# FIELD MAINTENANCE PRINT SET



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| UNIT VARIATIONS COVERED BY THIS PRINT SET |
|---|
| 11730-ZA |

11730-Z

## Field Maintenance Print Set

## Digital Equipment Corporation

PRINT SET ORDER
NO. MP01270

REV. A | SIZE B | CODE TC | NUMBER 11730-Z-1

| REVISIONS | REV. | CHG. NO. | DATE |
|---|---|---|---|
| | | | |

USED ON OPTION/MODEL

SHEET 1 OF 2

| | | |
|---|---|---|
| DRN. A. ROCHA | DATE 22mar82 | |
| CHK'D R.MORIN | DATE 13APR82 | |
| PROJ. ENG. R.MORIN | DATE 13APR82 | |
| FIELD SERV. H. Hunter | DATE 21 APR 82 | |

digital

TITLE: FIELD MAINT. PRINT SET 11730-Z

| SIZE | CODE | NUMBER | REV. |
|---|---|---|---|
| B | TC | 11730-Z-1 | A |

DIST.

DRB 124

TW

# FIELD MAINTENANCE PRINT SET



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| D-BD-M8390-0-1 | 11730 CONTROL STORE FORMATS |
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| D-GL-M8390-0-0 | DATA PATH - ROM AND PALS LISTING |
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| K-PL-M8391-0-DBP | M8391 MEMORY CONTR. MODULE ASSY - PARTS LIST |
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| D-GL-M8394-0-0 | WRITEABLE CONTROL STORE - ROM AND PALS LISTING |
| D-TD-M8394-0-0 | W.C.S. DYNAMIC RAM TIMING DIAGNOSTICS |
| D-EC-5014439-0-0 | W.C.S. ETCH CUT DRAWING |
| B-DD-G7273-0 | BUS GRANT & NON-PROC GRANT CARD - DRAWING DIRECTORY |
| D-UA-G7273-0-0 | BUS GRANT & NON-PROC GRANT CARD ASSY |
| K-PL-G7273-0-DBP | BUS GRANT & NON-PROC GRANT CARD - PARTS LIST |
| D-CS-M9302-YA-1 | M9302 UNIBUS TERMINATOR - CIRCUIT SCHEM. |
| MP01366 | 1 MB MEMORY ARRAY FIELD MAINT PRINT SET (COMPLETE) |


| UNIT VARIATIONS COVERED BY THIS PRINT SET |
|---|
| 11730-ZA |

11730-Z

**Field Maintenance Print Set**

**Digital Equipment Corporation**

PRINT SET ORDER NO. MP01270

SIZE B | CODE TC | NUMBER 11730-Z-1 | REV. A

| REVISIONS | | | USED ON OPTION/MODEL | | DRN. | DATE | TITLE: digital |
|---|---|---|---|---|---|---|---|
| REV | | | | | A. ROCHA | 22MAR82 | FIELD MAINT. PRINT SET 11730-Z |
| CHG. NO. | | | | | CHK'D R. MORIN | DATE 13APR82 | |
| DATE | | | | | PROJ. ENG. R. MORIN | DATE 13APR82 | |
| | | | | | FIELD SERV. J. Hunter | DATE 21 APR 82 | |

SHEET 2 OF 2

| SIZE | CODE | NUMBER | REV. |
|---|---|---|---|
| B | TC | 11730-Z-1 | A |

DIST.

DRB 124

TW

# DRAWING DIRECTORY



## UNIT VARIATIONS

| VAR | TITLE |
|---|---|
| 11730-ZA | BA11-ZA, KA730-A, MS730-CA, 120V/240V |

| REVISIONS | REV. | CHANGE NO. | CHK |
|---|---|---|---|
| | | | |

USED ON OPTION/MODEL: 11730-Z

SHEET 1 OF 6

| | | | |
|---|---|---|---|
| DRN. | | DATE | 2FEB82 |
| CHK'D. | | DATE | 2FEB82 |
| PROJ. ENG. | | DATE | 2FEB82 |
| PROD. | | DATE | 21 APR82 |

TITLE: 11730-Z UNIT ASSY

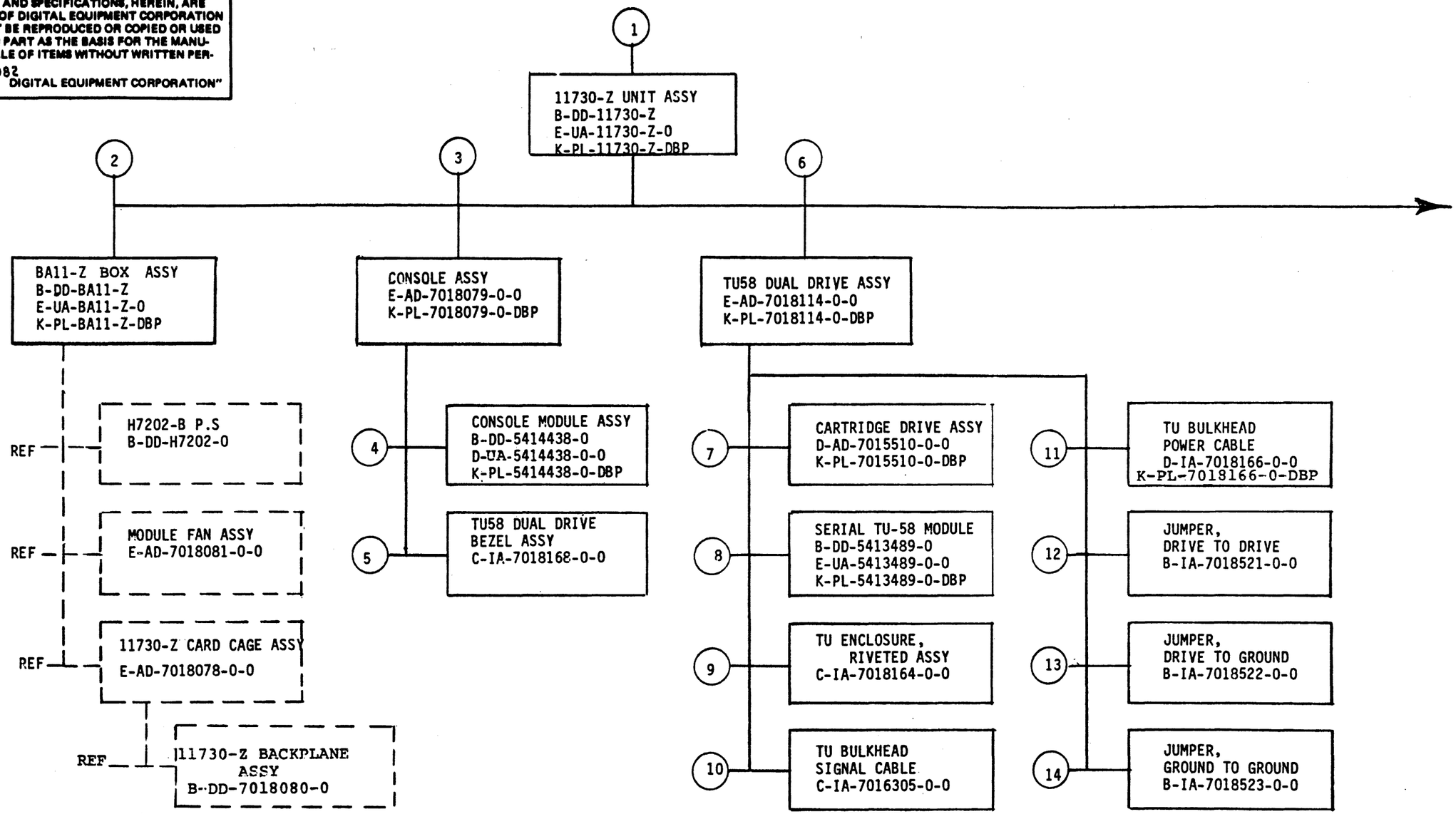
digital

| SIZE | CODE | NUMBER | REV |
|---|---|---|---|
| B | DD | 11730-Z | A |

DIST.

DRB 106A

TW




| TITLE | | SIZE | CODE | NUMBER | REV |
|---|---|---|---|---|---|
| 11730-Z UNIT ASSY | SHEET 2 OF 6 | B | DD | 11730-Z | A |



TW

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11730 MODULE SET
B-DD-KA730-0
K-PL-KA730-A-DBP

16 DATA PATH MODULE
B-DD-M8390-0
D-UA-M8390-0-0
K-PL-M8390-0-DBP

17 MEMORY CONT. MODULE
B-DD-M8391-0
D-UA-M8391-0-0
K-PL-M8391-0-DBP

18 WRITABLE CONTROL STORE MODULE
B-DD-M8394-0
D-UA-M8394-0-0
K-PL-M8394-0-DBP

19 BUS GRANT & NON-PROC GRANT CARD
B-DD-G7273-0
D-UA-G7273-0-0
K-PL-G7273-0-DBP

20 UNIBUS TERMINATOR
B-DD-M9302-0
D-UA-M9302-0-0
K-PL-M9302-0-DBP

21 IMB MEMORY ARRAY MODULE
B-DD-MS730-C
B-PL-MS730-C-0

34 MOS MEMORY ARRAY
B-DD-M8750-0
D-UA-M8750-0-0
K-PL-M8750-CA-DBP

22 CABLE ASSY
(10 COND. RIBBON)
D-IA-7011411-0-0

23 TU58 POWER CABLE
D-IA-7018109-0-0
K-PL-7018109-0-DBP

24 CABLE ASSY
(25/26 COND. RIBBON)
C-IA-7018074-0-0

25

CPU CABLE RETRACTOR ASSY
E-AD-7018779-0-0
K-PL-7018779-0-DBP

26 RETRACTOR TRAY, RIVETED ASSY
D-IA-7018549-0-0
K-PL-7018549-0-DBP

27 CLAMP ASSY
C-IA-7018772-0-0
K-PL-7018772-0-DBP

28 CPU-I/O PANEL ASSY
D-AD-7018778-0-0
K-PL-7018778-0-DBP

29 UNIBUS FILLER BRKT ASSY
B-IA-7018781-0-0
K-PL-7018781-0-DBP

30 CATCH PAN ASSY
C-IA-7018720-0-0
K-PL-7018720-0-DBP

31 PRESSURE SHEET ASSY
C-IA-7018718-0-0
K-PL-7018718-0-DBP

32 CLAMP ASSY
C-IA-7018772-0-0
K-PL-7018772-0-DBP

33 PKG, CPU, 11730-ZA
A-PS-3700662-0-0

| TITLE | SHEET | SIZE | CODE | NUMBER | REV |
|---|---|---|---|---|---|
| 11730-Z UNIT ASSY | 3 OF 6 | B | DD | 11730-Z | A |



TW

| FIND NO. | DRAWING NO. | DESCRIPTION | TYPE |
|---|---|---|---|
| 1. | MP01270 | FIELD MAINTENANCE PRINT SET (MP) | - |
| | B-TC-11730-Z-1 | FIELD MAINTENANCE PRINT SET (TC) | - |
| | B-DD-11730-Z | 11730-Z UNIT ASSY - DRAWING DIRECTORY | - |
| | E-UA-11730-Z-0 | 11730-Z UNIT ASSY | E/M |
| | K-PL-11730-Z-DBP | 11730-Z UNIT ASSY - PARTS LIST -Z28 | - |
| | B-PL-11730-Z-2 | 11730-Z SHIPPING LIST | - |
| | B-PL-11730-Z-3 | 11730-Z HARDWARE KIT LIST | M |
| | D-BD-11730-Z-5 | 11730 SYSTEM BLOCK DIAGRAM | - |
| | C-PS-1209856-0-0 | MODULE HOLDER | M |
| | A-PS-1217665-0-0 | FILTER FOAM | M |
| | A-PS-1218166-0-0 | SLIDE (PAIR) W/HDW | M |
| | A-PS-1219020-0-0 | CARRIER,CABLE | M |
| | A-PS-1215700-0-0 | CABLE,FERRULED | M |
| | A-PS-3615809-0-0 | MEDIA CARTRIDGE,TU58-K | M |
| | D-MD-7425374-0-0 | BRACKET,SLIDE MOUNTING | M |
| | B-IA-7426335-0-0 | PLATE,STUD | M |
| | C-MD-7413659-0-0 | BRACKET,SHIPPING | M |
| | C-MD-7425927-0-0 | GUIDE AND CLAMP | M |
| | C-MD-7425928-0-0 | BRACKET,CARRIER/BOX | M |
| | C-MD-7425929-0-0 | BRACKET,CAB/CARRIER | M |
| | D-MD-7426623-0-0 | CLAMP,R80 CABLE | M |
| | D-IA-7426625-0-0 | CLAMP,DMF CABLE | M |
| | B-IA-7426723-0-0 | BAR CLAMP ASSY | M |
| | | | - |
| 2. | B-DD-BA11-Z | BA11-Z BOX ASSY -DRAWING DIRECTORY | - |
| | E-UA-BA11-Z-0 | BA11-Z BOX ASSY | E/M |
| | K-PL-BA11-Z-DBP | BA11-Z BOX ASSY - PARTS LIST - Z1862 | - |
| 3. | E-AD-7018079-0-0 | CONSOLE ASSY | E/M |
| | K-PL-7018079-0-DBP | CONSOLE ASSY - PARTS LIST - Z1827 | - |
| | A-PS-1216178-0-0 | LOCK,ASSY PLASTIC (6 POS) | M |
| | A-PS-1217094-0-0 | BEZEL,10.5 IN. | M |
| | A-PS-1217665-0-0 | FILTER,FOAM INSERT | M |
| | E-IA-7424269-0-0 | CONSOLE,INSERT | M |
| | E-IA-7424832-0-0 | MOUNTING PLATE,10.5 IN. | M |
| | D-MD-7426334-0-0 | SHIELD | M |
| 4. | B-DD-5414438-0 | CONSOLE MODULE ASSY - DRAWING DIRECTORY | - |
| | D-UA-5414438-0-0 | CONSOLE MODULE ASSY | E/M |
| | K-PL-5414438-0-DBP | CONSOLE MODULE ASSY - PARTS LIST | - |
| | D-CS-5414438-0-1 | CONSOLE MODULE ASSY - CIRCUIT SCHEMATIC | E |

| FIND NO. | DRAWING NO. | DESCRIPTION | TYPE |
|---|---|---|---|
| 5. | C-IA-7018168-0-0 | TU58 DUAL DRIVE BEZEL ASSY | M |
| | D-MD-7425270-0-0 | BEZEL,FRONT,TU | M |
| | B-MD-7425341-0-0 | TU,LED BUTTON | M |
| 6. | E-AD-7018114-0-0 | TU58 DUAL DRIVE ASSY | E/M |
| | K-PL-7018114-0-DBP | TU58 DUAL DRIVE ASSY - PARTS LIST - Z1352 | - |
| | D-IA-7423933-0-0 | PLATFORM,TU58 | M |
| | B-MD-7424846-0-0 | TU CENTER BRACE | M |
| | D-MD-7424848-0-0 | TU,BOTTOM PLATE | M |
| | A-PS-1118799-0-0 | LED CABLE ASSY | E/M |
| 7. | D-AD-7015510-0-0 | CARTRIDGE DRIVE ASSY | E/M |
| | K-PL-7015510-0-DBP | CARTRIDGE DRIVE ASSY - PARTS LIST - Z1620 | - |
| 8. | B-DD-5413489-0 | SERIAL TU58 MODULE ASSY - DRAWING DIRECTORY | - |
| | E-UA-5413489-0-0 | SERIAL TU58 MODULE ASSY | E/M |
| | K-PL-5413489-0-DBP | SERIAL TU58 MODULE ASSY - PARTS LIST - Z0582 | - |
| | D-CS-5413489-0-1 | SERIAL TU58 MODULE ASSY - CIRCUIT SCHEMATIC | E |
| 9. | C-IA-7018164-0-0 | TU ENCLOSURE,RIVETED ASSY | M |
| | E-IA-7424845-0-0 | TU ENCLOSURE | M |
| | C-MD-7424847-0-0 | TU BACKPLATE | M |
| 10. | C-IA-7016305-0-0 | TU BULKHEAD SIGNAL CABLE | E/M |
| 11. | D-IA-7018166-0-0 | TU BULKHEAD POWER CABLE | E/M |
| | K-PL-7018166-0-DBP | TU BULKHEAD POWER CABLE - PARTS LIST - Z1854 | - |
| 12. | B-IA-7018521-0-0 | JUMPER,DRIVE TO DRIVE | M |
| 13. | B-IA-7018522-0-0 | JUMPER,DRIVE TO GROUND | M |
| 14. | B-IA-7018523-0-0 | JUMPER GROUND TO GROUND | M |
| 15. | B-DD-KA730-A | 11730 MODULE SET - DRAWING DIRECTORY | - |
| | K-PL-KA730-A-DBP | 11730 MODULE SET - PARTS LIST | - |

TYPE: E ELECTRICAL
M MECHANICAL
E/M ELECTRO/MECHANICAL

digital

| TITLE | SHEET | SIZE | CODE | NUMBER | REV |
|---|---|---|---|---|---|
| 11730-Z UNIT ASSY | 4 OF 6 | B | DD | 11730-Z | A |



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| FIND NO. | DRAWING NO. | DESCRIPTION | TYPE |
|---|---|---|---|
| 16 | B-DD-M8390-0 | M8390 DATA PATH MODULE - DRAWING DIRECTORY | - |
| | D-UA-M8390-0-0 | M8390 DAP MODULE ASSY | E/M |
| | K-PL-M8390-0-DBP | M8390 DAP MODULE ASSY (PARTS LIST) | - |
| | D-CS-M8390-0-1 | M8390 DAP MODULE - CIRCUIT SCHEMATIC | E |
| 17 | B-DD-M8391-0 | M8391 MEMORY CONTROLLER MODULE- DWG DIRECTORY | - |
| | D-UA-M8391-0-0 | M8391 MCT MODULE ASSY | E/M |
| | K-PL-M8391-0-DBP | M8391 MCT MODULE ASSY (PARTS LIST) | - |
| | D-CS-M8391-0-1 | M8391 MCT MODULE- CIRCUIT SCHEMATIC | E |
| 18 | B-DD-M8394-0 | M8394 WRITABLE CONTROL STORE MODULE-DWG DIR. | - |
| | D-UA-M8394-0-0 | M8394 WCS MODULE ASSY | E/M |
| | K-PL-M8394-0-DBP | M8394 WCS MODULE ASSY (PARTS LIST) | - |
| | D-CS-M8394-0-1 | M8394 WCS MODULE - CIRCUIT SCHEMATIC | E |
| 19 | B-DD-G7273-0 | BUS GRANT AND NON-PROCESSOR GRANT CARD - DWG DIR. | - |
| | D-UA-G7273-0-0 | GRANT CARD ASSY | E/M |
| | K-PL-G7273-0-DBP | GRANT CARD ASSY (PARTS LIST) | - |
| 20 | B-DD-M9302-0 | UNIBUS TERMINATOR - DRAWING DIRECTORY | - |
| | D-UA-M9302-0-0 | UNIBUS TERMINATOR ASSY | E/M |
| | K-PL-M9302-0-DBP | UNIBUS TERMINATOR ASSY (PARTS LIST) | - |
| | D-CS-M9302-0-1 | UNIBUS TERMINATOR ASSY - CIRCUIT SCHEMATIC | E |
| 21 | B-DD-MS730-C | MS730 MEMORY ARRAY MODULE - DRAWING DIRECTORY | - |
| | K-PL-MS730-C-DBP | MS730 MEMORY ARRAY MODULE ASSY - PARTS LIST | - |
| 22 | D-IA-7011411-0-0 | CABLE ASSY - 10 COND. RIBBON | E/M |
| 23 | D-IA-7018109-0-0 | CABLE, TU58 POWER | E/M |
| | K-PL-7018109-0-DBP | CABLE, TU58 POWER (PARTS LIST) - Z1853 | - |
| 24 | C-IA-7018074-0-0 | CABLE ASSY - 25/26 COND RIBBON | E/M |
| 25 | E-AD-7018779-0-0 | CPU CABLE RETRACTOR ASSY | M |
| | K-PL-7018779-0-DBP | CPU CABLE RETRACTOR ASSY (PARTS LIST) -Z3612 | - |
| | E-IA-7425733-0-0 | TRAY, R.H. HALF | M |
| | E-IA-7426619-0-0 | BRACKET, I/O PANEL (RT AND LT) | M |
| | E-IA-7426618-0-0 | PANEL, I/O PORT | M |
| | C-IA-7426620-0-0 | BRACKET, MAGNET | M |
| | C-MD-7426621-0-0 | COVER PLATE, R80 HOLE | M |
| | B-IA-7426652-0-0 | PLATE, NUT | M |
| | D-MD-7426407-01-DBU | PANEL, DOUBLE BLANK | M |
| | A-PS-1212908-0-0 | DOOR CATCH, MAGNETIC | M |
| 26 | D-IA-7018549-0-0 | RETRACTOR TRAY - RIVETED ASSY | M |
| | K-PL-7018549-0-DBP | RETRACTOR TRAY - RIVETED ASSY (PARTS LIST) - Z2446 | - |
| | D-MD-7425729-0-0 | GUIDE, CABLE | M |
| | E-IA-7425732-0-0 | TRAY, L.H. HALF | M |
| 27 | C-IA-7018772-0-0 | CLAMP ASSY | M |
| | K-PL-7018772-0-DBP | CLAMP ASSY (PARTS LIST) -Z3325 | - |
| | C-MD-7425711-0-0 | CLAMP, CABLE | M |
| | B-MD-7426358-0-0 | FOAM, ADH-BACKED | M |
| 28 | D-AD-7018778-0-0 | CPU - I/O PANEL ASSY | M |
| | K-PL-7018778-0-DBP | CPU - I/O PANEL ASSY (PARTS LIST) -Z3616 | - |
| | D-IA-7426405-04-DBU | PLATE, SEXTAL, CPU - I/O | M |
| | C-IA-7426654-0-0 | BRACKET, CABLE GRD | M |
| | A-PS-1219534-0-0 | SCREW, CAPTIVE | M |
| | A-PS-1217431-0-0 | CONN, D SUB, 25 PIN FILTERED | E/M |
| | A-PS-1211591-0-0 | CONN, ZIF, 40 CONDUCTOR | E/M |
| 29 | B-IA-7018781-0-0 | BRACKET ASSY, UNIBUS FILLER | M |
| | K-PL-7018781-0-DBP | BRACKET ASSY, UNIBUS FILLER (PARTS LIST) Z3618 | - |
| | D-MD-7426624-0-0 | PLATE, UNIBUS FILLER | M |
| | B-MD-7426653-0-0 | FOAM PAD, CABLE CLAMP | M |
| 30 | C-IA-7018720-0-0 | CATCH PAN ASSY | M |
| | K-PL-7018720-0-DBP | CATCH PAN ASSY (PARTS LIST) -Z2835 | - |
| | E-IA-7425728-0-0 | CATCH PAN | M |

TYPE: E ELECTRICAL
M MECHANICAL
E/M ELECTRO/MECHANICAL

digital

TITLE 11730-Z UNIT ASSY

SHEET 5 OF 6 | SIZE B | CODE DD | NUMBER 11730-Z | REV A

DRB 108A

TW

| FIND NO. | DRAWING NO. | DESCRIPTION | TYPE |
|---|---|---|---|
| 31 | C-IA-7018718-0-0 | PRESSURE SHEET ASSY | M |
| | K-PL-7018718-0-DBP | PRESSURE SHEET ASSY (PARTS LIST) - Z2618 | - |
| | C-MD-7425726-0-0 | SHEET, PRESSURE | M |
| | C-MD-7425730-0-0 | CLAMP, SHEET | M |
| 32 | C-IA-7018772-0-0 | CLAMP ASSY | M |
| | K-PL-7018772-0-DBP | CLAMP ASSY (PARTS LIST) -Z3325 | - |
| | C-MD-7425711-0-0 | CLAMP, CABLE | M |
| | B-MD-7426358-0-0 | FOAM, ADH-BACKED | M |
| 33 | A-PS-3700662-0-0 | PKG, CPU, 11730-ZA | M |
| 34 | B-DD-M8750-0 | 1 MB MOS MEMORY ARRAY - DRAWING DIRECTORY | - |
| | D-UA-M8750-0-0 | 1 MB MOS MEMORY ARRAY | E/M |
| | K-PL-M8750-CA-DBP | 1 MB MOS MEMORY ARRAY - PARTS LIST | - |
| | D-CS-M8750-0-1 | 1 MB MOS MEMORY ARRAY - CIRCUIT SCHEM. | E |

| FIND NO. | DRAWING NO. | DESCRIPTION | TYPE |
|---|---|---|---|

TYPE: E ELECTRICAL
M MECHANICAL
E/M ELECTRO/MECHANICAL

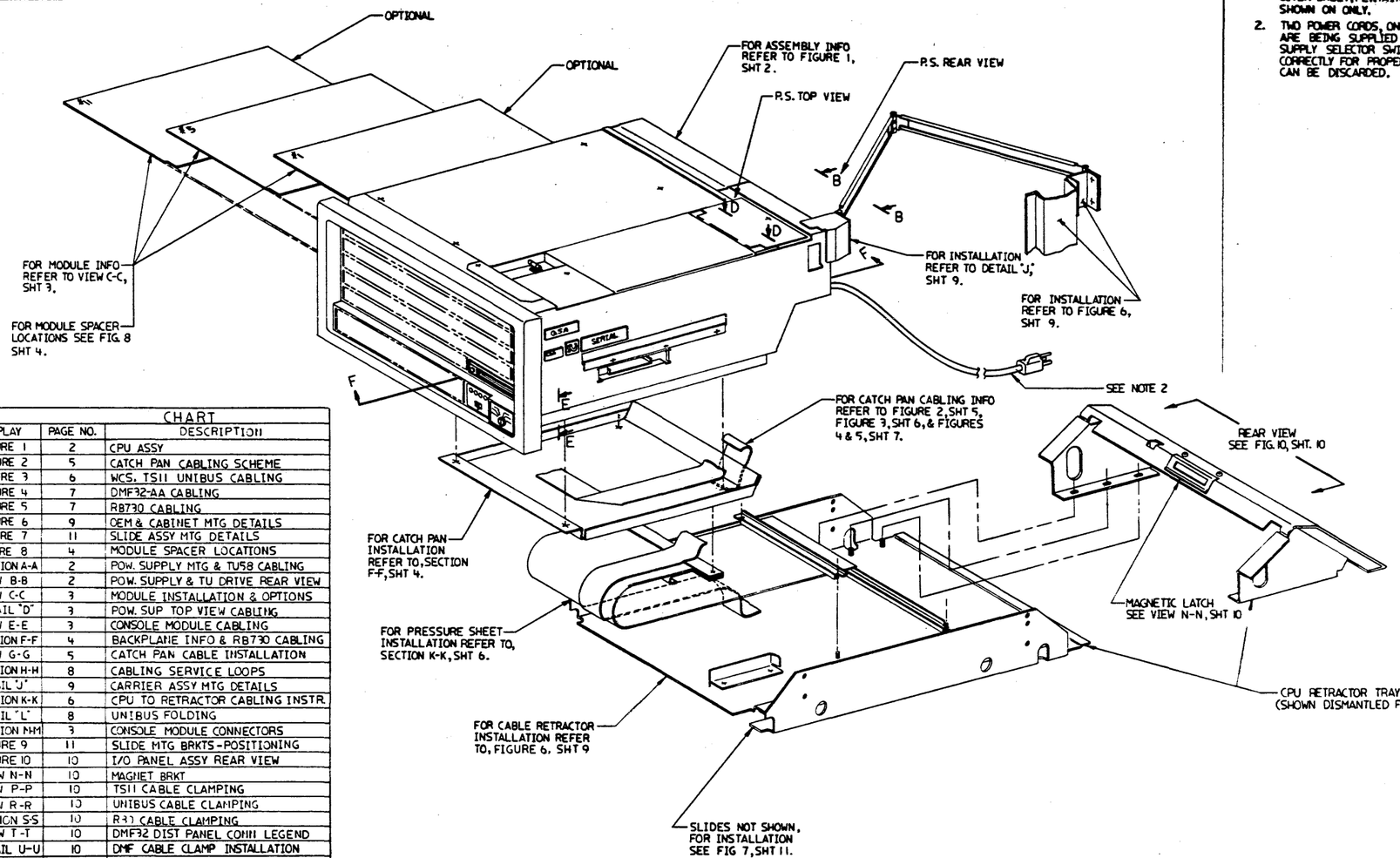
digital

TITLE: 11730-Z UNIT ASSY

SHEET 6 OF 6 | SIZE B | CODE DD | NUMBER 11730-Z | REV A

DRB 108A

TW




NOTES:

1. FROM HEREIN, ALL NOTES SHOWN ON ANY GIVEN SHEET, PERTAIN TO THE SHEET THERE SHOWN ON ONLY.
2. TWO POWER CORDS, ONE FOR 120V AND ONE FOR 240V, ARE BEING SUPPLIED WITH EACH SYSTEM. POWER SUPPLY SELECTOR SWITCH MUST BE POSITIONED CORRECTLY FOR PROPER OPERATION. UNUSED CORD CAN BE DISCARDED.

CHART

| DISPLAY | PAGE NO. | DESCRIPTION |
|---|---|---|
| FIGURE 1 | 2 | CPU ASSY |
| FIGURE 2 | 5 | CATCH PAN CABLING SCHEME |
| FIGURE 3 | 6 | WCS, TSII UNIBUS CABLING |
| FIGURE 4 | 7 | DMF32-AA CABLING |
| FIGURE 5 | 7 | RB730 CABLING |
| FIGURE 6 | 9 | OEM & CABINET MTG DETAILS |
| FIGURE 7 | 11 | SLIDE ASSY MTG DETAILS |
| FIGURE 8 | 4 | MODULE SPACER LOCATIONS |
| SECTION A-A | 2 | POW. SUPPLY MTG & TU58 CABLING |
| VIEW B-B | 2 | POW. SUPPLY & TU DRIVE REAR VIEW |
| VIEW C-C | 3 | MODULE INSTALLATION & OPTIONS |
| DETAIL "D" | 3 | POW. SUP TOP VIEW CABLING |
| VIEW E-E | 3 | CONSOLE MODULE CABLING |
| SECTION F-F | 4 | BACKPLANE INFO & RB730 CABLING |
| VIEW G-G | 5 | CATCH PAN CABLE INSTALLATION |
| SECTION H-H | 8 | CABLING SERVICE LOOPS |
| DETAIL "J" | 9 | CARRIER ASSY MTG DETAILS |
| SECTION K-K | 6 | CPU TO RETRACTOR CABLING INSTR. |
| DETAIL "L" | 8 | UNIBUS FOLDING |
| SECTION M-M | 3 | CONSOLE MODULE CONNECTORS |
| FIGURE 9 | 11 | SLIDE MTG BRKTS-POSITIONING |
| FIGURE 10 | 10 | I/O PANEL ASSY REAR VIEW |
| VIEW N-N | 10 | MAGNET BRKT |
| VIEW P-P | 10 | TSII CABLE CLAMPING |
| VIEW R-R | 10 | UNIBUS CABLE CLAMPING |
| SECTION S-S | 10 | R3) CABLE CLAMPING |
| VIEW T-T | 10 | DMF32 DIST PANEL CONN LEGEND |
| DETAIL U-U | 10 | DMF CABLE CLAMP INSTALLATION |
| SECTION V-V | 11 | SLIDE TO BRKT. MOUNTING |

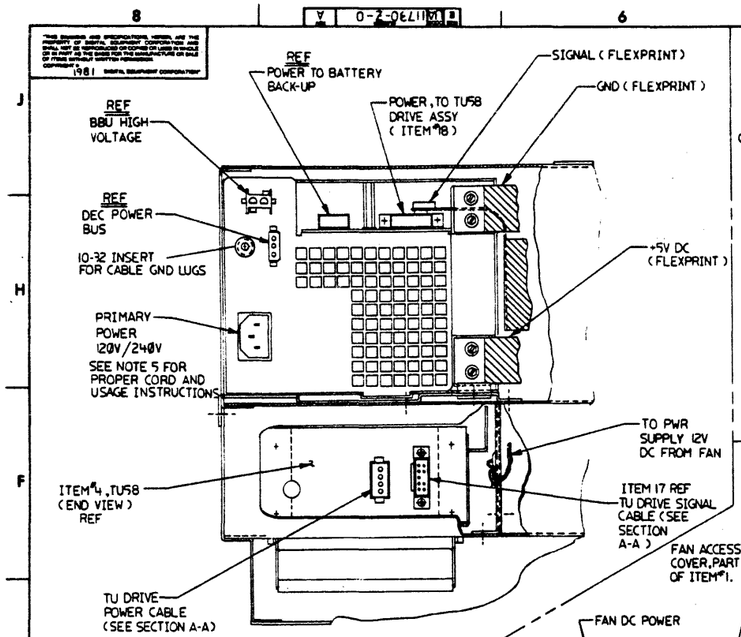
VARIATION CHART

| NUMBER | VARIATION |
|---|---|
| 11730-ZA | BA11-ZA, KA730-A, MS730-CA, 120V/240V |

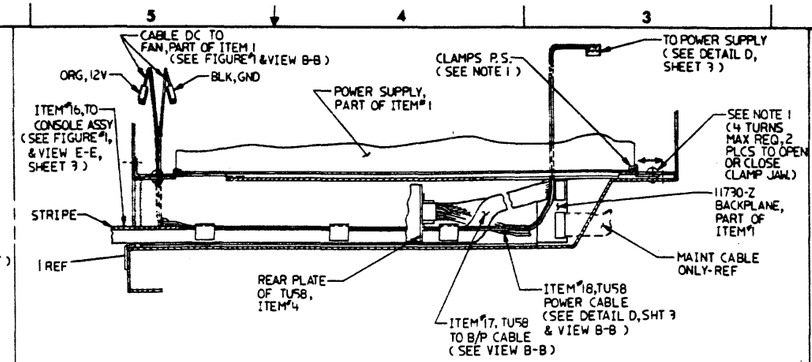
CAUTION: FOR PARTS LIST REFER TO K-PL-11730-Z-DBP.(Z2842) FOR SYSTEM BLOCK DIAGRAM REFER TO D-BD-11730-Z-5.

| REVISION HISTORY | | | |
|---|---|---|---|
| ZONE | ECO NUMBER | DATE | REV |
| 2 | Released AT Rev A | 27 JUL 81 | A |

| | | | |
|---|---|---|---|
| DESCRIPTION | DRAWING NO. | PART NO. | ITEM NO. |
| UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES AND THE FOLLOWING TOLERANCES APPLY (PER DEC-STD 114B) | | | |
| THIRD ANGLE PROJECTION | DRN A Baker 27 July 81 | TITLE 11730-Z UNIT ASSY | |
| DO NOT SCALE DRAWING | CHK'D [illegible] 27 JUL 82 | | |
| REMOVE BURRS AND BREAK SHARP CORNERS | ENGR [illegible] 27 JUL 82 | | |
| MATERIAL SEE PARTS LIST | MGR [illegible] 27 JUL 82 | DOCUMENT NUMBER E UA 11730-Z-0 | REV A |
| FINISH | NEXT ASSY B-BD-11730-Z-0 | SIZE E | CODE UA |
| | | SCALE | SHEET 1 OF 11 |




VIEW B-B
SCALE: NONE
(CAUTION: RETRACTOR ARM, PART OF ITEM 1, REMOVED TO SHOW MORE DETAIL.)




SECTION A-A
SCALE: NONE
( TO REMOVE OR REPLACE POWER SUPPLY, SEE NOTE 1 )

NOTES:

1. TO REMOVE POWER SUPPLY, DISCONNECT ALL ELECTRICAL CONNECTIONS AND FLEXPRINTS, REMOVE FAN ACCESS COVER, ENERGY WARNING PLATE, & FOUR (4) RIGHT SIDEWALL SCREWS, NOW LOOSEN TWO (2) POWER SUPPLY CLAMP HOLDOWN SCREWS (REFER TO SECTION A-A) AND SLIDE POWER SUPPLY TO THE REAR UNTIL ITS UNLATCHED FROM THE FRONT CLAMP THEN LIFT. TO REPLACE THE UNIT, FOLLOW INSTRUCTIONS IN REVERSE ORDER.
2. PRIMARY POWER CONN MUST BE DISCONNECTED TO REMOVE POWER SUPPLY COVER, SEE DETAIL D, SHEET 3.
3. FOAM FILTER ITEM 25, IS EASILY REMOVABLE FOR CLEANING OR REPLACING. MUST BE IN PLACE DURING OPERATION TO PREVENT DUST ACCUMULATION.
4. CONSOLE ASSY ( ITEM 3 ) INSTALLATION REQUIRES THAT FRONT TU BEZEL MATES CORRECTLY TO MOUTH OF FRONT DRIVE UNIT WITHOUT UNNECESSARY PRESSURE OR INTERFERENCE. CONSOLE ASSY MUST BE GUIDED INTO POSITION AND THEN (4) SCREWS, ITEM 40, SECURED. FOAM FILTER IS THEN INSERTED INTO POSITION.
5. BOTH POWER CORDS, 120V AND 240V ARE SUPPLIED WITH ALL CPU'S. PLEASE FOLLOW WARNING INSTRUCTIONS AND ALSO DISCARD UNUSED POWER CORD.
6.

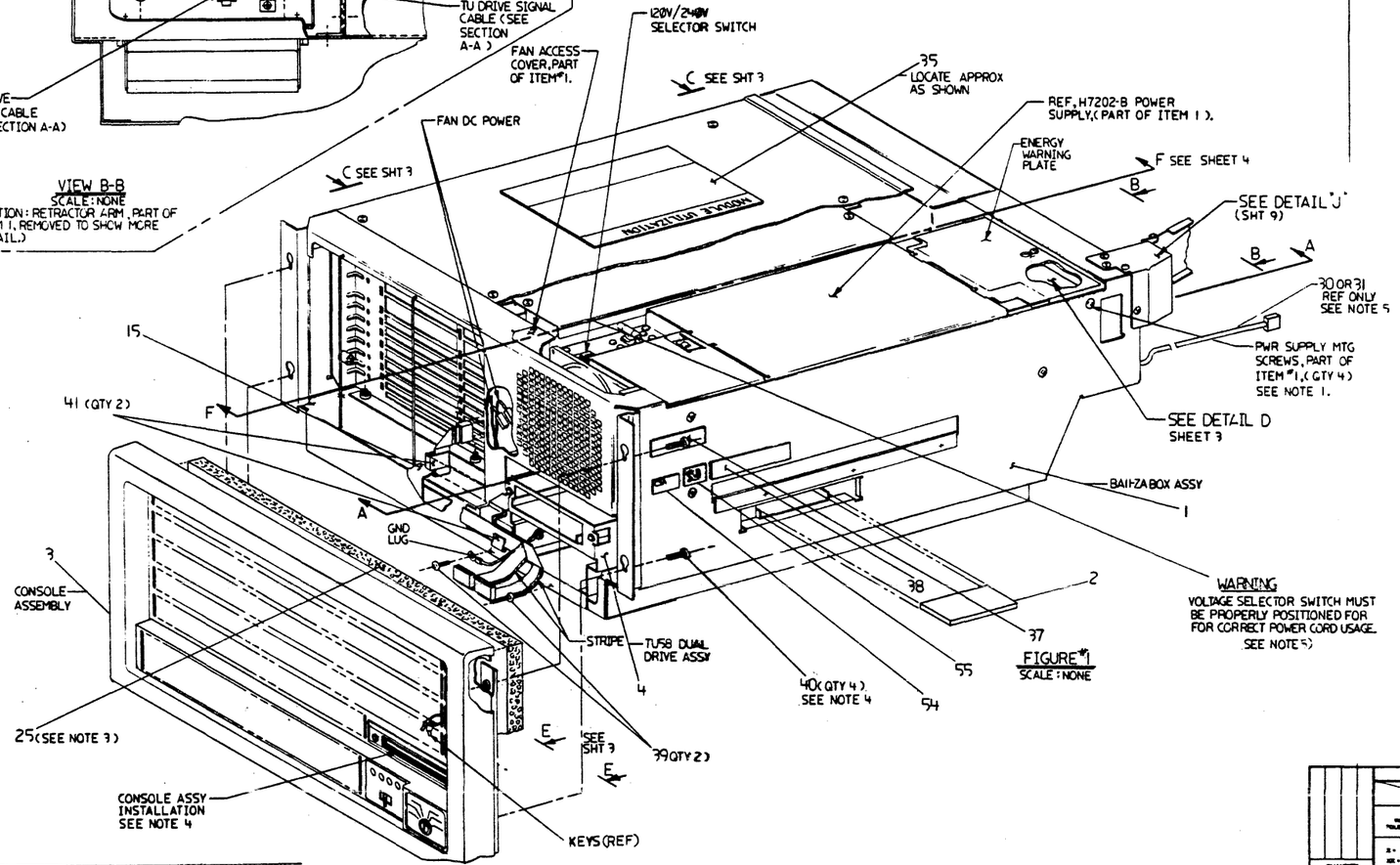



FIGURE #1
SCALE: NONE

WARNING
VOLTAGE SELECTOR SWITCH MUST BE PROPERLY POSITIONED FOR FOR CORRECT POWER CORD USAGE. SEE NOTE 5)

| | | | |
|---|---|---|---|
| DO NOT SCALE DRAWING | | | |
| REMOVE BURRS AND BREAK SHARP CORNERS | | | |
| MATERIAL: SEE PARTS LIST | | | |
| FINISH | | | |
| NEXT HIGHER ASSY: B-DD-11730-Z | | | |

| | | |
|---|---|---|
| DRN: A. Richa | DATE: 26 MAR 81 | |
| CHK'D | DATE | |
| ENGR APVL | DATE | |
| PROJ APVL | DATE | |
| MFG APVL | DATE | |

TITLE: 11730-Z UNIT ASSY

DOCUMENT NUMBER: E UA 11730-Z-0 A

SIZE: D

35 REF

MODULE (STD.)

TOP COVER, PART OF ITEM #1.

FAN HOUSING ASSY AND ENCLOSED SENSOR BOARD ASSY, PART OF ITEM 1.

1 REF — BA11-ZA BOX ASSY

REF ITEM 5 M8738 (OPTION) INTERGRATED DISK CONTROLLER

REF ITEM 6 FPT30 M8389 (OPTION) FLOATING POINT ACC.

REF ITEM 8 DAP M8390 DATA PATH

REF ITEM 9 MCT M8391 MEMORY CONTROLLER

REF ITEM 10 WCS M8392 WRITABLE CONTROL STORE

M7330-CA M8750 MEMORY ARRAY

M7330-CA (OPTION)

G7273 GRANT

DWF32-AA M8396 (OPTION) MULTI FUNCTION MODULE

M7502 UNIBUS TERM.

SLOT 1 … SLOT 11, SLOT 12

J1, J2, J3

ITEM #7, KA730-A MODULE SET, (QTY 1 STND) INCLUDES ITEMS 8,9,& 10.

ITEM 11, MEMORY ARRAY, (QTY 1 STND) SEE MODULE NOTES.

ITEM 13 REF, MULTI-FUNCTION MODULE.

ITEM 12, (QTY 5 STND) SLOTS 8,9,10,11 & 12 SEE MODULE NOTE D

MODULE SLOTS (REF)

A B C D E F

14

SLOT 10 ALTERNATE OPTION TS11

BOARD ACCESS COVER, PART OF ITEM #1 (NOTE: COVER MUST BE INSERTED/ INSTALLED AS SHOWN.

CAUTION: 1/4 TURN FASTENERS MUST BE POSITIVELY SECURED BEFORE CLOSING UNIT ASSY INTO CABINET. TO PREVENT DAMAGE TO THIS COVER AND CPU.

## MODULE NOTES

A. SLOTS 8-10 ARE MEMORY OR HEX/QUAD SPC SLOTS. SLOTS 11 & 12 ARE SPC HEX/QUAD SLOTS RESPECTIVELY.
B. SLOTS 6 & 7, MEMORY ARRAY ONLY.
C. SLOT 5-J2 NOT USED IN THIS CONFIGURATION.
D. GRANT CARDS MUST BE USED IN ALL UNUSED C-D SLOTS, 8-12.
E. SLOT 12 (A&B CONN) IS FOR TERMINATOR OR UNIBUS CABLE.

POWER TO TU58 DRIVE ASSY (ITEM #18) SEE SECTION A-A & VIEW B-B SHEET 2.

TO FAN ASSEMBLY (PART OF ITEM #1)

REF BBU POWER

REF DEC POWER BUS

REF BBU HIGH VOLTAGE

SIGNAL FLEXPRINT (FROM BACKPLANE)

TO FRONT FAN (SEE FIGURE 1 & VIEW B-B, SHEET 2)

STRIPE

ITEM #16 TO CONSOLE ASSY (SEE VIEW B-B & FIGURE 1, SHEET 2)

PRIMARY POWER CONN

POWER SUPPLY COVER, (SEE NOTE 2, SHT 2)

COMM REG

MAIN 5V

MEM REG

INDICATOR LIGHTS

## DETAIL D
SCALE: NONE
FROM SHEET 2

(PROTECTIVE COVER REMOVED FOR MORE DETAIL.)

## VIEW C-C
SCALE: NONE
SEE SHEET 1

## SECTION M-M
SCALE: NONE

CONSOLE PC BOARD (PART OF ITEM #3)

STRIPE

SIDE 2

CABLE, CONSOLE TO POWER SUPPLY

CABLE, CONSOLE TO BACKPLANE

16

15 REF

## VIEW E-E
SCALE: NONE
SEE SHEET 2
REAR VIEW-MODULE BOARD ON CONSOLE ASSY

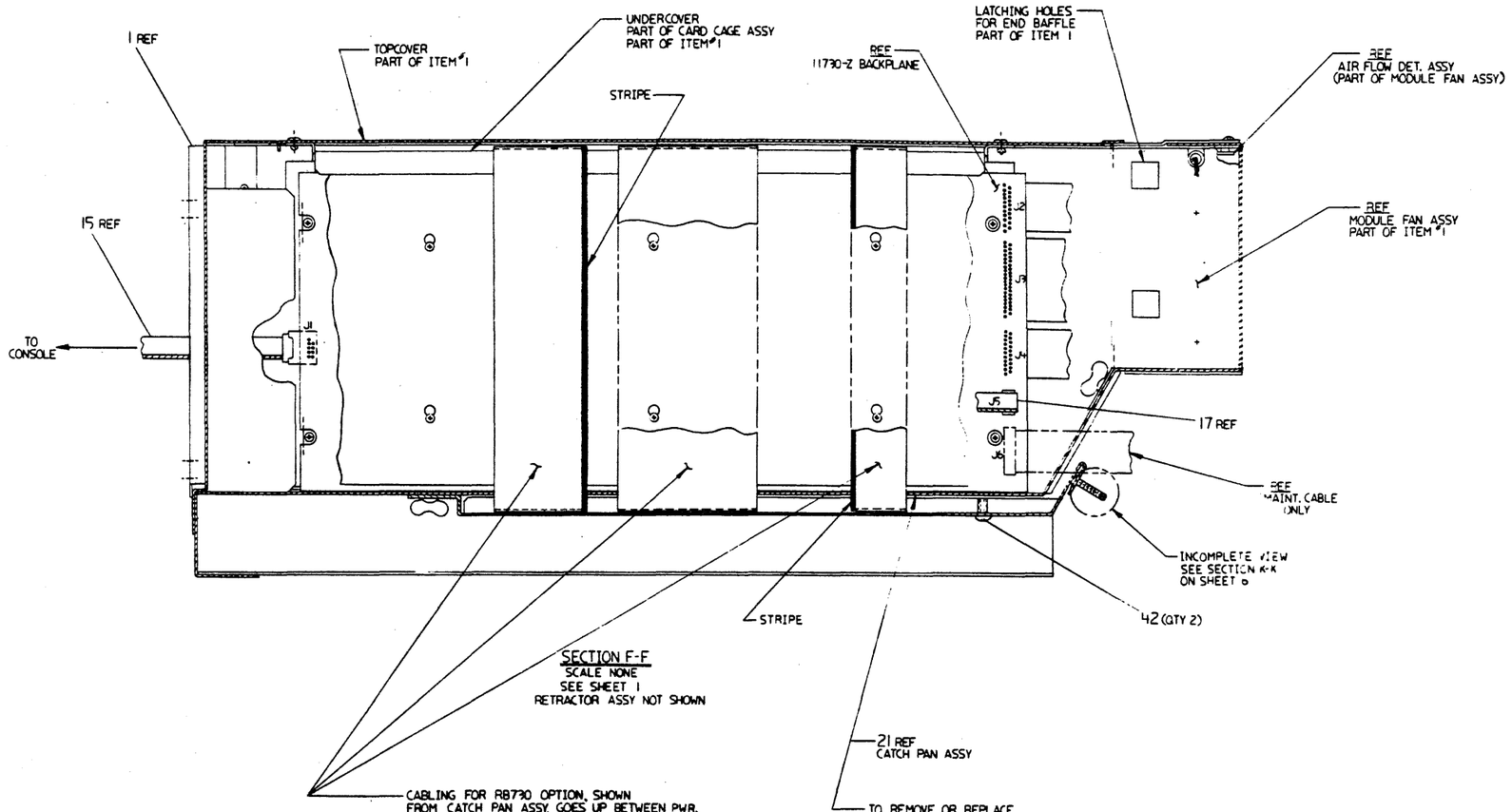
REVISION HISTORY

| DATE | ECO NUMBER | REV |
|---|---|---|

TITLE: 11730-Z UNIT ASSY

DOCUMENT NUMBER: E UA 11730-Z-0 A

SCALE — SHEET 3 OF 11



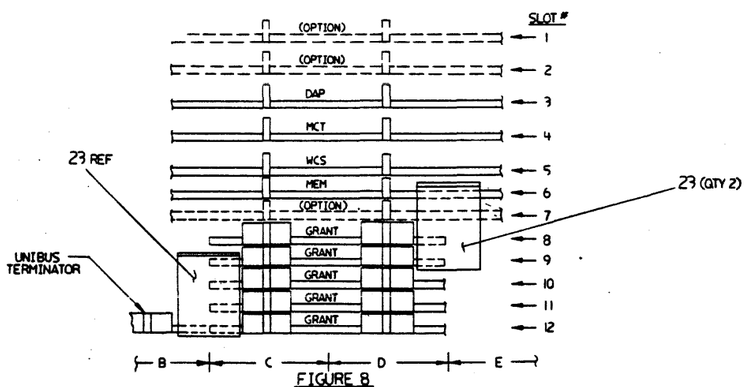
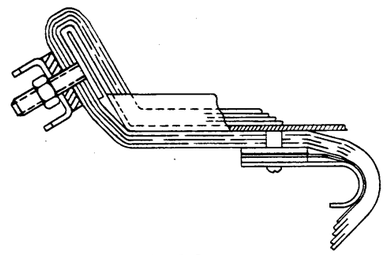




FIGURE 8
MODULE SPACER LOCATION
ON STANDARD UNIT ASSY

| REVISION HISTORY | | |
|---|---|---|
| DATE | ECO NUMBER | REV. |

| TITLE | DOCUMENT NUMBER | | |
|---|---|---|---|
| 11730-Z UNIT ASSY | SIZE E / CODE MJA | 11730 - Z - 0 | REV A |
| | SCALE | SHEET 4 OF 11 | |



VIEW G-G
REFERENCE CABLING PATH
ON CATCH PAN ASSY

FRONT OF
BA11-ZA BOX

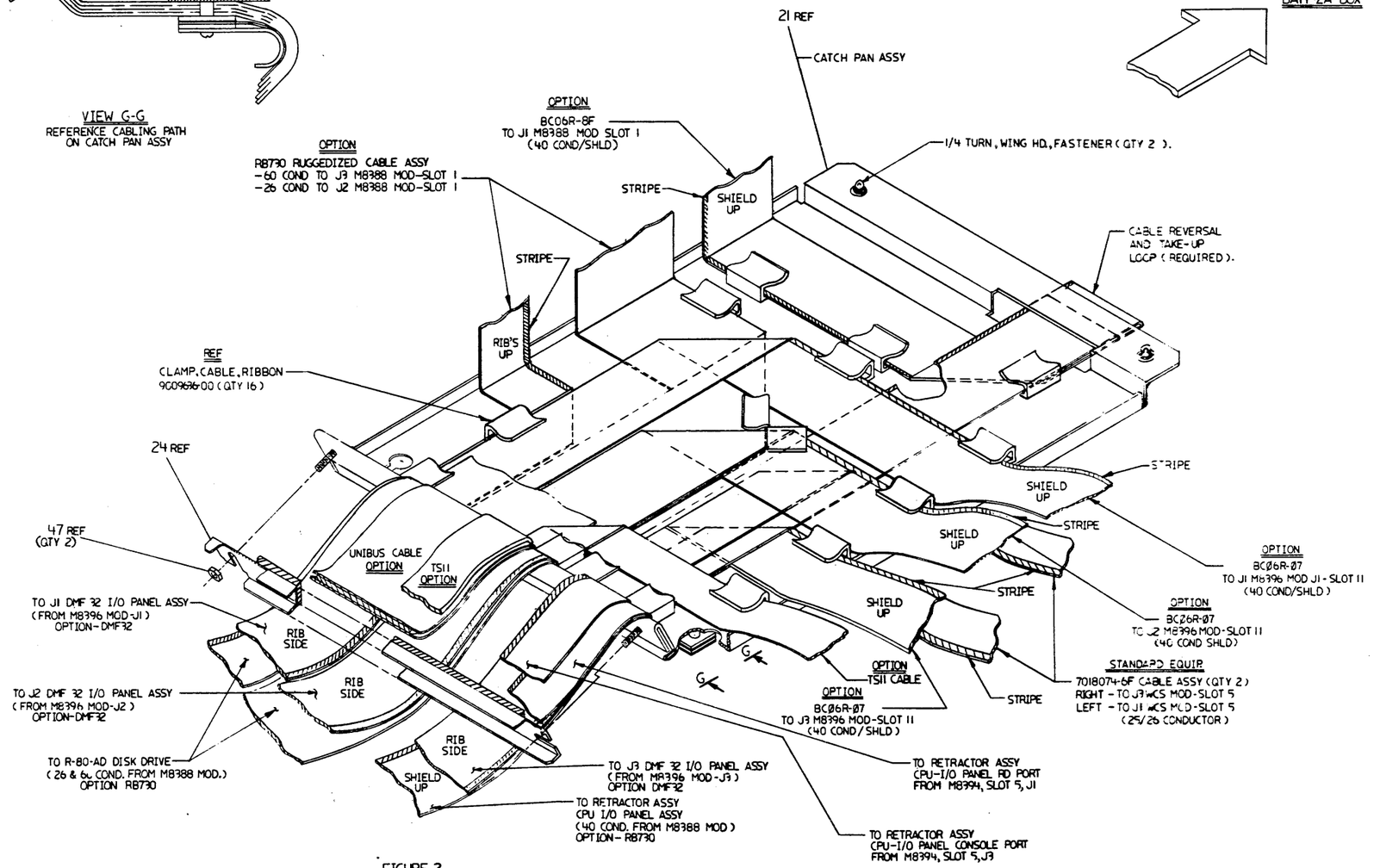



FIGURE 2
SCALE: NONE

CAUTION: VIEW ROTATED 180°.

| | | | |
|---|---|---|---|
| DESCRIPTION | DRAWING NO. | PART NO. | ITEM NO. |
| UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES AND THE FOLLOWING TOLERANCES APPLY (PER DEC STD 119) | | | |
| FRACTIONS ± | ANGLES ± 0° 30' | APPLICABLE DIMENSION RANGE | OVER 0 TO 6 / OVER 6 TO 30 / OVER 30 TO 120 / OVER 120 TO 480 / OVER 480 TO 1000 |
| .X ± .1 / .XX ± .02 / .XXX ± .005 | SURFACE QUALITY | MICROINCHES | 63 / 125 / 250 / 500 / 1000 |
| | | | ± .03 / ± .06 / ± .12 / ± .25 / ± .50 |
| | | | ± .005 / ± .010 / ± .020 / ± .040 / ± .080 |
| QUANTITY & VARIATION | | | |
| THIRD ANGLE PROJECTION | DRAWN | DATE | TITLE: 11730-Z UNIT ASSY |
| DO NOT SCALE DRAWING | CHK'D | DATE | |
| REMOVE BURRS AND BREAK SHARP CORNERS | ENGR APPR | DATE | |
| MATERIAL | MFG APPR | DATE | |
| FINISH | NEXT HIGHER ASSY | DATE | DOCUMENT NUMBER: E UA 11730-Z-0 REV A |

| REVISION HISTORY | | | |
|---|---|---|---|
| REV | ECO NUMBER | DATE | |
| A | | | |

| | | |
|---|---|---|
| REVISIONS | | |
| REV | ECO NUMBER | DATE |
| A | | |

DRAWING NUMBER: E UA 11730-Z-0 REV A

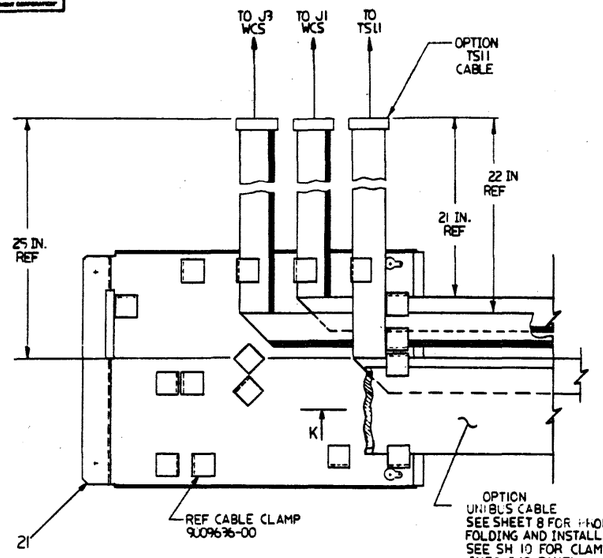
NOTE:
1. UNIBUS OPTION AND TS11 OPTION CANNOT BE USED TOGETHER IN CPU.

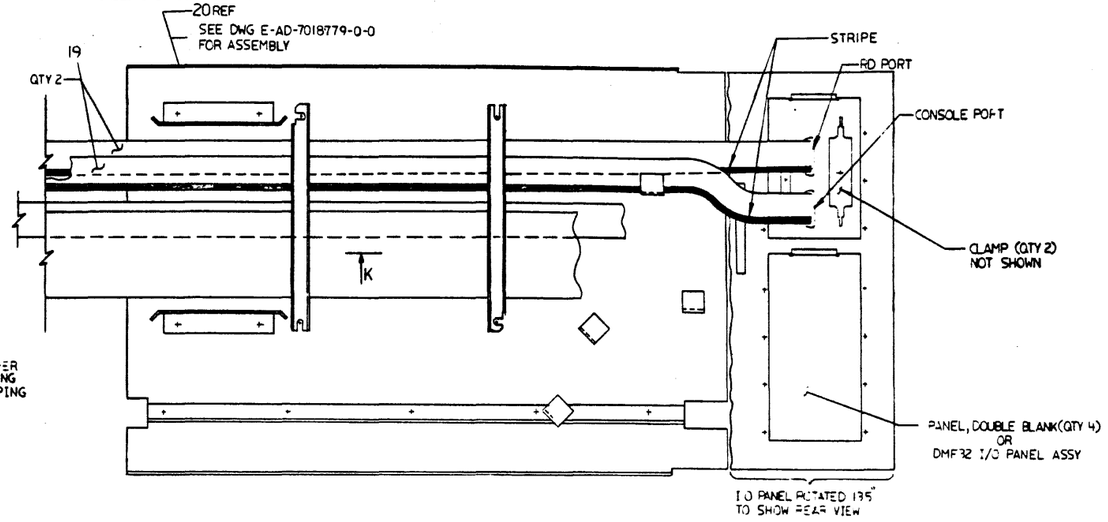
FIGURE 3

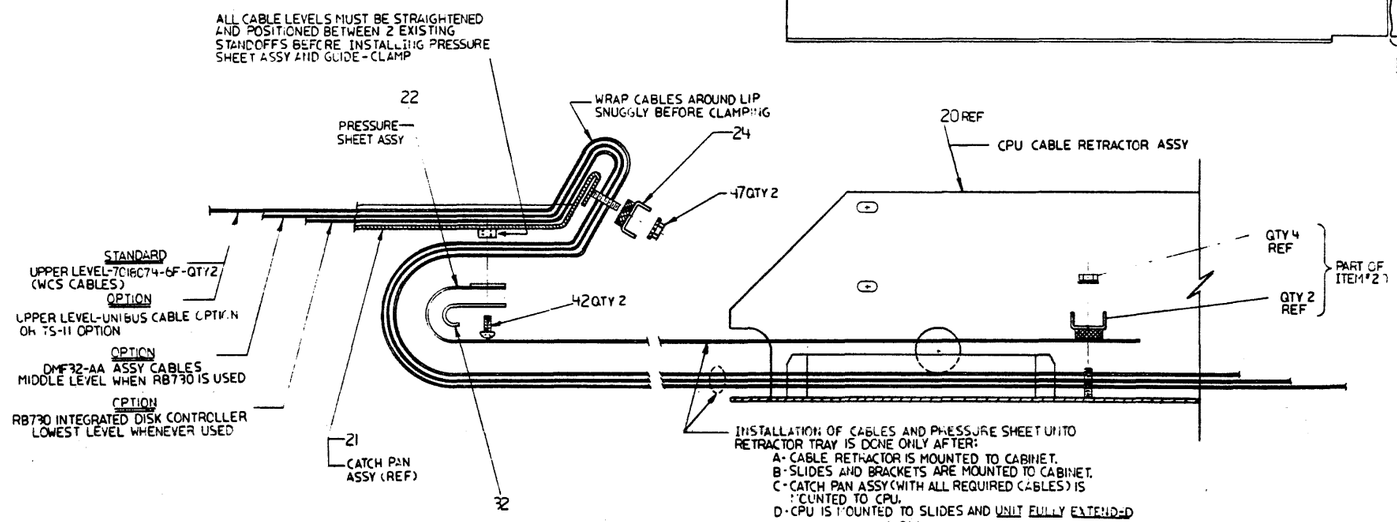
STANDARD O.E.M. CPU UNIT ASSY
BASIC UNIT, WITHOUT OPTIONS, WILL BE SUPPLIED WITH 2 EA 7018074-6F CABLE ASSY

NOTE

OEM CPU UNIT ASSY, WHEN IN SHIPPING PACKAGE WILL HAVE 2 WCS CABLES ALREADY INSTALLED FROM MODULE, THRU CATCH PAN ASSY, CAPTURED BY CLAMP (ITEM 24), AND TAPED TO UNDERSIDE OF CATCH PAN. ITEMS 22 & 32 MUST BE MOUNTED BEFORE CPU IS INSTALLED ON SLIDES IN CABINET. CABLING LAYOUT PROCEEDS AS SHOWN IN FIG. 3 & SECTION K-K.




INSTALLATION OF CABLES AND PRESSURE SHEET UNTO RETRACTOR TRAY IS DONE ONLY AFTER:
A - CABLE RETRACTOR IS MOUNTED TO CABINET.
B - SLIDES AND BRACKETS ARE MOUNTED TO CABINET.
C - CATCH PAN ASSY (WITH ALL REQUIRED CABLES) IS MOUNTED TO CPU.
D - CPU IS MOUNTED TO SLIDES AND UNIT FULLY EXTENDED

NOW
CABLES CAN BE POSITIONED ON TRAY AS SHOWN ON RESPECTIVE STANDARD OR OPTION VIEW (FROM SHEETS 6 AND 7). PULL CABLES AND PRESSURE SHEET GENTLY TO FORM TO GUIDE & CLAMP (ITEM 32) AND INSTALL CABLE CLAMPS.

SECTION K-K (FIG 3,4&5)

TYPICAL ASSY FOR ALL CONFIGURATIONS
SHEET 6 - UPPER VIEW - STANDARD O.E.M. CPU CABLING (WCS MODULE)
SHEET 6 - UPPER VIEW - UNIBUS CABLE OR TS-11 OPTION
SHEET 7 - UPPER VIEW - DMF32-AA OPTION
SHEET 7 - LOWER VIEW - RB730 OPTION

| REVISION HISTORY | | |
|---|---|---|
| DATE | ECO NUMBER | REV. |

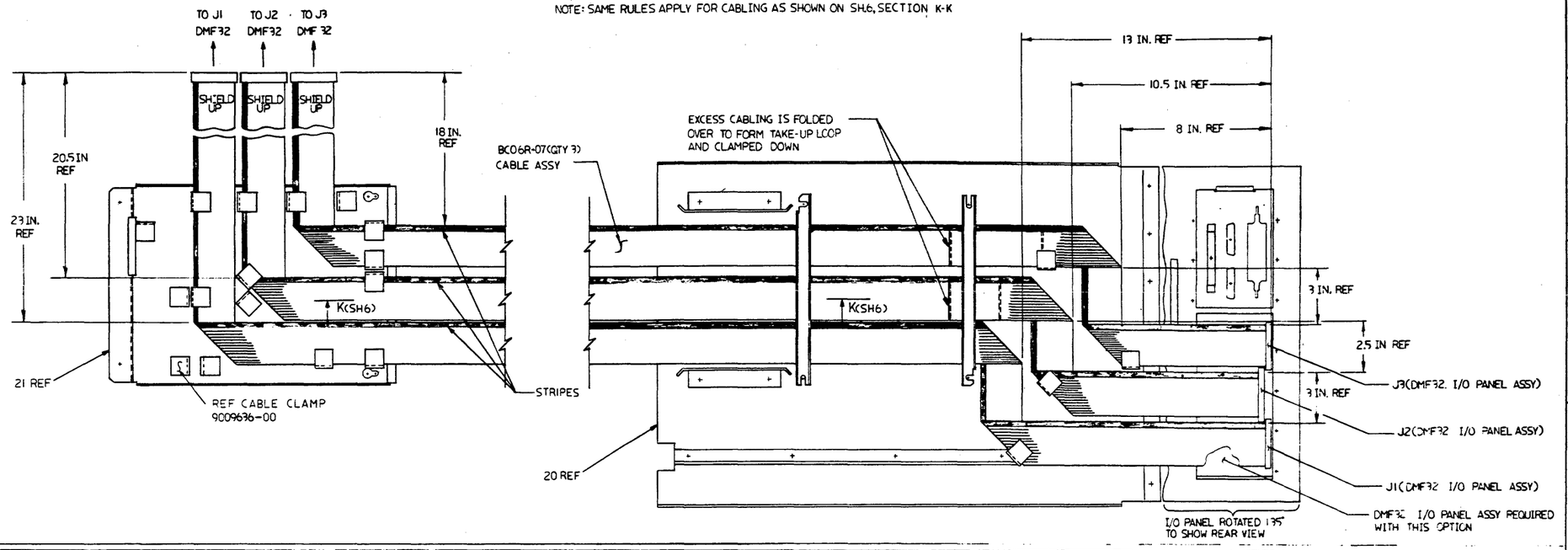
| TITLE | DOCUMENT NUMBER | |
|---|---|---|
| 11730-Z UNIT ASSY | E UA 11730-Z-0 | A |
| | SCALE — SHEET 5 OF 11 | |

11730-Z-0 A

FIGURE 4
OPTION

DMF32-AA MULTI-FUNCTION MODULE

NOTE: SAME RULES APPLY FOR CABLING AS SHOWN ON SH6, SECTION K-K



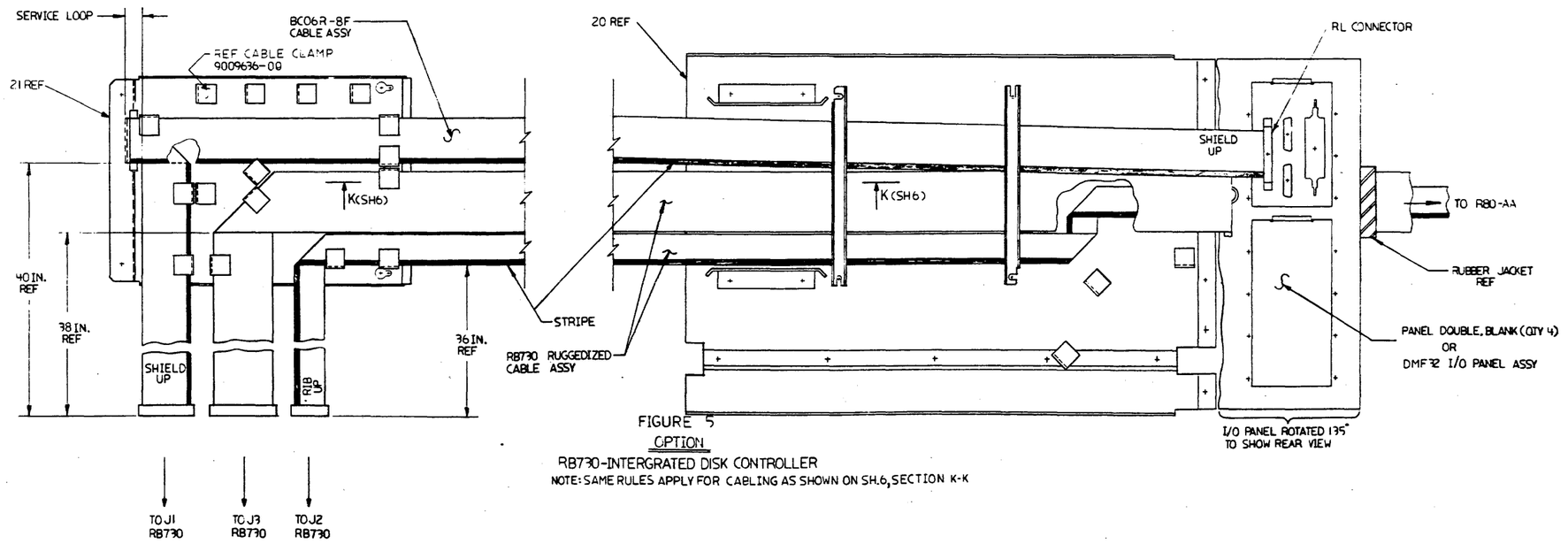




FIGURE 5
OPTION

RB730-INTERGRATED DISK CONTROLLER

NOTE: SAME RULES APPLY FOR CABLING AS SHOWN ON SH.6, SECTION K-K

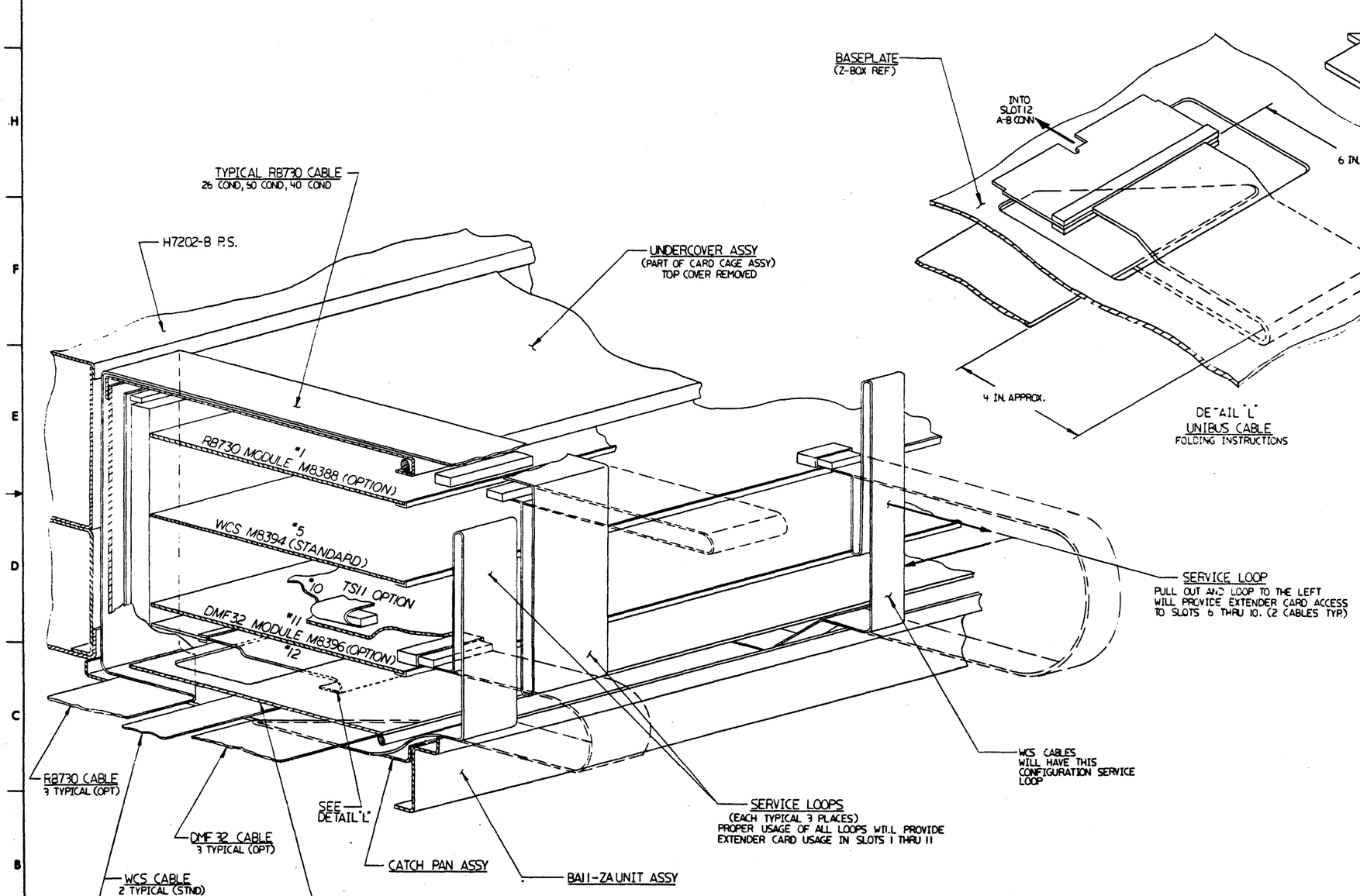
| REVISION HISTORY | | |
|---|---|---|
| DATE | ECO NUMBER | REV |

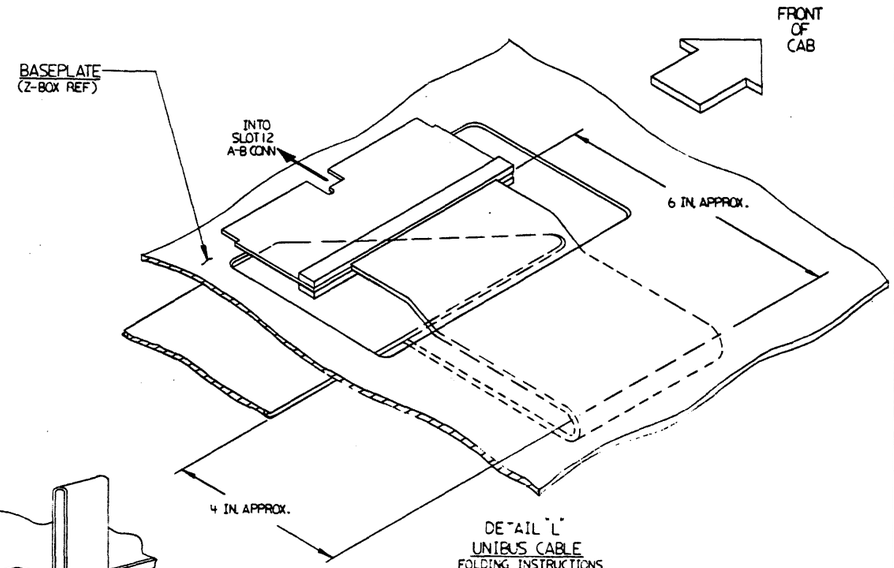
TITLE: 11730-Z UNIT ASSY

DOCUMENT NUMBER: EUA 11730-Z-0 REV A

SCALE — SHEET 1 OF 11

11730-Z-0 REV A




DETAIL 'L'
UNIBUS CABLE
FOLDING INSTRUCTIONS

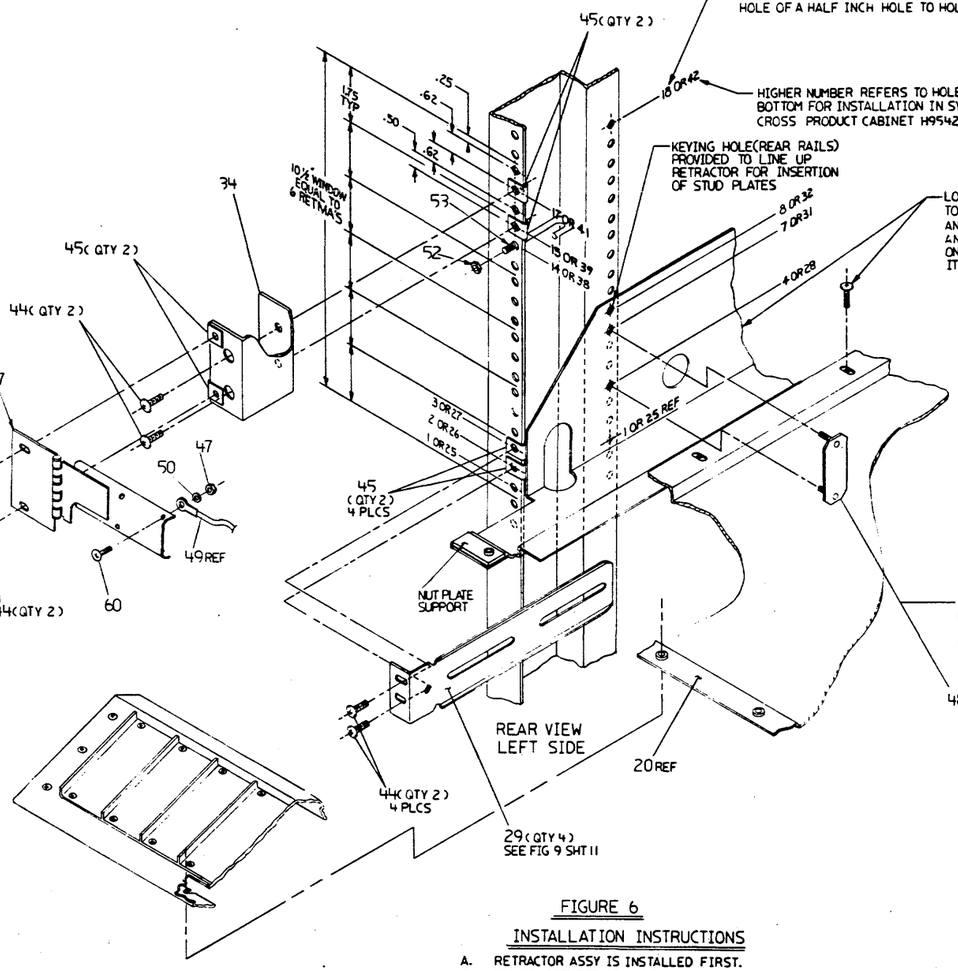
SECTION H-H (SHT 1)
11730-Z CPU CARD CAGE CUT-A-WAY
(NOT TO SCALE)

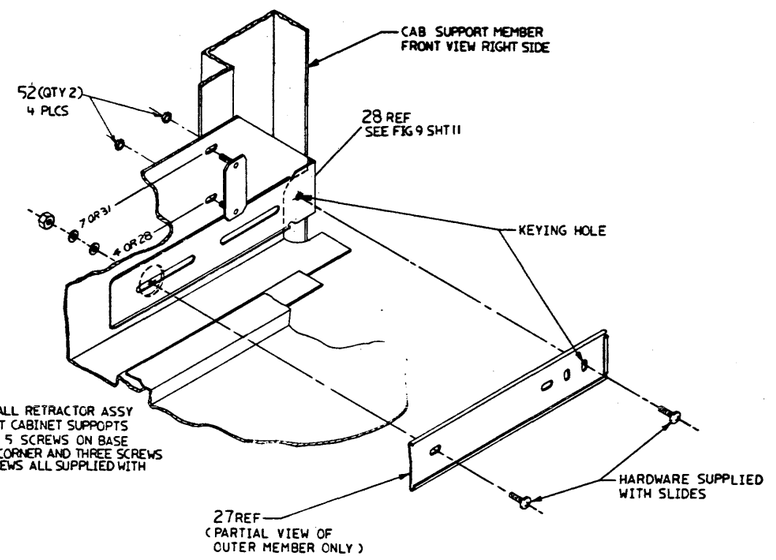
| REVISION HISTORY | | |
|---|---|---|
| DATE | ECO NUMBER | REV |

TITLE: 11730-Z UNIT ASSY

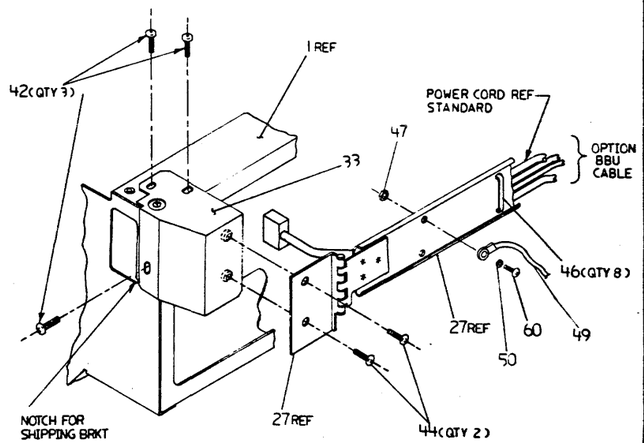
DOCUMENT NUMBER: MJA 11730-Z-0 REV A

SCALE — SHEET 8 OF 11




FOR SLIDE INSTALLATION
SEE SHEET 11, FIG 7 AND 9




DETAIL "J"
SCALE: NONE

## FIGURE 6

### INSTALLATION INSTRUCTIONS

A. RETRACTOR ASSY IS INSTALLED FIRST.
B. SLIDES ARE SET UP, SIZED, AND INSTALLED SECOND.
C. CPU IS NEXT INSTALLED ON EXTENDED SLIDES.
D. CATCH PAN ASSY CABLING IS POSITIONED AND INSTALLED.
NOTE: CAN BE ON CPU BEFORE CPU IS INSTALLED.
E. POSITION AND/OR CONNECT ALL CABLING TO RETRACTOR ASSY.
F. POSITION AND MOUNT CABLE CARRIER ASSY.
G. CONNECT POWER CABLES AND OPTIONAL BBU CABLES.
H. MOUNT ALL COVERS SECURELY.
I POSITION MAGNETIC LATCH FOR PROPER CPU CLOSURE.
J INSTALL TETHER LINE CABLE CARRIER.

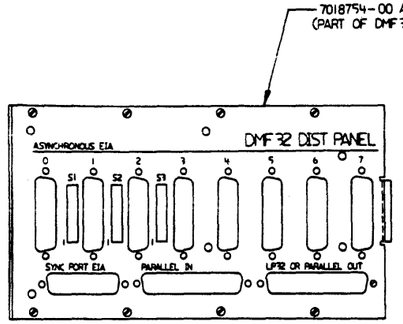
### NOTE

FOR OEM SHIPPING, ALL LOOSE HARDWARE REQUIRED, WILL BE KITTED AND BAGGED UNDER DEC P/N 11730-Z-3.

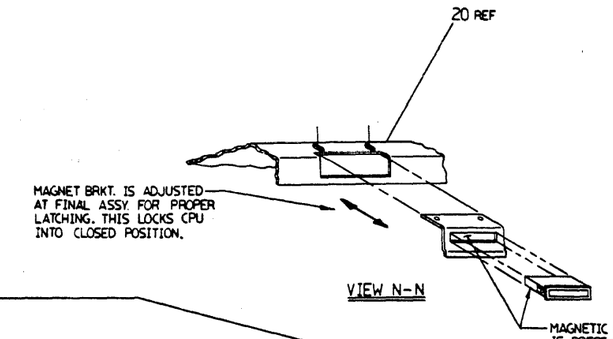
REVISION HISTORY

| DATE | ECO NUMBER | REV. |
|---|---|---|

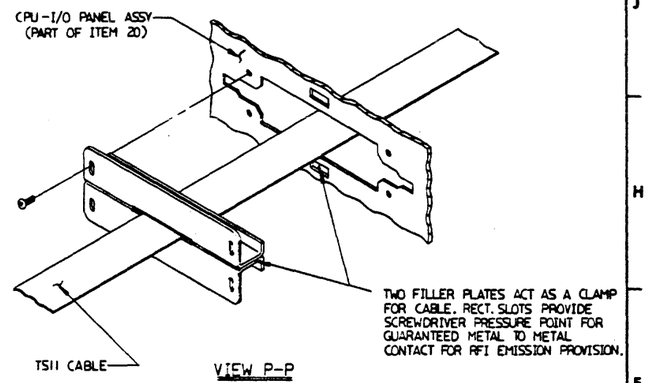
TITLE: 11730-Z UNIT ASSY
DOCUMENT NUMBER: SIZE E, CODE UA, 11730-Z-0, REV A
SCALE — SHEET 9 OF 11



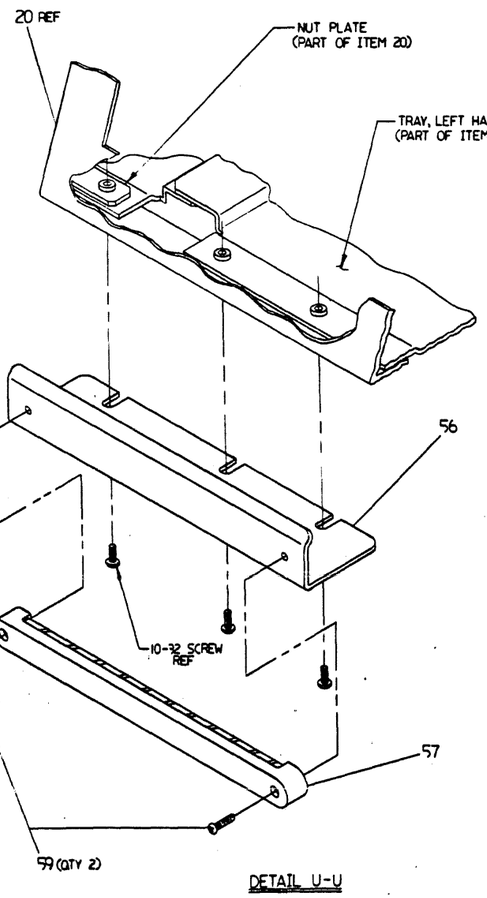

VIEW T-T
DMF 32 OPTION
DISTRIBUTION PANEL MTG PLATE
CONNECTOR INFORMATION LEGEND




VIEW N-N




VIEW P-P
TS11 CABLE OPTION




DETAIL U-U

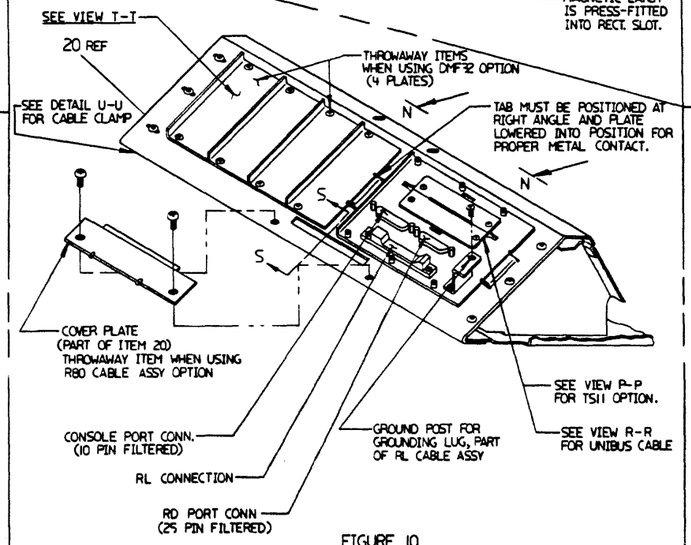
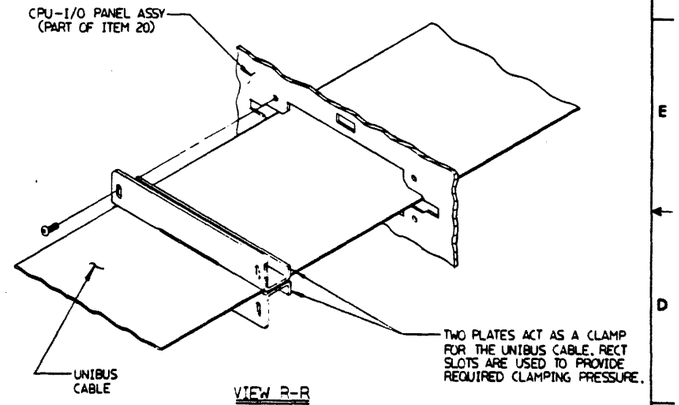
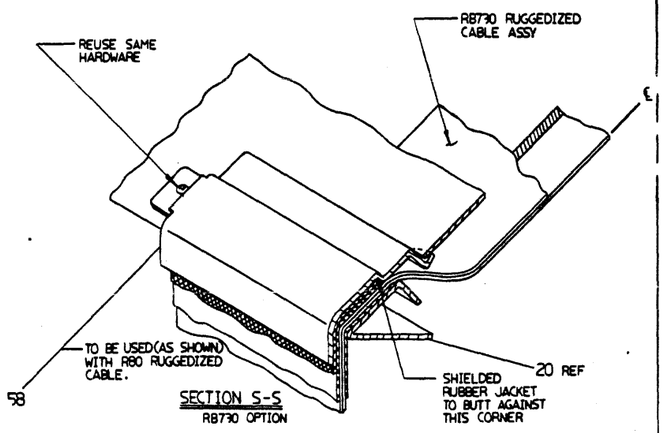



FIGURE 10
FROM SHT. 1 AND SHT. 9




VIEW R-R
UNIBUS CABLE OPTION




SECTION S-S
RB730 OPTION

REVISION HISTORY

| DATE | ECO NUMBER | REV |
|---|---|---|

TITLE: 11730-Z UNIT ASSY

DOCUMENT NUMBER: E UA 11730-Z-0 REV A

SCALE — SHEET 10 OF 11

TW

NOTES:

1. IF SLIDE MTG. BRACKETS ARE MOUNTED BEFORE SIZING TO REQUIRED LENGTH, ACCESS HOLES HAVE BEEN PROVIDED ON RETRACTOR ASSY FOR OPEN END OR BOX WRENCH.
2. FRONT MTG SLOTS ON SLIDE MTG BRKTS WILL PROVIDE ADJUSTMENT TO PREVENT SLIDES FROM BINDING DURING TRAVEL. SPACING ON EACH SIDE (CAB TO SLIDE) SHOULD BE ABOUT THE SAME.
3. OFFSET HOLES IN SLIDE MTG BRKTS PROVIDE PROPER CLEARANCE BETWEEN CPU AND RETR. TRAY. THESE BRKTS MUST BE MOUNTED AS SHOWN.

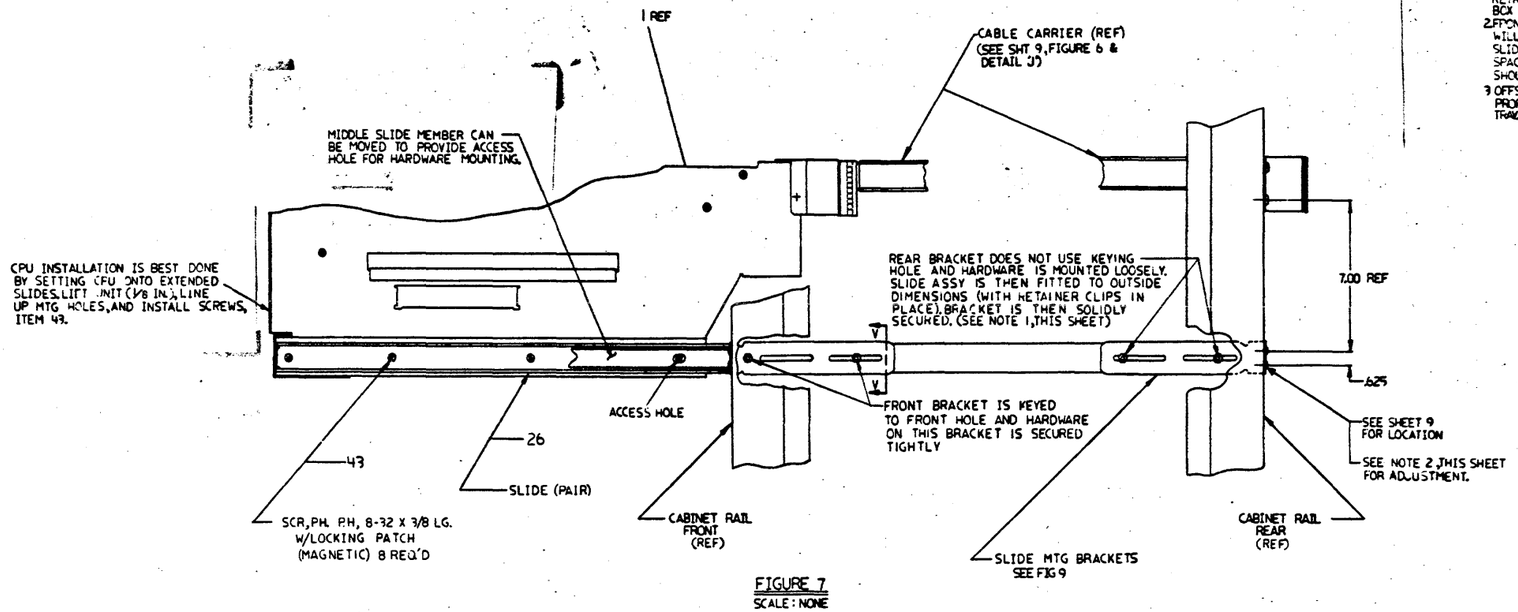



FIGURE 7
SCALE: NONE

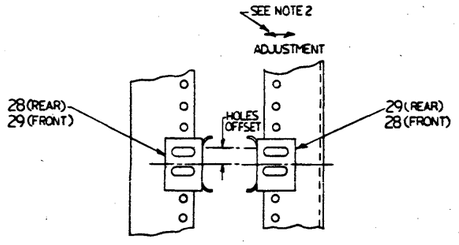
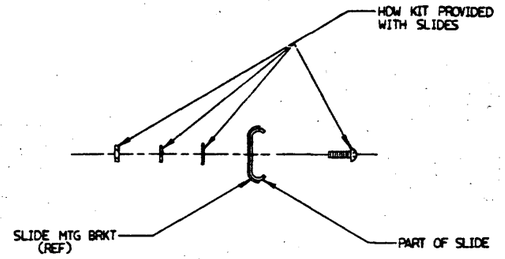



FIGURE 9
CAB FRONT VIEW
SCALE: NONE
SEE NOTE 3




| TITLE | DOCUMENT NUMBER | REV |
|---|---|---|
| 11730-Z UNIT ASSEMBLY | E UA 11730-Z-0 | A |
| | SCALE -/- SHEET 11 OF 11 | |

TW 1

AUTOMATED BY PRTLST.3P(44) — P A R T S  L I S T — SHEET A1 OF A2

| LINE | ITEM | DOCUMENT NUMBER | PART NUMBER | DESCRIPTION | QUANTITY PER VARIATION ZA |
|---|---|---|---|---|---|
| 1 | 1 | E-UA-BA11-Z-0 | 0BA11-ZA | 10.5" BASIC BOX,H7202-B,120V & 2 | 1 |
| 2 | 2 | | 3615839-00 | TAPE,MAGNETIC CARTRIDGE .150W X | 1 |
| 3 | 3 | E-AD-7018079-0-0 | 7018079-00 | CONSOLE ASSY TU58 | 1 |
| 4 | 4 | E-AD-7018114-0-0 | 7018114-00 | DUAL TU58 DRIVE ASSY. | 1 |
| 5 | 5 | B-DD-RB730-0 | RB730-00 | INTEGRATED DISK CONTROL FOR 1 RB | REF |
| 6 | 6 | B-DD-FP730-0 | FP730-00 | FLOATING POINT PROCESSOR (M8389) | REF |
| 7 | 7 | B-DD-KA730-A | KA730-A | CPU MOD SET | 1 |
| 8 | 8 | D-UA-M8390-0-0 | M8390-00 | DAP (DATA PATH) | REF |
| 9 | 9 | D-UA-M8391-0-0 | M8391-00 | MCT (MEMORY CONTROLLER) HEX | REF |
| 10 | 10 | D-UA-M8394-0-0 | M8394-00 | WRITEABLE CONTROL STORE,HEX,FOR | REF |
| 11 | 11 | B-DD-MS730-C | MS730-CA | 1MB MOS MEM ECC MEMORY EXPANSION | 1 |
| 12 | 12 | B-DD-G7273-0 | G7273-00 | BUS GRANT & NON-PROCESSOR GRANT | 5 |
| 13 | 13 | B-DD-DMF32-0 | DMF32-AA | 8 EIA ASYNC SLU,SYNC SLU,PARALLE | REF |
| 14 | 14 | B-DD-M9302-0 | M9302-00 | UNIBUS TERMINATOR | 1 |
| 15 | 15 | D-IA-7011411-0-0 | 7011411-01 | CABLE, CONSOLE BACKPLANE | 1 |
| 16 | 16 | D-IA-7011411-0-0 | 7011411-3D | CABLE, CONSOLE BACKPLANE | 1 |
| 17 | 17 | D-IA-7011411-0-0 | 7011411-YA | CABLE, CONSOLE BACKPLANE | 1 |
| 18 | 18 | D-IA-7018109-0-0 | 7018109-3B | TU58 POWER CABLE | 1 |
| 19 | 19 | C-IA-7018074-0-0 | 7018074-6F | BERG TO D SUB-MINATURE CABLE | 2 |
| 20 | 20 | E-AD-7018779-0-0 | 7018779-00 | CPU CABLE RETRACTOR ASSY | 1 |
| 21 | 21 | C-IA-7018720-0-0 | 7018720-00 | CATCH PAN ASSY. | 1 |
| 22 | 22 | C-IA-7018718-0-0 | 7018718-00 | PRESSURE SHEET ASSY. | 1 |
| 23 | 23 | A-PS-1209856-0-0 | 1209856-02 | CLIP, MODULE HOLDER W/O SEPARA | 2 |
| 24 | 24 | C-IA-7018772-0-0 | 7018772-00 | CLAMP ASSY | 1 |
| 25 | 25 | A-PS-1217665-0-0 | 1217665-03 | FILTER,AIR FOAM 020PPI | 1 |
| 26 | 26 | A-PS-1218166-0-0 | 1218166-00 | CHASSIS SLIDE 24.88 EXTENDED LG | 1 |
| 27 | 27 | A-PS-1219020-0-0 | 1219020-00 | CABLE CARRIER | 1 |
| 28 | 28 | D-MD-7425374-0-0 | 7425374-01 | SLIDE MOUNTING BRACKET,RIGHT | 2 |
| 29 | 29 | D-MD-7425374-0-0 | 7425374-00 | SLIDE MTG BRACKET LEFT | 2 |
| 30 | 30 | A-PS-1700083-0-0 | 1700083-22 | PWR CORD,TERM. 84IN,18-3 125V 15 | REF |

| REVISION HISTORY | | | BASIC PART NO: 11730 | | | | |
|---|---|---|---|---|---|---|---|
| ENG | ECO NUMBER | REV | SECTION A OF A | DRN: P. TOUSIGNANT | DATE: 24-FEB-82 | DIGITAL | |
| | INITIAL | A | SECTION. VARIATION INDEX [A] ZA | CHK'D: R. MORIN | DATE: 24-FEB-82 | TITLE: PARTS LIST. 11730-Z UNIT ASSY | |
| | | | [B] | DES.ENG.: R. MORIN | DATE: 24-FEB-82 | | |
| | | | [C] | RESP.ENG.: R. MORIN | DATE: 24-FEB-82 | DOCUMENT NUMBER | |
| | | | [D] | | | SIZE: K / CODE: PL / NUMBER: 11730-Z-DBP / REV: A | |
| | | | [E] | MFG.ENG.: S. CASTIGLIONE | DATE: 24-FEB-82 | | |
| | | | [F] | ASSEMBLY NUMBER: E-UA-11730-Z-0 | TOP DOCUMENT NUMBER: #B-DD-11730-Z | FILE NAME: Z2842A.PLS | EDIT #: 19 |

AUTOMATED BY PRTLST.3P(44) P A R T S L I S T SHEET A2 OF A2

| LINE | ITEM | DOCUMENT NUMBER | PART NUMBER | DESCRIPTION | QUANTITY PER VARIATION ZA |
|---|---|---|---|---|---|
| 31 | 31 | A-PS-1700083-0-0 | 1700083-21 | PWR CORD,TERM. 84IN,18-3 250V 6 | 1 |
| 32 | 32 | C-MD-7425927-0-0 | 7425927-00 | GUIDE + CLAMP | 1 |
| 33 | 33 | C-IA-7425928-0-0 | 7425928-00 | BRACKET,CARRIER/BOX | 1 |
| 34 | 34 | C-MD-7425929-0-0 | 7425929-00 | BRACKET,CABINET/CARRIER | 1 |
| 35 | 35 | A-PS-3618537-0-0 | 3618537-01 | LABEL,MODULE UTILIZATION | 1 |
| 36 | 36 | | BET173A-DE | VAX 11730 CONCOLE | 1 |
| 37 | 37 | A-PS-3617880-0-0 | 3617880-09 | LABEL,NON-COMPLIANT FCC | 1 |
| 38 | 38 | A-DC-3617674-0-0 | 3617674-00 | LABEL,SERIAL & POWER,UNIVERSAL | 1 |
| 39 | 39 | | 9009701-00 | SCREW,PAN,PHIL,SEMS 6-32X .312L | 2 |
| 40 | 40 | | 9006075-03 | SCREW,TRUS,PHIL, 10-32X 3/4 | 4 |
| 41 | 41 | | 9009636-00 | CLAMP, CABLE, FOR FLAT CABLE | 2 |
| 42 | 42 | | 9006037-03 | SCREW,TRUS,PHIL, 8-32X 3/8 | 7 |
| 43 | 43 | | 9010309-00 | SCREW,PAN,PHIL 8-32X .375L | 8 |
| 44 | 44 | | 9009700-00 | SCREW,TRUS,PHIL,SEMS10-32X .500L | 14 |
| 45 | 45 | | 9007786-00 | RETAINER, U-NUT, 10-32 | 12 |
| 46 | 46 | | 9007031-00 | TIE,CABLE BUNDL.DIA 0- 3/4"=101 | 8 |
| 47 | 47 | | 9006563-00 | NUT,KEP 8-32X 11/13AF | 4 |
| 48 | 48 | B-IA-7426335-0-0 | 7426335-01 | STUD PLATE | 4 |
| 49 | 49 | A-PS-1215700-0-0 | 1215700-04 | CABLE ASSY,NYLON,11"LG | 1 |
| 50 | 50 | | 9006660-00 | WASHER, FLAT, .375 O.D. X .187 I | 2 |
| 51 | 51 | A-PA-3700662-0-0 | 3700662-01 | PKG 11730-ZACPU | 1 |
| 52 | 52 | | 9006565-00 | NUT,KEP 10-32X 3/8 AF | 9 |
| 53 | 53 | C-MD-7413659-0-0 | 7413659-00 | BRACKET SHIPPING | 1 |
| 54 | 54 | A-PS-3613211-0-0 | 3613211-00 | DECAL,CLEAR PREPRINTED CSA 1-1/4 | 1 |
| 55 | 55 | A-PS-3612063-0-0 | 3612063-00 | LABEL, ,ADHESIVE I.D. FOR UL C | 1 |
| 56 | 56 | D-IA-7426625-0-0 | 7426625-01 | CLAMP,TABLE,DMF | 1 |
| 57 | 57 | B-IA-7426723-0-0 | 7426723-01 | BARCLAMP ASSY. | 1 |
| 58 | 58 | D-MD-7426623-0-0 | 7426623-01 | CLAMP,R80 TABLE | 1 |
| 59 | 59 | | 9006028-01 | SCREW,PAN,PHIL 6-32X1 SS | 2 |
| 60 | 60 | | 9006037-01 | SCREW,PAN,PHIL 8-32X 3/8 SS | 2 |
| 61 | 51 | B-PL-11730-Z-5 | | 11730-ZA HARDWARE KIT LIST | REF |

RELEASABLE

| DIGITAL | TITLE | SECTION A OF A | SIZE | CODE | DOCUMENT NUMBER | REV |
|---|---|---|---|---|---|---|
| | 11730-Z UNIT ASSY | | K | PL | 11730-Z-DBP | A |

# DIGITAL EQUIPMENT CORPORATION
# PARTS LIST

| | | | |
|---|---|---|---|
| MADE BY R.P. MORIN<br>DATE 15FEB82 | CHECKED<br>DATE | SECTION | |
| ENG R.P. MORIN<br>DATE 15FEB82 | PROD S.A. Castagnini<br>DATE 25FEB82 | ISSUED SECTION | |

| ITEM NO. | DRAWING NO. | PART NO. | DESCRIPTION | QUANTITY / VARIATION 11730-ZA | NOTES: / REF DESIGNATION |
|---|---|---|---|---|---|
| 1 | E-UA-11730-Z-0 | 11730-ZA | 11730-Z UNIT ASSY | 1 | CPU BOX ONLY |
| 2 | E-AD-7018779-0-0 | 7018779-00 | CPU CABLE RETRACTOR ASSY | 1 | |
| 3 | C-IA-7018718-0-0 | 7018718-00 | PRESSURE SHEET ASSY | 1 | |
| 4 | D-MD-7425374-0-0 | 7425374-00 | SLIDE MTG BRKT , LEFT | 2 | |
| 5 | D-MD-7425374-0-0 | 7425374-01 | SLIDE MTG BRKT , RIGHT | 2 | |
| 6 | C-MD-7425927-0-0 | 7425927-00 | GUIDE & CLAMP | 1 | |
| 7 | C-IA-7425928-0-0 | 7425928-00 | BRKT , CARRIER/BOX | 1 | |
| 8 | C-MD-7425929-0-0 | 7425929-00 | BRKT , CAB/CARRIER | 1 | |
| 9 | B-IA-7426335-0-0 | 7426335-01 | STUD PLATE | 4 | |
| 10 | D-IA-7426623-0-0 | 7426623-01 | CLAMP , R80 CABLE | 1 | |
| 11 | D-IA-7426625-0-0 | 7426625-01 | CLAMP , IMF CABLE | 1 | |
| 12 | B-IA-7426723-0-0 | 7426723-01 | BAR CLAMP ASSY | 1 | |
| 13 | C-MD-7413659-0-0 | 7413659-00 | BRKT , SHIPPING | 1 | |
| 14 | | 1215700-04 | CABLE , FERRULED | 1 | |
| 15 | | 1218166-00 | SLIDE (PAIR) W/HDW KITS (4) | 1 | |
| 16 | | 1219020-00 | CARRIER , CABLE | 1 | |
| 17 | | 1700083-21 | AC LINE CORD (240V) | 1 | |
| 18 | | 1700083-22 | AC LINE CORD (120V) | 1 | |
| 19 | | 3615809-00 | MEDIA CARTRIDGE , TU58-K | 1 | |
| 20 | | 3700662-01 | PACKAGING , CPU , 11730-ZA | 1 | |
| 21 | B-PL-11730-Z-3 | 11730-Z-3 | HARDWARE KIT BAG | 1 | |

E.C.O. NO.



| TITLE | ASSY NO. | SIZE | CODE | NUMBER | REV. |
|---|---|---|---|---|---|
| SHIPPING LIST ,11730-Z | B-DD-11730-Z | B | PL | 11730-Z-2 | A |
| | SHEET 1 OF 1 | INSERTION PARTS LIST DATA BASE REV | | | |

DRB 125

TW

# DIGITAL EQUIPMENT CORPORATION
# PARTS LIST

| | | | |
|---|---|---|---|
| MADE BY / DATE | R.P.MORIN 15FEB82 RPM | CHECKED / DATE | SECTION |
| ENG / DATE | R.P.MORIN 15FEB82 RPM | PROD / DATE S.A.Castiglione 25FEB82 | ISSUED SECTION |

| ITEM NO. | DRAWING NO. | PART NO. | DESCRIPTION | QUANTITY / VARIATION 11730-ZA | REF DESIGNATION |
|---|---|---|---|---|---|
| 1. | | 9006037-03 | SCR.TRUS,PHIL,8-32x3/8L | 5 | (ITEM 42) TO MOUNT PRESSURE SHEET AND CARRIER/BOX BRKT |
| 2. | | 9010309-00 | SCR,PAN,PHIL,8-32x3/8L W/PATCH | 8 | (ITEM 43) TO MOUNT SLIDES TO CPU |
| 3. | | 9009700-00 | SCR,TRUS,PHIL SEMS,10-32x1/2L | 14 | (ITEM 44) TO MOUNT SLIDE MTG BRKTS CAB/CARRIER BRKT,CARRIER/BOX BRKT |
| 4. | | 9007786-00 | RETAINER,U-NUT,10-32 | 12 | (ITEM 45) TO MOUNT SLIDE MTG BRKTS AND CARRIER/CAB BRKTS |
| 5. | | 9007031-00 | TIE,CABLE | 8 | (ITEM 46) TO TIE CABLES TO CABLE CARRIER |
| 6. | | 9006563-00 | NUT,KEP,8-32 | 2 | (ITEM 47) FOR TETHER LINE |
| 7. | | 9006660-00 | WASHER,FLAT,#8 | 2 | (ITEM 50) FOR TETHER LINE |
| 8. | | 9006565-00 | NUT,KEP,10-32 | 1 | (ITEM 52) FOR SHIPPING BRKT |
| 9. | | 9006028-01 | SCR,PAN,PHIL,6-32x1.0L | 2 | (ITEM 59) BAR CLAMP TO DMF CABLE CLAMP |
| 10. | | 9006037-01 | SCR,PAN,PHIL,3/8L | 2 | (ITEM 60) FOR TETHER LINE |
| 11. | | 9906557-03 | BAG,POLYETHYLENE,RECLOSABLE * | 1 | |

* BAG TO BE MARKED PER DEC STD 178.

NOTES:

E.C.O. NO.



| TITLE | ASSY NO. | SIZE | CODE | NUMBER | REV. |
|---|---|---|---|---|---|
| HARDWARE KIT LIST,11730-Z | B-DD-11730-Z | B | PL | 11730-Z-3 | A |
| | SHEET 1 OF 1 | INSERTION PARTS LIST DATA BASE REV | | | |

DRB 125

TW

BATTERY 1 → FRONT PANEL LIGHTS AND SWITCHES (SWITCHES 4, LIGHTS 3) → 54144438 CONSOLE → POWER SUPPLY 2

ASYNC LINES (R/D, TU58 AND CONSOLE TERMINAL) 3

UNIBUS DATA TRANSCEIVERS AND LATCHES | 8085 MICROPROCESSOR SYSTEM | CPU CONTROL STORE (RAM) | CONTROL STORE REGISTER

WCS M8394

UNIBUS DATA <15:00>

MC BUS <15:0>

DATA AND CONTROL

CSR <19:16,8:7>

CSR <17:10>

CSR<23:0>

MICROSEQUENCER AND CONTROL STORE

SYNCHRONIZATION

CPU MICROSEQUENCER

CONTROL WORD DECODE

18 UNIBUS ADDRESS

TRANSLATION BUFFER

VIRT ADDR REG

MC BUS

MUX

DATA ROTATOR

ERR

ARRAY BUS

PHYSICAL ADDRESS BUS

UNIBUS TRANS-CEIVERS

UNIBUS ADDRESS AND CONTROLS

MCT M8391

MC BUS <31:0>

MC BUS

INSTRUCTION BUFFER

IB BUS

TRANS-CEIVER

D BUS

LOCAL STORE (RAM)

DATA PATH SLICE (2901)

CONTROL REGISTERS

Y BUS

DAP M8390

Y BUS <31:0>

INTERRUPTS

SYNCHRONIZATION

IB BUS <7:0>

OPCODE TO ACCELERATOR

MICROSEQUENCER AND CONTROL STORE

TRANSCEIVER

I/O BUS

DATA OUTPUT REGISTER | DATA INPUT REGISTER | CONTROL/STATUS REGISTER | CRC/ECC GENERATOR | DISK ADDRESS REGISTER

READ WRITE SILO

SHIFT REGISTER

DRIVERS AND RECEIVERS

IDC M8388

OPTION

DISK CONTROL/DATA TO DRIVES

ARRAY DATA BUS <31:0> AND CHECK BITS

ARRAY ADDRESS AND CHIP SELECTS

SYNCHRONIZATION

MICRO SEQUENCER | CONTROL STORE

UNIBUS TRANS-CEIVERS

DATA AND ADDRESS, STATUS REGISTERS

LOCAL STORE (RAM)

DATA B

DATA PROCESSOR (2901)

SERIAL LINE INTERFACE (8 UARTS, 1 USRT)

REGISTERS

EIA DRIVERS AND RECEIVERS

TTL BUFFERS

SYNC LINE

ASYNC LINES

MODEM CONTROL

LINE PRINTER/DRIIC INTERFACE

DMF-32 (M8396 & 54144599 I/O DISTRIBUTION PANEL)

OPTION

MAIN MEMORY ARRAY (MS730-CA) 1 MEGA BYTE

MEMORY ARRAY (MS730-CA) OPTION

MEMORY ARRAY (MS730-CA) OPTION

MEMORY ARRAY (MS730-CA) OPTION

MEMORY ARRAY (MS730-CA) OPTION

TRANSCEIVER

FP BUS 32

EXPONENT PROCESSOR (2901)

HIGH FRACTION PROCESSOR (2901)

LOW FRACTION PROCESSOR (2901)

EXTENSION PROCESSOR (2901)

OPCODE

MICRO-SEQUENCER | CONTROL STORE

FPA M8389

OPTION

REVISION HISTORY

| REV. | ECO NUMBER | DATE |
|---|---|---|

DRN Michael P. Duggan DATE 10 Oct 80
CHK D M. Lindsay DATE 25-FEB-82
DES ENG D M. Lindsay DATE 25-FEB-82
PROJ ENG D M. Lindsay DATE 25-FEB-82
MFG ENG D. Post DATE 25-FEB-82
NEXT HIGHER DOC B-DD-11730-Z

TITLE digital

11730 SYSTEM BLOCK DIAGRAM

DOCUMENT NUMBER

| SIZE | CODE | NUMBER | REV. |
|---|---|---|---|
| D | BD | 11730-Z-5 | A |

SCALE SHEET OF

TW

# FIELD MAINTENANCE PRINT SET



## TABLE OF CONTENTS


| | |
|---|---|
| B-TC-BA11-Z-1 | FIELD MAINTENANCE PRINT SET MP01266 |
| B-DD-BA11-Z | BA11-Z BOX ASSY-DRAWING DIRECTORY |
| E-UA-BA11-Z-0 | BA11-Z BOX ASSY |
| K-PL-BA11-Z-DBP | BA11-Z BOX ASSY-PARTS LIST |
| E-AD-7018081-0-0 | MODULE FAN ASSY |
| K-PL-7018081-0-DBP | MODULE FAN ASSY- PARTS LIST |
| D-IA-7018161-0-0 | DC HARNESS ASSY |
| K-PL-7018161-0-DBP | DC HARNESS ASSY- PARTS LIST |
| D-IA-7018162-0-0 | SENSOR POWER CABLE |
| K-PL-7018162-0-DBP | SENSOR POWER CABLE - PARTS LIST |
| B-DD-5414340-0 | AIR FLOW DETECTOR ASSY- DRAWING DIRECTORY |
| D-UA-5414340-0-0 | AIR FLOW DETECTOR ASSY |
| K-PL-5414340-0-DBP | AIR FLOW DETECTOR ASSY - PARTS LIST |
| B-DD-7018080-0 | 11730-Z BACKPLANE ASSY - DRAWING DIRECTORY |
| D-AD-7018080-0-0 | 11730-Z BACKPLANE ASSY |
| K-PL-7018080-0-DBP | 11730-Z BACKPLANE ASSY - PARTS LIST |
| K-WL-7018080-0-1 | 11730-Z BACKPLANE ASSY - WIRE LIST |
| A-WT-7018080-0-2 | 11730-Z BACKPLANE ASSY - REV STATUS |
| MP02157 | H7202 LEM PWR. SUP. FIELD MAINT. PRINT SET (COMPLETE) |
| D-CS-5414340-0-1 | AIR FLOW DETECTOR ASSY - CIRCUIT SCHEMATIC |


| UNIT VARIATIONS COVERED BY THIS PRINT SET |
|---|
| BA11-ZA |

BA11-Z

**Field Maintenance Print Set**

**Digital Equipment Corporation**

PRINT SET ORDER

NO MP01266

REV. A

SIZE B | CODE TC | NUMBER BA11-Z-1

REVISIONS

| REV | CHG. NO. | DATE |
|---|---|---|
| | | |

| USED ON OPTION/MODEL | |
|---|---|
| 11730-Z | |

SHEET 1 OF 1

| | | |
|---|---|---|
| DRN. | A. ROCHA | DATE 6JAN82 |
| CHK'D | | DATE 28JAN82 |
| PROJ. ENG. | | DATE 28JAN82 |
| FIELD SERV. | | DATE 16Feb82 |

digital

TITLE: FIELD MAINT. PRINT SET (BA11-Z)

| SIZE | CODE | NUMBER | REV. |
|---|---|---|---|
| B | TC | BA11-Z-1 | A |

DIST.

DRB 124

TW

# DRAWING DIRECTORY



## UNIT VARIATIONS

| VAR | TITLE |
|---|---|
| BA11-ZA | 10½" Z BOX,H7202-B P.S.,11730-Z BKPL,120V & 240V |

REVISIONS

| REV. | CHANGE NO. | CHK |
|---|---|---|
| | | |

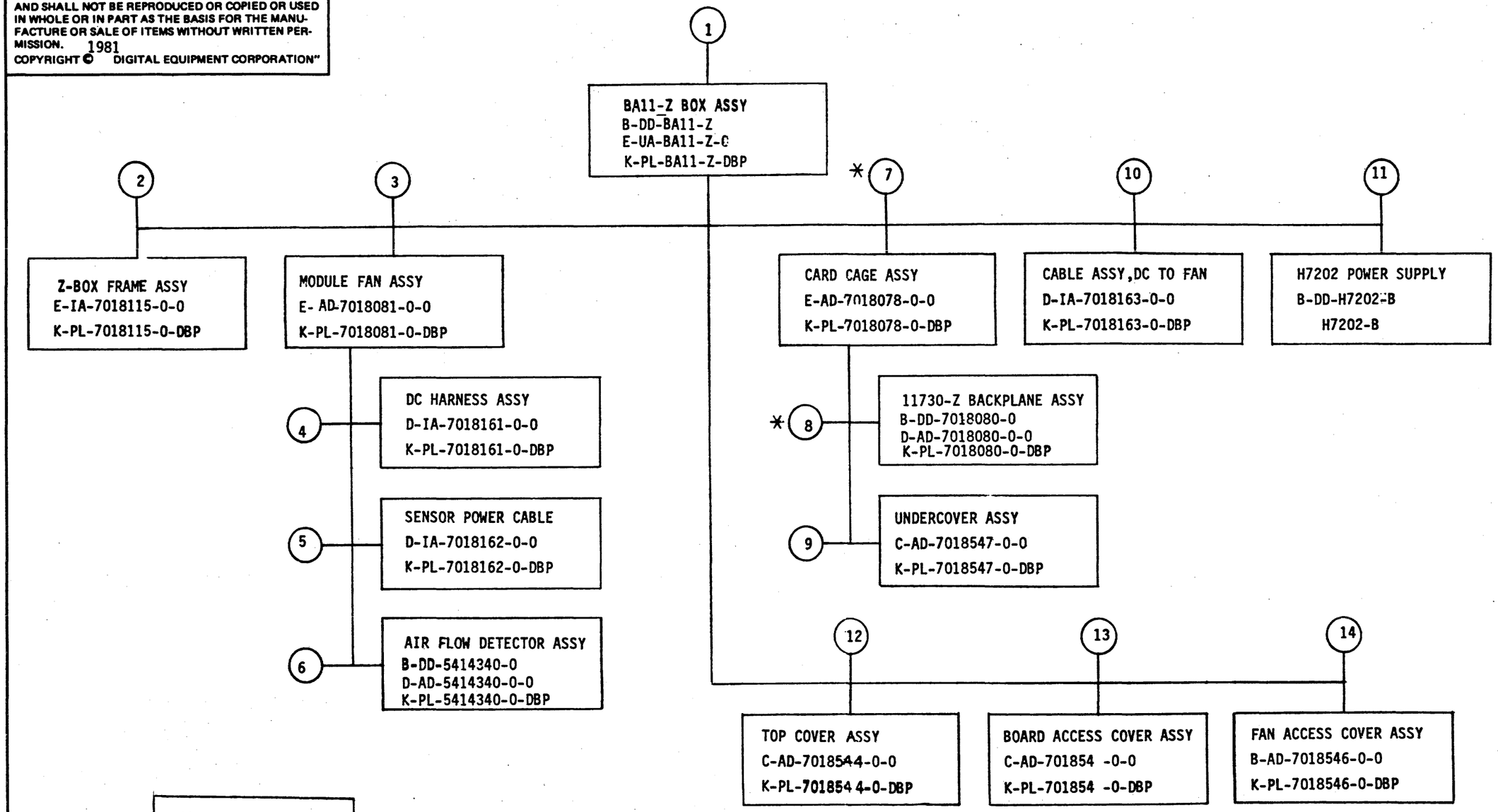
| USED ON OPTION/MODEL | DRN. | DATE | TITLE |
|---|---|---|---|
| 11730 | A. ROCHA | 3AUG81 | BA11-Z BOX ASSY |
| | CHK'D. B.MORIN | DATE 3AUG81 | |
| | PROJ. ENG. B.MORIN | DATE 3AUG81 | |
| SHEET 1 OF 4 | PROD. S.Castiglione | DATE 25AUG81 | |

| SIZE | CODE | NUMBER | REV |
|---|---|---|---|
| B | DD | BA11-Z | A |

DIST.

DRB 106A

TW




*= SPECIFIC TO 11730-Z NEBULA SYSTEM.

| TITLE | | SIZE | CODE | NUMBER | REV |
|---|---|---|---|---|---|
| BA11-Z BOX ASSY | SHEET 2 OF 4 | B | DD | BA11-Z | A |



TW

| FIND NO. | DRAWING NO. | DESCRIPTION | TYPE |
|---|---|---|---|
| 1 | MP01266 | FIELD MAINT. PRINT SET (MP) | - |
| | B-TC-BA11-Z-1 | FIELD MAINT. PRINT SET (TC) | - |
| | B-DD-BA11-Z | BA11-Z BOX ASSY-DRAWING DIRECTORY | - |
| | E-UA-BA11-Z-0 | BA11-Z BOX ASSY-UNIT ASSY | E/M |
| | K-PL-BA11-Z-DBP | BA11-Z BOX ASSY-PARTS LIST Z1862 | - |
| | D-MD-7424850-0-0 | BAFFLE , END PLATE | M |
| | C-IA-7425373-0-0 | CLAMP , POWER SUPPLY | M |
| | C-MD-7425571-0-0 | WIRE , SUPPORT | M |
| | A-PS-1217556-0-0 | FAN DC | E/M |
| | A-PS-1700083-0-0 | AC LINE CORD | E/M |
| 2 | E-IA-7018115-0-0 | Z-BOX FRAME ASSY | M |
| | K-PL-7018115-0-DBP | Z-BOX CHASSIS ASSY-PARTS LIST Z1858 | - |
| | E-IA-7424819-0-0 | BASEPLATE | M |
| | K-PL-7424819-0-DBP | BASEPLATE-PARTS LIST Z1859 | - |
| | E-IA-7424820-0-0 | WALL , LEFT SIDE | M |
| | E-IA-7424821-0-0 | WALL , RIGHT SIDE | M |
| | E-MD-7424822-0-0 | SHELF SUPPORT | M |
| | E-MD-7424823-0-0 | BRACE FRONT | M |
| 3 | E-AD-7018081-0-0 | MODULE FAN ASSY | E/M |
| | K-PL-7018081-0-DBP | MODULE FAN ASSY-PART LIST | - |
| | D-MD-7424831-0-0 | FAN HOUSING | M |
| | C-MD-7424849-0-0 | FAN BAFFLE | M |
| | A-PS-1217556-0-0 | FAN DC | M |
| 4 | D-IA-7018161-0-0 | DC HARNESS ASSY | E/M |
| | K-PL-7018161-0-DBP | DC HARNESS ASSY-PARTS LIST Z1851 | - |
| 5 | D-IA-7018162-0-0 | SENSOR POWER CABLE | E/M |
| | K-PL-7018162-0-0 | SENSOR POWER CABLE-PARTS LIST Z1862 | - |
| 6 | B-DD-5414340-0 | AIR FLOW DETECTOR ASSY | E/M |
| | D-UA-541434-0-0 | AIR FLOW DETECTOR ASSY | E/M |
| | K-PL-5414340-0-DBP | AIR FLOW DETECTOR ASSY - PARTS LIST | - |
| | D-CS-5414340-0-1 | AIR FLOW DETECTOR ASSY - CIRCUIT SCHEM. | E |
| 7 | E-AD-7018078-0-0 | 11730-Z CARD CAGE ASSY * | M |
| | K-PL-7018078-0-DBP | 11730-Z CARD CAGE ASSY-PARTS LIST Z1828 | - |
| | C-MD-7423051-0-0 | ROD , SUPPORT | M |
| | E-IA-7424830-0-0 | CARD CAGE (FRONT AND REAR) | M |
| | B-MD-7425257-0-0 | CARD GUIDE,SINGLE SHORT | M |
| | A-PS-1212405-0-0 | CARD GUIDE,NYLON | M |
| 8 | B-DD-7018080-0-0 | 11730-Z BACKPLANE ASSY-DRAWING DIRECTORY | E/M |
| | D-AD-7018080-0-0 | 11730-Z BACKPLANE ASSY * | E/M |
| | K-PL-7018080-0-DBP | 11730-Z BACKPLANE ASSY-PARTS LIST Z0715 | - |
| | K-WL-7018080-0-1 | 11730-Z BACKPLANE ASSY - WIRELIST | E |
| | A-WT-7018080-0-2 | 11730-Z BACKPLANE ASSY - REV STATUS | - |
| | A-DC-7411881-0-0 | LABEL,AWT REV STATUS | - |
| | D-MD-7425344-0-0 | PROTECTIVE COVER | M |
| | C-MD-7425372-0-0 | SPACER | M |
| | A-PS-1700238-0-0 | CIRCUIT,FLEX,SIGNAL | E/M |
| | A-PS-1700239-0-0 | CIRCUIT,FLEX,POWER | E/M |
| | E-MD-5014598-0-0 | DRILL AND ETCH BOARD | E/M |
| 9 | C-AD-7018547-0-0 | UNDERCOVER ASSY | M |
| | K-PL-7018547-0-DBP | UNDERCOVER ASSY-PARTS LIST Z2449 | - |
| | E-MD-7424829-0-0 | UNDERCOVER | M |

* SPECIFIC FOR 11730-Z ASSY.

TYPE: E ELECTRICAL
M MECHANICAL
E/M ELECTRO/MECHANICAL

digital

| TITLE | SHEET | SIZE | CODE | NUMBER | REV |
|---|---|---|---|---|---|
| BA11-Z BOX ASSY | 3 OF 4 | B | DD | BA11-Z | A |

DRB 108A

TW

| FIND NO. | DRAWING NO. | DESCRIPTION | TYPE |
|---|---|---|---|
| 10 | D-IA-7018163-0-0 | CABLE,DC TO FAN | E/M |
| | K-PL-7018163-0-DBP | CABLE,DC TO FAN-PARTS LIST Z1853 | - |
| 11 | MP02157 | H7202 POWER SUPPLY PRINT SET (MP) | - |
| | B-TC-H7202-0-1 | H7202 POWER SUPPLY - (TC) | - |
| | B-DD-H7202-B | H7202 POWER SUPPLY | E/M |
| 12 | C-AD-7018544-0-0 | TOP COVER ASSY | M |
| | K-PL-7018544-0-DBP | TOP COVER ASSY-PARTS LIST Z2444 | - |
| | E-MD-7424827-0-0 | TOP COVER | M |
| 13 | C-AD-7018545-0-0 | BOARD ACCESS COVER ASSY | M |
| | K-PL-7018545-0-DBP | BOARD ACCESS COVER ASSY-PARTS LIST Z2577 | - |
| | D-MD-7424824-0-0 | BOARD ACCESS COVER | M |
| 14 | B-AD-7018546-0-0 | FAN ACCESS COVER ASSY | M |
| | K-PL-7018546-0-DBP | FAN ACCESS COVER ASSY-PARTS LIST Z2578 | - |
| | C-MD-7424825-0-0 | FAN ACCESS COVER ASSY | M |

| FIND NO. | DRAWING NO. | DESCRIPTION | TYPE |
|---|---|---|---|

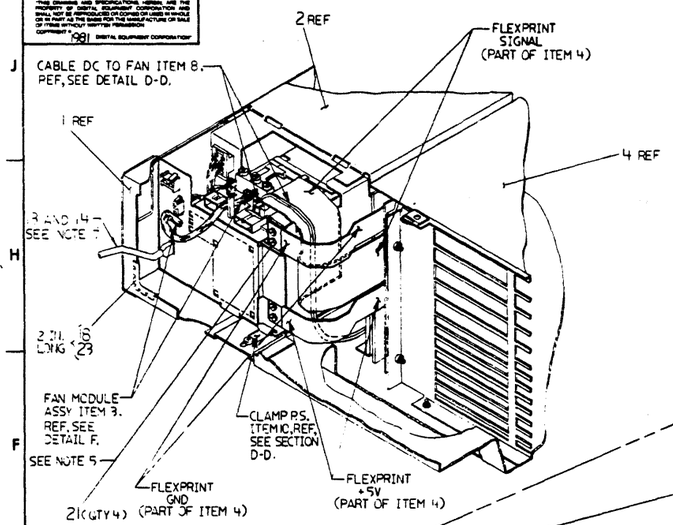
TYPE: E ELECTRICAL
M MECHANICAL
E/M ELECTRO/MECHANICAL

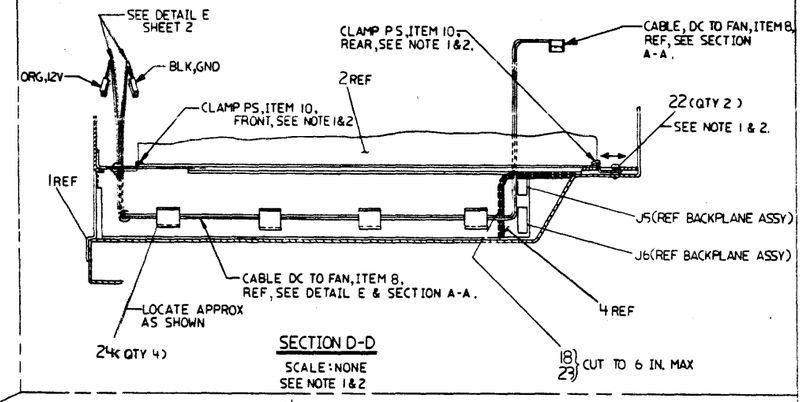
digital

| TITLE | SHEET | SIZE | CODE | NUMBER | REV |
|---|---|---|---|---|---|
| BA11-Z BOX ASSY | 4 OF 4 | B | DD | BA11-Z | A |

DRB 108A

TW

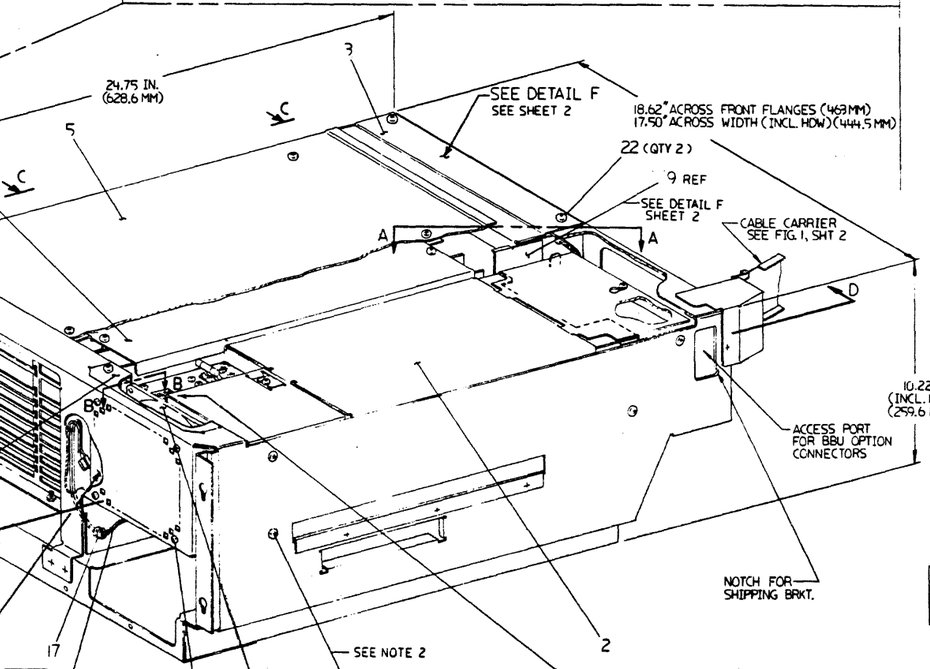



SECTION D-D
SCALE: NONE
SEE NOTE 1&2

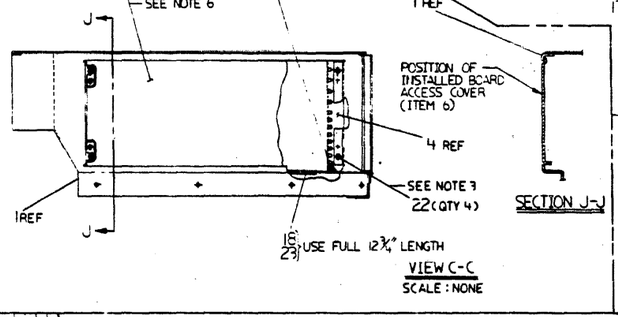
NOTES:

1. INSTALL ITEM 10 CLAMP PS QTY 2 LOOSELY TO ACCEPT POWER SUPPLY WHEN INSTALLED.
2. INSTALLATION OF POWER SUPPLY:
   REMOVE FAN ACCESS COVER (ITEM 7) AND LOWER POWER SUPPLY (ITEM 2) INTO PLACE BY TILTING REAR END ONTO BRACKET AND SEATING FRONT END. NOW SLIDE POWER SUPPLY (SEE SECTION D-D) TO CATCH UNDER FRONT CLAMP AND SLIDE REAR CLAMP INTO POSITION. INSTALL 4 SCREWS (ITEM 22) INTO RIGHT HAND WALL AND TIGHTEN CLAMP SCREWS (2 PLACES). NOTE: CLAMP SCREWS REQUIRE ONLY 3 OR 4 TURNS, MAXIMUM, TO LOOSEN OR TIGHTEN FOR SLIDING ACTION. NOW CONNECT FLEXPRINTS (QTY 3) AND CONNECTORS AS SHOWN (SEE SECTION A-A).
3. INSTALL CARD CAGE (ITEM 4) SQUARELY AND CENTERED. SCREW TIGHTENING PROGRESSION IS REQUIRED TO SEAT FIRMLY.
4. ITEM 12, 12VDC FAN IS SUPPLIED BY VENDOR WITH MOUNTING CLIPS (QTY 4). IF SUPPLIED WITH 'U-CLIP' TYPE MOUNTING CLIPS (REF. 9009202-00) REFER TO SECTION B-B (BB1). AND IF BOSS TYPE MOUNTING CLIPS (REF, 9009165 00) ARE SUPPLIED, REFER TO SECTION B-B (BB2).
5. TORQUE OF 16 IN-LBS REQUIRED ON SCREWS (ITEM 21) MOUNTING FLEXPRINT CABLES.
6. INSTALL BOARD ACCESS COVER (ITEM 6) WITH OFFSET LIP FITTING UNDER TOP OF SIDE WALL.
7. BOTH POWER CORDS, 120V AND 240V, ARE SUPPLIED WITH ALL OEM CPU'S. PLEASE FOLLOW WARNING INSTRUCTIONS AND ALSO DISCARD UNUSED POWER CORD.



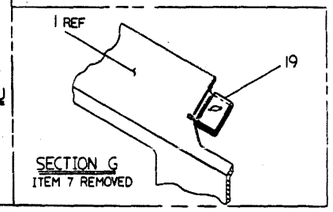

WARNING
VOLTAGE SELECTOR SWITCH MUST BE PROPERLY POSITIONED FOR CORRECT POWER CORD USAGE. (SEE NOTE 7)


SECTION B-B
SCALE: NONE
SEE NOTE 4




SECTION J-J

VIEW C-C
SCALE: NONE




SECTION G
ITEM 7 REMOVED

| VAR | DESCRIPTION |
|---|---|
| BA11-ZA | 10.5" Z-BOX, H7202-B POWER SUPPLY, 11790-Z CARD CAGE/BACKPLANE, 120V AND 240V POWER CORDS |

CAUTION: OFF SHEETS PARTS LIST REFER TO K-PL-BA11-Z-DGP. (Z1862A)

| | |
|---|---|
| TITLE | BA11-Z BOX ASSEMBLY |
| DOCUMENT NUMBER | E UA BA11-Z-0 REV B |
| MATERIAL | SEE PARTS LIST |
| FINISH | |
| NEXT HIGHER ASSY | B-DD-BA11-Z-0 |
| DRAWN | A. Lin 15-JAN-81 |
| CHECKED | D. Collins 4-Jun-81 |
| ENGR MGR | L. Mayhew 4-Jun-81 |
| PROD MGR | L. Mayhew 4-Jun-81 |
| QUALITY | B. Vaughan 4-Jun-81 |

THIRD ANGLE PROJECTION
DO NOT SCALE DRAWING
REMOVE BURRS AND BREAK SHARP CORNERS

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES AND THE FOLLOWING TOLERANCES APPLY (PER DEC STD 115)

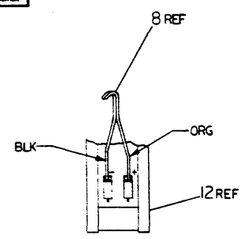
| DECIMAL PLACES | TOLERANCES |
|---|---|
| X | ± 1 |
| XX | ± .03 |
| XXX | ± .005 |

ANGLES ± 0° 30'
SURFACE QUALITY
MICROINCHES

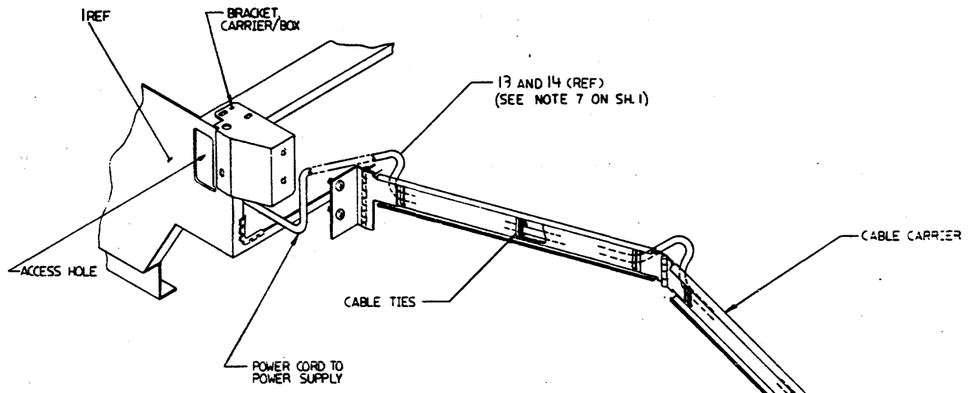
| APPLICABLE DIMENSIONS RANGE | OVER | OVER | OVER | OVER | OVER | OVER |
|---|---|---|---|---|---|---|
| | 0 TO 6 | 6 TO 12 | 12 TO 48 | 48 TO 120 | 120 TO 240 | 240 TO 480 |
| | ± .02 | ± .03 | ± .06 | ± .12 | ± .18 | ± .25 |
| | ± .03 | ± .04 | ± .08 | ± .16 | ± .24 | ± .32 |
| | ± .005 | ± .005 | ± .010 | ± .015 | ± .020 | ± .030 |
| | ± .010 | ± .010 | ± .015 | ± .020 | ± .030 | ± .040 |
| | ± .005 | ± .005 | ± .005 | ± .010 | ± .015 | ± .020 |

QUANTITY & VARIATION

digital

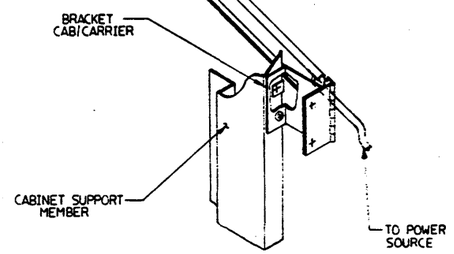


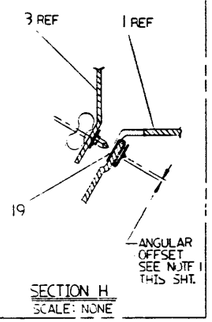

DETAIL E
SCALE: NONE
SEE SHEET 1



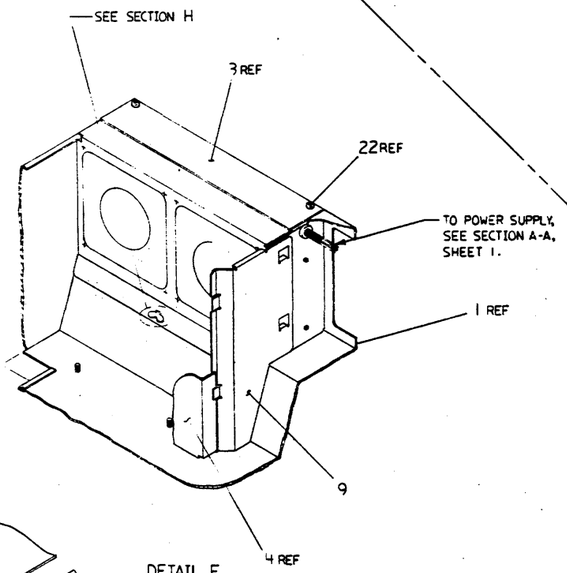

SHOWN FOR REFERENCE ONLY
SEE "E-UA-11730-Z-0" FOR PARTS AND INSTALLATION ASSEMBLY

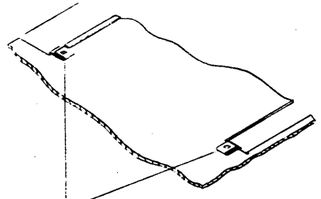
FIGURE 1
SCALE: NONE
SEE SHEET 1




SECTION H
SCALE: NONE




DETAIL F
SCALE: NONE
SEE SHEET 1

NOTES:
1. AFTER FAN HOUSING ASSY IS LOCATED INTO POSITION IN BOX ASSY, WING FASTENER MIGHT REQUIRE MOVEMENT TO FIRMLY SEAT FAN HOUSING ASSY. ITEM 22 SCREWS (2 EA) CAN NOW EASILY BE INSTALLED AND WINGED FASTENER CAN BE SECURED.

| REVISION HISTORY | | |
|---|---|---|
| DATE | ECO NUMBER | REV |

| | | | |
|---|---|---|---|
| TITLE | BA11-Z BOX ASSEMBLY | DOCUMENT NUMBER | |
| SIZE | CODE | NUMBER | REV |
| E | UA | BA11-Z-0 | B |
| SCALE | | SHEET 2 OF 3 | |

TW 1

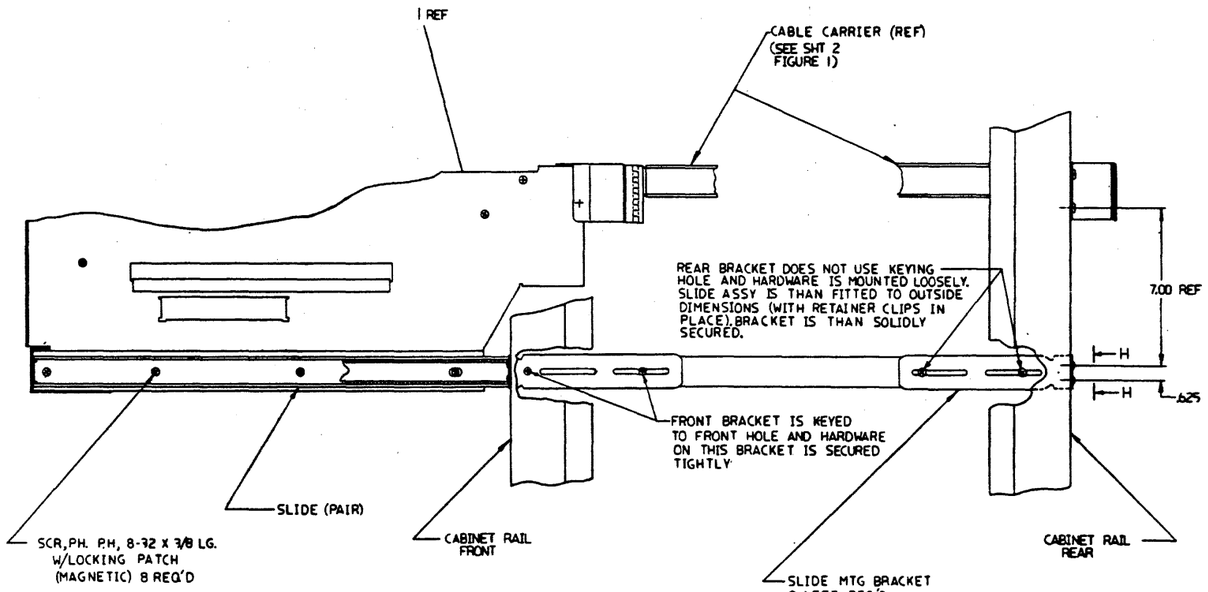
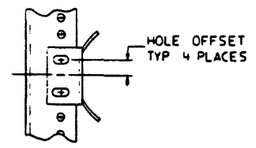



FIGURE 2
SCALE: NONE
SHOWN FOR REFERENCE ONLY
SEE "E-UA-11730-Z-0" FOR PARTS AND INSTALLATION ASSEMBLY




VIEW H-H
REAR VIEW-LEFT RAIL
SCALE: NONE

REVISION HISTORY

| DATE | ECO NUMBER | REV |
|---|---|---|

| TITLE | DOCUMENT NUMBER | REV |
|---|---|---|
| BAII-Z BOX ASSEMBLY | E UA BAII-Z-0 | B |
| | SCALE -/-/- SHEET 3 OF 3 | |

TW

AUTOMATED BY PRTLST.3P(44) — P A R T S  L I S T — SHEET A1 OF A1

| LINE | ITEM | DOCUMENT NUMBER | PART NUMBER | DESCRIPTION | QUANTITY PER VARIATION ZA | ZB |
|---|---|---|---|---|---|---|
| 1 | 1 | E-IA-7018115-0-0 | 7018115-00 | Z-BOX FRAME ASSY. | 1 | 1 |
| 2 | 2 | B-DD-H7202-0-0 | H7202-B | NEBULA POW SUP: H7200,H7211,H721 | 1 | 1 |
| 3 | 3 | E-AD-7018081-0-0 | 7018081-00 | FAN ASSY | 1 | 1 |
| 4 | 4 | E-AD-7018078-0-0 | 7018078-00 | CARD CAGE ASSY | 1 | 1 |
| 5 | 5 | C-AD-7018544-0-0 | 7018544-00 | TOP COVER ASSY. | 1 | 1 |
| 6 | 6 | C-AD-7018545-0-0 | 7018545-00 | BOARD ACCESS COVER ASSY. | 1 | 1 |
| 7 | 7 | B-AD-7018546-0-0 | 7018546-00 | FAN ACCESS COVER ASSY. | 1 | 1 |
| 8 | 8 | D-IA-7018163-0-0 | 7018163-00 | CABLE DC TO FAN | 1 | 1 |
| 9 | 9 | D-MD-7424850-0-0 | 7424850-00 | PLATE,BAFFLE END | 1 | 1 |
| 10 | 10 | C-IA-7425373-0-0 | 7425373-00 | CLAMP,PS | 2 | 2 |
| 11 | 11 | B-MD-7425571-0-0 | 7425571-00 | SUPPORT,WIRE | 2 | 2 |
| 12 | 12 | | 12175556-00 | FAN,108CFM, 12VDC,AXIAL,4.5"DIA | 1 | 1 |
| 13 | 13 | | 1700083-22 | PWR CORD,TERM. 84IN,18-3 125V 15 | 1 | 0 |
| 14 | 14 | | 1700083-21 | PWR CORD,TERM. 84IN,18-3 250V 6 | 0 | 1 |
| 15 | 15 | BLANK | | *** THIS ITEM IS NOT USED *** | - | - |
| 16 | 16 | | 9006565-00 | NUT,KEP 10-32X 3/8 AF | 4 | 4 |
| 17 | 17 | | 9007015-00 | GROMMET, RUBBER | 1 | 1 |
| 18 | 18 | | 9007035-00 | GROMMET #122-37-1500 | 2 | 2 |
| 19 | 19 | | 9008196-01 | RECP. CLIP-ON F/1/4 TURN FASTNR | 4 | 4 |
| 20 | 20 | | 9009984-01 | SCREW, SEMS, PHILLIPS PAN HD 6- | 4 | 4 |
| 21 | 21 | | 9009988-08 | SCREW, SEMS,SLOTTED HEX HD 8-32 | 4 | 4 |
| 22 | 22 | | 9010174-01 | SCREW,PAN,PHIL,SEMS 8-32X .31 L | 12 | 12 |
| 23 | 23 | | 9009157-00 | ADH,LIQ.RM.TEMP CURING COLORLESS | A/R | A/R |
| 24 | 24 | | 9009636-00 | CLAMP, CABLE, FOR FLAT CABLE | 4 | 4 |

| REVISION HISTORY | | |
|---|---|---|
| ENG | ECO NUMBER | REV |
| --- | INITIAL | XA |
| --- | INITIAL | A |

BASIC PART NO: 0BA11

SECTION A OF A

SECTION. VARIATION INDEX

[A] ZA,ZB

[B]

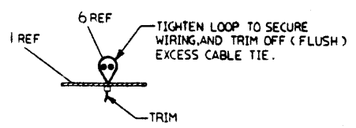
[C]

[D]

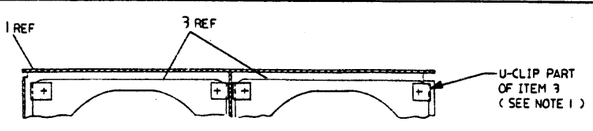
[E]

[F]

| | | |
|---|---|---|
| DRN: A. ROCHA | DATE: 16-NOV-81 | D I G I T A L |
| CHK'D: R. MORIN | DATE: 16-NOV-81 | TITLE: PARTS LIST — BA11-Z BOX ASSY |
| DES.ENG.: R. MORIN | DATE: 16-NOV-81 | |
| RESP.ENG.: R. MORIN | DATE: 16-NOV-81 | DOCUMENT NUMBER |
| MFG.ENG.: S.CASTIGLIONE | DATE: 30-JUL-81 | SIZE: K — CODE: PL — NUMBER: BA11-Z-DBP — REV: A |
| ASSEMBLY NUMBER: E-AD-BA11-Z-0 | TOP DOCUMENT NUMBER: E-UA-11730-Z-0 | FILE NAME: Z1862A.PLS — EDIT #: 14 |




SECTION C-C
SCALE: NONE

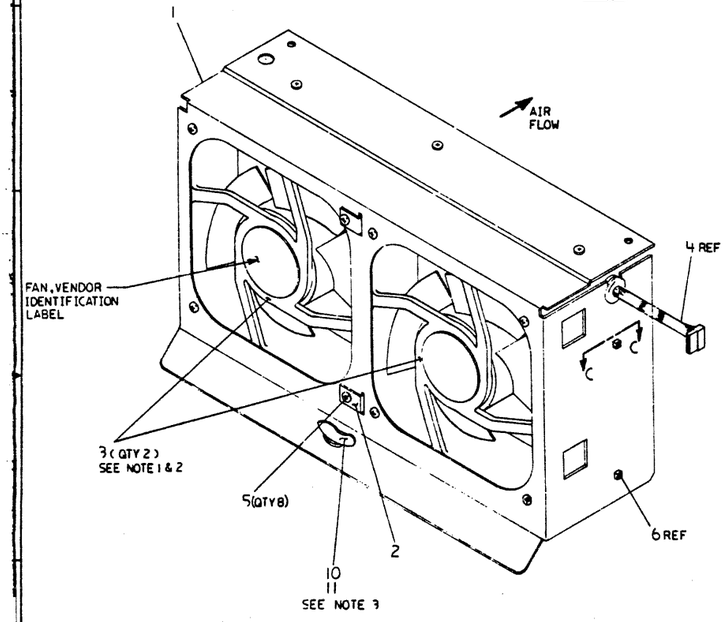



SECTION D-D
SCALE: NONE

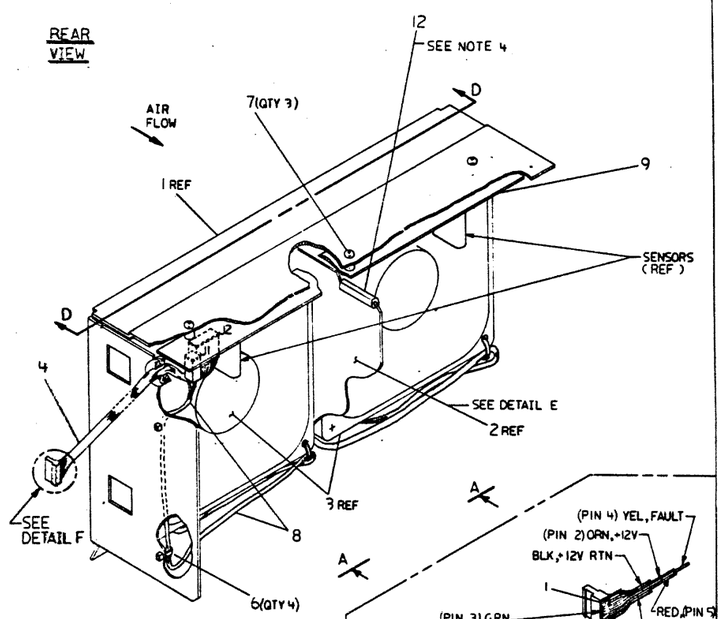
NOTES:

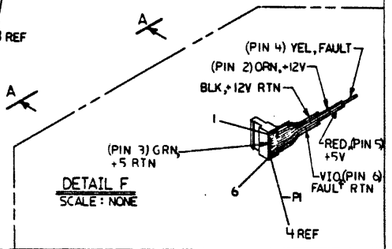
1. ITEM 3, 12V. DC FAN, WILL BE SUPPLIED BY VENDOR WITH 4 (FOUR) APPROPRIATE FAN MOUNTING CLIPS. USING BOSS MOUNTING CLIP (REF 9009165-00), THERE IS NO PROBLEM. USING U-CLIP TYPE (REF 9009282-00) ON CERTAIN FANS, POSITIONING OF CLIP PER SECTION D-D ON UPPER ROW OF CORNERS IS MANDATORY FOR INSTALLATION OF THIS ASSEMBLY INTO BA11-Z BOX ASSEMBLY.
2. INCORRECT POLARITY CONNECTIONS ON DC FAN IS PROTECTED BY THE FAN. FAN WILL NOT OPERATE IF IMPROPERLY CONNECTED.
3. TO PROPERLY INSTALL ITEM 11 ONTO ITEM 10, USE INSTALLATION TOOL 82-0-14719-11 (SOUTHCO) OR EQUIVALENT.
4. ITEM 12 RUBBER U CHANNEL IS TO BE CUT TO 1.25 ±.06 INCH LONG. THIS ITEM IS INSERTED UNTO ITEM 2 AND BUTTED AGAINST SENSOR BOARD.

FRONT VIEW

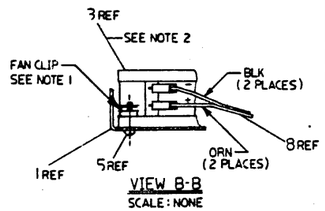



REAR VIEW

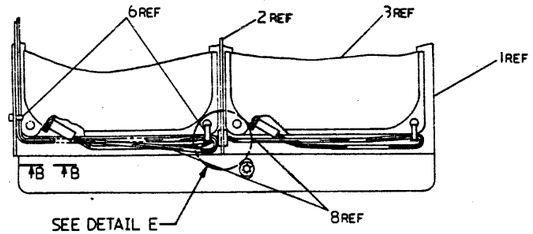


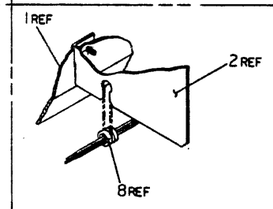

DETAIL F
SCALE: NONE




VIEW B-B
SCALE: NONE




VIEW A-A
SCALE: NONE




DETAIL E
SCALE: NONE
(SHOWN WITH FANS, ITEM 3, REMOVED)

NOTE: FOR PARTS LIST REFER TO K-PL-7018081-0-DBP.

| REV | DESCRIPTION | DRAWING NO. | PART NO. | ITEM NO. |
|---|---|---|---|---|
| A | RELEASED | | | |
| B | REV C PER ECO [illegible] | | | |
| C | REV D PER ECO [illegible] | | | |

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES AND THE FOLLOWING TOLERANCES APPLY (PER DEC STD 115)

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| QUANTITY & VARIATION | | | | | | | |
| THIRD ANGLE PROJECTION | | | | | | | |
| DO NOT SCALE DRAWING | | | | | | | |
| REMOVE BURRS AND BREAK SHARP CORNERS | | | | | | | |
| MATERIAL | SEE PARTS LIST | | | | | | |
| FINISH | | | | | | | |

| | | |
|---|---|---|
| ENG | [signature] | DATE 16 MAR 81 |
| CHK | [signature] | DATE 17 MAR 81 |
| MFG MGR | [signature] | DATE 17 MAR 81 |
| MFG | [signature] | DATE 17 Mar 81 |
| PROJ MGR | [signature] | DATE 23 MAR 81 |

E-UA-BA11-Z-0

TITLE: MODULE FAN ASSY

DOCUMENT NUMBER: E AD 7018081-0-0 REV A

SIZE E | CODE AD | NUMBER 7018081-0-0 | REV A

SCALE | SHEET 1 OF 1

TW

AUTOMATED BY FRTLST.3P(44) — P A R T S  L I S T — SHEET A1 OF A1

| LINE | ITEM | DOCUMENT NUMBER | PART NUMBER | DESCRIPTION | QUANTITY PER VARIATION 00 |
|---|---|---|---|---|---|
| 1 | 1 | D-MD-7424831-0-0 | 7424831-00 | HOUSING,FAN | 1 |
| 2 | 2 | C-MD-7424849-0-0 | 7424849-00 | BAFFLE,FAN | 1 |
| 3 | 3 | | 1217556-00 | FAN,103CFM, 12VDC,AXIAL,4.5"DIA | 2 |
| 4 | 4 | D-IA-7018162-0-0 | 7018162-0M | SENSOR PWR CABLE | 1 |
| 5 | 5 | | 9009984-01 | SCREW, SEMS, PHILLIPS PAN HD 6- | 8 |
| 6 | 6 | | 9007031-00 | TIE,CABLE BUNDL,DIA 0- 3/4"=101 | 4 |
| 7 | 7 | | 9009643-02 | SCREW,PAN,SLOT,SEMS 4-40X .250L | 3 |
| 8 | 8 | D-IA-7018161-0-0 | 7018161-00 | DC HARNESS ASSY | 1 |
| 9 | 9 | D-AD-5414340-0-0 | 5414340-00 | AIR FLOW SENSOR | 1 |
| 10 | 10 | | 9000026-05 | FASTNR, 1/4 TURN,WING HD | 1 |
| 11 | 11 | | 9010308-00 | RETAINER,PUSH-ON SS/PAS | 1 |
| 12 | 12 | SEE NOTE | 9009533-00 | CHANNEL"U"EXTRUDED RUBBER | 1 |

13 NOTE: * CUT LENGTH OF ITEM 12 TO BE 1.25+\-.06 INCH

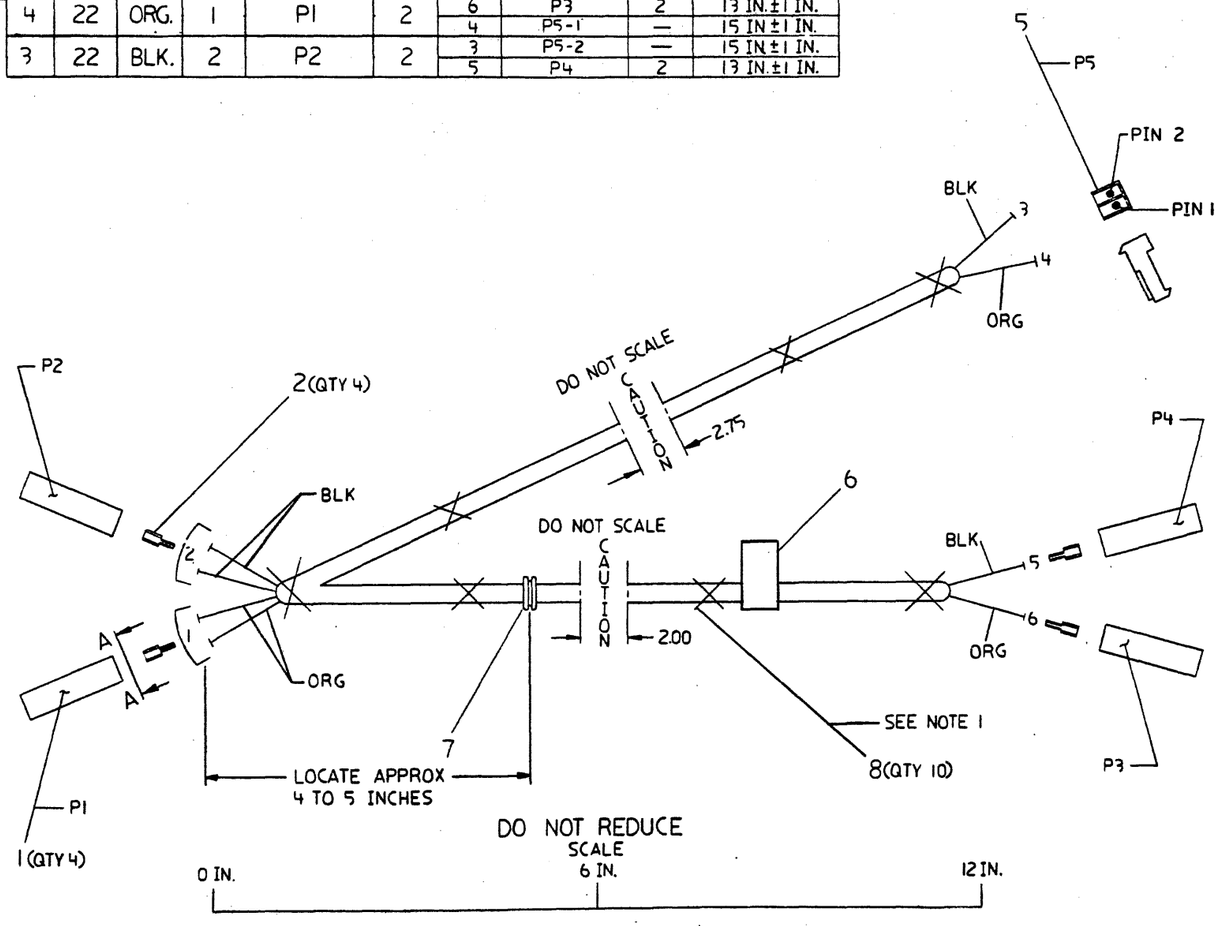
| REVISION HISTORY | | | BASIC PART NO: 7018081 | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ENG | ECO NUMBER | REV | SECTION A OF A | DRN: P. TOUSIGNANT | DATE: 28-JUL-81 | | D | I | G | I | T | A | L |
| --- | INITIAL | A | SECTION. VARIATION INDEX [A] 00 | CHK'D: A. ROCHA | DATE: 28-JUL-81 | TITLE PARTS LIST | | | | | | | |
| | | | [B] | DES.ENG.: R. MORIN | DATE: 28-JUL-81 | MODULE FAN ASSY | | | | | | | |
| | | | [C] | RESP.ENG.: R. MORIN | DATE: 28-JUL-81 | DOCUMENT NUMBER | | | | | | | |
| | | | [D] | | | SIZE | CODE | NUMBER | | | | REV | |
| | | | [E] | MFG.ENG.: E. PARIS | DATE: 28-JUL-81 | K | PL | 7018081-0-DBP | | | | A | |
| | | | [F] | ASSEMBLY NUMBER: E-AD-7018081-0-0 | TOP DOCUMENT NUMBER: E-UA-BA11-Z-0 | FILE NAME: Z1848A.PLS | | | | | | EDIT # 14 | |

REV A | NUMBER 7018161-0-0 | SIZE D | CODE IA | 3000

## WIRE TABLE

| ITEM NO. | DESCRIPTION AWG | COLOR | FROM POINT | FROM CONNECTION | FROM WITH | TO POINT | TO CONNECTION | TO WITH | LENGTH |
|---|---|---|---|---|---|---|---|---|---|
| 4 | 22 | ORG. | 1 | P1 | 2 | 6 | P3 | 2 | 13 IN. ± 1 IN. |
| | | | | | | 4 | P5-1 | — | 15 IN ± 1 IN. |
| 3 | 22 | BLK. | 2 | P2 | 2 | 3 | P5-2 | — | 15 IN ± 1 IN. |
| | | | | | | 5 | P4 | 2 | 13 IN. ± 1 IN. |

NOTES:
1. ATTACH CABLE TIES (ITEM 8) APPROX. EVERY 3 IN. AS SHOWN, AND AT EVERY BREAKOUT POINT.
2. ALL WIRE ENDS TO BE STRIPPED. EXCEPT FOR POINTS 3 AND 4.




SEE OFF SHEET PARTS LIST
K-PL-7018161-0-DBP

| REVISION HISTORY | | |
|---|---|---|
| REV. | ECO NUMBER | DATE |
| A | REISSUED AT REVG | 14 JUL 81 |

| | DESCRIPTION | DRAWING NO. | PART NO. | ITEM NO. |
|---|---|---|---|---|
| | UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES AND THE FOLLOWING TOLERANCES APPLY (PER DEC-STD 114) | | | |

| INCHES TOLERANCES | ANGLES ± 0°30' | SURFACE QUALITY | MICROINCHES | APPLICABLE DIMENSION RANGE (CHECK ONE) | DIMENSION RANGE IN INCHES: OVER 0 TO 0.2 | OVER 0.2 TO 1.2 | OVER 1.2 TO 4.0 | OVER 4.0 TO 12.0 | OVER 12.0 TO 40.0 | OVER 40.0 TO 80.0 |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | ☐ | | ± .02 | ± .03 | ± .05 | ± .10 | |
| | | | | ☐ | ± .004 | ± .008 | ± .012 | ± .016 | ± .024 | ± .06 |
| | | | | ☐ | | | | | | |

QUANTITY & VARIATION

THIRD ANGLE PROJECTION

DO NOT SCALE DRAWING

REMOVE BURRS AND BREAK SHARP CORNERS

MATERIAL: SEE PARTS LIST

FINISH

| | NAME | DATE |
|---|---|---|
| DRN | R. Tourigny | 7/8/80 |
| CHK'D | J.F. Sullivan | 7 AUG 81 |
| DES. ENG. | R.P. Morin | 4 AUG 81 |
| PROJ. ENG. | R.P. Morin | 4 AUG 81 |
| MFG. ENG. | J. Costy Lee | 7 AUG 81 |

NEXT HIGHER ASSY: E-AD-7018081-0-0

TITLE: digital
DC HARNESS ASSY

DOCUMENT NUMBER: SIZE D | CODE IA | NUMBER 7018161-0-0 | REV A

SCALE 1/1 | SHEET 1 OF 1

TW

DRD 1000

AUTOMATED BY PRTLST.3P(44) — P A R T S  L I S T — SHEET A1 OF A1

| LINE | ITEM | DOCUMENT NUMBER | PART NUMBER | DESCRIPTION | QUANTITY PER VARIATION 00 |
|---|---|---|---|---|---|
| 1 | 1 | | 1210820-01 | SOCKET HOUSING | 4 |
| 2 | 2 | | 1210820-03 | CONN TERMINAL,LOOSE | 4 |
| 3 | 3 | SEE NOTE 1 | 9107736-00 | WIRE,STRND,22AWG,XLPVC UL1430 ( | 28 |
| 4 | 4 | SEE NOTE 2 | 9107796-33 | WIRE,STRND,22AWG,XLPVC UL1430 ( | 28 |
| 5 | 5 | | 1218296-02 | CONN .100" 2SKT STRAIGHT | 1 |
| 6 | 6 | | 9003255-01 | LABEL, POWER SUPPLY, 2-7 8" LG X | 1 |
| 7 | 7 | | 9007013-00 | GROMMET, RUBBER | 1 |
| 8 | 8 | | 9007031-00 | TIE,CABLE BUNDL.DIA 0- 3/4"=101 | 10 |

9 NOTE: 1.ITEM 3 REQUIRES A 13 INCH AND A 15 INCH LENGTH.
10 NOTE: 2.ITEM 4 REQUIRES A 13 INCH AND A 15 INCH LENGTH.

| REVISION HISTORY | | | BASIC PART NO: 7018161 | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ENG | ECO NUMBER | REV | SECTION A OF A | | | | D | I | G | I | T | A | L |
| --- | INITIAL | A | SECTION. VARIATION INDEX [A] 00 | DRN: P. TOUSIGNANT | DATE: 23-JUL-81 | TITLE | PARTS LIST | | | | | | |
| | | | [B] | CHK'D: A. ROCHA | DATE: 23-JUL-81 | DC HARNESSS ASSY | | | | | | | |
| | | | [C] | DES.ENG.: R. MORIN | DATE: 23-JUL-81 | | | | | | | | |
| | | | [D] | RESP.ENG.: R. MORIN | DATE: 23-JUL-81 | DOCUMENT NUMBER | | | | | | | |
| | | | [E] | MFG.ENG.: S. CASTIGLIONE | DATE: 23-JUL-81 | SIZE: K | CODE: PL | NUMBER: 7018161-0-DBP | | | | REV: A | |
| | | | [F] | ASSEMBLY NUMBER: D-IA-7018161-0-0 | TOP DOCUMENT NUMBER: E-AD-7018081-0-0 | FILE NAME: Z1851A.PLS | | | | | | EDIT #: 15 | |

REV A | SIZE D | CODE IA | NUMBER 7018162-0-0

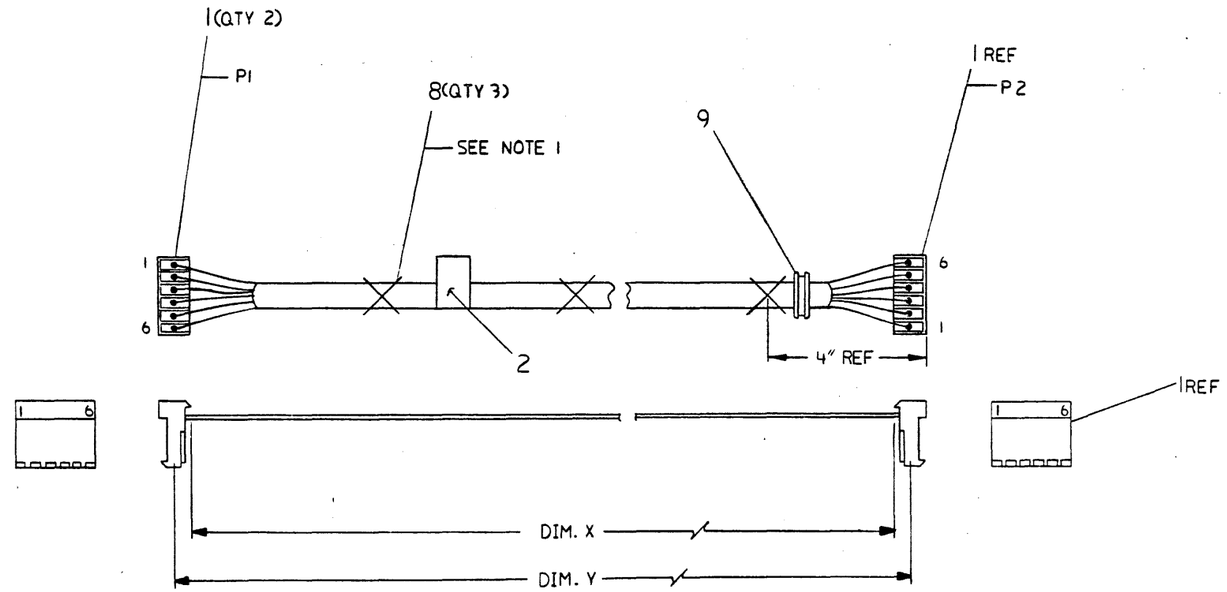
## WIRE TABLE

| ITEM NO. | DESCRIPTION AWG | COLOR | FROM CONN | WITH | TO CONN | WITH | REMARKS |
|---|---|---|---|---|---|---|---|
| 3 | 22 | BLACK | P1-1 | — | P2-1 | — | +12V RTN |
| 5 | 22 | ORANGE | P1-2 | — | P2-2 | — | +12 V |
| 6 | 22 | YELLOW | P1-4 | — | P2-4 | — | FAULT |
| 4 | 22 | RED | P1-5 | — | P2-5 | — | +5V |
| 7 | 22 | VIOLET | P1-6 | — | P2-6 | — | FAULT RTN |
| 10 | 22 | GREEN | P1-3 | — | P2-3 | — | +5V RTN |

## LEGEND

| NUMBER | DIM.X VARIATION | DIM.Y(PRECUT)REF |
|---|---|---|
| 7018162-ØM | 11. IN ±.5 IN | 11.50 IN. ± 5 IN. |

NOTES:
1. ATTACH CABLE TIES(ITEM 8) APPROX. EVERY 3 IN. AS SHOWN.
2. WIRES NEED NOT HAVE ANY INSULATION REMOVED.




SEE OFF SHEET PARTS LIST
K-PL- 7018162-0-DBP

| REVISION HISTORY | | |
|---|---|---|
| REV. | ECO NUMBER | DATE |
| A | CHANGED "A" REV A PER ECO 1065 PROJECT 23JUL81 | |

| DESCRIPTION | DRAWING NO. | PART NO. | ITEM NO. |
|---|---|---|---|

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES AND THE FOLLOWING TOLERANCES APPLY (PER DEC STD 114)

| INCHES TOLERANCES | ANGLES ± 0°30' | APPLICABLE DIMENSION RANGE (CHECK ONE) | DIMENSION RANGE IN INCHES: OVER 0 TO 0.2 | OVER 0.2 TO 1.0 | OVER 1.0 TO 4.0 | OVER 4.0 TO 12.0 | OVER 12.0 TO 40.0 | OVER 40.0 TO 60.0 |
|---|---|---|---|---|---|---|---|---|
| .X = ± .1 | SURFACE QUALITY | ☐ | | ± .02 | ± .03 | ± .05 | ± .10 | |
| .XX = ± .02 | | ☐ | | | | | | |
| .XXX = ± .005 | MICRO-INCHES | ☐ | ± .004 | ± .008 | ± .012 | ± .016 | ± .024 | ± .04 |

QUANTITY & VARIATION

THIRD ANGLE PROJECTION

DO NOT SCALE DRAWING

REMOVE BURRS AND BREAK SHARP CORNERS

MATERIAL: SEE PARTS LIST

FINISH: —

| | | |
|---|---|---|
| DRN | H.C. TOUSIGNANT | DATE 1-15-81 |
| CHK'D | R.D. MORRISON | DATE 9 AUG 81 |
| DES. ENG | R.D. MORRISON | DATE 9 AUG 81 |
| PROJ. ENG | R.D. MORRISON | DATE 9 AUG 81 |
| MFG. ENG | S. CASTY LEE | DATE 13 OCT 81 |
| NEXT HIGHER ASSY | E-AD-7018081-0-0 | |

TITLE: digital
CABLE, SENSOR POWER

DOCUMENT NUMBER

| SIZE | CODE | NUMBER | REV. |
|---|---|---|---|
| D | IA | 7018162-0-0 | A |

SCALE 1/1 SHEET OF

TW

DRD 1000

AUTOMATED BY PRTLST.3P(44) — P A R T S  L I S T — SHEET A1 OF A1

| LINE | ITEM | DOCUMENT NUMBER | PART NUMBER | DESCRIPTION | QUANTITY PER VARIATION CM |
|---|---|---|---|---|---|
| 1 | 1 | | 1218296-03 | CONN .100 6SKT STRAIGHT | 2 |
| 2 | 2 | | 9009255-01 | LABEL, POWER SUPPL. 2-7/8" LG X | 1 |
| 3 | 3 | SEE NOTE | 9107796-00 | WIRE,STRND,22AWG,XLPVC UL1430 ( | 12 |
| 4 | 4 | SEE NOTE | 9107796-22 | WIRE,STRND,22AWG,XLPVC UL1430 ( | 12 |
| 5 | 5 | SEE NOTE | 9107796-33 | WIRE,STRND,22AWG,XLPVC UL1430 ( | 12 |
| 6 | 6 | SEE NOTE | 9107796-44 | WIRE,STRND,22AWG,XLPVC UL1430 ( | 12 |
| 7 | 7 | SEE NOTE | 9107796-77 | WIRE,STRND,22AWG,XLPVC UL1430 ( | 12 |
| 8 | 8 | | 9007031-00 | TIE,CABLE BUNDL.DIA 0- 3/4"=101 | 3 |
| 9 | 9 | | 9007017-00 | GROMMET, RUBBER | 1 |
| 10 | 10 | SEE NOTE | 9107796-55 | WIRE,STRND,22AWG,XLPVC UL1430 ( | 12 |

11 NOTE: ITEMS 3,4,5,6,7 AND 10 ARE IN INCHES LONG.

| REVISION HISTORY | | | BASIC PART NO: 7018162 | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ENG | ECO NUMBER | REV | SECTION A OF A | DRN: P. TOUSIGNANT | DATE: 23-JUL-81 | | D | I | G | I | T | A | L |
| --- | INITIAL | A | SECTION. VARIATION INDEX [A] OM | CHK'D: A. ROCHA | DATE: 23-JUL-81 | TITLE | PARTS LIST | | | | | | |
| | | | [B] | DES.ENG.: R. MORIN | DATE: 23-JUL-81 | SENSOR POWER CABLE | | | | | | | |
| | | | [C] | RESP.ENG.: R. MORIN | DATE: 23-JUL-81 | DOCUMENT NUMBER | | | | | | | |
| | | | [D] | | | SIZE | CODE | NUMBER | | | | REV | |
| | | | [E] | MFG.ENG.: S. CASTIGLIONE | DATE: 23-JUL-81 | K | PL | 7018162-0-DBP | | | | A | |
| | | | [F] | ASSEMBLY NUMBER: D-IA-7018162-0-0 | TOP DOCUMENT NUMBER: E-AD-7018081-0-0 | FILE NAME: Z1852A.PLS | | | | | | EDIT #: 13 | |

| SIZE | CODE | NUMBER | REV. |
|---|---|---|---|
| B | DD | 5414340-0 | A |

| DRAWING NO. | NO. OF SHTS. | PART NO. | DESCRIPTION | REVISIONS |
|---|---|---|---|---|
| B-DD-5414340-0 | 1 | | AIR FLOW SENSOR | A |
| D-UA-5414340-0-0 | 1 | | AIR FLOW SENSOR | A |
| D-MD-5014339-0-0 | 3 | | DRILL AND ETCH DRAWING | A |
| D-EC-5014339-0-0 | 2 | | ETCH CUT DRAWING | A |
| D CS 5414340-0-1 | 1 | | AIR FLOW SENSOR | A |
| K-PL-5414340-0-DBP | 1 | | AIR FLOW SENSOR | A |
| | | 5014339 | ETCHED BOARD | D |
| K-PG-5414340-0-DBC | | | P C DESIGN DATA BASE | D |
| A-SP-3700646-0-0 | 6 | 3700646-01 | PKG MODULE (5413340) 54PACK | A |
| A-SP-5414340-0-2 | 17 | | AIR FLOW SENSOR SPEC | A |

**NOTES:**

| REVISIONS | CHG NO. | REV. |
|---|---|---|
| DATE | | |



digital

| USED ON OPTION/MODEL |
|---|
| BAII-Z |

| | | |
|---|---|---|
| DRN. | Ferguson | 9-10-81 |
| CHK'D | Ferguson | 9-10-81 |
| ENG. | [illegible] | 9-17-81 |
| PROD. | W. P. [illegible] | 9/18/81 |

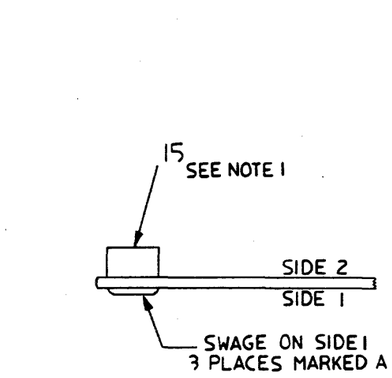
TITLE: AIR FLOW SENSOR

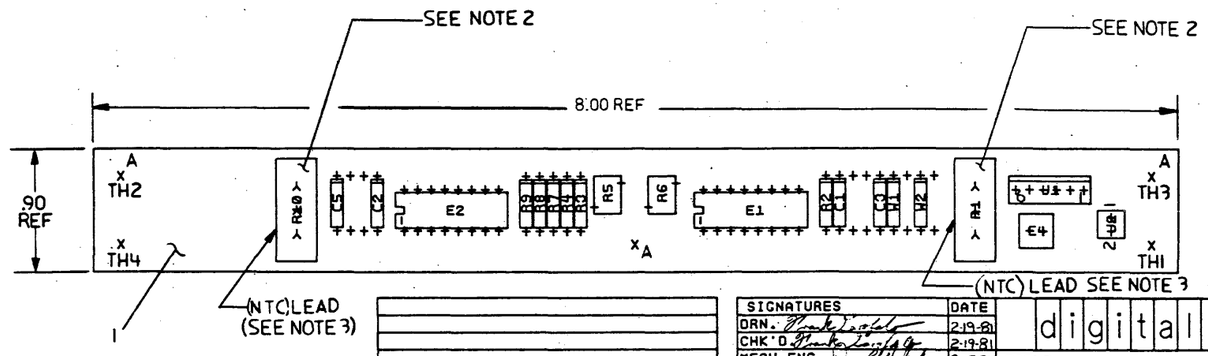
| SIZE | CODE | NUMBER | REV. |
|---|---|---|---|
| B | DD | 5414340-0 | A |

SHEET 1 OF 1

TC

DRB 128




NOTES: 1. INSTALL ITEM 15 FROM SIDE 2 AFTER WAIVE SOLDER & AFTER BOARD IS CUT TO FINISHED BOARD SIZE.
2. R1 & R10 MUST BE RAISED .125" TO .150" OFF P.C. BOARD.
3. NOTE ORIENTATION OF R1 AND R10 (ITEM 10)

| STEP & REPEAT | ↑ Y AXIS ____ STEP ____ TIMES |
|---|---|
| | → X AXIS ____ STEP ____ TIMES |

| CHK | CHANGE NO | REV |
|---|---|---|
| | | |

ETCH REV. D

| SIGNATURES | DATE |
|---|---|
| DRN. | 2-19-81 |
| CHK'D. | 2-19-81 |
| MECH. ENG. | 9-17-81 |
| PROJ. ENG. | 9-17-81 |
| PROD. | 9-18-81 |
| SCALE 2/1 | |
| SHT. 1 OF 1 | |
| NEXT HIGHER ASSY. B-DD-5414340-0 | |

digital

TITLE AIR FLOW SENSOR

| SIZE | CODE | NUMBER | REV |
|---|---|---|---|
| D | UA | 5414340-0-0 | A |

1 WO# 170273

AUTOMATED BY: PRTLST.EXE

| LINE ITEM | DOCUMENT NUMBER | PART NUMBER | DESCRIPTION | QTY PER ASSEMBLY | REFDES OR ITEM NOTE |
|---|---|---|---|---|---|
| | 9-00-5414340-0-0 | | | | |

| REVISION HISTORY | | | BASIC PART NO: 5414340 |
|---|---|---|---|
| ENG | ECO NUMBER | REV | SECTION A OF A |
| --- | INITIAL | A | SECTION VARIATION INDEX<br>[A] 00<br>[B]<br>[C]<br>[D]<br>[E]<br>[F]<br>[H]<br>[K]<br>[L]<br>[M]<br>[N] |

| | | |
|---|---|---|
| DRN: J.FERGUSON | DATE: 30-JAN-91 | |
| CHK'D: F.GAROFALO | DATE: 30-JAN-91 | |
| DES.ENG: D.DRINKWATER | DATE: 30-JAN-91 | |
| RESP.ENG.: D.DRINKWATER | DATE: 30-JAN-91 | |
| MFG.ENG.: W. WYCKOFF | DATE: 9-10-91 | |
| ASSEMBLY NUMBER: D-UA-5414340-0-3 | TOP DOCUMENT NUMBER: 9-00-5414340-0-0 | |

D I A G T A L

TITLE: PARTS LIST
AIR FLOW SENSOR

DOCUMENT NUMBER

| SIZE | CODE | NUMBER | REV |
|---|---|---|---|
| K | FL | 5414340-0-0SP | A |

FILE NAME: 5414340.FLS

SHT 1 OF 1

| SIZE | CODE | NUMBER | REV. |
|---|---|---|---|
| B | DD | 7018080-0-0 | B |

| DRAWING NO. | NO. OF SHTS. | PART NO. | DESCRIPTION | REVISIONS |
|---|---|---|---|---|
| A-WT-7018080-0-2 | 1 | | AWT REVISION STATUS | A A |
| K-WL-7018080-0-DBW | | | DESIGN DATA BASE TAPE | A A |
| K-WL-7018080-0-1 | 1 | | WIRELIST (730Z) | A A |
| | | 5014598-00 | ETCH BOARD | C D |
| K-PL-7018080-0-DBP | 1 | | 11730-Z BACKPLANE ASSY | A A |
| D-AD-7018080-0-0 | 1 | | 11730 Z BACKPLANE ASSY | A A |
| B-DD-5414599-0-0 | 1 | | 730Z BACKPLANE MODULE | A B |

**NOTES:**

| REVISIONS | | |
|---|---|---|
| DATE | CHG NO. | REV. |
| 8-82 | TW001 | B |



digital

USED ON OPTION/MODEL

| | | |
|---|---|---|
| DRN. | R. Tousignant | 27 July 81 |
| CHK'D | R.P. Morin | 2 DEC 81 |
| ENG | R.P. Morin | 2 DEC 81 |
| PROD. | Jack Greene | 2 DEC 81 |

TITLE: 11730 BACKPLANE

| SIZE | CODE | NUMBER | REV. |
|---|---|---|---|
| B | DD | 7018080-0-0 | B |

SHEET 1 OF 1

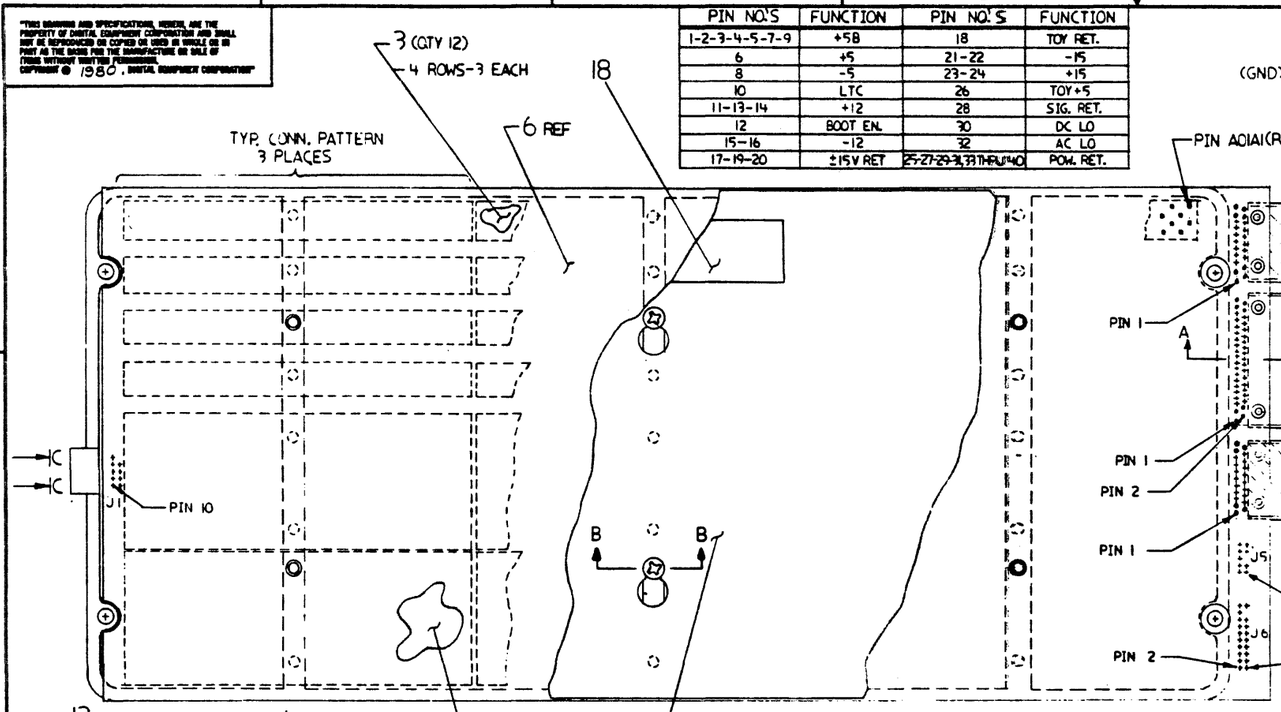
DRB 126

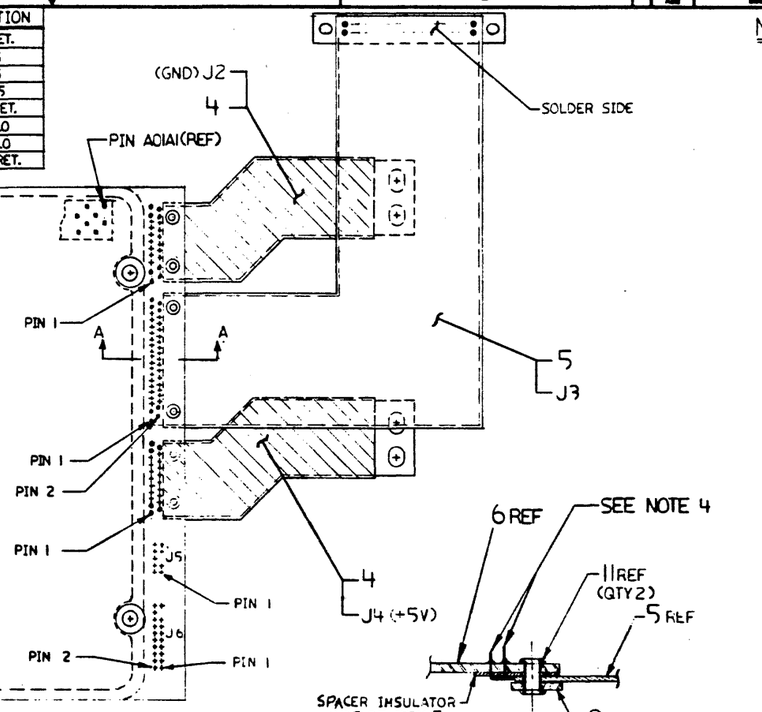
TW

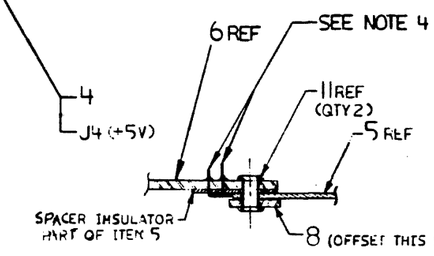
| PIN NO'S | FUNCTION | PIN NO'S | FUNCTION |
|---|---|---|---|
| 1-2-3-4-5-7-9 | +5B | 18 | TOY RET. |
| 6 | +5 | 21-22 | -15 |
| 8 | -5 | 23-24 | +15 |
| 10 | LTC | 26 | TOY+5 |
| 11-13-14 | +12 | 28 | SIG. RET. |
| 12 | BOOT EN. | 30 | DC LO |
| 15-16 | -12 | 32 | AC LO |
| 17-19-20 | ±15V RET | 25-27-29-31-33 THRU 40 | POW. RET. |

NOTES:

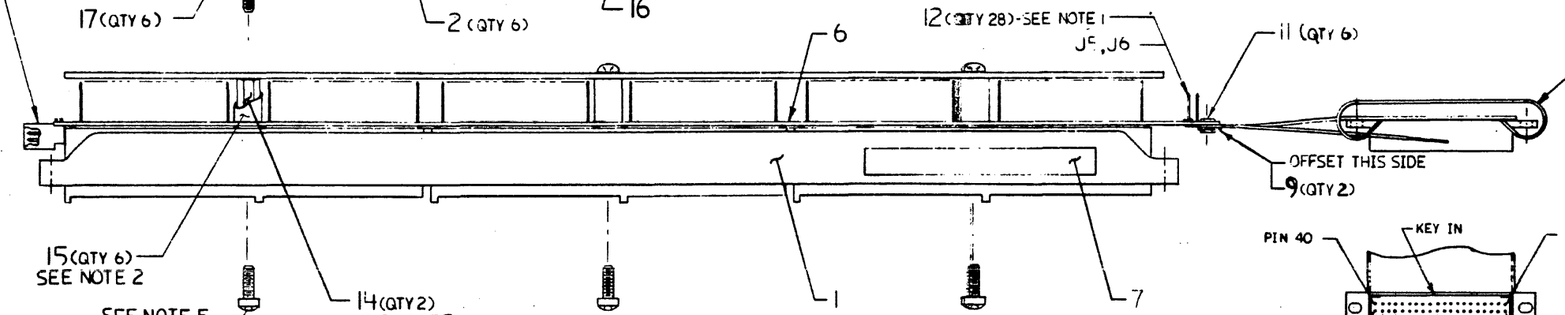
1. STAKE PINS, ITEM 12, ARE INSERTED BEFORE BLOCKS ARE MOUNTED. ALSO, PINS ARE TO BE PROTECTED FROM SOLDERING.
2. PROTECTIVE SLEEVE, ITEM 15 ($1/2 \pm 1/16$ LONG) REQUIRED ON ALL STANDOFFS. ITEM 14; (QTY 6)
3. PIN 1 OF ITEM 13 MUST BE REMOVED BEFORE BEING INSTALLED. J1 IS MOUNTED ON SIDE 1 OF THE PC BOARD (BLOCKSIDE).
4. ALL PINS OF ITEM 5 (POWER CABLE) AND ITEM 4 (FLEX CABLE) SHOULD NOT EXTEND MORE THAN .060 INCH MAXIMUM ABOVE SURFACE OF THE BOARD. CUT PINS TO MAXIMUM LENGH IF NECESSARY.
5. USE ITEM 10 (24 EACH) TO ASSEMBLE FOR WAVE SOLDERING AND REPLACE ITEM 10 IN 6 PLACES WITH ITEM 19 WHEREVER STANDOFF (ITEM 14) IS TO BE USED.

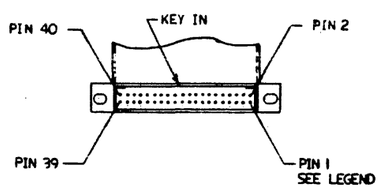


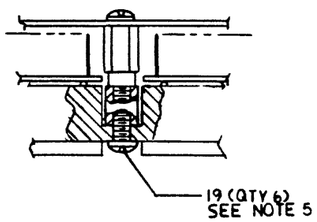




SECTION AA




SECTION B-B
SCALE-NONE

CAUTION: SEE OFF SHEET PARTS LIST K-PL-7018080-0-DBP (Z0715)

| REVISIONS | | | |
|---|---|---|---|
| DWG | CHANGE NO. | REV. | |
| | | A | |

| | DESCRIPTION | DWG./PART NO. | ITEM NO. |
|---|---|---|---|
| | UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES | | |
| QUANTITY & VARIATION | ANGLES ±0° 30' / CLASS OF ACCURACY (CHECK ONE) / NOMINAL DIMENSION RANGE (INCHES) | | |
| | SURFACE QUALITY ▽▽ MICROINCHES / MEDIUM ☐ / PREFERRED ☐ | | |
| THIRD ANGLE PROJECTION | DRN. R MACEN 4 JUN 81 | FIRST USED ON 11730-Z | digital |
| REMOVE BURRS AND BREAK SHARP CORNERS | CHK'D 4 JUN 81 | TITLE 11730-Z BACKPLANE ASSEMBLY | |
| DO NOT SCALE DWG | ENG 4 JUN 81 | | |
| MATERIAL SEE PARTS LIST | PROJ. ENG. 4 JUN 81 | B-DD-7018078-0-0 | |
| FINISH | PROD. 2/Jun/81 | SCALE 1:1 | |
| | NEXT HIGHER ASSY. | SHEET 1 OF 1 | |

SIZE D | CODE | NUMBER AD7018080-0-0 | REV A | DIST.

D AD7018080-0-0 A

2 TW

AUTOMATED BY PRTLST.3P(44) P A R T S L I S T SHEET A1 OF A1

| LINE | ITEM | DOCUMENT NUMBER | PART NUMBER | DESCRIPTION | QUANTITY PER VARIATION 00 |
|---|---|---|---|---|---|
| 1 | 1 | | 1217096-02 | FRAME,LOGIC,12 SLOT | 1 |
| 2 | 2 | | 1210258-01 | CONN,CARD 288PIN SLOTTED OPEN EN | 6 |
| 3 | 3 | | 1211425-00 | CONN,CARD 72PIN SLOTTED DOUBLE | 12 |
| 4 | 4 | | 1700239-00 | CIRCUIT,FLEXIBLE POWER CABLE | 2 |
| 5 | 5 | | 1700238-00 | CIRCUIT,FLEXIBLE,SIGNAL | 1 |
| 6 | 6 | E-MD-5014598-0-0 | 5014598-00 | DRILL AND ETCH BD. | 1 |
| 7 | 7 | A-DC-7411881-0-0 | 7411881-01 | DECAL | 1 |
| 8 | 8 | B-MD-7424779-0-0 | 7424779-00 | STRAIN RELIEF | 1 |
| 9 | 9 | B-MD-7424779-0-0 | 7424779-01 | STRAIN RELIEF | 2 |
| 10 | 10 | | 9006120-06 | SCREW, POZIDRIVE FILLISTER HD SW | 18 |
| 11 | 11 | | 9000024-01 | EYELET,ROLL FLANGE .1210DX .192 | 6 |
| 12 | 12 | | 9009149-00 | PIN, STAKING, P.C. BOARD, .025 X | 28 |
| 13 | 13 | | 1218414-01 | HEADER.100 10PIN RT ANGLE | 1 |
| 14 | 14 | C-MD-7425372-0-0 | 7425372-00 | SPACER | 6 |
| 15 | 15 | SEE NOTE | 9107252-09 | TUBING,SHRINK 3/8 DIA.EXP UL | 3 |
| 16 | 16 | D-MD-7425344-0-0 | 7425344-00 | COVER,PROTECTIVE | 1 |
| 17 | 17 | | 9009545-01 | SCREW,PAN,PHIL,SEMS 8-32X .50 L | 6 |
| 18 | 18 | | 3618538-01 | LABEL,CAUTION | 1 |
| 19 | 19 | | 9007641-06 | SCREW, PHILLIPS FILLISTER HEAD 8 | 6 |
| 20 | 20 | | 9105740-44 | WIRE(WRAP)30AWG UL1423 | A/R |
| 21 | 21 | K-WL-7018080-0-1 | | WIRELIST (730Z) | REF |
| 22 | 22 | A-WT-7018080-0-2 | | AWT REVISION STATUS | REF |
| 23 | 23 | K-WL-7018080-0-DBW | | DATA BASE TAPE | REF |
| 24 | 24 | | 9905016-07 | CARTON,DIE CUT W/FOAM,B | A/R |

25 NOTE: ITEM 15 IS IN INCHES.

| REVISION HISTORY | | | BASIC PART NO: 7018080 | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ENG | ECO NUMBER | REV | SECTION A OF A | DRN: R.J. RILEY | DATE: 26-AUG-81 | | D | I | G | I | T | A | L |
| --- | INITIAL | A | SECTION. VARIATION INDEX [A] 00 | CHK'D: R.J. RILEY | DATE: 26-AUG-81 | TITLE PARTS LIST 11730-Z BACKPLANE ASSEMBLY | | | | | | | |
| | | | [B] | DES.ENG.: R. MORIN | DATE: 26-AUG-81 | | | | | | | | |
| | | | [C] | RESP.ENG.: R. MORIN | DATE: 26-AUG-81 | DOCUMENT NUMBER | | | | | | | |
| | | | [D] | | | SIZE | CODE | NUMBER | | | | REV | |
| | | | [E] | MFG.ENG.: K. WALSH | DATE: 26-AUG-81 | K | PL | 7018080-0-DBP | | | | A | |
| | | | [F] | ASSEMBLY NUMBER: D-AD-7018080-0-0 | TOP DOCUMENT NUMBER: E-AD-7018078-0-0 | | | FILE NAME: Z0715A.PLS | | | | EDIT # 25 | |

| REV. | NUMBER | CODE | SIZE |
|---|---|---|---|
| A | 7018080-0-1 | WL | K |

| FIRST USED ON OPTION MODEL |
|---|
| 11730 |

| QTY. | DESCRIPTION | PART NO. | ITEM NO. |
|---|---|---|---|
| | PARTS LIST | | |

| | | |
|---|---|---|
| DRN. P. Youngman | DATE 27 July 81 | digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS |
| CHK'D. D.M. Harding | DATE 2 DEC 81 | |
| ENG. D.M. Harding | DATE 2 DEC 81 | TITLE: 11730 BACKPLANE (730Z) |
| PROJ. ENG. D.M. Harding | DATE 2 DEC 81 | |
| PROD. Jack Greene | DATE 2 Dec 81 | |
| NEXT HIGHER ASSEMBLY: 7018078-0-0 | | SIZE K / CODE WL / NUMBER 7018080-0-1 / REV. A |
| SCALE NONE | | DIST. |
| SHEET 1 OF 1 | | |

| REVISIONS | CHANGE NO. | REV. |
|---|---|---|
| | | CHK |

DEC FORM NO. DRB 109

TW

| DRAWING NUMBER | INIT REL |
|---|---|
| | T10 |
| D-AD-7018080-0-0 | A |
| K-WL-7018080-0-1 | A |
| 5014598-00 | REF |
| K-WL-7018080-0-DBW | A |
| | |
| | |
| | |
| | |
| | |
| | |

## AUTOMATIC WIRE TESTER (AWT) REVISION STATUS

REV A

SIZE A CODE AWT NUMBER 7018080-0-2

REVISIONS | REV | CHANGE NO. | CHK

| | | |
|---|---|---|
| DRN | | DATE 27 July 81 |
| CHK'D | D.H. Handley | DATE 2 DEC 81 |
| ENG | D.H. Handley | DATE 2 DEC 81 |
| PROJ. ENG. | D.H. Handley | DATE 2-DEC 81 |
| PROD | Linda Gomez | DATE 7 Dec 81 |

FIRST USED ON 7018078-0-0

SCALE NONE

SHEET 1 OF 1

digital

TITLE

11730 BACKPLANE

AWT REVISION STATUS

| SIZE | CODE | NUMBER | REV |
|---|---|---|---|
| A | WT | 7018080-0-2 | A |

DIST

DRA 123

TW

# FIELD MAINTENANCE PRINT SET



## TABLE OF CONTENTS


| | |
|---|---|
| B-TC-H7202-0-1 | H7202 POWER SUPPLY |
| B-DD-H7202-0 | H7202 POWER SUPPLY |
| E-UA-H7202-0-0 | H7202 POWER SUPPLY |
| K-PL-H7202-0-DBP | H7202 POWER SUPPLY PARTS LIST |
| D-IC-H7202-0-2 | H7202B INTERCONNECT |
| D-UA-H7200-0-0 | 5V POWER MODULE |
| K-PL-H7200-0-DBP | 5V POWER MODULE |
| B-UA-H7211-0-0 | COMMUNICATIONS POWER MODULE |
| K-PL-H7211-0-DBP | COMMUNICATIONS POWER MODULE |
| B-UA-H7213-0-0 | MEMORY POWER MODULE |
| K-PL-H7213-0-DBP | MEMORY POWER MODULE |
| E-AD-7017635-0-0 | H7202 BOX ASSY |
| K-PL-7017635-0-DBP | H7202 BOX ASSY |
| D-UA-5413857-0-0 | MAJOR BOARD (+5V60A) |
| K-PL-5413857-0-DBP | MAJOR BOARD (+5V60A) |
| D-CS-5413857-0-1 | MAJOR BOARD (+5V60A) |
| E-UA-5413869-0-0 | MEMORY REG BOARD (+5V) |
| K-PL-5413869-0-DBP | MEMORY REG BOARD (+5V) |
| D-CS-5413869-0-1 | MEMORY REG BOARD (+5V) |
| E-UA-5413867-0-0 | COM REG BOARD (±15V) |
| K-PL-5413867-0-DBP | COM REG BOARD (±15V) |
| D-CS-5413867-0-1 | COM REG BOARD (±15V) |
| D-UA-5413877-0-0 | DISTRIBUTION BOARD |
| K-PL-5413877-0-DBP | DISTRIBUTION BOARD |
| D-CS-5413877-0-1 | DISTRIBUTION BOARD |
| A-SP-H7202-B-0 | H7202B P.S. ENG. SPEC |
| A-SP-3700635-0-0 | PKG. P.S. H7202/H7200 |


| UNIT VARIATIONS COVERED BY THIS PRINT SET |
|---|
| H7202B |

**Field Maintenance Print Set** NO. MP01257

**Digital Equipment Corporation**

REV. B

SIZE B | CODE TC | NUMBER H7202-0-1

| REVISIONS | | |
|---|---|---|
| REV | B | |
| CHG. NO. | H7202-TW1 | |
| DATE | 3-82 | |

| USED ON OPTION/MODEL |
|---|
| VAX11/730 |

SHEET 1 OF 1

| | | |
|---|---|---|
| DRN. | G. Katayis | DATE 2/20/81 |
| CHK'D | J.F. Sullivan | DATE 2/20/81 |
| PROJ. ENG. | C.S. Landstrom | DATE 2/20/81 |
| FIELD SERV. | W. Macy | DATE 10/9/81 |

digital

TITLE: H7202 POWER SUPPLY

| SIZE | CODE | NUMBER | REV. |
|---|---|---|---|
| B | TC | H7202-0-1 | B |

DIST.

DRB 124

TW

# DRAWING DIRECTORY



## UNIT VARIATIONS

| VAR | TITLE |
|---|---|
| H7202B | H7202 POWER SUPPLY |

REVISIONS

| REV. | CHANGE NO. | CHK |
|---|---|---|
| | | |

USED ON OPTION/MODEL: VAX11/730

SHEET 1 OF 3

| | | | |
|---|---|---|---|
| DRN. | 9. Katagiri | DATE | 2/20/81 |
| CHK'D. | J.F. Sullivan | DATE | 2/20/81 |
| PROJ. ENG. | C S Lapadula | DATE | 2/20/81 |
| PROD. | V Mitchell | DATE | 10/19/81 |

TITLE: H7202 POWER SUPPLY

digital

| SIZE | CODE | NUMBER | REV |
|---|---|---|---|
| B | DD | H7202 - 0 | A |

DIST.

DRB 106A

TW

1

H7202 POWER SUPPLY
E-UA-H7202 - 0-0
K-PL-H7202 - 0-DBP

2

3

MEMORY POWER MODULE
B-DD-H7213-0

DISTRIBUTION BD
B-DD-5413877-0

4

COMMUNICATION POWER MODULE
B-DD-H7211-0

5

H7200 5V POWER MODULE
B-DD-H7200-0

6

H7202 BOX ASSY
E-AD-7017635-0-0
K-PL-7017635-0-DBP

8

CHASSIS ASSY
D-IA-7018136-0-0

9

POWER JUMPER
C-IA-7018139-0-0
K-PL-7018139-0-DBP

10

DEC BUS HARNESS
C-IA-7018142-0-0
K-PL-7018142-0-DBP

11

B. B. U. HARNESS
C-IA-7018143-0-0
K-PL-7018143-0-DBP

12

RETURN JUMPER
C-IA-7018520-0-0
K-PL-7018520-0-DBP

7

PKG POWER SUPPLY
H7202/H7200
A-SP-3700635-0-0

13

A.C. POWER ASSY
D-AD-7017636-0-0
K-PL-7017636-0-DBP

14

AC SWITCH HARNESS ASSY
D-IA-7017712-0-0
K-PL-7017712-0-DBP

| TITLE | | SIZE | CODE | NUMBER | REV |
|---|---|---|---|---|---|
| H7202 POWER SUPPLY | SHEET 2 OF 3 | B | DD | H7202 - 0 | A |

| FIND NO. | DRAWING NO. | DESCRIPTION | TYPE |
|---|---|---|---|
| 1 | MP02157 | FIELD MAINTENANCE PRINT SET (MP) | - |
| | B-TC-H7202-0-1 | FIELD MAINTENANCE PRINTSET (TC) | - |
| | E-UA-H7202-0-0 | H7202 POWER SUPPLY | E/M |
| | K-PL-H7202-0-DBP | H7202 POWER SUPPLY PARTS LIST | E/M |
| | D-MD-7424254-0-0 | COVER TOP | M |
| | D-IA-7424260-0-0 | PANEL, ACCESS | M |
| | B-MD-7425394-0-0 | COVER, SWITCH | M |
| | A-DC-3618426-0-0 | LABEL, P.S. H7202 | M |
| | A-DC-3612063-0-0 | LABEL ADHESIVE | M |
| | A-DC-3613211-0-0 | DECAL CSA | M |
| | A-DC-3618427-0-0 | LABEL, CAUTION | M |
| | A-DC-3615087-02 | LABEL, "DANGER-HIGH CURRENT" | M |
| 2 | B-DD-H7213-0 | MEMORY POWER MODULE | E/M |
| 3 | B-DD-5413877-0 | DISTRIBUTION BOARD | E/M |
| 4 | B-DD-H7211-0 | COMMUNICATION POWER MODULE | E/M |
| 5 | B-DD-H7200-0 | H7200 5V POWER MODULE | E/M |
| 6 | E-AD-7017635-0-0 | H7202 BOX ASSY | E/M |
| | K-PL-7017635-0-DBP | H7202 BOX ASSY PARTS LIST | E/M |
| | B-IA-7424257-0-0 | BRACKET POWER CONN | M |
| | D-MD-7425398-0-0 | INSULATOR, POWER CONN | M |
| | D-MD-7424259-0-0 | CONNECTOR MTG. BRACKET | M |
| | C-MD-7425494-0-0 | INSULATOR, P.C. BOARD | M |
| | C-MD-7425401-0-0 | INSULATOR, SHIELD | M |
| 7 | A-SP-3700635-0-0 | PKG POWER SUPPLY H7202/H7200 | M |
| 8 | D-IA-7018136-0-0 | CHASSIS ASSY | M |
| | E-MD-7424252-0-0 | CHASSIS, LEM | M |
| | D-MD-7424253-0-0 | PLATE, END | M |
| 9 | C-IA-7018139-0-0 | JUMPER, POWER | E/M |
| | K-PL-7018139-0-DBP | JUMPER, POWER PARTS LIST | E/M |
| 10 | C-IA-7018142-0-0 | DEC BUS HARNESS | E/M |
| | K-PL-7018142-0DBP | DEC BUS HARNESS | E/M |
| 11 | C-IA-7018143-0-0 | HARNESS, BBU | E/M |
| | K-PL-7018143-0-DBP | HARNESS, BBU PARTS LIST | E/M |
| 12 | C-IA-7018520-0-0 | JUMPER, RETURN | E/M |
| | K-PL-7018520-0-DBP | JUMPER, RETURN PARTS LIST | E/M |
| 13 | D-AD-7017636-0-0 | AC POWER ASSY | E/M |
| | K-PL-7017636-0-DBP | AC POWER ASSY PARTS LIST | E/M |
| | D-MD-7424258-0-0 | BRACKET, C.B. MTG | M |
| 14 | D-IA-7017712-0-0 | HARNESS ASSY, AC SWITCH | E/M |
| | K-PL-7017712-0-DBP | HARNESS ASSY, AC SWITCH PARTS LIST | E/M |

TYPE: E ELECTRICAL
M MECHANICAL
E/M ELECTRO/MECHANICAL

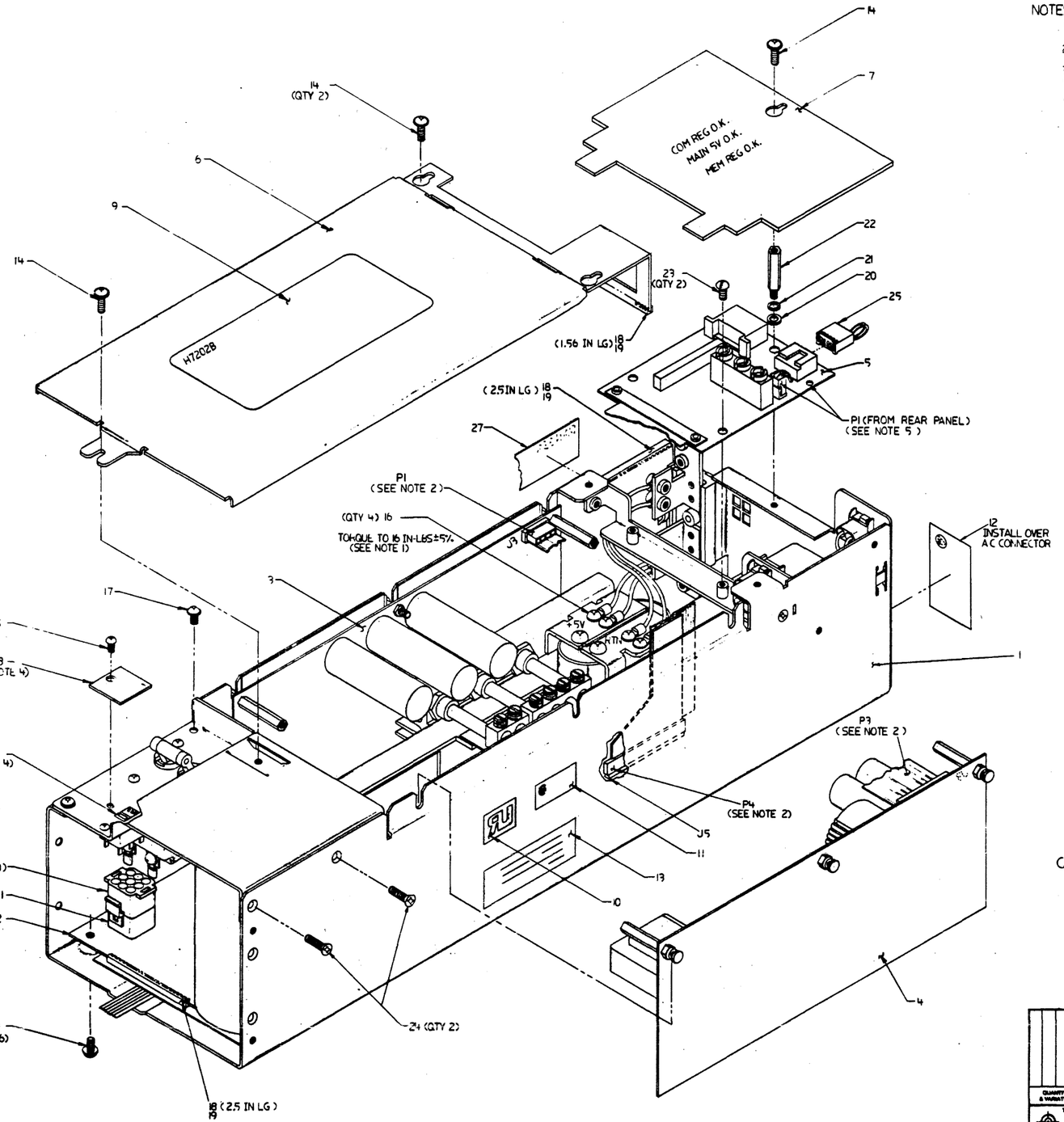
digital

| TITLE | SHEET | SIZE | CODE | NUMBER | REV |
|---|---|---|---|---|---|
| H7202 POWER SUPPLY | 3 OF 3 | B | DD | H7202-0 | A |

DRB 108A

TW

NOTES:
1. CONNECT RED LEADS TO +5V & BLACK LEADS TO RTN AS SHOWN USING ITEM 16.
2. CONNECT P1 OF ITEM 5 TO J3 OF ITEM 3, P4 OF ITEM TO J5 OF ITEM 2 & P3 OF ITEM 5 TO J3 OF ITEM 4.
3. CONNECT P1 OF ITEM 1 TO J1 OF ITEM 2.
4. BE SURE VOLTAGE SELECT SWITCH IS SET AT 220 V BEFORE INSTALLING ITEM 8.
5. ROUTE WIRES OF P1 AWAY FROM TESTER ALIGNMENT HOLE AS INDICATED.




CAUTION: OFF SHEET PARTS LIST SEE K-PL-H7202-0-DBP

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES AND THE FOLLOWING TOLERANCES APPLY (PER DEC STD 114)

THIRD ANGLE PROJECTION
DO NOT SCALE DRAWING
REMOVE BURRS AND BREAK SHARP CORNERS

| | | |
|---|---|---|
| DRAWN | T. Hamilton | 1/28/81 |
| ENGR | T. Hamilton | 3/2/81 |
| MFG | R. Kelly | 3/20/81 |
| QA | C. Taylor | 3/24/81 |
| PROJ MGR | T. Hamilton | 3/24/81 |

TITLE: H7202 POWER SUPPLY

| SIZE | DRAWING NO. | REV |
|---|---|---|
| E | H7202-0-0 | A |

B-DD-H7202-0

H7202-0-0 A

AUTOMATED BY PRTLST.3P(44)

# P A R T S  L I S T



| LINE | ITEM | DOCUMENT NUMBER | PART NUMBER | DESCRIPTION | QUANTITY PER VARIATION B |
|---|---|---|---|---|---|
| 1 | 1 | E-AD-7017635-0-0 | 7017635-00 | H7202 BOX ASSY. | 1 |
| 2 | 2 | D-UA-H7200-0-0 | H7200-00 | 5V POWER MODULE: 5V 60A,300V 200 | 1 |
| 3 | 3 | B-UA-H7211-0-0 | H7211-00 | COMM OPT PS: +15V 2A,-15V 3A,+12 | 1 |
| 4 | 4 | 3-UA-H7213-0-0 | H7213-00 | MEMORY PWR MODULE: +5V 15A,+12V | 1 |
| 5 | 5 | D-UA-5413877-0-0 | 5413877-00 | H7202 DIST BOARD | 1 |
| 6 | 6 | D-MD-7424254-0-0 | 7424254-00 | TOP COVER | 1 |
| 7 | 7 | D-IA-7424260-0-0 | 7424260-00 | ACCESS PANEL | 1 |
| 8 | 8 | B-MD-7425394-0-0 | 7425394-00 | COVER,SWITCH | 1 |
| 9 | 9 | | 3618426-01 | LABEL,P.S. H7202 | 1 |
| 10 | 10 | | 3612063-00 | LABEL, ,ADHESIVE I.D. FOR UL C | 1 |
| 11 | 11 | | 3613211-00 | DECAL,CLEAR PREPRINTED CSA 1-1/4 | 1 |
| 12 | 12 | | 3618427-01 | LABEL,CAUTION VOLTAGE SETTING | 1 |
| 13 | 13 | | 9009255-00 | LABEL, POWER SUPPLY, 2-15/16 " L | 1 |
| 14 | 14 | | 9009984-00 | SCREW, SEMS, PHILLIPS PAN HD. 6- | 10 |
| 15 | 15 | | 9010128-00 | SCREW,TAPPING,TYPE PAN,PHIL, | 1 |
| 16 | 16 | | 9010174-01 | SCREW,PAN,PHIL,SEMS 8-32X.31 L | 4 |
| 17 | 17 | | 9010148-01 | SCREW,TRUSS PHIL 6-32X 5/16 | 1 |
| 18 | 18 | | 9007035-00 | GROMMET #122-37-1500 | 7 |
| 19 | 19 | | 9009157-00 | ADH,LIQ.RM.TEMP CURING COLORLESS | A/R |
| 20 | 20 | | 9006656-00 | WASHER, FLAT, .312 O.D. X .156 I | 1 |
| 21 | 21 | | 9009882-00 | WASHER, LOCK, INT TOOTH #6 | 1 |
| 22 | 22 | | 9000001-05 | STANDOFF,HEX,M/F 6-32X 1 | 1 |
| 23 | 23 | | 9008212-00 | SCREW, NYLON, SLTD PAN HD, 6-32 | 2 |
| 24 | 24 | | 9009730-00 | SCREW, PHILLIPS FLAT AD, 6-32 X | 2 |
| 25 | 25 | C-IA-7018535-0-0 | 7018535-00 | JUMPER TOY POWER | 1 |
| 26 | 26 | | 3700635-02 | PKG. POWER SUPPLY H7202/H7200 | 1 |
| 27 | 27 | | 3615087-02 | LABEL,"DANGER-HIGH CURRENT" | 1 |

REVISION HISTORY

| ENG | ECO NUMBER | REV |
|---|---|---|
| --- | INITIAL | A |

BASIC PART NO: H7202

SECTION A OF A

SECTION. VARIATION INDEX
[A] B
[B]
[C]
[D]
[E]
[F]

DRN: T.MCCULLOUGH DATE: 19-FEB-81

CHK'D: J.SULLIVAN DATE: 19-FEB-81

DES.ENG.: A.KANTARGIS DATE: 19-FEB-81

RESP.ENG.: C.LANDINO DATE: 19-FEB-81

MFG.ENG.: V.MITCHELL DATE: 19-FEB-81

ASSEMBLY NUMBER: E-UA-H7202-0-0

TOP DOCUMENT NUMBER: B-DD-H7202-0-0

D I G I T A L

TITLE PARTS LIST

H7202 POWER SUPPLY

DOCUMENT NUMBER

| SIZE | CODE | NUMBER | REV |
|---|---|---|---|
| K | PL | H7202-0-DBP | A |

FILE NAME: Z2281A.PLS

EDIT # 10

AUTOMATED BY PRTLST.3P(44) PARTS LIST SHEET A2 OF A2

| LINE ITEM | DOCUMENT NUMBER | PART NUMBER | DESCRIPTION | QUANTITY PER VARIATION<br>B |
|---|---|---|---|---|

28 NOTE: ITEM 18 IS IN INCHES.
29 NOTE: ITEM 26 IS BULK PKG FOR (48) UNIT. FOR INDIVIDUAL PKG USE 3700635-01 QTY 1.

| D | I | G | I | T | A | L | TITLE H7202 POWER SUPPLY | SECTION A OF A |
|---|---|---|---|---|---|---|---|---|

| SIZE | CODE | DOCUMENT NUMBER | REV |
|---|---|---|---|
| K | PL | H7202-0-DBP | A |

H7202-0-2 | D | IC

H7211
COM POWER MODULE

J3 OUTPUTS

-15V
±15RTN
+15V
CH3OK A

P1

5V RTN
+5V

60 AMP OUTPUT

J2 BACKPLANE
1-5,7,9+5.1VB
6 RMT SENSE+
8 RMT SENSE-
10 LTC
11,13,14+5.1VB
12 BOOT EN
15,16 +5.1VB
17,19,20±15RTN
18 TOY RTN
21,22 -15V
23,24+15V
25,27,29,31,33-40 +5.1V B RTN
26 TOY+5
28 SIG RTN
30 DC.LOW
32 AC.LOW

J3 TU58 POWER
1 +12.3V
2 +12.3V RTN
3 +5.1VB
4 +5.1V B RTN

J4 FAN ASSEMBLY
1 +12.3V RTN
2 +12.3V
3 PS. RTN
4 AIR FLT
5 5V AUX
6 AIR FLT PULLUP

J5 BBU
J5 P1
1 +5 VB
2 TOY+5
3 +5 V B RTN
4 TOY RTN
5 BAT. STATUS
6 P.S. RTN
7 BAT. REQ.
8 MOD. EN.
9
10 BAT EN
11 P.S. RTN
12 P.S. RTN

P2
POWER CONTROL BUS
J6 P1
1 PWR REQ
2 SHT DN
3 BUS RTN

J7 CONSOLE
1 +5.1V B RTN
2 BAT. STATUS
3
4 STBY
5 PWR. REQ.
6 KEY
7
8 BUS RTN
9
10

J8 FAN
1 +12.3V
2 +12.3V RTN

CH O.K. INDICATORS

P1
-150VDC BBU
+150VDC

AC INPUT
FILTER
0
N

P3
3 4 1 2 6 5
P2

CHASSIS GROUND
CONNECTION MADE BY MOUNTING SCREWS

S1 VOLTAGE SELECTION
1B 1 1A
230 115
2B 2 2A

CB1 15A

J1
1 115 NEUT
2 KEY
3 -150VDC
4
5
6 230V NEUT
7 PHASE
8
9 +150VDC

70-17636 AC POWER ASSY

H7200
5V POWER MODULE

J3 J1
+150 VDC
-150 VDC
CHASSIS GND
+14V
-14V
BIAS RTN

J1 J2
CLOCK
CH2 INH
FREQ SHIFT
CH3 O K

J2 J4

J5 P3
RMT SENSE +
RMT SENSE -
AC. LOW
DC. LOW
KEY
LTC
SIG RTN
BOOT EN
BUS RTN
STBY
SHTDN
PWR.REQ.
BAT. EN.
MOD. EN.
5V AUX
BAT. REQ.
P.S. RTN
CH1OK A
AIR FLT
AIR FLT PULLUP
STBY SELECT
CH1 STBY
CH2 STBY
CH3 STBY

H7213
MEMORY POWER MODULE

J3 J1
+150VDC
-150VDC
CHASSIS GND
+14V
-14V
BIAS RTN

J6 J2
CLOCK
CH2 INH
FREQ SHIFT
THERMAL SHUTDOWN L
CH2 OK
CH2 CROBAR

J3 OUTPUTS
+5.1V B
5.1V B RTN
CH2 OK A
+12.3V
+12.3V RTN

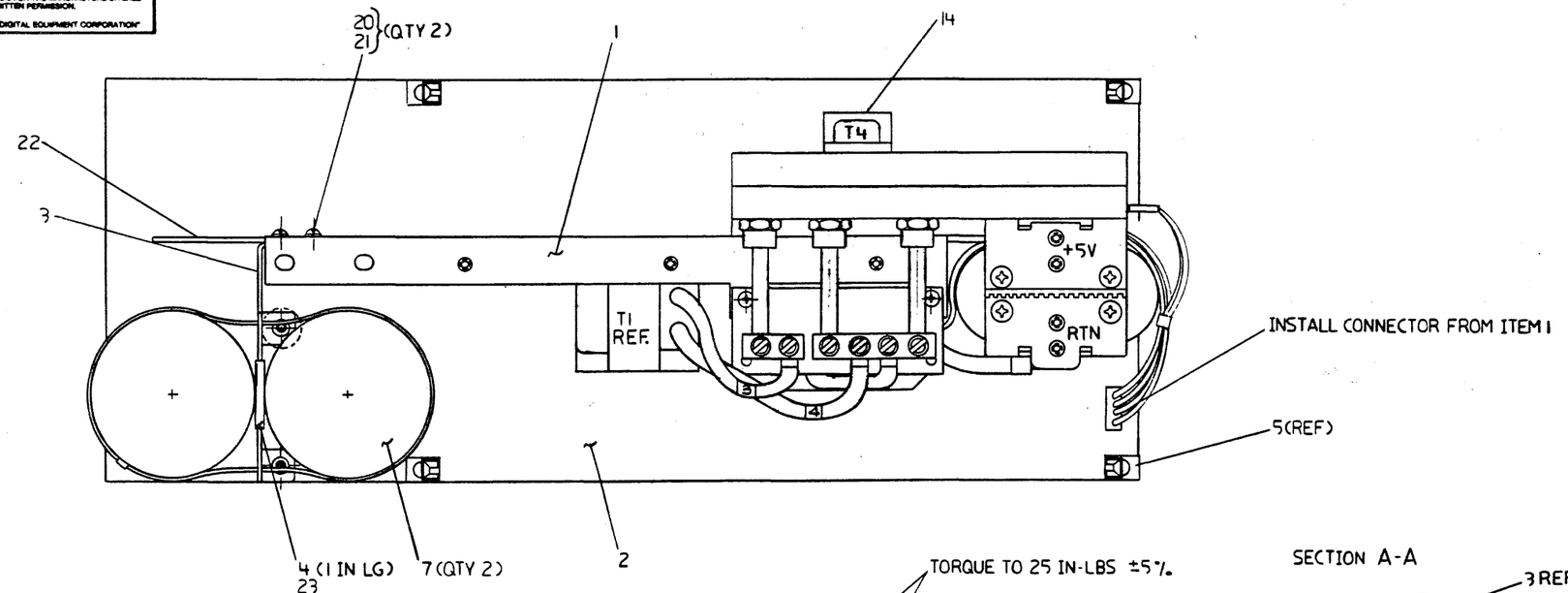
P4

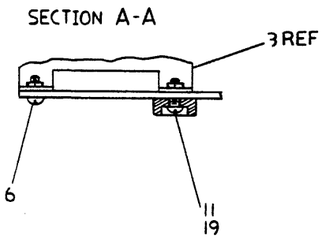
DISTRIBUTION BD
54-13677

| REVISION HISTORY | | | |
|---|---|---|---|
| REV. | ECO NUMBER | DATE | DRB NBR |

| | | |
|---|---|---|
| DRN. Thomas F Walsh | DATE 2-11-71 | TITLE digital |
| CHK'D. | DATE | H7202B INTERCONNECT |
| ENG. SUPV. CS Landers | DATE 10/9/81 | |
| PROJ. SUPV. CS Landers | DATE 10/9/81 | DOCUMENT NUMBER |
| MFG. SUPV. Richard M Cote | DATE 10/19/81 | SIZE D / CODE IC / NUMBER H7202-0-2 / REV. A |
| NEXT HIGH ASSY DOC. B-DD-H7202-0 | | SCALE / SHEET / OF |

T.W.




CAUTION: OFF SHEET PARTS LIST
SEE K-PL-H7200-0-DBP (Z2297B.PLS)

| REVISION HISTORY | | |
|---|---|---|
| DATE | ECO NUMBER | REV. |
| 2/19/81 | H7200-TW0101 | B |
| 11 AUG 1981 | | |
| C. LANDINO | | |

| DESCRIPTION | DRAWING NO. | PART NO. | ITEM NO. |
|---|---|---|---|

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES AND THE FOLLOWING TOLERANCES APPLY (PER DEC STD 114)

| INCHES TOLERANCES | ANGLES ±0°30' | APPLICABLE DIMENSION RANGE (CHECK ONE) | DIMENSION RANGE IN INCHES | | | | | |
|---|---|---|---|---|---|---|---|---|
| | | | OVER 0 TO 0.2 | OVER 0.2 TO 1.2 | OVER 1.2 TO 4.0 | OVER 4.0 TO 12.0 | OVER 12.0 TO 40.0 | OVER 40.0 TO 80.0 |
| .X = ± .1 | SURFACE QUALITY | ☐ | ± .02 | | ± .03 | ± .05 | ± .10 | |
| .XX = ± .02 | | ☐ | ± .004 | ± .008 | ± .012 | ± .016 | ± .024 | ± .04 |
| .XXX = ± .005 | MICROINCHES | ☐ | | | | | | |

QUANTITY & VARIATION

THIRD ANGLE PROJECTION

DO NOT SCALE DRAWING

REMOVE BURRS AND BREAK SHARP CORNERS

MATERIAL

FINISH

| | | |
|---|---|---|
| DRN Bob Forsyth | DATE 12/10/80 | TITLE digital |
| CHK'D J.F. Sullivan | DATE 2/17/81 | H7200 5V POWER MODULE |
| DES ENG E. Kantzis | DATE 2/19/81 | |
| PROJ ENG R.A. Martel | DATE 2/19/81 | DOCUMENT NUMBER |
| MFG ENG Peter M. Ott | DATE 2/19/81 | SIZE D CODE UA NUMBER H7200-0-0 REV. B |
| NEXT HIGHER DOC. F-UA-H7202-0-0 | | SCALE FULL SHEET OF |

TW 1

AUTOMATED BY PRTLST.3P(44)

# P A R T S  L I S T



| LINE | ITEM | DOCUMENT NUMBER | PART NUMBER | DESCRIPTION | QUANTITY PER VARIATION 00 |
|---|---|---|---|---|---|
| 1 | 1 | D-UA-7017638-0-0 | 7017638-00 | OUTPUT ASSY. | 1 |
| 2 | 2 | D-UA-5413857-0-0 | 5413857-00 | H7200 MAJOR BD | 1 |
| 3 | 3 | C-MD-7424279-0-0 | 7424279-00 | BRACKET,TAF,SUPPORT | 1 |
| 4 | 4 | | 9008209-00 | GROMMET, STRIP X 650 | 1 |
| 5 | 5 | D-MD-7425495-0-0 | 7425495-00 | CARD GUIDE | 4 |
| 6 | 6 | | 9010148-01 | SCREW TRUSS PHIL 6-32X 5/16 | 1 |
| 7 | 7 | | 1018989-00 | 3300 MFD 200V +50-10% AL EL | 2 |
| 8 | 8 | | 9010006-00 | TIE,CABLE BUNDL.DIA -4"TYPE=101 | 1 |
| 9 | 9 | | 1617441-00 | XFMR P=370V S=28,60,86V | 1 |
| 10 | 10 | | 9000038-07 | SCREW,PAN,PHIL 10-32X 3/8 BR/T | 4 |
| 11 | 11 | | 1216435-00 | BUMPER | 1 |
| 12 | 12 | | 9006656-00 | WASHER, FLAT, .312 O.D. X .156 I | 3 |
| 13 | 13 | | 9008185-00 | NUT,KEP 6-32X 1/4 AF | 3 |
| 14 | 14 | | 1617638-00 | XFMR,FLYBACK BIAS,HIGH FREQUENCY | 1 |
| 15 | 15 | | 9008978-00 | WASHER,LOCK,INT,.375OD X .200ID | 4 |
| 16 | 16 | | 9009950-01 | WASHER,FLAT BR/TIN .203IDX .4380 | 4 |
| 17 | 17 | | 9009800-05 | SCREW,PAN,PHILLIPS, 4X.38 | 4 |
| 18 | 18 | A-SP-3700635-0-0 | 3700635-03 | PKG. POWER SUPPLY H7202/H7200 | A/R |
| 19 | 19 | | 9009989-00 | SCREW,PAN PHIL, 6-32X 3/8 | 1 |
| 20 | 20 | | 9006659-00 | WASHER, FLAT, .375 O.D. X .156 I | 2 |
| 21 | 21 | | 9008212-00 | SCREW, NYLON, SLTD PAN HD, 6-32 | 2 |
| 22 | 22 | | 7426130-00 | BARRIER,B.S. | 1 |
| 23 | 23 | | 9009157-00 | ADH,LIQ.RM.TEMP CURING COLORLESS | A/R |

24 NOTE: ITEM 18 IS A CUSTOMER/FIELD SERVICE PKG AND THE QTY IS DETERMIND BY MFG-
25 NOTE: FOR BULK PKG (88) UNITS USE 3700635-04, QTY 1 .

| REVISION HISTORY | | |
|---|---|---|
| ENG | ECO NUMBER | REV |
| --- | INITIAL | A |
| --- | TW001 | A |
| CL | H7200-TW001 | B |

BASIC PART NO: H7200

SECTION A OF A

SECTION. VARIATION INDEX
[A] 00
[B]
[C]
[D]
[E]
[F]

DRN: T.MCCULLOUGH — DATE: 06-JAN-81

CHK'D: J.SULLIVAN — DATE: 06-JAN-81

DES.ENG.: A.KANTARGIS — DATE: 06-JAN-81

RESP.ENG.: D.MARTEL — DATE: 19-FEB-81

MFG.ENG.: V.MITCHELL — DATE: 19-FEB-81

ASSEMBLY NUMBER: D-UA-H7200-0-0

TOP DOCUMENT NUMBER: B-DD-H7202-0-0

D I G I T A L

TITLE PARTS LIST

H7200 5V POWER MODULE

DOCUMENT NUMBER

| SIZE | CODE | NUMBER | REV |
|---|---|---|---|
| K | PL | H7200-0-DBP | B |

FILE NAME: Z2297B.PLS

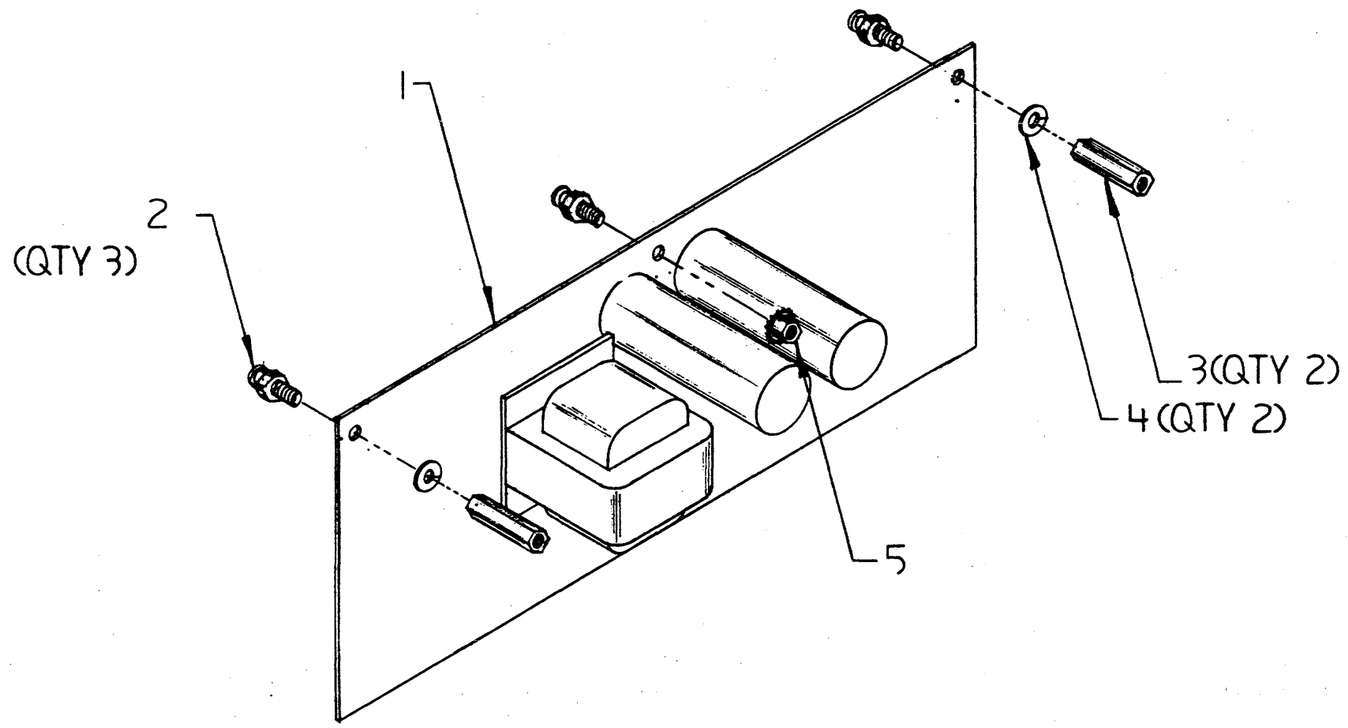
EDIT # 10

AUTOMATED BY PRTLST.3P(44) P A R T S L I S T SHEET A2 OF A2

| LINE ITEM | DOCUMENT NUMBER | PART NUMBER | DESCRIPTION | QUANTITY PER VARIATION 00 |
|---|---|---|---|---|
| 26 | NOTE: ITEM 4 IS IN INCHES. | | | |

| | | | |
|---|---|---|---|
| DIGITAL | TITLE H7200 5V POWER MODULE | SECTION A OF A | |

| SIZE | CODE | DOCUMENT NUMBER | REV |
|---|---|---|---|
| K | PL | H7200-0-DBP | B |




CAUTION: OFF SHEET PARTS LIST
SEE K-PL-H7211-0-DBP

| REVISIONS | REV. | CHANGE NO. | CHK |
|---|---|---|---|
| | A | | |

DRB 100A

| DESCRIPTION | DWG./PART NO. | ITEM NO. |
|---|---|---|

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES

| ANGLES ±0° 30' | CLASS OF ACCURACY (CHECK ONE) | NOMINAL DIMENSION RANGE INCHES | | | | | |
|---|---|---|---|---|---|---|---|
| | | OVER 0 TO .3 | OVER .3 TO 1.2 | OVER 1.2 TO 4.0 | OVER 4.0 TO 12.0 | OVER 12.0 TO 40.0 | OVER 40.0 TO 80.0 |
| SURFACE QUALITY IN ✓ | MEDIUM ☐ | ±.004 | ±.008 | ±.012 | ±.016 | ±.024 | ±.04 |
| MICROINCHES | PREFERRED ☐ | ±.012 | ±.016 | ±.025 | ±.04 | ±.063 | ±0.1 |

QUANTITY & VARIATION

THIRD ANGLE PROJECTION

REMOVE BURRS AND BREAK SHARP CORNERS

DO NOT SCALE DWG

MATERIAL —"—

FINISH —"—

| | | |
|---|---|---|
| DRN. Forsyth | 2/11/81 | FIRST USED ON H7202B |
| CHK'D J. Flatlie | 2/19/81 | digital |
| ENG. G. Katagi | 2/19/81 | TITLE COMMUNICATION POWER MODULE |
| PROJ. ENG. [illegible] | 2/19/81 | |
| PROD. [illegible] | 2-19-81 | |
| NEXT HIGHER ASSY. F-UA-H7202-0-0 | | |
| SCALE 1:2 | | SIZE B · CODE UA · NUMBER H7211-0-0 · REV. A |
| SHEET 1 OF 1 | | DIST. |

TW

AUTOMATED BY PRTLST.3P(44) — P A R T S  L I S T — SHEET A1 OF A1

| LINE | ITEM | DOCUMENT NUMBER | PART NUMBER | DESCRIPTION | QUANTITY PER VARIATION 00 |
|---|---|---|---|---|---|
| 1 | 1 | D-UA-5413867-0-0 | 5413867-00 | H7211 COMMUNICATION REG | 1 |
| 2 | 2 | B-MD-7425185-0-0 | 7425185-00 | SPACER,PCB | 3 |
| 3 | 3 | | 9006809-00 | SPACER, HEX, ALUM, .138 ID X 1.0 | 2 |
| 4 | 4 | | 9007801-00 | WASHER, LOCK, S.S. #6 | 2 |
| 5 | 5 | | 9009243-00 | NUT,KEP , 6-32 X5/16AF | 1 |
| 6 | 6 | A-SP-3700635-0-0 | 3700635-05 | PKG. POWER SUPPLY H7202/H7200 | A/R |

7 NOTE: ITEM 6 IS A CUSTOMER/FIELD SERVICE PKG AND THE QTY IS DETERMINED BY MFG.

(2( (2i0 ¢

REVISION HISTORY

| ENG | ECO NUMBER | REV |
|---|---|---|
| --- | INITIAL | A |

BASIC PART NO: H7211
SECTION A OF A
SECTIO.hVa[YATION INDEX:
[A] 00
[B]
[C]
[D]
[E]
[F]

| | | |
|---|---|---|
| DRN: T.MCCULLOUGH | DATE: 19-FEB-81 | |
| CHK'D: J.SULLIVAN | DATE: 19-FEB-81 | |
| DES.ENG.: A.KANTARGIS | DATE: 19-FEB-81 | |
| RESP.ENG.: R.MARTEL | DATE: 19-FEB-81 | |
| MFG.ENG.: V.MITCHELL | DATE: 19-FEB-81 | |
| ASSEMBLY NUMBER: B-UA-H7211-0-0 | TOP DOCUMENT NUMBER: B-DD-H7202-0-0 | |

D I G I T A L

TITLE: PARTS LIST
COMM. POWER MODULE

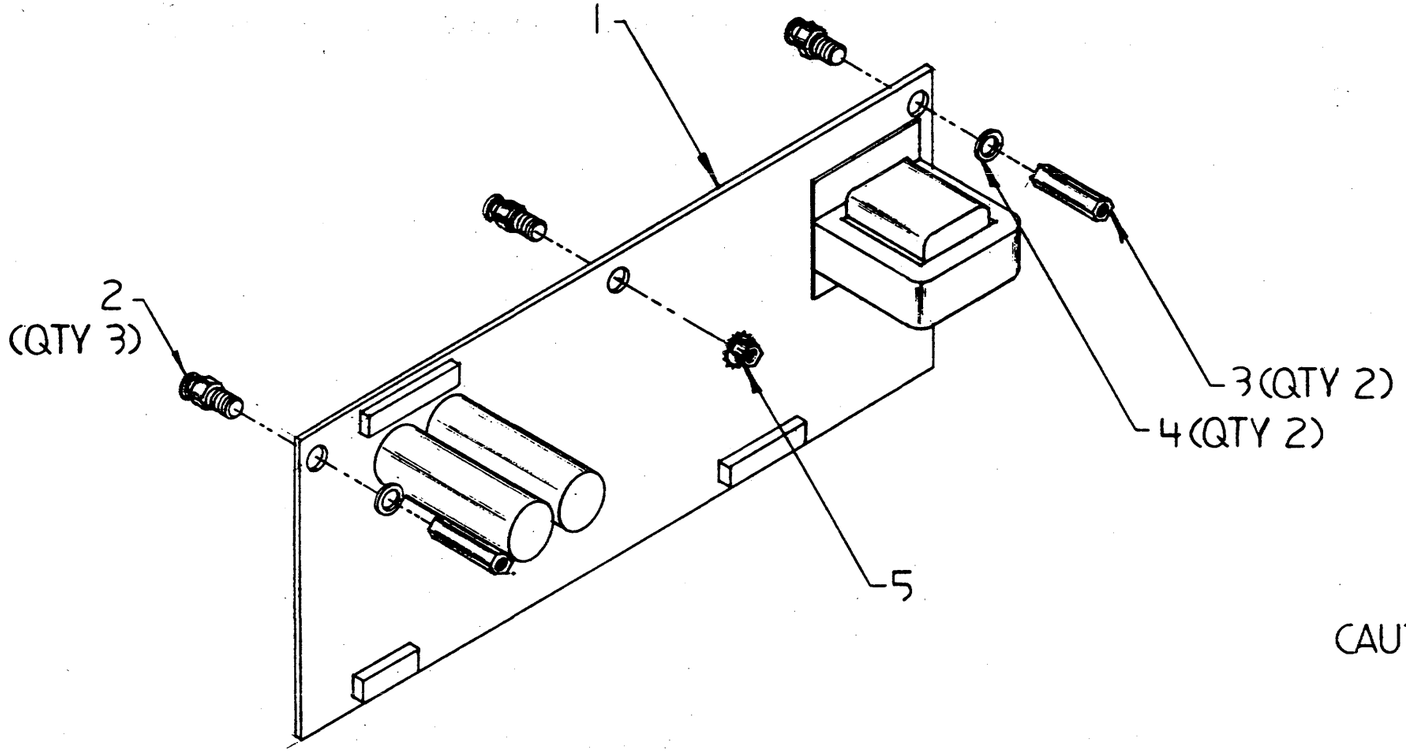
DOCUMENT NUMBER

| SIZE | CODE | NUMBER | REV |
|---|---|---|---|
| K | PL | H7211-0-DBP | A |

FILE NAME: Z2283.PLS
EDIT # 3

| REV. | NUMBER | CODE | SIZE |
|---|---|---|---|
| A | H-7213-0-0 | UA | B |






CAUTION: OFF SHEETS PARTS LIST SEE
K-PL-H7213-0-DBP

| REVISIONS | REV. | CHANGE NO. | CHK |
|---|---|---|---|
| | | | |

| DESCRIPTION | DWG./PART NO. | ITEM NO. |
|---|---|---|
| | | |

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES

| ANGLES ±0° 30' | CLASS OF ACCURACY (CHECK ONE) | NOMINAL DIMENSION RANGE INCHES | | | | | |
|---|---|---|---|---|---|---|---|
| | | OVER 0 TO .12 | OVER .12 TO 1.2 | OVER 1.2 TO 4.0 | OVER 4.0 TO 12.0 | OVER 12.0 TO 40.0 | OVER 40.0 TO 80.0 |
| SURFACE QUALITY IN ✓ | MEDIUM ☐ | ±.004 | ±.008 | ±.012 | ±.016 | ±.024 | ±.04 |
| MICROINCHES | PREFERRED ☐ | ±.012 | ±.016 | ±.025 | ±.04 | ±.063 | ±0.1 |

QUANTITY & VARIATION

THIRD ANGLE PROJECTION

REMOVE BURRS AND BREAK SHARP CORNERS

DO NOT SCALE DWG

MATERIAL

FINISH

| | | |
|---|---|---|
| DRN. Forsyth | 2/11/81 | |
| CHK'D J. Sullivan | 2/15/81 | |
| ENG. S. Katzeff | 2/19/81 | |
| PROJ. ENG. [illegible] | 2/19/81 | |
| PROD. [illegible] | 2-19-81 | |
| NEXT HIGHER ASSY. | | |
| E-UA-H7202-0-0 | | |
| SCALE 1:2 | | |
| SHEET OF | | |

FIRST USED ON
H7202B

digital

TITLE
MEMORY POWER MODULE

| SIZE | CODE | NUMBER | REV. |
|---|---|---|---|
| B | UA | H7213-0-0 | A |

DIST.

DRB 100A

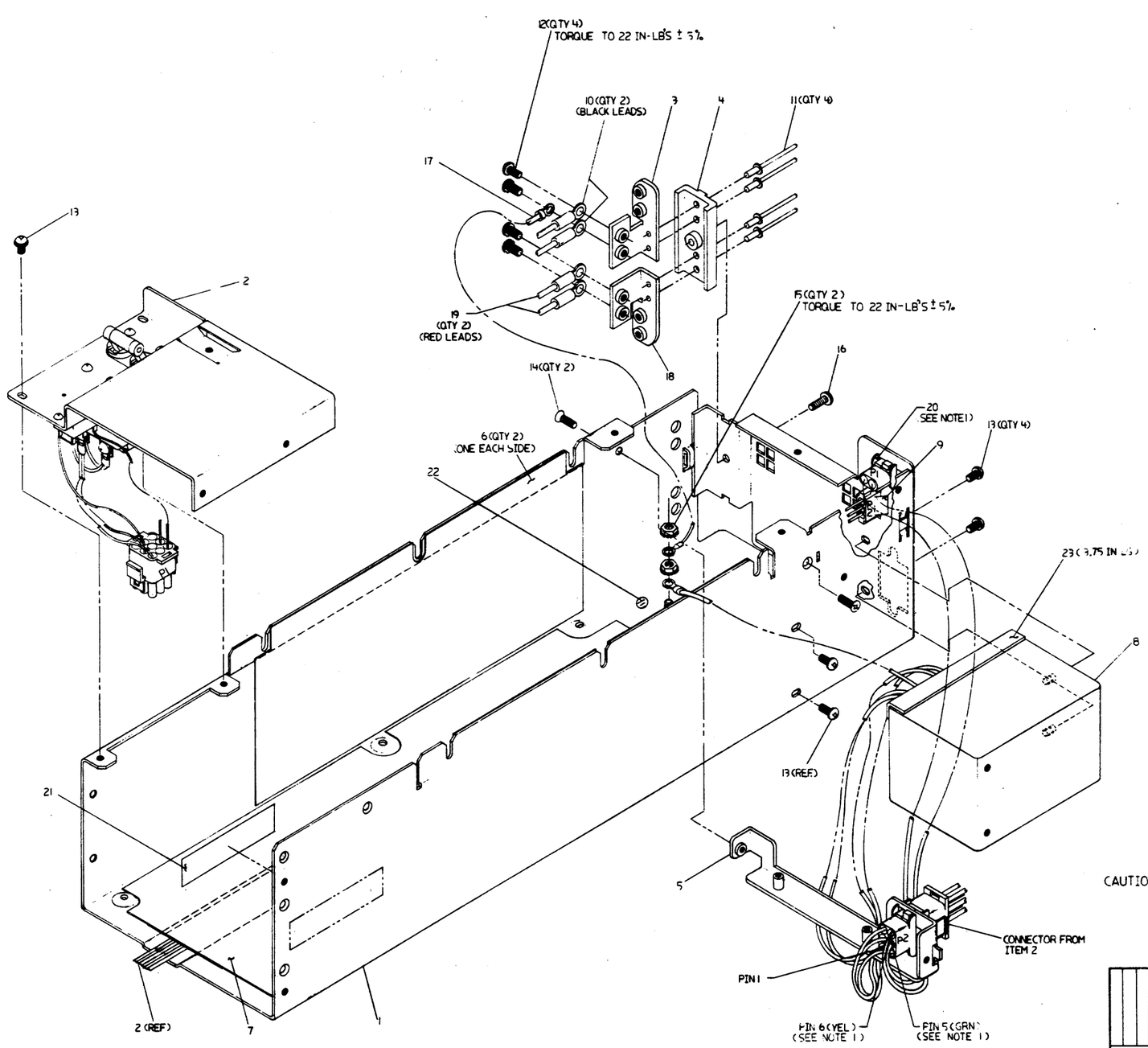
AUTOMATED BY PRTLST.3P(44) — P A R T S  L I S T — SHEET A1 OF A1

| LINE | ITEM | DOCUMENT NUMBER | PART NUMBER | DESCRIPTION | QUANTITY PER VARIATION 00 |
|---|---|---|---|---|---|
| 1 | 1 | D-UA-5413869-0-0 | 5413869-00 | H7213 MEMORY REG | 1 |
| 2 | 2 | B-MD-7425185-0-0 | 7425185-00 | SPACER,PCB | 3 |
| 3 | 3 | | 9006809-00 | SPACER, HEX, ALUM, .138 ID X 1.0 | 2 |
| 4 | 4 | | 9007801-00 | WASHER, LOCK, S.S. #6 | 2 |
| 5 | 5 | | 9009243-00 | NUT,KEP 6-32 X5/16AF | 1 |
| 6 | 6 | A-SP-3700635-0-0 | 3700635-05 | PKG. POWER SUPPLY H7202/H7200 | A/R |

7 NOTE: ITEM 6 IS A CUTOMER/FIELD SERVICE PKG AND THE QTY IS DETERMINED BY MFG.

| REVISION HISTORY | | | BASIC PART NO: H7213 | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ENG | ECO NUMBER | REV | SECTION A OF A | DRN: T.MCCULLOUGH | DATE: 19-FEB-81 | | D | I | G | I | T | A | L |
| --- | INITIAL | A | SECTION. VARIATION INDEX [A] 00 | CHK'D: J.SULLIVAN | DATE: 19-FEB-81 | TITLE | PARTS LIST | | | | | | |
| | | | [B] | DES.ENG.: A.KANTARGIS | DATE: 19-FEB-81 | MEMORY POWER MODULE | | | | | | | |
| | | | [C] | | | DOCUMENT NUMBER | | | | | | | |
| | | | [D] | RESP.ENG.: R.MARTEL | DATE: 19-FEB-81 | SIZE | CODE | NUMBER | | | | REV | |
| | | | [E] | MFG.ENG.: V.MITCHELL | DATE: 19-FEB-81 | K | PL | H7213-0-DBP | | | | A | |
| | | | [F] | ASSEMBLY NUMBER: B-UA-H7213-0-0 | TOP DOCUMENT NUMBER: B-UA-H7213-0-0 | FILE NAME: Z2282.PLS | | | | | | EDIT # 3 | |

NOTES:
1. INSTALL YEL LEAD (POS. NO. 1) OF ITEM 20 (P1) INTO POS. NO. 6 OF P2 FROM ITEM NO. 8, INSTALL GREEN LEAD (POS. NO. 2) OF ITEM 20 (P1) INTO POS. NO. 5 OF P2 FROM ITEM 8.




CAUTION: OFF SHEET PARTS LIST SEE K-PL-7017635-0-DBP

| REVISION HISTORY | | |
|---|---|---|
| DATE | ECO NUMBER | REV |
| 2/19/81 | TW680 | B |
| | Modified drawing to current standards C. LANDING | |

| | | | |
|---|---|---|---|
| DESCRIPTION | DRAWING NO. | PART NO. | FROM SEL |
| | 7017635-0-0 | | AD |

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES AND THE FOLLOWING TOLERANCES APPLY (PER DEC STD 119)

| INCHES TOLERANCES | ANGLES ±0°30' | MACHINABLE DIAMETER RANGE | DIMENSIONS IN INCHES | | | | | |
|---|---|---|---|---|---|---|---|---|
| X ± .1 | SURFACE QUALITY | | OVER 0 TO 6 | OVER 6 TO 12 | OVER 12 TO 24 | OVER 24 TO 48 | OVER 48 TO 96 | OVER 96 TO 144 |
| XX ± .03 | | METRIC DIMS | | | | | | |
| XXX ± .010 | MICROINCHES | | ± .005 | ± .010 | ± .015 | ± .020 | ± .030 | ± .040 |
| QUANTITY & VARIATION | | | ± .005 | ± .010 | ± .015 | ± .020 | ± .030 | ± .040 |

THIRD ANGLE PROJECTION

DO NOT SCALE DRAWING

REMOVE BURRS AND BREAK SHARP CORNERS

MATERIAL —

FINISH —

| | | |
|---|---|---|
| DRN | Tanguay | 7/6/81 |
| CHKD | R. Sullivan | 2/19/81 |
| ENG APVD | | 2/19/81 |
| QUALITY APVD | | 2/19/81 |
| PROJECT MGR APVD | | 2/19/81 |

E-UA-H7202-0-0

TITLE: H7202 BOX ASSY

DOCUMENT NUMBER: AD 7017635-0-0

SIZE: B

SCALE: 1:1

SHEET 1 OF 1

7017635-0-0 B

AUTOMATED BY PRTLST,JP(44) — P A R T S  L I S T — SHEET A1 OF A1

| LINE | ITEM | DOCUMENT NUMBER | PART NUMBER | DESCRIPTION | QUANTITY PER VARIATION 00 |
|---|---|---|---|---|---|
| 1 | 1 | D-IA-7018136-0-0 | 7018136-00 | ASSY CHASSIS | 1 |
| 2 | 2 | D-AD-7017636-0-0 | 7017636-00 | AC POWER ASSY | 1 |
| 3 | 3 | D-IA-7424257-0-0 | 7424257-00 | BRACKET,POWER CONN | 1 |
| 4 | 4 | D-MD-7425398-0-0 | 7425398-00 | INSULATOR,POWER CONNECTOR | 1 |
| 5 | 5 | D-MD-7424259-0-0 | 7424259-00 | CONN MTG BRKT. | 1 |
| 6 | 6 | C-MD-7425494-0-0 | 7425494-00 | INSULATOR,P.C.BOARD | 2 |
| 7 | 7 | C-MD-7425401-0-0 | 7425401-00 | INSULATOR,SHIELD | 1 |
| 8 | 8 | A-PS-1217838-0-0 | 1217838-00 | FILTER,LINE 115/250V,47-63HZ,6A | 1 |
| 9 | 9 | C-IA-7018142-0-0 | 7018142-00 | DEC BUS HARNESS | 1 |
| 10 | 10 | C-IA-7018139-0-0 | 7018139-00 | JUMPER, PWR | 2 |
| 11 | 11 | | 9006508-00 | RIVET, BLIND, .125 DIA X .419 LG | 4 |
| 12 | 12 | | 9010174-01 | SCREW,PAN,PHIL,SEMS 8-32X .31 L | 4 |
| 13 | 13 | | 9010148-01 | SCREW TRUSS PHIL 6-32X 5/16 | 5 |
| 14 | 14 | | 9009730-00 | SCREW, PHILLIPS FLAT AD, 6-32 X | 2 |
| 15 | 15 | | 9006565-00 | NUT,KEP , 10-32X 3/8 AF | 1 |
| 16 | 16 | | 9009800-08 | SCTEW,PAN,PHIL,TAP'G 8-16X .5 | 1 |
| 17 | 17 | C-IA-7018520-0-0 | 7018520-00 | RETURN JUMPER | 1 |
| 18 | 18 | D-IA-7424257-0-0 | 7424257-01 | BRKT-PWR-CONNECTOR | 1 |
| 19 | 19 | C-IA-7018139-0-0 | 7018139-01 | POWER JUMPER | 2 |
| 20 | 20 | C-IA-7018143-0-0 | 7018143-00 | BBU HARNESS | 1 |
| 21 | 21 | | 9009255-00 | LABEL, POWER SUPPLY, 2-15/16 " L | 1 |

| REVISION HISTORY | | | BASIC PART NO: 7017635 | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ENG | ECO NUMBER | REV | SECTION A OF A | DRN: T,MCCULLOUGH | DATE: 19-FEB-81 | | D | I | G | I | T | A | L | |
| --- | INITIAL | A | SECTION, VARIATION INDEX [A] 00 | CHK'D: J,SULLIVAN | DATE: 19-FEB-81 | TITLE PARTS LIST H7202 BOX ASSY | | | | | | | | |
| | | | [B] | DES.ENG.: A,KANTARGIS | DATE: 19-FEB-81 | | | | | | | | | |
| | | | [C] | RESP.ENG.: R,MARTEL | DATE: 19-FEB-81 | DOCUMENT NUMBER | | | | | | | | |
| | | | [D] | | | SIZE | CODE | NUMBER | | | | | REV | |
| | | | [E] | MFG.ENG.: V,MITCHELL | DATE: 19-FEB-81 | K | PL | 7017635-0-DBP | | | | | A | |
| | | | [F] | ASSEMBLY NUMBER: E-AD-7017635-0-0 | TOP DOCUMENT NUMBER: B-DD-H7202-0-0 | | | FILE NAME: Z2285.PLS | | | | | EDIT #: 2 | |



TW

COMPONENT SIDE VIEW

15.688 REF.

127 (6 PLACES) MARKED 'C' INSTALL AS SHOWN

1 REF (SIDE 2)

SWAGE ON COMPONENT SIDE

.30 MAX. COMPONENT HEIGHT IN THIS AREA

SOLDER

155 (2 PLACES)

VIEW C-C

155

149 (2 PLACES)

R45

VIEW B-B

SOLDER

.7" MAX

R44

C53

VIEW D-D

1 REF (SIDE 2) TYPICAL MOUNTING Q1 & Q2

41 (4 PLACES)

147

TORQUE TO 8 IN-LBS ±10%

143,146,80

Q1 & Q2

INSTALL ON OPPOSITE SIDE FOR Q2

42

VIEW A-A

143,146,142 TORQUE TO 8 IN-LBS ±10%

TYPICAL MOUNTING R3, R4, R7, R8, R63, D1

145 (2 PLACES)

1 (SIDE 2)

SEE NOTE 7

NOTE 2

SEE NOTE 6

2-5

0-4

2-1

1

1-1

1-2

1-6

0-7

45 INSTALL NEAR SIDE (3 PLACES) MARKED 'D'

1-10

NOTE 2

44 INSTALL NEAR SIDE (4 PLACES) MARKED 'B'

J6

J7

DI7

J5

J4

J2

J3

J1

NOTE 4 T4 REF

NOTE 4 T1 REF

NOTE 4 C2 REF

NOTE 4 C1 REF

5.900 REF

0-2

0-5

0-3

0-10

0-6

SEE NOTE 6

1-7, 1-11

2-2

2-3

0-1

106

SEE NOTE 6

1-9

144 (6PLCS)

1-8

1-4

145

1-3

154

NOTE 3

1-5

2-6

2-4

NOTES:
1. U/L APPROVAL REQUIRED.
2. MASK HOLES PRIOR TO WAVE SOLDER.
3. PULL PIN NO.3 FROM J1, PIN NO.5 FROM J5 PRIOR TO INSERTION.
4. C1, C2, T1 & T4 TO BE INSERTED AT NEXT HIGHER ASSY. LEVEL.
5. RAISE R11, R13, R60, D5 TO .10 OFF P.C. BOARD.

| STEP & REPEAT | ↑ Y AXIS ____ STEP ____ TIMES |
|---|---|
| | → X AXIS ____ STEP ____ TIMES |

| CHK | CHANGE NO | REV |
|---|---|---|
| | 5413857-TW1 | B |
| C. LANDINO | 5413857-TW2 | C |
| C. LANDINO | | |

6. DIODES D2, D3, D8, D9, D25, D27, D31, AND D41 ARE OPPOSITE ORIENTATION TO ALL OTHER DIODES.
7. CUT PIN 5 FROM J5 (FOR KEY).

ETCH REV. C

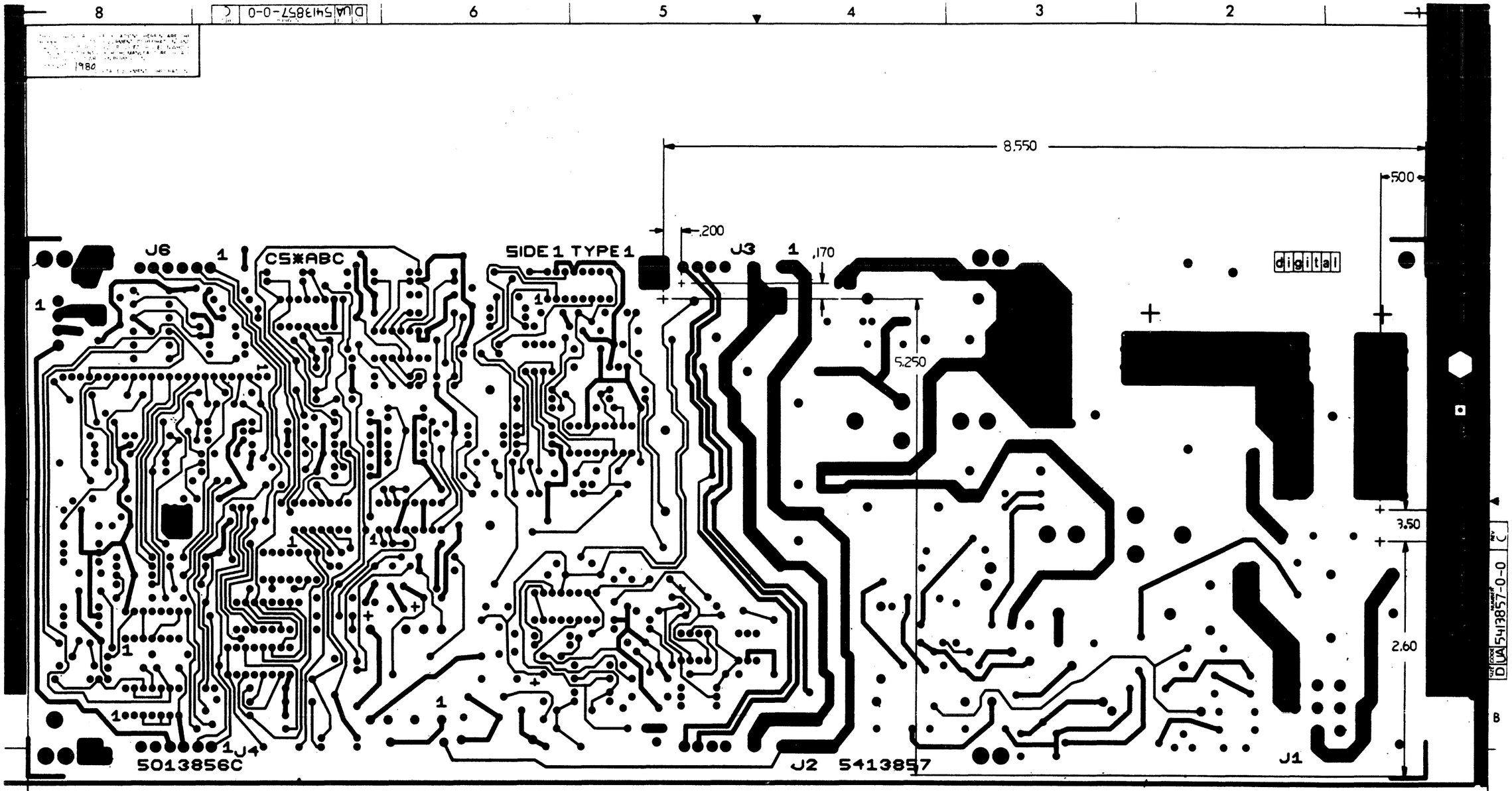
| SIGNATURES | DATE |
|---|---|
| DRN. | 12-4-82 |
| CHK'D. | 12-4-82 |
| MECH. ENG. | 2/18/81 |
| PROJ. ENG. | 2/10/81 |
| PROD. | 2-18-81 |
| SCALE 2/1 | |
| SHT. 1 OF 3 | |
| NEXT HIGHER ASSY. B-DD-5413857-0 | |

digital

TITLE H7200 MAJOR BD.

SIZE D | CODE UA | NUMBER 5413857-0-0 | REV C

WO# 172325




U/L APPVL REQD

DIMESIONAL TOLERANCE, INCHES .XXX= ±.020

| REVISION HISTORY | | |
|---|---|---|
| DATE | ECO NUMBER | REV |

TITLE: H7200 MAJOR BOARD

| DOCUMENT NUMBER | | | |
|---|---|---|---|
| SIZE | CODE | NUMBER | REV |
| D | UA | 5413857-0-0 | C |

SCALE 2/1 SHEET 2 OF 3

WIRE ADDS

0-1 FROM FEED THRU RIGHT SIDE OF R70 TO FEED THRU BELOW R8 USING ITEM 106

0-2 FROM FEED THRU BELOW E11-2 TO FEED THRU NEAR E9-1 USING ITEM 124

0-3 FROM FEED THRU BELOW E11-4 TO FEED THRU BELOW E9-1 USING ITEM 124

0-10 FROM FEED THRU ABOVE R117, TO FEED THRU RIGHT SIDE E10 PIN 8 USING ITEM 124.

COMPONENT ADDS

0-4 C5 (.01 UF) IN PARALLEL WITH R86

0-5 C6 (.1 UF) FROM ETCH AT C44 TO FEED THRU NEAR E 14/8

0-6 R9 (270, 1/4 W) FROM LEFT TERMINAL OF D28 TO RIGHT TERMINAL OF R58

0-7 R45 (30 1/4 W) FROM E6/5 TO E6/7; USE EYELETS (ITEM 149) AND WIRES (ITEM 124)
NOTE: EYELETS MUST BE 3/16 IN MINIMUM FROM ETCHES AT R63, R59

WIRE ADDS

1-1 FROM E6-5 TO LOWER END OF R45 USING ITEM 124.

1-2 FROM E6-7 TO UPPER END OF R45 USING ITEM 124.

1-3 FROM PTH AT LEFT OF D1 TO PTH ABOVE D1 USING ITEM 154.

COMPONENT DELETIONS

1-4 REMOVE R1, DEC # 1314270-02.

1-5 REMOVE R2, DEC # 1314270-02.

1-6 REMOVE R45, DEC # 1302751-00.

1-7 REMOVE D32, DEC # 1105275-00.

COMPONENT ADDS

1-8 INSTALL R1, DEC # 1314270-02, BY DRILLING TWO .055" HOLES ABOVE D1. SEE SHT. 2 OF UA FOR LOCATION. USE SPACERS ON LEADS. (ITEM 144).

1-9 INSTALL R2, DEC # 1314270-02, USING SPACERS ON THE LEADS (ITEM 144). INSERT ONE LEAD INTO PTH NEAR ETCH CUT TO THE RIGHT OF R4. TACK SOLDER THE OTHER LEAD TO THE ETCH ON THE OTHER SIDE OF THE ETCH CUT.

1-10 INSTALL R45, DEC # 1302751-00, BY DRILLING TWO .055" NEAR J3. SEE SHT. 2 OF UA FOR LOCATION. INSTALL EYELETS (ITEM 149) IN THESE HOLES. MOUNT R44 VERTICLE WITH SLEEVING (ITEM 155) ON LEAD. SEE VIEW B-B ON SHT. 1 OF UA.

1-11 CONNECT ANODE OF D32 TO CATHODE OF D35, BOTH DEC # 1105275-00, BY TWISTING LEADS, SOLDERING AND TRIMMING EXCESS, INSTALL SHORT PIECE OF ITEM 155 ON THE OTHER TWO LEADS AND INSERT AS ONE COMPONENT IN LOCATION SHOWN, (BELOW D33), WITH D35 ON THE LEFT AND D32 ON THE RIGHT. SEE VIEW C-C ON SHT. 1 OF UA.

NOTE: ECO 5413857-TW001 ALSO CHANGES THE VALUE OF R44, R49, R50, R56, R62, R64, R65, R86, R140, C29, C30 AND D31. SEE REV B PARTS LIST OR ECO IF MORE INFORMATION IS NEEDED.

ECO # 2

COMPONENT DELETIONS SIDE 1

2-1 DELETE C5 DEC # 1001610-00.

2-2 DELETE D28 DEC # 1117992-00.

COMPONENT ADDS SIDE 1

2-3 ADD D28 DEC # 1117992-01

2-4 ADD R145 DEC # 1311996-01 AND TO BOTH LEADS ADD SPACERS (ITEM 144) DEC # 9009798-00 INSERT ONE LEAD IN PTH RIGHT OF R2 AND TACK SOLDER REMAINING LEAD TO ETCH UNDER AND NEAR LEFT SIDE OF R3.

2-5 ADD R144, DEC # 1302751-00 AND C53 DEC # 1010978-36 BY TWISTING AND SOLDERING ONE LEAD FROM EACH COMPONENT TOGETHER (CLIP OFF EXCESS LEAD) TACK SOLDER LEAD OF R144 TO ETCH LEADING TO E8-8 AND TACK SOLDER LEAD OF C53 TO ETCH BETWEEN R44 AND C23.

WIRE ADD SIDE 1

2-6 FROM PTH BELOW AND BETWEEN R2 AND R145 TO ETCH NEXT TO PTH LOCATED TO THE LEFT OF D1 (TACK SOLDER) USE ITEM 154.

| REVISION HISTORY | | |
|---|---|---|
| DATE | ECO NUMBER | REV. |
| | | |

| TITLE | DOCUMENT NUMBER | | | |
|---|---|---|---|---|
| H7200 MAJOR BD | SIZE | CODE | NUMBER | REV. |
| | D | UA | 5413857-0-0 | C |
| | SCALE | | SHEET 3 OF 3 | |

D UA 5413857-0-0 C

AUTOMATED BY PRTLST.3P(44)

# P A R T S  L I S T



| LINE | ITEM | DOCUMENT NUMBER | PART NUMBER | DESCRIPTION | QTY PER VARIATION 00 | | REFERENCE DESIGNATOR |
|---|---|---|---|---|---|---|---|
| 1 | 1 | D-MD-5013856-0-0 | 5013856-00 | DRILL + ETCH BRD | 1 | | |
| 2 | 2 | | 1000012-00 | 56.0 MMF 100V 5%200PPM MICA | 1 | | C15 |
| 3 | 3 | | 1013466-06 | 100.0 MMF 50V 5% CER | 3 | | C25,C44,C47 |
| 4 | 4 | | 1010978-24 | .01 MFD 50V 10% CER | 1 | | C46 |
| 5 | 5 | | 1001765-00 | .005 MFD 100V 20% Z5T DISC | 4 | | C9,C13,C16,C19 |
| 6 | 6 | | 1018000-00 | 2.2 MFD 63V +50-10 AL EL | 2 | | C18,C22 |
| 7 | 7 | | 1010274-00 | .22 MFD 50V +80-20% Z5U CER | 1 | | C21 |
| 8 | 8 | | 1010978-36 | .1 MFD 50V 10% CER | 12 | | C14,C24,C34,C35,C40-C42,C45,C6, |
| | | | | | | CONT | C51,C43,C17 |
| 9 | 9 | | 1011847-01 | .01 MFD 400V 10% POLYPROP | 1 | | C36 |
| 10 | 10 | | 1011847-03 | .0047 MFD 600V 10% POLYPROP | 2 | | C3,C4 |
| 11 | 11 | | 1012784-00 | .047 MFD 50V +80-20% CER | 1 | | C10 |
| 12 | 12 | | 1010274-02 | 1 MFD 50V +80-20% CER | 1 | | C27 |
| 13 | 13 | | 1015755-00 | .047 MFD 270V 20% POLYPROP | 1 | | C11 |
| 14 | 14 | | 1000009-00 | 33.0 MMF 100V 5%200PPM MICA | 1 | | C39 |
| 15 | 15 | | 1014169-00 | 1000.0 MMF 100V 1%200PPM MICA | 2 | | C23,C26 |
| 16 | 16 | | 1011740-00 | 5600.0 MMF 50V 10% CER | 2 | | C28,C50 |
| 17 | 17 | | 1018000-01 | 15 MFD 25V +50-10 AL EL | 2 | | C20,C33 |
| 18 | 18 | | 1018001-00 | 100 MFD 20V 15% AL EL | 1 | | C32 |
| 19 | 19 | | 1000023-00 | 330.0 MMF 100V 5%200PPM MICA | 1 | | C49 |
| 20 | 20 | | 1011740-05 | 1000.0 MMF 50V 10% CER | 1 | | C37 |
| 21 | 21 | | 1000055-00 | 2200.0 MMF 250V 20% Y5S DISC | 1 | | C48 |
| 22 | 22 | | 1018929-00 | 330.0 MMF 1000V 5% 70PPM MIC | 1 | | C30 |
| 23 | 23 | | 1018001-01 | 15 MFD 60V 15 % AL EL | 1 | | C31 |
| 24 | 24 | | 1012783-00 | .022 MFD 50V +80-20% CER | 2 | | C12,C29 |
| 25 | 25 | | 1012312-00 | .47 MFD 50V +80-20% CER | 1 | | C52 |
| 26 | 26 | | 1117992-00 | 1N 5758 DIAC@20V BILATERAL TRIG | 1 | | D28 |
| 27 | 27 | | 1110968-00 | 2N 5062 SCR@100V I=.8A TO92 | 1 | | D29 |
| 28 | 28 | | 1105275-00 | D 672 TR= 15NS PIV= 60V SI | 35 | | D18,D22-D27,D32,D33,D41-D65,D35 |
| 29 | 29 | | 1112594-02 | A115M PIV=600 I= 3A | 2 | | D2,D3 |

| REVISION HISTORY | | | BASIC PART NO: 5413857 |
|---|---|---|---|
| ENG | ECO NUMBER | REV | SECTION A OF A |
| --- | INITIAL | B | SECTION.VARIATION INDEX |
| | | | [A] 00 |
| | | | [B] |
| | | | [C] |
| | | | [D] |
| | | | [E] |
| | | | [F] |
| | | | [H] |
| | | | [J] |
| | | | [K] |
| | | | [L] |
| | | | [M] |
| | | | [N] |

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| DRN: J. FERGUSON | DATE: 16-NOV-81 | | D | I | G | I | T | A | L | |
| CHK'D: K. SHEYTANIAN | DATE: 16-NOV-81 | TITLE | PARTS LIST | | | | | | | |
| DES.ENG: C. LANDINO | DATE: 16-NOV-81 | H7200 MAJOR BOARD | | | | | | | | |
| RESP.ENG.: C. LANDINO | DATE: 16-NOV-81 | DOCUMENT NUMBER | | | | | | | | |
| MFG.ENG.: H. ORTIZ | DATE: 16-NOV-81 | SIZE | CODE | NUMBER | | | | | REV | |
| | | K | PL | 5413857-0-DBP | | | | | B | |
| ASSEMBLY NUMBER: D-UA-5413857-0-0 | TOP DOCUMENT NUMBER: B-DD-5413857-0-0 | FILE NAME: Z13108.PLS | | | | | | | EDIT #: 6 | |

| LINE | ITEM | DOCUMENT NUMBER | PART NUMBER | DESCRIPTION | QTY PER VARIATION 00 | REFERENCE DESIGNATOR |
|---|---|---|---|---|---|---|
| 30 | 30 | | 1112595-01 | A114B PIV=200 I= 1A | 11 | D14-D16,D19-D21,D34,D37-D40 |
| 31 | 31 | | 1114245-00 | NBS30600LPIV=600 I=30A | 1 | D1 |
| 32 | 32 | | 1112595-02 | A114M PIV=600 I= 1A | 4 | D8,D9,D13,D30 |
| 33 | 33 | | 1117061-00 | MCR 69-1 THYRISTOR | 1 | D17 |
| 34 | 34 | | 1105796-01 | 5796-1PIV=400 I=1A DO41 | 4 | D4-D7 |
| 35 | 35 | | 1110994-00 | 1N 751A VZ= 5.1 5% .40W | 1 | D68 |
| 36 | 36 | | 1100113-00 | D 662 OS 600PCB(STABISTOR) | 2 | D66,D67 |
| 37 | 37 | | 1212297-02 | MATE-N-LOK 9PIN UNIV HEADER | 1 | J1 |
| 38 | 38 | | 1218241-00 | HEADER.156 8PIN KEYED | 2 | J2,J3 |
| 39 | 39 | | 1216122-08 | HEADER.156 6POS KEYED | 2 | J4,J6 |
| 40 | 40 | | 1212518-04 | HEADER.100 24POS STRAIGHT | 1 | J5 |
| 41 | 41 | | 1214789-00 | INSERT,THREADED 6-32 ,BRASS,ELEC | 4 | |
| 42 | 42 | | 1217304-00 | HEAT SINK,W/NON-THREADED INSERT | 2 | |
| 43 | 43 | | 1216122-00 | HEADER.156 4POS KEYED | 1 | J7 |
| 44 | 44 | | 1214809-01 | INSERT,W/O INTERNAL THREADS,THRU | 4 | |
| 45 | 45 | | 1214809-03 | INSERT,W/O INTERNAL THREADS,THRU | 3 | |
| 46 | 46 | | 1300202-00 | 47.0 .25 W 5.0 % CC | 5 | R35,R36,R74,R62,R140 |
| 47 | 47 | | 1300229-00 | 100.0 .25 W 5.0 % CC | 2 | R58,R104 |
| 48 | 48 | | 1311337-00 | 56.0 5.0 W 5.0 % WW | 1 | R11 |
| 49 | 49 | | 1300288-00 | 270.0 2.0 W10.0 % CC | 1 | R13 |
| 50 | 50 | | 1300365-00 | 1.0 K .25 W 5.0 % CC | 4 | R18,R25,R47,R119 |
| 51 | 51 | | 1313469-00 | 240.0 .25 W 5.0 % CC | 1 | R29 |
| 52 | 52 | | 1303313-00 | 12.10 K .25 W 1.0 % RN55D-F10 | 2 | R26,R46 |
| 53 | 53 | | 1300447-00 | 4.70 K .25 W 5.0 % CC | 5 | R40,R96,R116,R120,R126 |
| 54 | 54 | | 1300479-00 | 10.0 K .25 W 5.0 % CC | 8 | R87,R117,R123,R127,R133,R134, CONT R136,R71 |
| 55 | 55 | | 1300496-00 | 15.0 K .25 W 5.0 % CC | 4 | R41,R118,R125,R142 |
| 56 | 56 | | 1301317-00 | 10.0 .25 W 5.0 % CC | 2 | R19,R20 |
| 57 | 57 | | 1301422-00 | 7.50 K .25 W 5.0 % CC | 3 | R38,R138,R73 |
| 58 | 58 | | 1301775-00 | 820.0 .25 W 5.0 % CC | 3 | R30,R97,R121 |
| 59 | 59 | | 1302466-00 | 100.0 K .25 W 5.0 % CC | 3 | R124,R128,R130 |
| 60 | 60 | | 1300277-00 | 220.0 1.0 W10.0 % CC | 1 | R61 |
| 61 | 61 | | 1302612-00 | 1.78 K .25 W 1.0 % RN55D-F10 | 1 | R84 |
| 62 | 62 | | 1302177-00 | 47.0 K .25 W 5.0 % CC | 10 | R37,R89,R90,R105-R107,R111-R113, CONT R131 |
| 63 | 63 | | 1302377-00 | 39.0 .25 W 5.0 % CC | 1 | R31 |
| 64 | 64 | | 1302398-00 | 470.0 K .25 W 5.0 % CC | 2 | R93,R108 |
| 65 | 65 | | 1302514-00 | 39.0 K .25 W 5.0 % CC | 1 | R39 |
| 66 | 66 | | 1302645-00 | 1.10 K .25 W 1.0 % RN55D-F10 | 1 | R34 |
| 67 | 67 | | 1303114-00 | 1.0 K .25 W 1.0 % RN55D-F10 | 7 | R16,R21-R24,R33,R57 |
| 68 | 68 | BLANK | | *** THIS ITEM IS NOT USED *** | - | |
| 69 | 69 | | 1313476-00 | 51.10 K .25 W 1.0 % RN55D-F10 | 1 | R85 |
| 70 | 70 | | 1305516-00 | 128.0 K .25 W .10% RN55E-B 2 | 1 | R80 |
| 71 | 71 | | 1309963-00 | 260.0 5.0 W 3.0 % WW | 2 | R7,R8 |
| 72 | 72 | | 1312546-00 | 16.50 K .25 W 1.0 % RN55D-F10 | 1 | R75 |
| 73 | 73 | | 1312932-00 | 36.0 K .25 W 5.0 % CC | 2 | R42,R122 |
| 74 | 74 | | 1311320-00 | 90.90 K .25 W 1.0 % RN55D-F10 | 1 | R48 |
| 75 | 75 | | 1313752-00 | 15.0 K .25 W 1.0 % RN55D-F10 | 1 | R86 |

| DIGITAL | TITLE | SECTION | SIZE | CODE | DOCUMENT NUMBER | REV |
|---|---|---|---|---|---|---|
| | H7200 MAJOR BOARD | A OF A | K | PL | 5413857-0-DBP | B |

| LINE | ITEM | DOCUMENT NUMBER | PART NUMBER | DESCRIPTION | QTY PER VARIATION 00 | REFERENCE DESIGNATOR |
|---|---|---|---|---|---|---|
| 76 | 76 | | 1314088-00 | 20.0 K 5.0 W 5.0 % WW | 2 | R3,R4 |
| 77 | 77 | | 1316444-00 | 150.0 K .25 W 1.0 % RN55D-F10 | 1 | R77 |
| 78 | 78 | | 1314350-00 | 1.0 2.0 W10.0 % FUSE | 2 | R5,R6 |
| 79 | 79 | | 1303110-00 | 19.60 .25 W 1.0 % RN55D-F10 | 1 | R28 |
| 80 | 80 | | 9006656-00 | WASHER, FLAT, .312 O.D. X .156 I | 2 | |
| 81 | 81 | | 1300255-00 | 150.0 1.0 W 5.0 % CC | 1 | R32 |
| 82 | 82 | | 1300488-00 | 12.0 K .25 W 5.0 % CC | 2 | R67,R91 |
| 83 | 83 | | 1300417-00 | 2.20 K .25 W 5.0 % CC | 3 | R94,R95,R141 |
| 84 | 84 | | 1301320-00 | 1.20 K .25 W 5.0 % CC | 1 | R43 |
| 85 | 85 | | 1311522-00 | 200.0 .25 W 5.0 % CC | 2 | R17,R88 |
| 86 | 86 | | 1314119-00 | 44.20 K .25 W 1.0 % RN55D-F10 | 1 | R78 |
| 87 | 87 | | 1313596-00 | 20.0 K .25 W 1.0 % RN55D-F10 | 1 | R51 |
| 88 | 88 | | 1301972-00 | 270.0 .25 W 5.0 % CC | 2 | R137,R9 |
| 89 | 89 | | 1305346-00 | 27.0 K .25 W 5.0 % CC | 8 | R98-R103,R109,R110 |
| 90 | 90 | | 1314643-00 | 430.0 K .25 W 5.0 % CC | 1 | R115 |
| 91 | 91 | | 1317522-00 | 1.0 .25 W 5.0 % CC | 1 | R76 |
| 92 | 92 | | 1300439-00 | 3.30 K .25 W 5.0 % CC | 1 | R27 |
| 93 | 93 | | 1300271-00 | 220.0 .25 W 5.0 % CC | 3 | R14,R132,R143 |
| 94 | 94 | | 1314270-02 | 2.50 15.0 % NTC THERM | 2 | R1,R2 |
| 95 | 95 | | 1303155-00 | 21.50 K .25 W 1.0 % RN55D-F10 | 2 | R79,R44 |
| 96 | 96 | | 1317968-00 | 150.0 K 2.0 W 5.0 % CC | 1 | R59 |
| 97 | 97 | | 1300368-00 | 1.0 K 1.0 W 5.0 % CC | 1 | R60 |
| 98 | 98 | | 1317595-00 | 270.0 K 1.0 W 5.0 % CC | 1 | R70 |
| 99 | 99 | | 1315052-00 | 500.0 5.0 W 5.0 % WW | 1 | R63 |
| 100 | 100 | | 1303312-00 | 10.0 K .25 W 1.0 % RN55D-F10 | 1 | R53 |
| 101 | 101 | | 1314252-00 | 130.0 K .25 W 1.0 % RN55D-F10 | 1 | R52 |
| 102 | 102 | | 1312682-00 | 3.0 3.0 W 5.0 % WW | 1 | R12 |
| 103 | 103 | | 1315518-02 | 10.0 1.0 W10.0 % FUSE | 1 | R49 |
| 104 | 104 | | 1314990-00 | 158.0 K .25 W 1.0 % RN55D-F10 | 1 | R114 |
| 105 | 105 | | 1313589-00 | 1.40 K .25 W 1.0 % RN55D-F10 | 1 | R15 |
| 106 | 106 | | 9107688-55 | WIRE(WRAP)24AWG UL1327 | A/R | |
| 107 | 107 | | 1302388-00 | 2.0 K .25 W 5.0 % CC | 1 | R92 |
| 108 | 108 | | 1301969-00 | 22.0 .25 W 5.0 % CC | 1 | R135 |
| 109 | 109 | | 1302751-00 | 30.0 .25 W 5.0 % CC | 1 | R45 |
| 110 | 110 | | 1304841-00 | 75.0 K .25 W 5.0 % CC | 1 | R139 |
| 111 | 111 | | 1301423-00 | 6.80 K .25 W 5.0 % CC | 1 | R66 |
| 112 | 112 | | 1302394-00 | 30.0 K .25 W 5.0 % CC | 1 | R68 |
| 113 | 113 | | 1303045-00 | 3.16 K .25 W 1.0 % RN55D-F10 | 1 | R82 |
| 114 | 114 | | 1302859-00 | 5.76 K .25 W 1.0 % RN55D-F10 | 1 | R56 |
| 115 | 115 | | 1303044-00 | 100.0 K .25 W 1.0 % RN55D-F10 | 1 | R83 |
| 116 | 116 | | 1309414-00 | 9.76 K .25 W 1.0 % RN55D-F10 | 1 | R81 |
| 117 | 117 | | 1510705-00 | XA 05 NPN 500MW SI 60 30 P | 6 | Q4-Q6,Q8,Q11,Q18 |
| 118 | 118 | | 1510706-00 | XA 55 PNP 500MW SI 60 50 P | 5 | Q9,Q10,Q12,Q17,Q19 |
| 119 | 119 | | 1511686-01 | FET N 350MW TO-92 | 3 | Q13,Q14,Q16 |
| 120 | 120 | | 1517365-00 | 2N 6678 NPN 175W SI | 2 | Q1,Q2 |
| 121 | 121 | | 1512790-00 | D 44C12 NPN 30W SI | 1 | Q3 |
| 122 | 122 | | 1517551-00 | J 176 FET 350MW SI P CHNNL | 1 | Q15 |
| 123 | 123 | | 1516119-00 | NPN 75W SI | 1 | Q7 |

| DIGITAL | TITLE | SECTION | SIZE | CODE | DOCUMENT NUMBER | REV |
|---|---|---|---|---|---|---|
| | H7200 MAJOR BOARD | A OF A | K | PL | 5413857-0-DBP | B |

AUTOMATED BY PRTLST.3P(44) — P A R T S  L I S T — SHEET A4 OF A4

| LINE | ITEM | DOCUMENT NUMBER | PART NUMBER | DESCRIPTION | QTY PER VARIATION 00 | REFERENCE DESIGNATOR |
|---|---|---|---|---|---|---|
| 124 | 124 | | 9105740-55 | WIRE(WRAP)30AWG UL1423 | A/R | |
| 125 | 125 | | 1617557-00 | XFMR,CURRENT RATIO 1:2:100 PC MT | 1 | T3 |
| 126 | 126 | | 1617450-00 | PULSE XFMR,RATIO 40:3,3:1 | 1 | T2 |
| 127 | 127 | | 9010265-00 | SPACER,INT.THD, 6-32X .187 | 6 | |
| 128 | 128 | | 1911944-00 | 555CN TIMER,FUNCT.BLOCK | 1 | E5 |
| 129 | 129 | | 1912107-00 | 324 OP AMP,QUAD | 1 | E8 |
| 130 | 130 | | 1912108-00 | 339 VOLT CMPRTR,QUAD | 1 | E13 |
| 131 | 131 | | 1914194-00 | OPTP-COUPLED ISOLATOR | 1 | E1 |
| 132 | 132 | | 1916819-00 | 3527A MODULATOR,REGULATING | 1 | E6 |
| 133 | 133 | | 1917059-00 | 3543 P.S. SUPERVISORY CIR | 1 | E4 |
| 134 | 134 | | 1914156-00 | LM 393 VOLT.COMPARATOR DUAL | 1 | E2 |
| 135 | 135 | | 1916820-00 | SG3525J MODULATOR-REGULATING | 1 | E3 |
| 136 | 136 | | 2113635-00 | 4071B OR GATE-QUAD 2IN CMO | 1 | E11 |
| 137 | 137 | | 2113637-00 | 4073B AND GATE-TRIPLE 3IN | 1 | E12 |
| 138 | 138 | | 2113612-00 | 4019B AND-OR SELECT GATE-Q | 1 | E9 |
| 139 | 139 | | 2113645-00 | 4098B MULTIVIBRATOR,DUAL M | 1 | E7 |
| 140 | 140 | | 2113644-00 | 4093B NAND GATE-QUAD 2IN C | 2 | E14,E15 |
| 141 | 141 | | 2113615-00 | 4025UBNOR GATE-TRIPLE 3IN | 1 | E10 |
| 142 | 142 | | 9009676-00 | TERM,SOLDER BARRIER STR | 2 | |
| 143 | 143 | | 9007793-01 | SCREW,PAN,PHIL 6-32X 9/16 SS | 4 | |
| 144 | 144 | | 9009798-00 | SPACER, CERAMIC, .186 ODX.078 ID | 4 | |
| 145 | 145 | | 9009798-01 | SPACER, CERAMIC, .186 ODX.078 ID | 12 | |
| 146 | 146 | | 9007801-00 | WASHER, LOCK, S.S. #6 | 4 | |
| 147 | 147 | | 9008268-00 | COMPOUND, THERMAL JOINT | A/R | |
| 148 | 148 | | 1001610-00 | .01 MFD 50V +80-20% Z5U CER | 1 | C5 |
| 149 | 149 | | 9006731-00 | EYELET, (BRASS NICKEL PLATED) .0 | 2 | |
| 150 | 150 | | 1300521-00 | 47.50'K .25 W 1.0 % RN55D-F10 | 1 | R50 |
| 151 | 151 | | 1302379-00 | 75.0 .25 W 5.0 % CC | 1 | R64 |
| 152 | 152 | | 1318864-00 | 1.0 1.0 W 5.0 % WW | 1 | R65 |
| 153 | 153 | | 1115112-00 | PIV=800V I=1A | 1 | D31 |
| 154 | 154 | | 9107696-00 | WIRE,SOLID,18AWG,IPVC UL1429 | A/R | |
| 155 | 155 | | 9107256-11 | TUBING,THIN WALL,.027ID UL | A/R | |

156 NOTE: ITEM #124; .82' IS USED
157 NOTE: ITEM #106; .33' IS USED
158 NOTE: ITEM #154; .11' IS USED
159 NOTE: ITEM #155; .07' IS USED

| D I G I T A L | TITLE | SECTION | SIZE | CODE | DOCUMENT NUMBER | REV |
|---|---|---|---|---|---|---|
| | H7200 MAJOR BOARD | A OF A | K | PL | 5413857-0-DBP | B |

D CS 5413857-01 C

LTC PRI SHT 2

+15V SH2

-15V SH2

+150 VDC
230 V NEUT
-150 VDC
PHASE
PHASE
115V NEUT
115V NEUT
J1

D1 NBS 30 600L

R1 R2 R3 20K 5W R4 20K 5W R145

C1 3300 200V (REF) C2 3300 200V (REF)

T1 T2 T3

F R5 1A 2W F R6 1A 2W

Q1 2N6678 Q2 2N6678

D2 A115M D3 A115M

D4 IN5796 D5 IN5796 D6 IN5796 D7 IN5796

R7 260Ω 5W R8 260Ω 5W

C3 .0047 600V C4 .0047 600V

D8 A114M D9 A114M

+150 VDC
-150 VDC
CHASIS GND
+14V
-14V
BIAS RTN
J3 J2
+14V
-14V
BIAS RTN, SH2

D18 R28 19.6 1% R29 240

D20 A114B D19 A114B D21 A114B

R30 820Ω Q3 D44C12 R32 150Ω 1W R31 39Ω C13 5000PF R135 22

54-14573

R1 10,1/2W 10,1/2W R2

C1 .01 400V C2 .01 400V

D10 SD51 D11 SD51 D12 SD51

C7 15000 7.5V C8 15000 7.5V 1 SUH L1

S1 100°C

J7

+5V (60 AMP OUTPUT)

5V RTN

+14V

R25 1K R15 14K 1% R16 1K 1% D17 MCR69

R18 1K C10 .047 R17 200 C9 5000PF

THERM FLT SH3

J5

R19 10Ω R20 10Ω

R21 1K 1% R23 1.0 K 1%

R22 1K 1% R24 10 K 1% R26 12.1 K

E8 324

C12 .022 R27 3.3K

+14

Q5 A05 R43 1.2K

1 RMT SENSE +
2 RMT SENSE −
15 5V AUX
18 CH1 OK A

CH1 OK SH3

D13 A114M R11 56, 5W D14 A114B R12 3435W C11 .047 270V D15 A114B D16 A114B R13 270, 2W +14V R14 220Ω

2.5V, SH2

+14V

C20 15 C21 .22

13 VIN 15 VIN

R33 1.0K 1% R34 1.1K 1%

+14

16 VIN

UV DLY U.V. IND. E4 3543

R38 7.5K R39 39K Q4 A05 R41 15K

R42 36K C18 2.2 C19 5000PF

8 VCC 4 VCC

E5 555

COMP COMP R S Q OUTPUT DIS

3 OUTPUT 7 DIS

D27

2.5V

OV DLY SCR TRIG. O.V. IND. RMT. ST.

R35 47Ω R36 47Ω R40 4.7K

C15 56PF R37 47K

CL RESET

C16 5000PF

D22 D23 D25 D26

SCR RST SH2
P.W.LIMIT SH2
CH1 INH SH3
CH1 SYNC SH2

FF OSC OUT SYN. 3 OSC RT DIS CT

R44 2.15K 1% R45 30 C23 1000PF 1% Q6 A05 R47 1K C24 .1 R48 90.9K C25 100 PF

COMP AMP

C22 2.2 SFT ST SHT DN

5.1V REF REF OUT

R134 10K COM

E6 3527A

AUX SYNC SH2

NOTES: UNLESS OTHERWISE SPECIFIED
ALL DIODES ARE D672.
2 ALL CAPACITOR VALUES ARE IN MICROFARADS. ALL RESISTOR VALUES ARE IN OHMS.

| REVISION HISTORY | | | |
|---|---|---|---|
| DATE | ECO NUMBER | REV | |
| 11-14-81 | 5413857 - TW001 | B | C. LANDINO |
| 12-10-81 | 5413857 - TW002 | C | C. LANDINO |
| 2/18/82 | | | |

| | | |
|---|---|---|
| DRWN F. GUNDERSEN | DATE 6-2-80 | TITLE digital |
| CHK'D | DATE 12-03-80 | MAJOR BOARD H 7200 |
| DES. ENGR. | DATE 2/18/81 | |
| PROJ. ENGR. | DATE 2/18/81 | DOCUMENT NUMBER |
| MFG. ENGR. | DATE 2-18-81 | SIZE D CODE CS 5413857-01 REV C |
| NEXT HIGHER DOC. D-UA-5413857-0-0 | | SCALE SHEET 1 OF 3 |

8 7 6 5 4 3 2 1

+150VDC SH1

D28 IN5760A
D29 2N5062
R9 270
R58 100
R49 10 5W
R59 150K 2W
T4

R50 4.75K 1%
R51 20K 1%
R53 10K 1%
R52 130K
R56 5.76K 1%
R57 1K 1%
R63 500 5W
C51 1
C26 1000PF 1%
C27 1UF
C28 5600PF
C29 .022
C30 330PF 1KV
C31 15 60V
C50 5600PF
C52 47 50V

E3 3525A
$V_{IN}$
OSC OUT
SYNC
RT
DIS
OSC
COMP
AMP
COM
SHTDN
SFT ST
5.1V

R61 220,1W
R140 47
R62 47
D33
D35 D32
Q7 MJE13005
R64 75
R65 1/2,1W
D31 A114N
D30 A114M
R60 1K,1W
R139 75K
D34 A114B
D65
D64
R66 6.8K
R67 12K
R68 30K
E2 393

R70 270K,1W
R71 10K
R73 7.5K
C17 .1
E1
SH3

LTC PRI SH1
-150VDC SH1
CHAN 1 INH SH3
AUX SYNC SH1

D37 A114B
D38 A114B
D39 A114B
+14V, SH1, SH3
BIAS, RTN, SH1
-14V, SH1, SH3
C32 100 20V
C34 1
C33 15 25V
C35 .1
R76 1A
2.5V SH1
R74 47Ω
C36 .01 400V
R75 16.5K 1%
R77 150K 1%
R78 44.2K ,1%
R79 21.5K ,1%
E8 324
D67 D662
D66 D662
PW LIMIT SH1

R80 128K .1%
R81 9.76K 1%
R82 3.16K 1%
R83 100K 1%
+14V
E13 339
BULK MONITOR B SH3
2.5V SH1

D40 A114B
R1144 30
C53 .1
R84 1.78K 1%
R85 51.1K 1%
R86 15.0K 1%
BULK MONITOR A SH3

C37 100PF
R87 10K
R88 200
CH 1 SYNC SH1
SCR RST SH1

+14V
R89 47K
R90 47K
Q8 A05
D41
R93 470K
D42
R91 12K
R133 10K
R94 2.2K
R95 2.2K
D43
D44
J4 CLOCK
J6 CLOCK
D68 IN751A 5.1V

C39 33PF
R92 2K

| | | | |
|---|---|---|---|
| DRN F GUNDERSEN | DATE 6-2-80 | TITLE digital | |
| CHK'D Ferguson | DATE 12-23-80 | MAJOR BOARD H7200 | |
| ENGR Engr C.S. Gaudio | DATE 2/15/81 | | |
| MFG ENGR C.S. Gaudio | DATE 2/18/81 | DOCUMENT NUMBER | |
| MFG Mgr Peter M. Cody | DATE 2-18-81 | SIZE D CODE CS NUMBER 5413857-0-1 REV C | |
| NEXT HIGHER DOC D-UA-5413857-0-0 | | SCALE -- SHEET 2 OF 3 | |

REVISION HISTORY | REV. | ECO NUMBER | DATE

DCS 5413857-0-1 C

BULK MONITOR B SH2
BULK MONITOR A SH2
MOD EN
P.S.RTN
PWR.REQ.
SHTDN
STBY
BUS RTN
CH 1 OK SH1
THERMAL SHUTDOWN L
CH 2 OK
CH 3 OK
THERMAL SHUTDOWN L
THERM FLT SH1
AIR FLT
AIR FLT PULL UP
STBY SELECT
CH 1 STBY
CH 2 STBY
CH 3 STBY
J5
J6
J4
R97 820
R96 4.7K
Q19 A55
R98 27K
R99 27K
R100 27K
R101 27K
R105 47K
R102 27K
R103 27K
R104 100
R107 47K
R106 47K
R108 470K
C43 .01
R109 27K
R110 27K
R141 2.2K
C40 .1
C41 .1
C42 .1
C44 100PF
R111 47K
R112 47K
R113 47K
D45 D46 D47 D48 D49 D50
E15 A B C D
E14 C D
RESET
SET
LATCH
D51 D52 D53 D54 D55 D56 D62
D24
R114 158K 1%
C45 .1
R115 430K
C46 .01
R116 4.7K
E7 A 7±2mS
E7 B 2±1mS
TRIG
RST
START SHTDN SEQ
KEY OFF
E12 C
R117 10K
C47 100PF
E14 A B
E12A E11A E12B E11B E11C
STBY
SHT DN
E9 SELECTABLE GATE
E10C E10A
OUTPUTS OK
STBY OUTPUTS OK
R122 36K
E1 SH2
Q11 A05
R120 4.7K
R121 820
Q12 A55
R143 220
R118 15K
R119 1K
Q9 A55
R123 10K
C48 2200PF
Q13 5433
D57 D58 D59
R124 100K
R125 15K
R126 4.7K
Q10 A55
R127 10K
C49 33CPF
Q14 5433
R128 100K
D60 D61
Q15 J176
R130 100K
R138 7.5K
Q16 5433
R131 47K
R142 15K
Q17 A55
E11 E10 E16
R132 220
LTC
BAT. REQ.
AC. LOW
SIG RTN
D.C. LOW
J5
BOOT EN.
BAT. EN.
R136 10K
R137 270
Q18 A05
-14VS
C6 .1
CH 1 INH SH1, SH2
FREQ SHIFT
CH 2 INH
CH 3 INH
FREQ SHIFT

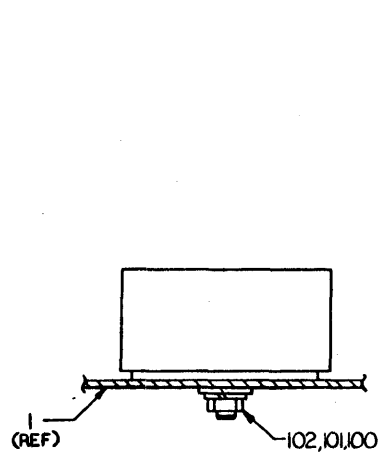
| # | TYPE | +14V | COM |
|---|---|---|---|
| E11 | 4071B | 14 | 7 |
| E12 | 4073B | 14 | 7 |
| E9 | 4019B | 16 | 8 |
| E7 | 4098B | 16 | 8 |
| E15 | 4093B | 14 | 7 |
| E14 | 4093B | 14 | 7 |
| E10 | 4025UB | 14 | 7 |

| | | |
|---|---|---|
| DRWN F GUNDERSEN | DATE 6-6-80 | TITLE digital |
| CHKD | DATE 8-22-80 | MAJOR BOARD H7200 |
| ENGR SUPV | DATE 2/19/81 | |
| PROJ SUPV | DATE 3/5/81 | |
| MFG SUPV | DATE 2-18-81 | |
| NEXT HIGHER ASSY D-UA-5413857-0-0 | | DOCUMENT NUMBER SIZE D CODE CS NUMBER 5413857-01 REV C |
| | | SCALE SHEET 3 OF 3 |

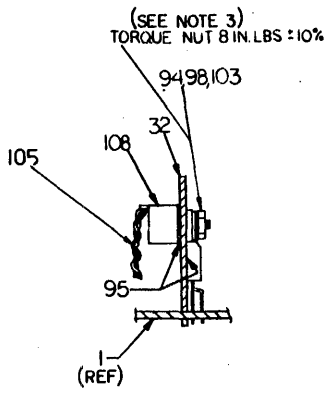
REVISION HISTORY — REV | ECO NUMBER | DATE

5413857-01 REV C

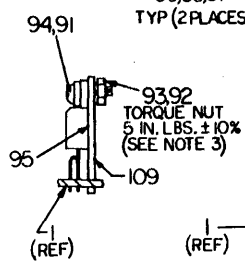
TW 1



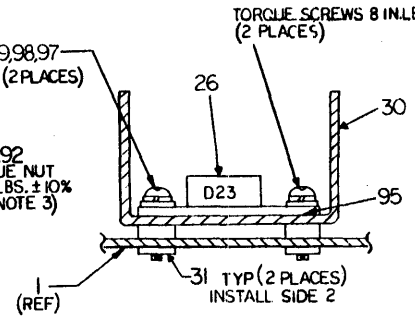

SECTION A-A
TYP FOR L1 & L2



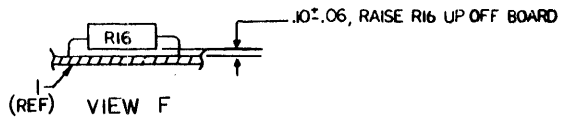

SECTION D-D
DII MTG



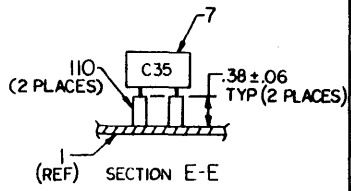

SECTION B-B
TYP FOR Q1 & Q2



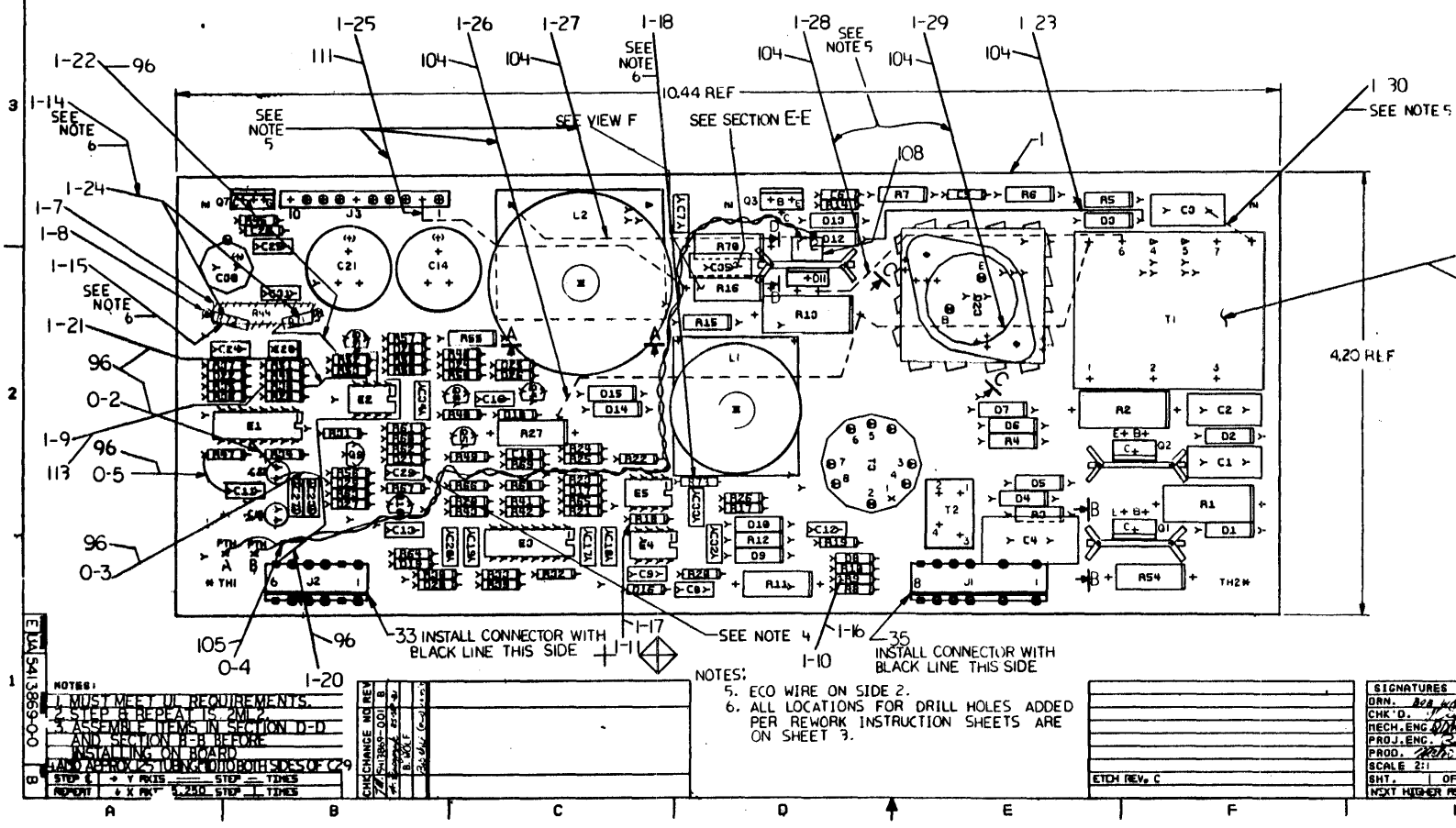

SECTION C-C




VIEW F




SECTION E-E




COMPONENT SIDE VIEW

NOTES:
1. MUST MEET UL REQUIREMENTS.
2. STEP 8 REPEAT IS 2MIL.
3. ASSEMBLE ITEMS IN SECTION D-D AND SECTION B-B BEFORE INSTALLING ON BOARD.
4. ADD APPROX 25 TURNS TO BOTH SIDES OF C9

NOTES:
5. ECO WIRE ON SIDE 2.
6. ALL LOCATIONS FOR DRILL HOLES ADDED PER REWORK INSTRUCTION SHEETS ARE ON SHEET 3.

| CHK | CHANGE NO | REV |
|---|---|---|
| | 5413869-001 | B |

ETCH REV: C

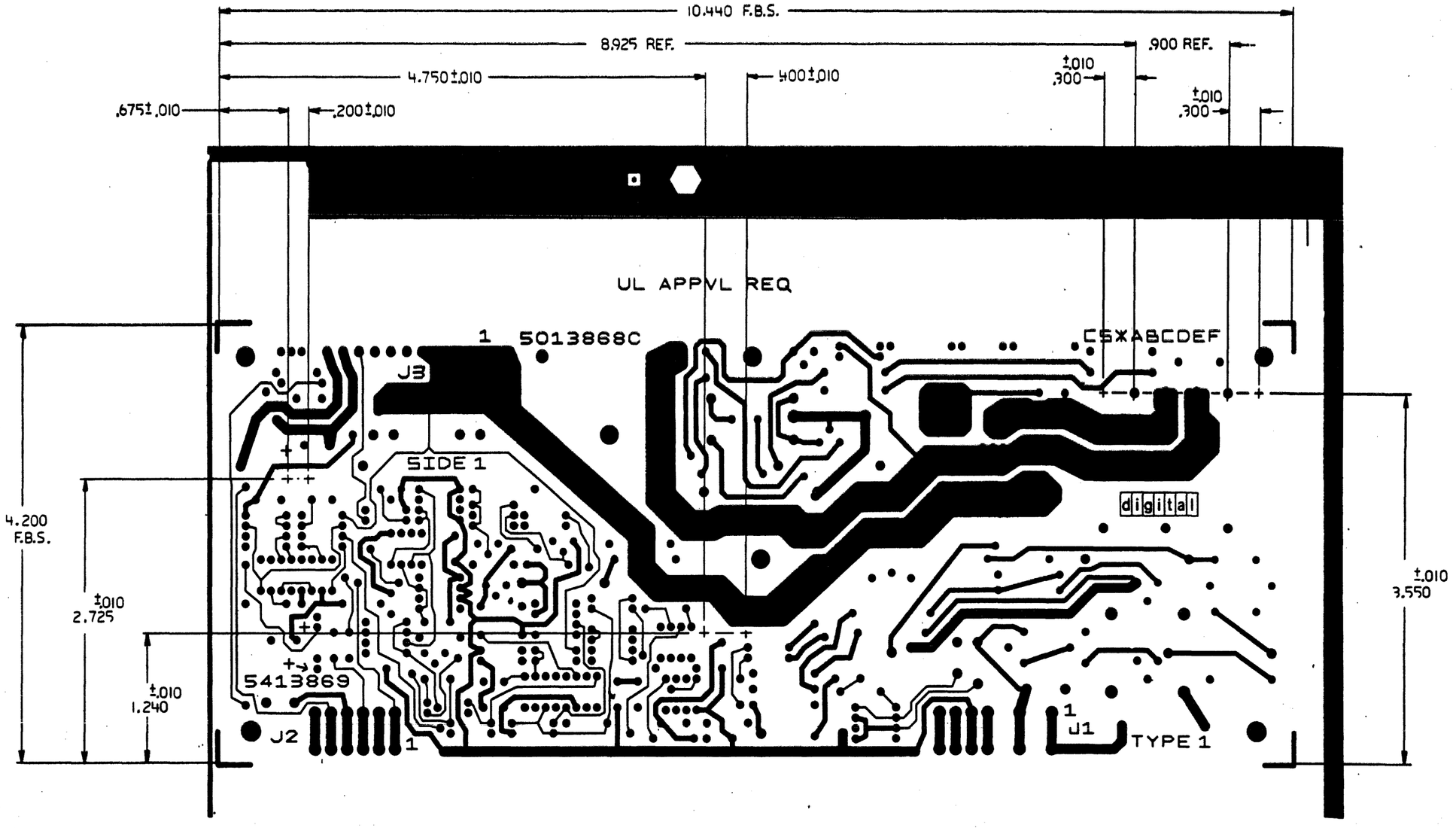
| | | |
|---|---|---|
| SIGNATURES | | DATE |
| DRN. | | 11/24/80 |
| CHK'D. | | 11/25/80 |
| MECH. ENG. | | 11/26/80 |
| PROJ. ENG. | | 12/1/80 |
| PROD. | | 12-8-80 |
| SCALE 2:1 | | |
| SHT. 1 OF 3 | | |
| NEXT HIGHER ASSY: B-00-5413869-0 | | |

digital

TITLE H7213 MEMORY REGULATOR

| SIZE | CODE | NUMBER | REV |
|---|---|---|---|
| E | UA | 5413869-0-0 | B |

E UA 5413869-0-0 B




H7213
MEMORY REGULATOR

DUA 5413869-0-0 B

2/1 2 3

DUA 5413869-0-0 B

REWORK INSTRUCTIONS

WIRE ADDS SIDE 1:

0-2 ADD ITEM 96 FROM E1 PIN 12 TO C22(-).
0-3 ADD ITEM 96 FROM C22 (+) TO D29 ANODE.
0-4 ADD ITEM 105 FROM ITEM 108 PIN 1 TO PTH A (RED WIRE) CONNECT BLACK WIRE FROM PIN 2 ITEM 108 TO PTH B.
0-5 ADD ITEM 96 FROM R47 TO C11.

ECO #1

COMPONENT DELETES SIDE 1

1-7 DELETE R44 DEC#1309094-00.
1-8 DELETE CERAMIC SPACERS DEC#9009798-01.
1-9 DELETE R38 DEC#1303047-00.
1-10 DELETE R9 DEC#1302602-00.
1-11 DELETE R18 DEC#1309416-00.
1-12 DELETE T1 DEC# 1617439-00.

COMPONENT ADDS SIDE 1

1-13 ADD R38 DEC#1316896-00.
1-14 DRILL ONE .042" HOLE AND ADD R71 DEC#1305324-00.
1-15 DRILL ONE .042" HOLE AND ADD R72 DEC#1303114-00.
1-16 ADD R9 DEC#1300202-00.
1-17 ADD R18 DEC#1311594-00.
1-18 DRILL TWO .042" HOLES AND ADD R73 DEC#1311594-00. ON SIDE 2 TACK SOLDER R73 FROM ETCH RUN BETWEEN C33 AND E5-4 TO R26. (SIDE CONNECTED TO C32)
1-19 DRILL TWO .055" HOLES AND ADD T1 DEC#1618879-00.

WIRE ADDS SIDE 1

1-20 ADD ITEM 96 FROM E2-1 TO J2-6.
1-21 ADD ITEM 96 FROM E2-3 TO R38.
1-22 ADD ITEM 96 FROM E2-2 TO R71. (WRAP AND SOLDER TO COMPONENT LEAD)
1-23 ADD ITEM 104 FROM D12/CATHODE TO D3/CATHODE.

WIRE ADDS SIDE 2

1-24 JUMPER R72 TO R71 (USE COMPONENT LEADS)
1-25 ADD ITEM 111 FROM J3-2 TO R16. (TACK SOLDER BOTH SIDES TO ETCH)
1-26 ADD ITEM 104 FROM PTH ABOVE R27 TO R13. (TACK SOLDER TO ETCH)
1-27 ADD ITEM 104 FROM L2 (SIDE CONNECTED TO C14/NEG) TO D12/ANODE. (TACK SOLDER BOTH SIDES TO ETCH)
1-28 ADD ITEM 104 FROM D11/ANODE TO T1-6. (TACK SOLDER BOTH SIDES TO ETCH)
1-29 ADD ITEM 104 FROM R13 (TACK SOLDER TO ETCH) TO T1-8. (WRAP AND SOLDER TO COMPONENT LEAD)
1-30 ADD ITEM 104 FROM C3 (TACK SOLDER TO ETCH) TO T1-9. (WRAP AND SOLDER TO COMPONENT LEAD)

AUTOMATED BY PRTLST.3P(44)

# P A R T S  L I S T



| LINE | ITEM | DOCUMENT NUMBER | PART NUMBER | DESCRIPTION | QTY PER VARIATION 00 | REFERENCE DESIGNATOR |
|---|---|---|---|---|---|---|
| 1 | 1 | D-MD-5013868-0-0 | 5013868-00 | DRILL AND ETCH | 1 | |
| 2 | 2 | | 1000018-00 | 120.0 MMF 100V 5%200PPM MICA | 3 | C18-C20 |
| 3 | 3 | | 1012607-00 | 560 MFD 20V+100-10% AL EL | 1 | C30 |
| 4 | 4 | | 1001610-00 | .01 MFD 50V +80-20% 25U CER | 3 | C5,C6,C26 |
| 5 | 5 | | 1010274-00 | .22 MFD 50V +80-20% Z5U CER | 6 | C8,C9,C11,C17,C33,C34 |
| 6 | 6 | | 1010978-36 | .1 MFD 50V 10% CER | 2 | C25,C31 |
| 7 | 7 | | 1011847-01 | .01 MFD 400V 10% POLYPROP | 2 | C3,C35 |
| 8 | 8 | | 1000016-00 | 100.0 MMF 100V 5%200PPM MICA | 1 | C12 |
| 9 | 9 | | 1014169-00 | 1000.0 MMF 100V 1%200PPM MICA | 1 | C23 |
| 10 | 10 | | 1010978-24 | .01 MFD 50V 10% CER | 1 | C29 |
| 11 | 11 | | 1014277-00 | 3800 MFD 6.3V +75-10% AL EL | 2 | C14,C21 |
| 12 | 12 | | 1017426-00 | 2700.0 MMF 250V 10% POLYPROP | 2 | C1,C2 |
| 13 | 13 | | 1000042-00 | 1000.0 MMF 100V 5%200PPM MICA | 2 | C7,C24 |
| 14 | 14 | | 1015573-01 | 5600.0 MMF 50V 5% CER | 1 | C10 |
| 15 | 15 | | 1011847-02 | .01 MFD 600V 10% POLYPROP | 1 | C4 |
| 16 | 16 | | 1000020-00 | 180.0 MMF 100V 5%200PPM MICA | 1 | C16 |
| 17 | 17 | | 1010978-32 | .047 MFD 50V 10% CER | 1 | C13 |
| 18 | 18 | | 1018000-00 | 2.2 MFD 63V +50-10 AL EL | 1 | C22 |
| 19 | 19 | | 1018000-01 | 15 MFD 25V +50-10 AL EL | 1 | C15 |
| 20 | 20 | | 1000011-00 | 47.0 MMF 100V 5%200PPM MICA | 1 | C32 |
| 21 | 21 | | 1105275-00 | D 672 TR= 15NS PIV= 60V SI | 11 | D8,D17-D22,D24,D27-D29 |
| 22 | 22 | | 1112595-01 | A114B PIV=200 I= 1A | 10 | D1,D3,D4,D6,D7,D9,D10,D12,D14, CONT D15 |
| 23 | 23 | | 1102495-00 | VZ= 3.3 5% .25W | 1 | D16 |
| 24 | 24 | | 1112595-02 | A114M PIV=600 I= 1A | 3 | D2,D5,D13 |
| 25 | 25 | | 1117555-00 | UES2403 RECTIFIER 150V 3A TO220 | 1 | D11 |
| 26 | 26 | | 1116323-00 | SD 241 PIV= 45 I=30A | 1 | D23 |
| 27 | 27 | | 1109517-00 | IN 9148 TR= 4NS PIV= 75V SY | 1 | D25 |
| 28 | 28 | | 1110766-00 | IN 5248B VZ= 18.0 5% .50W | 1 | D26 |
| 29 | 29 | | 1117061-00 | MCR 69-1 THYRISTOR | 1 | Q7 |

| REVISION HISTORY | | | BASIC PART NO: 5413869 |
|---|---|---|---|
| ENG | ECO NUMBER | REV | SECTION A OF A |
| --- | INITIAL | A | SECTION.VARIATION INDEX |
| | | | [A] 00 |
| | | | [B] |
| | | | [C] |
| | | | [D] |
| | | | [E] |
| | | | [F] |
| | | | [H] |
| | | | [J] |
| | | | [K] |
| | | | [L] |
| | | | [M] |
| | | | [N] |

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| DRN: J.FERGUSON | DATE: 12-22-80 | | D | I | G | I | T | A | L |
| CHK'D: B.WALDIE | DATE: 12-22-80 | TITLE PARTS LIST H7213 MEMORY REGULATOR | | | | | | | |
| DES.ENG: B.WOLF | DATE: 12-22-80 | | | | | | | | |
| RESP.ENG.: B.WOLF | DATE: 12-22-80 | DOCUMENT NUMBER | | | | | | | |
| MFG.ENG.: H.ORTIZ | DATE: 12-22-80 | SIZE: K | CODE: PL | NUMBER: 5413869-0-D8P | | | | REV: A | |
| ASSEMBLY NUMBER: D-UA-5413869-0-0 | TOP DOCUMENT NUMBER: B-DD-5413869-0-0 | FILE NAME: Z1311.PLS | | | | | | EDIT #: 9 | |

AUTOMATED BY PRTLST.3P(44)

P A R T S  L I S T



| LINE | ITEM | DOCUMENT NUMBER | PART NUMBER | DESCRIPTION | QTY PER VARIATION 00 | REFERENCE DESIGNATOR |
|---|---|---|---|---|---|---|
| 30 | 30 | | 1216688-01 | HEAT SINK, TO3 | 1 | |
| 31 | 31 | | 1214789-00 | INSERT,THREADED 6-32 ,BRASS,ELEC | 2 | |
| 32 | 32 | | 1215228-02 | HEAT SINK,TO-220,#6 MTG HOLE | 1 | |
| 33 | 33 | | 1217990-04 | HEADER.156 6SKT RCPT | 1 | J2 |
| 34 | 34 | | 1216122-09 | HEADER.156 10POS KEYED | 1 | J3 |
| 35 | 35 | | 1217990-02 | HEADER.156 8SKT RCPT | 1 | J1 |
| 36 | 36 | | 1300229-00 | 100.0 .25 W 5.0 % CC | 3 | R36,R45,R64 |
| 37 | 37 | | 1313347-00 | 220.0 1.0 W 5.0 % CC | 1 | R27 |
| 38 | 38 | | 1309855-00 | 300.0 2.0 W 5.0 % CC | 2 | R1,R2 |
| 39 | 39 | | 1300298-00 | 330.0 1.0 W10.0 % CC | 1 | R11 |
| 40 | 40 | | 1300316-00 | 470.0 .25 W 5.0 % CC | 3 | R19,R30,R34 |
| 41 | 41 | | 1300365-00 | 1.0 K .25 W 5.0 % CC | 4 | R28,R31,R49,R50 |
| 42 | 42 | | 1300447-00 | 4.70 K .25 W 5.0 % CC | 9 | R10,R23,R29,R40,R46,R57,R62,R63, |
| | | | | | CONT | R65 |
| 43 | 43 | | 1300479-00 | 10.0 K .25 W 5.0 % CC | 7 | R51,R52,R56,R58,R61,R66,R67 |
| 44 | 44 | | 1300168-00 | 10.0 .50 W 5.0 % CC | 4 | R5,R6,R7,R15 |
| 45 | 45 | | 1302411-00 | 511.0 .25 W 1.0 % RN55D-F10 | 1 | R37 |
| 46 | 46 | | 1301320-00 | 1.20 K .25 W 5.0 % CC | 1 | R53 |
| 47 | 47 | | 1302377-00 | 39.0 .25 W 5.0 % CC | 1 | R14 |
| 48 | 48 | | 1300356-00 | 820.0 .50 W10.0 % CC | 1 | R12 |
| 49 | 49 | | 1300257-00 | 150.0 2.0 W 5.0 % CC | 1 | R13 |
| 50 | 50 | | 1303047-00 | 464.0 .25 W 1.0 % RN55D-F10 | 1 | R38 |
| 51 | 51 | | 1302957-00 | 121.0 .25 W 1.0 % RN55D-F10 | 1 | R42 |
| 52 | 52 | | 1303114-00 | 1.0 K .25 W 1.0 % RN55D-F10 | 2 | R17,R26 |
| 53 | 53 | | 1314492-00 | 40.20 K .25 W 1.0 % RN55D-F10 | 1 | R35 |
| 54 | 54 | | 1309444-00 | 2.70 .50 W10.0 % CC | 2 | R3,R4 |
| 55 | 55 | | 1314551-00 | 442.0 .25 W 1.0 % RN55D-F10 | 2 | R41,R43 |
| 56 | 56 | | 1309094-00 | 100.0 5.0 W 5.0 % WW | 1 | R44 |
| 57 | 57 | | 1302602-00 | 56.0 .25 W 5.0 % CC | 1 | R9 |
| 58 | 58 | | 1303156-00 | 34.80 K .25 W 1.0 % RN55D-F10 | 1 | R24 |
| 59 | 59 | | 1313841-00 | 23.20 K .25 W 1.0 % RN55D-F10 | 1 | R39 |
| 60 | 60 | | 1302177-00 | 47.0 K .25 W 5.0 % CC | 2 | R47,R60 |
| 61 | 61 | | 1302388-00 | 2.0 K .25 W 5.0 % CC | 1 | R20 |
| 62 | 62 | | 1305324-00 | 4.99 K .25 W 1.0 % RN55D-F10 | 1 | R25 |
| 63 | 63 | | 1317515-00 | .04 2.0 W 2.0 % WW | 1 | R16 |
| 64 | 64 | | 1317522-00 | 1.0 .25 W 5.0 % CC | 1 | R8 |
| 65 | 65 | | 1305346-00 | 27.0 K .25 W 5.0 % CC | 2 | R33,R68 |
| 66 | 66 | | 1314350-00 | 1.0 2.0 W10.0 % FUSE | 1 | R54 |
| 67 | 67 | | 1309416-00 | 31.60 K .25 W 1.0 % RN55D-F10 | 1 | R18 |
| 68 | 68 | | 1312565-00 | 13.30 K .25 W 1.0 % RN55D-F10 | 1 | R21 |
| 69 | 69 | | 1302466-00 | 100.0 K .25 W 5.0 % CC | 1 | R48 |
| 70 | 70 | | 1302871-00 | 1.21 K .25 W 1.0 % RN55D-F10 | 1 | R32 |
| 71 | 71 | | 1316511-00 | 15.0 K .50 W 5.0 % CC | 1 | R55 |
| 72 | 72 | | 1300398-00 | 1.80 K .25 W 5.0 % CC | 1 | R59 |
| 73 | 73 | | 1312929-00 | 62.0 .25 W 5.0 % CC | 1 | R69 |
| 74 | 74 | | 1300171-00 | 10.0 1.0 W 5.0 % CC | 1 | R70 |
| 75 | 75 | | 1011683-00 | .022 MFD 50V 10% CER | 1 | C28 |
| 76 | 76 | | 1510705-00 | XA 05 NPN 500MW SI 60 50 P | 2 | Q6,Q10 |

| D | I | G | I | T | A | L | TITLE | SECTION | SIZE | CODE | DOCUMENT NUMBER | REV |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | H7213 MEMORY REGULATOR | SECTION A OF A | K | PL | 5413869-0-DBP | A |

AUTOMATED BY PRTLST.3P(44)

P A R T S  L I S T



| LINE | ITEM | DOCUMENT NUMBER | PART NUMBER | DESCRIPTION | QTY PER VARIATION 00 | REFERENCE DESIGNATOR |
|---|---|---|---|---|---|---|
| 77 | 77 | | 1509524-00 | 2N 3904 NPN 310MW SI 40 40 M | 1 | Q5 |
| 78 | 78 | | 1513489-00 | 2N 4401 NPN 350MW SI 40 20 | 2 | Q4,Q9 |
| 79 | 79 | | 1512790-00 | D 44C12 NPN 30W SI | 1 | Q3 |
| 80 | 80 | | 1517060-00 | MJE13009 NPN 100W SI | 2 | Q1,Q2 |
| 81 | 81 | | 1513490-00 | 2N 4403 PNP 350MW SI-40 30 | 1 | Q8 |
| 82 | 82 | | 1617450-00 | PULSE XFMR,RATIO 40:3,3:1 | 1 | T3 |
| 83 | 83 | | 1617439-00 | XFMR P=360V S=25/62V | 1 | T1 |
| 84 | 84 | | 1617557-00 | XFMR,CURRENT RATIO 1:2:100 PC MT | 1 | T2 |
| 85 | 85 | | 1617668-00 | 35.0 UH 20% 15A | 1 | L2 |
| 86 | 86 | | 1617667-00 | 200.0 UH 2A | 1 | L1 |
| 87 | 87 | | 1917908-00 | LM 358N OP AMP DUAL LOW POWE | 1 | E4 |
| 88 | 88 | | 1916819-00 | SG3527J MODULATOR-REGULATING PUL | 1 | E1 |
| 89 | 89 | | 1917059-00 | 3543 P.S. SUPERVISORY CIR | 1 | E3 |
| 90 | 90 | | 1914156-00 | LM 393 VOLT.COMPARATOR DUAL | 2 | E2,E5 |
| 91 | 91 | | 9006010-01 | SCREW,PAN,PHIL 4-40X 5/16 SS | 2 | |
| 92 | 92 | | 9006556-00 | NUT,HEX , 4-40X1/4 AF X 3/ | 2 | |
| 93 | 93 | | 9006688-00 | WASHER, LOCK, S.S. #4 | 2 | |
| 94 | 94 | | 9009769-00 | WASHER, RECTANGULAR .405X.225X.0 | 3 | |
| 95 | 95 | | 9008268-00 | COMPOUND, THERMAL JOINT | A/R | |
| 96 | 96 | | 9105740-55 | WIRE(WRAP)30AWG UL1423 | A/R | |
| 97 | 97 | | 9006024-01 | SCREW,PAN,PHIL 6-32X 1/2 SS | 2 | |
| 98 | 98 | | 9007801-00 | WASHER, LOCK, S.S. #6 | 3 | |
| 99 | 99 | | 9006656-00 | WASHER, FLAT, .312 O.D. X .156 I | 2 | |
| 100 | 100 | | 9009005-00 | NUT,HEX , 10-32 X1/4 AF X 3 | 2 | |
| 101 | 101 | | 9007906-00 | WASHER, LOCK S.S. #10 | 2 | |
| 102 | 102 | | 9006664-00 | WASHER, FLAT, .437 OD X .218 ID | 2 | |
| 103 | 103 | | 9008957-00 | NUT,HEX , 6-32X 1/4 AF X 3 | 1 | |
| 104 | 104 | | 9009798-01 | SPACER, CERAMIC, .186 ODX.078 ID | 2 | |
| 105 | 105 | | 9107430-02 | WIRE,STRND,18AWG,IPVC (UL1429) | A/R | |
| 106 | 106 | | 1000021-00 | 220.0 MMF 100V 5%200PPM MICA | 1 | C27 |
| 107 | 107 | | 1314951-00 | 390.0 K .25 W 5.0 % CC | 1 | R22 |
| 108 | 108 | | 1218375-00 | THERMOSTAT,@170,C@220,NORM OPEN | 1 | |
| 109 | 109 | | 1215228-01 | HEAT SINK,TO-220,SINGLE | 2 | |
| 110 | 110 | | 9107278-05 | TUBING,THIN WALL,.042ID UL | A/R | |

111 NOTE: ITEM NO 96 IS .17 FT.
112 NOTE: ITEM NO 105 IS .75 FT.
113 NOTE: ITEM NO 110 IS .10 FT.

| D | I | G | I | T | A | L | TITLE | SECTION | SIZE | CODE | DOCUMENT NUMBER | REV |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | H7213 MEMORY REGULATOR | A OF A | K | PL | 5413869-0-DBP | A |

O.V. TRIP

150 V J1-1

R54 1Ω,2W

C4 .01

R5 10 1/2W

C3 .01

D13 A114M

R13 150,2W

T1

T1-8

R6 10,1/2W

C5 .01

D23 SD241

R7 10 1/2W

C6 .01

C14 3800

C21 3800

C25 .1

C26 .01

R45 100

Q7 MCR69-1

L2, 35μH

+5.1V SENSE

+5.1V @15A J3-1,2,3,4

+5.1V RTN J3-5,6,7

D4 A114B

C1 2700 PF

R3 2,7,1/2W

Q1 MJE 13009

D1 A114B

R1 300 2W

D2 A114M

D3 A114B

R11 330,1W

D9 A114B

D10 A114B

R12 820 1/2W

D14 A114B

D12 A114B

D15 A114B

Q3 D44C12

R14 39

C10 5600PF

R27 220,1W

R69 62

D18 672

Q4 2N4401

CONTROL PULSE

T3

D6 A114B

R4 27,1/2W

Q2 MJE13009

C2 2700 PF

D5 A114M

D7 A114B

R2 300 2W

C7 1000PF

R15 10,1/2W

D11 UES2403

L1, 400μH

C35 .01

R70 10 1W

C30 560

C31 .1

R16 .04,2W

+12.3V @3A J3-9

+12.3V

+12.3V RTN J3-10

SEC. O.C. SENSE A

SEC. O.C. SENSE B

T2

D8 672

R19 470

R10 4.7K

R9 47

C12 100PF

PRIMARY O.C. SENSE

SHIELD J1-5

-150 V J1-3

+14 V J1-6

-14V J1-7

GND J1-8

R8 1

+14V

-14V

| REVISION HISTORY | | |
|---|---|---|
| DATE | ECO NUMBER | REV. |
| 27MAY81 | 5413869-TM001 | B |
| 4 Dec 81 | ECO 10F (Reverse Polarity) | |

| | | |
|---|---|---|
| DSN | T. McCullough | DATE 12-2-80 |
| CHK'D | Ferguson | DATE 12-10-80 |
| DES MGR | [illegible] | DATE 2-18-81 |
| CS | [illegible] | DATE 2/18/81 |
| MFG | [illegible] | DATE 2-18-81 |

NEXT HIGHER ASSY E-UA-5413869-0-0

TITLE digital

H7213 MEMORY REGULATOR

DOCUMENT NUMBER

| SIZE | CODE | NUMBER | REV |
|---|---|---|---|
| D | CS | 5413869-0-1 | B |

SCALE NONE SHEET 1 OF 2

TW

TI-8

D25 IN9148
D26 18V
+14V
R50 1K
Q8 2N4403
R55 15K 1/2W
R46 4.7K
R40 4.7K
Q5 2N3904
R49 1K
C16 180PF
D24 672
C15 15
C11 .22
R34 470
15 VIN
13 VC
16 VREF (5.1V)
E1 SG3527A
3 SYNC
7 DISCHARGE
6 RT
5 CT
9 COMP.
2 NI INPUT
1 INV INPUT
11 OUTPUT A
14 OUTPUT B
8 SOFT START
10 SHUTDOWN
12 GROUND
R31 1K
CLOCK J2-1
CONTROL PULSE
R28 1K
R36 100
R35 40.2K 1%
C27 220PF
FREQ SHIFT J2-3
C23 1000PF 1%
C28 .022
R48 100K
+5.1V SENSE
R51 10K
R38 402, 1%
D22 672
R37 511 1%
C24 1000PF
D29 672
Q9 2N4401
R63 4.7K
C22 22
R47 47K
R56 10K
D19 672
D27 672
D20 672
CH2 INH J2-2
+14V
R57 4.7K
R58 10K
C34 .22
R59 1.8K
D28 672
E2 393
R62 4.7K
R60 47K
D21 672
C29 .01
R61 10K
C17 .22
C19 120PF
PRIMARY O.C. SENSE
C8 .22
R25 4.99K 1%
R41 442 1%
R42 121 1%
R32 1.21K 1%
R43 442 1%
C20 120 PF
R33 27K
E3 SG3543
16 VIN
8 U.V. DELAY
7 U.V. INPUT
9 U.V. IND.
15 V REF (2.5V)
6 O.V. INPUT
5 O.V. DELAY
13 C.L. OUTPUT
10 C.L. INV INPUT
11 C.L. NI. INPUT
1 SCR TRIG.
2 REMOTE ACT
4 O.V. IND.
12 C.L. COMP
14 GROUND
3 O.V. RESET
C18 120PF
R52 10K
Q6 A05
R53 1.2K
CH2 OK A J3-8
CH2 OK J2-5
R64 100
C13 .047 MF
R30 470
O.V. TRIP
R29 4.7K
SEC. O.C. SENSE B
SEC. O.C. SENSE A
R17 1K 1%
R26 1K 1%
C32 47PF
R73 30.1K 1%
E4 358
R18 30.1K 1%
R24 34.8K 1%
C33 .22
R22 390K
R23 4.7K
D17 672
E5 393
R21 13.3K 1%
R65 4.7K
R39 23.2K 1%
+12.3V
R71 4.99K 1%
R72 1K 1%
E2 393
-14V
R20 2K
R66 10K
C9 .22
D16 IN746
R68 27K
R67 10K
Q10 A05
CH2 CROBAR J2-6
S1
(MOUNTED ON D11)
THERMAL SHUTDOWN L J2-4

| REVISION HISTORY | | |
|---|---|---|
| DATE | ECO NUMBER | REV. |

| TITLE | DOCUMENT NUMBER | | |
|---|---|---|---|
| H7213 MEMORY REGULATOR | SIZE D / CODE CS | NUMBER 5413869-0-1 | REV. B |
| | SCALE NONE | SHEET 2 OF 2 | |

VIEW A-A

VIEW B-B

VIEW C-C




NOTES:
1. U/L APPROVAL REQUIRED
2. STEP AND REPEAT NO. 2 WL 2
3. USE THERMAL COMPOUND (ITEM 107) BETWEEN Q5, Q16, D26, D29, AND HEATSINKS
4. RAISE R13, R56, R66, R67, R68, R69, R71, AND R73, .05 TO .10 OFF P.C. BOARD
5. USE SPACER (ITEM 110) TO RAISE R74 AND R75 OFF P.C. BOARD
6. FULL PIN'S 2 AND 4 FROM CONN. J1 BEFORE INSERTING IN P.C. BOARD
7. TC BOTH SIDES OF C2, C23, C24 ADD .125"

| STEP & REPEAT | + Y AXIS | STEP | TIMES |
|---|---|---|---|
| | + X AXIS | STEP | TIMES |

NOTE (CONTINUATION)
7. APPROX TUBING (ITEM 123)
8. DARK SIDE OF CONN. J1, J2
9. D26 AND D29 MUST BE MOUNTED TO HEATSINK BEFORE BEING ATTACHED TO PCB
10. ITEM 27 IS APPROX .34" LONG AND USED ONLY WHERE DESIGNATED ON HEATSINK.
11. SOLDER MASK HOLE PRIOR TO SOLDER WAVE.
12. ALL LOCATIONS FOR DRILL HOLES ADDED PER REWORK INSTRUCTIONS (IN SHEET ) ARE SHOWN IN SHEET 2.

ETCH REV. B

| CHG NO | REV |
|---|---|
| | B |

| SIGNATURES | DATE |
|---|---|
| DRN. | 7/21/80 |
| CHK'D. | |
| MECH. ENG. | 8/1/80 |
| PROJ. ENG. | 8/4/80 |
| PROD. | 8/4/80 |

SCALE 2/1 | SHT. 1 OF 1

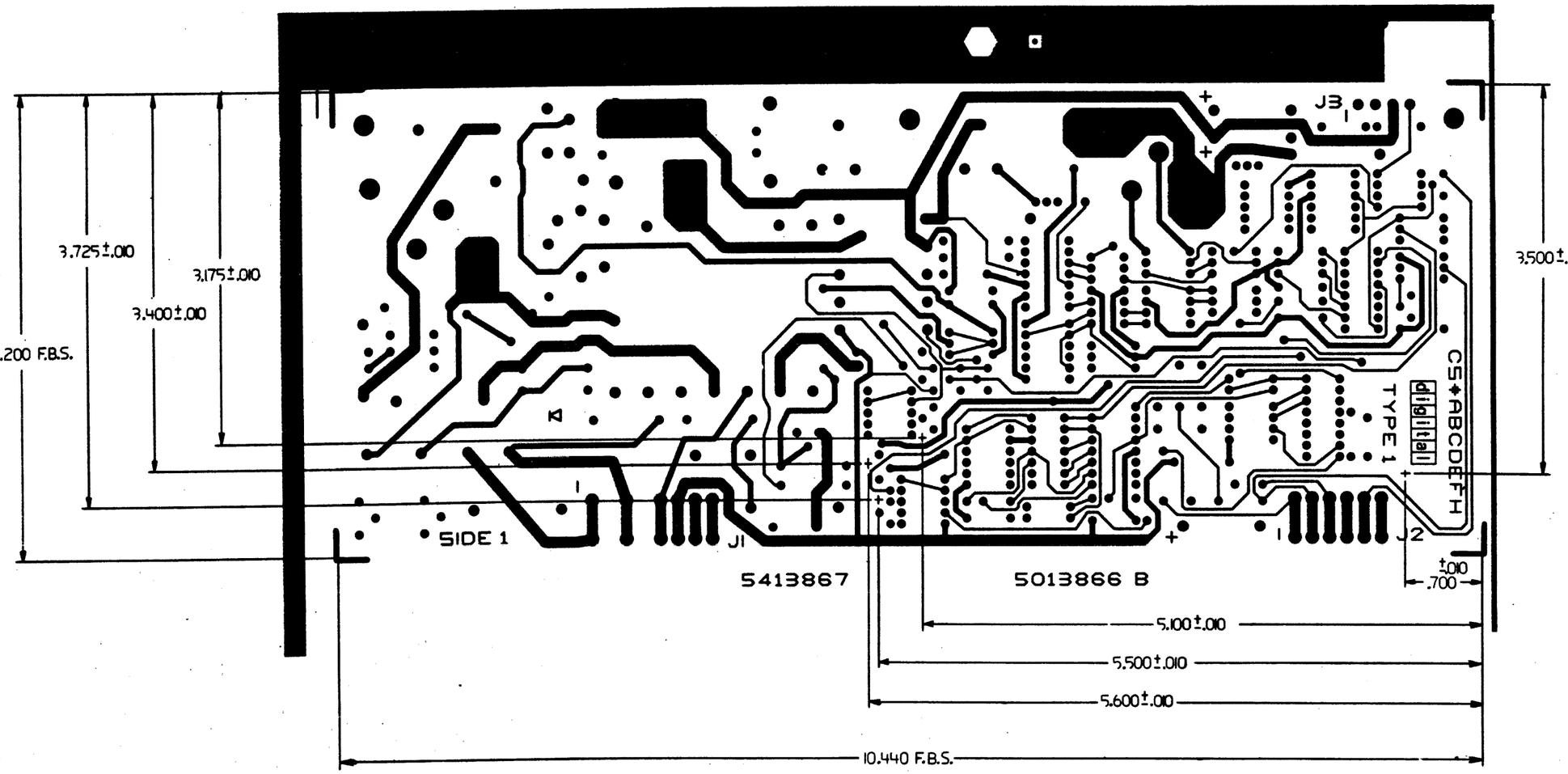
digital

TITLE H7211 COMMUNICATION REG

| SIZE | CODE | NUMBER | REV |
|---|---|---|---|
| E | | UA 5413867-0-0 | B |

NEXT HIGHER ASSY. B-DD-5413867-0

UA 5413867-0-0 B




| REVISION HISTORY | | |
|---|---|---|
| DATE | ECO NUMBER | REV |
| | | |

TITLE H7211 COMMUNICATION REG

| DOCUMENT NUMBER | | | |
|---|---|---|---|
| SIZE | CODE | NUMBER | REV. |
| D | UA | 5413867-0-0 | B |

SCALE 2/1 SHEET 2 OF 3



D UA 5413867-0-0 B

## REWORK INSTRUCTIONS

WIRE ADDS SIDE 1

0-6 FROM C22 TO C24
0-7 FROM C20 TO R50
0-8 FROM C41 TO R60
0-9 FROM OTHER SIDE OF C41 TO OTHER SIDE OF R60.
0-13 FROM R20 TO PTH LEADING TO J2 PIN 1
0-18 FROM Q1/COLLECTOR TO R81.(WRAP WIRE AROUND COMPONENT LEAD)

COMPONENT ADDS SIDE 1

0-10 INSTALL R79 BY DRILLING ONE .042" HOLE AS SHOWN AND TACK SOLDER TO LARGE GND. ETCH ON SIDE 2, ALSO TACK SOLDER OTHER SIDE OF RESISTOR TO ETCH LEADING TO J2 PIN 5 SIDE1

0-11 INSTALL R78 BY DRILLING ONE .042' HOLE AS SHOWN AND TACK SOLDER TO SIDE 2 ETCH LEADING TO BASE OF Q9. ALSO TACK SOLDER OTHER SIDE OF R78 TO ETCH BETWEEN R54 AND E3 PIN1, SIDE 1.

0-15 INSTALL R80 BY TACK SOLDERING ONE SIDE TO ETCH RUN LEADING TO E1-10 AND TACK SOLDER OTHER SIDE TO ETCH RUN BETWEEN D6/CATHODE AND PTH UNDER R30. (USE .25" APPROX. SLEEVING, ITEM 123, ON SIDE CONNECTED TO D6.)

0-16 INSTALL C15 BY DRILLING TWO .042" HOLES AS SHOWN. TACK SOLDER BOTTOM LEAD OF COMPONENT TO ETCH LEADING TO Q12/BASE.(SIDE 2) TACK SOLDER REMAINING LEAD TO ETCH LEADING TO Q12/EMITTER.(SIDE 2)

0-17 INSTALL R81 AND C42 BY DRILLING FOUR .042"HOLES. TACK SOLDER TOP LEAD OF C42 TO ETCH RUN BETWEEN C1 AND R1. (SIDE 2) JUMPER BOTTOM OF C42 AND TOP R81 USING COMPONENT LEADS.(SIDE 2) TACK SOLDER BOTTOM LEAD OF R81 TO ETCH RUN BETWEEN Q2/COLLECTOR AND C2/POSITIVE.(SIDE 2)

0-19 INSTALL R82 BY TACK SOLDERING ONE SIDE TO ETCH RUN BETWEEN E4-8 AND D10/CATHODE. TACK SOLDER OTHER SIDE TO ETCH RUN BETWEEN R32 AND R26.

## ECO #1

WIRE DELETE SIDE 1

1-1 FROM Q1/COLLECTOR TO R81.

COMPONENT DELETES SIDE 1

1-2 DELETE C8 DEC #1001610-00.
1-3 DELETE C42 DEC #1013466-11.
1-4 DELETE R81 DEC #1300479-00.
1-5 DELETE R15 DEC #1317494-00.
1-6 DELETE R18 DEC #1316843-00.
1-7 DELETE C13 DEC #1002476-00.
1-8 DELETE R52 DEC #1300439-00.
1-9 DELETE C32 DEC #1001610-00.
1-10 DELETE R32 DEC #1305353-00.
1-11 DELETE D31 DEC #1112595-02.

COMPONENT ADDS SIDE 1

1-12 ADD R15 DEC #1313342-00.
1-13 ADD R81 DEC #1301425-00.
1-14 ADD R32 DEC #1315096-00.
1-15 ADD R18 DEC #1313752-00.
1-16 ADD C13 DEC #1000026-00.
1-17 ADD R52 DEC #1300365-00.
1-18 ADD C32 DEC #1012783-00.
1-19 ADD D31 DEC #1115112-00.

REVISION HISTORY

| DATE | ECO NUMBER | REV. |
|---|---|---|

TITLE H7211 COMMUNICATION REG

DOCUMENT NUMBER: SIZE D | CODE DUA | NUMBER 5413867-0-0 | REV B

SCALE 2/1 | SHEET 3 OF 3

DUA 5413867-0-0 B

AUTOMATED BY PRTLST.3P(44) — P A R T S  L I S T — SHEET A1 OF A4

| LINE | ITEM | DOCUMENT NUMBER | PART NUMBER | DESCRIPTION | QTY PER VARIATION 00 | YA | REFERENCE DESIGNATOR |
|---|---|---|---|---|---|---|---|
| 1 | 1 | D-MD-5013866-0-0 | 5013866-00 | DRILL + ETCH BRD | 1 | 1 | |
| 2 | 2 | BLANK | | | 0 | 0 | |
| 3 | 3 | | 1001610-00 | .01 MFD 50V +80-20% Z5U CER | 2 | 2 | C6,C18 |
| 4 | 4 | | 1000026-00 | 680.0 MMF 100V 5%200PPM MICA | 1 | 1 | C13 |
| 5 | 5 | | 1005784-00 | .01 MFD 100V 200V 10% MYL | 1 | 1 | C33 |
| 6 | 6 | | 1010274-02 | 1 MFD 50V +80-20% CER | 3 | 3 | C17,C23,C24 |
| 7 | 7 | | 1011847-02 | .01 MFD 600V 10% POLYPROP | 1 | 1 | C38 |
| 8 | 8 | | 1011847-03 | .0047 MFD 600V 10% POLYPROP | 2 | 2 | C36,C39 |
| 9 | 9 | | 1012784-00 | .047 MFD 50V +80-20% CER | 2 | 2 | C41,C9 |
| 10 | 10 | | 1013466-04 | 33.0 MMF 50V 5% CER | 1 | 1 | C28 |
| 11 | 11 | | 1013466-06 | 100.0 MMF 50V 5% CER | 2 | 2 | C21,C27 |
| 12 | 12 | | 1013466-08 | 680.0 MMF 50V 10% X7R CER | 2 | 2 | C22,C15 |
| 13 | 13 | | 1012783-00 | .022 MFD 50V +80-20% CER | 1 | 1 | C32 |
| 14 | 14 | | 1013466-12 | 2200.0 MMF 50V 10% X7R CER | 2 | 2 | C19,C34 |
| 15 | 15 | | 1013466-11 | .22 MFD 50V +80-20% Z5U CER | 5 | 5 | C3-C5,C29,C30 |
| 16 | 16 | | 1014170-00 | 2700.0 MMF 100V 1% 70PPM MICA | 1 | 1 | C14 |
| 17 | 17 | | 1015573-01 | 5600.0 MMF 50V 5% CER | 2 | 2 | C7,C16 |
| 18 | 18 | | 1017472-00 | 10 MFD 35V +50-10% AL EL | 3 | 3 | C10-C12 |
| 19 | 19 | | 1016992-00 | 2700 MFD 25V +75-10% AL EL | 3 | 3 | C31,C35,C37 |
| 20 | 20 | | 1015202-03 | .0013 MFD 1600V 10% POLYPROP | 1 | 1 | C40 |
| 21 | 21 | | 1103441-00 | 1N 756A VZ= 8.2 5% .40W P | 1 | 1 | D9 |
| 22 | 22 | | 1105275-00 | D 672 TR= 15NS PIV= 60V SI | 21 | 21 | D1-D8,D10-D18,D20-D23 |
| 23 | 23 | | 1112595-01 | A114B PIV=200 I= 1A | 9 | 9 | D19,D24,D25,D27,D35-D39 |
| 24 | 24 | | 1112595-02 | A114M PIV=600 I= 1A | 1 | 1 | D30 |
| 25 | 25 | | 1115112-00 | PIV=800V I=1A | 4 | 4 | D28,D34,D40,D31 |
| 26 | 26 | | 1117490-00 | UES 1403 RECTIFIER 150V 8A TO220 | 2 | 2 | D26,D29 |
| 27 | 27 | | 9107252-00 | TUBING,SHRINK 3/8 DIA.EXP UL | A/R | A/R | |
| 28 | 28 | | 1213426-03 | HEAT SINK TO-3 1"HIGH | 1 | 1 | |
| 29 | 29 | | 1214789-00 | INSERT,THREADED 6-32 ,BRASS,ELEC | 2 | 2 | |
| 30 | 30 | | 1214809-02 | INSERT,W/O INTERNAL THREADS,THRU | 2 | 2 | |

| REVISION HISTORY | | |
|---|---|---|
| ENG | ECO NUMBER | REV |
| --- | INITIAL | B |

BASIC PART NO: 5413867

SECTION A OF A

SECTION.VARIATION INDEX
[A] 00,YA
[B]
[C]
[D]
[E]
[F]
[H]
[J]
[K]
[L]
[M]
[N]

| | | |
|---|---|---|
| DRN: J. FERGUSON | DATE: 5-AUG-80 | |
| CHK'D: J. FERGUSON | DATE: 21-OCT-80 | TITLE PARTS LIST<br>H7211 COMMUNICATIONS REG |
| DES.ENG: D. DRINKWATER | DATE: 21-OCT-80 | |
| RESP.ENG.: C. LANDINO | DATE: 21-OCT-80 | DOCUMENT NUMBER |
| MFG.ENG.: H. ORTIZ | DATE: 23-FEB-81 | SIZE: K; CODE: PL; NUMBER: 5413867-0-DBP; REV: B |
| ASSEMBLY NUMBER: D-UA-5413867-0-0 | TOP DOCUMENT NUMBER: B-DD-5413867-0-0 | FILE NAME: Z13098.PLS; EDIT #: 12 |

| LINE | ITEM | DOCUMENT NUMBER | PART NUMBER | DESCRIPTION | QTY PER VARIATION 00 | YA | REFERENCE DESIGNATOR |
|---|---|---|---|---|---|---|---|
| 31 | 31 | | 1215228-00 | HEAT SINK,TO-220,VERTICAL MNT | 2 | 2 | |
| 32 | 32 | | 1216122-11 | HEADER.156 4POS KEYED | 1 | 1 | J3 |
| 33 | 33 | | 1217990-04 | HEADER.156 6SKT RCPT | 1 | 1 | J2 |
| 34 | 34 | | 1217990-02 | HEADER.156 8SKT RCPT | 1 | 1 | J1 |
| 35 | 35 | | 1213426-01 | HEAT SINK TO-3 | 1 | 1 | |
| 36 | 36 | | 1301425-00 | 300.0 .25 W 5.0 % CC | 1 | 1 | R81 |
| 37 | 37 | | 1300171-00 | 10.0 1.0 W 5.0 % CC | 1 | 1 | R65 |
| 38 | 38 | | 1300229-00 | 100.0 .25 W 5.0 % CC | 4 | 4 | R4,R47,R76,R60 |
| 39 | 39 | | 1300287-00 | 270.0 1.0 W10.0 % CC | 1 | 1 | R72 |
| 40 | 40 | | 1300315-00 | 470.0 .50 W 5.0 % CC | 2 | 2 | R57,R64 |
| 41 | 41 | | 1300365-00 | 1.0 K .25 W 5.0 % CC | 2 | 2 | R20,R52 |
| 42 | 42 | | 1300391-00 | 1.50 K .25 W 5.0 % CC | 1 | 1 | R25 |
| 43 | 43 | | 1300398-00 | 1.80 K .25 W 5.0 % CC | 2 | 2 | R33,R45 |
| 44 | 44 | | 1300417-00 | 2.20 K .25 W 5.0 % CC | 1 | 1 | R5 |
| 45 | 45 | | 1300426-00 | 2.70 K .25 W 5.0 % CC | 1 | 1 | R38 |
| 46 | 46 | BLANK | | | 0 | 0 | |
| 47 | 47 | | 1300479-00 | 10.0 K .25 W 5.0 % CC | 13 | 13 | R1,R3,R12,R19,R39,R40,R51,R53, |
| | | | | | | CONT | R54,R56,R78,R80,R82 |
| 48 | 48 | | 1301317-00 | 10.0 .25 W 5.0 % CC | 1 | 1 | R62 |
| 49 | 49 | | 1301320-00 | 1.20 K .25 W 5.0 % CC | 2 | 2 | R6,R31 |
| 50 | 50 | | 1301423-00 | 6.80 K .25 W 5.0 % CC | 3 | 3 | R50,R61,R79 |
| 51 | 51 | | 1301890-00 | 560.0 .25 W 5.0 % CC | 1 | 1 | R21 |
| 52 | 52 | | 1302377-00 | 39.0 .25 W 5.0 % CC | 1 | 1 | R63 |
| 53 | 53 | | 1302394-00 | 30.0 K .25 W 5.0 % CC | 1 | 1 | R22 |
| 54 | 54 | | 1302466-00 | 100.0 K .25 W 5.0 % CC | 1 | 1 | R49 |
| 55 | 55 | | 1302859-00 | 5.76 K .25 W 1.0 % RN55D-F10 | 1 | 0 | R14 |
| 56 | 56 | | 1303114-00 | 1.0 K .25 W 1.0 % RN55D-F10 | 2 | 2 | R9,R34 |
| 57 | 57 | | 1303187-00 | 820.0 K .25 W 5.0 % CC | 1 | 1 | R28 |
| 58 | 58 | | 1303305-00 | 6.98 K .25 W 1.0 % RN55D-F10 | 1 | 0 | R44 |
| 59 | 59 | | 1304806-00 | 150.0 3.0 W 1.0 % WW | 3 | 3 | R66,R67,R69 |
| 60 | 60 | | 1303311-00 | 46.40 K .25 W 1.0 % RN55D-F10 | 1 | 0 | R27 |
| 61 | 61 | | 1304858-00 | 348.0 .25 W 1.0 % RN55D-F10 | 1 | 0 | R8 |
| 62 | 62 | | 1304867-00 | 7.0 K .25 W 1.0 % RN55D-F10 | 1 | 1 | R42 |
| 63 | 63 | | 1304870-00 | 6.81 K .25 W 1.0 % RN55D-F10 | 1 | 0 | R41 |
| 64 | 64 | | 1305121-00 | 38.30 .25 W 1.0 % RN55D-F10 | 1 | 1 | R55 |
| 65 | 65 | | 1305124-00 | 287.0 .25 W 1.0 % RN55D-F10 | 1 | 0 | R36 |
| 66 | 66 | | 1305346-00 | 27.0 K .25 W 5.0 % CC | 1 | 1 | R2 |
| 67 | 67 | | 1305621-00 | 111.10 .25 W .10% RN55D-B10 | 2 | 2 | R11,R48 |
| 68 | 68 | | 1314350-00 | 1.0 2.0 W10.0 % FUSE | 1 | 1 | R77 |
| 69 | 69 | | 1310632-00 | 2.37 K .25 W 1.0 % RN55D-F10 | 1 | 1 | R43 |
| 70 | 70 | | 1311522-00 | 200.0 .25 W 5.0 % CC | 2 | 2 | R17,R46 |
| 71 | 71 | | 1312123-00 | 220.0 3.0 W 1.0 % WW | 1 | 1 | R71 |
| 72 | 72 | | 1312930-00 | 5.10 K .25 W 5.0 % CC | 2 | 2 | R7,R37 |
| 73 | 73 | | 1312933-00 | 360.0 K .25 W 5.0 % CC | 1 | 1 | R30 |
| 74 | 74 | | 1313153-00 | 28.0 K .25 W 1.0 % RN55D-F10 | 1 | 1 | R10 |
| 75 | 75 | | 1313580-00 | 360.0 .25 W 5.0 % CC | 1 | 1 | R59 |
| 76 | 76 | | 1315096-00 | 1.87 K .25 W 1.0 % RN55D-F10 | 1 | 1 | R32 |
| 77 | 77 | | 1309413-00 | 3.83 K .25 W 1.0 % RN55D-F10 | 1 | 1 | R24 |

| D | I | G | I | T | A | L | TITLE | SECTION | SIZE | CODE | DOCUMENT NUMBER | REV |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | H7211 COMMUNICATIONS REG | A OF A | K | PL | 5413867-0-08P | B |

AUTOMATED BY PRTLST.3P(44) — P A R T S  L I S T — SHEET A3 OF A4

| LINE | ITEM | DOCUMENT NUMBER | PART NUMBER | DESCRIPTION | QTY PER VARIATION 00 | YA | REFERENCE DESIGNATOR |
|---|---|---|---|---|---|---|---|
| 78 | 78 | | 1314350-01 | .220 2.0 W 5.0% FUSE | 1 | 1 | R73 |
| 79 | 79 | | 1314397-00 | 9.53 K .25 W 1.0 % RN55D-F10 | 1 | 1 | R16 |
| 80 | 80 | BLANK | | | 0 | 0 | |
| 81 | 81 | | 1313342-00 | 18.70 K .25 W 1.0 % RN55D-F10 | 1 | 0 | R15 |
| 82 | 82 | | 1317522-00 | 1.0 .25 W 5.0 % CC | 1 | 1 | R70 |
| 83 | 83 | | 1317515-00 | .04 3.0 W 3.0 % WW | 2 | 2 | R13,R58 |
| 84 | 84 | | 1318039-00 | 1.0 K 14.0 W 5.0 % WW | 2 | 2 | R74,R75 |
| 85 | 85 | | 1302385-00 | 750.0 1.0 W 5.0 % CC | 1 | 1 | R68 |
| 86 | 86 | | 1510705-00 | XA 05 NPN 500MW SI 60 50 P | 4 | 4 | Q1,Q2,Q11,Q12 |
| 87 | 87 | | 1510853-00 | MJ 1000 NPN 90WC SI 60 1K Y | 1 | 1 | Q5 |
| 88 | 88 | | 1512782-00 | BUY69A NPN 100N SI325 15 | 1 | 1 | Q14 |
| 89 | 89 | | 1513489-00 | 2N 4401 NPN 350MW SI 40 20 | 2 | 2 | Q7,Q10 |
| 90 | 90 | | 1513490-00 | 2N 4403 PNP 350MW SI-40 30 | 2 | 2 | Q8,Q9 |
| 91 | 91 | | 1514271-01 | D 44Q5 NPN 31W SI225 30 | 1 | 1 | Q13 |
| 92 | 92 | | 1117061-00 | MCR 69-1 THYRISTOR | 2 | 2 | D41,D42 |
| 93 | 93 | | 1617557-00 | XFMR,CURRENT RATIO 1:2:100 PC MT | 1 | 1 | T3 |
| 94 | 94 | | 1617440-00 | XFMR P=370V S=VARIABLE | 1 | 1 | T1 |
| 95 | 95 | | 1617467-00 | PULSE XFMR PC MOUNT | 1 | 1 | T2 |
| 96 | 96 | | 1912107-00 | 324 OP AMP,QUAD | 1 | 1 | E4 |
| 97 | 97 | | 1912108-00 | 339 VOLT CMPRTR,QUAD | 1 | 1 | E3 |
| 98 | 98 | | 1916819-00 | 3527A MODULATOR,REGULATING | 1 | 1 | E1 |
| 99 | 99 | | 1917059-00 | 3543 P.S. SUPERVISORY CIR | 1 | 1 | E2 |
| 100 | 100 | | 9000024-09 | EYELET,ROLL FLANGE .0890DX .125 | 4 | 4 | |
| 101 | 101 | | 9006010-01 | SCREW,PAN,PHIL 4-40X 5/16 SS | 4 | 4 | |
| 102 | 102 | | 9007793-01 | SCREW,PAN,PHIL 6-32X 9/16 SS | 4 | 4 | |
| 103 | 103 | | 9006556-00 | NUT,HEX 4-40X1/4 AF X 3/ | 2 | 2 | |
| 104 | 104 | | 9006656-00 | WASHER, FLAT, .312 O.D. X .156 I | 6 | 6 | |
| 105 | 105 | | 9006688-00 | WASHER, LOCK, S.S. #4 | 2 | 2 | |
| 106 | 106 | | 9007801-00 | WASHER, LOCK, S.S. #6 | 4 | 4 | |
| 107 | 107 | | 9008268-00 | COMPOUND, THERMAL JOINT | A/R | A/R | |
| 108 | 108 | | 9008957-00 | NUT,HEX 6-32X 1/4 AF X 3 | 2 | 2 | |
| 109 | 109 | | 9009769-00 | WASHER, RECTANGULAR .405X.225X.0 | 2 | 2 | |
| 110 | 110 | | 9009798-00 | SPACER, CERAMIC, .186 ODX.078 ID | 4 | 4 | |
| 111 | 111 | BLANK | | | 0 | 0 | |
| 112 | 112 | | 1312452-00 | 3.74 K .25 W 1.0 % RN55D-F10 | 1 | 1 | R35 |
| 113 | 113 | | 1305128-00 | 5.62 K .25 W 1.0 % RN55D-F10 | 0 | 2 | R44,R41 |
| 114 | 114 | | 1304863-00 | 316.0 .25 W 1.0 % RN55D-F10 | 0 | 1 | R36 |
| 115 | 115 | | 1313598-00 | 32.40 K .25 W 1.0 % RN55D-F10 | 0 | 1 | R27 |
| 116 | 116 | | 1313752-00 | 15.0 K .25 W 1.0 % RN55D-F10 | 1 | - | R18 |
| | | | CONT | | - | 1 | R15 |
| 117 | 117 | | 1304856-00 | 4.64 K .25 W 1.0 % RN55D-F10 | 0 | 1 | R14 |
| 118 | 118 | | 1305125-00 | 383.0 .25 W 1.0 % RN55D-F10 | 0 | 1 | R8 |
| 119 | 119 | | 1313597-00 | 23.70 K .25 W 1.0 % RN55D-F10 | 1 | 1 | R26 |
| 120 | 120 | | 1013466-22 | .1 MFD 50V +80-20% Z5U CER | 3 | 3 | C1,C20,C25 |
| 121 | 121 | | 1018000-02 | 22 MFD 35V +50-10% AL EL | 1 | 1 | C2 |
| 122 | 122 | | 9105740-55 | WIRE(WRAP)30AWG UL1423 | A/R | A/R | |
| 123 | 123 | | 9107256-11 | TUBING,THIN WALL,.027ID UL | A/R | A/R | |

| D | I | G | I | T | A | L | TITLE | SECTION | SIZE | CODE | DOCUMENT NUMBER | REV |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | H7211 COMMUNICATIONS REG | A OF A | K | PL | 5413867-0-DBP | B |

AUTOMATED BY PRTLST.3P(44) P A R T S L I S T SHEET A4 OF A4

| LINE ITEM | DOCUMENT NUMBER | PART NUMBER | DESCRIPTION | QTY PER VARIATION 00 YA | REFERENCE DESIGNATOR |
|---|---|---|---|---|---|
| 124 | NOTE: | | ITEM #122; .37' IS USED. | | |
| 125 | NOTE: | | ITEM #123; .13' IS USED. | | |
| 126 | NOTE: | | ITEM #27; .15' IS USED. | | |

| DIGITAL | TITLE | SECTION | SIZE | CODE | DOCUMENT NUMBER | REV |
|---|---|---|---|---|---|---|
| | H7211 COMMUNICATIONS REG | A OF A | K | PL | 5413867-0-DBP | B |

+15Ø VDC

J1 TP23 TP21 TP22 TP18 TP19 TP43 TP36 TP35 TP42 TP41 TP40 TP39 TP37 TP10,11,12,13,14 TP15,16,17

T1 T2 T3

R73 .22 1/2W
C38 .01 600V
R74 1K 14W
D30 A114M
D31 RGP.5K-006
C39 .0047
D34, RGP5K-006
Q14 BUY69B
D39 A114B
D38 A114B
R76 10Ω
R75 1K 14W
D40 RGP15K-006
D28 RGP15K-006
C40 .0013 1600V
R71 220 3W
D27 A114B
C36 .0047 600V
D36 A114B
D37 A114B
R72 270 1W
+14V
D35 A114B
R77 1 2W 10%
R70 1
-15ØV
+14V
-14V
BIAS RTN
+14VS+1,2
-14VS+1,2

R47 100
R16 9.53K, 1%
5.1V
R49 160K
D16
R42 7.ØK 1%
D14
R58 .04 3W
R48 111.1 1%
D26 UE14Ø3
C3Ø .22UF
C35 2700UF 25V
C31 2700UF 25V
R69 15Ø 3W
+14V
D41 MCR69
R59 36Ø
Q11 AØ5
R6Ø 100
C41 .047
R46 2ØØ
C25 .1
C32 .Ø22
D15
*R44
R45 1.8K
C22 68ØPF
R43 2.37K 1%
C11 10
C4 .22UF
J3
RTN
D8
SHTDN
CNTRL
(OUTPUT)
-CO-15V @3A
-YA-12V @3A

R57 47Ø 1/2W
D19 A114B
*R41
R37 5.1K
C21 100PF
D12
R28 82ØK
*R38
R5Ø 6.8K
R34 1.Ø K 1%
2.5V
C27 100PF
SCR GATE
+14V
R53 1ØK
D2Ø
Q12 AØ5
-0V
C15 68ØPF
R61 6.8K
D1
+14V
R3 10K
D2
-UV

D25 A114B
R66 15Ø 3W
Q1Ø 2N4401
R67 15Ø 2W
TN. OFF DR
Q13 D44Q5
D24 A114B
R63 39
C34 2200PF
R62 1Ø
D23

D18
R56 1ØK
R55 38.3 1%
C28 33PF
C20 .1
R51 10K
R54 10K
R52 1K
D22
D21
5.1V
R35 3.74K 1%
C33 .Ø1UF 10%
R39 1ØK
D13
R40 1ØK
Q9 2N4403
R38 2.7K
D17
2.5V
R78 10K
-14V

*COMPONENT VALUES

| | -00 | -YA |
|---|---|---|
| OUTPUT VOLTAGE | -15V | -12V |
| R44 | 6.98K 1% | 5.62K 1% |
| R41 | 6.81K 1% | 5.62K 1% |
| R36 | 287 1% | 316 1% |

NOTE:
ALL UNMARKED DIODES ARE D672.

| REVISIONS | | |
|---|---|---|
| DWR | CHANGE NO. | REV. |
| ZM | 5413867-TW001 | B |
| A. ROZANIK | 5-JUN-81 | |
| C. LANDINO | 12-16-81 | |

| | | |
|---|---|---|
| DRN. R. Kippenhan | 11 MAR 80 | FIRST USED ON H7211 |
| CHK'D | | digital |
| ENG. | 2-18-81 | TITLE COMMUNICATION REG |
| PROJ. ENG. | 2/18/81 | |
| PROD. | 2-18-81 | |
| NEXT HIGHER ASSY. | | |
| E-UA-5413867-0-0 | | SIZE D CODE CS NUMBER 5413867-0-1 REV. B |
| SCALE | | |
| SHEET 1 OF 2 | | DIST. |

T1 PART OF T1 SHEET 1 · D29 UES1403 · C37 2700 25V · C29 .22 · R68 750 3W · TP38 · D11 · R33 1.8K · Q5 DARL. MJ1000 · D9 IN756A · TP32 · 5.1V · R25 1.5K · C18 .01 · TP33 · *R27 · R26 23.7K 1% · C19 2200PF · 324 E4 · R13 .04 3W · R11 111.1 1% · R4 100 · *R15 · D4 · D5 · *R14 · TP7,8,9 · J3 3 (OUTPUT) -00 +15V@ 2A -YA +12V@ 2A · D42 MCR69-1 · R81 300 · R17 200 · C9 .047 · C3 .22 · C10 10 · +14V · TP20 · 2.5V · TP24 · -U.V. · TP27 · C2 22 35V · TP31 · *R8 · TP29 · C5 .22 · R9 1K 1% · C6 .01 · +14V · R7 5.1K · TP28 · 5.1V · R10 28K 1% · UV DELAY · OV DELAY · 2.5V REF · 3543 E2 · SCR TRIG · UV IND · OV IND · RMT SET · C.L. · COM · RESET · +14 · Q2 A05 · TP44 · J3 4 CH3 OK A · J2 5 CH3 OK · R6 1.2K · R5 2.2K · R79 6.8K · TP2 · SCR GATE · C7 5600PF · R12 10K · Q1 A05 · R2 27K · R1 10K · TP26 · 5.1V · C1 .1 · R21 560 · 5.1V REF · OSC OUT · FF · SYNC · RT · DIS · OSC · V IN · J2 1 CLOCK · TP6 · R20 1K · R18 15.0K 1% · TP4 · C13 680PF · 3 FREQ SHIFT · C14 2700PF 1% · TP34 · CT · COMP · COMP · 5.1V · R24 3.83K 1% · +14 · C23 .1 · 324 E4 · D10 · R31 1.20K · R32 1.87K 1% · -14 · C24 .1 · R82 10K · C16 5600 PF · C17 .1 · R30 360K · +IN · -IN · AMP · 3527A E1 · COM · CNTRL · R22 30K · 2.5V · D7 · SHT DN · SHTDN · SOFT ST. · C12 10 · R80 10K · D6 · R19 10K · D3 · -OV · TP30 · TP25 · +14V · R65 10 1W · R64 470 1/2W · Q7 2N4401 · Q8 2N4403 · TN OFF DR · 2 CH3 INH · TP5

*COMPONENT VALUES

| | -00 | -YA |
|---|---|---|
| OUTPUT VOLTAGE | 15V | 12V |
| R27 | 46.4K, 1% | 32.4K, 1% |
| R15 | 18.7K | 15.0K |
| R14 | 5.76K, 1% | 4.64K, 1% |
| R8 | 348, 1% | 383, 1% |

ALL DIODES D672 UNLESS NOTED OTHERWISE.

| REVISION HISTORY | | |
|---|---|---|
| DATE | ECO NUMBER | REV. |
| | | |

TITLE: COMMUNICATION REG

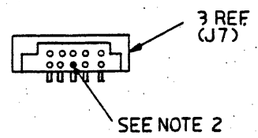
DOCUMENT NUMBER: SIZE D · CODE CS · NUMBER 5413867-0-1 · REV. B

SCALE — · SHEET 2 OF 2

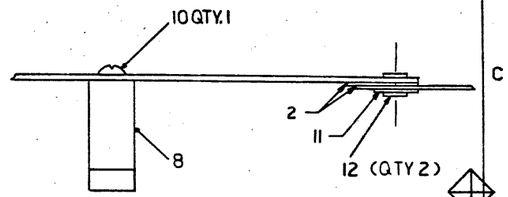
DRD 138A

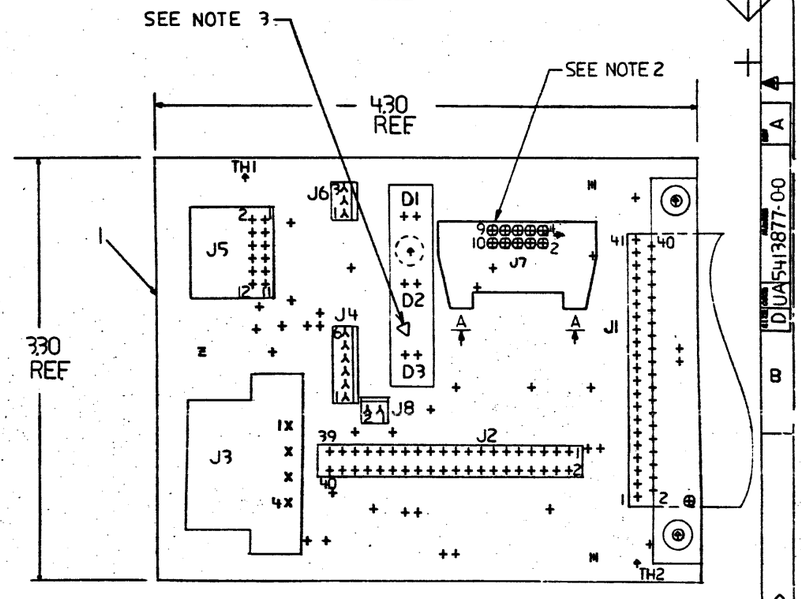
REV. B · SIZE CODE DCS 5413867-0-1

COMPONENT SIDE VIEW




VIEW A-A
(SCALE:NONE)




NOTES:
1. STEP & REPEAT 2ML80
2. BEFORE INSTALLATION CLIP PIN NO.6 FLUSH TO 02 MAX HIGH
3. NOTE ORIENTATION OF ITEM 8(HOLDER).

| | |
|---|---|
| STEP & REPEAT | ↑ Y AXIS 3.30 STEP 2 TIMES |
| | → X AXIS 4.30 STEP 2 TIMES |

| CHG | CHANGE NO | REV |
|---|---|---|
| | | A |

ETCH REV. B-P1

| SIGNATURES | DATE |
|---|---|
| DRN. S.CORCORAN | 1/5/81 |
| CHK'D. | 1-21-81 |
| MECH.ENG | 5/19/81 |
| PROJ.ENG. | 5/19/81 |
| PROD. | 5/19/81 |
| SCALE 2/1 | |
| SHT. 1 OF 1 | |
| NEXT HIGHER ASSY. B-DD-5413877-0 | |

digital

TITLE H7202 DISTRIBUTION BOARD

| SIZE | CODE | NUMBER | REV |
|---|---|---|---|
| D | UA | 5413877-0-0 | A |

DUA5413877-00

TW 1 WO#172359

AUTOMATED BY PRTLST.3P(44)

# P A R T S  L I S T



| LINE | ITEM | DOCUMENT NUMBER | PART NUMBER | DESCRIPTION | QTY PER VARIATION 00 | REFERENCE DESIGNATOR |
|---|---|---|---|---|---|---|
| 1 | 1 | D-MD-5013876-0-0 | 5013876-00 | DRILL AND ETCH BOARD | 1 | |
| 2 | 2 | | 1700213-00 | CIRCUIT,FLEXIBLE DISTRIBUTION | 1 | |
| 3 | 3 | | 1209941-05 | HEADER.100 10POS RT ANGLE | 1 | J7 |
| 4 | 4 | | 1211004-01 | SOCKET.100 40POS BOTTOM MOUNT | 1 | J2 |
| 5 | 5 | | 1218243-02 | HEADER.100 2PIN STRAIGHT | 1 | J8 |
| 6 | 6 | | 1216112-04 | HEADER.100 12POS DB SHROUDED | 1 | J5 |
| 7 | 7 | | 1218027-00 | HEADER 4PIN RT ANGLE | 1 | J3 |
| 8 | 8 | | 1210940-02 | LED HOLDER(3-DEC PART 11-10864) | 1 | |
| 9 | 9 | | 1110324-00 | LED 1MCD@10MA PIV=3 | 3 | D1-D3 |
| 10 | 10 | | 9010128-00 | SCREW,TAPPING,TYPE PAN ,PHIL, | 1 | |
| 11 | 11 | C-MD-7425196-0-0 | 7425196-00 | BRACKET,STRAIN RELIEF | 1 | |
| 12 | 12 | | 9000024-01 | EYELET,ROLL FLANGE .1210DX .192 | 2 | |
| 13 | 13 | | 1218243-00 | HEADER.100 3PIN STRAIGHT | 1 | J6 |
| 14 | 14 | | 1218243-03 | HEADER.100 6PIN STRAIGHT | 1 | J4 |

REVISION HISTORY

| ENG | ECO NUMBER | REV |
|---|---|---|
| --- | INITIAL | A |

BASIC PART NO: 5413877

SECTION A OF A

SECTION.VARIATION INDEX
[A] 00
[B]
[C]
[D]
[E]
[F]
[H]
[J]
[K]
[L]
[M]
[N]

DRN: J.FERGUSON DATE: 16-OCT-80

CHK'D: J.FERGUSON DATE: 16-OCT-80

DES.ENG: C.LANDINO DATE: 12-10-80

RESP.ENG.: C.LANDINO DATE: 12-10-80

MFG.ENG.: H.ORTIZ DATE: 12-11-80

ASSEMBLY NUMBER: D-UA-5413877-0-0

TOP DOCUMENT NUMBER: B-DD-5413877-0-0

D I G I T A L

TITLE PARTS LIST

H7202 DISTRIBUTION BOARD

DOCUMENT NUMBER

| SIZE | CODE | NUMBER | REV |
|---|---|---|---|
| K | PL | 5413877-0-DBP | A |

FILE NAME: Z1312.PLS

EDIT # 10

# BACKPLANE

## J2

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40

+5.1VB | RMT SENSE + | RMT SENSE − | LTC | +12V/+5.1VB | BOOT EN. | −12V/+5VB | ±15VBRTN | TOY RTN | −15 V | +15V | +5.1VB RTN | TOY +5 | SIG RTN | D.C. LOW | A.C. LOW

FLEXIBLE CIRCUIT (1700213-00)

P1
- -YA, +12V, -00 — +15V — 3
- -YA, -12V, -00 — −15V — 1
- -YA ± 12V, -00 ± 15VRTN — 2
- CH3 OK — 4

P2 J1

P4
- +5.1VB — 1, 2
- +12V/+5.1VB — 3
- −12V/+5.1VB — 4
- +5.1VB RTN — 5, 6, 7
- CH2 OKA — 6
- +12.3V — 9
- +12.3V RTN — 10

P3
- RMT SENSE+ / AC LOW — 1, 30
- RMT SENSE− / DC LOW — 2, 4
- LTC — 6
- SIG RTN — 7
- AIR FLT — 19
- BOOT EN. — 8
- BUS RTN — 9
- ST BY — 10
- SHT DN — 11
- BAT. EN. — 13
- PWR. REQ. — 12
- MOD EN — 14
- 5 V AUX — 15
- BAT. REQ. — 16
- CH1 OK — 18
- P.S. RTN — 17
- AIR FLT PULL-UP — 20
- STBY SELECT — 21
- CH1 STBY — 22
- CH3 STBY — 24
- CH2 STBY — 23
- 50 KEY

D3 CON REG PWR

D1 MEM REG PWR

D2 +5V PWR

J8 D.C. FAN
- +12.3V — 1
- +12.3V RTN — 2

J3 TU58 POWER
- +5.1VB — 3
- +5.1VB RTN — 4
- +12.3V — 1
- +12.3V RTN — 2

J4 FAN ASS'Y
- P.S. RTN — 3
- +12.3V — 2
- +12.3V RTN — 1
- AIR FLT — 4
- AIR FLT PULL-UP — 6
- 5V AUX — 5

J5 BBU
- BAT STATUS — 5
- +5.1VB — 1
- +5.1VB RTN — 9
- TOY +5 — 3
- BAT. EN. — 2
- TOY RTN — 10
- MOD. EN. — 4
- BAT. REQ. — 8
- P.S. RTN — 12, 7, 6, 11

J6 POWER CONTROL BUS
- BUS RTN — 3
- SHT DN — 1
- PWR. REQ. — 2

J7 CONSOLE
- (BAT MON.) BAT STATUS — 2
- ST BY — 4
- (D.C. ON) PWR. REQ. — 5
- KEY — 6
- +5.1VB RTN — 7
- BUS RTN (P.S. RTN) — 1, 8

| REVISION HISTORY | | |
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DIGITAL EQUIPMENT CORPORATION

H7202B POWER SUPPLY ENGINEERING


| REV | DESCRIPTION | CHG NO | ORIG | DATE | APPD BY |
|---|---|---|---|---|---|

| ENG | APPD | DATE | SIZE | CODE | NUMBER | REV | |
|---|---|---|---|---|---|---|---|
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The information in this specification is subject ot change without notice and should not be construed as final. No responsibility is assumed for any errors that may appear in this specification.

| SIZE | CODE | NUMBER | REV | |
|---|---|---|---|---|
| A | SP | H7202-B-0 | A | TW |

CHAPTER 1
SCOPE

## 1.1 General Description - H7200 Series Power Supplies

This specification covers an off-line, high frequency switching power supply with a regulated 5 volt main output at 0 to 60 amps, memory and communications options outputs up to 400W total for all. It consists of a motherboard with supporting chassis and input- output connections. Size is approximately 15 x 50 cm. and 12 cm. high; weight is approximately 8 kilograms. Input power is 90-132 or 180-264 (internal select switch) at 48-63 Hz.

Outputs are divided into three groups: Main output (Channel 1): 5.1V main; Memory outputs (Channel 2): +5V at 15A for MOS memory, and DC Fan/TU58 power; Com Outputs (Channel 3): ±15V.

All outputs except fan/TU58 +12V feature overvoltage and overcurrent protection and are regulated independently of one another. Battery backup and AC standby are operable for the memory power channel (CH2).

Additionally, AC low and DC low signals are provided as well as AC line clock and boot enable. This power supply will be UL recognized, CSA certified and comply with DEC-STD-119 Rev B.

## 1.2 Reference Documents

DEC Standard 023 - Circuit Schematics
DEC Standard 60 - Policy Relating to Nationally and Internationally Recognized Laboratories.
DEC Standard 102 - Section 7 - EMI
DEC Standard 102 - Environmental Standards
DEC Standard 116 - Workmanship Standards
DEC Standard 119 - Product Safety
DEC Standard 120 - Cooling Standards
DEC Standard 122 - AC Power Line Standard
DEC Standard 123 - Power Control Bus Standard
DEC Standard 139 - Reliability Prediction
DEC Standard 158 - Unibus

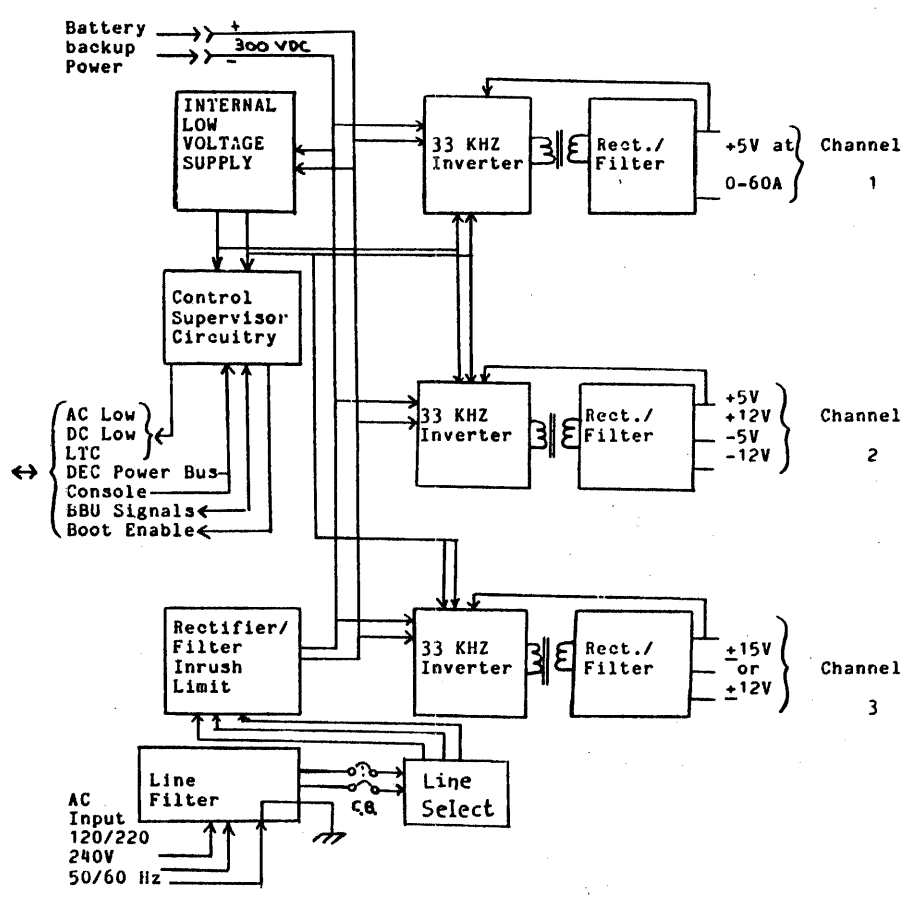
Engineering Print Set
DEC Standard 002 - AC Power Wiring, Grounding, Receptacles and Nameplates
DEC Standard 030 - Module Manufacturing Specification





FIGURE 1

FUNCTIONAL BLOCK DIAGRAM FOR H7200 SERIES POWER SUPPLIES








CHAPTER 2
ELECTRICAL SPECIFICATIONS (H7202B)

## 2.1 Input Specifications - AC Line

Note: Selection of low range or high range is accomplished through a tool operated slide switch located adjacent to the circuit breaker. A clear cover is also used to discourage casual operation.

### 2.1.1 Line Voltage

Note: Line impedance must be sufficiently low to assure less than 5% total harmonic distortion of the line AC waveform.

Low Range: (120V nominal) 90-132 (rms) single phase three wire.

High Range: (240V nominal) 180-264 (rms) single phase three wire.

### 2.1.2 Line Frequency

47-63 Hz for either voltage range.

### 2.1.3 Line Current

Peak and RMS currents vary proportionally with line voltage.

Low Voltage Range: 8.5 amperes (rms) max. and 25 amperes (peak) max. at a nominal 120 VRMS line.

High Voltage Range: 4.2 amperes (rms) max. and 12 amperes (peak) max. at a nominal 240 VRMS line.

### 2.1.4 Power Factor

The ratio of real power to apparent power shall be greater than 0.60 at full output load and nominal input voltage.

### 2.1.5 Inrush Current

At first application of input voltage to the power supply, the stated surge current may be reached for 1/2 cycle of the input line. Following that, there will be repetitive peaks of lower amplitude for up to 10 more cycles of the line.

Maximums: Low Voltage Range: 120 A (Peak)
High Voltage Range: 120 A (Peak)





### 2.1.6 Input Overload Protection

A two pole circuit breaker is provided to protect the input wire and components. This breaker is accessible and is a 15 Amp rating for both 120V and 240V settings.

### 2.1.7 Insulation/Hi-Pot

2.1.7.1 2120 V dc and 300 VAC, (rms) 50 Hz between input and frame and shields for 1 minute as specified in DEC-STD-119 Rev C, section 2, paragraph 2.

2.1.7.2 2500 VAC (rms) 50 Hz between input and output for 1 minute. In accordance with DEC-STD-119 Rev C. This excludes the line filter.

2.1.7.3 All isolation transformers shall have been high potential tested prior to assembly into a module or assembly. Devices without shields will have been tested to reinforced insulation levels (3750 VAC).

### 2.1.8 Input Power

The average input power shall be 650 watts max. with the outputs loaded to a total of 400 watts.

### 2.1.9 Grounding

The green/yellow bonding ground wire is connected to the metal case and to transformer shields. It is internally connected to the main 5V return.

### 2.1.10 Ride-Through Capability

All outputs are maintained within stated regulation limits for a minimum of 6 milliseconds after input power interruption at low line (either voltage range). AC low may be asserted at the interruption; DC Low will follow a minimum of 5 milliseconds after AC Low. (See power-down protocol Section 5.3.) The delay from power interruption to AC low increases with higher line voltage (either range) and lighter loads.

2.1.11 Efficiency

The ratio of output DC power at the power supply terminals to the input real power shall be 0.65 minimum taken at 5V/60A in either input voltage range. This ratio may degrade to .60 when other outputs are loaded.

2.1.12 Input Over/Under Voltage Conditions

Undervoltage: The power supply is capable of withstanding any undervoltage condition for any duration without damage or degradation.

Overvoltage: The power supply is capable of withstanding an input overvoltage of 150 VAC (RMS (low voltage range)) or 300 VAC (RMS) (high voltage range) for one second maximum without sustaining any internal damage or degradation. The outputs are protected from overvoltage (within crowbar range) under these conditions. Overvoltage in excess of this may be damaging to the power supply.

2.1.13 Input Line Noise Susceptibility

2.1.13.1 Transients

Note: A spike is defined as a voltage transient, of either polarity and of either common or differential mode, with a rise time (10% to 90%) of 0.1 micro-seconds or less and a fall time (to 10%) of 10 micro-seconds or more. The average power of spikes shall not exceed 0.5 watts. They may occur at any phase value of the input AC, adding to the instantaneous value.

2.1.13.1.1 Low Energy Transients

In accordance with DEC-STD-102.7 Rev C.

2.1.13.1.2 High Energy Transients

In accordance with DEC-STD 102.7 Rev C.

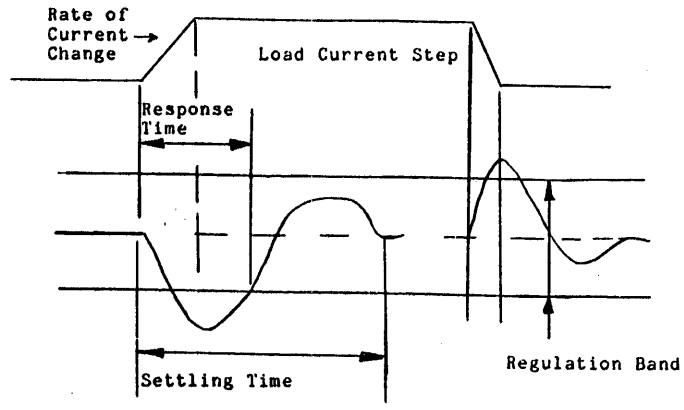
2.1.13.2 Conducted Noise

In accordance with DEC-STD-102.7 Rev C.





FIGURE 2.1 DYNAMIC RESPONSE TIME




2.1.13.2 Radiated Noise

In accordance with DEC-STD-102.7 REV C.





2.2 Output Specifications

This power supply has a fixed 5.1V output on the major board with remote sense capability. Other outputs are provided from the regulator cards. These outputs are regulated at the card. (See Table I.)

2.2.1 Output Voltages (Table I)

For all outputs, The "Total Tolerance" is the root-sum-squared of errors due to:

Initial Tolerance
Dynamic Voltage Limits
Line/Load Changes Over Specified Range
Long Term Stability (1000 hours)
Temperature Drift
Ripple

The "Total Static Tolerance" is the root-sum-squared of errors due to:

Initial Tolerance
Line/Load Changes Over Specified Range
Long Term Stability (1000 hours)
Temperature Drift

2.2.2 Output Current (Table I)

The minimum and maximum currents for each output are specified in Table I. Where minimum loads are given, it indicates a minimum loading level necessary to keep other outputs within that channel grouping within regulation.

2.2.3 Wattage

The maximum wattage from each output is the product of the max rated current and the sum of the rated voltage and the total tolerance. The maximum power obtainable from combining all output powers in any application must be limited to 400 watts.





2.2.4 Line/Load Regulation

Table I shows the maximum deviation of each output for gradual line and load changes. The line voltage range for this parameter is the full range specified in 2.1.1. The load current variation is from minimum load to maximum rated load as specified in Table I. Gradual change is defined for this purpose as covering the range in more than one second.

2.2.5 Noise

Table I shows the maximum peak to peak noise which is present on each output. Noise must be measured at the output terminals of the power supply. The noise voltage is superimposed on the ripple voltage. Noise is defined as repetitive disturbances at a frequency greater than 170 KHZ.

2.2.6 Ripple

Table I shows the maximum peak-to-peak ripple voltage present on each output at the specified measurement points. The output deviations classified as ripple are repetitive disturbances in the frequency range of 1 Hz to 170 KHZ.

2.2.7 Dynamic Response Time

Table I shows the dynamic response characteristics of each output channel. The load current change, the allowable overshoot/undershoot, the response time and the settling time are specified for each channel. Each channel is to be subjected to a maximum rate of load current change of 0.5 Amperes per microsecond (increasing or decreasing load). The load changes are to occur as a 50% duty cycle square wave at a frequency of 100 hertz max; within the min/max values specified in Table I. Figure 2.1 shows a typical output wave form and defines all the above mentioned terms.

2.2.8 Temperature Coefficient

The maximum temperature coefficient of each output of this supply is ±0.02%/oC maximum over the operating ambient temperature range specified in 7.1.1. The measurement of temperature coefficient is to be made at 50% load on all outputs, nominal line voltage and after ten minute warm-up period with proper cooling air flowing.

2.2.9 Short Term Stability

The changes in the voltage at each output during warm-up after the initial turn-on will be less than 0.2% of the output measured. This measurement is made from one second after the supply is turned on until component temperature stability is reached (no later than one hour after turn on). All other parameters and environmental conditions must remain constant during this test.

2.2.10 Long Term Stability

The long term stability of each output of the supply is 0.1%/1000 hours maximum when measured under constant line, load and environmental conditions. The conditions must be within the limits called out in this specification.

2.2.11 Output Overload Protection

Table I shows the type of current limiting scheme and initiating point (limits) for each output.

The description of each type is below:

| | |
|---|---|
| **Pulsing** | In this mode, the output is turned off for some fixed period of time after the initiation point is reached. Upon reactivation of the output, the output current builds; then, if the initiation point is reached again, the output turns off again. The average current in this mode is low, but with higher peaks. |
| **Constant Current** | At the initiation point, the output current is held constant and the voltage dropped to a level sufficient to maintain the fixed current level. |
| **Foldback** | In this mode, once the initiation point is reached, the voltage is lowered and the output current level also lowered. At a short circuit, the current is approximately 40% - 60% of the initiation point current. |





The current limit on all outputs is configured such that the output will automatically recover to normal operation upon the removal of the overload.

All outputs are capable of operating for indefinite periods of time with short circuits on the output without causing damage or degradation to any portion or component of the supply.





TABLE I

| | UNITS | | | |
|---|---|---|---|---|
| Output Designator | | #1 | #2 | #3 |
| Power Channel | | 1 | 2 | 2 |
| Nominal Voltage | V.dc | +5.1 | +12.3 | +5.1 |
| Rated Current (Max) | A.dc | 60 | 3.0(Note 2) | 15.0 |
| Minimum Current | A.dc | 0 | 0.8(Note 3) | 2.0 (Note 1) |
| Total Tolerance | ±mV.dc | 230 | 1000 | 300 |
| Total Static Tolerance | ±mV.dc | 150 | 850 | 275 |
| Initial Tolerance | ±mV.dc | 100 | 500 | 100 |
| Static Line/Load Regulation | ±mV.dc | 100 | 675 | 250 |
| Ripple Voltage | mV (p-p) | 100 | 200 | 75 |
| Noise Voltage | mV (rms) | 50 | 100 | 50 |
| Dynamic Regulation | (Figure 2) | | | |
| I | A | 5 | 0.6 | 3.0 |
| Over/Undershoot (max) | mV | 150 | 500 | 100 |
| Response Time (max) | ms | 1.0 | 10 | 1.0 |
| Settling Time | ms | 1.5 | 15 | 1.5 |
| Current Limit Type | -- | Pulsing | Pulsing | Pulsing |
| Initiation Point(min/max) | A.dc | 65-75 | 3-3.5 | 16.0/22.0 |
| Short Ckt Current (max) | A (RMS) | 5 | 2.0 | 8.0 |
| (max) | A dc | --- | | |
| Overvoltage Trip Pt. | V dcmax/min | +6.5 | +14.5/15.5 | +5.4/6.0 |
| Maximum Voltage | V dc | +7.0 | | 6.5 |

Note 1: The minimum load specified for the +5.1V output is required to maintain reg. on the +12.3V output. The 5.1V output will operate at no load but the +12.3V output will be below spec.

Note 2: Max continuous output current for +12.3V output is 3.0 amps. Intermittent currents of up to 6.0 amps may be drawn for several seconds if the duty cycle is kept below 2%. If continuous currents of greater than 3.0 amps are drawn a thermal protection switch will shut the supply down.

Note 3: The minimum load specified for the +12.3V output is required to maintain regulation. If the minimum load is below that specified the +12.3V output can be out of regulation on the high side. If the load falls below 0.75A the 12.3V output can rise sufficiently to cause an overvoltage condition and the module will shut down. See A-SP-H7213, paragraph 2.2.13.





TABLE I (Cont'd)

| | Units | High Range | |
|---|---|---|---|
| Output Designator | | #4 | #5 |
| Power Channel | | 3 | 3 |
| Nominal Voltage | V.dc | +15.0 | -15.0 |
| Rated Current (max) | A.dc | 2.0 | 3.0 |
| Minimum Current | A.dc | 0 | 0.3 |
| Total Tolerance | ±mV.dc | 580 | 700 |
| Total Static Tolerance | ±mV.dc | 500 | 630 |
| Initial Tolerance | ±mV.dc | 450 | 550 |
| Static Line/Load Regulation | ±mV.dc | 175 | 275 |
| Ripple Voltage | mV (p-p) | 200 | 300 |
| Noise Voltage | mV (rms) | 150 | 150 |
| Dynamic Regulation: | (Figure 2.1) | | |
| Current Step | A | .2 | .3 |
| Under/Overshoot (max) | mV | 200 | 50 |
| Response Time | ms | 0.5 | 0.25 |
| Settling Time | ms | 0.5 | 0.25 |
| Current Limit Type | -- | Foldback | Foldback |
| Initiation Point | A.dc | 2.1-3.0 | 3.1-4.0 |
| Short Ckt Current (max) | A (RMS) | --- | --- |
| (max) | A dc | 0.5 | 1.5 |
| Overvoltage Trip Point min/max | V dc (max) | +17.0/19.1 | -16.7/18.8 |
| Maximum Voltage | V dc | +21.0 | -21.0 |

2.2.12 Overvoltage Protection

All outputs except designator 2, table 1, have a crowbar protective device to prevent the voltage from exceeding the maximum fault voltage level indicated in Table I. The crowbars will be capable of discharging all internal and rated external capacitances. The maximum response time of the protection is 2 microseconds. The maximum voltage is not exceeded during the response time.

All overvoltage fault circuits (crowbars) are latching. The latched-off condition can be reset by removal of AC power for at least one minute or by removal of Power Request and Standby signals (console switch to "off").

2.2.13 Output Adjustment

All outputs are fixed with no means of adjustment. Channel 3 outputs are available for ±15V or ±12V. This selection is by choosing a variation of the module.

2.2.14 Output Sequencing

None.

2.2.15 Voltage Margins

There are no margin circuits or capability provided.





2.3 D. C. Input - Battery Backup Power

P1 is the inlet connector for Battery Backup Power. It is common with the bulk DC on the major board which is derived from line rectification. It is not isolated from the AC line. Proper cable mounting, shielding and insulation must be exercised when using this input to avoid circumventing the AC line filter and preserve signal integrity in adjacent cables. In systems that are high potential tested, this input is raised to the high voltage.

Note: This input is in common with the internal bulk DC voltage. There is no fusing or limiting provided. High surge and average currents are therefore possible from this interface, as with any 240V line connection.

There is internally stored energy available at this connection for several seconds after power removal following some internal failures. These two terminals must not be short-circuited together or to ground to discharge this energy.

This input is to be used only with isolated BBU units such as the H7240 series battery converters.





CHAPTER 3
ELECTROMAGNETIC INTERFERENCE

3.1 Limits of Equipment Generated Interference

AC Power Lines
Compliance with FCC A and VDE A limit is provided by the line filter within this power supply.





CHAPTER 4
APPLICATION SPECIFICATIONS

4.1 Input - Voltage Current and Cord Requirements

The input voltage range is selected with a screwdriver operated slide switch on the unit. The inlet connector is a three pin (IEC) connector. A 14 guage three wire cord is required. This cord is not supplied with the power supply. Removal of a small protective cover is required for operation of the line select switch.

4.2 Output Voltage, Current and Harness Requirements

The main 5 volt output is available at the connection blocks on the unit. A suitable bus bar or sufficient size wire is required to conduct the current used by the load and restrict the voltage drop to 100 mV between output terminals and remote voltage sense points for each lead, supply and return. Other voltages are available at the backplane connector on the distribution board (see D-IC-H7202). Voltage drops for these are determined by user requirements.

4.3 Load Duty Cycle

The power supply will operate within all specification limits continuously with any outputs loaded to full rated current, provided total DC output power does not exceed 400W.

4.4 Paralleling Requirements

Operation of this supply connected in parallel with any other power supply is not permissible.

4.5 Load Capacitance

The maximum external capacitance added in parallel at the load (for decoupling, etc.) for each output is:

| | | | |
|---|---|---|---|
| +5V | : 500 uf | +15V | : 270 uf |
| +12V | : 100 uf | -15V | : 270 uf |
| +5VB | : 500 uf | | |

These limits are necessary to insure system stability.

## 4.6 Load Connection Characteristics

The interconnection circuit from the output to the remote sense attachment points is restricted in inductance and capacitance to assure system stability as follows:

| | | | |
|---|---|---|---|
| maximum inductance | (Normal mode) | 50 | Microhenries |
| maximum capacitance | -- | 500 | Microfarads |
| maximum LC product | 250 X $10^{-12}$ | | FARAD-HENRIES |

## 4.7 Remote Sense

The main 5V output has remote sense capability. The maximum sense line length is one meter (each line). A capacitor of 0.1 uF is required at the sense line termination at the load. The sense lines are pin 6 (+) and 8 (-) in connector J2. The power supply output is protected from opening or shorting the sense lines. Crowbar is considered adequate protection for this purpose. Regulation limits are not guaranteed if the sense line resistance from the sense pins to the 5V output exceeds 0.5ohm (each line). In the event of an open sense line, regulation takes place at output assembly on the H7200 power module.

## 4.8 Battery Back-Up Requirements

This power supply is capable of operating from a battery back-up with a 200V output interfacing with the primary bus, such as the H7240 series units. The power supply is capable of operation in this mode for 30 seconds maximum at rated load and temperature without forced air cooling. External forced air is required for operation for longer periods in this mode.

This unit is internally programmed to back up Channel 2 outputs (memory regulator). These are also the "standby" outputs (See Table I and 5.2.2).

## 4.9 Return Wire Voltage Offsets

The return lines for each power channel must be connected together externally for normal, safe operation. This is normally done at the load. In such cases, the difference in return wire voltage drops due to distribution losses must be less than 350 mV for any combination of two of the three power channels. This is necessary to prevent shortening the life of the internal ground isolation resistors between the power channel control circuits.





# CHAPTER 5
# SIGNAL SPECIFICATIONS

## 5.1 Output Signals

### 5.1.1 DC Low

This signal when asserted (low state) indicates that the dc voltage at the input bus is not adequate to maintain regulation of the outputs, and that output DC power is about to drop. All outputs will remain in regulation for 1 millisecond minimum after this signal is asserted.

The output signal is provided on two lines leading to an ungrounded (floating) FET. On power turn-on this signal is asserted until regulation is reached.

Electrical Characteristics:

Asserted (low) - Capable of sinking 50 mA. at 0.4Vmax.

Un-asserted (high) - Output impedance of 100 K ohms min, 15V maximum applied voltage.

### 5.1.2 AC Low

This signal when asserted (low state) indicates that the dc voltage at the input bus is at or near the value necessary to guarantee the 5 mS. hold-up prior to DC low. This value is below the specified line voltage but above the minimum required for regulation. When un-asserted (high) this signal indicates adequate input voltage.

On power turn-on this signal is asserted until after DC low is de-asserted. On power turn-off this signal is asserted 5 milli-seconds minimum prior to DC low (See Figure 5.2, 5.3).

Electrical characteristics are the same as DC low (see 5.1.1). The return lead (FET source) is common with DC low.





### 5.1.3 Line Clock Signal

This signal is a timing reference at the frequency of and synchronous with the AC line. Its waveform is a square wave of approximately 50% duty cycle. Its source is an open-collector transistor sinking 20 mA. with 0.4V maximum in the low state and high impedance in the high state. High state maximum applied voltage is 15V, minimum impedance is 100 K ohms. The return lead is common with DC low (See Figure 5.1).

Note: This signal does not function when power is derived from battery back-up.

### 5.1.4 Battery Back-Up Enable

This signal when true (high state) asserts that a valid BBU condition exists in the power supply. This enables the BBU unit to assume the "ready" state which permits fast response to a power fail condition through the BBU request signal (para. 5.1.5).

When false, a non valid condition is indicated such as thermal shutdown or output failure. This allows the BBU unit to assume the "Off" state which does not allow fast response and permits minimum battery drain. A transition from True to False while BBU unit is supplying power, terminates the backup condition, removing power.

Electrical Characteristics:

True (high state): A voltage source of +12V (10.5 min, +14.5 max) at 10 mA. max current.

False (low state): High impedance source of greater than 100 K-ohms to +14.5V maximum.

### 5.1.5 Battery Back-Up Request

This is a momentary indication of a drop in the bulk DC power input to the power stages indicating input AC has dropped. This signal is asserted simultaneously with AC low but is de-asserted when the bulk DC is increased due to the input of battery derived power (See figure 5.4). The minimum assertion time is greater than 1 millisecond.

Electrical Characteristics are the same as Battery Back-up Enable (para. 5.1.4).





### 5.1.6 Boot Enable

This signal is valid on power up between de-assertion of DC low and AC low. When true (high state) it indicates that memory voltage(s) had been good and uninterrupted since assertion of DC low on power down. When false (low state) it indicates that memory voltages had been interrupted. Electrical characteristics are the same as DC low.

## 5.2 Input Signals

### 5.2.1 DEC Power Bus

The power supply responds to these two signals (Power Request and Total Shutdown) in accordance with DEC STD 123.

Power Request: All outputs are inhibited until this signal is pulled low externally, except for the Standby mode.

Total Shutdown: All outputs are inhibited whenever this signal is pulled low externally. This signal overrides all other signals.

Normal output signal and power output sequencing per section 5.3 occurs when these signals are used.

### 5.2.2 Standby (Console Signal)

This input enables the "Standby" outputs when pulled low externally. It overrides Power Request but not Total Shutdown. "Standby" is internally programmed to be the "Channel 2" outputs (memory regulator) (See Table I).

Low State (asserted): Less than 1.0V
Source Current is -1.0 mA. max.

High State (unasserted): Greater than 10V,
Sink current: 1 uA. max.

### 5.2.3 Module Enable

This signal when asserted (low state) indicates that primary power is coming from the battery converter. This signal forces a "standby" state by internally de-asserting power request. This shuts down the Channel 1 and 3 outputs. An AC Low - DC Low sequence precedes the fall in actual DC output. See figure 5.4.

Electrical Characteristics:

Low State (asserted): External low impedance to power supply return capable of sinking 3 mA. minimum with a max. voltage of 1 Volt.

High State (unasserted): High impedance, capable of blocking +15 V with 1 micro amp max. leakage.





### 5.2.4 $\overline{\text{AIR FAULT}}$:

This signal is a shutdown input with internal latch intended for use with external environmental sensors. It consists of a pull-up line and fault signal which must be connected together externally to permit normal operation (see Figure 5). When the AIR FAULT line is pulled low to P.S. return, all DC power is removed after an AC low - DC Low sequence. An internal latch is also set, holding this condition until Power Request and Standby inputs are de-asserted ("Key OFF"). Under default conditions with both lines open, the Power Supply will not operate.

The minimum fault assertion time to guarantee a latch is 100 microseconds.

Electrical Characteristics:

Asserted (low state): Low impedance to P.S. return capable of sinking 10 mA. with a maximum Voltage of 1 Volt.

Unasserted (high state): High impedance capable of blocking 15 VDC with a max. leakage of 1 Microamp.

Note: Electrical Characteristics apply when "pull-up" and "fault" are connected together.





## 5.3 Power-Up/Power-Down Sequencing

See Figure 5.2 for sequence of signals and events oon power-up and power-down.

FIGURE 5.1 LINE CLOCK SIGNAL




Pulse width approximately 1/2 line cycle:
50Hz line 10 ms.
60Hz line 8.3 ms.

t1, t2 < 200 ns



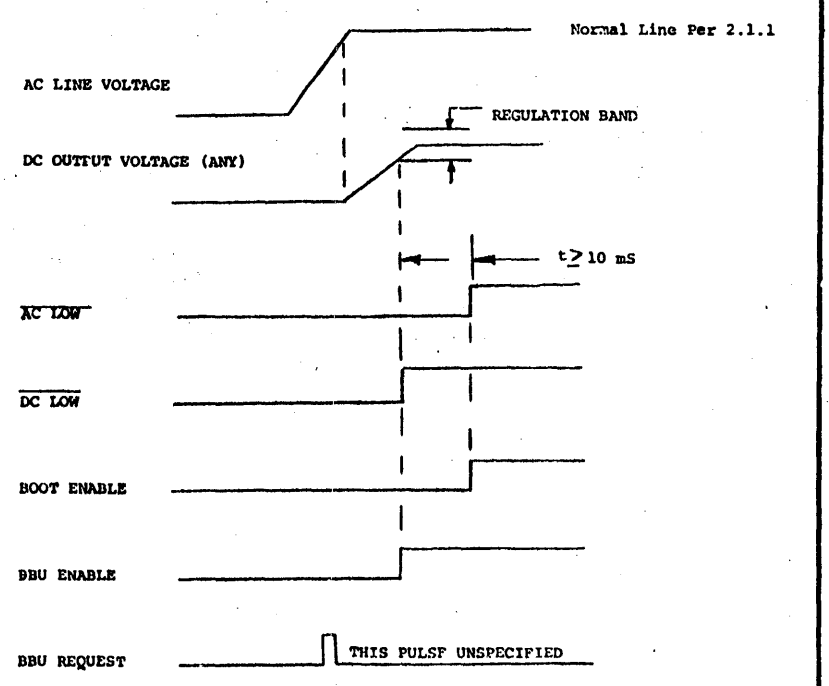
**ENGINEERING SPECIFICATION** CONTINUATION SHEET

TITLE H7202B POWER SUPPLY ENGINEERING SPECIFICATION

FIGURE 5.2

POWER UP SEQUENCING: AC LINE

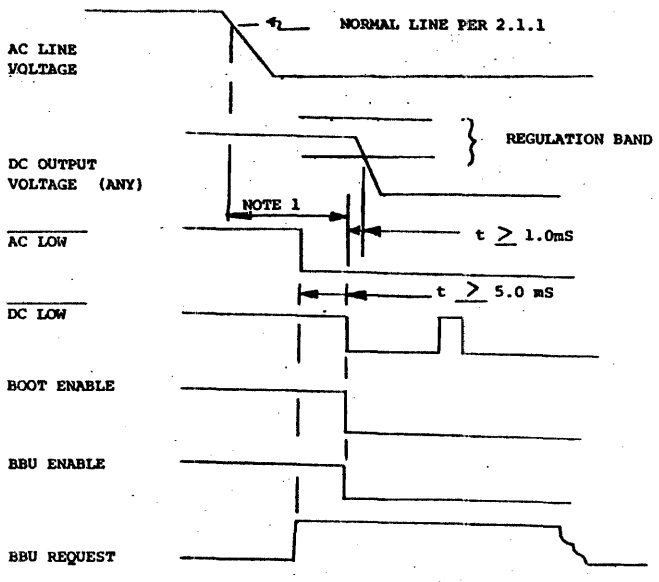
NOTE: Power Request Asserted




| | SIZE | CODE | NUMBER | REV |
|---|---|---|---|---|
| | A | SP | H7202-B-0 | A TW |

DEC FORM NO EN-01022-16-N370-(381)
DRA 108

FIGURE 5.3
POWER DOWN SEQUENCING - AC LINE
NOTE: POWER REQUEST ASSERTED, NO BBU CONNECTED




NOTE 1: This interval varies:
For 400 W total load: 0mS minimum (low line)
5mS typical (low line)
50mS typical (nominal line)

For less total load, this interval increases.





FIGURE 5.4
POWER DOWN TO POWER UP SEQUENCING WITH BBU CONNECTED (H7240 or EQUIVALENT)
NOTE: POWER REQUEST ASSERTED

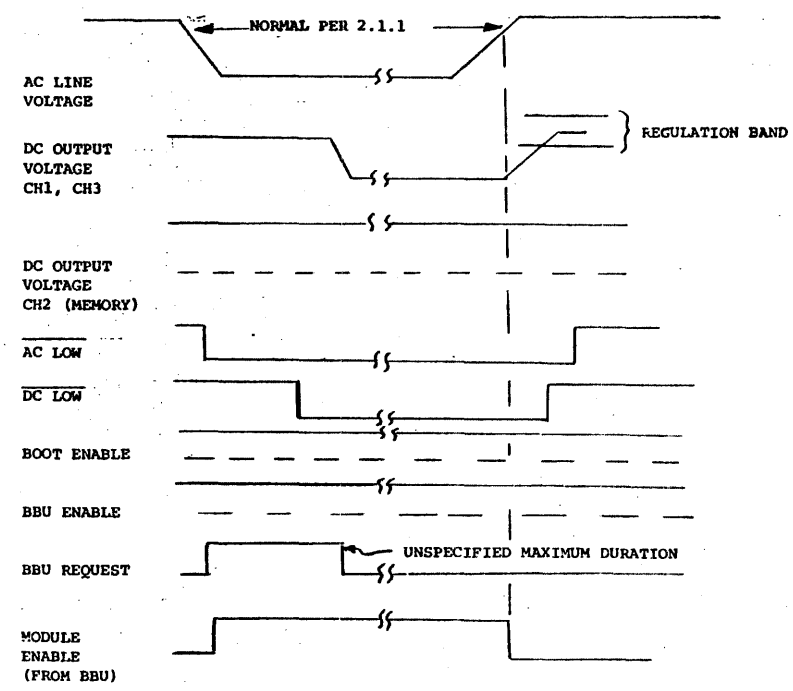
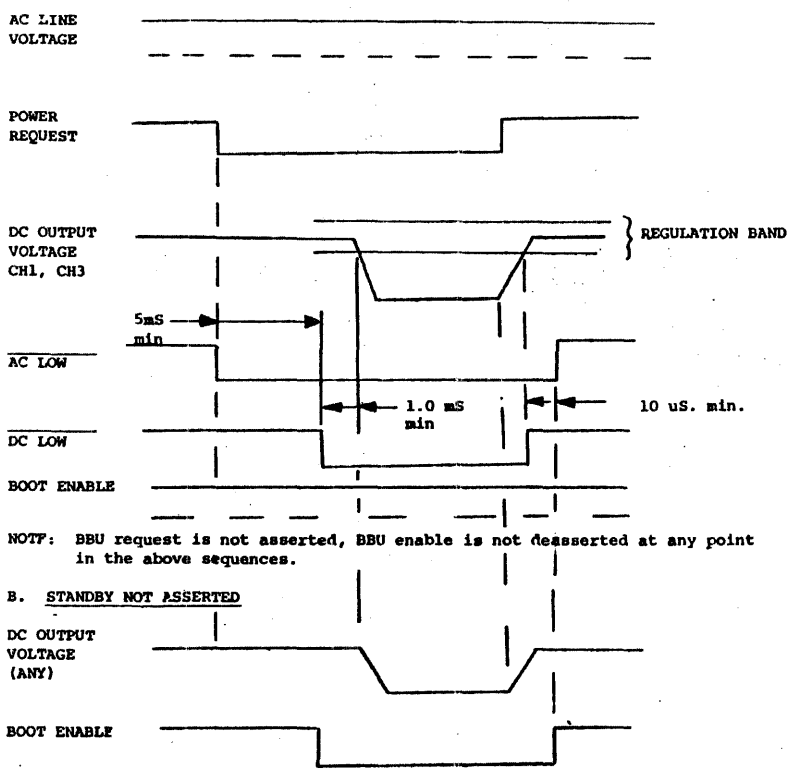







FIGURE 5.5
POWER DOWN TO POWER UP SEQUENCING - CONTROL SIGNALS

A. STANDBY ASSERTED




NOTE: BBU request is not asserted, BBU enable is not deasserted at any point in the above sequences.

B. STANDBY NOT ASSERTED








## 5.4 Status Indicators

Three red light emitting diodes indicate the status of each of the three power channels. These are visible through the connection access cover and labeled. Each LED will be on when that channel is on and outputs are within normal range.

Labels are as follows:

| | | |
|---|---|---|
| Main +5V | OK | (Channel 1) |
| Memory Power | OK | (Channel 2) |
| Com. Power | OK | (Channel 3) |

CHAPTER 6
MECHANICAL AND PHYSICAL SPECIFICATIONS

6.1 Size

The overall dimensions are 5 X 6.25 X 21 inches nominal, conforming to the dimensions shown in Figure 6.1.

6.2 Weight

The power supply with housing has a maximum weight of 8.2 kilograms (18lbs).

6.3 Mounting

Through threaded inserts comptaible with BA11-H and BA11-Z boxes .

6.4 Cooling

Externally supplied forced air at 400 linear feet per minute (20 m/s) is required to properly cool this unit when operating at full load and max. temperature. Volume requirement is approximately 80 cubic feet per minute. A suitable air filter is required to prevent dirt accumulation inside the unit. (See 7.6)

6.5 Thermal Protection

The power supply is self-protecting against the loss of adequate cooling air or excessive temperature by internal temperature switches which shut down the power supply. This sets an internal latch which is externally reset by de-asserting both power request and standby inputs (console key to OFF).

6.6 Accessibility

6.6.1 Connections:

All power and signal connections are available at the rear of the unit. A protective clear cover must be removed to access many of the power and signal connectors.

6.6.2 Service:

To access the working internal modules, the input power connector P2 must be disconnected to allow the top cover to be removed. This disconnects all HV power from the input harness. Channel 2 and 3 power modules may be removed at this point.

To remove the H7200 power module, the AC input panel must be removed, as well as the mounting screws on the bottom of the unit as well as the high current cables.





6.7 Identification Stickers

Special markings or compliance stickers are placed on the outside of the housing near the circuit breaker access, adjacent to the AC inlet connector and on the top cover.

6.8 Input/Output Connectors

6.8.1 Line Interfaces

Interfaces at AC Line potential (AC input line, battery back-up power) are through connectors in the chassis at the rear of the unit. AC line input is directly into the line filter.

6.8.2 Main Output

5V, 60A output is through screw and insert connections on the rear side corners. Interface to the load is then through flex-print (wire could also be used).

6.8.3 Other Interfaces

All other interfaces are from connectors on the distribution board under the rear protective cover. Interfaces included are:

(J2) Backplane (by flexprint) - includes DC power other than 5V/60A, and processor signals.

(J3) Fan: Power for DC fans and signals to and from air flow sensor.

(J7) Fan: Power for additional DC fan.

(J4) Battery Back-up: Signals to Battery Back-up unit.

(J6) DEC Power Bus.

(J1) Console - Control signals.





6.8.4 DEC Power Bus

These signals are carried out from the distribution board (J6) to the chassis where the standard 3 pin connector is accessible.

6.9 PACKAGING

Shipment of this unit requires that proper containers be used:

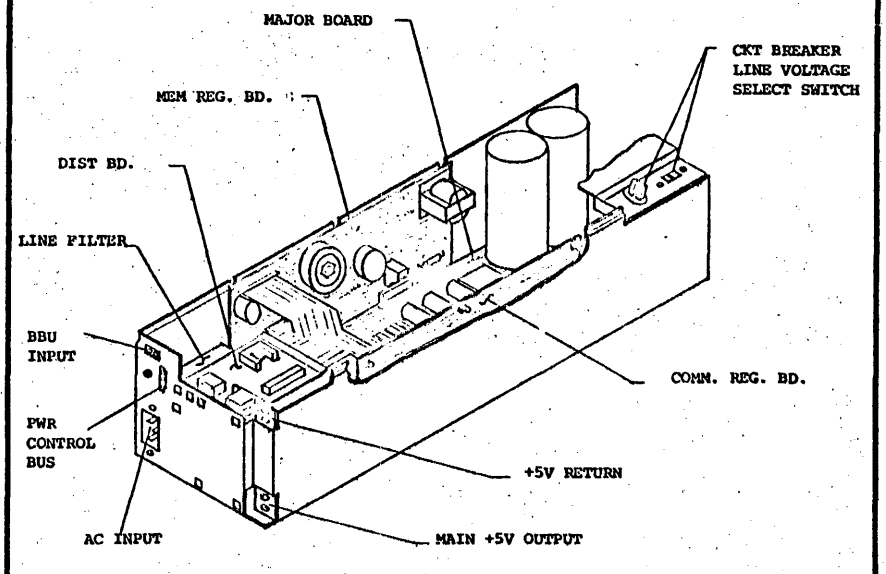
| | |
|---|---|
| bulk shipment | 3700635-00 |
| single unit shipment | 3700635-01 |

(See A-SP-3700635-0-0)





FIGURE 6.1
MECHANICAL CONFIGURATION




NOTES:

1. View shown with top cover and access panel removed.
2. Overall dimensions of power supply 21.00" X 6.25" X 5.00"

CHAPTER 7
ENVIRONMENTAL SPECIFICATIONS

General: In compliance with DEC STD 102, rev C class C.

7.1 Temperature

7.1.1 Operating Ambient Temperature Range

5 C to 55 C (intended for use in equipment rated DEC-STD 102, Class C).

7.1.2 Storage Temperature Range

-40 C to + 70 C.

7.2 Humidity

Per DEC Standard 102, Class C, Paragraph 3.0.

7.3 Altitude

7.3.1 Operating Limit

22.2 in Hg. (8,000 ft).

7.3.2 Storage Limit

8.9 in. Hg. (30,000 ft.).

7.4 Vibration

Per DEC Standard 102, Class C, Paragraph 6.0.

7.5 Mechanical Shock

Per DEC Standard 102, Pargraph 5.0.

7.6 Dirt Protection

An external filter for cooling air is required to prevent interanl dirt accumulation. This is necessary to preserve the integrity of the insulation systems.





CHAPTER 8
RELIABILITY

8.1 Life Expectancy

The design goal for life expectancy is 10 years.

8.2 Mean Time Between Failure

The deisgn MTBF is greater than 27,000 hours based on a parts count calculation and data from MIL-HBK-217B and DEC STD 139,





CHAPTER 9
SAFETY

The power supply as specified herein shall be UL recognized, CSA certified and comply with DEC STD 119 REV C.

9.1 Electrical

The power supply and its application (including battery back-up) shall be listed per UL-478-Electronic Data Processing Units and Systems and meet UL 1012 - Power Supplies.

The power supply and its application (including battery back-up) shall meet the following safety codes:

| | | |
|---|---|---|
| CSA C22.2 | No. 154 | Canadian Electrical Code, Part II, Safety Standards for Electircal Equipment. |
| VDE 0804 | | Regulations for Telecommunication Apparatus including Information Processing Equipment. |
| IEC 435 | | Safety of Data Processing Equipment. |

9.2 Regulatory Bodies

See DEC Standards 60 and 119.

9.3 Isolation

See Section 2.1.7 of this specification. Refer also to DEC Standards 60 and 119.

9.4 Grounding

The ground wire (green/yellow stripe) is connected to the power supply frame, housing and sheilds. The 5V return lead is internally connected to the chasses and ground wire.

# DIGITAL EQUIPMENT CORPORATION
## MAYNARD MASSACHUSETTS

**PACKAGING INSTRUCTION** REV: _____ DATE: _____

TITLE PKG POWER SUPPLY H7202/H7200/H7211/H7213

LEGEND

| VARIATION | USED ON | PACKAGE TYPE | REMARKS |
|---|---|---|---|
| 3700635-01 | H7202 | CUSTOMER | |
| 3700635-02 | H7202 | INTERPLANT | BULK |
| 3700635-03 | H7200 | CUSTOMER | |
| 3700635-04 | H7200 | INTERPLANT | BULK |
| 3700635-05 | H7211/H7213 | CUSTOMER | |
| 3700635-06 | H7211/H7213 | INTERPLANT | BULK |

PARTS LIST 37000635-01 THROUGH 3700635-06

REFER TO OFF-SHEET PARTS LIST K-PL-3700635-0-DBP

PACKAGING INSTRUCTIONS 3700635-01

STEP PROCEDURE FIGURE 1

1. WRAP THE FIVE PANEL FOLDER (9906851-00) AROUND THE H7202-B POWER SUPPLY AND TAPE IT WITH CARTON SEALING TAPE (9905729-00).
2. INSTALL A MOLDED FOAM PAD (9990010-00) ONTO EACH END OF THE FIVE PANEL FOLDER.
3. SET UP THE FULL OVERLAP CARTON (9906849-00) USING ONE (1) STRIP OF CARTON SEALING TAPE ALONG THE LENGTH AND ONE (1) STRIP ALONG EACH SIDE.
4. POSITION THE PRE-PACKED H7202-B POWER SUPPLY INTO THE FULL OVERLAP CARTON.
5. CLOSE AND SEAL THE FULL OVERLAP CARTON USING ONE (1) STRIP OF CARTON SEALING TAPE ALONG EACH SIDE.

SHEETS 5 THRU 10 "C" SIZE

| ENG | APPD | SIZE | CODE | NUMBER | REV |
|---|---|---|---|---|---|
| RS Gwell 7/82 | Jean Barrett 7/82 | A | PA | 3700635-0-0 | A |

EN-01189-16-0000(33L)

SHEET 1 OF 10

**PACKAGING INSTRUCTION** CONTINUATION SHEET

TITLE

PKG POWER SUPPLY H7202/H7200/H7211/H7213

PACKAGING INSTRUCTIONS 3700635-02

STEP PROCEDURE FIGURE 2

1. SQUARE AND SET UP THE HALF SLOTTED CARTON (9906856-01), USING ONE (1) STRIP OF CARTON SEALING TAPE DOWN THE CENTER EXTENDING THREE (3) INCHES DOWN EACH SIDE, AND POSITION IT ONTO THE GENERAL PURPOSE PALLET (9906199-00).
2. FIT THE GLUED TUBE (9906856-04) INTO THE HALF SLOTTED CARTON.
3. AFTER SETTING TWO (2) MOLDED FOAM PADS (9990015-00) INTO THE HALF SLOTTED CARTON, ARRANGE THE ASSEMBLED AND NESTED DIVIDER (9906856-03) INTO THE CARTON.
4. INSTALL THE H7202-B POWER SUPPLY INTO EACH OF THE DIVIDER CELLS (48 TOTAL), MAKING SURE THAT THE CAPACITOR IS ON THE TOP.
5. PLACE THE TELESCOPE CAP (9906856-02) ONTO THE HALF SLOTTED CARTON.
6. STRAP THE TELESCOPE CARTON ASSEMBLY TO THE PALLET USING TWO (2) POLYESTER STRAPS (9905734-00).

PACKAGING INSTRUCTIONS 3700635-03

STEP PROCEDURE FIGURE 3

1. WRAP THE DIE CUT CARTON (9906853-00) AROUND THE H7200 POWER SUPPLY AND TAPE IT WITH CARTON SEALING TAPE (9905729-00).
2. INSTALL A MODLED FOAM PAD (9990012-00) ONTO EACH END OF THE DIE CUT CARTON.
3. SET UP THE FULL OVERLAP CARTON (9906852-00) USING ONE (1) STRIP OF CARTON SEALING TAPE ALONG THE LENGTH AND ONE (1) STRIP ALONG EACH SIDE.
4. POSITION THE PRE-PACKED H7200 POWER SUPPLY INTO THE FULL OVERLAP CARTON.
5. CLOSE AND SEAL THE FULL OVERLAP CARTON USING ONE (1) STRIP OF CARTON SEALING TAPE ALONG THE LENGTH AND ONE (1) STRIP ALONG EACH SIDE.

| | | SIZE | CODE | NUMBER | REV |
|---|---|---|---|---|---|
| | | A | PA | 3700635-0-0 | A |

EN 01190 16 REVA(33L)

SHEET 2 OF 10

**PACKAGING INSTRUCTION** CONTINUATION SHEET

TITLE

PKG POWER SUPPLY H7202/H7200/H7211/H7213

PACKAGING INSTRUCTIONS 37000635-04

STEP PROCEDURE FIGURE 4

1. WRAP THE DIE CUT CARTON (9906853-00) AROUND THE H7200 POWER SUPPLY AND TAPE WITH CARTON SEALING TAPE (9905729-00).
2. SQUARE AND SET UP THE HALF SLOTTED CARTON (9906856-01) USING ONE (1) STRIP OF CARTON SEALING TAPE DOWN THE CENTER AND EXTENDING IT THREE 93) INCHES DOWN EACH SIDE; POSITION IT ONTO THE GENERAL PURPOSE PALLET (9906199-00).
3. FIT THE GLUED TUBE (9906856-04) INTO THE HALF SLOTTED CARTON.
4. PLACE TWO (2) MOLDED FOAM PADS (9990015-00) INTO THE HALF SLOTTED CARTON.
5. ARRANGE EIGHTY-EIGHT (88) H7200 POWER SUPPLIES,PRE-WRAPPED PER STEP ONE, PER PALLET PATTERN CONFIGURATION.
6. FIT THE TELESCOPE CAP (9906856-02) ONTO THE HALF SLOTTED CARTON.
7. STRAP THE TELESCOPE CARTON ASSEMBLY TO THE PALLET USING TWO (2) POLYESTER STRAPS (9905734-00).

PACKAGING INSTRUCTIONS 3700635-05

STEP PROCEDURE FIGURE 5

1. OPEN THE ALREADY SET-UP DIE CUT CARTON WITH CONVOLUTED FOAM (9906858-00).
2. PLACE EITHER THE H7211 OR H7213 POWER SUPPLY (COMPONENT SIDE DOWN) INTO THE DIE CUT CARTON WITH FOAM.
3. CLOSE THE SELF-LOCKING DIE CUT CARTON WITH ALL FLAPS INSIDE.

| | | SIZE | CODE | NUMBER | REV |
|---|---|---|---|---|---|
| | | A | PA | 3700635-0-0 | A |

EN 01190 16 REVA(33L)

SHEET 3 OF 10

**PACKAGING INSTRUCTION** CONTINUATION SHEET

TITLE

PKG POWER SUPPLY H7202/H7200/H7211/H7213

PACKAGING INSTRUCTIONS 3700635-06

STEP PROCEDURE FIGURE 6

1. ON A GENERAL PURPOSE PALLET (9906199-00) PLACE TWENTY-ONE (21) 3 X 7 PRE-PACKED H7211 OR H7213 POWER SUPPLIES PER PALLET CONFIGURATION.
2. CONTINUE STACKING UNTIL THERE ARE EIGHT (8) TIERS HIGH.
3. USING ANGLEBOARDS (9906185-14) POLYESTER STRAPPING (9905734-00), STRAP THE POWER SUPPLIES TO THE PALLET.

| | | SIZE | CODE | NUMBER | REV |
|---|---|---|---|---|---|
| | | A | PA | 3700635-0-0 | A |

EN 01190 16 REVA(33L)

SHEET 4 OF 10

SIZE C | CODE PA | NUMBER 3700635-00 | REV A

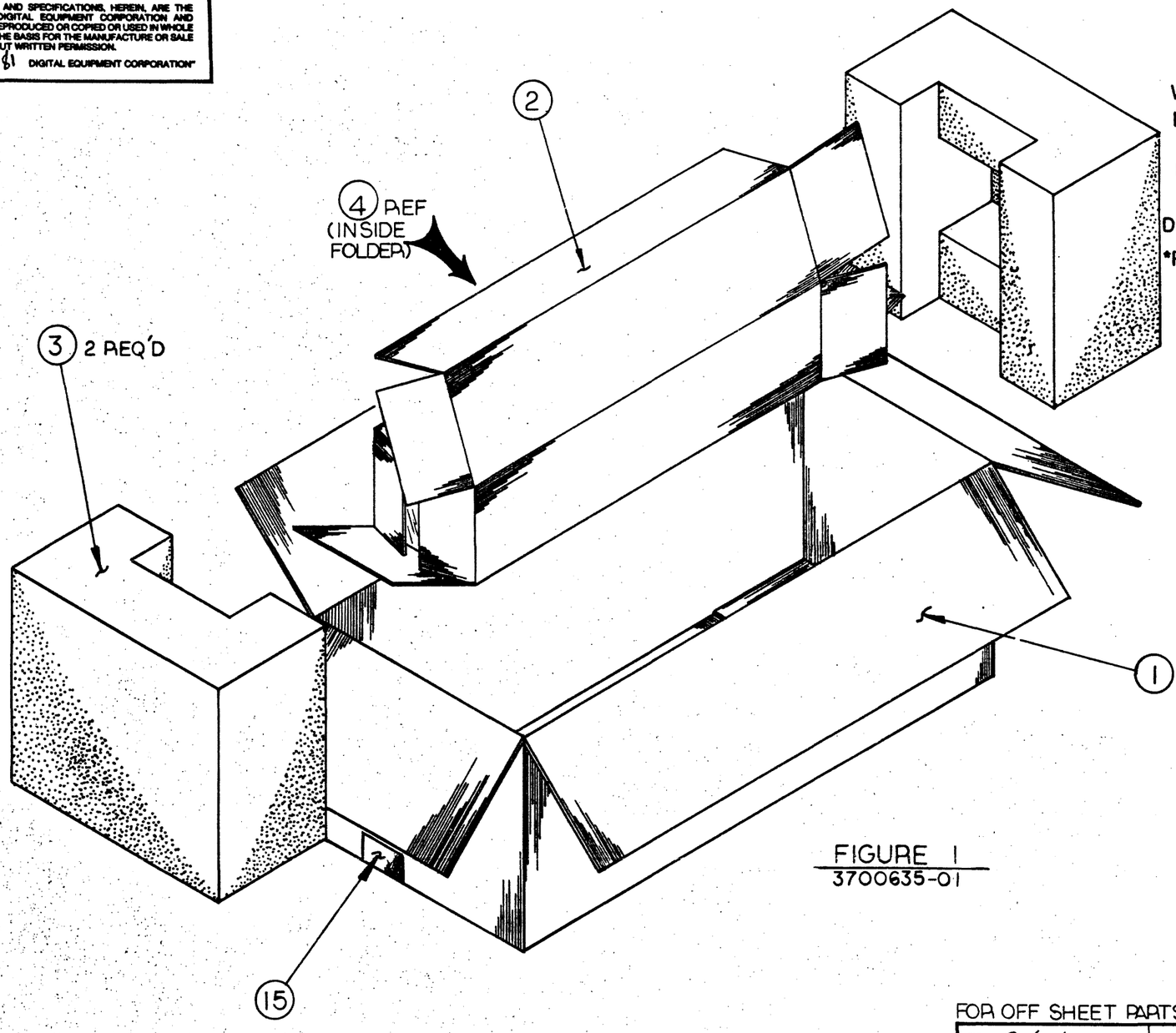



FIGURE 1
3700635-01

PACKAGE DIMENSIONS, WEIGHTS & PLASTIC PACKING MATERIAL

| | USA | METRIC |
|---|---|---|
| WEIGHT | 24.0 LBS. | 10.9 KG. |
| LENGTH | 28.25 IN. | 718 MM |
| WIDTH | 11.81 IN. | 300 MM |
| HEIGHT | 14.25 IN. | 362 MM |
| CUBE | 27.5 CU. FT. | 0.08 CU.M |
| DENSITY | 8.7 LBS./CU. FT. | 140 KG/CU.M |
| *PLASTIC | % VOL | % WT | TYPE |

*% VOLUME (EXPANDED)
% WEIGHT (UNEXPANDED)

FOR OFF SHEET PARTS LIST SEE K PL 3700635-0-DBP

| | | |
|---|---|---|
| DRN. GYORKE | DATE 5/6/82 | TITLE digital<br>PKG<br>POWER SUPPLY<br>H7202/H7200 |
| CHK'D. J. BARRETT | DATE 7/82 | |
| DES. ENG. R. SPINELLI | DATE 6/82 | |
| RESP. ENG. R. SPINELLI | DATE 6/82 | |
| MFG. ENG. NONE | DATE – | |
| NEXT HIGHER DOC. | | |

DOCUMENT NUMBER

| SIZE | CODE | NUMBER | REV. |
|---|---|---|---|
| C | PA | 3700635-0-0 | A |

SCALE | SHEET 5 OF 10

| REVISION HISTORY | | |
|---|---|---|
| DATE | ECO NUMBER | REV. |

DRC 1118

SIZE C | CODE PA | NUMBER 3700635-0-0 | REV. A

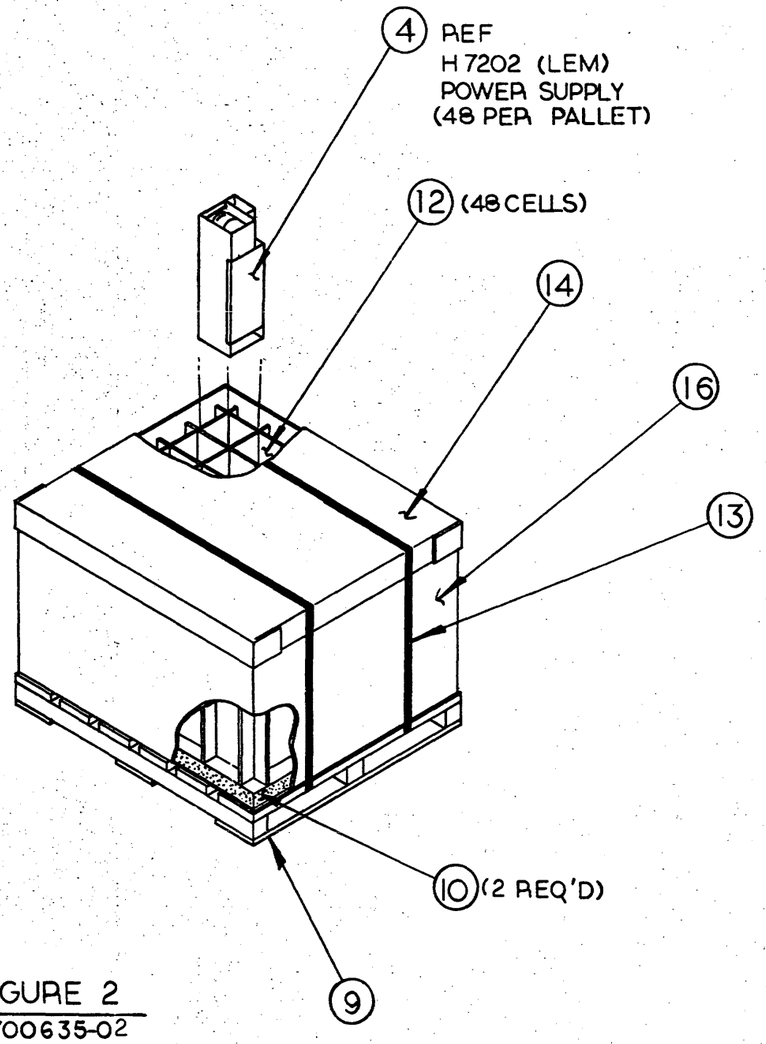



FIGURE 2
3700635-02

PACKAGE DIMENSIONS, WEIGHTS & PLASTIC PACKING MATERIAL

| | USA | METRIC |
|---|---|---|
| WEIGHT | 1000.0 LBS. | 454.0 KG. |
| LENGTH | 48.00 IN. | 1219 MM |
| WIDTH | 42.00 IN. | 1067 MM |
| HEIGHT | 35.00 IN. | 889 MM |
| CUBE | 40.8 CU. FT. | 1.16 CU.M |
| DENSITY | 24.5 LBS./CU. FT. | 392 KG/CU.M |
| *PLASTIC | % VOL / % WT | TYPE |

*% VOLUME (EXPANDED)
% WEIGHT (UNEXPANDED)

FOR OFF SHEET PARTS LIST SEE KPL-3700635-0-DBP

| | | |
|---|---|---|
| DRN. GYORKE | DATE 5/12/87 | TITLE digital |
| CHK'D. | DATE | PKG |
| DES. ENG. | DATE | POWER SUPPLY |
| RESP. ENG. | DATE | H7202 / H7200 |
| MFG. ENG. | DATE | DOCUMENT NUMBER |
| NEXT HIGHER DOC. | | SIZE C \| CODE PA \| NUMBER 3700635-0-0 \| REV. A |
| | | SCALE \| SHEET 6 OF 10 |

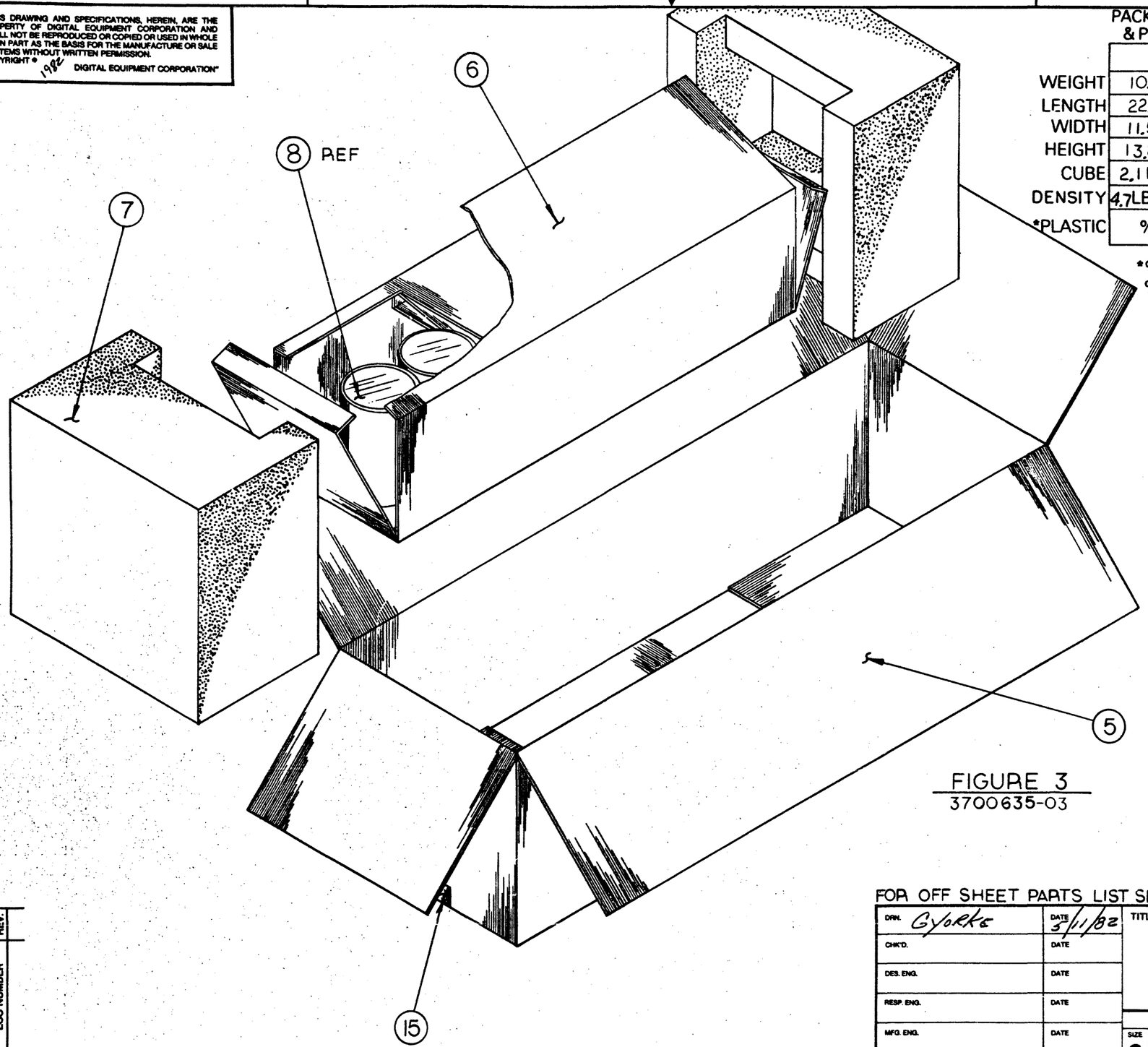
REVISION HISTORY

| REV. | ECO NUMBER | DATE |
|---|---|---|

DRC 1118

SIZE C | PA 3700635-0-0 | REV. A

SIZE C | CODE PA | NUMBER 3700635-0-0 | REV. A




PACKAGE DIMENSIONS, WEIGHTS & PLASTIC PACKING MATERIAL

| | USA | | METRIC | |
|---|---|---|---|---|
| WEIGHT | 10.0 | LBS. | 4.5 | KG. |
| LENGTH | 22.88 | IN. | 581 | MM |
| WIDTH | 11.50 | IN. | 292 | MM |
| HEIGHT | 13.88 | IN. | 353 | MM |
| CUBE | 2.11 | CU. FT. | 0.06 | CU.M |
| DENSITY | 4.7 LBS./CU. FT. | | 76 | KG/CU.M |
| *PLASTIC | % VOL | % WT | | TYPE |

*% VOLUME (EXPANDED)
% WEIGHT (UNEXPANDED)

FIGURE 3
3700635-03

FOR OFF SHEET PARTS LIST SEE K-PL-3700635-0-DBP

| | | |
|---|---|---|
| DRN. GYorke | DATE 3/11/82 | TITLE digital |
| CHK'D. | DATE | PKG POWER SUPPLY H7202/H7200 |
| DES. ENG. | DATE | |
| RESP. ENG. | DATE | |
| MFG. ENG. | DATE | |
| NEXT HIGHER DOC. | | |

DOCUMENT NUMBER

| SIZE | CODE | NUMBER | REV. |
|---|---|---|---|
| C | PA | 3700635-0-0 | A |

SCALE | SHEET 7 OF 10

| REVISION HISTORY | | |
|---|---|---|
| DATE | ECO NUMBER | REV. |

DRC 111B

SIZE C | CODE PA | NUMBER 3700635-0-0 | REV. A

SIZE C | CODE PA | NUMBER 3700635-0-0 | REV.

PACKAGE DIMENSIONS, WEIGHTS & PLASTIC PACKING MATERIAL

| | USA | METRIC |
|---|---|---|
| WEIGHT | 650.0 LBS. | 295.0 KG. |
| LENGTH | 48.00 IN. | 1219 MM |
| WIDTH | 42.00 IN. | 1067 MM |
| HEIGHT | 35.00 IN. | 889 MM |
| CUBE | 40.8 CU. FT. | 116 CU.M |
| DENSITY | 16 LBS./CU. FT. | 25.5 KG/CU.M |
| *PLASTIC | % VOL | % WT | TYPE |

*% VOLUME (EXPANDED)
% WEIGHT (UNEXPANDED)

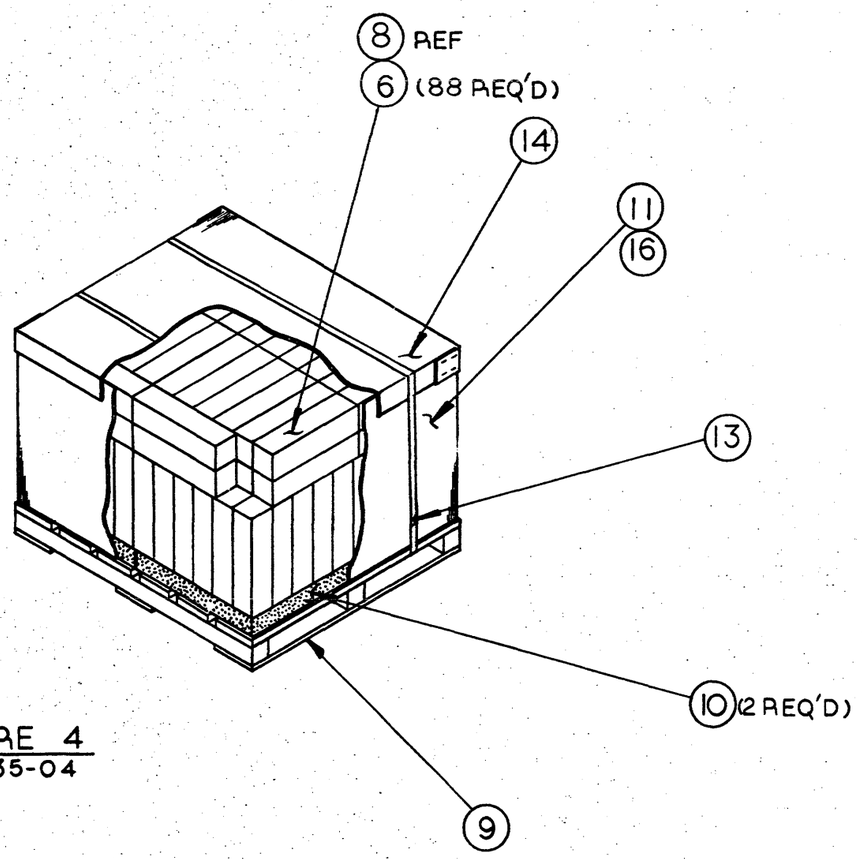



FIGURE 4
3700635-04

FOR OFF SHEET PARTS LIST SEE K-PL-3700635-0-DBP

| | |
|---|---|
| DRN. GYorke | DATE 5/12/82 |
| CHK'D. | DATE |
| DES. ENG. | DATE |
| RESP. ENG. | DATE |
| MFG. ENG. | DATE |
| NEXT HIGHER DOC. | |

TITLE digital
PKG
POWER SUPPLY
H7202/H7200

DOCUMENT NUMBER
SIZE C | CODE PA | NUMBER 3700635-0-0 | REV. A
SCALE | SHEET 8 OF 10

REVISION HISTORY | REV. | ECO NUMBER | DATE

SIZE C | PA | NUMBER 3700635-0-0 | REV. A

DRC 1118

SIZE C | CODE PA | NUMBER 3700636-0-0 | REV. A

PACKAGE DIMENSIONS, WEIGHTS & PLASTIC PACKING MATERIAL

| | USA | METRIC |
|---|---|---|
| WEIGHT | 2.13 LBS. | 0.97 KG. |
| LENGTH | 14.00 IN. | 356 MM |
| WIDTH | 6.81 IN. | 173 MM |
| HEIGHT | 4.75 IN. | 121 MM |
| CUBE | 0.26 CU. FT. | 0.0074 CU.M |
| DENSITY | 8.2 LBS./CU. FT. | 131 KG/CU.M |
| *PLASTIC | % VOL % WT | TYPE |

*% VOLUME (EXPANDED)
% WEIGHT (UNEXPANDED)

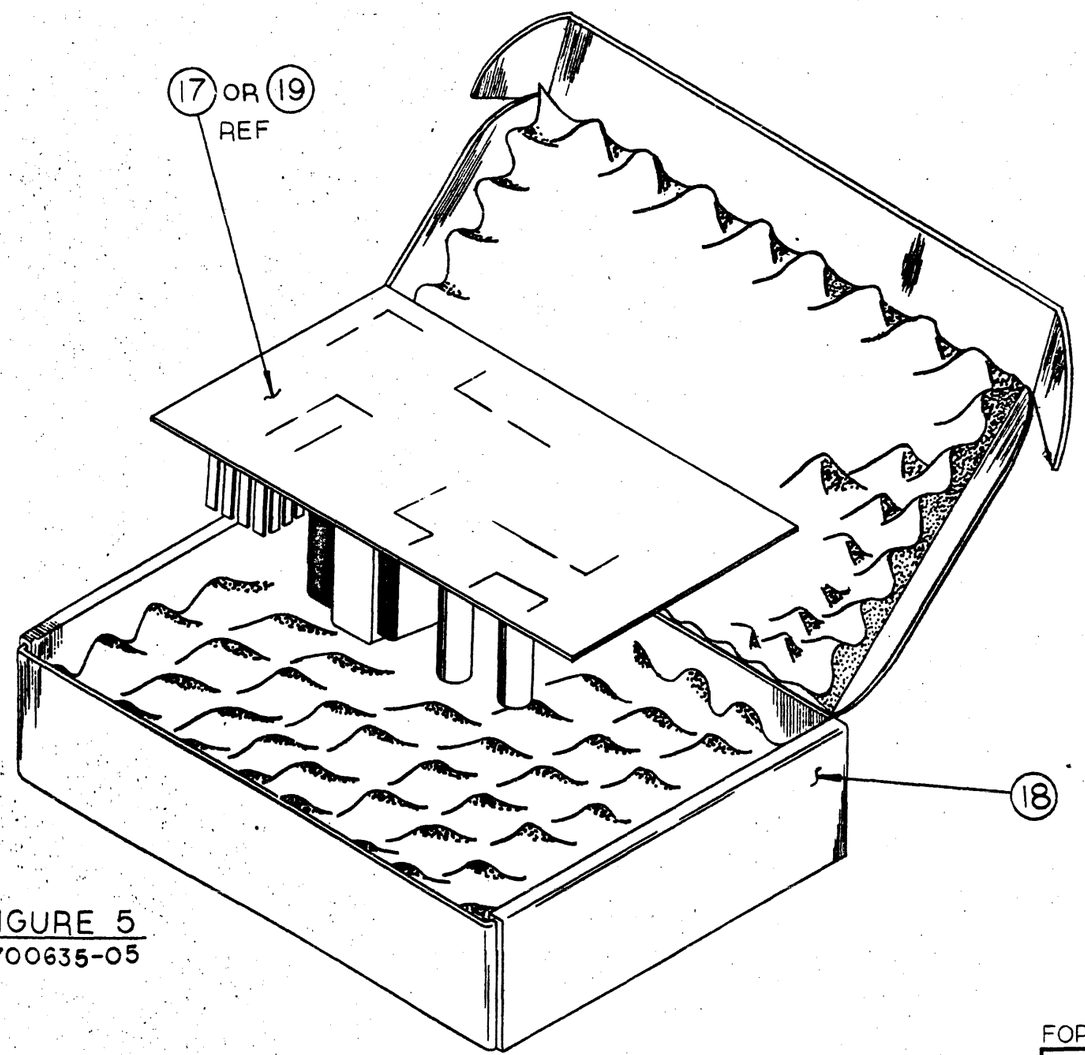



FIGURE 5
3700635-05

FOR OFF SHEET PARTS LIST SEE K-PL-3700635-0-DBP

| | |
|---|---|
| DRN. Gyorke | DATE 5/7/82 |
| CHK'D. | DATE |
| DES. ENG. | DATE |
| RESP. ENG. | DATE |
| MFG. ENG. | DATE |
| NEXT HIGHER DOC. | |

TITLE digital
PKG
POWER SUPPLY
H7202/H7200

DOCUMENT NUMBER

| SIZE | CODE | NUMBER | REV. |
|---|---|---|---|
| C | PA | 3700635-0-0 | A |

SCALE | SHEET 9 OF 10

REVISION HISTORY

| REV. | ECO NUMBER | DATE |
|---|---|---|

DRC 1118

SIZE C | CODE PA | NUMBER 3700636-0-0 | REV. A

SIZE C | CODE PA | NUMBER 3700635-0-0 | REV. A

PACKAGE DIMENSIONS, WEIGHTS & PLASTIC PACKING MATERIAL

| | USA | METRIC |
|---|---|---|
| WEIGHT | 407.0 LBS. | 185.0 KG. |
| LENGTH | 49.00 IN. | 1245 MM |
| WIDTH | 42.00 IN. | 1067 MM |
| HEIGHT | 44.00 IN. | 1118 MM |
| CUBE | 52.4 CU. FT. | 1.48 CU.M |
| DENSITY | 78 LBS./CU. FT. | 124 KG/CU.M |
| *PLASTIC | % VOL | % WT | TYPE |

*% VOLUME (EXPANDED)
% WEIGHT (UNEXPANDED)

21 CARTONS PER TIER
8 TIERS HIGH

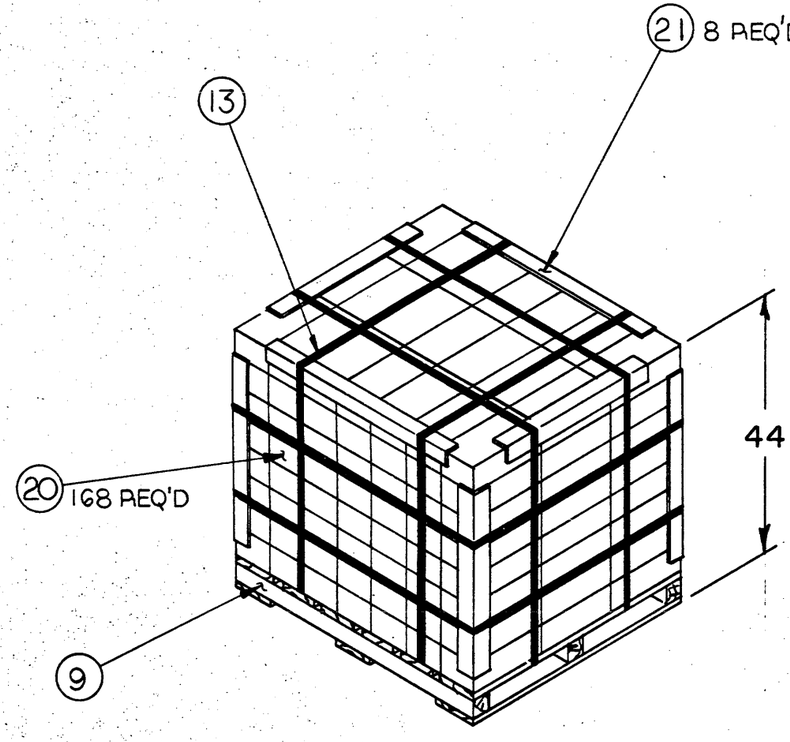
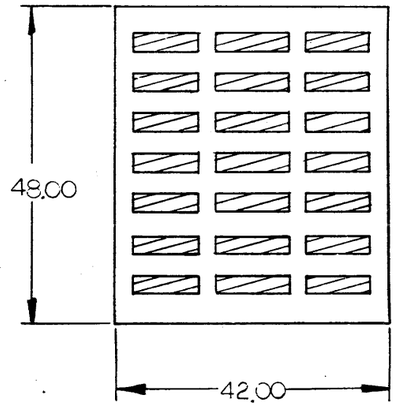



FIGURE 6
3700635-06



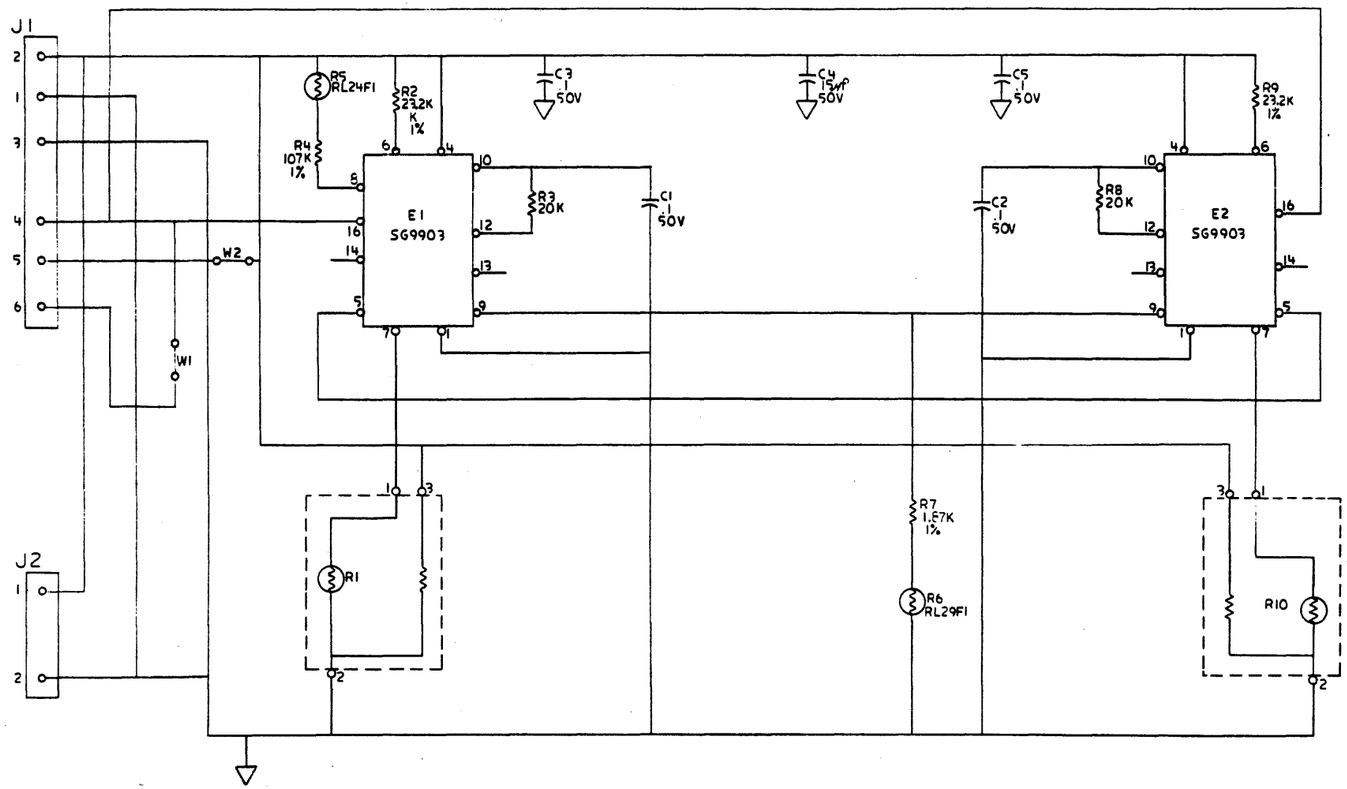

FOR OFF SHEET PARTS LIST SEE K-PL-3700635-0-DBP

| | | |
|---|---|---|
| DRN. GYORKE | DATE 5/4/82 | TITLE digital |
| CHK'D. | DATE | PKG POWER SUPPLY H7202/H7200 |
| DES. ENG. | DATE | |
| RESP. ENG. | DATE | |
| MFG. ENG. | DATE | |
| NEXT HIGHER DOC. | | DOCUMENT NUMBER: SIZE C \| CODE PA \| NUMBER 3700635-0-0 \| REV. A |
| | | SCALE — \| SHEET 10 OF 10 |

REVISION HISTORY | REV. | ECO NUMBER | DATE

DRC 1118

SIZE C | CODE PA | NUMBER 3700635-0-0 | REV. A

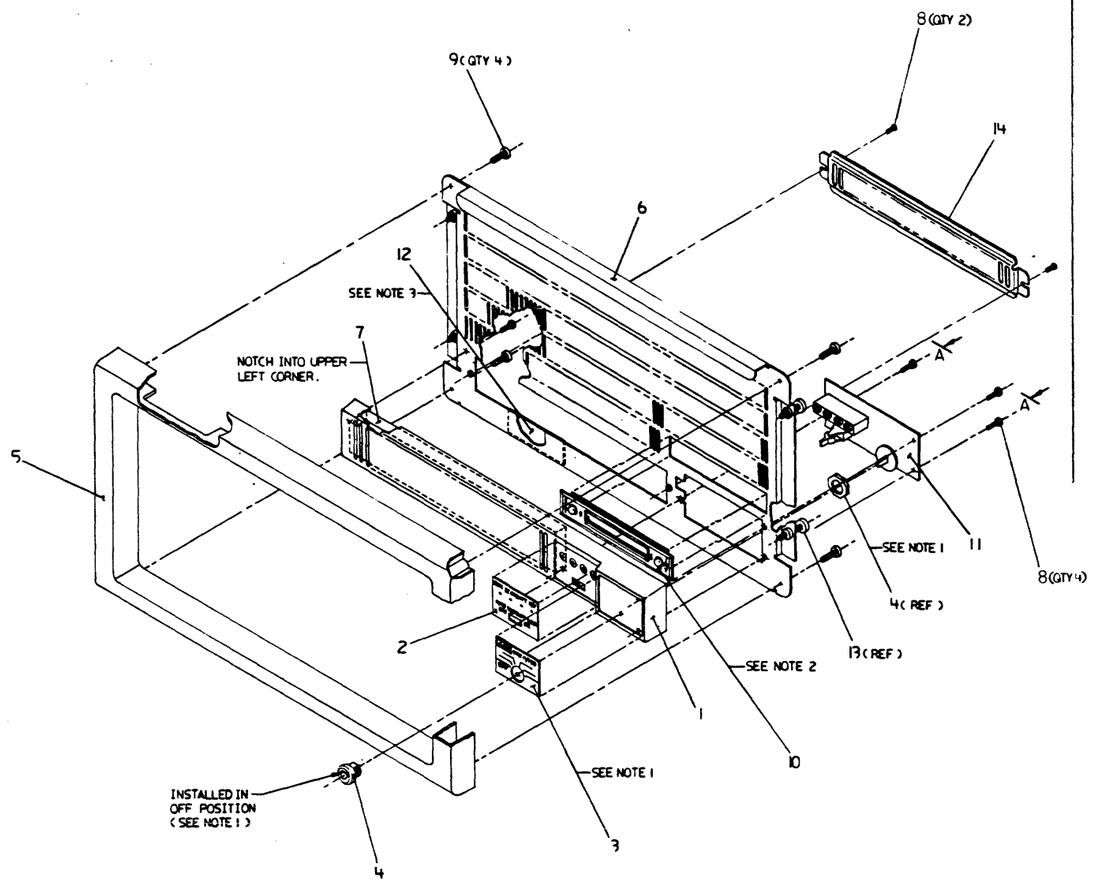


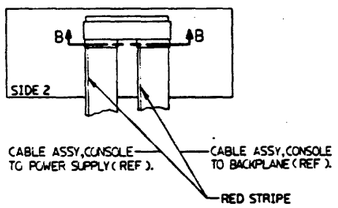

| | | | |
|---|---|---|---|
| DRN T. W. & Mooyé | DATE 3/12/81 | TITLE digital | |
| CHK'D T. Williams | DATE 3/11/81 | AIR FLOW SENSOR | |
| DES. ENGR Dubit | DATE 3-11-81 | | |
| PROJ. ENGR Scott Lint | DATE 3-17-81 | DOCUMENT NUMBER | |
| MFG. ENGR [illegible] | DATE 3/19/81 | SIZE D / CODE CS / 5414340-0-1 / REV. A | |
| D-UA-5414340-0-0 | | SCALE NONE / SHEET / OF | T.W. |

REVISION HISTORY | REV. | ECO NUMBER | DATE

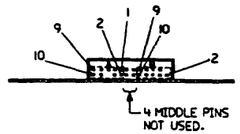
NOTES:

1. APPLY KEYLOCK LABEL ( ITEM 9 ) TO CONSOLE INSERT ( ITEM 1 ) BEFORE INSTALLING KEYLOCK ( ITEM 4 ). MAKE SURE KEYLOCK NUT IS APPLIED TIGHTLY. KEY SWITCH CORRECTLY TO MATE WITH KEYLOCK, DO NOT FORCE.
2. SQUEEZE MIDDLE SECTION TOGETHER FOR SNAP-FIT OF TU BEZEL (ITEM 10) ONTO MOUNTING PLATE (ITEM 6). MAKE SURE ITS RIGHT SIDE UP.
3. MARK LABEL ( ITEM 12 ) WITH DEC PART NO. AND REV LEVEL. FOLD EXCESS LABEL OVER EDGE.




VIEW A-A
SCALE: NONE




SECTION B-B
SCALE: NONE

NOTE: FOR PARTS LIST REFER TO K-PL-7018079-0-DBP.

| | |
|---|---|
| DESCRIPTION | CONSOLE ASSY |
| DRAWING NO. | E AD 7018079-0-0 A |
| PART NO. | |
| MATERIAL | SEE PARTS LIST |
| FINISH | |
| DO NOT SCALE DRAWING | |
| REMOVE BURRS AND BREAK SHARP CORNERS | |
| UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES AND THE FOLLOWING TOLERANCES APPLY (PER DEC STD 119) | |
| THIRD ANGLE PROJECTION | |
| SIZE | E |
| DOCUMENT NUMBER | AD 7018079-0-0 |
| REV | A |
| SCALE | |
| SHEET | |
| E-UA-11730-Z-0 | |

AUTOMATED BY PRTLST.3P(44) P A R T S L I S T SHEET A1 OF A1

| LINE | ITEM | DOCUMENT NUMBER | PART NUMBER | DESCRIPTION | QUANTITY PER VARIATION 00 |
|---|---|---|---|---|---|
| 1 | 1 | E-IA-7424269-0-0 | 7424269-00 | CONSOLE INSERT | 1 |
| 2 | 2 | A-PS-3617322-0-0 | 3617322-00 | LABEL,LEGEND STRIP VAX 11/730 LE | 1 |
| 3 | 3 | A-PS-3617902-0-0 | 3617902-01 | LABEL,LEGEND STRIP VAX 11/730 6P | 1 |
| 4 | 4 | A-PS-1216178-0-0 | 1216178-01 | LOCK,PLASTIC 6POS ASSY | 1 |
| 5 | 5 | E-PS-1217094-0-0 | 1217094-00 | BEZEL,PLASTIC 11-44 | 1 |
| 6 | 6 | E-IA-7424832-0-0 | 7424832-00 | PLATE,MTG 10-1/2 | 1 |
| 7 | 7 | A-PS-1217665-0-0 | 1217665-01 | FILTER,FOAM 11.5X1.85X1/2 5PPI | 1 |
| 8 | 8 | | 9009984-02 | SCREW, SEMS, PHILLIPS PAN HD. 6- | 6 |
| 9 | 9 | | 9010119-00 | SCREW, PHILLIPS TRUSS HD, 10-32 | 4 |
| 10 | 10 | C-IA-7018168-0-0 | 7018168-00 | TU58 DUAL DRIVE BEZEL ASSY | 1 |
| 11 | 11 | D-AD-5414438-0-0 | 5414438-01 | CONSOLE MODULE | 1 |
| 12 | 12 | | 9009255-01 | LABEL, POWER SUPPLY, 2-7/8" LG X | 1 |
| 13 | 13 | | 9006075-03 | SCREW,TRUS,PHIL, 10-32X 3/4 | REF |
| 14 | 14 | D-MD-7426334-0-0 | 7426334-01 | SHIELD | 1 |

| REVISION HISTORY | | |
|---|---|---|
| ENG | ECO NUMBER | REV |
| --- | INITIAL | XA |
| --- | INITIAL | A |

BASIC PART NO: 7018079
SECTION A OF A
SECTION. VARIATION INDEX
[A] 00
[B]
[C]
[D]
[E]
[F]

DRN: P. TOUSIGNANT DATE: 30-JUL-81
CHK'D: A. ROCHA DATE: 30-JUL-81
DES.ENG.: R. MORIN DATE: 30-JUL-81
RESP.ENG.: R. MORIN DATE: 30-JUL-81
MFG.ENG.: S. CASTIGLIONE DATE: 30-JUL-81
ASSEMBLY NUMBER: E-AD-7018079-0-0
TOP DOCUMENT NUMBER: E-UA-11730-Z-0

| D | I | G | I | T | A | L |
|---|---|---|---|---|---|---|

TITLE PARTS LIST
CONSOLE ASSEMBLY

DOCUMENT NUMBER

| SIZE | CODE | NUMBER | REV |
|---|---|---|---|
| K | PL | 7018079-0-0 | A |

FILE NAME: Z1827A.PLS
EDIT # 16

| SIZE | CODE | NUMBER | REV. |
|---|---|---|---|
| B | DD | 5414438-0 | B |

| DRAWING NO. | NO. OF SHTS. | PART NO. | DESCRIPTION | REVISIONS |
|---|---|---|---|---|
| | | | MODULE REVISION | A B |
| B-DD-5414438-0 | 1 | | CONSOLE MODULE | A B |
| D-UA-5414438-0-0 | 3 | | CONSOLE MODULE | A B |
| K-PL-5414438-0-DBP | 1 | | CONSOLE MODULE | A B |
| D-CS-5414438-0-1 | 1 | | CONSOLE MODULE | A A |
| D-MD-5014437-0-0 | 3 | | DRILL & ETCH DRAWING | A A |
| | | 5014437 | ETCHED BOARD | A A |
| K-PC-5414438-0-DBG | | | P.C. DESIGN DATA BASE | A A |
| D-EC-5014437-0-0 | 2 | | ETCH CUT DRAWING | A A |

**NOTES:**

| REVISIONS | REV. | CHG NO. | DATE |
|---|---|---|---|
| | B | TW001 | 3-82 |



digital

| USED ON OPTION/MODEL | | | |
|---|---|---|---|
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |

| | | |
|---|---|---|
| DRN. | P. Bisse | 29 JUL 80 |
| CHK'D | J. Hanfelo | 7-30-80 |
| ENG. | D. M. [illegible] | 7-30-80 |
| PROD. | [illegible] | [illegible] |

TITLE: CONSOLE MODULE

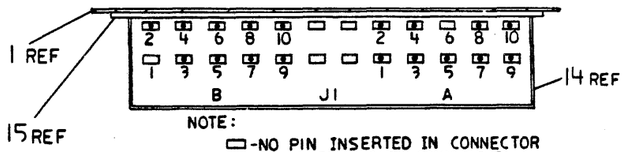
| SIZE | CODE | NUMBER | REV. |
|---|---|---|---|
| B | DD | 5414438-0 | B |

SHEET 1 OF 1

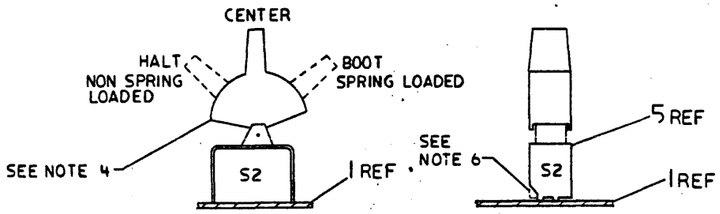
DRB 126

TW

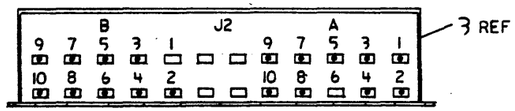
COMPONENT SIDE VIEW



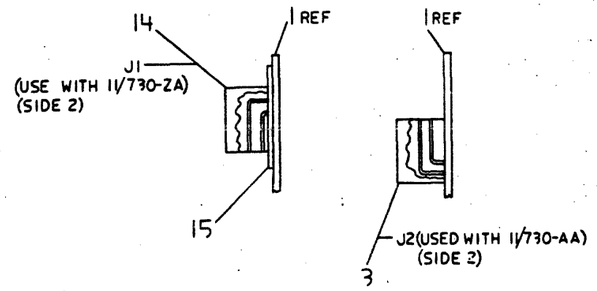

VIEW C-C
SCALE: NONE



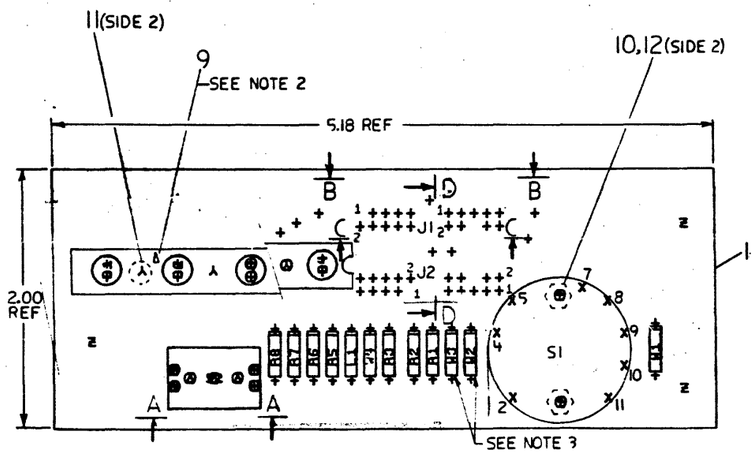

VIEW A-A
SCALE: NONE




VIEW B-B
SCALE: NONE




VIEW D-D




NOTES:
1. STEP & REPEAT 2ML33.
2. COMPONENT ORIENTATION MARK.
3. JUMPER W2 IS USED ON VARIATION -01. W3 IS USED ON -00
4. MOUNT S2 WITH SPRING LOAD POSITION TOWARD S1.

| STEP & REPEAT | ↑ Y AXIS 2.125 STEP 3 TIMES |
|---|---|
| | → X AXIS 5.250 STEP 1 TIMES |

| CHG | CHANGE NO | REV |
|---|---|---|
| | 5414438-1 | D |

NOTES (CONT)
5. W1 IS NOT INSTALLED
6. REMOVE A SMALL SECTION OF THE MOUNTING BRACKET OF S2 BEFORE MOUNTING TO PC BOARD.

ETCH REV. A

| SIGNATURES | DATE |
|---|---|
| DRN. | 9 JUL 80 |
| CHK'D. | 9-30-80 |
| MECH. ENG. | 10-8-80 |
| PROJ. ENG. | 10-8-80 |
| PROD. | 10-9-80 |

digital

TITLE: CONSOLE BOARD

| SIZE | CODE | NUMBER | REV |
|---|---|---|---|
| D | UA | 5414438-0-0 | B |

SHT. 1 OF 1
NEXT HIGHER ASSY. B-DD-5414438-0

TW 1 MS#170299

5414438-0-0 D UA B

AUTOMATED BY PRTLST,3P(44) — P A R T S  L I S T — SHEET A1 OF A1

| LINE | ITEM | DOCUMENT NUMBER | PART NUMBER | DESCRIPTION | QTY PER VARIATION 00 | 01 | REFERENCE DESIGNATOR |
|---|---|---|---|---|---|---|---|
| 1 | 1 | D-MD-5014437-0-0 | 5014437-00 | CONSOLE MODULE | 1 | 1 | |
| 2 | 2 | | 1110864-00 | LED 2MCD@10MA | 4 | 4 | D1-D4 |
| 3 | 3 | | 1213506-06 | HEADER 24POS RT ANGLE | 1 | - | J2 |
| 4 | 4 | | 1218038-00 | SW,ROT 1P 2.0A 6POS 1SECTION | 1 | 1 | S1 |
| 5 | 5 | | 1216179-00 | SW,LEVER 1P ON/OFF/ON | 1 | 1 | S2 |
| 6 | 6 | | 1300229-00 | 100,0 .25 W 5.0 % CC | 3 | 3 | R1,R2,R9 |
| 7 | 7 | | 1300316-00 | 470,0 .25 W 5.0 % CC | 4 | 4 | R3,R5-R7 |
| 8 | 8 | | 1601562-00 | 1.0 UH 10% 475MA #DD1.00 | 1 | 1 | L1 |
| 9 | 9 | | 7413127-00 | LED HOLDER REWORK | 1 | 1 | |
| 10 | 10 | | 9006555-00 | NUT,HEX , 2-56X3/16AF X 1/ | 2 | 2 | |
| 11 | 11 | | 9009236-01 | SCREW,TAPPING,TYPE F,PAN ,PHIL, | 3 | 3 | |
| 12 | 12 | | 9009321-00 | LOCK TITE, SCREW LOCK, 10CC PER | A/R | A/R | |
| 13 | 13 | | 9009185-00 | JUMPER, WIRE, INSULATED, BLACK B | 2 | - | W3,W4 |
| | | | CONT | | - | 2 | W2,W4 |
| 14 | 14 | | 1213506-08 | HEADER 24POS RT ANGLE | - | 1 | J1 |

| REVISION HISTORY | | | BASIC PART NO: 5414438 | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ENG: | ECO NUMBER | REV | SECTION A OF A | DRN: P.GROSSE | DATE: 09-JUL-80 | | D | I | G | I | T | A | L | |
| --- | INITIAL | A | SECTION,VARIATION INDEX [A] 00,01 [B] [C] [D] [E] [F] [H] [J] [K] [L] [M] [N] | CHK'D: F.GAROFALO | DATE: 09-JUL-80 | TITLE PARTS LIST 11/730 CONSOLE MODULE | | | | | | | | |
| | | | | DES.ENG: D.LANDRY | DATE: 09-JUL-80 | | | | | | | | | |
| | | | | RESP.ENG.: D.LANDRY | DATE: 18-SEP-80 | DOCUMENT NUMBER SIZE: K CODE: PL NUMBER: 5414438-0-DBP REV: A | | | | | | | | |
| | | | | MFG.ENG.: J.CONSIDINE | DATE: 8-OCT-80 | | | | | | | | | |
| | | | | ASSEMBLY NUMBER: D-UA-5414438-0-0 | TOP DOCUMENT NUMBER: | FILE NAME: Z1273A.PLS EDIT #: 32 | | | | | | | | |



TW

SIZE D CODE CS NUMBER 5414438-0-1 REV A

## LEGEND

| J1 | J2 | W1 | W2 | W3 | W4 | VARIATION | ASSEMBLY NUMBER |
|---|---|---|---|---|---|---|---|
| OUT | IN | OUT | OUT | IN | IN | 11/730-AA | 54-14438-00 SEE NOTE 1 |
| IN | OUT | OUT | IN | OUT | IN | 11/730-ZA | 54-14438-01 SEE NOTE 1 |

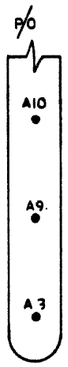
NOTE:
1. FOR PICTORAL PINNING OF J1 AND J2 SEE D-UA-5414438-0-0.

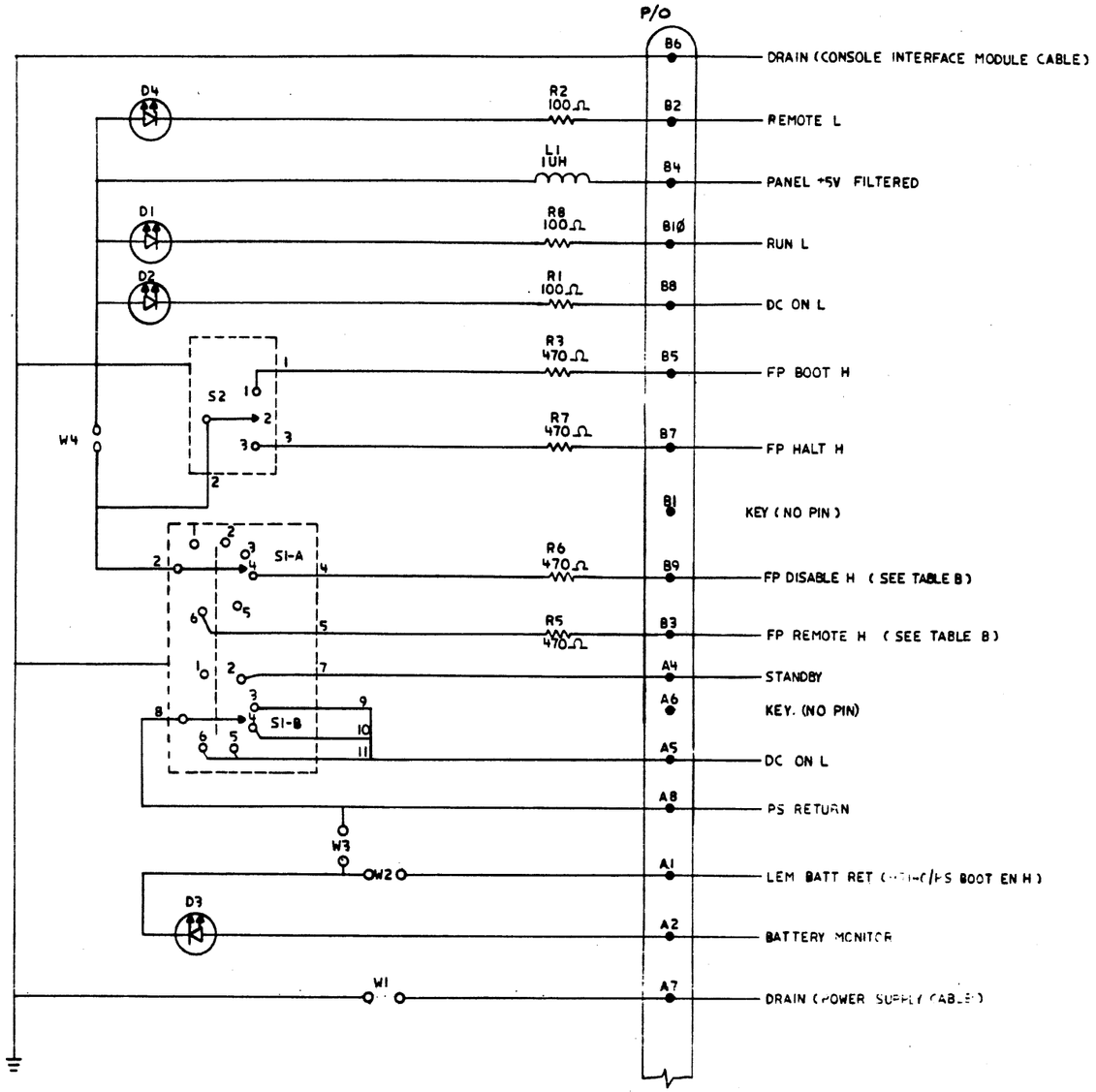
## TABLE A

| POSITION | SWITCH 1A DESCRIPTION | SWITCH 1B DESCRIPTION |
|---|---|---|
| 1 | OFF | OFF |
| 2 | NONE | STANDBY |
| 3 | LOCAL | DC ON |
| 4 | LOCAL DISABLE | DC ON |
| 5 | REMOTE DISABLE | DC ON |
| 6 | REMOTE | DC ON |

## TABLE B

| DISABLE | REMOTE | SWITCH 1A POSITION |
|---|---|---|
| 0 | 0 | 1 |
| 0 | 0 | 2 |
| 0 | 0 | 3 |
| 1 | 0 | 4 |
| 1 | 1 | 5 |
| 0 | 1 | 6 |




| | | | |
|---|---|---|---|
| DESIGN | Fournier | DATE | 6-18-80 |
| CHECK | Fournier | DATE | 6-20-80 |
| ENGR MGR | D.M. Hunsberg | DATE | 10-8-80 |
| PROJ MGR | D.M. Hunsberg | DATE | 10-8-80 |
| APPD MGR | | DATE | 10-8-80 |
| ASSY DRAWING | D-UA-5414438-0-0 | | |

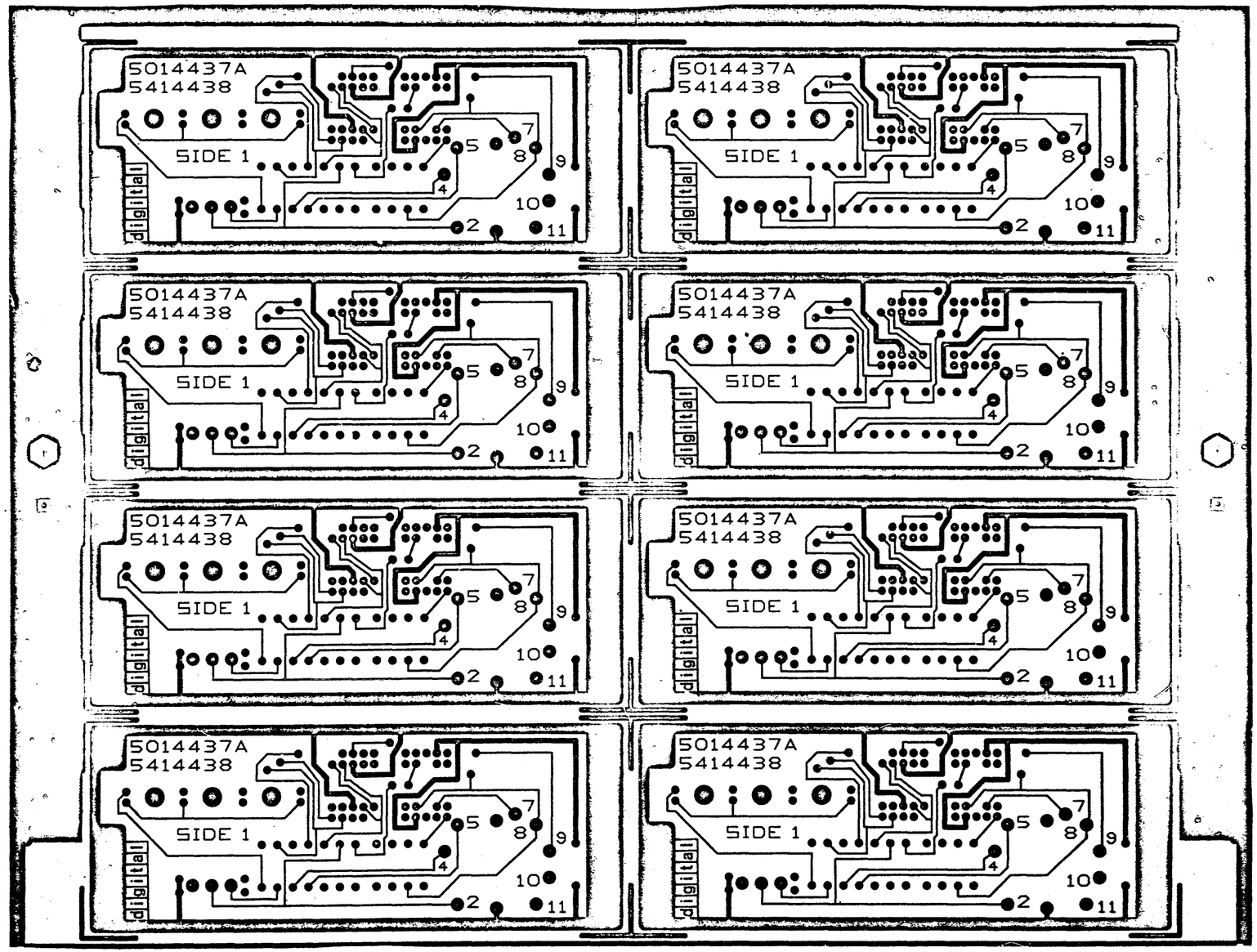
TITLE: digital
CONSOLE MODULE

DOCUMENT NUMBER: SIZE D | CODE CS | NUMBER 5414438-0-1 | REV A

SCALE: FULL | SHEET 1 OF 1 | TW

REVISION HISTORY: REV. | ECO NUMBER | DATE

BASE DRAWING DCS 5414438-0-1 REV A




| REVISION HISTORY | | | |
|---|---|---|---|
| REV | ECO NUMBER | DATE | |

| | | | |
|---|---|---|---|
| DRAWN | Casey | DATE | 8-27-80 |
| CHECKED | Casey | DATE | 8-27-80 |
| TECH PUBS | M. Lansing | DATE | 10-8-80 |
| RELEASED | M. Lansing | DATE | 10-8-80 |
| MFG ENG | | DATE | 10-9-80 |
| NEXT HIGHER ASSY | | | |

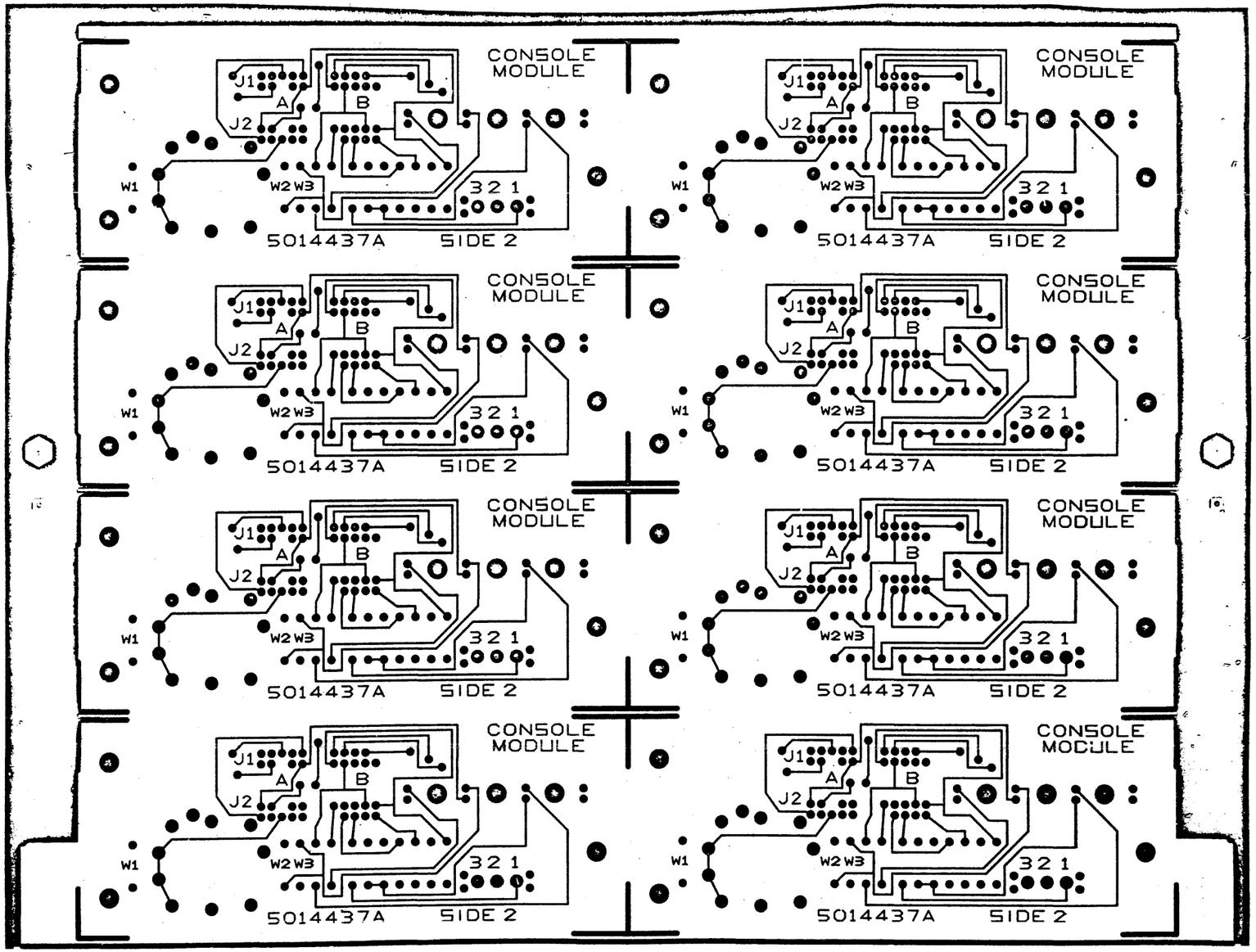
TITLE: digital

ETCH CUT DRAWING

| DOCUMENT NUMBER | | | |
|---|---|---|---|
| SIZE | CODE | NUMBER | REV |
| D | EC | 5014437-0-0 | A |

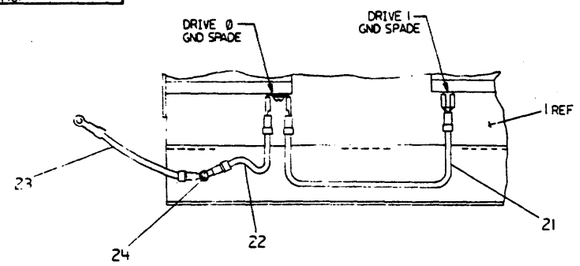
SCALE 2:1 SHEET 1 OF 2

DEC 5014437-0-0 A




| REVISION HISTORY | | |
|---|---|---|
| DATE | ECO NUMBER | REV |
| | | |

| TITLE | DOCUMENT NUMBER | | | |
|---|---|---|---|---|
| ETCH CUT DRAWING | SIZE | CODE | NUMBER | REV |
| | D | EC | 5014437-0-0 | A |
| | SCALE 2:1 | | SHEET 2 OF 2 | |

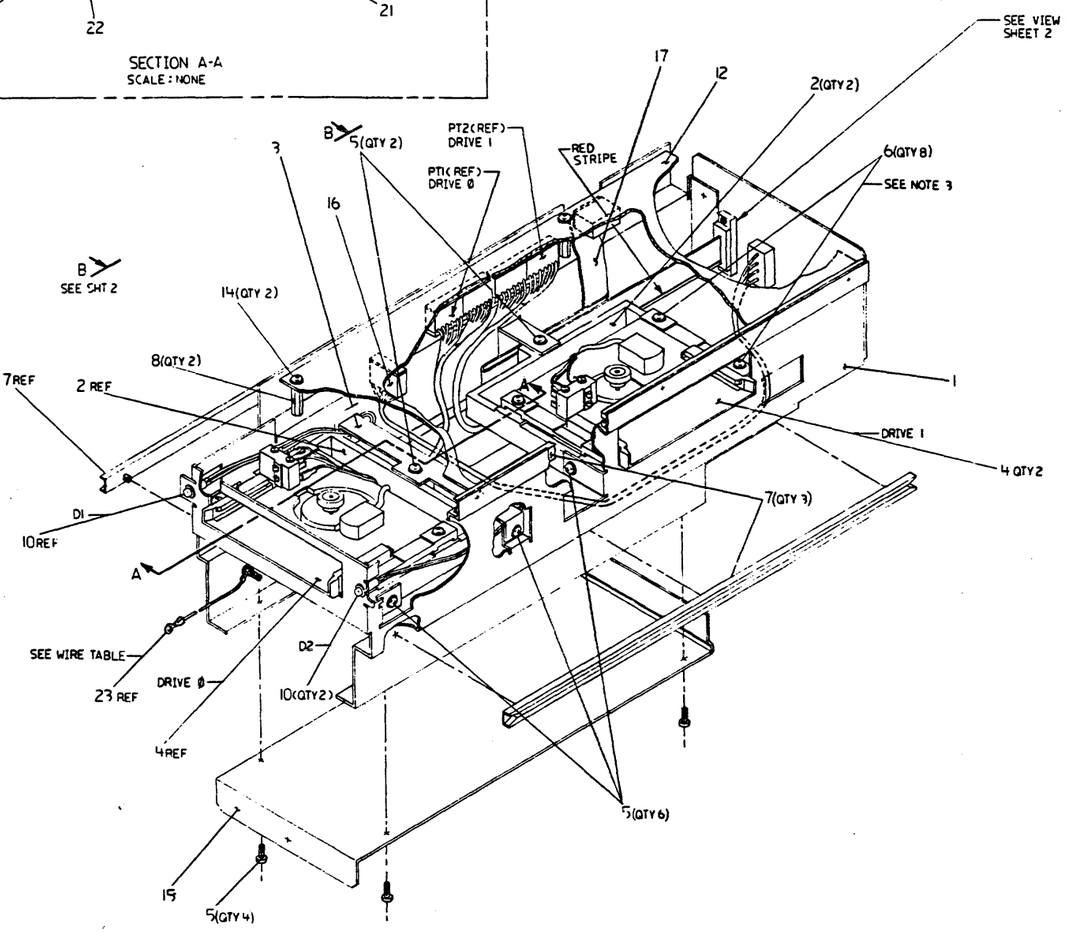



SECTION A-A
SCALE : NONE

WIRE TABLE

| ITEM NO. | DESCRIPTION | FROM CONN | FROM ITEM | TO CONN | TO ITEM | REMARKS |
|---|---|---|---|---|---|---|
| 10 | BRN LEAD | D1 | | PT1-6-BRN | 4 | DRIVE Ø |
| | BLK LEAD | D1 | | C1 P2 | 4 | DRIVE Ø |
| 10 | BRN LEAD | D2 | | PT2-6-BRN | 4 | DRIVE 1 |
| | BLK LEAD | D2 | | C2 P2 | 4 | DRIVE 1 |
| 21 | JUMPER DR/DR | DRIVE Ø SPADE GND | | DRIVE 1 SPADE GND | | |
| 22 | JUMPER DR/GND | DRIVE Ø SPADE GND | | UNIT GND STUD | | ITEM 24, QTY 1, |
| 23 | JUMPER GND/GND | ( FLOATING ) | | UNIT GND STUD | | TO CONN BOTH |

NOTES:
1. BROWN WIRE ( PT1-6, DRIVE Ø ) & ( PT2-6, DRIVE 1 ) MUST BE DISCONNECTED FROM C1-P2 & C2-P2 RESPECTIVELY BEFORE WIRING ITEM .
2. DRIVE ASSEMBLY SEQUENCE:
   A. INSTALL ITEM 2 ( DRIVE 1 ) WITH ITEMS 13 & 5.
   B. INSTALL ITEM 3 WITH ITEM 5.
   C. INSTALL ITEM 2 ( DRIVE Ø ) WITH ITEMS 13 & 5.
   D. INSTALL DRIVE UNITS ( ITEMS 4 ) USING ITEM 6 AND TORQUE PER NOTE 3.
   E. DRIVE Ø MUST BE ALIGNED IN THE CENTER OF ITS SLOT.
3. TORQUE VALUES ON DRIVES TO BE 6.0±1.0/LBS ON ITEM 6.




NOTE: FOR PARTS LIST REFER TO K-PL-701814-0-DBP.

| REVISION HISTORY | | |
|---|---|---|
| REV | ECO NUMBER | DATE |
| A | E-UA-11730-Z-0 | 7-AUG-81 |

| | | | |
|---|---|---|---|
| DESCRIPTION | DRAWING NO. | PART NO. | REV |
| | | | A |

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES AND THE FOLLOWING TOLERANCES APPLY (PER DEC STD 118)

| INCHES TOLERANCES | ANGLES ± 0° 30' | MACHINED DIMENSIONS ROUGH | DIMENSIONS NAMED IN INCHES | | | | | |
|---|---|---|---|---|---|---|---|---|
| X = ± 1 | SURFACE QUALITY | FINISH SMOOTH | OVER 0 TO 6 | OVER 6 TO 30 | OVER 30 TO 120 | OVER 120 TO 315 | OVER 315 TO 1000 | OVER 1000 TO 2000 |
| XX = ± 03 | | | ± .01 | ± .02 | ± .03 | ± .06 | ± .10 | ± .16 |
| XXX = ± 010 | | | ± .005 | ± .010 | ± .015 | ± .030 | ± .050 | ± .080 |

QUANTITY & VARIATION

THIRD ANGLE PROJECTION

DO NOT SCALE DRAWING

REMOVE BURRS AND BREAK SHARP CORNERS

MATERIAL: SEE PARTS LIST

FINISH

| | | |
|---|---|---|
| DESIGNED | | DATE |
| DRAWN | A. Kula | 4-AUG-81 |
| TRACED | J. Williams | 4-AUG-81 |
| SOFTWARE | | |
| SOFTWARE | | |
| MECHANICAL ENGINEERING | L. Martin | 7-AUG-81 |
| PROJECT MANAGEMENT | C. Gaydos | 7-AUG-81 |
| QUALITY ASSURANCE | E-UA-11730-Z-0 | |

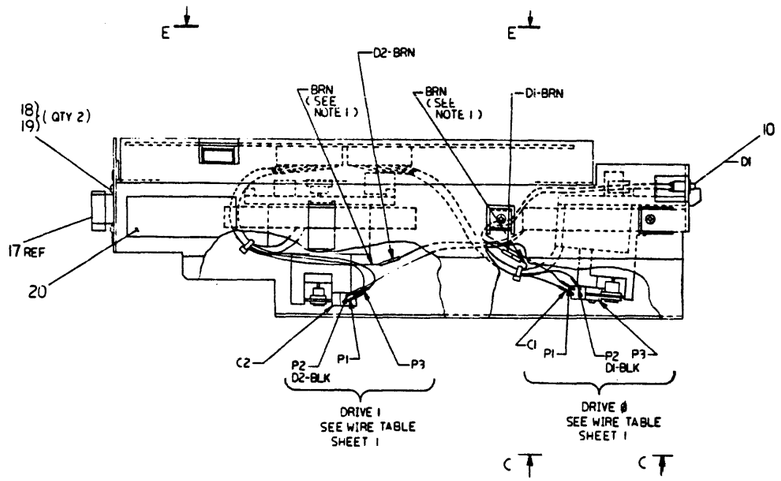
TITLE: TU58 DUAL DRIVE ASSY

digital

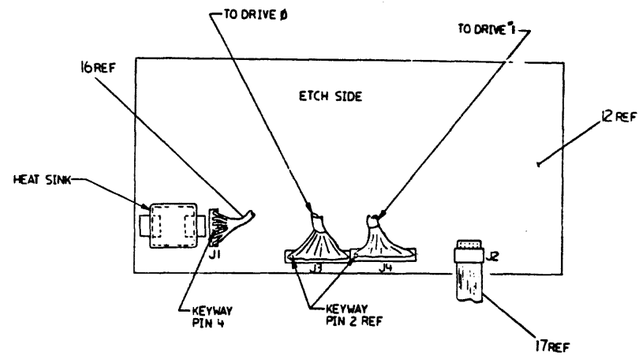
| SIZE | CODE | DOCUMENT NUMBER | REV |
|---|---|---|---|
| E | AD | 701814-0-0 | A |

SCALE: NONE  SHEET 1 OF 4

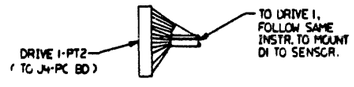
TW 1

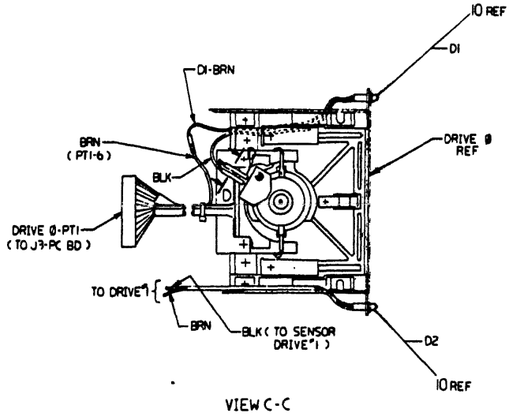



VIEW B-B
SCALE : NONE

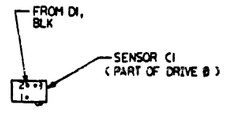



VIEW E-E
SCALE : NONE
( ROTATED 180° )




VIEW C-C




VIEW D-D
SCALE : NONE
( WIRES REMOVED )

| REVISION HISTORY | | |
|---|---|---|
| DATE | ECO NUMBER | REV |

TITLE: TU58 DUAL DRIVE ASSY

DOCUMENT NUMBER: SIZE E | AD 7018114-0-0 | REV 1

SCALE | SHEET 2 OF 2

1 TW

AUTOMATED BY PRTLST.3P(44)

# P A R T S  L I S T



| LINE | ITEM | DOCUMENT NUMBER | PART NUMBER | DESCRIPTION | QUANTITY PER VARIATION 00 |
|---|---|---|---|---|---|
| 1 | 1 | C-IA-7018164-0-0 | 7018164-00 | TU ENCLOSURE RIVETED ASSY | 1 |
| 2 | 2 | D-IA-7423933-0-0 | 7423933-00 | TU58 PLATFORM | 2 |
| 3 | 3 | B-MD-7424846-0-0 | 7424846-00 | BRACE,CENTER,TU | 1 |
| 4 | 4 | D-AD-7015510-0-0 | 7015510-00 | CARTRIDGE DRIVE | 2 |
| 5 | 5 | | 9009701-00 | SCREW,PAN,PHIL,SEMS 6-32X .312L | 12 |
| 6 | 6 | | 9009984-02 | SCREW, SEMS, PHILLIPS PAN HD. 6- | 8 |
| 7 | 7 | | 9010107-00 | GUIDE, CARD 11"LG. | 3 |
| 8 | 8 | | 9009284-00 | STANDOFF,HEX,M/F 4-40 | 2 |
| 9 | 9 | BLANK | | *** THIS ITEM IS NOT USED *** | - |
| 10 | 10 | A-PS-1118799-0-0 | 1118799-00 | LED 15.0MCD@20MA 3.0V | 2 |
| 11 | 11 | BLANK | | *** THIS ITEM IS NOT USED *** | - |
| 12 | 12 | E-UA-5413489-0-0 | 5413489-00 | TU58 ELECTRONICS SERIAL | 1 |
| 13 | 13 | BLANK | | *** THIS ITEM IS NOT USED *** | - |
| 14 | 14 | | 9009643-02 | SCREW,PAN,SLOT,SEMS 4-40X .250L | 2 |
| 15 | 15 | D-MD-7424848-0-0 | 7424848-00 | PLATE,BOTTOM,TU | 1 |
| 16 | 16 | D-IA-7018166-0-0 | 7018166-18 | TU BULKHEAD PWR CABLE | 1 |
| 17 | 17 | C-IA-7016305-0-0 | 7016305-0K | CABLE, SERIAL TU58 | 1 |
| 18 | 18 | | 9006013-01 | SCREW,PAN,PHIL 4-40K 1/2 SS | 2 |
| 19 | 19 | | 9009990-00 | NUT,KEP 4-40 X1/4 AF | 2 |
| 20 | 20 | | 9009255-01 | LABEL, POWER'SUPPLY, 2-7/8" LG X | 1 |
| 21 | 21 | B-IA-7018521-0-0 | 7018521-00 | JUMPER, DRIVE/DRIVE | 1 |
| 22 | 22 | B-IA-7018522-0-0 | 7018522-00 | JUMPER'DRIVE/GND | 1 |
| 23 | 23 | B-IA-7018523-0-0 | 7018523-00 | JUMPER, GND/GND | 1 |
| 24 | 24 | | 9008185-00 | NUT,KEP 6-32X 1/4 AF | 1 |

| REVISION HISTORY | | |
|---|---|---|
| ENG | ECO NUMBER | REV |
| --- | INITIAL | A |

BASIC PART NO: 7018114
SECTION A OF A
SECTION. VARIATION INDEX
[A] 00
[B]
[C]
[D]
[E]
[F]

| | | |
|---|---|---|
| DRN: A. ROCHA | DATE: 23-JUL-81 | |
| CHK'D: R. MORIN | DATE: 23-JUL-81 | |
| DES.ENG.: R. MORIN | DATE: 23-JUL-81 | |
| RESP.ENG.: R. MORIN | DATE: 23-JUL-81 | |
| MFG.ENG.: S. CASTIGLIONE | DATE: 23-JUL-81 | |
| ASSEMBLY NUMBER: E-AD-7018114-0-0 | TOP DOCUMENT NUMBER: E-UA-11730-Z-0 | FILE NAME: Z1352A.PLS |

D I G I T A L

TITLE: PARTS LIST

TU58 DUAL DRIVE ASSY

DOCUMENT NUMBER

| SIZE | CODE | NUMBER | REV |
|---|---|---|---|
| K | PL | 7018114-0-DBP | A |

EDIT # 20

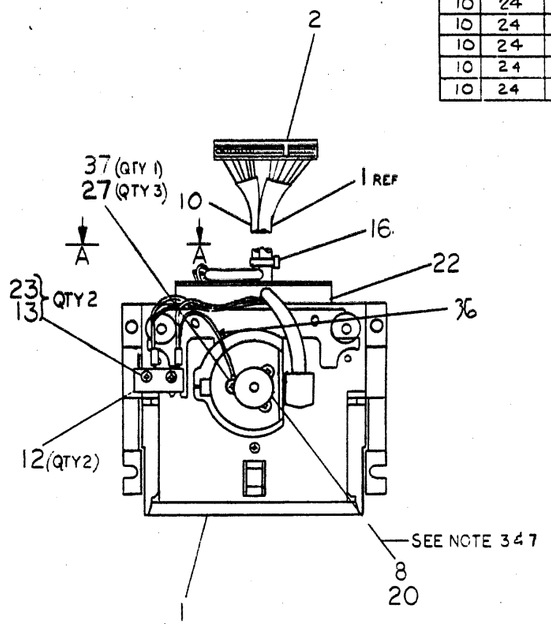
## WIRE TABLE

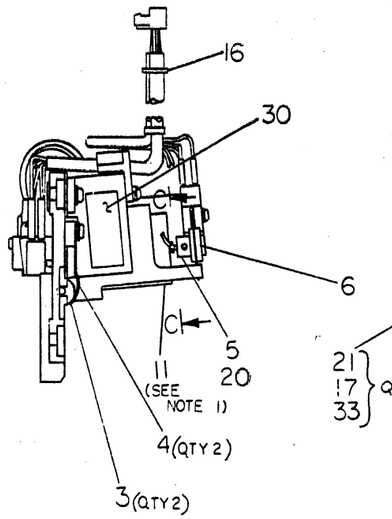
| ITEM NO | DESCRIPTION AWG | COLOR | FROM CONN | FROM WITH | TO CONN | TO WITH | REMARKS |
|---|---|---|---|---|---|---|---|
| 10 | 24 | YEL | PT-2 | — | SWI-5 | — | |
| 10 | 24 | GRY | PT-1 | — | SWI-2 | — | |
| 10 | 24 | VIO | PT-3 | — | SWI-3 | — | |
| 31 | 22 | — | SW-6 | SOLD | SWI-3 | SOLD. | BUS WIRE |
| 10 | 24 | GRN | PT-6 | — | C1-3. | — | |
| 10 | 24 | BRN | PT-8 | — | C1-2 | — | |
| 10 | 24 | BLU | PT-7 | — | C1-1 | — | |
| 10 | 24 | BLK | PT-5 | — | MOTOR- | — | TWISTED PAIR |
| 10 | 24 | RED | PT-4 | — | MOTOR+ | — | |

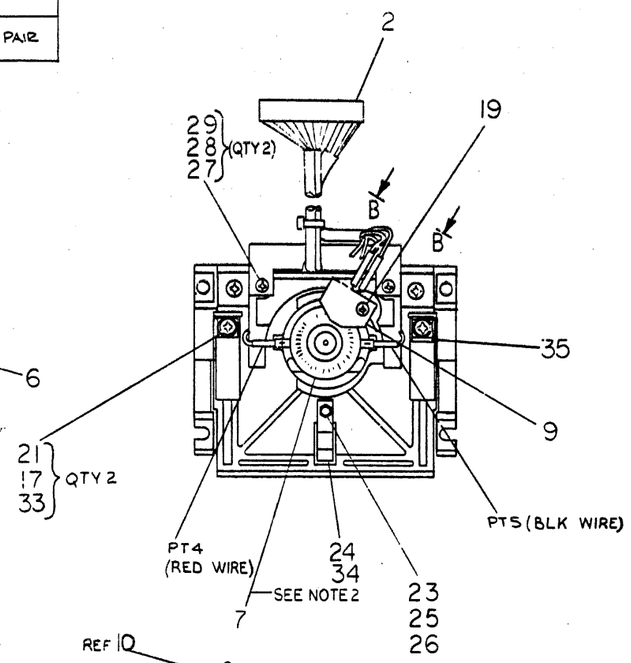
8. ASSEMBLE ITEM #5,6 & 9 USING 5± .5 IN LBS TORQUE.
9. CARTRIDGE WITHDRAWAL FORCE SHALL BE A MAXIMUM OF 4.8 LBS. AND WHEN AN EXCESS FORCE OF 1 LB. IS APPLIED TO THE DRIVE ROLLER (OUTWARD) AND IS REMOVED, THE CARTRIDGE SHALL STILL BE AGAINST THE DRIVE REFERENCE STOPS
10. HEAD SKEW TO BE WITHIN 6' ± 0°6' AFTER FINAL ASSY.

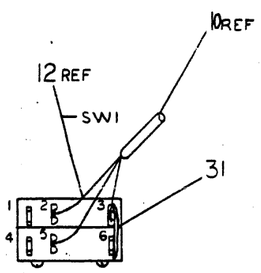
## NOTES:

1. MOTOR TO BE ROTATED TO PROVIDE EASIEST ACCESS TO TERMINALS PT4, PT5. MOTOR LEADS MAY BE BENT AS SHOWN IF NECESSARY TO CLEAR MOTOR MOUNT.
2. CODE WHEEL ITEM #7 MUST ROTATE FREELY WITHOUT RUBBING IN SLOT IN OPTICAL SENSOR ITEM #9. TIGHTEN ITEM #20 TO 3.5±.5 IN LBS
3. SET DRIVE ROLLER, ITEM #8, TO BE FLUSH WITH END OF MOTOR SHAFT ITEM #11. TIGHTEN ITEM #20 TO 3.5±.5 IN LBS
4. TIGHTEN ITEMS 13 & 25 TO 2.0±.5 IN LBS
5. TIGHTEN ITEMS 15, 19 & 27 TO 3.5±.5 IN LBS
6. TIGHTEN ITEM 21 TO 5±.5 IN LBS.
7. WHEN CARTRIDGE IS INSERTED INTO DRIVE, THE FORCE ON THE DRIVE ROLLER (ITEM 8) IS TO BE 1 LB±.1".

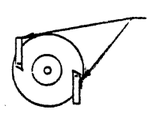


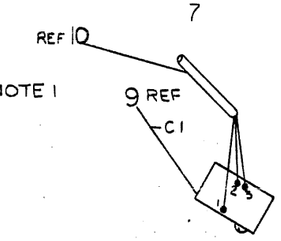




VIEW A-A
SCALE : NONE




VIEW C-C
SCALE: NONE




VIEW B-B
SCALE: NONE

CAUTION : OFF SHEET PARTS LIST K-PL-7015510-0-DBP

| REVISIONS | CHANGE NO. | REV. |
|---|---|---|
| CHK | 7015510-ML001 | A |
| CHK | TU58YA-ML002 | B |
| CHK | TU58-XA-ML003 | C |
| CHK | 7015510-ML002 | D |
| CHK | TU58XA-ML004 | E |
| CHK | 7015510-ML003 | F |

| | DESCRIPTION | DWG./PART NO. | ITEM NO. |
|---|---|---|---|
| | UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES | | |

| ANGLES | CLASS OF ACCURACY | NOMINAL DIMENSION RANGE INCHES | | | | | |
|---|---|---|---|---|---|---|---|
| | | OVER 0 TO 0.3 | OVER 0.3 TO 1.2 | OVER 1.2 TO 4.0 | OVER 4.0 TO 12.0 | OVER 12.0 TO 40.0 | OVER 40.0 TO 80.0 |
| SURFACE QUALITY 125 MICROINCHES | (CHECK ONE) MEDIUM | ±.004 | ±.008 | ±.012 | ±.016 | ±.024 | ±.04 |
| | PREFERRED | ±.012 | ±.016 | ±.025 | ±.04 | ±.063 | ±0.1 |

QUANTITY & VARIATION

THIRD ANGLE PROJECTION

REMOVE BURRS AND BREAK SHARP CORNERS

DO NOT SCALE DWG

MATERIAL SEE PARTS LIST

FINISH —

DRN. [illegible] 5 DEC 78
CHK'D [illegible] 5 DEC 78
ENG. [illegible] 5 DEC 78
PROJ. ENG. [illegible] 5 DEC 78
PROD. [illegible] 5 DEC 78

NEXT HIGHER ASSY.

K-PL-TU58-XA-DBP

SCALE 1/1

SHEET 1 OF 1

FIRST USED ON TU58-XA

digital

TITLE
CARTRIDGE DRIVE

SIZE D | CODE AD | NUMBER 7015510-0-0 | REV. F

DIST.

ML2

AUTOMATED BY PRTLST.3P(44) — P A R T S  L I S T — SHEET A1 OF A2

| LINE | ITEM | DOCUMENT NUMBER | PART NUMBER | DESCRIPTION | QUANTITY PER VARIATION 00 |
|---|---|---|---|---|---|
| 1 | 1 | D-IA-7016558-0-0 | 7016558-00 | HEAD MOUNTING ASSY | 1 |
| 2 | 2 | | 1216144-00 | COVER,CONN FOR 12-15815- | 1 |
| 3 | 3 | C-MD-7420645-0-0 | 7420645-01 | LOCK,ROLLER | 2 |
| 4 | 4 | C-MD-7423353-0-0 | 7423353-00 | SPRING,BEVELED | 2 |
| 5 | 5 | C-MD-7420651-0-0 | 7420651-00 | HUB,ENCODER | 1 |
| 6 | 6 | B-MD-7420652-0-0 | 7420652-00 | CLAMP | 1 |
| 7 | 7 | C-MD-7420649-0-0 | 7420649-00 | WHEEL,CODE | 1 |
| 8 | 8 | | 1216231-00 | ROLLER ASSEMBLY,DRIVE | 1 |
| 9 | 9 | | 1915721-00 | PHOTO SWITCH W/LED & | 1 |
| 10 | 10 | D-IA-7016017-0-0 | 7016017-00 | CABLE,TAPE DRIVE | 1 |
| 11 | 11 | | 1215602-00 | MOTOR,12VDC SERVO | 1 |
| 12 | 12 | | 1209782-00 | SW,MICRO 1P .1A @125V,AG "CROSS | 2 |
| 13 | 13 | | 9008025-01 | SCREW,PAN,PHIL 2-56X 5/8 SS | 2 |
| 14 | 14 | | 9006009-02 | *** THIS ITEM IS NOT USED *** | - |
| 15 | 15 | | 9008301-01 | SCREW,PAN,PHIL 4-40X 1/4 SS | 3 |
| 16 | 16 | | 9007031-00 | TIE,CABLE BUNDL.DIA 0- 3/4"=101 | 2 |
| 17 | 17 | | 9007801-00 | WASHER, LOCK, S.S. #6 | 2 |
| 18 | 18 | B-MD-7422968-0-0 | | *** THIS ITEM IS NOT USED *** | - |
| 19 | 19 | | 9006013-01 | SCREW,PAN,PHIL 4-40K 1/2 SS | 1 |
| 20 | 20 | | 9006278-10 | SCREW,SET ,SKT , 4-40X 1/8 | 2 |
| 21 | 21 | | 9006021-01 | SCREW,PAN,PHIL 6-32X 5/16 SS | 2 |
| 22 | 22 | C-MD-7421491-0-0 | 7421491-00 | CLAMP,CABLE | 1 |
| 23 | 23 | | 9006631-00 | WASHER,LOCK,INT,.1800D X .096ID | 3 |
| 24 | 24 | C-MD-7423355-0-0 | 7423355-00 | SPRING STRAIGHT SUPPORT | 1 |
| 25 | 25 | | 9006001-02 | SCREW,FLAT,PHIL, 2-56X 1/4 | 1 |
| 26 | 26 | | 9006555-00 | NUT,HEX , 2-56X3/16AF X 1/ | 1 |
| 27 | 27 | | 9006010-01 | SCREW,PAN,PHIL 4-40X 5/16 SS | 2 |
| 28 | 28 | | 9006655-00 | WASHER, FLAT, .312 O.D. X .125 I | 2 |
| 29 | 29 | | 9006688-00 | WASHER, LOCK, S.S. #4 | 2 |
| 30 | 30 | | 3616582-00 | LABEL,SERIAL TU58-XA | 1 |

| REVISION HISTORY | | | BASIC PART NO: 7015510 |
|---|---|---|---|
| ENG | ECO NUMBER | REV | SECTION A OF A |
| D.W | TU58XA-ML003 | C | SECTION. VARIATION INDEX |
| DW | 7015510-ML002 | D | [A] 00 |
| DW | TU58XA-ML004 | E | [B] |
| | | | [C] |
| | | | [D] |
| | | | [E] |
| | | | [F] |

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| DRN: D.WARREN | DATE: 24-APR-78 | | D | I | G | I | T | A | L | |
| CHK'D: D.HEALY | DATE: 5-DEC-78 | TITLE PARTS LIST | | | | | | | | |
| | | CARTRIDGE DRIVE | | | | | | | | |
| DES.ENG.: M.LEIS | DATE: 5-DEC-78 | | | | | | | | | |
| RESP.ENG.: M.LEIS | DATE: 5-DEC-78 | DOCUMENT NUMBER | | | | | | | | |
| | | SIZE | CODE | NUMBER | REV | | | | | |
| MFG.ENG.: R.TAYLOR | DATE: 5-DEC-78 | K | PL | 7015510-0-DBP | E | | | | | |
| ASSEMBLY NUMBER: | TOP DOCUMENT NUMBER: | FILE NAME: Z1610E.PLS | | | EDIT # 13 | | | | | |

AUTOMATED BY PRTLST.3P(44) P A R T S L I S T SHEET A2 OF A2

| LINE | ITEM | DOCUMENT NUMBER | PART NUMBER | DESCRIPTION | QUANTITY PER VARIATION 00 |
|---|---|---|---|---|---|
| 31 | 31 | | 9107560-01 | WIRE,BUSS,22AWG | A/R |
| 32 | 32 | | 9006656-00 | *** THIS ITEM IS NOT USED *** | - |
| 33 | 33 | C-MD-7423354-0-0 | 7423354-00 | WASHER,LEAF SPRING | 2 |
| 34 | 34 | B-MD-7423356-0-0 | 7423356-00 | BUTTON,SUPPORT | 1 |
| 35 | 35 | | 9007113-01 | TERM QUICK .152DIA .250TAB BR/T | 1 |

| DIGITAL | TITLE | SIZE | CODE | DOCUMENT NUMBER | REV |
|---|---|---|---|---|---|
| | CARTRIDGE DRIVE SECTION A OF A | K | PL | 7015510-0-DBP | E |

| SIZE | CODE | NUMBER | REV. |
|---|---|---|---|
| B | DD | 5413489-Ø | H |

| DRAWING NO. | NO. OF SHTS. | PART NO. | DESCRIPTION | REVISIONS |
|---|---|---|---|---|
| B-DD-5413489-Ø | 1 | | SERIAL TU58 | * A B C D E F H |
| E-UA-5413489-Ø-Ø | 3 | | SERIAL TU58 | C D D E F F H J |
| D-CS-5413489-Ø-1 | 2 | | SERIAL TU58 | C D D E F F H J |
| E-MD-5013488-Ø-Ø | 4 | | DRILL & ETCH DRAWING | C D D D D D E E |
| | | 5013488 | ETCHED BOARD | D E E E E E F F |
| K-PL-5413489-Ø-DBP | - | | PARTS LIST DATA BASE (5413489) | C D D E F F H J |
| K-PC-5413489-Ø-DBC | - | | P.C. DESIGN DATA BASE (5413489) | A B B B B B C C |
| E-EC-5013488-0-0 | 2 | | ETCH CUT DRAWING | - - — — — — H H |
| | | | | |
| E-UA-5413489-0-0 | 3 | | SERIAL TU58 | C1 C1 C1 C1 C1 C1 |
| D-CS-5413489-0-1 | 2 | | SERIAL TU58 | C1 C1 C1 C1 C1 C1 C1 |
| K-PL-5413489-0-DBP | | | PARTS LIST DATA BASE | C1 C1 C1 C1 C1 C1 C1 |
| | | | | |
| | | 5013488 | ETCH BOARD | D D D D D D |
| | | | | |
| E-UA-5413489-0-0 | 3 | | SERIAL TU58 | - F1 F1 F1 |
| D-CS-5413489-0-1 | 2 | | SERIAL TU58 | - F1 F1 F1 |
| K-PL-5413489-0-DBP | | | PARTS LIST DATA BASE (5413489) | - F1 F1 F1 |
| | | | | |
| | | 5013488 | ETCH BOARD | E E E |

**NOTES:** ~~SPECIAL REVISIONS: FOUND ON SHEET 2~~

| REVISIONS | REV. | CHG NO. | DATE |
|---|---|---|---|
| | * | 1ST REL | 8/11/78 |
| | A | ML001 | 11/2/78 |
| | B | ML002 | 1/79 |
| | C | ML003 | 6-79 |
| | D | ML004 | 11-79 |
| | E | ML005 | 7-80 |
| | F | ML006 | 9/10 |
| | H | ML007 | 2/82 |



digital

| USED ON OPTION/MODEL | |
|---|---|
| TU58 | |
| | |
| | |
| | |
| | |

| | | |
|---|---|---|
| DRN. | P. BOSSMAN | 6/14/78 |
| CHK'D | | 2/7/79 |
| ENG. | | 8/1/78 |
| PROD. | | 8-1-78 |

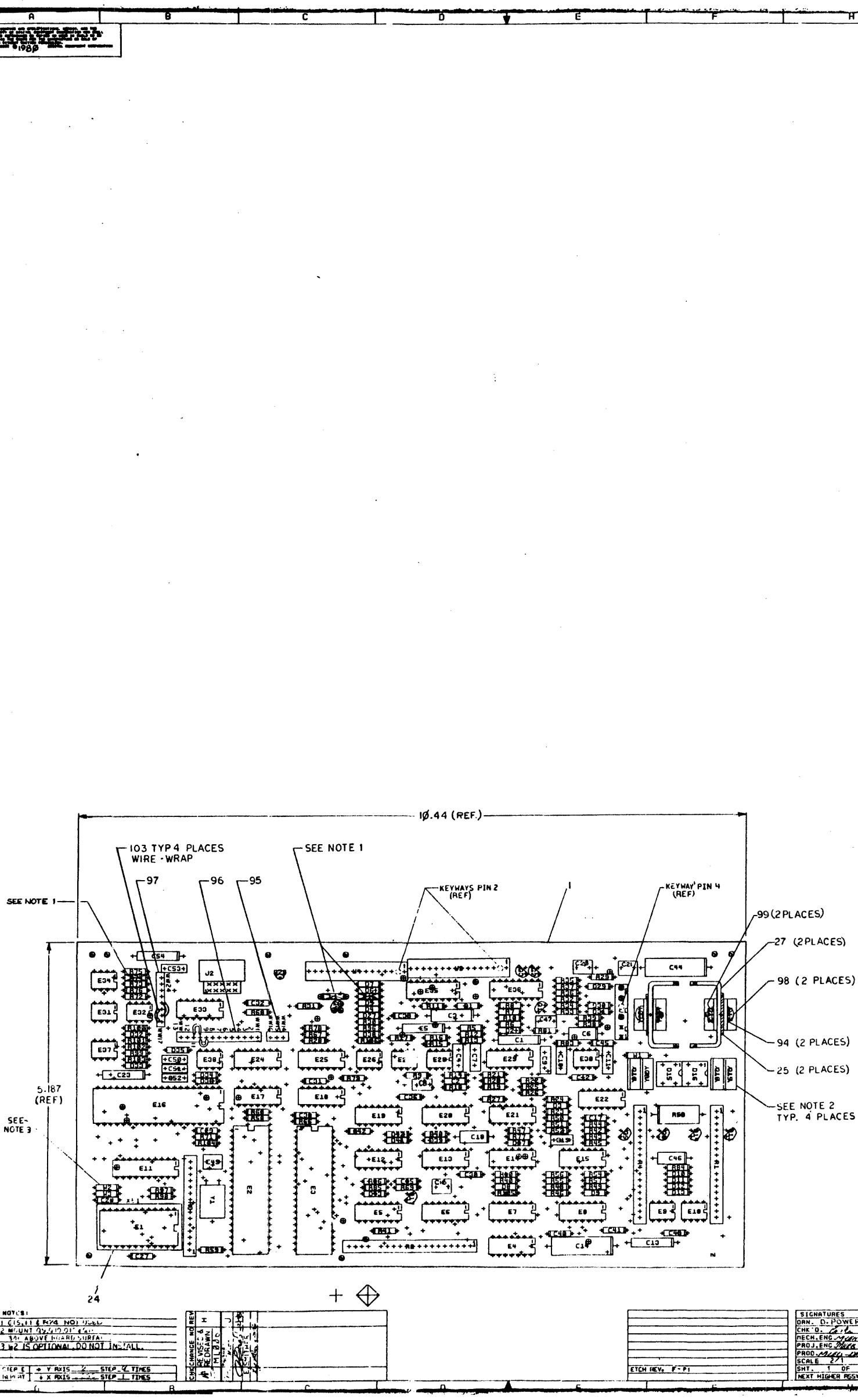
TITLE: SERIAL TU58

| SIZE | CODE | NUMBER | REV. |
|---|---|---|---|
| B | DD | 5413489-Ø | H |

SHEET 1 OF 1

DRB 126

ML2




NOTES:
1. C15, L1 & R74 NOT USED
2. MOUNT ON 0.400" CTRS
3. .14" ABOVE BOARD SURFACE
4. J2 IS OPTIONAL, DO NOT INSTALL

| STEP | + Y AXIS | STEP | TIMES |
|---|---|---|---|
| INPUT | + X AXIS | STEP | TIMES |

| CHG/CHANGE NO | REV |
|---|---|
| REVISED & REDRAWN | H |
| | J |

ETCH REV. F-P1

| SIGNATURES | DATE |
|---|---|
| DRN. D. POWERS | 10-1-79 |
| CHK'D. | |
| MECH. ENG. | |
| PROJ. ENG. | |
| PROD. | |

SCALE 2/1
SHT. 1 OF 1
NEXT HIGHER ASSY. B-TU-5413489-G

digital

TITLE SERIAL TU58

| SIZE | CODE | NUMBER | REV |
|---|---|---|---|
| E | UA | 5413489-00 | J |

E1-5413489-J-2

AUTOMATED BY PRTLST.2D(16) P A R T S L I S T SHEET A1 OF A3

| LINE | ITEM | DOCUMENT NUMBER | PART NUMBER | DESCRIPTION | QTY PER VARIATION 00 | REFERENCE DESIGNATOR |
|---|---|---|---|---|---|---|
| 1 | 1 | | 5013488-00 | TU58 ELECTRONIC SERIAL | 1 | |
| 2 | 2 | | 1215816-00 | HEADER.100 15POS STRAIGHT | 2 | J3,J4 |
| 3 | 3 | | 1000021-00 | 220.0 MMF 100V 5%200PPM MICA | 1 | C10 |
| 4 | 4 | | 1000023-00 | *** THIS ITEM IS NOT USED *** | - | |
| 5 | 5 | | 1010978-36 | .1 MFD 50V 10% CER | 3 | C8,C16,C47 |
| 6 | 6 | | 1000042-00 | 1000.0 MMF 100V 5%200PPM MICA | 2 | C9,C7 |
| 7 | 7 | | 1001610-00 | .01 MFD 50V +80-20% 25U CER | 17 | C2,C17,C27-C33,C35,C36,C38,C40, CONT C41,C42,C43,C45 |
| 8 | 8 | | 1001776-00 | 1 MFD 35V 10% S.TANT | 2 | C6,C46 |
| 9 | 9 | | 1002315-00 | 2000.0 MMF 500V 5%200PPM MICA | 1 | C12 |
| 10 | 10 | | 1013466-21 | 3.3 MMF 50V+-.5PF CER | 1 | C4 |
| 11 | 11 | | 1002431-00 | 2.2MFD 35V 10% S.TANT | 2 | C1,C3 |
| 12 | 12 | | 1005306-00 | 6.8MFD 35V 10% S.TANT | 4 | C5,C13,C23,C54 |
| 13 | 13 | | 1005334-00 | *** THIS ITEM IS NOT USED *** | - | |
| 14 | 14 | | 1005820-00 | 22.0 MMF 100V 5%200PPM MICA | 1 | C11 |
| 15 | 15 | | 1010978-40 | .22 MFD 50V 10% CER | 1 | C19 |
| 16 | 16 | | 1011895-00 | .15 MFD 35V 10% S.TANT | 1 | C18 |
| 17 | 17 | | 1012312-00 | *** THIS ITEM IS NOT USED *** | - | |
| 18 | 18 | | 1100101-00 | *** THIS ITEM IS NOT USED *** | - | |
| 19 | 19 | | 1102808-00 | 1N 752A VZ= 5.6 5% .40W | 1 | D27 |
| 20 | 20 | | 1105275-00 | D 672 TR= 15NS PIV= 60V SI | 25 | D1-D13,D31,D33-D43 |
| 21 | 21 | | 1110324-00 | LED 1MCD@10MA PIV=3 | 1 | D28 |
| 22 | 22 | | 1115369-00 | VM 18 PIV=100 I=1A | 2 | D15,D16 |
| 23 | 23 | | 1213506-04 | HEADER 10POS RT ANGLE W/3 SI | 1 | J2 |
| 24 | 24 | | 1212385-04 | SOCKET 24PIN IC | 1 | XE1 |
| 25 | 25 | USED FOR Q7 & Q12 | 1213071-06 | INSULATOR,RUBBER SILICONE | 2 | |
| 26 | 26 | | 1213113-01 | *** THIS ITEM IS NOT USED *** | - | |
| 27 | 27 | | 1213418-01 | HEAT SINK,VERTICLE MNT,ALUMINUM | 2 | |
| 28 | 28 | | 1300247-00 | 120.0 .25 W 5.0 % CC | 1 | R75 |
| 29 | 29 | | 1300274-00 | *** THIS ITEM IS NOT USED *** | - | |

| REVISION HISTORY | | | BASIC PART NO: 5413489 |
|---|---|---|---|
| ENG | ECO NUMBER | REV | SECTION A OF A |
| | INIT | C | SECTION.VARIATION INDEX |
| PB | 5413489-ML001 | D | [A] 00 |
| M.L | 5413489-ML003 | E | [B] |
| ML | 5413489-ML004 | F | [C] |
| D.M | 5413489-ML006 | H | [D] |
| | | | [E] |
| | | | [F] |
| | | | [H] |
| | | | [J] |
| | | | [K] |
| | | | [L] |
| | | | [M] |
| | | | [N] |

| | | | |
|---|---|---|---|
| DRN: DAN MUTNANSKY | DATE: 22-MAY-78 | D I G I T A L | |
| CHK'D: P. BOSSMAN | DATE: 6-JUNE-78 | TITLE PARTS LIST | |
| | | SERIAL TU58 | |
| DES.ENG: MIKE LEIS | DATE: 22-MAY-78 | | |
| RESP.ENG.: M. LEIS | DATE: 6-JUNE-78 | DOCUMENT NUMBER | |
| MFG.ENG.: P. BARTON | DATE: 6-JUNE-78 | SIZE: K / CODE: PL / NUMBER: 5413489-0-DBP / REV: H | |
| ASSEMBLY NUMBER: E-UA-5413489-0-0 | TOP DOCUMENT NUMBER: TU58 | FILE NAME: Z0582H.PLS | EDIT #: 38 |

AUTOMATED BY PRTLST.2D(16)

P A R T S  L I S T



| LINE | ITEM | DOCUMENT NUMBER | PART NUMBER | DESCRIPTION | QTY PER VARIATION 00 | REFERENCE DESIGNATOR |
|---|---|---|---|---|---|---|
| 30 | 30 | | 1300316-00 | 470.0 .25 W 5.0 % CC | 5 | R5,R55,R100,R78,R84 |
| 31 | 31 | | 1300365-00 | 1.0 K .25 W 5.0 % CC | 2 | R10,R18 |
| 32 | 32 | | 1300295-00 | *** THIS ITEM IS NOT USED *** | - | |
| 33 | 33 | | 1300447-00 | 4.70 K .25 W 5.0 % CC | 8 | R11,R19,R20,R25,R54,R79,R76,R105 |
| 34 | 34 | | 1300479-00 | 10.0 K .25 W 5.0 % CC | 21 | R9,R22,R24,R26,R44,R46,R50,R58, |
| | | | | | CONT | R59,R66,R67,R68,R80,R33,R36,R96, |
| | | | | | CONT | R86,R73,R97-R99 |
| 35 | 35 | | 1301322-00 | 180.0 .25 W 5.0 % CC | 1 | R31 |
| 36 | 36 | | 1301327-00 | 68.0 K .25 W 5.0 % CC | 1 | R72 |
| 37 | 37 | | 1300432-00 | 3.0 K .25 W 5.0 % CC | 1 | R6 |
| 38 | 38 | | 1301969-00 | 22.0 .25 W 5.0 % CC | 1 | R29 |
| 39 | 39 | | 1302092-00 | 220.0 K .25 W 5.0 % CC | 1 | R51 |
| 40 | 40 | | 1302177-00 | 47.0 K .25 W 5.0 % CC | 2 | R14,R23 |
| 41 | 41 | | 1302388-00 | 2.0 K .25 W 5.0 % CC | 5 | R27,R28,R34,R37,R85 |
| 42 | 42 | | 1302391-00 | 20.0 K .25 W 5.0 % CC | 1 | R83 |
| 43 | 43 | | 1302394-00 | 30.0 K .25 W 5.0 % CC | 2 | R52,R106 |
| 44 | 44 | | 1302396-00 | 150.0 K .25 W 5.0 % CC | 2 | R8,R81 |
| 45 | 45 | | 1302398-00 | 470.0 K .25 W 5.0 % CC | 4 | R7,R21,R45,R57 |
| 46 | 46 | | 1302941-00 | 14.70 K .25 W 1.0 % RN55D-F10 | 3 | R13,R16,R56 |
| 47 | 47 | | 1303177-00 | 2.40 K .25 W 5.0 % CC | 8 | R17,R30,R41,R42,R43,R60,R69,R71 |
| 48 | 48 | | 1303312-00 | 10.0 K .25 W 1.0 % RN55D-F10 | 2 | R12,R15 |
| 49 | 49 | | 1305324-00 | 4.99 K .25 W 1.0 % RN55D-F10 | 4 | R38,R39,R47,R49 |
| 50 | 50 | | 1309386-00 | 5.60 M .25 W 5.0 % CC | 1 | R40 |
| 51 | 51 | | 1001610-01 | *** THIS ITEM IS NOT USED *** | - | |
| 52 | 52 | | 1311466-00 | .20 2.0 W 5.0 % WW | 1 | R53 |
| 53 | 53 | | 1313596-00 | 20.0 K .25 W 1.0 % RN55D-F10 | 2 | R77,R102 |
| 54 | 54 | | 1315660-00 | R NETWORK 16-10K 1-4.7K 20PIN | 1 | R2 |
| 55 | 55 | | 1315661-00 | R NETWORK MULTI-VALUE | 2 | R1,R4 |
| 56 | 56 | | 1315662-00 | R NETWORK 14-2.4K 10.0 % 15PIN | 1 | R3 |
| 57 | 57 | | 1503409-00 | DEC6534D PNP 310MW SI 40 90 | 2 | Q2,Q4 |
| 58 | 58 | | 1509142-00 | DEC4250 PNP 200MW SI 40250 | 1 | Q1 |
| 59 | 59 | | 1509338-00 | DEC6531B NPN 310MW SI 40 90 P | 6 | Q3,Q5,Q8,Q11,Q14,Q17 |
| 60 | 60 | | 1510421-00 | D 44C8 NPN 30WT SI 60 20 | 4 | Q6,Q7,Q12,Q13 |
| 61 | 61 | | 1510598-00 | DEC45C8 PNP 27WT SI 60 20 Y | 4 | Q9,Q10,Q15,Q16 |
| 62 | 62 | | 1812396-06 | XTAL 4.9152 MHZ | 1 | Y1 |
| 63 | 63 | | 1910282-00 | 301AN OP AMP | 1 | E30 |
| 64 | 64 | | 1910645-00 | 75452 DRIVER,PERIPH,DUAL, | 4 | E9,E10,E26,E27 |
| 65 | 65 | | 1910741-00 | 7406 INVERTER GATE-HEX 1I | 1 | E8 |
| 66 | 66 | | 1911242-00 | *** THIS ITEM IS NOT USED *** | - | |
| 67 | 67 | | 1912107-00 | 324 OP AMP,QUAD | 1 | E15 |
| 68 | 68 | | 1912108-00 | 339 VOLT CMPRTR,QUAD | 1 | E29 |
| 69 | 69 | | 1912799-00 | LS00 NAND-GATE-QUAD 2IN,P | 2 | E17,E19 |
| 70 | 70 | | 1912801-00 | LS02 NOR-GATE-QUAD 2IN | 1 | E13 |
| 71 | 71 | | 1912803-00 | 774LS04 INVERTER GATE, HEX | 2 | E6,E25 |
| 72 | 72 | | 1912807-00 | LS10 NAND GATE-TRIPLE 3IN | 1 | E24 |
| 73 | 73 | | 1912813-00 | LS27 NOR GATE-TRIPLE 3IN | 1 | E18 |
| 74 | 74 | | 1912832-00 | LS107 FF-JK DUAL MASTER/SL | 2 | E5,E12 |
| 75 | 75 | | 1912857-00 | LS197 COUNTER,BINARY,PRESET | 1 | E7 |

| D | I | G | I | T | A | L | TITLE | SECTION A OF A |
|---|---|---|---|---|---|---|---|---|
| | | | | | | | SERIAL TU58 | |

| SIZE | CODE | DOCUMENT NUMBER | REV |
|---|---|---|---|
| K | PL | 5413489-0-DBP | H |

AUTOMATED BY PRTLST.2D(16) P A R T S L I S T SHEET A3 OF A3

| LINE | ITEM | DOCUMENT NUMBER | PART NUMBER | DESCRIPTION | QTY PER VARIATION 00 | REFERENCE DESIGNATOR |
|---|---|---|---|---|---|---|
| 76 | 76 | | 1914451-00 | 74LS393 COUNTER,BINARY,4BIT | 1 | E33 |
| 77 | 77 | | 1914466-00 | 3130E OP AMP MOS/FET IN,CM | 1 | E28 |
| 78 | 78 | | 1915219-00 | LS373 FF-D OCTAL-TRANSPARE | 1 | E11 |
| 79 | 79 | | 1915415-00 | 9636 DRIVER,DUAL,EIA RS- | 1 | E32 |
| 80 | 80 | | 1915416-00 | 9637 RECEIVER,DUAL,RS-42 | 1 | E34 |
| 81 | 81 | | 1915417-00 | 9638 DRIVER,DUAL,EIA RS- | 1 | E31 |
| 82 | 82 | | 2113605-00 | 4006B SHIFT REG,18 STAGE | 1 | E14 |
| 83 | 83 | | 2113609-00 | 4013B FF-D DUAL W/SET/RESE | 1 | E4 |
| 84 | 84 | | 2113630-00 | 4052B MULTIPLEXER 4CHAN DI | 1 | E35 |
| 85 | 85 | | 2113632-00 | 4066B BILATERAL SWITCH-QUA | 1 | E22 |
| 86 | 86 | | 2113634-00 | 4070B X-OR GATE-QUAD CMOS | 1 | E21 |
| 87 | 87 | | 2113937-00 | UART 125K BUAD | 1 | E16 |
| 88 | 88 | | 2114663-00 | MM 80C95 BUFFER-GATE-HEX TRIS | 1 | E36 |
| 89 | 89 | | 2114963-00 | UP,8-BIT NMOS | 1 | E2 |
| 90 | 90 | | 2114964-00 | RAM 2048 MOSJ-STATIC | 1 | E3 |
| 91 | 91 | | 23089E2-00 | E2-01 | 1 | E1 |
| 92 | 92 | | 1212619-07 | HEADER.156 6POS STRAIGHT | 1 | J1 |
| 93 | 93 | | 9009185-00 | JUMPER, WIRE, INSULATED, BLACK B | 2 | W1,W3 |
| 94 | 94 | USED FOR Q7 & Q12 | 9010057-00 | WASHER, INSULATING SHOULDER FOR | 2 | |
| 95 | 95 | | 1215816-01 | HEADER.100 3POS STRAIGHT | 1 | |
| 96 | 96 | | 1215816-02 | HEADER.100 13POS STRAIGHT | 1 | |
| 97 | 97 | | 1215816-03 | HEADER.100 8POS STRAIGHT | 1 | |
| 98 | 98 | | 9006011-01 | SCREW,PAN,PHIL 4-40X 3/8 SS | 2 | |
| 99 | 99 | | 9006557-00 | NUT,KEP , 4-40X 1/4 AF | 2 | |
| 100 | 100 | | 1100124-00 | 1N 750A VZ= 4.7 5% .40W P | 2 | D29,D30 |
| 101 | 101 | | 1301890-00 | 560.0 .25 W 5.0 % CC | 2 | R32,R35 |
| 102 | 102 | | 1313840-00 | 4.53 K .25 W 1.0 % RN55D-F10 | 1 | R48 |
| 103 | 103 | | 9105740-55 | WIRE(WRAP)30AWG UL1423 | A/R | |
| 104 | 104 | | 1012084-03 | 150 MFD 15V +75-10% AL EL | 2 | C44,C14 |
| 105 | 105 | | 9107256-11 | *** THIS ITEM IS NOT USED *** | - | |
| 106 | 106 | | 1910741-01 | 7406N BUFFER,HEX | 1 | E20 |
| 107 | 107 | | 5414232-00 | *** THIS ITEM IS NOT USED *** | - | |
| 108 | 108 | | 1310633-00 | 2.55 K .25 W 1.0 % RN55D-F10 | 1 | R101 |
| 109 | 109 | | 1300488-00 | 12.0 K .25 W 5.0 % CC | 1 | R103 |
| 110 | 110 | | 1302466-00 | 100.0 K .25 W 5.0 % CC | 1 | R104 |
| 111 | 111 | | 1105871-00 | 1/4M5.1AZ1 = 5.1 1% .25W N | 1 | D32 |
| 112 | 112 | | 1914156-00 | LM 393 VOLT.COMPARATOR DUAL | 1 | E37 |
| 113 | 113 | | 1912098-00 | 0026 DRIVER,MOS CLOCK,2 | 1 | E38 |
| 114 | 114 | | 1010274-01 | .22 MFD 50V +80-20% Z5U CER | 4 | C50-C53 |
| 115 | 115 | | 1010279-00 | .47 MFD 25V 20% CER | 3 | C20,C21,C49 |

| D | I | G | I | T | A | L | TITLE | SECTION A OF A | SIZE | CODE | DOCUMENT NUMBER | REV |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | SERIAL TU58 | | K | PL | 5413489-0-DBP | H |

CART L
N/C
PERMIT L
S GND
MOTOR +
MOTOR −
+12V
TACH
LED
H GND
ERASE RT
ERASE I
ERASE Ø
HEAD RT
HEAD Ø
HEAD I
J3/J4 TYPICAL CONNECTION

E11 8B REG 74LS373 LATCH
ALE
OCS

E1 8316E ROM 2K×8
A11
R97 10K
W2
AD Ø AD 1 AD 2 AD 3 AD 4 AD 5 AD 6 AD 7

W3
R98 10R
+5V
A11

E3 RAM I/O TIMER 8155
IO/M
RD L
WR L
ALE
RESET H
CLK H
TIMER IN
TIMER OUT
PC5 PC4 PC2 PC3 PC1 PCØ PB7 PB6 PB5 PB4 PB3 PB2 PB1 PBØ PA7 PA6 PA5 PA4 PA3 PA2 PA1 PAØ
TMR OUT L
OTP1
OTP3
BOOT L
30 IPS H
ERASE ENA L
SAN RESCUE L
SEL TRK Ø L
SEL DRV B L
REVERSE H
WRT ENB H
RUN L
MARK H
(SW BOOT L)
OE
RJN TP L
A CART L
B CART L
VEL TP H
WRT PERMIT L
R68 10K
R98 4.7K
D28

E2 8085 CPU
TRAP H
Y1 4915Z MHz
RESET L
RESET IN
READY
HOLD
INTR
TRAP
X1
X2
RST 5.5
RST 6.5
RST 7.5
RD STROBE H
RD DATA −
SID
SOD
WRT DATA H
RESET OUT
CLOCK
IO/M
HLDA
INTA
S1 S0 ALE WR RD
SØ H
S1 H
ALE
WRL
RDL
RESET H
CLK H
R58 10K
R59 10K
R60 22K

R100 470
R101 2.55K 1%
R102 20K 1%
R103 12K
R99 10K
R66 10K
D32 5.1V
D33 DG72
+12V
+5V
M RESET L
RESET L
C49 .47μf
R104 100K
R67 10K
E24 LS74
(RAMCS L)
A14 A15 A12 A13
E27 LS27
E18
E19 LSØØ

E5 LS107
E12 LS107
MARK H
R69 24K
TMR OUT L

E7 BIN CTR 74LS197
CLK A
CLK B
LOAD
CLR
1D-A 1D-B 2D-B 4D-B
1R-A 1R-B 2R-B 4R-B
CHG CLK H.
38.4KB CLK H
VEL CLK H
30IPS H

E33 DUAL BIN CTR 74LS393
38.4KB CLK H
RESET H
(RCV CLK)
(XMIT CLK)
AUX B
AUX A

E16 UART 64Ø2
AD Ø AD 1 AD 2 AD 3 AD 4 AD 5 AD 6 AD 7
R3A 2.4K
R3M 2.4K
R3J 2.4K
R3H 2.4K
R3N 2.4K
RDA RRC TBRL TRC
TRO RRI SFD CLS1 CLS2 EPE PI TBRE PE OE DR FE TRFE
RDL WR L IO/M
BOOT L
RST 5.5
RST 6.5
TRAP H
RESET H
E17 LSØØ
E25 9636
E32 9636
E34 9637
R3K 2.4K
R72 68K
R73 10K
R76 4.7K
R75 220
J2
XMIT+ XMIT− AUX A AUX B CCV+ RCV−
INTERFACE

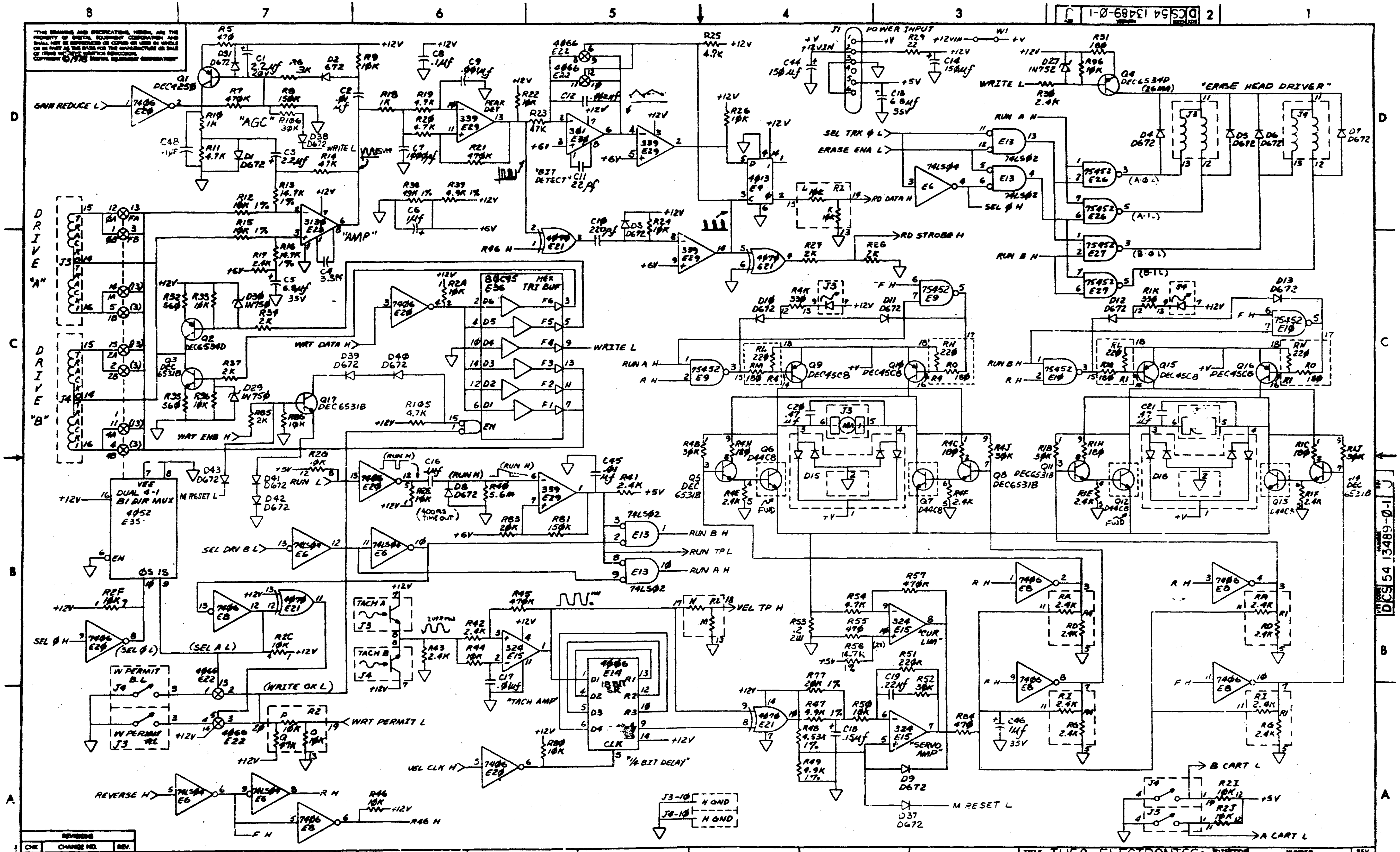
CHG CLK H
C50 .22μf
C53 .22μf
C54 6.8μf
C23 6.8μf
C51 .22μf
C52 .22μf
D34 D672
D35 D672
D36 D672
E38 MHØ026
74LSØØ
+12V −12V +5V

C27 THRU C32, C35, C36, C38, C40 THRU C43 .1μf
C33 .1μf
GND

| REVISIONS | | | |
|---|---|---|---|
| CHK | CHANGE NO. | REV. | |
| | 5413489-ML000 | D | |
| | 5413489-ML003 | E | |
| | 5413489-ML004 | F | |
| | 5413489-ML006 | H | |
| | 5413489-ML007 | J | |

M LEIS

| | | |
|---|---|---|
| DRN. M. LEIS | 5 JAN 76 | FIRST USED ON TU58 |
| CHK'D M LEIS | 7-26-76 | digital |
| ENG. ROSE/LEIS | 7-28-76 | TITLE TU58 ELECTRONICS: |
| PROJ. ENG. | 8/11/78 | SERIAL |
| PROD | | |
| NEXT HIGHER ASSY. | B-DD-5413489-0 | SIZE D CODE CS NUMBER 5413489-0-1 REV. J |
| SCALE | | |
| SHEET 1 OF 2 | | DIST. |



| REVISIONS | | |
|---|---|---|
| CHK | CHANGE NO. | REV. |

TITLE TU58 ELECTRONICS:
SERIAL

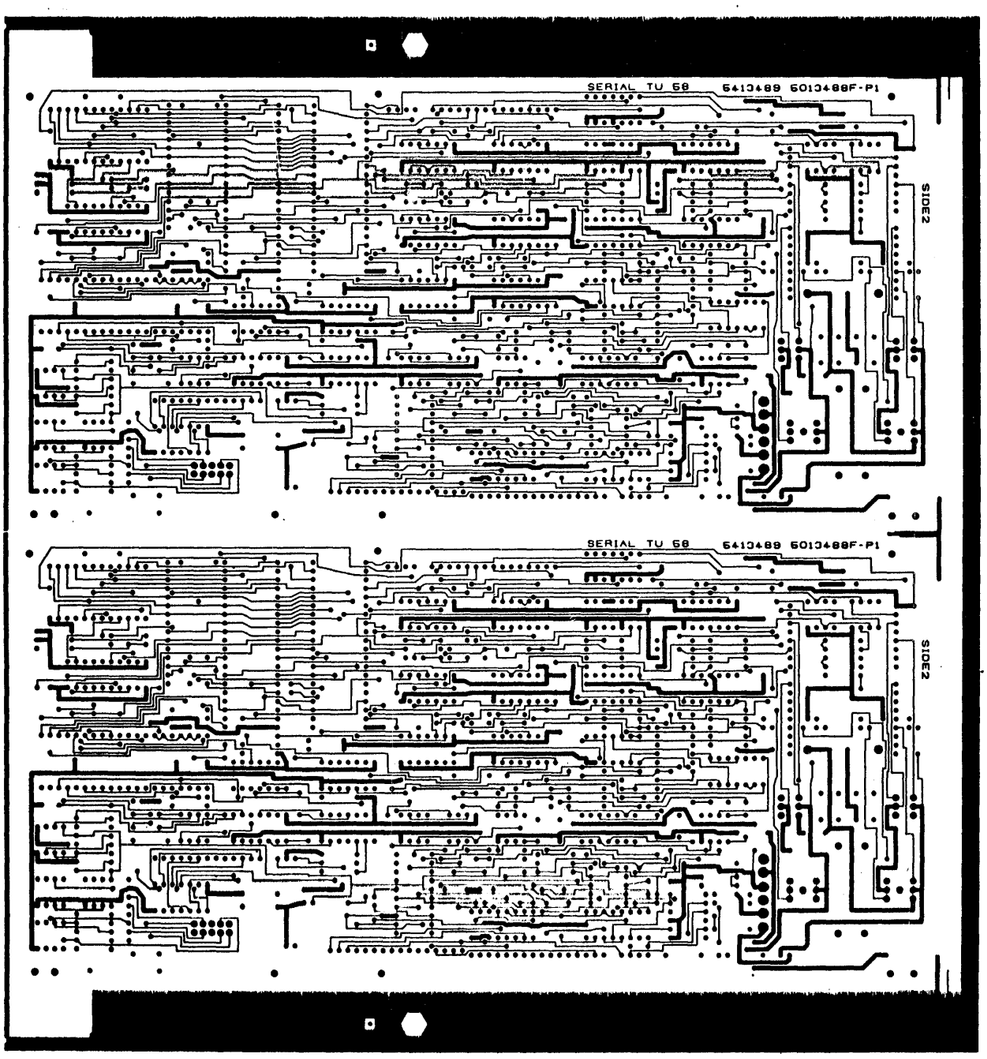
SIZE D CODE CS NUMBER 54 13489-Ø-1 REV. J

SCALE —//— SHEET 2 OF 2

DIST.

ETCH CUT DRAWING

8 7 6 5 4 3 2 1




ETCH CUT DRAWING

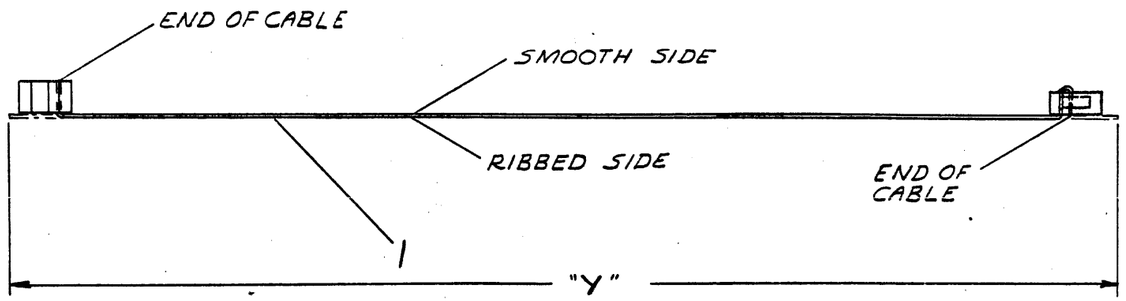
SHEET 2 OF 2

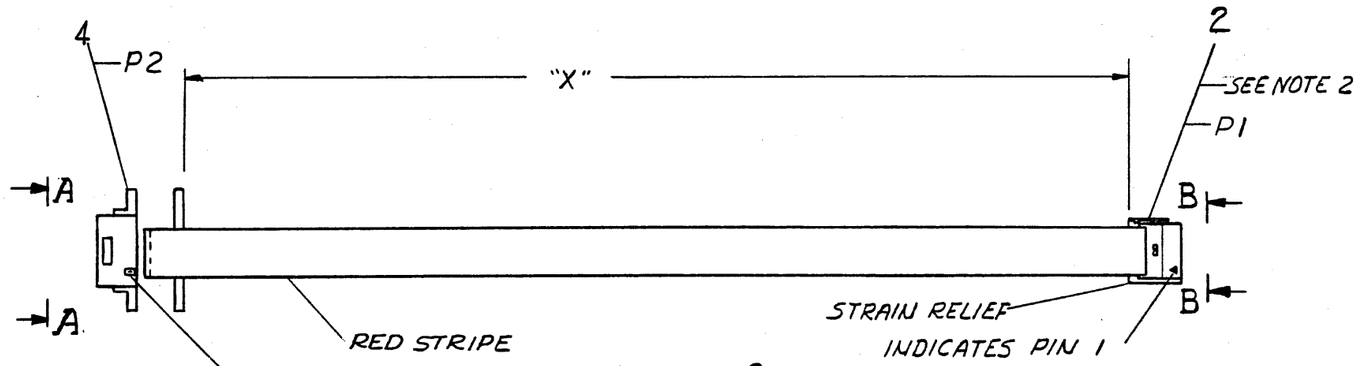
5013488-00 H

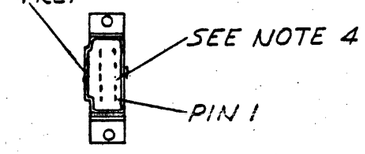
| NUMBER | DIM "X" VARIATION | DIM "Y" (PRECUT) |
|---|---|---|
| 7016305-03 | 3 FT ± 1.0 IN. | 3 FT. 3 IN |
| 7016305-1F | 1 FT 6 IN ± 1.0 IN. | 1 FT 9 IN. |
| 7016305-0K | 9 IN. ± .5 IN. | 10 IN. |

NOTES

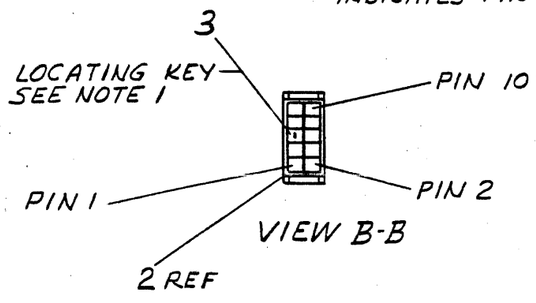
1. INSERT KEY IN #5 CONNECTOR PIN HOLE AND BREAK OFF TAB
2. USE CRIMP PRESS 3M # 3440 OR #3445 AND LOCATER GUIDE 3M #3443-9 TO CRIMP ITEM #2.
3. USE AMP. LATCH PIN TOOLING ASSY. #91140-2 WITH MANUAL UNIT #91085-2 OR PNEU. UNIT #91112-2 TO ATTACH ITEM 4 TO CABLE
4. REMOVE PIN #5 FROM CONNECTOR ITEM #4 BEFORE ASSEMBLY WITH CABLE.




VIEW A-A




VIEW B-B

| | | | |
|---|---|---|---|
| 1 | CONNECTOR, CRIMP | 1213039-02 | 4 |
| 1 | KEY | 9009707-00 | 3 |
| 1 | CONNECTOR, CRIMP | 1211206-02 | 2 |
| A/R | CABLE, 10 CONDUCTOR | 9107747-02 | 1 |
| | DESCRIPTION | DWG./PART NO. | ITEM NO. |

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES

| ANGLES ±0° 30' | CLASS OF ACCURACY (CHECK ONE) | NOMINAL DIMENSION RANGE INCHES | | | | | |
|---|---|---|---|---|---|---|---|
| | | OVER 0 TO 0.2 | OVER 0.2 TO 1.2 | OVER 1.2 TO 4.0 | OVER 4.0 TO 12.0 | OVER 12.0 TO 40.0 | OVER 40.0 TO 80.0 |
| SURFACE QUALITY IN MICROINCHES | MEDIUM ☐ | ±.004 | ±.008 | ±.012 | ±.016 | ±.024 | ±.04 |
| | PREFERRED ☐ | ±.012 | ±.016 | ±.025 | ±.04 | ±.063 | ±0.1 |

QUANTITY & VARIATION

THIRD ANGLE PROJECTION

REMOVE BURRS AND BREAK SHARP CORNERS

DO NOT SCALE DWG

MATERIAL SEE PARTS LIST

FINISH

DRN Steve Levine 5 Sep 78
CHK'D A Brittain NOV 78
ENG. P Lorusso 1 Nov 78
PROJ. ENG. M Lee 2 NOV 78
PROD. R Gibbs 15 NOV 78

NEXT HIGHER ASSY. E-UA-TU58-C-0

SCALE NONE

SHEET 1 OF 1

FIRST USED ON TU58

digital

TITLE
CABLE,
SERIAL TU58

| SIZE | CODE | NUMBER | REV. |
|---|---|---|---|
| C | IA | 7016305-0-0 | B |

DIST.

| REVISIONS | | |
|---|---|---|
| CHK | CHANGE NO. | REV. |
| Jpc | TU58C-ML0003 | A |
| | Apr L.A. Cr 19/6/78 | |
| | D. WARREN 16/10/78 | |
| DC | 7016305-ML0011 | B |
| | Ken Okin 6/11/79 | |
| | KEN OKIN | |
| | Steve Levine 5 Sep 78 | |

MARKSPACE P-1888

DEC FORM NO. DRC 100-C

ML2

SIZE D | CODE IA | NUMBER 7018166-0-0 | REV A

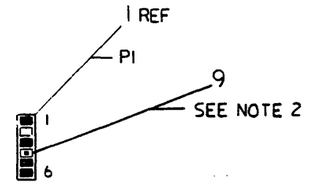
## WIRE TABLE

| ITEM NO | DESCRIPTION AWG | COLOR | FROM CONN | FROM WITH | TO CONN | TO WITH | REMARKS |
|---|---|---|---|---|---|---|---|
| 6 | 18 | ORN | P1-1 | 3 | P2-1 | 4 | +12V |
| 7 | 18 | BLK | P1-3 | 3 | P2-2 | 4 | +12V RTN |
| 8 | 18 | RED | P1-5 | 3 | P2-3 | 4 | +5V |
| 7 | 18 | BLK | P1-6 | 3 | P2-4 | 4 | +5V RTN |

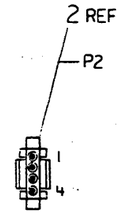
## LEGEND

| NUMBER | DIM "X" VARIATION | DIM "Y" (PRECUT) REF |
|---|---|---|
| 7018166-18 | 14 IN ± .5 IN | 14.5 IN ± .5 IN |

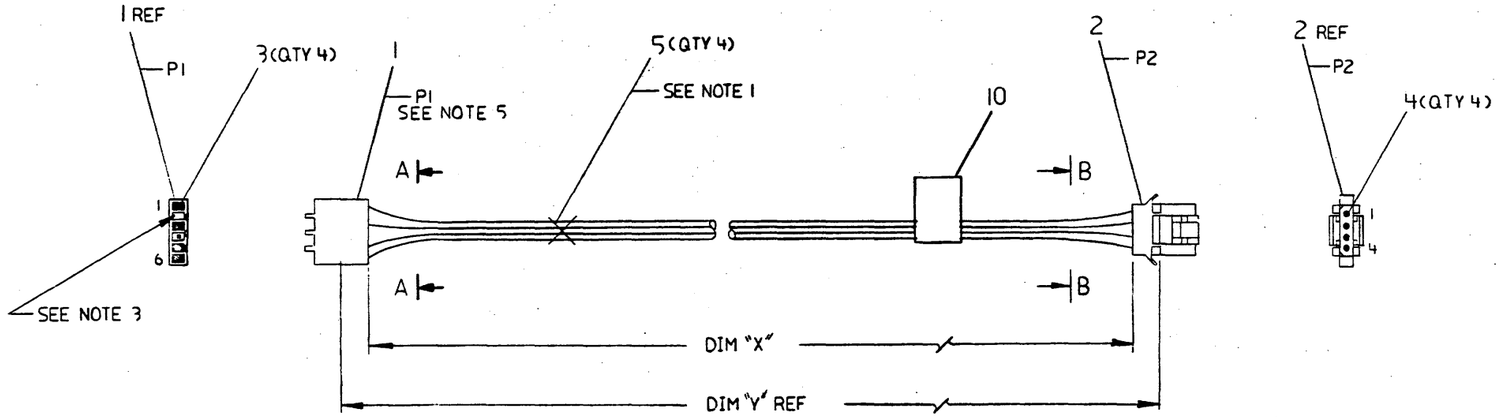
NOTES:
1. ATTACH CABLE TIES (ITEM 5) APPROXIMATELY EVERY 3 INCHES AS SHOWN.
2. INSERT KEY PLUG (ITEM 9) INTO POSITION 4 OF P1 FROM THIS END.
3. THERE SHOULD BE NO SOCKET OR KEY INSTALLED IN ITEM 1 POSITION 2 OF P1.
4. ALL WIRE ENDS TO BE STRIPPED.




VIEW A-A
WIRING SIDE




VIEW B-B
WIRING SIDE




SEE OFF SHEET PARTS LIST
K-PL-7018166-0-DBP

| REVISION HISTORY | | |
|---|---|---|
| DATE | ECO NUMBER | REV. |
| 12-4-81 | RELEASED AS REV A PER ECO M4258 | A |

DRD 1000

| | | | |
|---|---|---|---|
| DESCRIPTION | DRAWING NO. | PART NO. | ITEM NO. |

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES AND THE FOLLOWING TOLERANCES APPLY (PER DEC STD 114)

| INCHES TOLERANCES | ANGLES ±0°30' | APPLICABLE DIMENSION RANGE (CHECK ONE) | DIMENSION RANGE IN INCHES: OVER 0 TO 0.2 | OVER 0.2 TO 1.2 | OVER 1.2 TO 4.0 | OVER 4.0 TO 12.0 | OVER 12.0 TO 40.0 | OVER 40.0 TO 80.0 |
|---|---|---|---|---|---|---|---|---|
| X = ± .1 | SURFACE QUALITY | ☐ | ± .02 | | ± .05 | | ± .10 | |
| XX = ± .02 | ✓ | ☐ | | ± .008 | ± .012 | ± .016 | ± .024 | ± .04 |
| XXX = ± .005 | MICROINCHES | ☐ | | | | | | |

QUANTITY & VARIATION

THIRD ANGLE PROJECTION

DO NOT SCALE DRAWING

REMOVE BURRS AND BREAK SHARP CORNERS

MATERIAL: SEE PARTS LIST

FINISH: ++

| | | |
|---|---|---|
| DRN P.L. Tousignant | DATE 11/19/81 | |
| CHECD R.P. Morin | DATE 9 AUG 81 | |
| DES. ENG R.P. Morin | DATE 9 AUG 81 | |
| PROJ. ENGR R.P. Morin | DATE 9 AUG 81 | |
| MFG. ENG S. Casey Lane | DATE 12 OCT 81 | |
| NEXT HIGHER DOC E-AD-7018114-0-0 | | |

TITLE: digital
CABLE, TU
BULKHEAD POWER

DOCUMENT NUMBER: SIZE D | CODE IA | NUMBER 7018166-0-0 | REV A
SCALE 1/1 | SHEET 1 OF 1
TW

AUTOMATED BY PRTLST.3P(44) — P A R T S L I S T — SHEET A1 OF A1

| LINE | ITEM | DOCUMENT NUMBER | PART NUMBER | DESCRIPTION | QUANTITY PER VARIATION 1B |
|---|---|---|---|---|---|
| 1 | 1 | | 12122Q2-09 | CONN 6POS HOUSING | 1 |
| 2 | 2 | | 1318681-00 | RCPT 4PIN KEYED | 1 |
| 3 | 3 | | 12122Q3-00 | PIN CRIMP TYPE | 4 |
| 4 | 4 | | 12180Q0-00 | SKT 16-18AWG REEL | 4 |
| 5 | 5 | | 9001031-00 | TIE,CABLE BUNDL,DIA 0- 3/4"=101 | 4 |
| 6 | 6 | SEE NOTE | 9107786-33 | WIRE,STRND,18AWG UL1430 0 | 15 |
| 7 | 7 | SEE NOTE | 9107786-00 | WIRE,STRND,18AWG UL1430 | 30 |
| 8 | 8 | SEE NOTE | 9107786-23 | WIRE,STRND,18AWG UL1430 R | 15 |
| 9 | 9 | | 1216113-00 | CONN KEYING PLUG | 1 |
| 10 | 10 | | 9009255-01 | LABEL, POWER SUPPLY, 2-7/8" LG X | 1 |

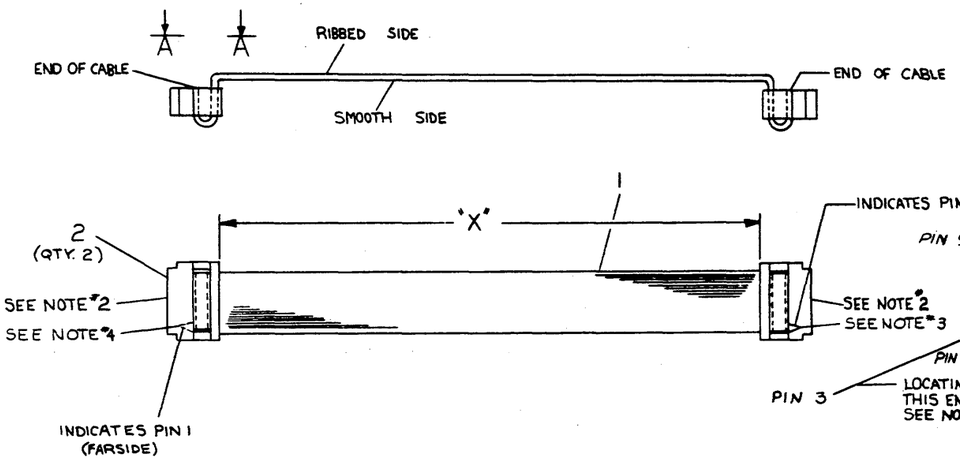
11 NOTE: ITEMS 6,7 AND 8 ARE IN INCHES.

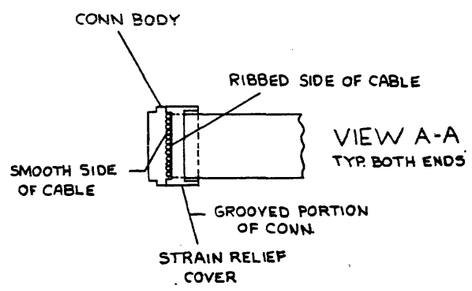
| REVISION HISTORY | | | BASIC PART NO: 7018166 | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ENG | ECO NUMBER | REV | SECTION A OF A | DRN: P. TOUSIGNANT | DATE: 23-JUL-81 | | D | I | G | I | T | A | L |
| --- | INITIAL | A | SECTION. VARIATION INDEX [A] 1B | CHK'D: A. ROCHA | DATE: 23-JUL-81 | TITLE | PARTS LIST | | | | | | |
| | | | [B] | DES.ENG.: R. MORIN | DATE: 23-JUL-81 | TU BULKHEAD POWER CABLE | | | | | | | |
| | | | [C] | RESP.ENG.: R. MORIN | DATE: 23-JUL-81 | DOCUMENT NUMBER | | | | | | | |
| | | | [D] | | | SIZE | CODE | NUMBER | | | | REV | |
| | | | [E] | MFG.ENG.: S. CASTIGLIONE | DATE: 23-JUL-81 | K | PL | 7018166-0-DBP | | | | A | |
| | | | [F] | ASSEMBLY NUMBER: D-IA-7018166-0-0 | TOP DOCUMENT NUMBER: E-AD-7018114-0-0 | FILE NAME: Z1854A.PLS | | | | | | EDIT # 11 | |

## LEGEND

| NUMBER | DIM "X" VARIATION | USED ON | KEY PIN |
|---|---|---|---|
| 7011411-0J | 8 IN ± .5 IN. | BA11-L OR K | 10 ONE END |
| 7011411-0K | 9 IN ± .5 IN. | LSI-11 | 4 BOTH ENDS |
| 7011411-1D | 1 FT-4 IN ± 1 IN. | KY11-LB | |
| 7011411-2D | 2 FT-4 IN ± 1 IN. | BA11-F/DD #PF | 10 ONE END |
| 7011411-0H | 7 IN ± .5 IN. | H790, 1, 2, 3 | |
| 7011411-1J | 1 FT-8 IN ± 1 IN. | 1104/34-7A | |
| 7011411-1L | 1 FT. 10 IN. ± 1 IN. | BA11-L, H777 | PIN 3 1 END |
| 7011411-1A | 1 FT. -1 IN. ± 1 IN. | H787 | 4 BOTH ENDS |
| 7011411-3J | 3 FT. -8 IN ± 1 IN. | BA11-K, H785 | |
| 7011411-2J | 2 FT. -8 IN ± .1 IN. | BA11K-H785 | NO KEY |
| 7011411-5F | 5 FT. -6 IN ± 1 IN. | 1160 | 8 ONE END |
| 7011411-12 | 12 FT ± 3 IN. | KAS70 | |
| 7011911-,7 | 7 FT ± 2 IN | 11780 | |
| 7011411-1C | 1 FT-3 IN ± 1 IN | VT103 | SEE NOTES 3 AND 4 |
| 7011411-2 | 2 FT ± 1 IN | VT103 | SEE NOTES 3 AND 4 |
| 7011411-0E | 5 IN ± .5 IN | NEBULA | 10 BOTH ENDS |
| 7011411-3D | 3 FT-4 IN ± 1 IN | NEBULA | 5 BOTH ENDS |
| 7011411-0F | 8 IN ± .5 IN | 11/24 | PIN 3 ONE END PIN 6 ONE END |
| 7011411-1B | 1 FT-2 IN ± 1 IN. | H333-A/DPM50 | 4 BOTH ENDS |
| 7011411-YA | 2 FT. ± 1 IN. | NEBULA | PIN 5 BOTH ENDS |
| 7011411-01 | 12 IN. ± 1 IN. | NEBULA | PIN 10 BOTH ENDS |

NOTES:
1. INSERT KEY IN PROPER CONNECTOR PIN AND BREAK OFF TAB.
2. FOR ITEM (2) DRAWING IS SHOWING 3M CONNECTOR.
3. FOR -1C AND -2 VARIATIONS, KEY PIN 6.
4. FOR -1C AND -2 VARIATIONS, KEY PIN 5.




| | | | |
|---|---|---|---|
| 1 | TIE, CABLE | 9007031 | 5 |
| 1 | LABEL, CABLE IDENT. | 9009532 | 4 |
| A/R | KEY | 9009707 | 3 |
| 2 | CONN. CRIMP | 12112206-02 | 2 |
| A/R | CABLE, 10 CONDUCT | 9107747-02 | 1 |
| 7011411-0-0 | DESCRIPTION | DWG./PART NO. | ITEM NO. |

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES

| ANGLES ±0° 30' | CLASS OF ACCURACY (CHECK ONE) | NOMINAL DIMENSION RANGE INCHES: OVER 0 TO 0.12 | OVER 0.12 TO 1.2 | OVER 1.2 TO 4.0 | OVER 4.0 TO 12.0 | OVER 12.0 TO 40.0 | OVER 40.0 TO 80.0 |
|---|---|---|---|---|---|---|---|
| SURFACE QUALITY IN MICROINCHES | MEDIUM | ±.004 | ±.008 | ±.012 | ±.016 | ±.024 | ±.04 |
| | PREFERRED | ±.012 | ±.016 | ±.025 | ±.04 | ±.063 | ±0.1 |

QUANTITY & VARIATION

THIRD ANGLE PROJECTION

REMOVE BURRS AND BREAK SHARP CORNERS

DO NOT SCALE DWG

MATERIAL SEE PARTS LIST

FINISH

| | | |
|---|---|---|
| DRN | M. BAPTIST | 5-20-75 |
| CHK'D | D. HEALY | 6-13-75 |
| ENG. | R. BARRY | 6-18-75 |
| PROJ. ENG. | R. BARRY | 6-18-75 |
| PROD. | R. PETERSON | 6-19-75 |

NEXT HIGHER ASSY.

SCALE NONE

SHEET 1 OF 1

FIRST USED ON: SEE LEGEND

digital

TITLE: CABLE CONSOLE BACKPLANE

SIZE D | CODE IA | NUMBER 7011411-0-0 | REV. W

DIST.

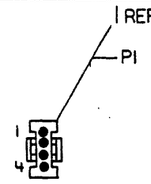
TW 1

| REVISIONS | | | | |
|---|---|---|---|---|
| CHK. | CHANGE NO. | REV. | | |
| | 7011411-00011 | M | REDRAWN & REVISED STEVE ALMEE 26 May 77 | K. DUGGAN |
| | 7011411-00012 | N | 10 IN. ± .5 IN. | E. ANTON 22 MAR 78 |
| | 7011411-TW013 | P | | D. SCHANIN 1 Aug 79 |
| | 7011411-TW014 | R | | D. BARRY |
| | 7011411-TW015 | S | | D. BARRY |
| | 7011411-TW016 | T | | BOB SILVER |
| | 7011411-TW017 | U | | M. BANGERT |
| | 7011411-TW018 | V | | RAY GRUDA |
| | 7011411-TW019 | W | | R. DAY 9-MAR-82 |

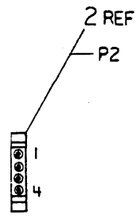
| WIRE TABLE | | | | | | | |
|---|---|---|---|---|---|---|---|
| ITEM NO. | DESRIPTION AWG | COLOR | FROM CONN | WITH | TO CONN | WITH | REMARKS |
| 6 | 18 | ORN | P1-1 | 3 | P2-1 | 4 | +12V |
| 7 | 18 | BLK | P1-2 | 3 | P2-2 | 4 | +2V RTN |
| 8 | 18 | RED | P1-3 | 3 | P2-3 | 4 | +5V |
| 7 | 18 | BLK | P1-4 | 3 | P2-4 | 4 | +5V RTN |

| LEGEND | | |
|---|---|---|
| NUMBER | DIM "X" VARIATION | DIM "Y" (PRECUT) REF |
| 7018109-3B | 3FT. 2IN. ±1IN. | 3FT. 3IN. ±1IN. |

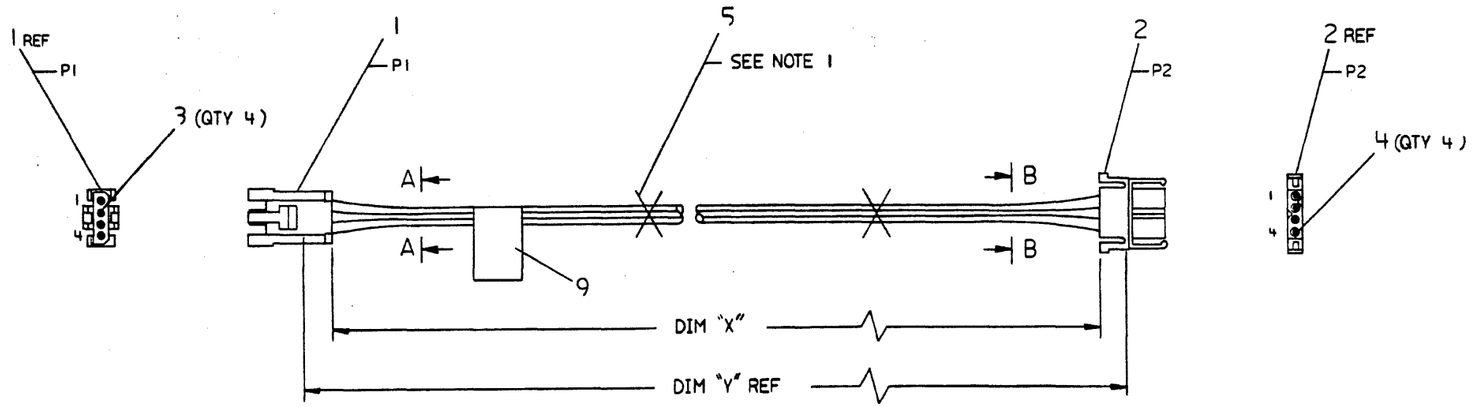
NOTES:
1. ATTACH CABLE TIE (ITEM 5) APPROXIMATELY EVERY 3 IN. AS SHOWN.
2. ALL WIRE ENDS TO BE STRIPPED.




VIEW A-A
WIRING SIDE




VIEW B-B
WIRING SIDE




SCALE
0 3.0 6.0

FOR MANUFACTURING PURPOSES ONLY
DO NOT REDUCE

SEE OFF SHEET PARTS LIST
K-PL-7018109-0-DBP

| REVISION HISTORY | | | |
|---|---|---|---|
| DATE | ECO NUMBER | REV. | |
| 23 JUN 81 | RELEASED AT REV A FROM REV x07 P.Shaw | A | |

| DESCRIPTION | DRAWING NO. | PART NO. | ITEM NO. |
|---|---|---|---|

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES AND THE FOLLOWING TOLERANCES APPLY (PER DEC STD 114)

| INCHES TOLERANCES | ANGLES ±0°30' | APPLICABLE DIMENSION RANGE (CHECK ONE) | DIMENSION RANGE IN INCHES: OVER 0 TO 4.2 | OVER 4.2 TO 12 | OVER 12 TO 48 | OVER 48 TO 96 | OVER 96 TO 192 |
|---|---|---|---|---|---|---|---|
| X = ± .1 | SURFACE QUALITY | | ± .08 | ± .05 | ± .05 | ± .10 | |
| XX = ± .02 | | | ± .004 | ± .008 | ± .012 | ± .016 | ± .024 |
| XXX = ± .005 | MICRONES/RMS | | | | | | |

QUANTITY & VARIATION

THIRD ANGLE PROJECTION

DO NOT SCALE DRAWING

REMOVE BURRS AND BREAK SHARP CORNERS

MATERIAL: SEE PARTS LIST

FINISH: NONE

| | | |
|---|---|---|
| DRN | | DATE 24 JUL 80 |
| CHKD | J.F Sullivan | DATE 7 FEB 81 |
| ENGR | | DATE 4 AUG 81 |
| PROJ ENGR | | DATE 4 AUG 81 |
| MFG ENGR | J. Canty Crow | DATE 13 OCT 81 |
| NEXT HIGHER DOC | E-UA-11730-Z-0 | |

TITLE: CABLE, TU58 POWER

DOCUMENT NUMBER: D IA 7018109-0-0 REV A

SCALE 1/1 SHEET 1 OF 1

DIA 7018109-0-0 REV A

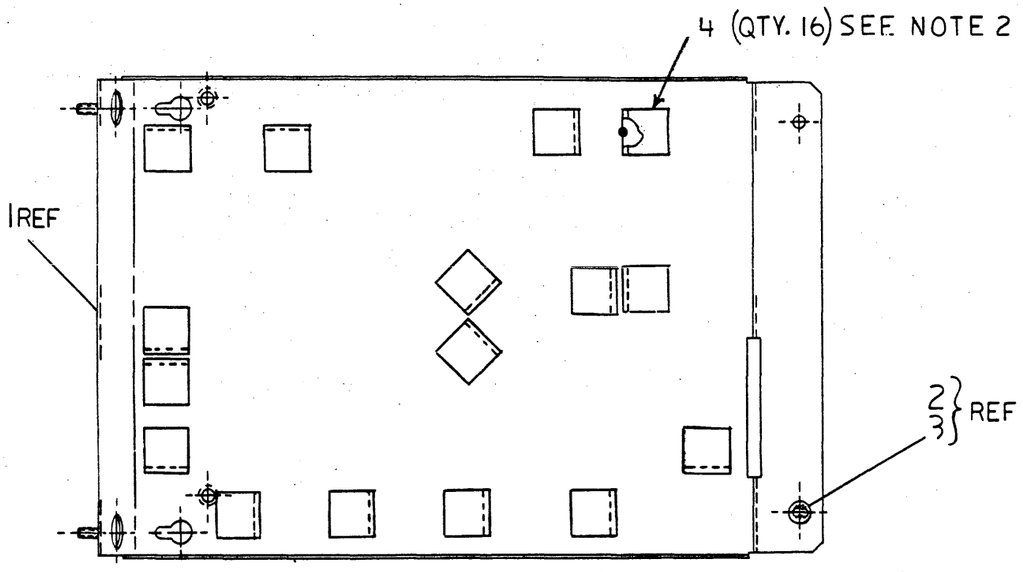
AUTOMATED BY PRTLST.3P(44) P A R T S L I S T SHEET A1 OF A1

| LINE | ITEM | DOCUMENT NUMBER | PART NUMBER | DESCRIPTION | QUANTITY PER VARIATION 33 |
|---|---|---|---|---|---|
| 1 | 1 | | 12139Ø1-Ø3 | CONN,PLUG 4PIN | 1 |
| 2 | 2 | | 1318441-Ø0 | CONN 4SKT | 1 |
| 3 | 3 | | 1318563-ØØ | CONN PIN 18-16AWG | 4 |
| 4 | 4 | | 1318Ø2Ø-ØØ | SKT 15-18AWG, REEL | 4 |
| 5 | 5 | | 9ØØ4ØØ7-ØØ | TIE,CABLE BUNDL,DIA Ø- 3.4"=1Ø1 | 1 |
| 6 | 6 | SEE NOTE | 9107786-33 | WIRE,STRND,18AWG UL1430 Ø | 45 |
| 7 | 7 | SEE NOTE | 9107786-ØØ | WIRE,STRND,18AWG UL1430 | 45Ø |
| 8 | 8 | SEE NOTE | 9107786-22 | WIRE,STRND,18AWG UL1430 R | 45Ø |
| 9 | 9 | | 9ØØ9255-Ø1 | LABEL, POWER SUPPLY, 2-7/8" LG X | 1 |

10 NOTE: ITEMS 6,7 AND 8 ARE IN INCHES.

| REVISION HISTORY | | | BASIC PART NO: 7Ø18109 | DRN: P. TOUSIGNANT | DATE: 28-JUL-81 | | D | I | G | I | T | A | L |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ENG | ECO NUMBER | REV | SECTION A OF A | | | | | | | | | | |
| --- | INITIAL | A | SECTION. VARIATION INDEX: [A] 3B | CHK'D: A. ROCHA | DATE: 28-JUL-81 | TITLE | PARTS LIST | | | | | | |
| | | | [B] | DES.ENG.: R. MORIN | DATE: 28-JUL-81 | TU58 POWER CABLE | | | | | | | |
| | | | [C] | RESP.ENG.: R. MORIN | DATE: 28-JUL-81 | DOCUMENT NUMSER | | | | | | | |
| | | | [D] | | | SIZE | CODE | NUMBER | | | | REV | |
| | | | [E] | MFG.ENG.: S. CASTIGLIONE | DATE: 28-JUL-81 | K | PL | 7Ø18109-Ø-DBP | | | | A | |
| | | | [F] | ASSEMBLY NUMBER: D-IA-7Ø18109-Ø-Ø | TOP DOCUMENT NUMBER: E-UA-11730-Z-Ø | FILE NAME: Z1853A.PLS | | | | | | EDIT # 5 | |

SIZE C | CODE IA | NUMBER 7018720-0 | REV. A




NOTES:

1. TO INSTALL RETAINER RING USE VENDOR INSTALLATION TOOL NUMBER 82-0-14719-11 (SOUTHCO).
2. APPLY CABLE CLAMPS TO EMBOSSED SQUARES AS SHOWN. DOT ON METAL INDICATES CLOSED END OF CLAMP.

CAUTION: OFF SHEETS PARTS LIST REFER TO K-PL-7018720-0-DBP

| REVISION HISTORY | | | |
|---|---|---|---|
| DATE | ECO NUMBER | REV. | |
| 13 July 81 | Rev per journal E-UA-11730-Z-0 T. Rocha | A | |
| 4 Aug 81 | REL'D AT REV A RDMorin | | |

| DESCRIPTION | DRAWING NO. | PART NO. | ITEM NO. |
|---|---|---|---|

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES AND THE FOLLOWING TOLERANCES APPLY (PER DEC STD 114)

| INCHES TOLERANCES | ANGLES ± 0° 30' | APPLICABLE DIMENSION RANGE (CHECK ONE) | DIMENSIONS RANGE IN INCHES | | | | | |
|---|---|---|---|---|---|---|---|---|
| | SURFACE QUALITY | | OVER 0 TO .2 | OVER .2 TO 1.2 | OVER 1.2 TO 4.0 | OVER 4.0 TO 12.0 | OVER 12.0 TO 40.0 | OVER 40.0 TO 80.0 |
| X = ± .1 | | | ± .02 | | ± .03 | ± .05 | ± .10 | |
| XX = ± .02 | | | ± .004 | ± .008 | ± .012 | ± .016 | ± .024 | ± .04 |
| XXX = ± .005 | MICROINCHES | | | | | | | |

QUANTITY & VARIATION

THIRD ANGLE PROJECTION

DO NOT SCALE DRAWING

REMOVE BURRS AND BREAK SHARP CORNERS

MATERIAL: SEE PARTS LIST

FINISH

| | | |
|---|---|---|
| DRN | A. Rocha | 13 July 81 |
| CHECKED | RDMorin | 7-14-81 |
| DESIGNED | RDMorin | 4 AUG 81 |
| PROJ. ENGR. | RDMorin | 4 AUG 81 |
| MFG. ENGR. | 3D Castly Cnc | 30 JUL 81 |

NEXT HIGHER DOC: E-UA-11730-Z-0

TITLE: CATCH PAN ASSY

digital

DOCUMENT NUMBER

| SIZE | CODE | NUMBER | REV. |
|---|---|---|---|
| C | IA | 7018720-0-0 | A |

SCALE 1/2 SHEET 1 OF 1

SIZE C | CODE IA | NUMBER 7018720-0-0 | REV. A

DRC 1000

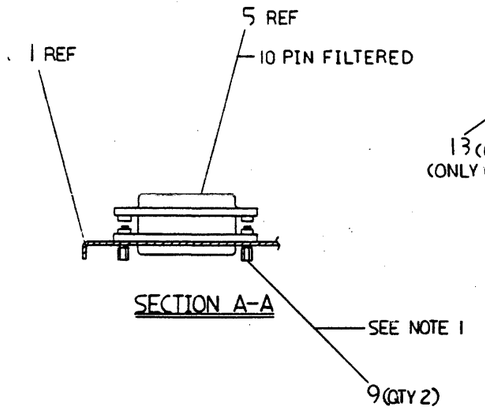
TW 1

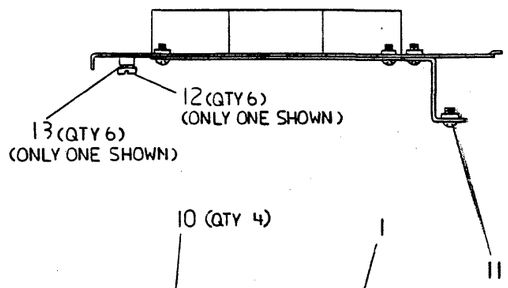
AUTOMATED BY PRTLST.3P(44) P A R T S L I S T SHEET A1 OF A1

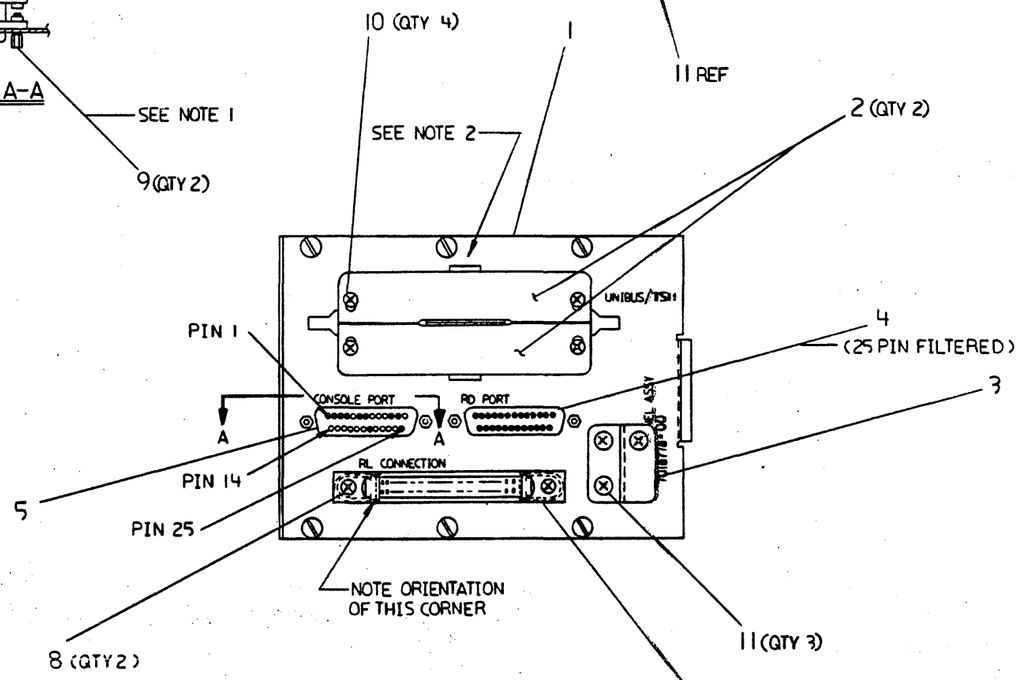
| LINE | ITEM | DOCUMENT NUMBER | PART NUMBER | DESCRIPTION | QUANTITY PER VARIATION 00 |
|---|---|---|---|---|---|
| 1 | 1 | E-IA-7425728-0-0 | 7425728-00 | PAN,CATCH | 1 |
| 2 | 2 | | 9010308-00 | RETAINER,PUSH-ON SS/PAS | 2 |
| 3 | 3 | | 9000026-05 | FASTNR, 1/4 TURN,WING HD | 2 |
| 4 | 4 | | 9009636-00 | CLAMP,'CABLE, FOR FLAT CABLE | 16 |

| REVISION HISTORY | | | BASIC PART NO: 7018720 | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ENG | ECO NUMBER | REV | SECTION A OF A | DRN: P. TOUSIGNANT | DATE: 30-JUL-81 | | D | I | G | I | T | A | L |
| --- | INITIAL | A | SECTION. VARIATION INDEX | | | TITLE | PARTS LIST | | | | | | |
| | | | [A] 00 | CHK'D: A. ROCHA | DATE: 30-JUL-81 | | | | | | | | |
| | | | [B] | | | CATCH PAN ASSY | | | | | | | |
| | | | [C] | DES.ENG.: R. MORIN | DATE: 30-JUL-81 | | | | | | | | |
| | | | [D] | RESP.ENG.: R. MORIN | DATE: 30-JUL-81 | DOCUMENT NUMBER | | | | | | | |
| | | | [E] | MFG.ENG.: S. CASTIGLIONE | DATE: 30-JUL-81 | SIZE | CODE | NUMBER | | | | | REV |
| | | | [F] | | | K | PL | 7018720-0-DBP | | | | | A |
| | | | | ASSEMBLY NUMBER: C-IA-7018720-0-0 | TOP DOCUMENT NUMBER: E-UA-11730-Z-0 | FILE NAME: Z2835A.PLS | | | | | | | EDIT # 6 |

NOTES:
1. SCREWLOCK ASSY IS A KIT BAG PER CONNECTOR. DISCARD FOUR FLAT WASHERS AND TWO NUTS PER CONNECTOR ASSY.
2. RECTANGULAR SLOTS ARE PROVIDED SO THAT PRESSURE CAN BE EXERTED TO FIRMLY SEAT THE TWO UNIBUS PLATES FOR METAL CONTACT BY USING FLAT SCREWDRIVER BLADE OR EQUIVALENT.




CAUTION: SEE OFF SHEET PARTS LIST
K-PL-7018778-0-DBP.(Z3616A)

| REVISION HISTORY | | |
|---|---|---|
| DATE | ECO NUMBER | REV. |
| 25 Feb 82 | Released per ECO 4 Feb 82 E.Shepard | A |

DRD 1000

| DESCRIPTION | DRAWING NO. | PART NO. | ITEM NO. |
|---|---|---|---|

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES AND THE FOLLOWING TOLERANCES APPLY (PER DEC STD 114)

| INCHES TOLERANCES | ANGLES ± 0° 30' | APPLICABLE DIMENSION RANGE (CHECK ONE) | DIMENSION RANGE IN INCHES | | | | | |
|---|---|---|---|---|---|---|---|---|
| | | | OVER 0 TO 0.2 | OVER 0.2 TO 1.2 | OVER 1.2 TO 4.9 | OVER 4.9 TO 12.0 | OVER 12.0 TO 40.9 | OVER 40.9 TO 80.0 |
| X = ± .1 | SURFACE QUALITY | | | ± .02 | ± .03 | | ± .05 | ± .10 |
| .XX = ± .02 | | | | | | | | |
| .XXX = ± .005 | | | ± .004 | ± .008 | ± .012 | ± .016 | ± .024 | ± .04 |
| QUANTITY & VARIATION | MICROINCHES | | | | | | | |

THIRD ANGLE PROJECTION

DO NOT SCALE DRAWING

REMOVE BURRS AND BREAK SHARP CORNERS

MATERIAL: SEE PARTS LIST

FINISH: —

| | | |
|---|---|---|
| DRN: Paul Tousignant | DATE: 15 JAN 82 | TITLE: digital — CPU-I/O PANEL ASSY |
| CHKD: W.Romanow | DATE: 2 FEB 82 | |
| DES MGR: W.Romanow | DATE: 2 FEB 82 | |
| PROJ MGR: W.Romanow | DATE: 2 FEB 82 | |
| MFG APP: S.H.Castiglione | DATE: 3 FEB 82 | |
| NEXT HIGHER DOC: E-AD-7018779-0-0 | | |

DOCUMENT NUMBER

| SIZE | CODE | NUMBER | REV. |
|---|---|---|---|
| D | AD | 7018778-0-0 | A |

SCALE — SHEET — OF

| REV. | NUMBER | CODE |
|---|---|---|
| A | 7018778-0-0 | DAD |

AUTOMATED BY PRTLST.3P(44) — P A R T S  L I S T — SHEET A1 OF A1

| LINE | ITEM | DOCUMENT NUMBER | PART NUMBER | DESCRIPTION | QUANTITY PER VARIATION 00 |
|---|---|---|---|---|---|
| 1 | 1 | D-IA-7426405-04-DBU | 7426405-04 | PANEL,SEXTAL | 1 |
| 2 | 2 | B-IA-7018781-0-0 | 7018781-00 | BRKT. ASSY, UNIBUS FILLER | 2 |
| 3 | 3 | C-IA-7426654-0-0 | 7426654-01 | BRACKET,CABLE GROUND | 1 |
| 4 | 4 | A-PS-1217431-0-0 | 1217431-00 | CONN,D SUB 25POS ASSY STRAIGHT W | 1 |
| 5 | 5 | A-PS-1217431-0-0 | 1217431-02 | CONN,D SUB 10POS ASSY STRAIGHT W | 1 |
| 6 | 6 | A-PS-1211591-0-0 | 1211591-35 | CONN,ZIF 40PIN RCPT ASSY | 1 |
| 7 | 7 | A-PS-1211591-0-0 | 1211591-38 | CONN,ZIF 40PIN RCPT,SWAP IN GU | 2 |
| 8 | 8 | | 9006010-01 | SCREW,PAN,PHIL 4-40X 5/16 SS | 2 |
| 9 | 9 | | 9008451-00 | SCREW LOCK ASSY | 2 |
| 10 | 10 | | 9009546-00 | SCREW,PAN,PHIL,SEMS 4-40X .375L | 4 |
| 11 | 11 | | 9010174-00 | SCREW,PAN,PHIL,SEMS 6-32X .25 L | 3 |
| 12 | 12 | A-PS-1219534-0-0 | 1219534-01 | SCREW,CAPTIVE,SLTD HD 4-40X.60LG | 6 |
| 13 | 13 | | 9006688-00 | WASHER, LOCK, S.S. #4 | 6 |

| REVISION HISTORY | | | |
|---|---|---|---|
| ENG | ECO NUMBER | REV | |
| | INITIAL | A | |

BASIC PART NO: 7018778
SECTION A OF A

SECTION. VARIATION INDEX
[A] 00
[B]
[C]
[D]
[E]
[F]

DRN: P. TOUSIGNANT — DATE: 27-JAN-82
CHK'D: R. MORIN — DATE: 27-JAN-82
DES.ENG.: R. MORIN — DATE: 27-JAN-82
RESP.ENG.: R. MORIN — DATE: 27-JAN-82
MFG.ENG.: S. CASTIGLIONE — DATE: 27-JAN-82

ASSEMBLY NUMBER: D-AD-7018778-0-0
TOP DOCUMENT NUMBER: E-AD-7018779-0-0

| D | I | G | I | T | A | L |
|---|---|---|---|---|---|---|

TITLE: PARTS LIST
CPU-I/O PANEL ASSY

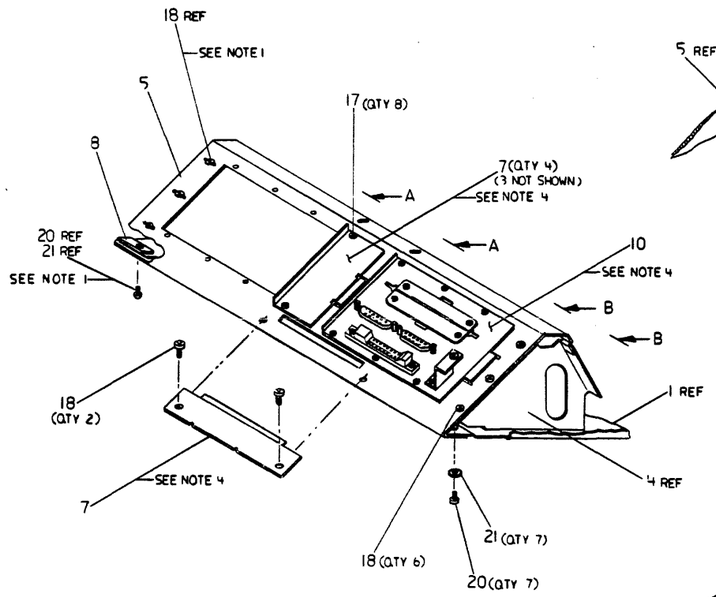
DOCUMENT NUMBER

| SIZE | CODE | NUMBER | REV |
|---|---|---|---|
| K | PL | 7018778-0-DBP | A |

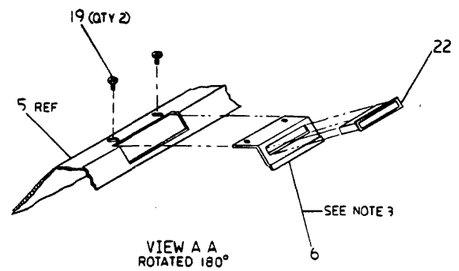
FILE NAME: Z3616A.PLS
EDIT #: 8

NOTES:

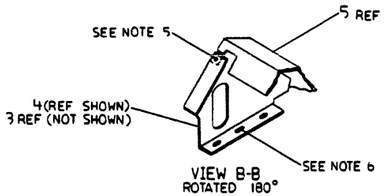
1. IN THREE PLACES, AS SHOWN, THE HARDWARE SHOULD BE MOUNTED LOOSELY. TO COLLAPSE TRAY SECTIONS FOR SHIPPING AND READY TO EXPAND FOR CABINET INSTALLATION.
2. APPLY CABLE CLAMPS (ITEM 14) TO EMBOSSED SQUARES IN METAL AS SHOWN. DOT ON METAL INDICATES CLOSED END OF CLAMPS.
3. MAGNET BRACKET (ITEM 6) SHOULD BE INSTALLED IN ITS INNERMOST ADJUSTABLE POSITION. THIS BRACKET MUST BE POSITIONED AT CPU INSTALLATION LEVEL.
4. ITEMS 7, 10 & 16 MUST BE LOCATED AT A RIGHT ANGLE (90°) TO ITS MOUNTING SURFACE AND LOWERED FLAT INTO POSITION. METAL INTERFERENCE IS BUILT IN TO REDUCE RFI EMISSION.
5. TWO OUTERMOST TABS ON ITEM 5 MUST MAKE CONTACT WITH ITEM 3 & 4. MYLAR OR SHIM STOCK TRIAL REQ'D
6. SLOTTED HOLES IN THE BRACKET ARE TO BE CENTERED ON STUDS ON BOTH TRAYS AT ASSY. ADJUSTMENT PROVIDED IN CASE REQUIRED.



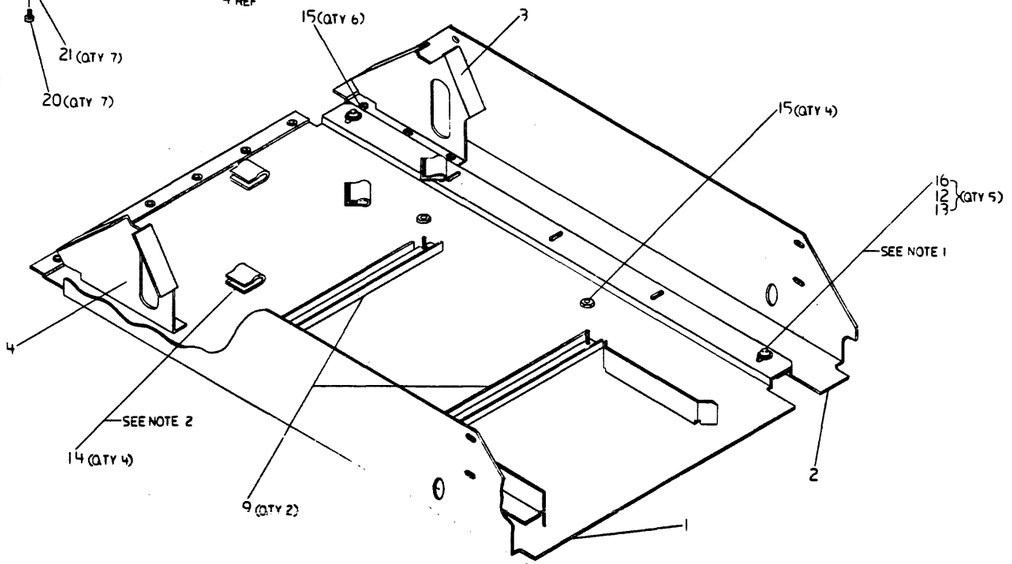

REAR VIEW




VIEW A A
ROTATED 180°




VIEW B-B
ROTATED 180°




FRONT VIEW
WITHOUT I/O-PORT PANEL

CAUTION: SEE OFF SHEET PARTS
LIST K-PL-7018779-0-DBP (Z3612A)

| REVISION HISTORY | | | |
|---|---|---|---|
| ECO NUMBER | REV | DATE | |
| | A | 27-Jul-82 | RJ |

| | | | |
|---|---|---|---|
| DESCRIPTION | DRAWING NO. | PART NO. | TW |
| UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES AND THE FOLLOWING TOLERANCES APPLY (PER DEC STD 113) | | | |
| FRONT TOLERANCES | ANGLES ± 0° 30' | MACHINABLE SURFACE ROUGHNESS RANGE | DIMENSION RANGE IN INCHES: OVER 0 TO 6 ± .02; OVER 6 TO 30 ± .05; OVER 30 TO 120 ± .08; OVER 120 TO 315 ± .12 |
| .X ± .1<br>.XX ± .05<br>.XXX ± .025 | SURFACE QUALITY 125 | 000 | ± .010 ± .020 ± .040 ± .060 |
| QUANTITY & VARIATION | | | |
| THIRD ANGLE PROJECTION | | | |
| DO NOT SCALE DRAWING | | | |
| REMOVE BURRS AND BREAK SHARP CORNERS | | | |
| MATERIAL | | | |
| FINISH | | | |
| NEXT HIGHER ASSY: E-UA-11730-Z-0 | | | |

| | | |
|---|---|---|
| DES | [illegible] | 17-Jul-82 |
| PD | [illegible] | 27-Jul-82 |
| PM | [illegible] | 27-Jul-82 |
| CM | [illegible] | 27-JUL-82 |

TITLE: CPU CABLE RETRACTOR ASSY

| SIZE | CODE | DOCUMENT NUMBER | REV |
|---|---|---|---|
| E | AD | 7018779-0-0 | A |

SCALE 1/2 SHEET 1 OF 1

7018779-0-0

AUTOMATED BY PRTLSST.3P(44) — P A R T S  L I S T — SHEET A1 OF A1

| LINE | ITEM | DOCUMENT NUMBER | PART NUMBER | DESCRIPTION | QUANTITY PER VARIATION 00 |
|---|---|---|---|---|---|
| 1 | 1 | D-IA-7018549-0-0 | 7018549-00 | RETRACTOR TRAY RIVETED | 1 |
| 2 | 2 | E-IA-7425733-0-0 | 7425733-00 | TRAY,R.H. HALF | 1 |
| 3 | 3 | E-IA-7426619-0-0 | 7426619-01 | I/O PANEL BRKT.(RIGHT) | 1 |
| 4 | 4 | E-IA-7426619-0-0 | 7426619-02 | I/O PANEL BRKT.(LEFT) | 1 |
| 5 | 5 | E-IA-7426618-0-0 | 7426618-01 | I/O PORT PANEL | 1 |
| 6 | 6 | C-IA-7426620-0-0 | 7426620-01 | BRACKET,MAGNETIC | 1 |
| 7 | 7 | C-MD-7426621-0-0 | 7426621-01 | COVER,PLATE-R80 HOLE | 1 |
| 8 | 8 | B-IA-7426652-0-0 | 7426652-01 | NUT PLATE | 1 |
| 9 | 9 | C-IA-7018772-0-0 | 7018772-00 | CLAMP ASSY | 2 |
| 10 | 10 | D-AD-7018778-0-0 | 7018778-00 | CPU-1I/O PANEL ASSY | 1 |
| 11 | 11 | D-MD-7426407-01-DBU | 7426407-01 | PANEL,SUB,DOUBLE | 4 |
| 12 | 12 | | 9006664-00 | WASHER, FLAT, .437 OD X .218 ID | 5 |
| 13 | 13 | | 9007651-00 | WASHER, LOCK, EXTERNAL TOOTH #10 | 5 |
| 14 | 14 | | 9009636-00 | CLAMP, CABLE, FOR FLAT CABLE | 4 |
| 15 | 15 | | 9006563-00 | NUT,KEP 8-32X 11/13AF | 10 |
| 16 | 16 | | 9006071-03 | SCREW,TRUS,PHIL, 10-32X 3/8 | 5 |
| 17 | 17 | | 9009546-00 | SCREW,PAN,PHIL,SEMS 4-40X .375L | 8 |
| 18 | 18 | | 9010174-00 | SCREW,PAN,PHIL,SEMS 6-32X .25 L | 8 |
| 19 | 19 | | 9010174-01 | SCREW,PAN,PHIL,SEMS 8-32X .31 L | 2 |
| 20 | 20 | | 9006037-33 | SCREW,TRUS,PHIL, 8-32X 3/8 | 7 |
| 21 | 21 | | 9008151-00 | WASHER, LOCK, EXT. TOOTH #8 | 7 |
| 22 | 22 | A-PS-1212908-0-0 | 1212908-01 | DOOR CATCH,MAGNETIC,SNAP-IN | 1 |

RELEASABLE

| REVISION HISTORY | | | |
|---|---|---|---|
| ENG | ECO NUMBER | REV | |
| | INITIAL | A | |

BASIC PART NO: 7018779
SECTION A OF A
SECTION. VARIATION INDEX
[A] 00
[B]
[C]
[D]
[E]
[F]

DRN: R.J. RILEY — DATE: 27-JAN-82
CHK'D: R.J. RILEY — DATE: 27-JAN-82
DES.ENG.: R. MORIN — DATE: 27-JAN-82
RESP.ENG.: R. MORIN — DATE: 27-JAN-82
MFG.ENG.: S. CASTIGLIONE — DATE: 27-JAN-82
ASSEMBLY NUMBER: E-AD-7018779-0-0
TOP DOCUMENT NUMBER: E-UA-11730-2-0

DIGITAL

TITLE: PARTS LIST
CPU CABLE RETRACTOR ASSY

DOCUMENT NUMBER

| SIZE | CODE | NUMBER | REV |
|---|---|---|---|
| K | PL | 7018779-0-DBP | A |

FILE NAME: Z3612A.PLS
EDIT #: 3

**DIGITAL EQUIPMENT CORPORATION**
**MAYNARD MASSACHUSETTS**

| PACKAGING INSTRUCTION | REV:_____ DATE:_____ |
|---|---|
| TITLE PKG CPU 11730-ZA | |

LEGEND

| VARIATION | USED ON | PACKAGE TYPE | REMARKS |
|---|---|---|---|
| 3700662-01 | 11730-ZA | | |

PARTS LIST 3700662-01

REFER TO OFF-SHEET PARTS LIST K-PL-3700662-0-DBP

PACKAGING INSTRUCTIONS 3700662-01

STEP PROCEDURE FIGURE 1 AND 2

1. CUT TWO (2) PIECES OF POLYESTER STRAPPING (9905734-02) SEVEN (7) FEET LONG AND LAY FLAT ON THE PALLET (9906199-00).

2. SET UP ONE (1) END OF THE DIE CUT TRAY (9906832-01) AND PLACE ON THE TWO (2) STRAPS.

3. SET UP THE DIE CUT SHEET (9906933-01).

4. PLACE RETRACTOR TRAY (7018779-00) ON DIE CUT SHEET SO THAT THE ANGLED CABLE CONNECTOR RESTS AGAINST THE CORRUGATED SQUARE.

5. WRAP THE SHEET AROUND THE RETRACTOR TRAY.

6. PLACE THE WRAPPED RETRACTOR TRAY INTO THE DIE CUT TRAY SO THAT THE CORRUGATED SQUARE ON THE SHEET RESTS AGAINST THE SET UP END OF THE DIE CUT TRAY.

7. TAPE ONE (1) PRESSURE SHEET ASSY (7018718-00) TO THE TOP OF THE CPU BOX USING FIFTEEN (15) INCHES OF GLASS FILAMENT TAPE (9009634-00).

8. PLACE A POLYETHYLENE BAG (9905128-23) OVER THE CPU UNIT ASSEMBLY.

9. PLACE THE CPU BOX INTO THE WRAPPED RETRACTOR TRAY SO THAT THE BEZEL OF THE CPU UNIT ASSEMBLY IS FACING THE OPEN END OF THE DIE CUT TRAY.

10. FOLD OVER THE OPEN END OF THE DIE CUT TRAY.

SHEET 4 & 5 "C" SIZE

| ENG | APPD | SIZE | CODE | NUMBER | REV |
|---|---|---|---|---|---|
| [signature] 6-20-82 | Jean H. Barrett 6/22/82 | A | PA | 3700662-0-0 | A |

EN-01189-16-REVB(33L)

SHEET 1 OF 5

**PACKAGING INSTRUCTION** CONTINUATION SHEET

TITLE
PKG CPU 11730-ZA

11. PLACE ONE (1) HALF SLOTTED CARTON (9906930-01) OVER THE CPU UNIT ASSEMBLY AND INTO THE DIE CUT TRAY. LEAVE THE TOP FLAPS OPEN.

12. PLACE EACH OF THE FOLLOWING ITEMS IN, THE QUANTITY SPECIFIED, INTO A PLASTIC BAG (9906557-14) AND PLACE THEM ON THE FOURTH PANEL OF THE FIVE PANEL FOLDER (9906786-00):

| ITEM | DESCRIPTION | PART NUMBER | QUANTITY |
|---|---|---|---|
| A | GUIDE AND CLAMP | 7425927-00 | 1 |
| B | SHIPPING BRACKET | 7413659-00 | 1 |
| C | BRACKET, CARRIER/BOX | 7425928-00 | 1 |
| D | BRACKET, CAB/CARRIER | 7425929-00 | 1 |
| E | CABLE, FERRULED | 1215700-04 | 1 |
| F | CABLE CARRIER | 121902-00 | 1 |
| G | CLAMP, R80 CABLE | 7426623-01 | 1 |
| H | CLAMP, DMF CABLE | 7426625-01 | 1 |
| I | BAR CLAMP ASSY | 7426723-01 | 1 |
| J | STUD PLATE | 7426335-01 | 4 |
| K | SLIDE MTG BRKT, LEFT | 7425734-00 | 2 |
| L | SLIDE MTG BRKT, RIGHT | 7425734-01 | 2 |

| | | SIZE | CODE | NUMBER | REV |
|---|---|---|---|---|---|
| | | A | PA | 3700662-0-0 | A |

EN-01189-16-REVA(33L)

SHEET 2 OF 5

**PACKAGING INSTRUCTION** CONTINUATION SHEET

TITLE
PKG CPU 11730-ZA

13. CLOSE AND SEAL THE FIVE PANEL FOLDER USING TWENTY-FOUR (24) INCHES OF CARTON SEALING TAPE (9905729-00).

14. PLACE THE SEALED FIVE PANEL FOLDER INTO THE HALF SLOTTED CARTON IN FRONT OF THE CPU BEZEL.
CPU 11730-ZA

15. PLACE ONE (1) TU58-K MEDIA CARTRIDGE (3615809-00) INTO A BUBBLELITE ENVELOPE (9905012-05) AND PLACE ON TOP OF THE FIVE PANEL FOLDER.

16. PLACE ONE (1) AC LINE CORD (1700083-21) AND ONE (1) AC LINE CORD 1700083-22) INTO THE HALF SLOTTED CARTON ON TOP OF THE FIVE PANEL FOLDER.

17. PLACE A HARDWARE KIT BAG (B-PL-11730-Z-5) INTO THE HALF SLOTTED CARTON ON TOP OF THE AC LINE CORDS.

18. PLACE TWO (2) SLIDES (1218166-00) AND HARDWARE KIT BAGS, ONE (1) ON EACH SIDE OF THE CPU UNIT ASSEMBLY BETWEEN THE INSIDE OF THE HALF SLOTTED CARTON AND THE WRAPPED RETRACTOR TRAY AS SHOWN IN FIGURE 1.

19. CLOSE THE FLAPS OF THE HALF SLOTTED CARTON.

20. SEAL THE CARTON BY CLAMPING THE TWO (2) STRAPS AROUND THE CARTON.

21. PALLETIZE PER FIGURE 2 USING FOUR (4) ANGLEBOARD (9906185-05) AND FOUR (4) PIECES OF STRAPPING (9905734-02).

| | | SIZE | CODE | NUMBER | REV |
|---|---|---|---|---|---|
| | | A | PA | 3700662-0-0 | A |

EN-01189-16-REVA(33L)

SHEET 3 OF 5

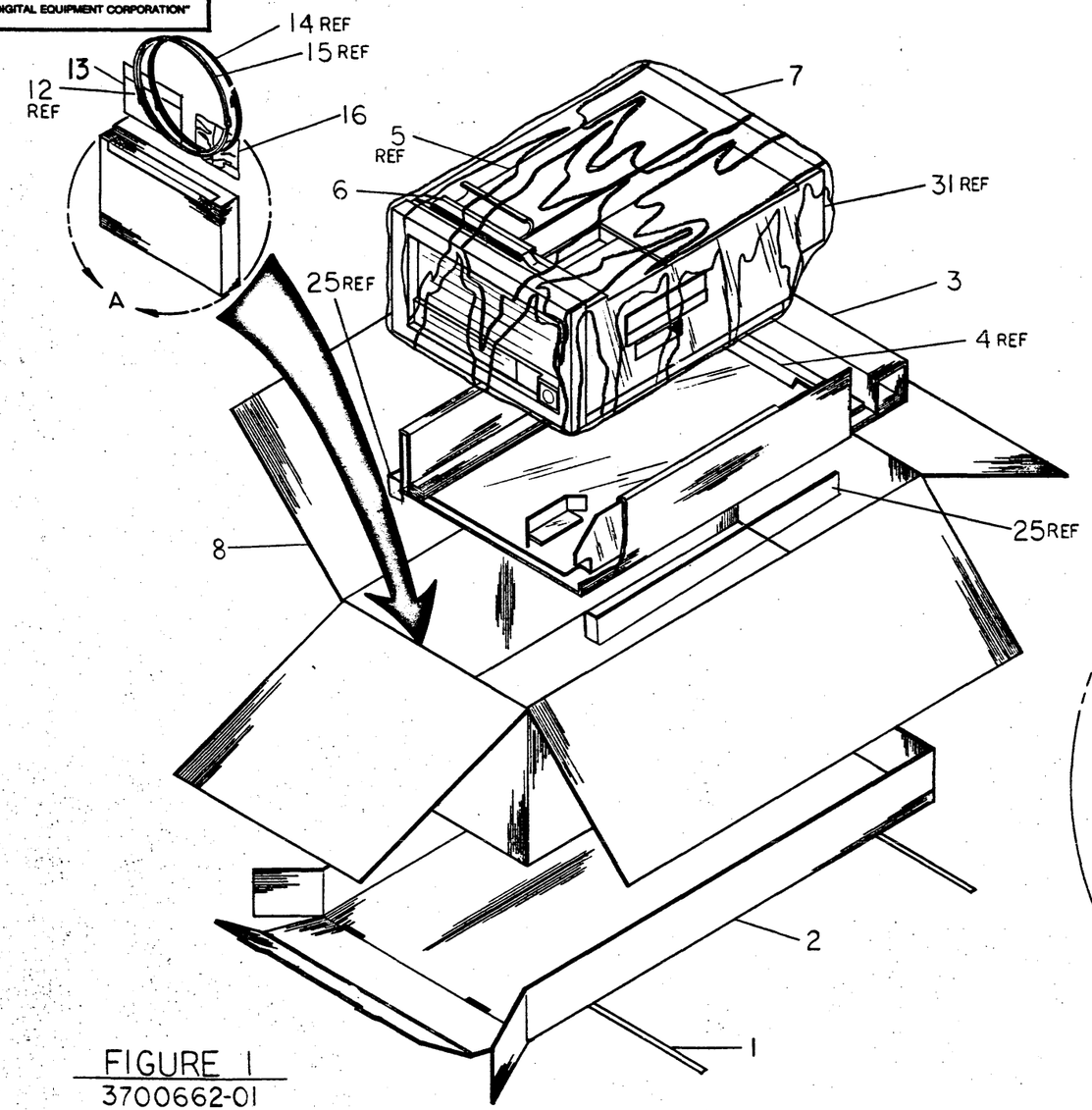
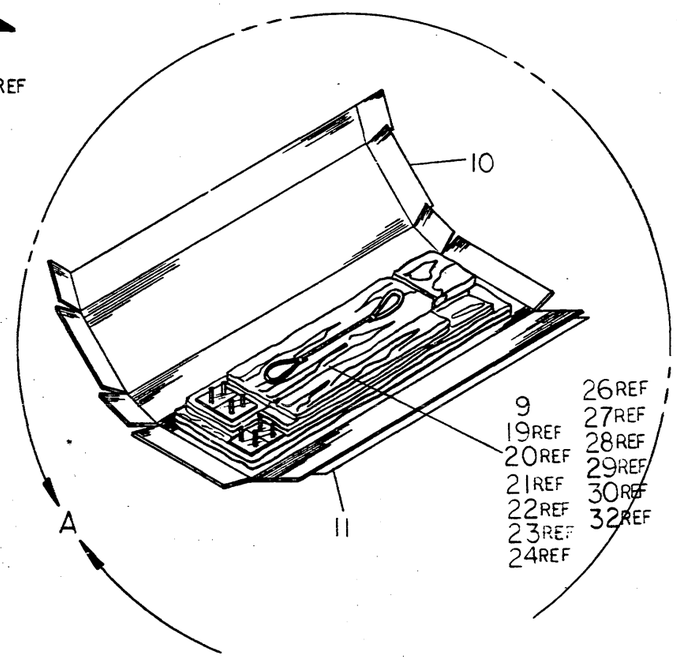



FIGURE 1
3700662-01




PACKAGE DIMENSIONS, WEIGHTS
& PLASTIC PACKING MATERIAL

| | USA | METRIC |
|---|---|---|
| WEIGHT | 98.00 LBS. | 44.45 KG. |
| LENGTH | 42.00 IN. | 1066 MM |
| WIDTH | 22.00 IN. | 558 MM |
| HEIGHT | 12.50 IN. | 317 MM |
| CUBE | 6.68 CU.FT. | 0.19 CU.M. |
| DENSITY | 14.67 LBS/CU.FT. | 235.0 KG./CU.M |
| * PLASTIC | — %$^{V}_{O}$ L. — %$^{W}_{T}$. | — TYPE |

* % VOLUME EXPANDED
% WEIGHT UNEXPANDED

FOR OFF SHEET PARTS LIST SEE K-PL-3700662-0-DBP

| | | | |
|---|---|---|---|
| DRN. G. GYORKE | DATE 6/82 | TITLE PKG | digital |
| CHK'D. J. Barrett | DATE 6/24/82 | CPU 11730-ZA | |
| DES. ENG. G. Larsen | DATE 6/82 | | |
| RESP. ENG. G. Larsen | DATE 6/82 | | |
| MFG. ENG. NONE | DATE — | | |
| NEXT HIGHER DOC. | | DOCUMENT NUMBER | |
| | | SIZE C / CODE PA / NUMBER 3700662-0-0 / REV A | |
| | | SCALE — | SHEET 4 OF 5 |

REVISION HISTORY

| REV. | ECO NUMBER | DATE |
|---|---|---|

SIZE C | CODE PA | NUMBER 3700662-0-0 | REV A

DRC 1118

SIZE C | CODE PA | NUMBER 3700662-0-0 | REV. A

PACKAGE DIMENSIONS WEIGHTS
& PLASTIC PACKING MATERIAL

| | USA | METRIC |
|---|---|---|
| WEIGHT | 638.00 LBS. | 289.39 KG. |
| LENGTH | 48.00 IN. | 1219 MM |
| WIDTH | 42.00 IN. | 1066 MM |
| HEIGHT | 42.50 IN. | 1079 MM |
| CUBE | 49.58 CU.FT. | 1.40 CU.M |
| DENSITY | 12.87 LBS/CU.FT. | 206.1 KG/CU.M |
| *PLASTIC | —% VOL. —% WT. | — TYPE |

* % VOLUME (EXPANDED)
% WEIGHT (UNEXPANDED)

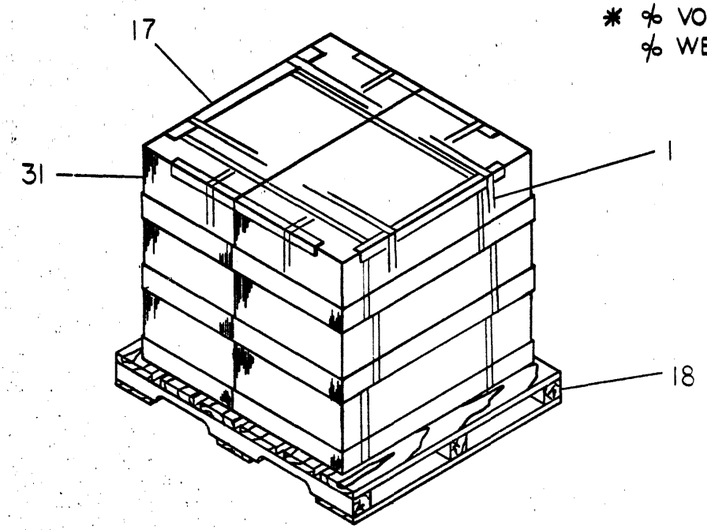



FIGURE 2
3700662-01

FOR OFF SHEET PARTS LIST SEE K-PL-3700662-0-DBP

| | |
|---|---|
| DRN. | DATE |
| CHK'D. | DATE |
| DES. ENG. | DATE |
| RESP. ENG. | DATE |
| MFG. ENG. | DATE |
| NEXT HIGHER DOC. | |

TITLE PKG digital
CPU 11730-ZA

DOCUMENT NUMBER
SIZE C | CODE PA | NUMBER 3700662-0-0 | REV. A
SCALE | SHEET 5 OF 5

REVISION HISTORY
REV. | ECO NUMBER | DATE

DRC 1118

# DRAWING DIRECTORY



## UNIT VARIATIONS

| VAR | TITLE |
|---|---|
| KA730-A | 11730 PROCESSOR MODULE SET |

REVISIONS

| REV. | CHANGE NO. | CHK |
|---|---|---|
| | | |

USED ON OPTION/MODEL: 11730

SHEET 1 OF 3

| | | | |
|---|---|---|---|
| DRN. | D. LANDRY | DATE | 2-2-82 |
| CHK'D. | D.M. Landry | DATE | 25-FEB-82 |
| PROJ. ENG. | D.M. Landry | DATE | 25-FEB-82 |
| PROD. | S.A. Cadolph | DATE | 25FEB82 |

TITLE: 11730 PROCESSOR MODULE SET

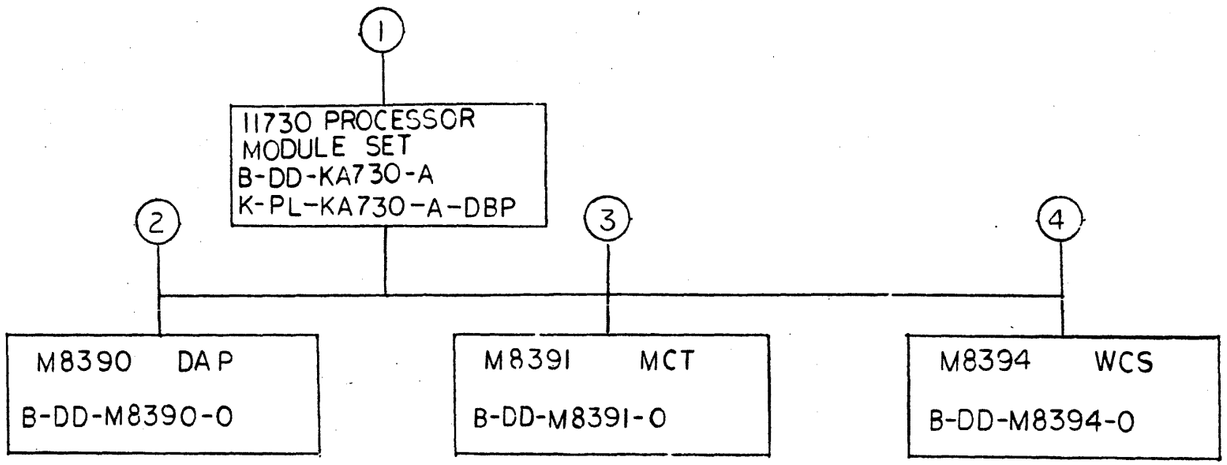
digital

| SIZE | CODE | NUMBER | REV |
|---|---|---|---|
| B | DD | KA730-A | A |

DIST.

DRB 106A

TW




| TITLE | | SIZE | CODE | NUMBER | REV |
|---|---|---|---|---|---|
| 11730 PROCESSOR MODULE SET | SHEET 2 OF 3 | B | DD | KA730-A | A |



TW

| FIND NO. | DRAWING NO. | DESCRIPTION | TYPE | FIND NO. | DRAWING NO. | DESCRIPTION | TYPE |
|---|---|---|---|---|---|---|---|
| | B-DD-KA730-A | 11730 MODULE SET-DWG DIRECTORY | — | | | | |
| | K-PL-KA730-A-DBP | 11730 MODULE SET-PARTS LIST | — | | | | |
| | | | | | | | |
| 2 | B-DD-M8390-0 | M8390 DAP MODULE-DWG DIRECTORY | — | | | | |
| | D-UA-M8390-0-0 | DAP UNIT ASSEMBLY | E/M | | | | |
| | K-PL-M8390-0-DBP | DAP PARTS LIST | — | | | | |
| | D-BD-M8390-0-0 | DAP BLOCK DIAGRAM | E | | | | |
| | D-CS-M8390-0-X | DAP CIRCUIT SCHEMATICS | E | | | | |
| | | (D-CS-M8390-0-DAPA THRU -DAPM) | | | | | |
| | D-GL-M8390-0-0 | DAP ROM AND PAL LISTINGS | — | | | | |
| | | | | | | | |
| 3 | B-DD-M8391-0 | M8391 MCT MODULE-DWG DIRECTORY | — | | | | |
| | D-UA-M8391-0-0 | MCT UNIT ASSEMBLY | E/M | | | | |
| | K-PL-M8391-0-DBP | MCT PARTS LIST | — | | | | |
| | D-BD-M8391-0-0 | MCT BLOCK DIAGRAM | E | | | | |
| | D-CS-M8391-0-X | MCT CIRCUIT SCHEMATICS | E | | | | |
| | | (D-CS-M8391-0-MCTA THRU -MCTN) | | | | | |
| | D-GL-M8391-0-1 | MCT ROM AND PAL LISTINGS | — | | | | |
| | D-FD-M8391-0-X | MCT FLOW DIAGRAMS | — | | | | |
| | | (D-FD-M8391-0-1 THRU -21) | — | | | | |
| | | | | | | | |
| 4 | B-DD-M8394-0 | M8394 WCS MODULE-DWG DIRECTORY | — | | | | |
| | D-UA-M8394-0-0 | WCS UNIT ASSEMBLY | E/M | | | | |
| | K-PL-M8394-0-DBP | WCS PARTS LIST | — | | | | |
| | D-BD-M8394-0-0 | WCS BLOCK DIAGRAM | — | | | | |
| | D-CS-M8394-0-X | WCS CIRCUIT SCHEMATICS | E | | | | |
| | | (D-CS-M8394-0-WCSA THRU -WCSR) | | | | | |
| | D-GL-M8394-0-1 | WCS ROM AND PAL LISTINGS | — | | | | |

TYPE:
E ELECTRICAL
M MECHANICAL
E/M ELECTRO/MECHANICAL

digital

| TITLE | SHEET | SIZE | CODE | NUMBER | REV |
|---|---|---|---|---|---|
| 11730 PROCESSOR MODULE SET | SHEET 3 OF 3 | B | DD | KA730-A | A |

DRB 108A

TW

AUTOMATED BY PRTLST.3P(44) — P A R T S  L I S T — SHEET A1 OF A1

| LINE | ITEM | DOCUMENT NUMBER | PART NUMBER | DESCRIPTION | QUANTITY PER VARIATION A |
|---|---|---|---|---|---|
| 1 | 1 | B-DD-M8390-0 | M8390-00 | DAP (DATA PATH) | 1 |
| 2 | 2 | B-DD-M8391-0 | M8391-00 | MCT (MEMORY CONTROLLER) HEX | 1 |
| 3 | 3 | B-DD-M8394-0 | M8394-00 | WRITEABLE CONTROL STORE,HEX,FOR RELEASABLE | 1 |

| REVISION HISTORY | | | BASIC PART NO: KA730 | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ENG | ECO NUMBER | REV | SECTION A OF A | DRN: A. ROCHA | DATE: 03-MAR-82 | | D | I | G | I | T | A | L |
| | INITIAL | A | SECTION. VARIATION INDEX | CHK'D: D. LANDRY | DATE: 03-MAR-82 | TITLE PARTS LIST | | | | | | | |
| | | | [A] A | | | 11730 PROCESSOR MODULE SET | | | | | | | |
| | | | [B] | DES.ENG.: D. LANDRY | DATE: 03-MAR-82 | | | | | | | | |
| | | | [C] | | | DOCUMENT NUMBER | | | | | | | |
| | | | [D] | RESP.ENG.: D. LANDRY | DATE: 03-MAR-82 | SIZE | CODE | NUMBER | | REV | | | |
| | | | [E] | MFG.ENG.: S. CASTIGLIONE | DATE: 03-MAR-82 | K | PL | KA730-A-DBP | | A | | | |
| | | | [F] | ASSEMBLY NUMBER: | TOP DOCUMENT NUMBER: #B-DD-KA730-A | | | FILE NAME: Z1867A.PLS | | EDIT # 3 | | | |

| SIZE | CODE | NUMBER | REV. |
|---|---|---|---|
| B | DD | M8390-0 | B |

| DRAWING NO. | NO. OF SHTS. | PART NO. | DESCRIPTION | REVISIONS |
|---|---|---|---|---|
| | | | MODULE REVISION | A B |
| B-DD-M8390-0-0 | 1 | | DRAWING DIRECTORY | A B |
| B-UA-M8390-0-0 | 2 | | UNIT ASSEMBLY | A A |
| K-PL-M8390-0-DBP | 2 | | PARTS LIST | A B |
| | | 5013860 | ETCH BOARD REVISION | B B |
| K-PC-5013860-0-DBC | | | DESIGN DATA BASE PC | A B |
| D-MD-5013860-0-0 | 5 | | DRILL AND ETCH DRAWING | A A |
| D-EC-5013860-0 | 3 | | ETCH CUT DRAWING | A B |
| K-CS-M8390-0-DBS | | | DESIGN DATA BASE SUDS | A B |
| D-CS-M8390-0-DAPA | 1 | * | MICRO WORD DECODE AND REG ADDR GEN | A B |
| D-CS-M8390-0-DAPB | 1 | * | DATA PATH CLOCKS AND CONTROL | A B |
| D-CS-M8390-0-DAPC | 1 | * | DATA PATH AND LS (HIGH WORD) | A B |
| D-CS-M8390-0-DAPD | 1 | * | DATA PATH AND LS (LOW WORD) | A B |
| D-CS-M8390-0-DAPE | 1 | * | BUS IB AND BUS D DRIVERS | A B |
| D-CS-M8390-0-DAPF | 1 | * | BUS NAD AND BUS IB CONTROL | A B |
| D-CS-M8390-0-DAPH | 1 | * | OS MUX AND CC CONTROL | A B |
| D-CS-M8390-0-DAPJ | 1 | * | CONTROL STORE REG AND SEQUENCER | A B |
| D-CS-M8390-0-DAPK | 1 | * | MICRO PC AND INTERRUPT CONTROL | A B |
| D-CS-M8390-0-DAPL | 1 | * | CONSOLE INTERFACE AND CONTROL | A B |
| D-CS-M8390-0-DAPM | 1 | * | FILTER CAPACITORS | A B |
| D-BD-M8390-0-0 | 1 | * | DATA PATH BLOCK DIAGRAM | ~~A~~ A |
| D-GL-M8390-0-0 | 13 | * | ROM AND PAL LISTINGS | A |
| D-BD-M8390-0-1 | 1 | | 11/730 CONTROL STORE FORMATS | - A |
| D-TD-M8390-0-0 | 1 | | 11/730 CPU MICRCOYCLE TIMING | - A |
| | | | | |
| | | | | |

## NOTES:

*CONTROL STORE IS THE SUDS DATA BASE

NO CONTROLLED PAPER ORIGINALS EXIST

| REVISIONS | REV. | CHG NO. | DATE |
|---|---|---|---|
| | B | TW001 | 12-81 |



digital

USED ON OPTION/MODEL

| | | |
|---|---|---|
| DRN. | J. CASEY | 7-15-80 |
| CHK'D | J. CASEY | 7-15-80 |
| ENG. | S. LACKEY | 8-8-80 |
| PROD. | C. CONSIDINE | 8-8-80 |

TITLE: DAP

| SIZE | CODE | NUMBER | REV. |
|---|---|---|---|
| B | DD | M8390-0 | B |

SHEET 1 OF 1

DRB 126

D UA M8390-0-0 A

COMPONENT SIDE VIEW

SEE NOTE 2

0-1 0-2 0-3

66 1 4

TH2 TH1 TP1 TP2 TP3 TP4 TP5 TP6

XE103 XE93 XE72 XE50 XE39 XE29 XE10 XE19 XE9 XE28 XE8 XE18 XE27 XE7 XE17 XE26 XE6 XE16 XE25 XE5 XE15 XE24 XE4 XE14 XE23 XE3 XE13 XE22 XE2 XE12 XE21 XE1 XE11 XE20 XE41 XE40 XE30 XE31 XE42 XE32 XE33 XE43 XE53 XE54 XE64 XE63 XE74 XE73 XE84 XE85 XE95 XE94 XE104 XE105 XE106 XE96 XE86 XE75 XE107 XE97 XE87 XE76 XE108 XE98 XE88 XE77 XE66 XE109 XE99 XE89 XE78 XE67 XE110 XE100 XE90 XE79 XE68 XE57 XE46 XE45 XE35 XE34 XE24 XE23 XE14 XE13 XE4 XE111 XE101 XE91 XE80 XE69 XE58 XE47 XE36 XE37 XE48 XE59 XE60 XE49 XE38 XE39 XE50 XE61 XE72 XE71 XE82 XE83 XE93 XE103 XE112 XE102 XE92 XE81 XE70 XE59 XE48 XE37 XE113 XE115 XE114

C1 C2 C3 C4 C5 C6 C7 C8 C9 C10 C11 C12 C13 C14 C15 C16 C17 C18 C19 C20 C21 C22 C23 C24 C25 C26 C27 C28 C29 C30 C31 C32 C33 C34 C35 C36 C37 C38 C39 C40

8.41
213.61
F.B.S.
REF.

F E D C B A

V U T S R P N M L K J H F E D C B A

NOTES:
1. SPARE IC POSITIONS ARE E15, E83
2. ADD E18 IN SPARE IC LOCATION

| STEP ξ | ↑ Y AXIS ___ STEP ___ TIMES |
|---|---|
| REPEAT | → X AXIS ___ STEP ___ TIMES |

| CHK | CHANGE NO | REV |
|---|---|---|
| | | |

| | |
|---|---|
| ETCH REV. | B |
| DATA BASE REV. | B |

| SIGNATURES | DATE |
|---|---|
| DRN. | 3-3-80 |
| CHK'D. E.T. GERRY | 3-4-80 |
| MECH. ENG. | 8-8-80 |
| PROJ. ENG. | 8-8-80 |
| PROD. | 8-8-80 |

digital

TITLE: D.A.P.

| SCALE | SIZE | CODE | NUMBER | REV |
|---|---|---|---|---|
| 2/1 | D | UA | M8390-0-0 | A |
| SHT. 1 OF 2 | | | | |

NEXT HIGHER ASSY. B-DD-M8390-C

TW 1 MS# 1701458

# REWORK INSTRUCTIONS

WIRE ADDS SIDE 1:

0-1 FROM E18-1 TO E26-11

0-2 FROM E18-15 TO E23-11

0-3 FROM E18-7 TO E7-11

REVISION HISTORY

| DATE | ECO NUMBER | REV. |
|---|---|---|
| | | |

| TITLE | DOCUMENT NUMBER | | | |
|---|---|---|---|---|
| DAP | SIZE D | CODE UA | NUMBER M8390-0-0 | REV. A |
| | SCALE 2-1 | | SHEET 2 OF 2 | |

TW

AUTOMATED BY PRTLST.3M(41) — P A R T S  L I S T — SHEET A1 OF A2

| LINE | ITEM | DOCUMENT NUMBER | PART NUMBER | | DESCRIPTION | QTY PER VARIATION 00 | | REFERENCE DESIGNATOR |
|---|---|---|---|---|---|---|---|---|
| 1 | 1 | D-MD-5013860-0-0 | 5013860-00 | | DAP | 1 | | |
| 2 | 2 | | 1012084-01 | | 8 MFD 25V +75-10% AL EL | 6 | | C1-C6 |
| 3 | 3 | | 1012784-00 | | .047 MFD 50V +80-20% CER | 34 | | C7-C40 |
| 4 | 4 | | 1216988-02 | | HANDLE,MODULE,HEX TWO EJECTORS | 1 | | |
| 5 | 5 | | 1215006-02 | | SKT,IC 16PIN DIP TIN PLATE | 2 | | XE46,XE82 |
| 6 | 6 | | 1215006-04 | | SKT,IC 20PIN DIP TIN PLATE | 26 | | XE36,XE37,XE39,XE41,XE43,XE45, |
| | | | | | | | CONT | XE49,XE50,XE54,XE58,XE60,XE68, |
| | | | | | | | CONT | XE69,XE71,XE72,XE79,XE91,XE92, |
| | | | | | | | CONT | XE95,XE97,XE99,XE110, |
| | | | | | | | CONT | XE111-XE113,XE25 |
| 7 | 7 | | 1215006-06 | | SKT,IC 24PIN DIP TIN PLATE | 2 | | XE93,XE103 |
| 8 | 8 | | 1311003-01 | | R NETWORK 14-180 14-390 16PIN | 1 | | E73 |
| 9 | 9 | | 1910532-00 | | 74S00 NAND GATE-QUAD 2IN | 2 | | E57,E89 |
| 10 | 10 | | 1910534-00 | | 74S04 INVERTER GATE-HEX 1I | 2 | | E67,E77 |
| 11 | 11 | | 1910536-00 | | 74S10 NAND GATE-TRIPLE 3IN | 1 | | E102 |
| 12 | 12 | | 1910539-00 | | 74S20 NAND GATE-DUAL 4INPU | 1 | | E100 |
| 13 | 13 | | 1910542-00 | | 74S64 A-O-I GATE 4-2-3-2 | 1 | | E94 |
| 14 | 14 | | 1910547-00 | | 74S153 MUX 1 OF 4 (DUAL) | 1 | | E32 |
| 15 | 15 | | 1910549-00 | | 74S158 MUX 1 OF 2 (QUAD) | 6 | | E56,E78,E90,E98,E101,E114 |
| 16 | 16 | | 1910956-00 | | 74S151 MUX 1 OF 8 | 2 | | E81,E88 |
| 17 | 17 | | 1910957-00 | | 74S175 FF-D QUAD COMMON CLO | 2 | | E64,E75 |
| 18 | 18 | | 1911579-00 | | 8641 TRANSCEIVER,BUS,QUA | 1 | | E74 |
| 19 | 19 | | 1911641-00 | | SN 74S257 MUX,QUAD 2 TO 1 | 1 | | E38 |
| 20 | 20 | | 1911675-00 | | 74S138 DECODER/DEMUX 3-8 LIN | 1 | | E62 |
| 21 | 21 | | 1911676-00 | | 74S139 DECODER-DUAL TWO-INP | 3 | | E48,E63 |
| 22 | 22 | | 1911712-00 | | 74S51 AND-OR GATE-INVERT D | 2 | | E47,E105 |
| 23 | 23 | | 1912097-00 | | SN 74S182 LOOK AHD CARRY GEN | 2 | | E17,E19 |
| 24 | 24 | | 1912388-00 | | 74S02 NOR GATE-QUAD 2IN,PO | 4 | | E70,E76,E80,E84 |
| 25 | 25 | | 1912586-00 | | DM 8556BN REGISTER,64BIT EDGE | 4 | | E106-E109 |
| 26 | 26 | | 1912648-00 | | LS251 MUX 8 INPUT,TRI-STA | 1 | | E96 |

| REVISION HISTORY | | |
|---|---|---|
| ENG | ECO NUMBER | REV |
| --- | INITIAL | A |
| KO | M8390-TW001 | B |

BASIC PART NO: M8390

SECTION A OF A

SECTION.VARIATION INDEX
[A] 00
[B]
[C]
[D]
[E]
[F]
[H]
[J]
[K]
[L]
[M]
[N]

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | D | I | G | I | T | A | L |

DRN: J.CASEY — DATE: 27-FEB-80

CHK'D: E.T.GERRY — DATE: 27-FEB-80

DES.ENG: S.LACKEY — DATE: 7-29-80

RESP.ENG.: S.LACKEY — DATE: 7-29-80

MFG.ENG.: J.CONSIDINE — DATE: 8-AUG-80

TITLE: PARTS LIST
DAP

| DOCUMENT NUMBER | | | |
|---|---|---|---|
| SIZE | CODE | NUMBER | REV |
| K | PL | M8390-0-DBP | B |

| ASSEMBLY NUMBER: | TOP DOCUMENT NUMBER: | FILE NAME: | EDIT # |
|---|---|---|---|
| D-UA-M8390-0-0 | B-DD-M8390-0-0 | Z12698.PLS | 18 |

AUTOMATED BY PRTLST.3M(41)

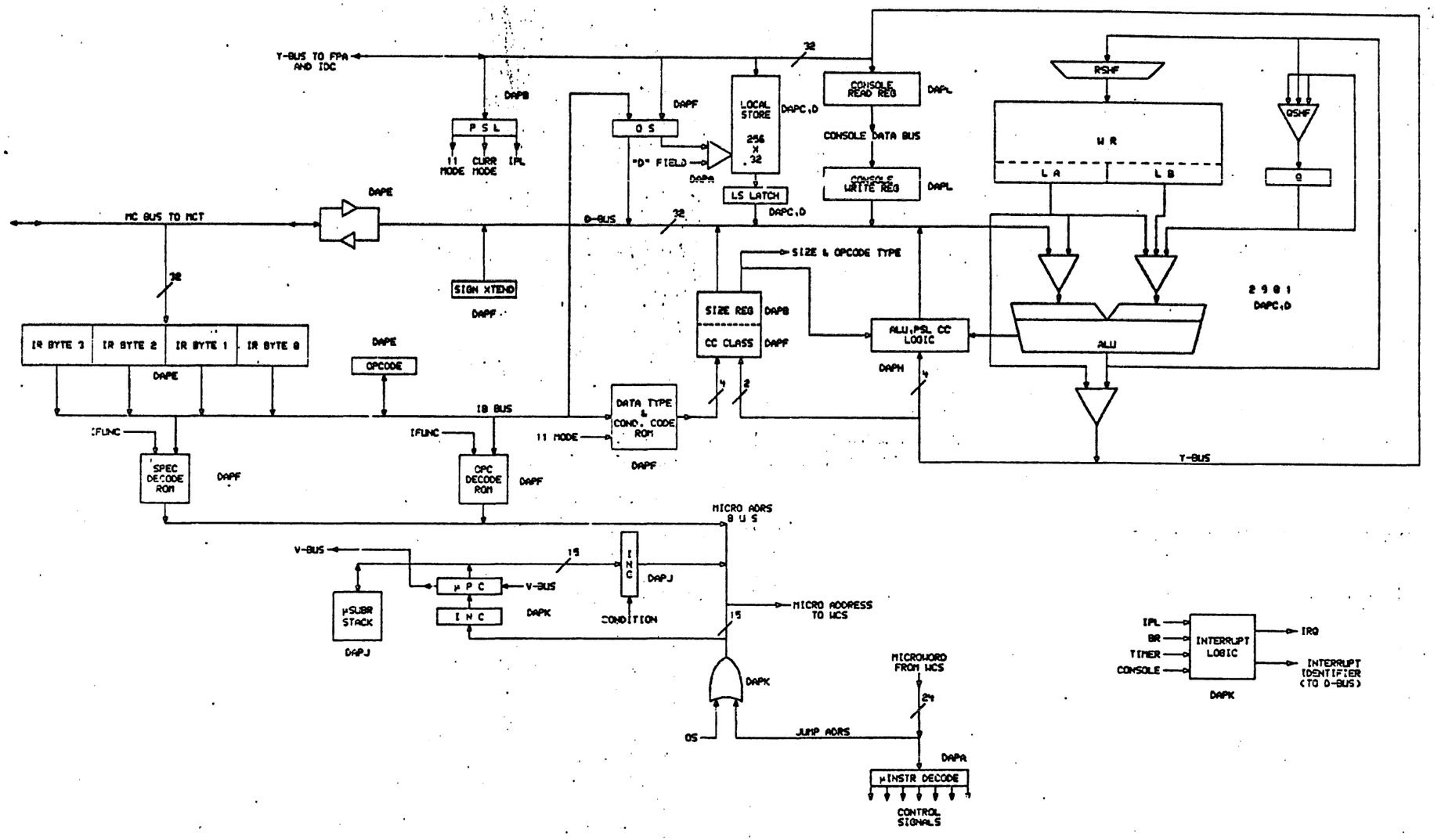
# P A R T S  L I S T



| LINE | ITEM | DOCUMENT NUMBER | PART NUMBER | DESCRIPTION | QTY PER VARIATION 00 | REFERENCE DESIGNATOR |
|---|---|---|---|---|---|---|
| 27 | 27 | | 1912660-00 | 74S253 MUX 1 OF 4 (DUAL) | 2 | E59,E61 |
| 28 | 28 | | 1912746-00 | DEC 74S37 NAND GATE-QUAD 2IN | 1 | E66 |
| 29 | 29 | | 1912796-00 | 74148 EXCODER,PRIORITY,8 T | 1 | E65 |
| 30 | 30 | | 1912860-00 | LS259 LATCH 8BIT | 1 | E85 |
| 31 | 31 | | 1912865-00 | LS283 ADDER-4BIT BINARY FU | 1 | E115 |
| 32 | 32 | | 1913245-01 | 2901A MICROPROCESSOR-4 BIT | 8 | E7-E10,E26-E29 |
| 33 | 33 | | 1913670-00 | 74S373 LATCH 8BIT TRASP TR | 7 | E3,E6,E12,E16,E21,E22,E24 |
| 34 | 34 | | 1913671-00 | 74S374 FF-D OCTAL TRISTATE | 10 | E1,E20,E30,E40,E42,E51-E53,E55, |
| | | | | | CONT | E87 |
| 35 | 35 | | 1914866-00 | AM 93S48PCGEN/CHECK PARITY, 48 | 2 | E85,E104 |
| 36 | 36 | | 1915218-00 | LS245 TRANSCEIVER,BUS,OCT | 4 | E2,E11,E31,E44 |
| 37 | 37 | | 1915697-00 | RAM 256X4 TRI-STATE | 8 | E4,E5,E13,E14,E23,E33-E35 |
| 38 | 38 | | 23001K4-00 | K4-01 | 1 | E69 |
| 39 | 39 | | 23002K4-00 | K4-01 | 1 | E95 |
| 40 | 40 | | 23003K4-00 | K4-01 | 3 | E97,E99,E110 |
| 41 | 41 | | 23008K3-00 | K3-01 PAL,REG, CONT | 1 | E58 |
| 42 | 42 | | 23032K3-00 | K3-01 PAL,REG, CONT | 1 | E41 |
| 43 | 43 | | 23010K3-00 | K3-01 PAL,REG, CONT | 1 | E60 |
| 44 | 44 | | 23011K3-00 | K3-01 PAL,REG, CONT | 1 | E49 |
| 45 | 45 | | 23012J5-00 | J5-01 PAL,LOGIC,CONT | 1 | E79 |
| 46 | 46 | | 23006K3-00 | K3-01 PAL,REG, CONT | 1 | E72 |
| 47 | 47 | | 23007K3-00 | K3-01 PAL,REG, CONT | 1 | E71 |
| 48 | 48 | | 23012K3-00 | K3-01 PAL,REG, CONT | 1 | E112 |
| 49 | 49 | | 23013J5-00 | J5-01 PAL,LOGIC,CONT | 1 | E45 |
| 50 | 50 | | 23013K3-00 | K3-01 PAL,REG, CONT | 1 | E37 |
| 51 | 51 | | 23014J5-00 | J5-01 PAL,LOGIC,CONT | 1 | E91 |
| 52 | 52 | | 23014K3-00 | K3-01 PAL,REG, CONT | 1 | E39 |
| 53 | 53 | | 23015J5-00 | J5-01 PAL,LOGIC,CONT | 1 | E25 |
| 54 | 54 | | 23015K3-00 | K3-01 PAL,REG, CONT | 1 | E50 |
| 55 | 55 | | 23016J5-00 | J5-01 PAL,LOGIC,CONT | 1 | E111 |
| 56 | 56 | | 23017J5-00 | J5-01 PAL,LOGIC,CONT | 1 | E92 |
| 57 | 57 | | 23018J5-00 | J5-01 PAL,LOGIC,CONT | 1 | E113 |
| 58 | 58 | | 23019J5-00 | J5-01 PAL,LOGIC,CONT | 1 | E68 |
| 59 | 59 | | 23020J5-00 | J5-01 PAL,LOGIC,CONT | 1 | E54 |
| 60 | 60 | | 23021J5-00 | J5-01 PAL,LOGIC,CONT | 1 | E43 |
| 61 | 61 | | 23041J5-00 | J5-01 PAL,LOGIC,CONT | 1 | E36 |
| 62 | 62 | | 23069D1-00 | D1-02 | 1 | E93 |
| 63 | 63 | | 23133F3-00 | F3-03 | 1 | E103 |
| 64 | 64 | | 23954A9-00 | A9-01 | 1 | E82 |
| 65 | 65 | | 23945A9-00 | A9-01 | 1 | E46 |
| 66 | 66 | | 9009000-00 | EYELET,ROLL FLANGE .1210DX .156 | 12 | |
| 67 | 67 | | 9009149-00 | PIN, STAKING, P.C. BOARD, .025 X | 6 | TP1-TP6 |
| 68 | 68 | | 1311003-02 | R NETWORK 14-330 14-680 16PIN | 1 | E18 |
| 69 | 69 | | 9105740-55 | WIRE(WRAP)30AWG UL1423 | A/R | |

########## RELEASABLE/NO REF DES CHECK ##########

| DIGITAL | TITLE | SECTION | SIZE | CODE | DOCUMENT NUMBER | REV |
|---|---|---|---|---|---|---|
| | DAP | A OF A | K | PL | M8390-0-DBP | B |




| REVISIONS | | | |
|---|---|---|---|
| | CHK | CHANGE NO. | REV |

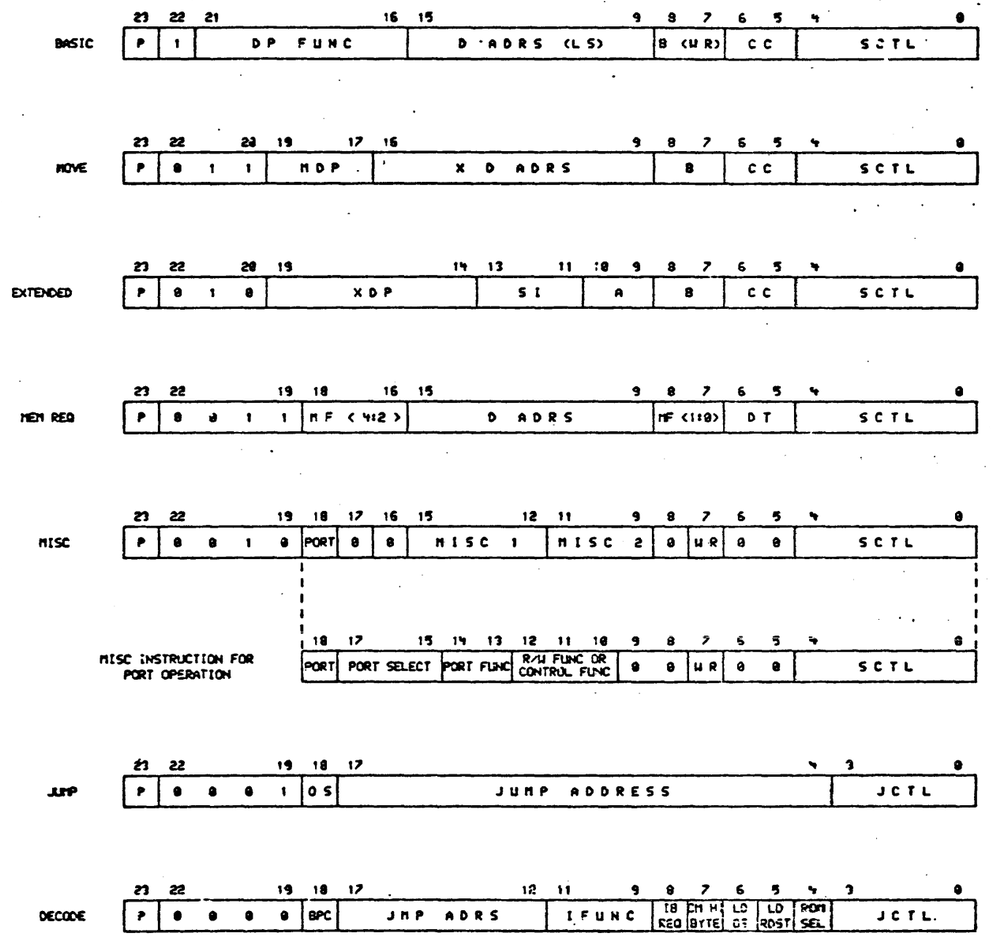
digital

DRN D.Mitchell DATE 26-SEP-81 ENG. DATE
CHK'D. DATE BOARD LOCATION: SHEET 1 OF 1
(367.1500 DAPBLK.DPM 26-SEP-81 10:04) NEXT HIGHER ASSEMBLY:
FIRST USED ON OPTION/MODEL: NEBULA

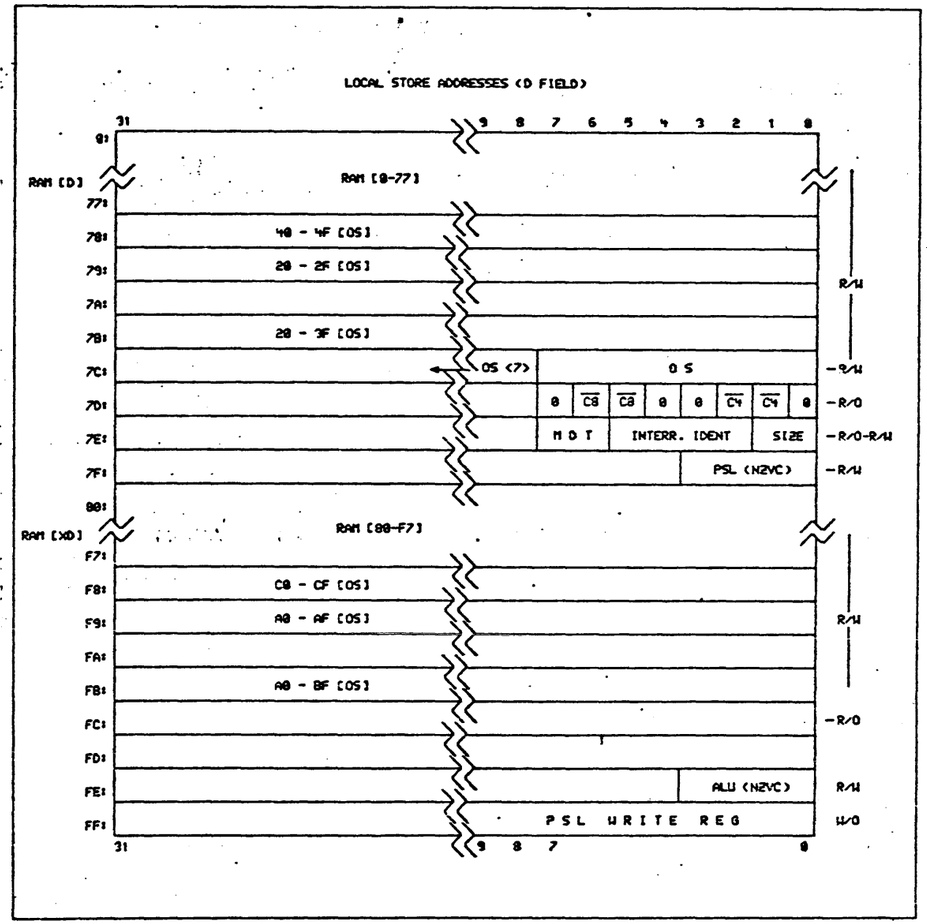
TITLE: NEBULA DATA PATH BLOCK DIAGRAM (DAP)

| SIZE | CODE | NUMBER | REV. |
|---|---|---|---|
| D | BD | M8390-0-0 | A |

## MICRO WORD FORMATS




## LOCAL STORE ADDRESSES (D FIELD)






| REVISIONS | | | |
|---|---|---|---|
| | CHK | CHANGE NO. | REV |

DRN D.M.Hetzer
CHK D.

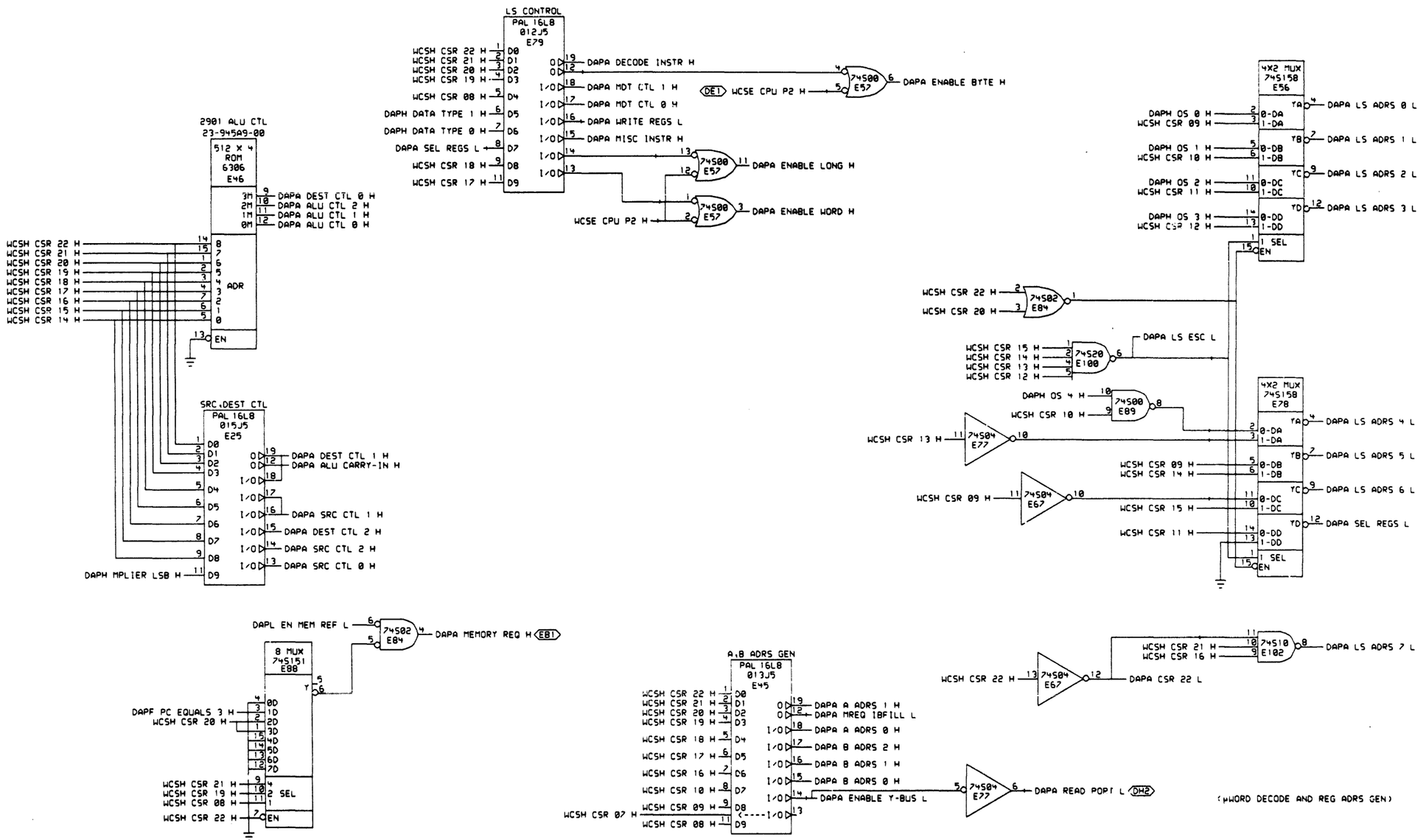
DATE 26-SEP-87 ENG. DATE

DATE ECO/PD LOCATION:
SHEET 1 OF 1

\\SRC\1500\CPU\CD.DIR 26-SEP-87 10:39:04 NEXT HIGHER ASSEMBLY:
FIRST USED ON OPTION/MODEL: 11/730

TITLE: 11/730 μCONTROL STORE FORMATS

| SIZE | CODE | NUMBER | REV. |
|---|---|---|---|
| D | BD | M8390-0-1 | A |

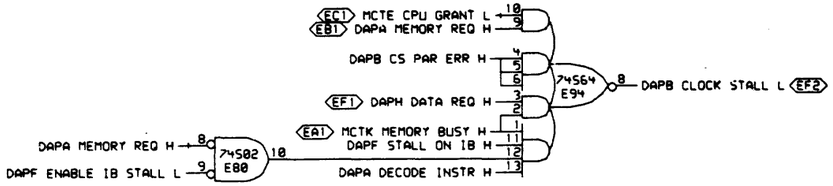


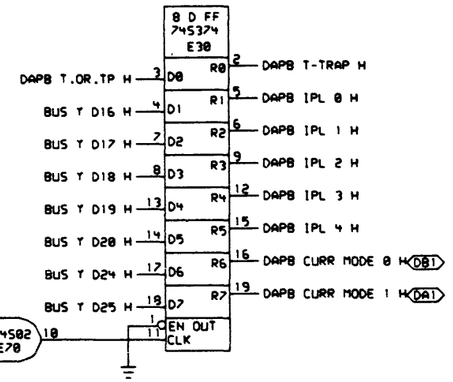


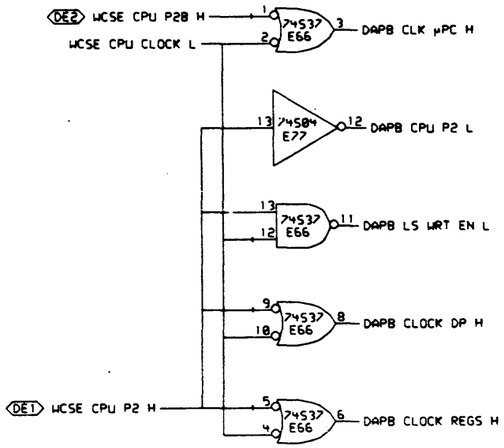

| REVISIONS | | |
|---|---|---|
| CHK | CHANGE NO. | REV |

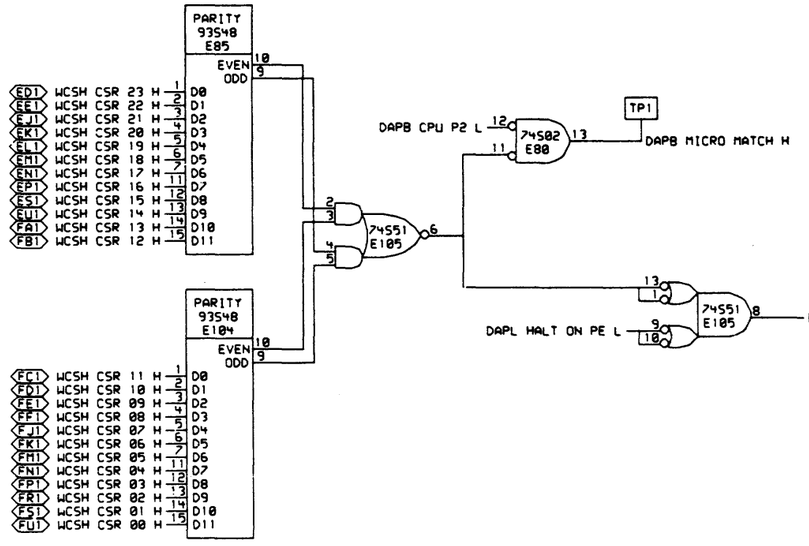
| | | | | | |
|---|---|---|---|---|---|
| DRN | DATE | ENG. | DATE | TITLE: | NEBULA CPU & DATA PATH (DAPA) |
| G.M. Hafner | 27-OCT-81 | | | | |
| CHK'D. | DATE | BOARD LOCATION: | | | |
| | | SHEET 1 OF 1 | | | |
| (367,1500)DAPA.DRW | 27-OCT-81 10:50 | NEXT HIGHER ASSEMBLY: | | SIZE D / CODE CS / NUMBER M8390-0-DAPA / REV. B | |
| FIRST USED ON OPTION/MODEL: 11/730 | | | | | |

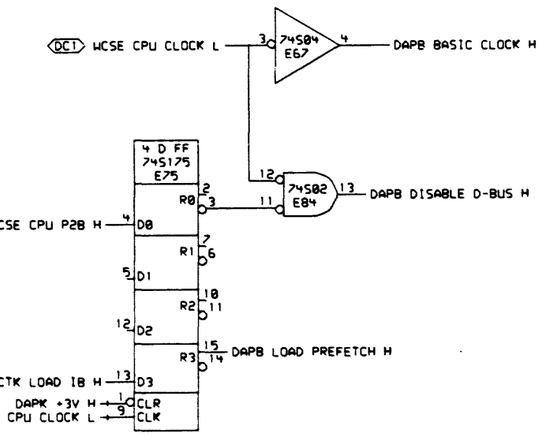
G.M. HAFNER [1186,1500]DAPA.DPL; SCALE 2, "D" RELEASE BOX
G.M. HAFNER DAPA.PLO[1186,1500] 27-OCT-81 11:26

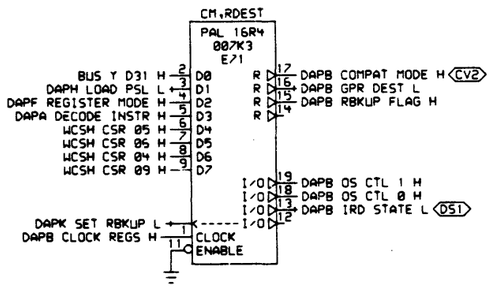


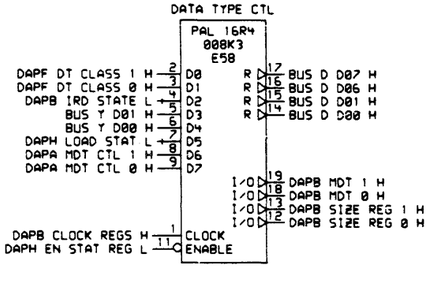



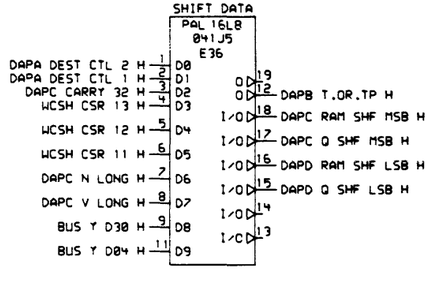



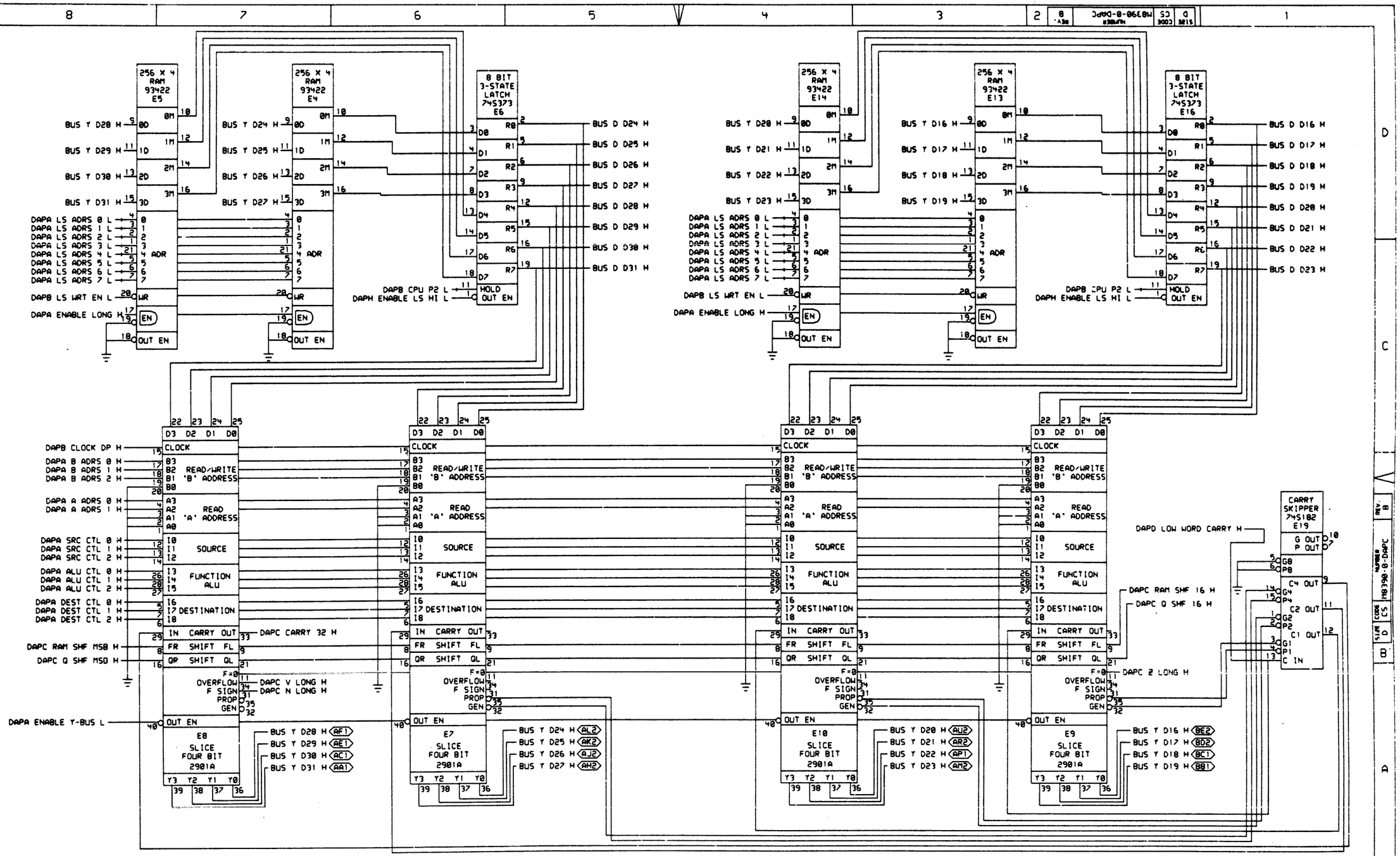






| REVISIONS | | |
|---|---|---|
| CHK | CHANGE NO. | REV |

| | | | | | |
|---|---|---|---|---|---|
| DRN G.M.Hafner | DATE 27-OCT-81 | ENG. | DATE | TITLE: NEBULA CPU & DATA PATH (DAPB) | |
| CHK'D. | DATE | BOARD LOCATION: | | | |
| (367,1500)DAPB.DRW 27-OCT-81 10:51 | | NEXT H.GHER ASSEMBLY: | | SIZE D / CODE CS / NUMBER M8390-0-DAPB | REV. B |
| FIRST USED ON OPTION/MODEL: 11/730 | | SHEET 1 OF 1 | | | |

G.M. HAFNER, [1106,1500]DAPB.PLT, "SCALE 2, "D" RELEASE BOX
G.M. HAFNER DAPB.PLT[1106,1500] 27-OCT-81 11:26




(DATA PATH AND LS - HI WORD)



| REVISIONS | | |
|---|---|---|
| CHK | CHANGE NO. | REV |

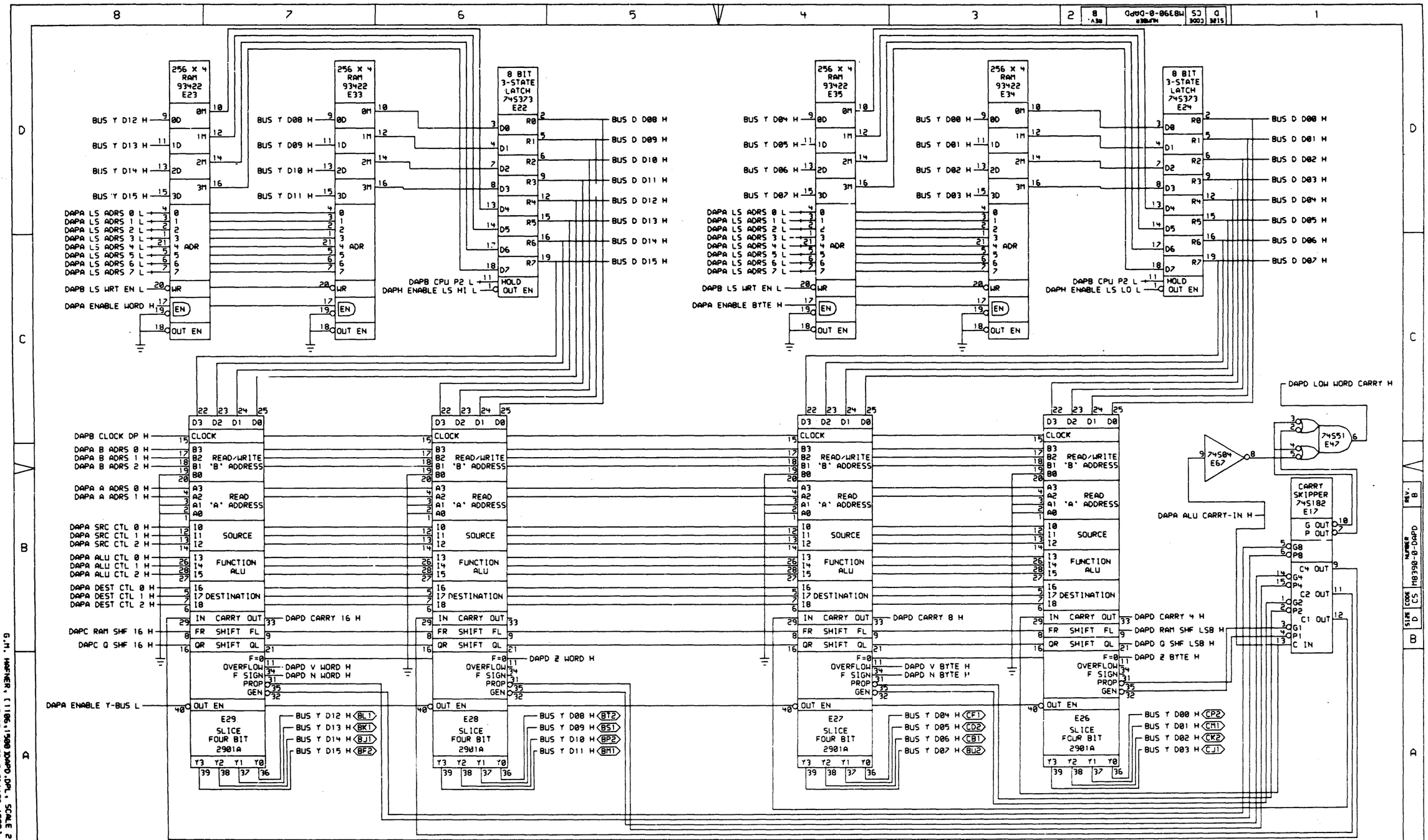
digital

DRN G.M. Hafner | DATE 27-OCT-81 | ENG. | DATE
CHK D. | DATE | BOARD LOCATION:
(367,1500)DAPC.DRW 27-OCT-81 10:51 | SHEET 1 OF 1 | NEXT HIGHER ASSEMBLY:
FIRST USED ON OPTION/MODEL: 11/730

TITLE: NEBULA CPU & DATA PATH (DAPC)

| SIZE | CODE | NUMBER | REV. |
|---|---|---|---|
| D | CS | M8390-0-DAPC | B |

G.M. HAFNER [1186,1500]DAPC.DPL SCALE 2. "D" RELEASE BOX
G.M. HAFNER DAPC.PLO[1186,1500] 27-OCT-81 11:25

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| REVISIONS | | |
|---|---|---|
| CHK | CHANGE NO. | REV |

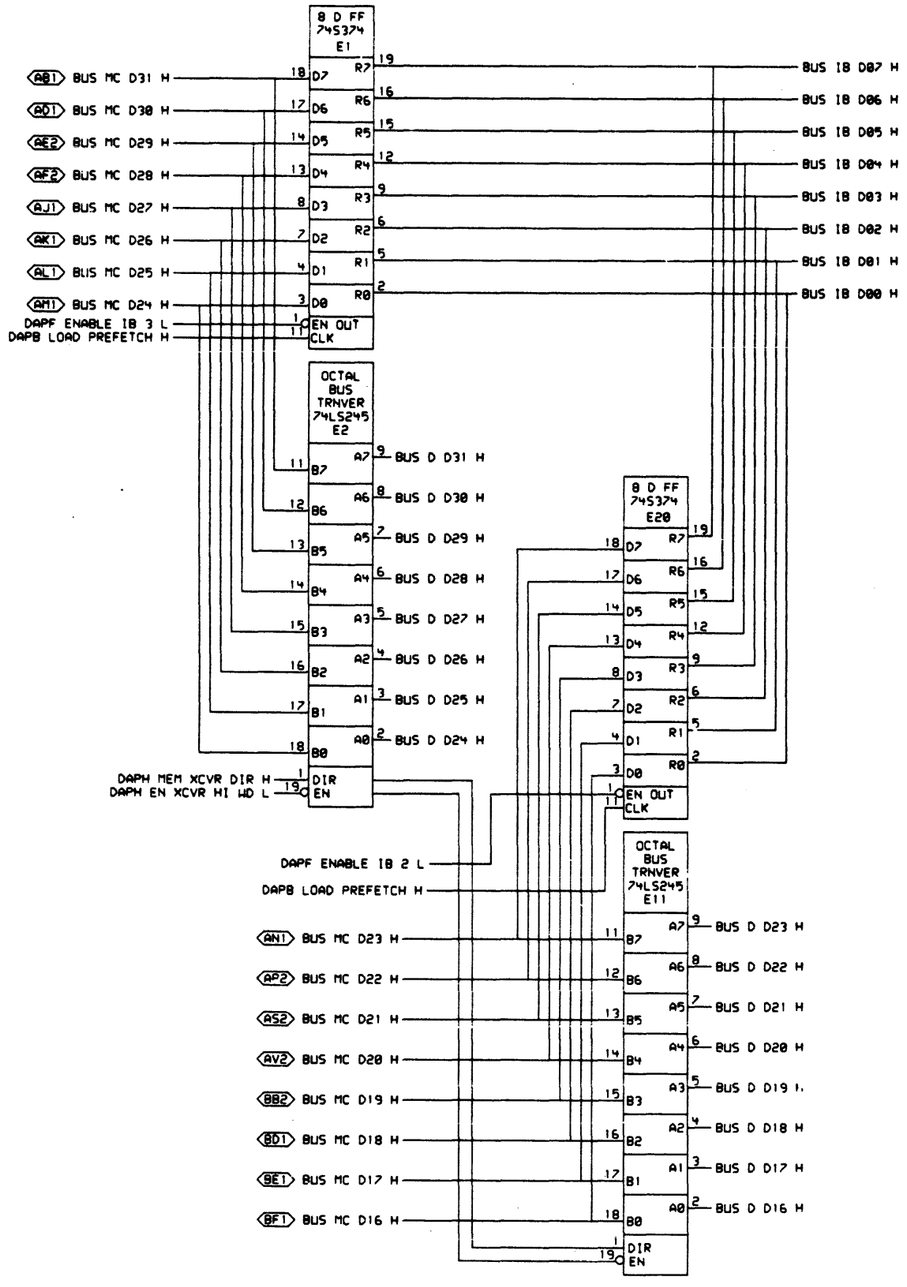
digital

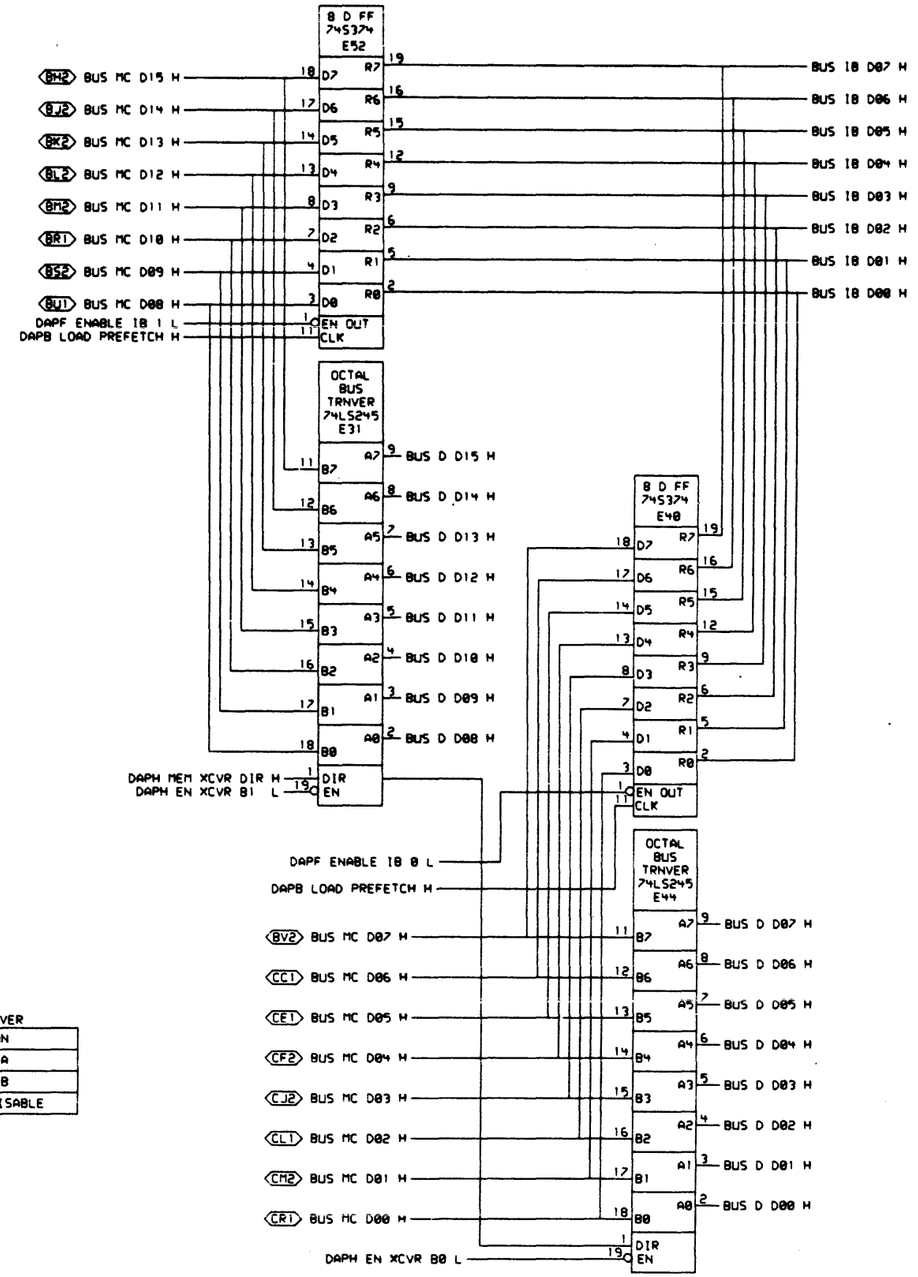
DRN: G.M. Hafner
CHK'D.
DATE: 27-OCT-81
ENG.
DATE
BOARD LOCATION:
SHEET 1 OF 1
[367,1500]DAPD.DRW 27-OCT-81 10:51
NEXT HIGHER ASSEMBLY:
FIRST USED ON OPTION/MODEL: 11/730

TITLE: NEBULA CPU & DATA PATH (DAPD)

| SIZE | CODE | NUMBER | REV. |
|---|---|---|---|
| D | CS | M8390-0-DAPD | B |

G.M. HAFNER [1106,1500]DAPD.DPL SCALE 2, "D" RELEASE BOX
G.M. HAFNER DAPD.PLO[1106,1500] 27-OCT-81 11:27




(BUS IB & BUS D DRIVERS)

74LS245
BI-DIRECTIONAL DRIVER

| EN | DIR | FUNCTION |
|---|---|---|
| L | L | B ---→ A |
| L | H | A ---→ B |
| H | X | TRI-STATE DISABLE |



| REVISIONS | | |
|---|---|---|
| CHK | CHANGE NO. | REV |

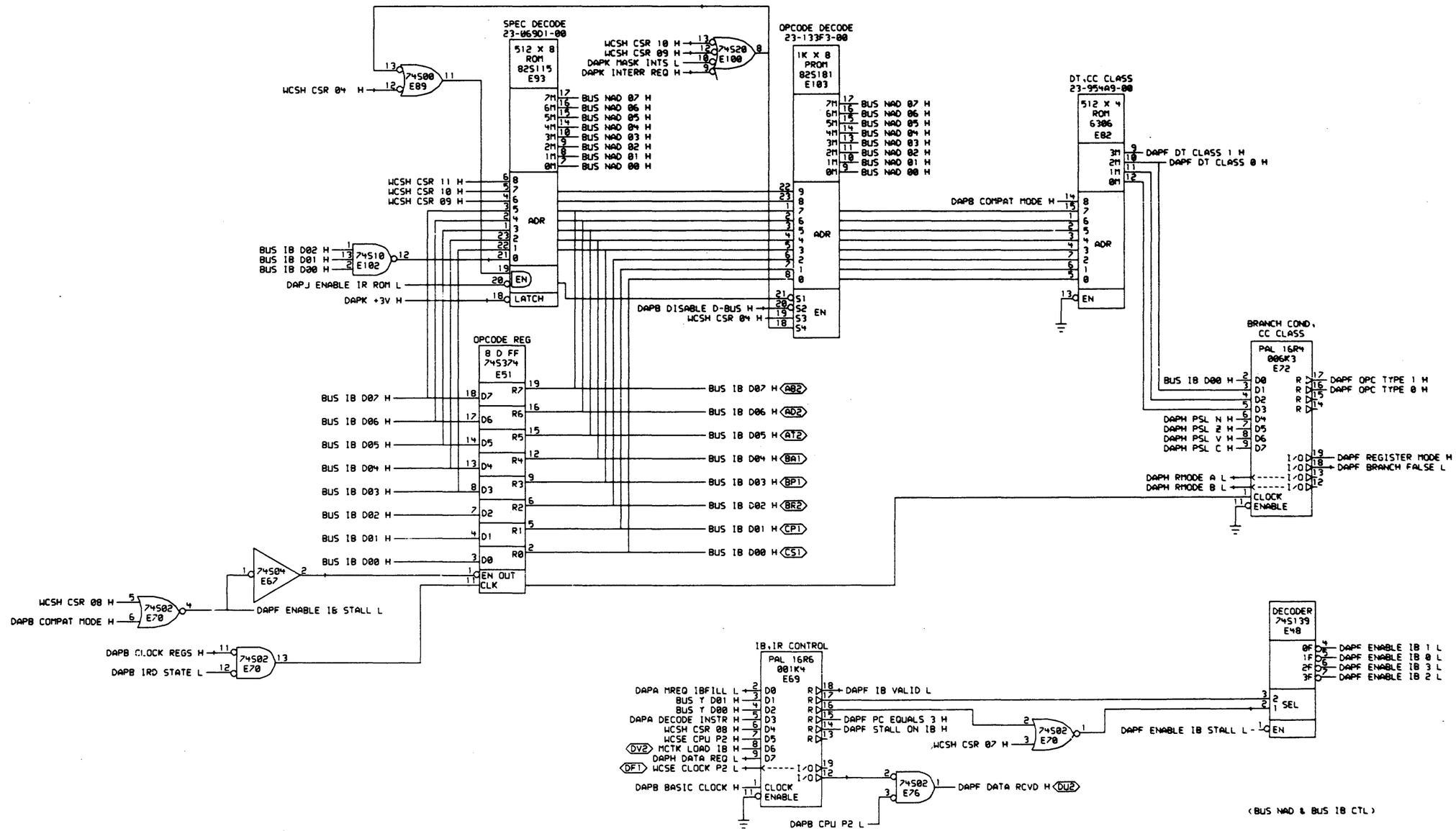
digital
(367,1500)DAPE.DRW 27-OCT-81 10:51
FIRST USED ON OPTION/MODEL: 11/730

DRN. D.M.Hafner 27-OCT-81
CHK'D.
ENG.
DATE
BOARD LOCATION:
SHEET 1 OF 1
NEXT HIGHER ASSEMBLY:

TITLE: NEBULA CPU & DATA PATH (DAPE)

| SIZE | CODE | NUMBER | REV. |
|---|---|---|---|
| D | CS | M8390-0-DAPE | B |

G.H. HAFNER, (1196,1500)DAPE.DPL, SCALE 2, "D" RELEASE BOX
G.H. HAFNER DAPE.PLO; 1196,1500] 27-OCT-81 11:27






| REVISIONS | | |
|---|---|---|
| CHK | CHANGE NO. | REV |

digital

DRN: J.M.Hafner 27-OCT-81 | ENG. | DATE
CHK'D. | DATE | BOARD LOCATION:
SHEET 1 OF 1
(367,1500)DAPF.DRW 27-OCT-81 10:51 | NEXT HIGHER ASSEMBLY:
FIRST USED ON OPTION/MODEL: 11/730

TITLE: NEBULA CPU & DATA PATH (DAPF)

| SIZE | CODE | NUMBER | REV. |
|---|---|---|---|
| D | CS | M8390-0-DAPF | B |

G.M. HAFNER, [1106,1500]DAPF.DPL, SCALE 2, "D" RELEASE BOX
G.M. HAFNER DAPF.PLO[1106,1500] 27-OCT-81 11:27

OS<7:1>(ODD)

PAL 16R4
011K3
E49

BUS IB D07 H
BUS IB D05 H
BUS IB D03 H
BUS IB D01 H
BUS Y D07 H
BUS Y D05 H
BUS Y D03 H
BUS Y D01 H
DAPH LOAD Y TO OS L
DAPB OS CTL 1 H
DAPB OS CTL 0 H
DAPB CLOCK REGS H

D0 D1 D2 D3 D4 D5 D6 D7
I/O I/O I/O
CLOCK ENABLE

DAPH OS 7 H
DAPH OS 5 H
DAPH OS 3 H
DAPH OS 1 H
DAPH RMODE A L

OS<6:0>(EVEN)

PAL 16R4
010K3
E60

BUS IB D06 H
BUS IB D04 H
BUS IB D02 H
BUS IB D00 H
BUS Y D06 H
BUS Y D04 H
BUS Y D02 H
BUS Y D00 H
DAPH LOAD Y TO OS L
DAPB OS CTL 1 H
DAPB OS CTL 0 H
DAPB CLOCK REGS H

D0 D1 D2 D3 D4 D5 D6 D7
I/O I/O I/O
CLOCK ENABLE

DAPH OS 6 H
DAPH OS 4 H
DAPH OS 2 H
DAPH OS 0 H
DAPH RMODE B L

CC CONTROL

PAL 16L8
019J5
E68

WCSH CSR 17 H
WCSH CSR 22 H
WCSH CSR 21 H
WCSH CSR 20 H
DAPB COMPAT MODE H
WCSH CSR 06 H
WCSH CSR 05 H
WCSH CSR 18 H
DAPB SIZE REG 1 H
WCSH CSR 19 H
DAPB SIZE REG 0 H

D0 D1 D2 D3 D4 D5 D6 D7 D8 D9
O O I/O I/O I/O I/O I/O I/O I/O

DAPH JUMP INSTR L
DAPH DATA TYPE 0 H (DT2)
DAPH ALU CC F1 H
DAPH ALU CC F0 H
DAPH COPY CC H
DAPH DATA TYPE 1 H (DS2)

DAPH DATA REQ L

74S02 E76

DAPH DATA REQ H (EF1)

DAPL EN MEM REF L
DAPB CS PAR ERR H

74S02 E76
74S04 E77

SIGN XTEND CTL

PAL 16L8
021J5
E43

WCSH CSR 22 H
WCSH CSR 21 H
WCSH CSR 18 H
WCSH CSR 17 H
DAPA SEL REGS L
WCSH CSR 16 H
DAPB MDT 1 H
DAPB MDT 0 H
(CL2) MCTM GATE DIR H
DAPB DISABLE D-BUS H

D0 D1 D2 D3 D4 D5 D6 D7 D8 D9
O O I/O I/O I/O I/O I/O I/O I/O

DAPH EN XCVR HI WD L
DAPH EN XCVR BI L
DAPH EN XCVR BO L
DAPH ENABLE LS HI L
DAPH MEM XCVR DIR H

RESISTOR NETWORK
1311003-2
E18

DAPD 2 BYTE H
DAPC 2 LONG H
+5.0V
390Ω
680Ω
DAPD 2 WORD H

2X4 MUX
74S153
E32

0-DA 1-DA 2-DA 3-DA EN
YA
YB
0-DB 1-DB 2-DB 3-DB EN
2 SEL 1

BUS MC D07 H
BUS MC D15 H
DAPH OS 7 H
DAPB MDT 0 H

ALU N,Z

PAL 16R4
013K3
E37

DAPC N LONG H
DAPD N WORD H
DAPD N BYTE H
BUS Y D03 H
DAPC 2 LONG H
DAPD 2 WORD H
DAPD 2 BYTE H
BUS Y D02 H
DAPD Q SHF LSB H
DAPH LOAD ALU CC L
DAPH ALU CC F0 H
DAPH ALU CC F1 H
DAPB CLOCK REGS H

D0 D1 D2 D3 D4 D5 D6 D7
R R R R
I/O I/O I/O I/O
CLOCK ENABLE

DAPH ALU N H
DAPH ALU Z H
DAPH MPLIER LSB H

ALU V,C

PAL 16R4
014K3
E39

DAPC V LONG H
DAPD V WORD H
DAPD V BYTE H
BUS Y D01 H
DAPC CARRY 32 H
DAPD CARRY 16 H
DAPD CARRY 8 H
BUS Y D00 H
DAPD CARRY 4 H
DAPH LOAD ALU CC L
DAPH ALU CC F0 H
DAPH ALU CC F1 H
DAPB CLOCK REGS H

D0 D1 D2 D3 D4 D5 D6 D7
R R R R
I/O I/O I/O
CLOCK ENABLE

DAPH ALU V H
DAPH ALU C H
DAPH HALF CARRY L
DAPH ALU C L

PSL CC

PAL 16R4
015K3
E50

DAPF OPC TYPE 1 H
DAPF OPC TYPE 0 H
DAPH COPY CC H
BUS Y D03 H
DAPH LOAD PSL CC L
BUS Y D00 H
BUS Y D01 H
BUS Y D02 H
DAPB CLOCK REGS H

D0 D1 D2 D3 D4 D5 D6 D7
R R R R
I/O I/O I/O
CLOCK ENABLE

DAPH PSL N H
DAPH PSL Z H
DAPH PSL V H
DAPH PSL C H

REG CONTROL

PAL 16L8
020J5
E54

WCSH CSR 22 H
WCSH CSR 21 H
WCSH CSR 18 H
WCSH CSR 17 H
WCSH CSR 16 H
DAPA SEL REGS-L
DAPB DISABLE D-BUS H
WCSH CSR 10 H
WCSH CSR 09 H
DAPA WRITE REGS L

D0 D1 D2 D3 D4 D5 D6 D7 D8 D9
O O I/O I/O I/O I/O I/O I/O I/O

DAPH READ REGS L
DAPH LOAD PSL L
DAPH EN STAT REG L
DAPH READ CONSOLE L
DAPH ENABLE LS LO L

8 BIT 3-STATE LATCH 745373 E3

D7 D6 D5 D4 D3 D2 D1 D0
R7 R6 R5 R4 R3 R2 R1 R0
HOLD OUT EN

BUS D D31 H
BUS D D30 H
BUS D D29 H
BUS D D28 H
BUS D D27 H
BUS D D26 H
BUS D D25 H
BUS D D24 H

8 BIT 3-STATE LATCH 745373 E12

BUS D D23 H
BUS D D22 H
BUS D D21 H
BUS D D20 H
BUS D D19 H
BUS D D18 H
BUS D D17 H
BUS D D16 H

8 BIT 3-STATE LATCH 745373 E21

BUS D D15 H
BUS D D14 H
BUS D D13 H
BUS D D12 H
BUS D D11 H
BUS D D10 H
BUS D D09 H
BUS D D08 H

DAPK +3V H

2X4 MUX 745253 E61

DAPH ALU C H
DAPH PSL C H
DAPH OS 0 H
DAPH ALU V H
DAPH PSL V H
DAPH OS 1 H

0-DA 1-DA 2-DA 3-DA EN
YA
YB
0-DB 1-DB 2-DB 3-DB EN
2 SEL 1

BUS D D00 H
BUS D D01 H

2X4 MUX 745253 E59

DAPH ALU Z H
DAPH PSL Z H
DAPH OS 2 H
DAPH ALU N H
DAPH PSL N H
DAPH OS 3 H

BUS D D02 H
BUS D D03 H

4X2 MUX 745257 E38

DAPH OS 4 H
DAPH ALU C L
DAPH OS 5 H
DAPH OS 6 H
DAPH OS 7 H

0-DA 1-DA
0-DB 1-DB
0-DC 1-DC
0-DD 1-DD
1 SEL
EN

YA
YB
YC
YD

BUS D D04 H
BUS D D05 H
BUS D D06 H
BUS D D07 H

DECODER 745139 E48

0F
1F
2F
3F

DAPH LOAD ALU CC L
DAPH LOAD PSL CC L
DAPH LOAD STAT L
DAPH LOAD Y TO OS L

2 SEL 1
EN

(OS MUX AND CC CONTROL)

| REVISIONS | | |
|---|---|---|
| CHK | CHANGE NO. | REV |

digital

DRN: D.M.Hafner
CHK'D.
DATE: 27-OCT-81
ENG.
DATE
DATE
BOARD LOCATION:
SHEET 1 OF 1
(362,1500)DAPH.DRW 27-OCT-81 10:51
NEXT HIGHER ASSEMBLY:
FIRST USED ON OPTION/MODEL: 11/730

TITLE: NEBULA CPU & DATA PATH (DAPH)

| SIZE | CODE | NUMBER | REV. |
|---|---|---|---|
| D | CS | M8390-0-DAPH | B |

G.M. MACHINE, 11-OCT-81 11:08:25 DAPH.DRW[1,1500] SCALE 2.0-REL2.5 BOOT

µSTACK POINTER
PAL 16R4 012K3 E112
WCSH CSR 03 H
DAPJ ENABLE SP L
D0 D1 D2 D3 D4 D5 D6 D7
R R R R
I/O I/O I/O I/O
CLOCK ENABLE

DAPB CLOCK REGS H
74S04 E67

16 X 4 RAM 85S68 E106
BUS µPC D12 H
BUS µPC D13 H
BUS µPC D14 H
DAPK +3V H
DAPJ ENABLE RTS L
0D 1D 2D 3D
0M 1M 2M 3M
STORE DISABLE
0 1 2 3 ADR
EN WR
BUS µPC D12 H
BUS µPC D13 H
BUS µPC D14 H
DAPJ PUSH µSTACK L

16 X 4 RAM 85S68 E107
BUS µPC D08 H
BUS µPC D09 H
BUS µPC D10 H
BUS µPC D11 H
BUS µPC D08 H
BUS µPC D09 H
BUS µPC D10 H
BUS µPC D11 H

16 X 4 RAM 85S68 E109
BUS µPC D04 H
BUS µPC D05 H
BUS µPC D06 H
BUS µPC D07 H
BUS µPC D04 H
BUS µPC D05 H
BUS µPC D06 H
BUS µPC D07 H

16 X 4 RAM 85S68 E108
BUS µPC D00 H
BUS µPC D01 H
BUS µPC D02 H
BUS µPC D03 H
BUS µPC D00 H
BUS µPC D01 H
BUS µPC D02 H
BUS µPC D03 H

74S10 E102
DAPJ INCR CIN H

MUX & INCR CTL
PAL 16L8 017J5 E92
DAPH ALU N H
WCSH CSR 04 H
WCSH CSR 03 H
WCSH CSR 02 H
DAPH ALU V H
WCSH CSR 01 H
WCSH CSR 00 H
DAPK STATE 0 H
DAPK CONSOLE ATTN L
DAPK STATE 1 H
DAPK CONSOLE ACK L
DAPH JUMP INSTR L
DAPB RBKUP FLAG H
DAPK PORT INT L

8 MUX 74S151 E81
DAPH ALU N H
DAPH ALU Z H
DAPH ALU V H
DAPH ALU C L
DAPH PSL C H
DAPF BRANCH FALSE L
DAPB GPR DEST L
DAPK INTERR REQ H
WCSH CSR 02 H
WCSH CSR 01 H
WCSH CSR 00 H
0D 1D 2D 3D 4D 5D 6D 7D
2 SEL
EN

µSEQ. CTL
PAL 16L8 018J5 E113
(FL1) WCSE MEM ERR H
DAPF IB VALID L
DAPH JUMP INSTR L
WCSH CSR 19 H
(DR1) FPAB ACC SYNC H
WCSH CSR 04 H
WCSH CSR 03 H
WCSH CSR 02 H
WCSH CSR 00 H
WCSH CSR 01 H
DAPJ ENABLE IR ROM L
DAPJ PUSH µSTACK L
DAPJ ENABLE JUMP L
DAPJ ENABLE SP L
DAPJ ENABLE JUMP LO L

74S00 E89
DAPH JUMP INSTR L
DAPJ ENABLE RTS L

74S04 E77
DAPJ EN µPC L

ADDER 74LS283 E115
C OUT
DAPJ LOW INCR COUT H
BUS µPC D03 H
BUS µPC D02 H
BUS µPC D01 H
BUS µPC D00 H
DAPJ INCR CIN H
8A 8B 4A 4B 2A 2B 1A 1B
C IN

4X2 MUX 74S158 E114
BUS NAD 03 H
BUS NAD 02 H
BUS NAD 01 H
BUS NAD 00 H
DAPJ ENABLE JUMP L
0-DA 1-DA 0-DB 1-DB 0-DC 1-DC 0-DD 1-DD
YA YB YC YD
DAPJ NAD 03 L (FS2)
DAPJ NAD 02 L (FT2)
DAPJ NAD 01 L (FU2)
DAPJ NAD 00 L (FV2)
1 SEL
EN

INCR.-HI
PAL 16L8 016J5 E111
BUS µPC D10 H
BUS µPC D09 H
BUS µPC D08 H
BUS µPC D07 H
BUS µPC D06 H
BUS µPC D05 H
BUS µPC D04 H
DAPJ ENABLE JUMP L
DAPJ LOW INCR COUT H
BUS NAD 04 H
BUS NAD 10 H
BUS NAD 09 H
BUS NAD 08 H
BUS NAD 07 H
BUS NAD 06 H
BUS NAD 05 H

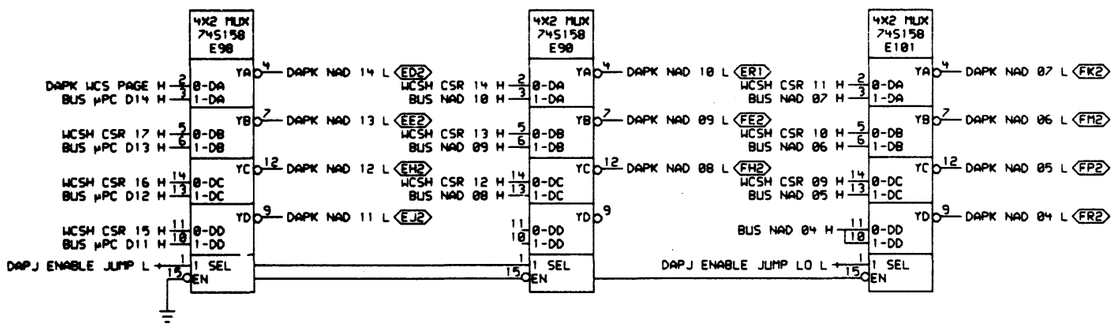
# MICRO PC STACK

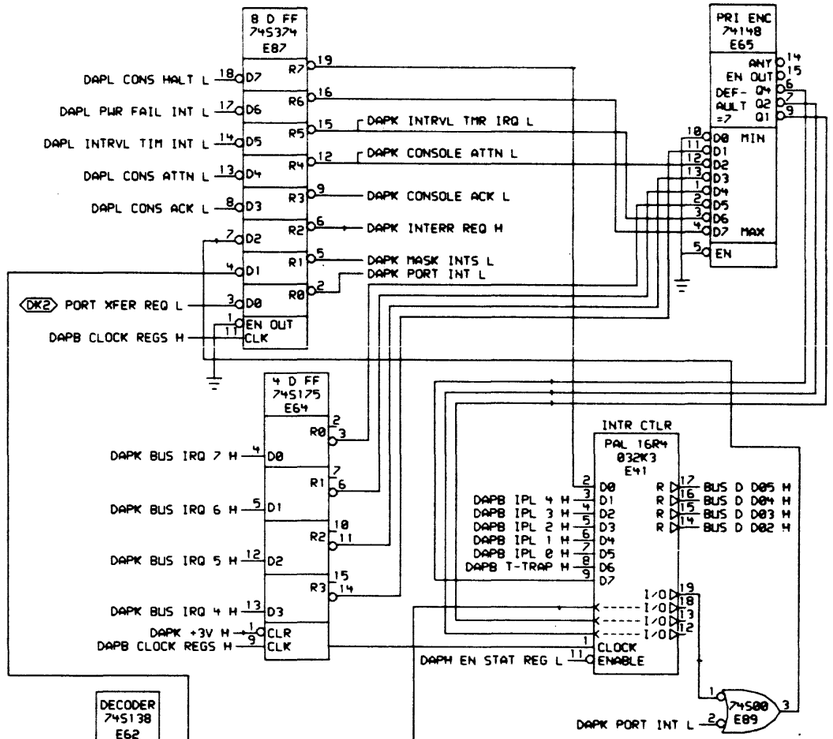


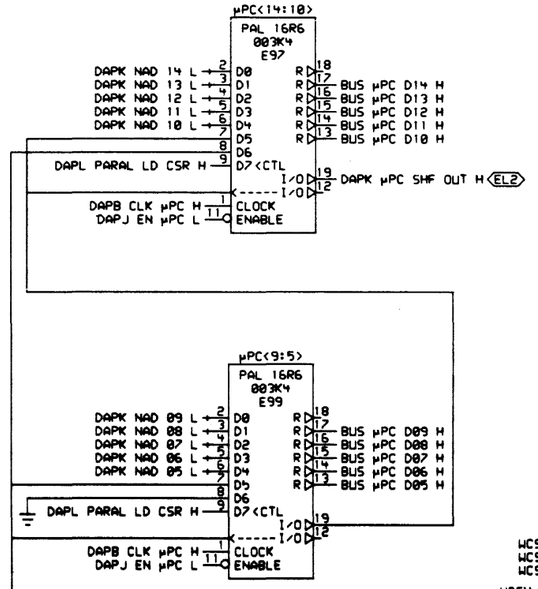
REVISIONS
CHK | CHANGE NO. | REV

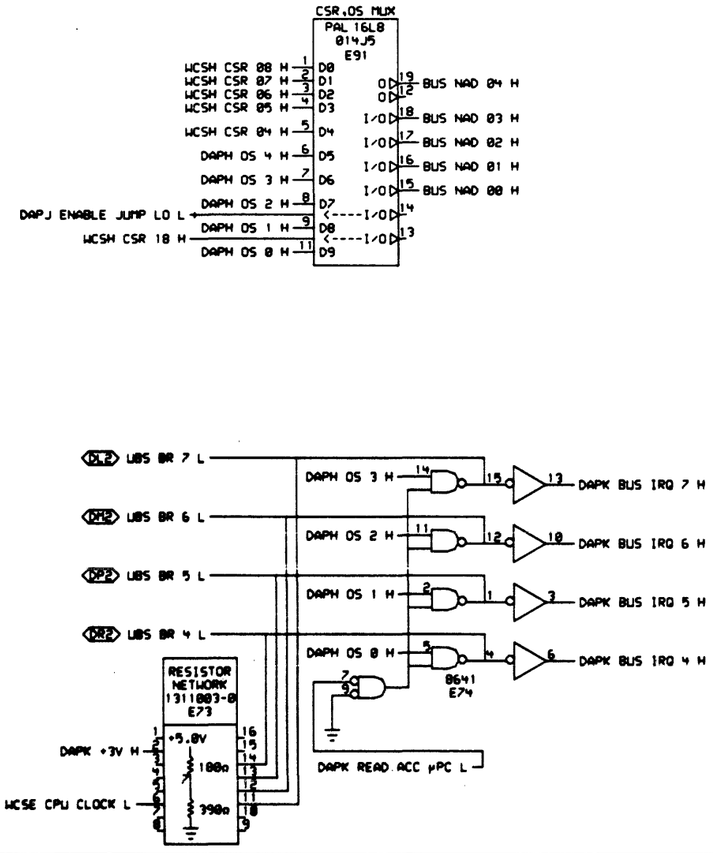
digital
DRN Z.M.Hoffman 27-OCT-81
CHK D.
ENG. DATE
BOARD LOCATION:
SHEET 1 OF 1
1367,1500 DAPJ.DRW 27-OCT-81 18:51
NEXT HIGHER ASSEMBLY:
FIRST USED ON OPTION/MODEL: 11/730

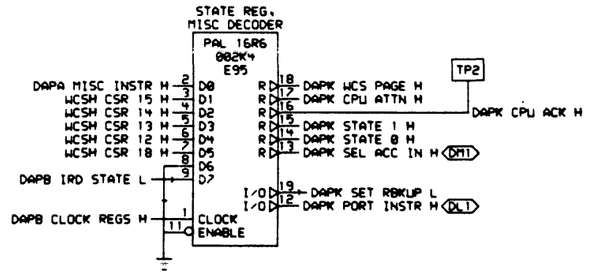
TITLE: NEBULA CPU & DATA PATH (DAPJ)
SIZE D | CODE CS | NUMBER M8390-0-DAPJ | REV. B




(MICROPC & INTERRUPT CTL)

| REVISIONS | | |
|---|---|---|
| CHK | CHANGE NO. | REV |

digital

DRN: D. M. Hoffman — DATE: 27-OCT-81 — ENG. — DATE
CHK'D. — DATE — BOARD LOCATION: — SHEET 1 OF 1
(367,1500)DAPK.DRW — 27-OCT-81 10:51 — NEXT HIGHER ASSEMBLY:
FIRST USED ON OPTION/MODEL: 11/730

TITLE: NEBULA CPU & DATA PATH (DAPK)

| SIZE | CODE | NUMBER | REV. |
|---|---|---|---|
| D | CS | M8390-0-DAPK | B |

REV. B
NUMBER M8390-0-DAPK
CODE CS
SIZE D
B
A

6.M. NUMBER [1186,1500]DAPK.PLT[186,1500] 27-OCT-81 10:21

8 D FF 74S374 E42
BUS Y D07 H
BUS Y D06 H
BUS Y D05 H
BUS Y D04 H
BUS Y D03 H
BUS Y D02 H
BUS Y D01 H
BUS Y D00 H
EN OUT CLK

8 D FF 74S374 E53
DAPL CONS REGS S1 H
DAPL CONS REGS S0 H
CT2 WCSA LATCH ADRS L

8 MUX 74LS251 E96
BUS CONS D0 H
DAPK CPU ACK H
DAPK CPU ATTN H
DAPK μPC SHF OUT H
WCSH CSR 07 H
WCSH CSR 15 H
WCSH CSR 23 H
2 SEL
EN

DAPK WRITE CRR L
DAPB CLOCK REGS H
74S51 E47

8 D FF 74S374 E55
CA1 BUS CONS D7 H
CD1 BUS CONS D6 H
CE2 BUS CONS D5 H
CH2 BUS CONS D4 H
CK1 BUS CONS D3 H
CL2 BUS CONS D2 H
CN1 BUS CONS D1 H
CR2 BUS CONS D0 H
DAPH READ CONSOLE L
BUS D D07 H
BUS D D06 H
BUS D D05 H
BUS D D04 H
BUS D D03 H
BUS D D02 H
BUS D D01 H
BUS D D00 H

8 BIT LATCH 74LS259 E86
0F DAPL HALT ON PE L
1F DAPL PARRAL LD CSR H FF2
2F DAPL INTRVL TIM INT L
3F DAPL EN MEM REF L
4F
5F DAPL CONS ATTN L
6F DAPL PWR FAIL INT L
7F DAPL CONS HALT L
TP3
DAPL CONS ACK L
2 SEL
DATA
EN
RESET
DAPK +3V H

DECODER 74S139 E63
0F
1F
2F
3F
DAPL CONS REGS S1 H
DAPL CONS REGS S0 H
2 SEL
CS2 WCSA SEL CPU REGS L
EN

(CONSOLE INTERFACE AND CONTROL)

| REVISIONS | | |
|---|---|---|
| CHK | CHANGE NO. | REV |



digital

| | | | |
|---|---|---|---|
| DRN | DATE 27-OCT-81 | ENG. | DATE |
| CHK D. | DATE | BOARD LOCATION: | |
| | | SHEET 1 OF 1 | |

C367,1500 DAPL.DRW 27-OCT-81 10:51 NEXT HIGHER ASSEMBLY:
FIRST USED ON OPTION/MODEL: 11/730

TITLE: NEBULA CPU & DATA PATH (DAPL)

| SIZE | CODE | NUMBER | REV. |
|---|---|---|---|
| D | CS | M8390-0-DAPL | B |

REV: B
SIZE D | CODE CS | NUMBER M8390-0-DAPL

G.H. HAFNER [1185,1500]DAPL.DPL; SCALE 2; -0- RELEASED BOM
G.H. HAFNER DAPL.PLO [1185,1500] 27-OCT-81 11:29

| 8 | 7 | 6 | 5 | 4 | 3 | 2 | 1 |
|---|---|---|---|---|---|---|---|

| REV. | NUMBER | CODE | SIZE |
|---|---|---|---|
| B | M8390-0-DAPM | CS | D |

+5.0V

C1 8µF 25V +
C2 8µF 25V +
C3 8µF 25V +
C4 8µF 25V +
C5 8µF 25V +
C6 8µF 25V +
C7 .047µF 50V
C8 .047µF 50V
C9 .047µF 50V
C10 .047µF 50V
C11 .047µF 50V
C12 .047µF 50V
C13 .047µF 50V
C14 .047µF 50V
C15 .047µF 50V
C16 .047µF 50V
C17 .047µF 50V
C18 .047µF 50V
C19 .047µF 50V
C20 .047µF 50V

AA2 AV1 BA2 BV1 CA2 CV1 DA2 DV1 EA2 EV1 FA2 FV1

AC2 AH1 AN2 AT1 BC2 BH1 BN2 BT1 CC2 CH1 CN2 CT1 DC2 DH1 DN2 DT1 EC2 EH1 EN2 ET1 FC2 FH1 FN2 FT1

+5.0V

C21 .047µF 50V
C22 .047µF 50V
C23 .047µF 50V
C24 .047µF 50V
C25 .047µF 50V
C26 .047µF 50V
C27 .047µF 50V
C28 .047µF 50V
C29 .047µF 50V
C30 .047µF 50V
C31 .047µF 50V
C32 .047µF 50V
C33 .047µF 50V
C34 .047µF 50V
C35 .047µF 50V
C36 .047µF 50V
C37 .047µF 50V
C38 .047µF 50V
C39 .047µF 50V
C40 .047µF 50V

TP4 TP5 TP6

| REVISIONS | | |
|---|---|---|
| CHK | CHANGE NO. | REV |

| | | | | |
|---|---|---|---|---|
| digital | DRN: D.M.Hofmann | DATE 27-OCT-81 | ENG. | DATE |
| | CHK'D. | DATE | BOARD LOCATION: | |
| | | | SHEET 1 OF 1 | |
| (367,1500)DAPM.DRW | 27-OCT-81 10:51 | NEXT HIGHER ASSEMBLY: | | |
| FIRST USED ON OPTION/MODEL: 11/730 | | B-DD-M8390-0 | | |

TITLE: NEBULA CPU & DATA PATH (DAPM)

| SIZE | CODE | NUMBER | REV. |
|---|---|---|---|
| D | CS | M8390-0-DAPM | B |

PART NUMBER: 23-012J5-00

DEVICE TYPE: PAL16L8 ;

SCHEMATIC SHEET #:D-CS-M8390-0-DAPA

LOCATION/DESCRIPTION: : E79/ LOCAL STORE CONTROL

ASSIGNED PIN NUMBER:

| | | |
|---|---|---|
| 1= CSR.22 | 8=/SEL.REGS | 15= MISC.INSTR |
| 2= CSR.21 | 9= CSR.18 | 16=/URT.REGS |
| 3= CSR.20 | 10= GND | 17= MDT.C0 |
| 4= CSR.19 | 11= CSR.17 | 18= MDT.C1 |
| 5= CSR.08 | 12=/URT.LS(7-0) | 19= DECODE.INSTR |
| 6= DT.1 | 13=/URT.LS(15-8) | 20= VCC |
| 7= DT.0 | 14=/URT.LS(31-16) | |

EQUATIONS:

```
IF(VCC) URT.LS(7--0):=/SEL.REGS*CSR.22*CSR.21
      +/SEL.REGS*/CSR.22*CSR.21*CSR.20*CSR.19
      +/CSR.22*/CSR.21*/CSR.20*/CSR.19*CSR.08
      +/SEL.REGS*/CSR.22*CSR.21*CSR.20*/CSR.19
        */CSR.18*/CSR.17

IF(VCC) URT.LS(15-8):=/SEL.REGS*CSR.22*CSR.21*DT.0
   +/SEL.REGS*/CSR.22*CSR.21*CSR.20*CSR.19*DT.0
   +/CSR.22*/CSR.21*/CSR.20*/CSR.19*CSR.08
   +/SEL.REGS*/CSR.22*CSR.21*CSR.20*/CSR.19
        */CSR.18*/CSR.17*DT.0

IF(VCC) URT.LS(31-16):=/SEL.REGS*CSR.22*CSR.21*DT.1
   +/SEL.REGS*/CSR.22*CSR.21*CSR.20*CSR.19*DT.1
   +/CSR.22*/CSR..21*/CSR.20*/CSR.19*CSR.08
   +/SEL.REGS*/CSR.22*CSR.21*CSR.20*/CSR.19
        */CSR.18*/CSR.17*DT.1

IF(VCC) /MISC.INSTR:=CSR.22
      +CSR.21
      +/CSR.20
      +CSR.19

IF(VCC) URT.REGS:=SEL.REGS*CSR.22*CSR.21
      +SEL.REGS*/CSR.22*CSR.21*CSR.20*CSR.19
      +SEL.REGS*/CSR.22*CSR.21*CSR.20*/CSR.19
        */CSR.18*/CSR.17

IF(VCC) /MDT.C0:=/CSR.22*/CSR.21*CSR.20*CSR.19*/DT.1*/DT.0
      +/CSR.22*/CSR*.21*CSR.20*CSR.19*DT.1

IF(VCC) /MDT.C1:=/CSR.22*/CSR.21*CSR.20*CSR.19*/DT.1

IF(VCC) /DECODE.INSTR:=CSR.22
      +CSR.21
      +CSR.20
```

PART NUMBER: 23-013J5-00

DEVICE TYPE: PAL16L8

SCHEMATIC SHEET #:D-CS-M8390-0-DAPA

LOCATION/DESCRIPTION: E95/ A,B ADDRESS GENERATOR

ASSIGNED PIN NUMBER:

| | | |
|---|---|---|
| 1= CSR.22 | 8= CSR.10 | 15= B.ADRS.0 |
| 2= CSR.21 | 9= CSR.09 | 16= B.ADRS.1 |
| 3= CSR.20 | 10= GND | 17= B.ADRS.2 |
| 4= CSR.19 | 11= CSR.08 | 18= A.ADRS.0 |
| 5= CSR.18 | 12=/MREQ.IBFILL | 19= A.ADRS.1 |
| 6= CSR.17 | 13= CSR.07 | 20= VCC |
| 7= CSR.16 | 14=/ENABLE.Y-BUS | |

EQUATIONS:

```
IF(VCC) MREQ.IBFILL:=/CSR.22*/CSR.21*CSR.20*CSR.19*/CSR.18*CSR.17
      *CSR.16*CSR.08*/CSR.07

. VCC) ENABLE.Y-BUS:=CSR.22
      +/CSR.21
      +/CSR.20
      +/CSR.19
      +CSR.18
      +/CSR.17

IF(VCC) /B.ADRS.0:=CSR.22*/CSR.07
      +CSR.21*/CSR.07
      +/CSR.20*/CSR.07
      +/CSR.19*/CSR.07
      +/CSR.22*/CSR.21*/CSR.20*/CSR.19

IF(VCC) /B.ADRS.1:=/CSR.09
      +/CSR.22*/CSR.21

IF(VCC) /B.ADRS.2:=CSR.22
      +CSR.21*/CSR.20
      +/CSR.22*CSR.21*CSR.20*CSR.19
      +/CSR.22*CSR.21*CSR.20*/CSR.18
      +/CSR.22*CSR.21*CSR.20*CSR.17
      +/CSR.20*/CSR.09
      +/CSR.22*/CSR.21*CSR.20*/CSR.19

IF(VCC) /A.ADRS.0:=/CSR.22*CSR.21*/CSR.20*/CSR.09
      +CSR.22*/CSR.07
      +/CSR.21*/CSR.07
      +CSR.20*/CSR.07

IF(VCC) /A.ADRS.1:=/CSR.22*CSR.21*/CSR.20*/CSR.10
      +CSR.22*/CSR.09
      +/CSR.21*/CSR.08
      +CSR.20*/CSR.08
```

PART NUMBER: 23-014J5-00

DEVICE TYPE: PAL16L8

SCHEMATIC SHEET #:D-CS-M8390-0-DAPK

LOCATION/DESCRIPTION: E91/ CSR , OS MUX

ASSIGNED PIN NUMBER:

| | | |
|---|---|---|
| 1= CSR.08 | 8= OS.2 | 15= NAD.00 |
| 2= CSR.07 | 9= OS.1 | 16= NAD.01 |
| 3= CSR.06 | 10= GND | 17= NAD.02 |
| 4= CSR.05 | 11= OS.0 | 18= NAD.03 |
| 5= CSR.04 | 12= NC | 19= NAD.04 |
| 6= OS.4 | 13= CSR.18 | 20= VCC |
| 7= OS.3 | 14=/ENABLE.JUMP.L0 | |

EQUATIONS:

```
IF(ENABLE.JUMP.L0) /NAD.00:=/CSR.04*/CSR.18
                        +/CSR.04*/OS.0

IF(ENABLE.JUMP.L0) /NAD.01:=/CSR.05*/CSR.18
                        +/CSR.05*/OS.1

IF(ENABLE.JUMP.L0) /NAD.02:=/CSR.06*/CSR.18
                        +/CSR.06*/OS.2

IF(ENABLE.JUMP.L0) /NAD.03:=/CSR.07*/CSR.18
                        +/CSR.07*/OS.3

IF(ENABLE.JUMP.L0) /NAD.04:=/CSR.08*/CSR.18
                        +/CSR.08*/OS.4
```

23-012J5-00
23-013J5-00
23-014J5-00



REVISIONS

| CHK | CHANGE NO. | REV |
|---|---|---|
| | | |

DRN: J.Hofmann DATE: 11-SEP-81
CHK'D. DATE
ENG. DATE
BOARD LOCATION: SHEET 01 OF 14
DSK:GLDP01.T2[367,1530]11-SEP-81 15:23
FIRST USED ON OPTION/MODEL: 11/730
NEXT HIGHER ASSEMBLY: B-DD-M8390-0-0

TITLE: DATA PATH ROM AND PAL LISTINGS

| SIZE | CODE | NUMBER | REV. |
|---|---|---|---|
| D | GL | M8390-0-0 | A |

PART NUMBER: 23-016J5-00

DEVICE TYPE: PAL16L8

SCHEMATIC SHEET 8:D-CS-M8390-0-0APJ

LOCATION/DESCRIPTION: E11/ MICRO ADDRESS <10:04> INCREMENTER

ASSIGNED PIN NUMBER:

| | | |
|---|---|---|
| 1= UPC.10 | 8=/ENABLE.JUMP | 15= NAD.07 |
| 2= UPC.09 | 9= CARRY.IN | 16= NAD.08 |
| 3= UPC.08 | 10= GND | 17= NAD.09 |
| 4= UPC.07 | 11= NC | 18= NAD.10.A |
| 5= UPC.06 | 12= NAD.04 | 19= NAD.10.B |
| 6= UPC.05 | 13= NAD.05 | 20= VCC |
| 7= UPC.04 | 14= NAD.06 | |

EQUATIONS:

```
IF(/ENABLE.JUMP) /NAD.04:=UPC.04*CARRY.IN
      +/UPC.04*/CARRY.IN

IF(/ENABLE.JUMP) /NAD.05:=UPC.05*UPC.04*CARRY.IN
      +/UPC.05*/UPC.04
      +/UPC.05*/CARRY.IN

IF(/ENABLE.JUMP) /NAD.06:=UPC.06*UPC.05*UPC.04*CARRY.IN
      +/UPC.06*/UPC.05
      +/UPC.05*/UPC.04
      +/UPC.06*/CARRY.IN

IF(/ENABLE.JUMP) /NAD.07:=UPC.07*UPC.06*UPC.05*UPC.04*CARRY.IN
      +/UPC.07*/UPC.06
      +/UPC.07*/UPC.05
      +/UPC.07*/UPC.04
      +/UPC.07*/CARRY.IN

IF(/ENABLE.JUMP) /NAD.08:=UPC.08*UPC.07*UPC.06*UPC.05*UPC.04
            *CARRY.IN
      +/UPC.08*/UPC.07
      +/UPC.08*/UPC.06
      +/UPC.08*/UPC.05
      +/UPC.08*/UPC.04
      +/UPC.08*/CARRY.IN

IF(/ENABLE.JUMP) /NAD.09:=/UPC.09*/CARRY.IN
      +/UPC.09*/UPC.08
      +/UPC.09*/UPC.07
      +/UPC.09*/UPC.06
      +/UPC.09*/UPC.05
      +/UPC.09*/UPC.04
      +UPC.09*UPC.08*UPC.07*UPC.06*UPC.05
         *UPC.04*CARRY.IN

IF(/ENABLE.JUMP*UPC.10) /NAD.10.B:=/CARRY.IN
      +/UPC.09
      +/UPC.08
      +/UPC.07
      +/UPC.06
      +/UPC.05
      +/UPC.04

IF(/ENABLE.JUMP*UPC.10) /NAD.10.B:=UPC.09*UPC.08*UPC.07*UPC.06
            *UPC.05*UPC.04*CARRY.IN
```

PART NUMBER: 23-018J5-00

DEVICE TYPE: PAL16L8

SCHEMATIC SHEET 8:D-CS-M8390-0-0APJ

LOCATION/DESCRIPTION: E11/ MICRO SEQUENCER CONTROL

ASSIGNED PIN NUMBER:

| | | |
|---|---|---|
| 1= ERR.SUM | 8= CSR.03 | 15=/ENABLE.SP |
| 2=/I8.VALID | 9= CSR.02 | 16=/ENABLE.JUMP |
| 3=/MUX.IN | 10= GND | 17=/ENABLE.UPC |
| 4=/JUMP.INSTR | 11= CSR.01 | 18=/PUSH.USTACK |
| 5= CSR.19 | 12=/ENABLE.IR.ROM | 19=/DR.OUT.2 |
| 6= SYNC | 13= CSR.00 | 20= VCC |
| 7= CSR.04 | 14=/ENABLE.JUMP.LO | |

EQUATIONS:

```
IF(VCC) ENABLE.IR.ROM:=JUMP.INSTR*/CSR.19*/CSR.03*/MUX.IN
      +JUMP.INSTR*/CSR.19*CSR.03*/CSR.02*MUX.IN
      +JUMP.INSTR*/CSR.19*CSR.02*/CSR.01*/CSR.00
      +JUMP.INSTR*/CSR.19*CSR.03*CSR.02*CSR.00*I8.VALID


IF(VCC) ENABLE.JUMP.LO:=JUMP.INSTR*CSR.19*/CSR.03*/MUX.IN
      +JUMP.INSTR*CSR.19*CSR.03*/CSR.02*MUX.IN
      +JUMP.INSTR*CSR.19*CSR.02*/CSR.01*/CSR.00
      +JUMP.INSTR*CSR.19*CSR.03*CSR.02*CSR.00*I8.VALID

IF(VCC) ENABLE.SP:=/JUMP.INSTR*CSR.04*/CSR.03*CSR.6:*/CSR.00
      +/JUMP.INSTR*CSR.04*/CSR.03*CSR.02*/CSR.00
      +/JUMP.INSTR*CSR.04*/CSR.03*/CSR.02*/ERR.SUM
      +JUMP.INSTR*CSR.03*CSR.02*/CSR.01*/CSR.00
      +JUMP.INSTR*CSR.03*CSR.02*/CSR.01*CSR.00*I8.VALID
      +/JUMP.INSTR*CSR.04*/CSR.03*/CSR.02*CSR.00*MUX.IN
      +/JUMP.INSTR*CSR.04*/CSR.03*CSR.02*CSR.01*CSR.00*SYNC

IF(VCC) ENABLE.JUMP:=JUMP.INSTR*/CSR.03*/MUX.IN
      +JUMP.INSTR*/CSR.03*/CSR.02*MUX.IN
      +JUMP.INSTR*/CSR.02*/CSR.01*/CSR.00
      +JUMP.INSTR*CSR.03*CSR.02*CSR.00*I8.VALID

IF(VCC) ENABLE.UPC:=/CSR.04
      +CSR.03
      +/CSR.02*/CSR.01*/CSR.00*ERR.SUM
      +CSR.02*MUX.IN
      +/CSR.02*CSR.01*/CSR.00
      +CSR.02*/CSR.01*CSR.00
      +CSR.02*CSR.01*CSR.00*SYNC

IF(VCC) PUSH.USTACK:=JUMP.INSTR*CSR.03*CSR.02*/CSR.01*/CSR.00
      +JUMP.INSTR*CSR.03*CSR.02*/CSR.01*CSR.00*I8.VALID

IF(VCC) DR.OUT.2:=/JUMP.INSTR*CSR.04*CSR.03*CSR.02*/CSR.01*CSR.00*/ERR.SUM
      +JUMP.INSTR*CSR.03*CSR.02*CSR.01*/CSR.00*I8.VALID
      +/JUMP.INSTR*CSR.04*CSR.02*CSR.01*CSR.00*SYNC
      +/JUMP.INSTR*/CSR.04*/CSR.03*/MUX.IN
      +/JUMP.INSTR*CSR.04*CSR.03*/CSR.02*MUX.IN
      +/JUMP.INSTR*CSR.04*CSR.02*CSR.01*/CSR.00
      +/JUMP.INSTR*CSR.04*/CSR.03*/CSR.02*/CSR.01*/CSR.00
```

PART NUMBER: 23-019J5-00

DEVICE TYPE: PAL16L8

SCHEMATIC SHEET 8:D-CS-M8390-0-0APH

LOCATION/DESCRIPTION: E8&/ CC CONTROL

ASSIGNED PIN NUMBER:

| | | |
|---|---|---|
| 1= CSR.17 | 8= CSR.19 | 15= COPY.CC |
| 2= CSR.22 | 9= SIZE.REG.1 | 16= ALU.CC.F0 |
| 3= CSR.21 | 10= GND | 17= ALU.CC.F1 |
| 4= CSR.20 | 11= SIZE.REG.0 | 18= DT.0 |
| 5= COMPAT.MODE | 12=/DATA.REQ | 19=/JUMP.INSTR |
| 6= CSR.06 | 13= CSR.19 | 20= VCC |
| 7= CSR.05 | 14= DT.1 | |

EQUATIONS:

```
IF(VCC) DATA.REQ:=/CSR.22*CSR.21*CSR.20*/CSR.19*/CSR.18
      +/CSR.22*CSR.21*CSR.20*/CSR.18*/CSR.17


IF(VCC) /DT.1:=CSR.22*CSR.06*/SIZE.REG.1
      +CSR.21*CSR.06*/SIZE.REG.1
      +/CSR.22*/CSR.21*CSR.20*/CSR.06
      +/CSR.22*/CSR.21*CSR.20*CSR.06*/CSR.05*/SIZE.REG.1
      +COMPAT.MODE

IF(VCC) /COPY.CC:=/CSR.22*/CSR.21
      +/CSR.06
      +/CSR.05

IF(VCC) /ALU.CC.F0:=CSR.22*/CSR.06*CSR.05
      +CSR.21*/CSR.06*CSR.05
      +CSR.22*CSR.06*/CSR.05*/DT.1*/DT.0
      +CSR.21*CSR.06*/CSR.05*/DT.1*/DT.0
      +CSR.22*CSR.06*/CSR.05*DT.1
      +CSR.21*CSR.06*/CSR.05*DT.1

IF(VCC) /ALU.CC.F1:=CSR.22*CSR.06*/CSR.05*/DT.1
      +CSR.21*CSR.06*/CSR.05*/DT.1

IF(VCC) /DT.0:=CSR.22*CSR.06*/SIZE.REG.1*/SIZE.REG.0
      +CSR.21*CSR.06*/SIZE.REG.1*/SIZE.REG.0
      +/CSR.22*/CSR.21*CSR.20*/CSR.06*/CSR.05
      +/CSR.22*/CSR.21*CSR.20*CSR.06*/CSR.05*/SIZE.REG.1
         */SIZE.REG.0

IF(VCC) JUMP.INSTR:=/CSR.22*/CSR.21*/CSR.20
```

23-016J5-00
23-018J5-00
23-019J5-00



| REVISIONS | | |
|---|---|---|
| CHK | CHANGE NO. | REV |

DRN: D.Mahoney 11-SEP-81 | ENG. | DATE
CHK'D. | DATE | 2080D LOCATION: SHEET 12 OF 14

OSKIGLDP02.T2P(362,1560)11-SEP-81 15:12:

FIRST USED ON OPTION/MODEL: 11/730

NEXT HIGHER ASSEMBLY: 8-DD-M8390-0-0

TITLE: DATA PATH ROM AND PAL LISTINGS

| SIZE | CODE | NUMBER | REV. |
|---|---|---|---|
| D | GL | M8390-0-0 | A |

PART NUMBER: 23-020J5-00

DEVICE TYPE: PAL16L8

SCHEMATIC SHEET 8:D-CS-M8390-0-0APN

LOCATION/DESCRIPTION: E59/ REGISTER CONTROL

ASSIGNED PIN NUMBER:

| | | |
|---|---|---|
| 1= CSR.22 | 8= CSR.10 | 15=/READ.CONSOLE |
| 2= CSR.21 | 9= CSR.09 | 16=/EN.STAT.REG |
| 3= CSR.18 | 10= GND | 17= S.0 |
| 4= CSR.17 | 11=/WRITE.REGS | 18= S.1 |
| 5= CSR.16 | 12=/LOAD.PSL | 19=/READ.REGS |
| 6=/SEL.REGS | 13= NC | 20= VCC |
| 7= DISABL.D-BUS | 14=/ENABLE.LS.LO | |

EQUATIONS:

```
IF(VCC] LOAD.PSL:=/CSR.22*CSR.21*CSR.16*WRITE.REGS
        +SEL.REGS*CSR.18*CSR.09

IF(VCC] ENABLE.LS.LO:=CSR.22*/SEL.REGS*/DISABL.D-BUS
       +/CSR.22*/CSR.21*/DISABL.D-BUS
       +/CSR.22*CSR.21*SEL.REGS*CSR.17*/DISABL.D-BUS

IF(VCC] READ.CONSOLE:=/CSR.22*CSR.21*CSR.16*SEL.REGS*/CSR.10
        */CSR.09*CSR.17*/DISABL.D-BUS

IF(VCC] EN.STAT.REG:=CSR.22*SEL.REGS*/DISABL.D-BUS*CSR.10*/CSR.09
       +/CSR.22*CSR.21*SEL.REGS*/DISABL.D-BUS*CSR.10
        */CSR.09*/CSR.16*CSR.17

IF(VCC] /S.0:=CSR.22*/CSR.10*CSR.09
       +CSR.22*CSR.12*/CSR.09
       +/CSR.22*CSR.21*CSR.17*/CSR.10*CSR.09
       +/CSR.22*CSR.21*CSR.17*CSR.10*/CSR.09
       +/CSR.22*CSR.21*/CSR.18*CSR.10*CSR.09
       +/CSR.22*CSR.21*/CSR.18*CSR.10*/CSR.09

IF(VCC] /S.1:=CSR.22*CSR.10*CSR.09
       +/CSR.22*CSR.21*CSR.17*CSR.10*CSR.09
       +/CSR.22*CSR.21*CSR.17*CSR.16
       +/CSR.22*CSR.21*/CSR.18*CSR.10*CSR.09
       +/CSR.22*CSR.21*/CSR.18*CSR.16

IF(VCC] READ.REGS:=/CSR.22*CSR.21*CSR.17*CSR.16*/DISABL.D-BUS
        *CSR.10*SEL.REGS
       +/CSR.22*CSR.21*CSR.18*/CSR.17*/DISABL.D-BUS
       +CSR.22*SEL.REGS*/DISABL.D-BUS*/CSR.10
       +CSR.22*SEL.REGS*/DISABL.D-BUS*CSR.09
       +/CSR.22*CSR.21*CSR.17*/CSR.16*/DISABL.D-BUS
        *CSR.10*SEL.REGS
       +/CSR.22*CSR.21*CSR.17*/CSR.16*/DISABL.D-BUS
        *CSR.09*SEL.REGS
```

PART NUMBER: 23-021J5-00

DEVICE TYPE: PAL16L8

SCHEMATIC SHEET 8:D-CS-M8390-0-0APN

LOCATION/DESCRIPTION: E43/ SIGN EXTEND CONTROL

ASSIGNED PIN NUMBER:

| | | |
|---|---|---|
| 1= CSR.22 | 8= MDT.0 | 15=/READ.IN.MEMORY |
| 2= CSR.21 | 9= GATE.DIR | 16=/EN.LS.HI |
| 3= CSR.18 | 10= GND | 17=/EN.XCVR.00 |
| 4= CSR.17 | 11= DISABL.D-BUS | 18=/EN.XCVR.01 |
| 5=/SEL.REGS | 12=/EN.SXT.01 | 19=/EN.XCVR.HI.WD |
| 6= CSR.16 | 13=/EN.SXT.HI.WD | 20= VCC |
| 7= MDT.1 | 14= NC | |

EQUATIONS:

```
IF(VCC] EN.SXT.01:=CSR.22*SEL.REGS*/DISABL.D-BUS
       +/CSR.22*CSR.21*CSR.18*CSR.17*SEL.REGS*/DISABL.D-BUS
       +/CSR.22*CSR.21*CSR.18*/CSR.17*/CSR.16*/DISABL.D-BUS
       +/CSR.22*CSR.21*/CSR.18*CSR.17*/MDT.0*/DISABL.D-BUS

IF(VCC] EN.SXT.HI.WD:=CSR.22*SEL.REGS*/DISABL.D-BUS
       +/CSR.22*CSR.21*CSR.18*CSR.17*SEL.REGS*/DISABL.D-BUS
       +/CSR.22*CSR.21*CSR.18*/CSR.17*/CSR.16*/DISABL.D-BUS
       +/CSR.22*CSR.21*/CSR.18*/CSR.17*/MDT.1*/DISABL.D-BUS

IF(VCC] READ.IN.MEMORY:=/GATE.DIR

IF(VCC] EN.LS.HI:=CSR.22*/SEL.REGS*/DISABL.D-BUS
       +/CSR.22*CSR.21*CSR.17*/SEL.REGS*/DISABL.D-BUS
       +/CSR.22*/CSR.21*/DISABL.D-BUS

IF(VCC] EN.XCVR.00:=/CSR.22*CSR.21*/CSR.18*/CSR.17*/DISABL.D-BUS
       +/CSR.22*CSR.21*/CSR.18*CSR.17*GATE.DIR*/DISABL.D-BUS
       +/CSR.22*/CSR.21*GATE.DIR*/DISABL.D-BUS

IF(VCC] EN.XCVR.01:=/CSR.22*CSR.21*/CSR.18*/CSR.17*/DISABL.D-BUS*MDT.0
       +/CSR.22*CSR.21*/CSR.18*CSR.17*GATE.DIR*/DISABL.D-BUS
       +/CSR.22*/CSR.21*GATE.DIR*/DISABL.D-BUS

IF(VCC] EN.XCVR.HI.WD:=/CSR.22*CSR.21*/CSR.18*/CSR.17
        */DISABL.D-BUS*MDT.1
       +/CSR.22*CSR.21*/CSR.18*CSR.17*GATE.DIR
        */DISABL.D-BUS
       +/CSR.22*/CSR.21*GATE.DIR*/DISABL.D-BUS
```

PART NUMBER: 23-041J5-00

DEVICE TYPE: PAL16L8

SCHEMATIC SHEET 8:D-CS-M8390-0-0APN

LOCATION/DESCRIPTION: E36/ SHIFT DATA

ASSIGNED PIN NUMBER:

| | | |
|---|---|---|
| 1= DEST.CTL.2 | 8= V.LONG | 15= Q.SHF.LSB |
| 2= DEST.CTL.1 | 9= T.30 | 16= RAM.SHF.LSB |
| 3= CARRY.32 | 10= GND | 17= Q.SHF.MSB |
| 4= CSR.13 | 11= T.09 | 18= RAM.SHF.MSB |
| 5= CSR.12 | 12= T.OR.TP | 19= NC |
| 6= CSR.11 | 13= NC | 20= VCC |
| 7= N.LONG | 14= NC | |

EQUATIONS:

```
IF(VCC] /T.OR.TP:=/T.30*/T.09

IF(DEST.CTL.2=DEST.CTL.1] /Q.SHF.LSB:=/CSR.13*/CSR.12*/CSR.11*/Q.SHF.MSB
              +/CSR.13*/CSR.12*CSR.11*/RAM.SHF.MSB
              +/CSR.13*CSR.12
              +CSR.13*/CSR.11

IF(DEST.CTL.2=DEST.CTL.1] /RAM.SHF.LSB:=/CSR.13*/CSR.12*/CSR.11
               */RAM.SHF.MSB
              +/CSR.13*CSR.11*/Q.SHF.MSB
              +/CSR.13*CSR.12*/CSR.11
              +CSR.13

IF(DEST.CTL.2=/DEST.CTL.1] /Q.SHF.MSB:=/CSR.13*/CSR.12*/CSR.11
               */Q.SHF.LSB
              +/CSR.13*CSR.11*/RAM.SHF.LSB
              +/CSR.13*CSR.12*/CSR.11
              +CSR.13*/CSR.12*/RAM.SHF.LSB
              +CSR.13*/CSR.11*/RAM.SHF.LSB

IF(DEST.CTL.2=/DEST.CTL.1] /RAM.SHF.MSB:=/CSR.13*/CSR.12*/CSR.11
               */RAM.SHF.LSB
              +/CSR.13*/CSR.12*CSR.11*/Q.SHF.LSB
              +/CSR.13*CSR.12*/N.LONG
              +CSR.13*/CSR.12*/CSR.11*/N.LONG*/V.LONG
              +CSR.13*/CSR.12*/CSR.11*N.LONG*V.LONG
              +CSR.13*/CSR.12*CSR.11*/CARRY.32
              +CSR.13*CSR.12
```

23-020J5-00
23-021J5-00
23-041J5-00



| REVISIONS | | |
|---|---|---|
| C-K | CHANGE NO. | REV |

DRN
CHK'D.
DATE ENG. 11-SEP-81
DATE BOARD LOCATION:
SHEET 01 OF 14
DSK:GLOP03.T2FC357,1500] 11-SEP-81 13:12
FIRST USED ON OPTION/MODEL: 11/730
NEXT HIGHER ASSEMBLY: 8-DD-M8390-0-0

TITLE: DATA PATH ROM AND PAL LISTINGS

| SIZE | CODE | NUMBER | REV. |
|---|---|---|---|
| D | GL | M8390-0-0 | A |

REV. A | NUMBER M8390-0-0 | CODE GL | SIZE D

PART NUMBER: 23-006K3-00

DEVICE TYPE: PAL16R4

SCHEMATIC SHEET 8:D-CS-M8390-0-DAPF

LOCATION/DESCRIPTION: E72/ BRANCH COND. ,CC

ASSIGNED PIN NUMBER:

| | | |
|---|---|---|
| 1= REGISTER.CLOCK | 8= PSL.V | 15= I8.0.SAVE |
| 2= I8.0 | 9= PSL.C | 16= OPC.TYPE.0 |
| 3= DT.CLASS.0 | 10= GND | 17= OPC.TYPE.1 |
| 4= CC.CLASS.1 | 11= REG.OUT.EN | 18= BR.FALSE |
| 5= CC.CLASS.0 | 12=/RMODE.B | 19= REGISTER.MODE |
| 6= PSL.N | 13=/RMODE.A | 20= VCC |
| 7= PSL.Z | 14=/PRETEST | |

EQUATIONS:

```
PRETEST:=/CC.CLASS.1*PSL.Z
      +/DT.CLASS.0*CC.CLASS.0*PSL.C
      +DT.CLASS.0*/CC.CLASS.0*PSL.N
      +/DT.CLASS.0*CC.CLASS.1*/CC.CLASS.0*PSL.V
      +DT.CLASS.0*CC.CLASS.0*PSL.N*/PSL.V
      +DT.CLASS.0*CC.CLASS.0*/PSL.N*PSL.V

/I8.0.SAVE:=/I8.0

/OPC.TYPE.0:=/CC.CLASS.0

/OPC.TYPE.1:=/CC.CLASS.1

IF(VCC) /BR.FALSE:=/I8.0.SAVE*PRETEST
     +I8.0.SAVE*/PRETEST

IF(VCC) /REGISTER.MODE:=/RMODE.A
```

PART NUMBER: 23-007K3-00

DEVICE TYPE: PAL16R4

SCHEMATIC SHEET 8:D-CS-M8390-0-DAP8

LOCATION/DESCRIPTION: E71/ I-STREAM DATA PROCESSING,R-DEST.

ASSIGNED PIN NUMBER:

| | | |
|---|---|---|
| 1= REGISTER.CLK | 8= CSR.04 | 15= RBKUP.FLAG |
| 2= Y.31 | 9= CSR.03 | 16=/GPR.DEST |
| 3=/LD.PSL | 10= GND | 17= COMPAT.MODE |
| 4= R.MODE | 11= REG.OUT.EN | 18= OS.CTL.0 |
| 5= DECODE.INSTR | 12=/SET.RBKUP | 19= OS.CTL.1 |
| 6= CSR.05 | 13=/IRD.STATE | 20= VCC |
| 7= CSR.06 | 14=/CM.IRD | |

EQUATIONS:

```
IF(VCC) /OS.CTL.1:=DECODE.INSTR*CSR.06*/COMPAT.MODE
          +DECODE.INSTR*CSR.06*/CSR.05
          +CM.IRD*/DECODE.INSTR

IF(VCC) /OS.CTL.0:=DECODE.INSTR*CSR.06

/COMPAT.MODE:=LD.PSL*/Y.31
          +/LD.PSL*/COMPAT.MODE

GPR.DEST:=DECODE.INSTR*CSR.05*R.MODE
          +DECODE.INSTR*GPR.DEST
          +CSR.05*GPR.DEST

/RBKUP.FLAG:=IRD.STATE
          +/SET.RBKUP*/RBKUP.FLAG

CM.IRD:=DECODE.INSTR*CSR.03*CSR.04*COMPAT.MODE

IF(VCC) IRD.STATE:=DECODE.INSTR*CSR.03*CSR.04
```

PART NUMBER: 23-008K3-00

DEVICE TYPE: PAL16R4

SCHEMATIC SHEET 8:D-CS-M8390-0-DAP8

LOCATION/DESCRIPTION: E53/ DATA TYPE CONTROL

ASSIGNED PIN NUMBER:

| | | |
|---|---|---|
| 1= CLK.REGS | 8= MDT.CTL.1 | 15= D.01 |
| 2= DT.CLASS.1 | 9= MDT.CTL.0 | 16= D.06 |
| 3= DT.CLASS.0 | 10= GND | 17= D.07 |
| 4=/IRD.STATE , | 11= EN.STAT.REG | 18= MDT.0 |
| 5= Y.01 | 12= SIZE.REG.0 | 19= MDT.1 |
| 6= Y.00 | 13= SIZE.REG.1 | 20= VCC |
| 7=/LOAD.STAT | 14= D.00 | |

EQUATIONS:

```
IF(VCC) /SIZE.REG.0:=/D.00

IF(VCC) /SIZE.REG.1:=/D.01

/D.00:=IRD.STATE*/DT.CLASS.0
          +LOAD.STAT*/Y.00
          +/IRD.STATE*/LOAD.STAT*/D.00

/D.01:=IRD.STATE*/DT.CLASS.1
          +LOAD.STAT*/Y.01
          +/IRD.STATE*/LOAD.STAT*/D.01

/D.06:=/MDT.CTL.1*/MDT.CTL.0
          +MDT.CTL.1*MDT.CTL.0*/D.06

/D.07:=/MDT.CTL.1
          +MDT.CTL.1*MDT.CTL.0*/D.07

IF(VCC) /MDT.0:=/D.06

IF(VCC) /MDT.1:=/D.07
```

23-006K3-00
23-007K3-00
23-008K3-00

| REVISIONS | | |
|---|---|---|
| CHK | CHANGE NO. | REV |

digital

DRN: D.M.Hobson 11-SEP-81 | DATE | ENG. | DATE
CHK'D. | DATE | BOARD LOCATION: SHEET 14 OF 14
OSKI:GLDP04.*;2P(367,1508) 11-SEP-81 15:12 | NEXT HIGHER ASSEMBLY: 9-DD-M8390-0-0
FIRST USED ON OPTION/MODEL: 11/730

TITLE: DATA PATH ROM AND PAL LISTINGS

| SIZE | CODE | NUMBER | REV. |
|---|---|---|---|
| D | GL | M8390-0-0 | A |

PART NUMBER: 23-010K3-00

DEVICE TYPE: PAL16R4

SCHEMATIC SHEET 8:D-CS-M8390-0-0APH

LOCATION/DESCRIPTION: E68/ OS EVEN NUMBERED BITS

ASSIGNED PIN NUMBER:

| | | |
|---|---|---|
| 1= CLK.REGS | 8= Y.2 | 15= OS.2 |
| 2= IB.6 | 9= Y.0 | 16= OS.4 |
| 3= IB.4 | 10= GND | 17= OS.6 |
| 4= IB.2 | 11= REG.OUT.EN | 18=/RMODE.0 |
| 5= IB.0 | 12= OS.CTL.0 | 19=/LOAD.Y.TO.OS |
| 6= Y.6 | 13= OS.CTL.1 | 20= VCC |
| 7= Y.4 | 14= OS.0 | |

EQUATIONS:

```
IF(VCC) RMODE.0:=OS.CTL.1*/IB.4
      +/OS.CTL.1*IB.6*IB.4

/OS.6:=/OS.CTL.1*/OS.CTL.0*/IB.6
      +/OS.CTL.1*OS.CTL.0*/OS.4
      +OS.CTL.1*/OS.CTL.0*/IB.6
      +OS.CTL.1*OS.CTL.0*/LOAD.Y.TO.OS*/OS.6
      +LOAD.Y.TO.OS*/Y.6

/OS.4:=/OS.CTL.1*/OS.CTL.0*/IB.4
      +/OS.CTL.1*OS.CTL.0*/OS.2
      +OS.CTL.1*/OS.CTL.0*/IB.4
      +OS.CTL.1*OS.CTL.0*/LOAD.Y.TO.OS*/OS.4
      +LOAD.Y.TO.OS*/Y.4

/OS.2:=/OS.CTL.1*/OS.CTL.0*/IB.2
      +/OS.CTL.1*OS.CTL.0*/OS.0
      +OS.CTL.1*/OS.CTL.0*/IB.2
      +OS.CTL.1*OS.CTL.0*/LOAD.Y.TO.OS*/OS.2
      +LOAD.Y.TO.OS*/Y.2

/OS.0:=/OS.CTL.1*/OS.CTL.0*/IB.0
      +/OS.CTL.1*OS.CTL.0*/IB.6
      +OS.CTL.1*/OS.CTL.0*/IB.0
      +OS.CTL.1*OS.CTL.0*/LOAD.Y.TO.OS*/OS.0
      +LOAD.Y.TO.OS*/Y.0
```

PART NUMBER: 23-011K3-00

DEVICE TYPE: PAL16R4

SCHEMATIC SHEET 8:D-CS-M8390-0-0APH

LOCATION/DESCRIPTION: E49/ OS ODD NUMBERED BITS

ASSIGNED PIN NUMBER:

| | | |
|---|---|---|
| 1= CLK.REGS | 8= Y.03 | 15= OS.3 |
| 2= IB.7 | 9= Y.01 | 16= OS.5 |
| 3= IB.5 | 10= GND | 17= OS.7 |
| 4= IB.3 | 11= REG.OUT.EN | 18=/RMODE.A |
| 5= IB.1 | 12= OS.CTL.0 | 19=/LOAD.Y.TO.OS |
| 6= Y.07 | 13= OS.CTL.1 | 20= VCC |
| 7= Y.05 | 14= OS.1 | |

EQUATIONS:

```
IF(VCC) RMODE.A:=OS.CTL.1*/IB.5*/IB.3
      +/OS.CTL.1*/IB.7*/IB.5

/OS.7:=/OS.CTL.1*/OS.CTL.0*/IB.7
      +/OS.CTL.1*OS.CTL.0*/OS.5
      +OS.CTL.1*/OS.CTL.0*/IB.7
      +OS.CTL.1*OS.CTL.0*/LOAD.Y.TO.OS*/OS.7
      +LOAD.Y.TO.OS*/Y.07

/OS.5:=/OS.CTL.1*/OS.CTL.0*/IB.5
      +/OS.CTL.1*OS.CTL.0*/OS.3
      +OS.CTL.1*/OS.CTL.0*/IB.5
      +OS.CTL.1*OS.CTL.0*/LOAD.Y.TO.OS*/OS.5
      +LOAD.Y.TO.OS*/Y.05

/OS.3:=/OS.CTL.1*/IB.3
      +/OS.CTL.1*OS.CTL.0
      +OS.CTL.1*/OS.CTL.0
      +OS.CTL.1*/LOAD.Y.TO.OS*/OS.3
      +LOAD.Y.TO.OS*/Y.03

/OS.1:=/OS.CTL.1*/OS.CTL.0*/IB.1
      +/OS.CTL.1*OS.CTL.0*/IB.7
      +OS.CTL.1*/OS.CTL.0*/IB.1
      +OS.CTL.1*OS.CTL.0*/LOAD.Y.TO.OS*/OS.1
      +LOAD.Y.TO.OS*/Y.01
```

PART NUMBER: 23-012K3-00

DEVICE TYPE: PAL16R4

SCHEMATIC SHEET 8:D-CS-M8390-0-0APJ

LOCATION/DESCRIPTION: E112/ U STACK POINTER CONTROL

ASSIGNED PIN NUMBER:

| | | |
|---|---|---|
| 1= CLK.REGS | 8= NC | 15=/SP.1 |
| 2= CSR.3 | 9= PRESET | 16=/SP.2 |
| 3=/ENABLE.SP | 10= GND | 17=/SP.3 |
| 4= NC | 11= REG.OUT.EN | 18=/ADRS.2 |
| 5= NC | 12=/ADRS.0 | 19=/ADRS.3 |
| 6= NC | 13=/ADRS.1 | 20= VCC |
| 7= NC | 14=/SP.0 | |

EQUATIONS:

```
IF(VCC) ADRS.0:=CSR.3*/SP.1*/SP.0
      +SP.1*/SP.0
      +/CSR.3*SP.1*/SP.0

IF(VCC) ADRS.1:=/CSR.3*/SP.1*/SP.0
      +CSR.3*SP.1*/SP.0
      +SP.1*/SP.0

SP.0:=ENABLE.SP*CSR.3*/SP.1*/SP.0*/PRESET
      +ENABLE.SP*/CSR.3*SP.1*/SP.0*/PRESET
      +/ENABLE.SP*SP.0*/PRESET
      +CSR.3*/SP.1*SP.0*/PRESET
      +/CSR.3*SP.1*SP.0*/PRESET

SP.1:=ENABLE.SP*/CSR.3*/SP.1*/SP.0*/PRESET
      +ENABLE.SP*CSR.3*/SP.1*SP.0*/PRESET
      +/ENABLE.SP*SP.1*/PRESET
      +CSR.3*SP.1*SP.0*/PRESET
      +/CSR.3*SP.1*/SP.0*/PRESET

SP.2:=ENABLE.SP*CSR.3*/SP.3*SP.1*/SP.0*/PRESET
      +ENABLE.SP*/CSR.3*SP.3*SP.1*/SP.0*/PRESET
      +SP.2*SP.0*/PRESET
      +SP.3*SP.2*/SP.1*/PRESET
      +/SP.3*SP.2*SP.1*/PRESET
      +/ENABLE.SP*SP.2*/PRESET
      +CSR.3*/SP.3*SP.2*/PRESET
      +/CSR.3*SP.3*SP.2*/PRESET

SP.3:=ENABLE.SP*/CSR.3*/SP.2*/SP.1*/SP.0*/PRESET
      +ENABLE.SP*CSR.3*SP.2*SP.1*/SP.0*/PRESET
      +SP.3*SP.0*/PRESET
      +SP.3*/SP.2*/SP.1*/PRESET
      +SP.3*SP.2*/SP.1*/PRESET
      +/ENABLE.SP*SP.3*/PRESET
      +CSR.3*SP.3*SP.2*/PRESET
      +/CSR.3*SP.3*SP.2*/PRESET

IF(VCC) ADRS.2:=/CSR.3*SP.3*/SP.1*/SP.0
      +CSR.3*SP.2
      +SP.3*SP.2
      +SP.2*SP.0
      +SP.2*SP.1

IF(VCC) ADRS.3:=/CSR.3*/SP.2*/SP.1*/SP.0
      +CSR.3*SP.3
      +SP.3*/SP.2
      +SP.3*SP.0
      +SP.3*SP.1
```

23-010K3-00
23-011K3-00
23-012K3-00

PART NUMBER: 23-013K3-00

DEVICE TYPE: PAL16R4

SCHEMATIC SHEET 8:D-CS-M8390-0-0APH

LOCATION/DESCRIPTION: E37/ ALU N,Z

ASSIGNED PIN NUMBER:

| | | |
|---|---|---|
| 1= CLK.REGS | 8= Z.BYTE | 15= MPLIER.LSB |
| 2= N.LONG | 9= Y.02 | 16= ALU.Z |
| 3= N.WORD | 10= GND | 17= ALU.N |
| 4= N.BYTE | 11= REG.OUT.EN | 18=/LOAD.Y-BUS |
| 5= Y.03 | 12= ALU.CC.F1 | 19= Q.SHF.LSB |
| 6= Z.LONG | 13= ALU.CC.F0 | 20= VCC |
| 7= Z.WORD | 14= NC | |

EQUATIONS:

```
/MPLIER.LSB:=/Q.SHF.LSB

/ALU.Z:=/ALU.CC.F1*/LOAD.Y-BUS*/Z.BYTE
       +/ALU.CC.F1*ALU.CC.F0*/LOAD.Y-BUS*/Z.WORD
       +ALU.CC.F1*/ALU.CC.F0*/LOAD.Y-BUS*/Z.LONG
       +/ALU.CC.F0*/LOAD.Y-BUS*/Z.BYTE
       +ALU.CC.F1*/ALU.CC.F0*/LOAD.Y-BUS*/Z.WORD
       +ALU.CC.F1*ALU.CC.F0*/LOAD.Y-BUS*/ALU.Z
       +LOAD.Y-BUS*/Y.02

/ALU.N:=/ALU.CC.F1*/ALU.CC.F0*/LOAD.Y-BUS*/N.BYTE
       +/ALU.CC.F1*ALU.CC.F0*/LOAD.Y-BUS*/N.WORD
       +ALU.CC.F1*/ALU.CC.F0*/LOAD.Y-BUS*/N.LONG
       +ALU.CC.F1*ALU.CC.F0*/LOAD.Y-BUS*/ALU.N
       +LOAD.Y-BUS*/Y.03
```

PART NUMBER: 23-014K3-00

DEVICE TYPE: PAL16R4

SCHEMATIC SHEET 8:D-CS-M8390-0-0APH

LOCATION/DESCRIPTION: E39/ ALU V,C

ASSIGNED PIN NUMBER:

| | | |
|---|---|---|
| 1= REGISTER.CLOCK | 8= C.8 | 15=/HALF.CARRY |
| 2= V.LONG | 9= Y.00 | 16= ALU.C |
| 3= V.WORD | 10= GND | 17= ALU.V |
| 4= V.BYTE | 11= REG.OUT.EN | 18=/LOAD.Y-BUS |
| 5= Y.?1 | 12= ALU.CC.F1 | 19= C.4 |
| 6= C.32 | 13= ALU.CC.F0 | 20= VCC |
| 7= C.16 | 14= NOT.ALU.C | |

EQUATIONS:

```
/NOT.ALU.C:=/ALU.CC.F1*/ALU.CC.F0*/LOAD.Y-BUS*C.8
           +/ALU.CC.F1*ALU.CC.F0*/LOAD.Y-BUS*C.16
           +ALU.CC.F1*/ALU.CC.F0*/LOAD.Y-BUS*C.32
           +ALU.CC.F1*ALU.CC.F0*/LOAD.Y-BUS*ALU.C
           +LOAD.Y-BUS*Y.00

HALF.CARRY:=C.4

/ALU.C:=/ALU.CC.F1*/ALU.CC.F0*/LOAD.Y-BUS*C.8
       +/ALU.CC.F1*ALU.CC.F0*/LOAD.Y-BUS*C.16
       +ALU.CC.F1*/ALU.CC.F0*/LOAD.Y-BUS*C.32
       +ALU.CC.F1*ALU.CC.F0*/LOAD.Y-BUS*ALU.C
       +LOAD.Y-BUS*Y.00

/ALU.V:=/ALU.CC.F1*/ALU.CC.F0*/LOAD.Y-BUS*/V.BYTE
       +/ALU.CC.F1*ALU.CC.F0*/LOAD.Y-BUS*/V.WORD
       +ALU.CC.F1*/ALU.CC.F0*/LOAD.Y-BUS*/V.LONG
       +ALU.CC.F1*ALU.CC.F0*/LOAD.Y-BUS*/ALU.V
       +LOAD.Y-BUS*/Y.01
```

PART NUMBER: 23-015K3-00

DEVICE TYPE: PAL16R4

SCHEMATIC SHEET 8:D-CS-M8390-0-0APH

LOCATION/DESCRIPTION: E58/ PSL CC

ASSIGNED PIN NUMBER:

| | | |
|---|---|---|
| 1= CLK.REGS | 8= COPY.CC | 15= PSL.V |
| 2= ALU.N | 9= Y.03 | 16= PSL.Z |
| 3= ALU.Z | 10= GND | 17= PSL.N |
| 4= ALU.V | 11= REG.OUT.EN | 18= Y.00 |
| 5= ALU.C | 12= Y.02 | 19=/LOAD.PSL.CC |
| 6= OPC.TYPE.1 | 13= Y.01 | 20= VCC |
| 7= OPC.TYPE.0 | 14= PSL.C | |

EQUATIONS:

```
/PSL.C:=LOAD.PSL.CC*/Y.00
       +/LOAD.PSL.CC*/COPY.CC*/PSL.C
       +/LOAD.PSL.CC*COPY.CC*/OPC.TYPE.1*/OPC.TYPE.0*/ALU.C
       +/LOAD.PSL.CC*COPY.CC*/OPC.TYPE.1*OPC.TYPE.0*ALU.C
       +/LOAD.PSL.CC*COPY.CC*OPC.TYPE.1*/OPC.TYPE.0*ALU.C
       +/LOAD.PSL.CC*COPY.CC*OPC.TYPE.1*OPC.TYPE.0*/PSL.C

/PSL.V:=LOAD.PSL.CC*/Y.01
       +/LOAD.PSL.CC*/COPY.CC*/PSL.V
       +/LOAD.PSL.CC*COPY.CC*/ALU.V
       +/LOAD.PSL.CC*COPY.CC*OPC.TYPE.1

/PSL.Z:=LOAD.PSL.CC*/Y.02
       +/LOAD.PSL.CC*/COPY.CC*/PSL.Z
       +/LOAD.PSL.CC*COPY.CC*/ALU.Z

/PSL.N:=LOAD.PSL.CC*/Y.03
       +/LOAD.PSL.CC*/COPY.CC*/PSL.N
       +/LOAD.PSL.CC*COPY.CC*/ALU.N*/ALU.V
       +/LOAD.PSL.CC*COPY.CC*/OPC.TYPE.1*/ALU.N
       +/LOAD.PSL.CC*COPY.CC*OPC.TYPE.0*/ALU.N
```

23-013K3-00
23-014K3-00
23-015K3-00



| REVISIONS | | |
|---|---|---|
| CHK | CHANGE NO. | REV |
| | | |

DRN: D. Mitchell | DATE: 11-SEP-81 | ENG. | DATE
CHK'D. | DATE | SCALED LOCATIONS | SHEET OF 14
DSK:GLDP05.TPC[357,1500] 11-SEP-81 15:13 NEXT HIGHER ASSEMBLY: 9-DD-M8390-0-0
FIRST USED ON OPTION/MODEL: 11/730

TITLE: DATA PATH ROM AND PSL LISTINGS

| SIZE | CODE | NUMBER | REV. |
|---|---|---|---|
| D | GL | M8390-0-0 | A |

REV. A | M8390-0-0 | CODE GL | SIZE D

PART NUMBER: 23-032K3-00

DEVICE TYPE: PAL16R4

SCHEMATIC SHEET #:D-CS-M8390-0-DAPK

LOCATION/DESCRIPTION: E41/ INTERRUPT CONTROLLER

ASSIGNED PIN NUMBER:

| | | |
|---|---|---|
| 1= REGISTER.CLOCK | 8= T.TRAP | 15=/VECT.1 |
| 2=/HALT | 9=/IRQ.2 | 16=/VECT.2 |
| 3= IPL.4 | 10= GND | 17=/VECT.3 |
| 4= IPL.3 | 11= REQ.OUT.EN | 18=/MASK |
| 5= IPL.2 | 12=/IRQ.1 | 19=/IRQ.OUT |
| 6= IPL.1 | 13=/IRQ.0 | 20= VCC |
| 7= IPL.0 | 14=/VECT.0 | |

EQUATIONS:

```
VECT.0:=IRQ.0*/IPL.4
      +IRQ.2*IRQ.1*IRQ.0*/IPL.3
      +IRQ.2*IRQ.1*IRQ.0*/IPL.2
      +IRQ.2*IRQ.1*IRQ.0*/IPL.1
      +IRQ.0*/IPL.3*/IPL.2
      +IRQ.2*IRQ.0*/IPL.3*IPL.2*/IPL.1
      +IRQ.2*IRQ.0*/IPL.3*IPL.2*/IPL.0
      +IRQ.1*IRQ.0*/IPL.3*IPL.2*/IPL.1*/IPL.0

VECT.1:=IRQ.1*/IPL.4
      +IRQ.2*IRQ.1*/IPL.3
      +IRQ.2*IRQ.1*IRQ.0*/IPL.2
      +IRQ.2*IRQ.1*IRQ.0*/IPL.1
      +IRQ.1*/IPL.3*/IPL.2
      +IRQ.1*IRQ.0*/IPL.3*IPL.2*/IPL.1*/IPL.0

VECT.2:=IRQ.2*/IPL.4
      +IRQ.2*IRQ.1*/IPL.3
      +IRQ.2*IRQ.1*IRQ.0*/IPL.2
      +IRQ.2*IRQ.1*IRQ.0*/IPL.1
      +IRQ.2*/IPL.3*/IPL.2
      +IRQ.2*/IPL.3*IPL.2*/IPL.1
      +IRQ.2*IRQ.0*/IPL.3*IPL.2*/IPL.0

VECT.3:=HALT


IF(VCC) IRQ.OUT:=VECT.3*/MASK
      +VECT.2
      +VECT.1
      +VECT.0
      +T.TRAP*/MASK
```

PART NUMBER: 23-015J5-00

DEVICE TYPE: PAL16L8

SCHEMATIC SHEET #:D-CS-M8390-0-DAPA

LOCATION/DESCRIPTION: E25/ FUNCTION CONTROL SIGNAL GENERATION

ASSIGNED PIN NUMBER:

| | | |
|---|---|---|
| 1= CSR.22 | 8= CSR.15 | 15= DEST.CTL.2 |
| 2= CSR.21 | 9= CSR.14 | 16= SRC.CTL.1B |
| 3= CSR.20 | 10= GROUND | 17= SRC.CTL.1A |
| 4= CSR.19 | 11= MPLIER.LSB | 18= DEST.CTL.1B |
| 5= CSR.18 | 12= ALU.CARRY.IN | 19= DEST.CTL.1A |
| 6= CSR.17 | 13= SRC.CTL.0 | 20= VCC |
| 7= CSR.16 | 14= SRC.CTL.2 | |

EQUATIONS:

```
IF(/CSR.22) /DEST.CTL.1A:= /CSR.21*/CSR.20*CSR.18
      +/CSR.20*CSR.19*/CSR.18
      +CSR.21*CSR.20*/CSR.19*/CSR.18*CSR.17
      +CSR.21*/CSR.19*/CSR.18*/CSR.17
      +CSR.21*CSR.20*CSR.19
      +CSR.21*/CSR.22*/CSR.19*CSR.17*/CSR.15
      +CSR.21*/CSR.20*CSR.18*/CSR.17*CSR.16
        *CSR.15*CSR.14

IF(CSR.22) /DEST.CTL.1B:= CSR.21*/CSR.20*/CSR.19*CSR.18*/CSR.17*CSR.16
      +/CSR.20*CSR.19
      +CSR.21*CSR.20
      +CSR.20*/CSR.19
      +CSR.20*/CSR.18

IF(/CSR.22) /SRC.CTL.1A:= /CSR.21*CSR.20*/CSR.19
      +CSR.21*CSR.19*CSR.18
      +CSR.21*/CSR.20*/CSR.16*CSR.15
      +CSR.21*/CSR.20*/CSR.18*/CSR.17*/CSR.15
      +CSR.21*/CSR.20*CSR.19*CSR.18*CSR.17
        */CSR.16*/CSR.15*MPLIER.LSB
      +CSR.21*/CSR.20*CSR.19

IF(CSR.22) /SRC.CTL.1B:= /CSR.21*/CSR.20

      +/CSR.20*/CSR.18
      +/CSR.20*CSR.19
      +/CSR.21*CSR.20*CSR.19*/CSR.17*CSR.16
      +CSR.21*CSR.20*CSR.19*/CSR.18*CSR.17
      +CSR.21*/CSR.20*/CSR.19*CSR.18*CSR.17*CSR.16

IF(VCC) /DEST.CTL.2:= CSR.22
      +/CSR.21
      +CSR.20
      +CSR.19
      +CSR.18
      +/CSR.17

IF(VCC) /SRC.CTL.2:= /CSR.22*CSR.21*/CSR.19*CSR.18*/CSR.17
      +/CSR.22*CSR.21*/CSR.20*CSR.19
      +/CSR.22*CSR.21*/CSR.20*/CSR.17*CSR.16*CSR.15
      +/CSR.22*CSR.21*/CSR.20*CSR.17
      +CSR.22*CSR.21*/CSR.19*CSR.18*CSR.17
      +CSR.22*CSR.21*CSR.20*CSR.19*/CSR.18

IF(VCC) /SRC.CTL.0:= /CSR.22*/CSR.21*CSR.20*/CSR.19
      +/CSR.22*CSR.21*CSR.20*CSR.19*CSR.18*CSR.17
      +/CSR.22*CSR.21*/CSR.20*/CSR.17
      +CSR.22*CSR.21*/CSR.19*CSR.18*CSR.17
      +CSR.22*CSR.20*/CSR.19
      +CSR.22*CSR.20*CSR.19*/CSR.18*CSR.17
      +CSR.22*/CSR.21*CSR.20*CSR.19*CSR.18*/CSR.17*/CSR.16

IF(VCC) /ALU.CARRY.IN:= /CSR.22*CSR.21*CSR.20
      +/CSR.22*CSR.21*/CSR.20*/CSR.15*/CSR.14
      +/CSR.22*CSR.21*/CSR.20*/CSR.19*/CSR.18*CSR.17
        */CSR.16*CSR.15*CSR.14
      +CSR.22*/CSR.17*/CSR.16
      +CSR.22*CSR.21*CSR.20*CSR.19*/CSR.18*CSR.17*/CSR.16
      +CSR.22*CSR.21*/CSR.20*/CSR.19*CSR.18*CSR.17*CSR.16
```

PART NUMBER: 23-017J5-00

DEVICE TYPE: PAL16L8

SCHEMATIC SHEET #:D-CS-M8390-0-DAPJ

LOCATION/DESCRIPTION: E92/ MUX INCREMENT CONTROL

ASSIGNED PIN NUMBER:

| | | |
|---|---|---|
| 1= ALU.N | 8=/CONS.ACK | 15= STATE.1 |
| 2= CSR.04 | 9=/JUMP.INSTR | 16= STATE.0 |
| 3= CSR.03 | 10= GND | 17= NC |
| 4= CSR.02 | 11=/PORT.IRQ | 18= ALU.V |
| 5= CSR.01 | 12=/DR.OUT.1 | 19=/DR.OUT.0 |
| 6= CSR.00 | 13= RBKUP.FLAG | 20= VCC |
| 7=/CONS.ATTN | 14= NC | |

EQUATIONS:

```
IF(VCC) DR.OUT.0:=/JUMP.INSTR*/CSR.04*CSR.03*CSR.02*/CSR.01
      */CSR.00*STATE.0
    +/JUMP.INSTR*/CSR.04*CSR.03*CSR.02*/CSR.01
      */CSR.00*STATE.1
    +/JUMP.INSTR*/CSR.04*CSR.03*CSR.02*CSR.01
      */CSR.00*/STATE.0
    +/JUMP.INSTR*/CSR.04*CSR.03*CSR.02*CSR.01
      *CSR.00*/STATE.1
    +/JUMP.INSTR*CSR.04*CSR.03*/CSR.02*/CSR.01
      */CSR.00*/CONS.ATTN
    +/JUMP.INSTR*CSR.04*CSR.03*/CSR.02*/CSR.01
      *CSR.00*CONS.ACK
    +/JUMP.INSTR*CSR.04*CSR.03*/CSR.02*CSR.01
      */CSR.00*/PORT.IRQ

IF(VCC) DR.OUT.1:=/JUMP.INSTR*CSR.04*CSR.03*/CSR.02*CSR.01
      *CSR.00*RBKUP.FLAG
    +/JUMP.INSTR*CSR.04*CSR.03*CSR.02*/CSR.01
      */CSR.00*ALU.N*/ALU.V
    +/JUMP.INSTR*CSR.04*CSR.03*CSR.02*/CSR.01
      */CSR.00*/ALU.N*ALU.V
```

23-032K3-00
23-015J5-00
23-017J5-00



| REVISIONS | | |
|---|---|---|
| CHK | CHANGE NO. | REV |
| | | |

| | | | |
|---|---|---|---|
| DRN | DATE 23-SEP-81 | ENG. | DATE |
| CHK "D." | DATE | BOARD LOCATION: SHEET 12 OF 12 | |

TITLE: DATA PATH ROM AND PAL LISTINGS

D:K:GLDP07.T2PC 367,1223 23-SEP-81 16:27 | NEXT HIGHER ASSEMBLY: FIRST USED ON OPTION-MODEL: 11/730 | B-DD-M8390-0-0

| SIZE | CODE | NUMBER | REV. |
|---|---|---|---|
| D | GL | M8390-0-0 | A |

PART NUMBER: 23-001K4-00

DEVICE TYPE: PAL16R6

SCHEMATIC SHEET 8:D-CS-M8390-0-0APP

LOCATION/DESCRIPTION: E49/ IR CONTROL

ASSIGNED PIN NUMBER:

| | | |
|---|---|---|
| 1= REGISTER.CLOCK | 8= LOAD.IB | 15= PC.EQUALS.3 |
| 2=/MREQ.IBFILL | 9=/DATA.REQUEST | 16= PC.0 |
| 3= Y.01 | 10= GND | 17= PC.1 |
| 4= Y.00 | 11= REG.OUT.EN.L | 18=/IB.VALID |
| 5= DECODE.INSTR | 12=/DATA.RECEIVED | 19=/CLOCK.P2 |
| 6= CSR.00 | 13=/IB.LOADED | 20= VCC |
| 7= CPU.P2 | 14= STALL.ON.IB | |

EQUATIONS:

```
IB.LOADED:= LOAD.IB
     +/IB.VALID*IB.LOADED

IB.VALID:= LOAD.IB*CLOCK.P2
     +IB.LOADED*CLOCK.P2
     +CPU.P2*/MREQ.IBFILL*/DECODE.INSTR*IB.VALID
     +CPU.P2*/MREQ.IBFILL*/CSR.00*IB.VALID
     +CPU.P2*/MREQ.IBFILL*/PC.EQUALS.3*IB.VALID
     +/CPU.P2*IB.VALID

/PC.1:=MREQ.IBFILL*/Y.01*CPU.P2
     +DECODE.INSTR*CSR.02*/Y.01*CPU.P2
     +/MREQ.IBFILL*/DECODE.INSTR*/PC.1*CPU.P2
     +/MREQ.IBFILL*/CSR.02*/PC.1*CPU.P2
     +/PC.1*/CPU.P2

/PC.0:=MREQ.IBFILL*/Y.00*CPU.P2
     +DECODE.INSTR*CSR.02*/Y.00*CPU.P2
     +/MREQ.IBFILL*/DECODE.INSTR*/PC.0*CPU.P2
     +/MREQ.IBFILL*/CSR.00*/PC.0*CPU.P2
     +/PC.0*/CPU.P2

/PC.EQUALS.3:=MREQ.IBFILL*/Y.01*CPU.P2
     +MREQ.IBFILL*/Y.00*CPU.P2
     +DECODE.INSTR*CSR.02*/Y.01*CPU.P2
     +DECODE.INSTR*CSR.02*/Y.00*CPU.P2
     +/MREQ.IBFILL*/DECODE.INSTR*/PC.EQUALS.3*CPU.P2
     +/MREQ.IBFILL*/CSR.00*/PC.EQUALS.3*CPU.P2
     +/PC.EQUALS.3*/CPU.P2

/STALL.ON.IB:=IB.VALID
     +MREQ.IBFILL*DECODE.INSTR*CPU.P2

IF(VCC) DATA.RECEIVED:=MREQ.IBFILL
     +DECODE.INSTR*CSR.00*PC.EQUALS.3
     +DATA.REQUEST
```

PART NUMBER: 23-002K4-00

DEVICE TYPE: PAL16R6

SCHEMATIC SHEET 8:D-CS-M8390-0-0APX

LOCATION/DESCRIPTION: E95/ MISC CONTROL

ASSIGNED PIN NUMBER:

| | | |
|---|---|---|
| 1= REGISTER.CLOCK | 8= RESET | 15= STATE.1 |
| 2= MISC.INSTR | 9=/IRD.STATE | 16= CPU.ACK |
| 3= CSR.15 | 10= GND | 17= CPU.ATTN |
| 4= CSR.14 | 11= REG.OUT.EN | 18= UCS.PAGE |
| 5= CSR.13 | 12= PORT.INSTR | 19=/SET.RBKUP |
| 6= CSR.12 | 13= SEL.ACC | 20= VCC |
| 7= CSR.18 | 14= STATE.0 | |

EQUATIONS:

```
IF(VCC) SET.RBKUP:=MISC.INSTR*/CSR.18*/CSR.15*CSR.14*CSR.13
     *CSR.12

/UCS.PAGE:=MISC.INSTR*/CSR.18*CSR.15*/CSR.14*/CSR.13*/CSR.12
     +/MISC.INSTR*/UCS.PAGE
     +CSR.18*/UCS.PAGE
     +/CSR.15*/UCS.PAGE
     +CSR.14*/UCS.PAGE
     +/CSR.13*/UCS.PAGE
     +/CSR.12*/UCS.PAGE
     +RESET

/CPU.ATTN:=MISC.INSTR*/CSR.18*CSR.15*/CSR.14*/CSR.13*/CSR.12
     +/MISC.INSTR*/CPU.ATTN
     +CSR.18*/CPU.ATTN
     +/CSR.15*/CPU.ATTN
     +/CSR.14*/CPU.ATTN
     +/CSR.13*/CPU.ATTN
     +CSR.12*/CPU.ATTN
     +RESET

/CPU.ACK:=MISC.INSTR*/CSR.18*CSR.15*CSR.14*/CSR.13*/CSR.12
     +/MISC.INSTR*/CPU.ACK
     +CSR.18*/CPU.ACK
     +/CSR.15*/CPU.ACK
     +/CSR.14*/CPU.ACK
     +CSR.13*/CPU.ACK
     +/CSR.12*/CPU.ACK
     +RESET

/STATE.1:=IRD.STATE
     +MISC.INSTR*/CSR.18*/CSR.15*/CSR.13*/CSR.12
     +MISC.INSTR*/CSR.18*/CSR.15*/CSR.14*/CSR.13
     +/MISC.INSTR*/STATE.1
     +CSR.18*/STATE.1
     +CSR.15*/STATE.1
     +/CSR.13*/STATE.1
     +CSR.12*/STATE.1

/STATE.0:=IRD.STATE
     +MISC.INSTR*/CSR.18*/CSR.15*/CSR.14*CSR.13
     +MISC.INSTR*/CSR.18*/CSR.15*/CSR.14*/CSR.12
     +/MISC.INSTR*/STATE.0
     +CSR.18*/STATE.0
     +CSR.15*/STATE.0
     +CSR.13*/STATE.0
     +/CSR.12*/STATE.0

/SEL.ACC:=MISC.INSTR*/CSR.18*CSR.15*CSR.14*/CSR.13*CSR.12
     +/MISC.INSTR*/SEL.ACC
     +CSR.18*/SEL.ACC
     +/CSR.15*/SEL.ACC
     +CSR.14*/SEL.ACC
     +CSR.13*/SEL.ACC
     +CSR.12*/SEL.ACC
     +RESET

IF(VCC) /PORT.INSTR:=/MISC.INSTR
     +/CSR.13
```

PART NUMBER: 23-003K4-00

DEVICE TYPE: PAL16R6

SCHEMATIC SHEET 8:D-CS-M8390-0-0APK

LOCATION/DESCRIPTION: E97, E99, E118/ MICRO-PC-FIVE BIT SLICE

ASSIGNED PIN NUMBER:

| | | |
|---|---|---|
| 1= CLK.UPC | 8=/P2 | 15= UPC.2 |
| 2=/D.4 | 9= PARAL.LD.CSR | 16= UPC.3 |
| 3=/D.3 | 10= GND | 17= UPC.4 |
| 4=/D.2 | 11= EN.UPC.L | 18= NC |
| 5=/D.1 | 12= SI | 19= PROP.L\SO |
| 6=/D.0 | 13= UPC.0 | 20= VCC |
| 7=/P1 | 14= UPC.1 | |

EQUATIONS:

```
/UPC.0:=/PARAL.LD.CSR*/SI
          +PARAL.LD.CSR*P1*P2*D.0
          +PARAL.LD.CSR*/P1*/D.0
          +PARAL.LD.CSR*/P2*/D.0

/UPC.1:=/PARAL.LD.CSR*/UPC.0
          +PARAL.LD.CSR*P1*P2*D.0*D.1
          +PARAL.LD.CSR*/P1*/D.1
          +PARAL.LD.CSR*/P2*/D.1
          +PARAL.LD.CSR*/D.0*/D.1

/UPC.2:=/PARAL.LD.CSR*/UPC.1
          +PARAL.LD.CSR*P1*P2*D.0*D.1*D.2
          +PARAL.LD.CSR*/P1*/D.2
          +PARAL.LD.CSR*/P2*/D.2
          +PARAL.LD.CSR*/D.0*/D.2
          +PARAL.LD.CSR*/D.1*/D.2

/UPC.3:=/PARAL.LD.CSR*/UPC.2
          +PARAL.LD.CSR*P1*P2*D.0*D.1*D.2*D.3
          +PARAL.LD.CSR*/P1*/D.3
          +PARAL.LD.CSR*/P2*/D.3
          +PARAL.LD.CSR*/D.0*/D.3
          +PARAL.LD.CSR*/D.1*/D.3
          +PARAL.LD.CSR*/D.2*/D.3

/UPC.4:=/PARAL.LD.CSR*/UPC.3
          +PARAL.LD.CSR*P1*P2*D.0*D.1*D.2*D.3*D.4
          +PARAL.LD.CSR*/P1*/D.4
          +PARAL.LD.CSR*/P2*/D.4
          +PARAL.LD.CSR*/D.0*/D.4
          +PARAL.LD.CSR*/D.1*/D.4
          +PARAL.LD.CSR*/D.2*/D.4
          +PARAL.LD.CSR*/D.3*/D.4

IF(VCC) /PROP.L\SO:=/PARAL.LD.CSR*/UPC.4
          +PARAL.LD.CSR*D.0*D.1*D.2*D.3*D.4
```

23-001K4-00
23-002K4-00
23-003K4-00



REVISIONS

| CHK | CHANGE NO. | REV |
|---|---|---|
| | | |

DRN: J.M.Hofmeier DATE: 11-SEP-81 ENG. DATE

CHK'D. DATE BOX-PD LOCATION: SHEET 08 OF 14

DSK:GLOP08.T2PC367,1500] 11-SEP-81 15:12 NEXT HIGHER ASSEMBLY: 8-00-M8390-0-0

FIRST USED ON OPTION/MODEL: 11/730

TITLE: DATA PATH ROM AND PAL LISTINGS

SIZE D | CODE GL | NUMBER M8390-0-0 | REV. A

| HEX LOC | HEX DAT | BIN DAT | HEX LOC | HEX DAT | BIN DAT | HEX LOC | HEX DAT | BIN DAT | HEX LOC | HEX DAT | BIN DAT | HEX LOC | HEX DAT | BIN DAT | HEX LOC | HEX DAT | BIN DAT | HEX LOC | HEX DAT | BIN DAT |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 000 | 04 | 00000100 | 040 | 07 | 00000111 | 080 | 00 | 00000000 | 0C0 | FF | 11111111 | 100 | 00 | 00000000 | 140 | 00 | 00000000 | 180 | 28 | 00101011 | 1C0 | 00 | 00000000 |
| 001 | 04 | 00000100 | 041 | 07 | 00000111 | 081 | 00 | 00000000 | 0C1 | FF | 11111111 | 101 | 00 | 00000000 | 141 | 00 | 00000000 | 181 | 28 | 00101011 | 1C1 | 00 | 00000000 |
| 002 | 04 | 00000100 | 042 | 07 | 00000111 | 082 | 00 | 00000000 | 0C2 | FF | 11111111 | 102 | 00 | 00000000 | 142 | 00 | 00000000 | 182 | 2C | 00101100 | 1C2 | 00 | 00000000 |
| 003 | 04 | 00000100 | 043 | 07 | 00000111 | 083 | 00 | 00000000 | 0C3 | FF | 11111111 | 103 | 00 | 00000000 | 143 | 00 | 00000000 | 183 | 2C | 00101100 | 1C3 | 00 | 00000000 |
| 004 | 04 | 00000100 | 044 | 07 | 00000111 | 084 | 00 | 00000000 | 0C4 | FF | 11111111 | 104 | 00 | 00000000 | 144 | 00 | 00000000 | 184 | 31 | 00110001 | 1C4 | 00 | 00000000 |
| 005 | 04 | 00000100 | 045 | 07 | 00000111 | 085 | 00 | 00000000 | 0C5 | FF | 11111111 | 105 | 00 | 00000000 | 145 | 00 | 00000000 | 185 | 31 | 00110001 | 1C5 | 00 | 00000000 |
| 006 | 04 | 00000100 | 046 | 07 | 00000111 | 086 | 00 | 00000000 | 0C6 | FF | 11111111 | 106 | 00 | 00000000 | 146 | 00 | 00000000 | 186 | 38 | 00111000 | 1C6 | 00 | 00000000 |
| 007 | 04 | 00000100 | 047 | 07 | 00000111 | 087 | 00 | 00000000 | 0C7 | FF | 11111111 | 107 | 00 | 00000000 | 147 | 00 | 00000000 | 187 | 38 | 00111000 | 1C7 | 00 | 00000000 |
| 008 | 04 | 00000100 | 048 | 07 | 00000111 | 088 | 00 | 00000000 | 0C8 | FF | 11111111 | 108 | 00 | 00000000 | 148 | 00 | 00000000 | 188 | 41 | 01000001 | 1C8 | 00 | 00000000 |
| 009 | 04 | 00000100 | 049 | 07 | 00000111 | 089 | 00 | 00000000 | 0C9 | FF | 11111111 | 109 | 00 | 00000000 | 149 | 00 | 00000000 | 189 | 41 | 01000001 | 1C9 | 00 | 00000000 |
| 00A | 04 | 00000100 | 04A | 07 | 00000111 | 08A | 00 | 00000000 | 0CA | FF | 11111111 | 10A | 00 | 00000000 | 14A | 00 | 00000000 | 18A | 49 | 01001001 | 1CA | 00 | 00000000 |
| 00B | 04 | 00000100 | 04B | 07 | 00000111 | 08B | 00 | 00000000 | 0CB | FF | 11111111 | 10B | 00 | 00000000 | 14B | 00 | 00000000 | 18B | 49 | 01001001 | 1CB | 00 | 00000000 |
| 00C | 04 | 00000100 | 04C | 07 | 00000111 | 08C | 00 | 00000000 | 0CC | FF | 11111111 | 10C | 00 | 00000000 | 14C | 00 | 00000000 | 18C | 53 | 01010011 | 1CC | 00 | 00000000 |
| 00D | 04 | 00000100 | 04D | 07 | 00000111 | 08D | 00 | 00000000 | 0CD | FF | 11111111 | 10D | 00 | 00000000 | 14D | 00 | 00000000 | 18D | 53 | 01010011 | 1CD | 00 | 00000000 |
| 00E | 04 | 00000100 | 04E | 07 | 00000111 | 08E | 00 | 00000000 | 0CE | FF | 11111111 | 10E | 00 | 00000000 | 14E | 00 | 00000000 | 18E | 5C | 01011100 | 1CE | 00 | 00000000 |
| 00F | 04 | 00000100 | 04F | 07 | 00000111 | 08F | 00 | 00000000 | 0CF | FF | 11111111 | 10F | 00 | 00000000 | 14F | 00 | 00000000 | 18F | 5C | 01011100 | 1CF | 00 | 00000000 |
| 010 | 13 | 00010011 | 050 | 13 | 00010011 | 090 | 13 | 00010011 | 0D0 | FF | 11111111 | 110 | 13 | 00010011 | 150 | 22 | 00100010 | 190 | 28 | 00101011 | 1D0 | 01 | 00000001 |
| 011 | 13 | 00010011 | 051 | 13 | 00010011 | 091 | 13 | 00010011 | 0D1 | FF | 11111111 | 111 | 13 | 00010011 | 151 | 22 | 00100010 | 191 | 28 | 00101011 | 1D1 | 01 | 00000001 |
| 012 | 00 | 00000000 | 052 | 00 | 00000000 | 092 | 00 | 00000000 | 0D2 | FF | 11111111 | 112 | 00 | 00000000 | 152 | 22 | 00100010 | 192 | 2C | 00101100 | 1D2 | 01 | 00000001 |
| 013 | 13 | 00010011 | 053 | 13 | 00010011 | 093 | 13 | 00010011 | 0D3 | FF | 11111111 | 113 | 13 | 00010011 | 153 | 22 | 00100010 | 193 | 2C | 00101100 | 1D3 | 01 | 00000001 |
| 014 | 01 | 00000001 | 054 | 01 | 00000001 | 094 | 00 | 00000000 | 0D4 | FF | 11111111 | 114 | 02 | 00000010 | 154 | 00 | 00000000 | 194 | 31 | 00110001 | 1D4 | 01 | 00000001 |
| 015 | 01 | 00000001 | 055 | 01 | 00000001 | 095 | 00 | 00000000 | 0D5 | FF | 11111111 | 115 | 02 | 00000010 | 155 | 00 | 00000000 | 195 | 31 | 00110001 | 1D5 | 01 | 00000001 |
| 016 | 01 | 00000001 | 056 | 01 | 00000001 | 096 | 00 | 00000000 | 0D6 | FF | 11111111 | 116 | 02 | 00000010 | 156 | 00 | 00000000 | 196 | 38 | 00111000 | 1D6 | 01 | 00000001 |
| 017 | 01 | 00000001 | 057 | 01 | 00000001 | 097 | 00 | 00000000 | 0D7 | FF | 11111111 | 117 | 02 | 00000010 | 157 | 00 | 00000000 | 197 | 38 | 00111000 | 1D7 | 01 | 00000001 |
| 018 | 0D | 00001101 | 058 | 0D | 00001101 | 098 | 0D | 00001101 | 0D8 | FF | 11111111 | 118 | 0D | 00001101 | 158 | 0D | 00001101 | 198 | 41 | 01000001 | 1D8 | 01 | 00000001 |
| 019 | 0D | 00001101 | 059 | 0D | 00001101 | 099 | 0D | 00001101 | 0D9 | FF | 11111111 | 119 | 0D | 00001101 | 159 | 0D | 00001101 | 199 | 41 | 01000001 | 1D9 | 01 | 00000001 |
| 01A | 00 | 00000000 | 05A | 00 | 00000000 | 09A | 00 | 00000000 | 0DA | FF | 11111111 | 11A | 00 | 00000000 | 15A | 00 | 00000000 | 19A | 49 | 01001001 | 1DA | 01 | 00000001 |
| 01B | 0D | 00001101 | 05B | 0D | 00001101 | 09B | 0D | 00001101 | 0DB | FF | 11111111 | 11B | 0D | 00001101 | 15B | 0D | 00001101 | 19B | 49 | 01001001 | 1DB | 01 | 00000001 |
| 01C | 23 | 00100011 | 05C | 23 | 00100011 | 09C | 23 | 00100011 | 0DC | FF | 11111111 | 11C | 23 | 00100011 | 15C | 23 | 00100011 | 19C | 53 | 01010011 | 1DC | 01 | 00000001 |
| 01D | 23 | 00100011 | 05D | 23 | 00100011 | 09D | 23 | 00100011 | 0DD | FF | 11111111 | 11D | 23 | 00100011 | 15D | 23 | 00100011 | 19D | 53 | 01010011 | 1DD | 01 | 00000001 |
| 01E | 00 | 00000000 | 05E | 00 | 00000000 | 09E | 00 | 00000000 | 0DE | FF | 11111111 | 11E | 00 | 00000000 | 15E | 00 | 00000000 | 19E | 5C | 01011100 | 1DE | 01 | 00000001 |
| 01F | 23 | 00100011 | 05F | 23 | 00100011 | 09F | 23 | 00100011 | 0DF | FF | 11111111 | 11F | 23 | 00100011 | 15F | 23 | 00100011 | 19F | 5C | 01011100 | 1DF | 01 | 00000001 |
| 020 | 2F | 00101111 | 060 | 2F | 00101111 | 0A0 | 2F | 00101111 | 0E0 | FF | 11111111 | 120 | 2F | 00101111 | 160 | 2F | 00101111 | 1A0 | 28 | 00101011 | 1E0 | 02 | 00000010 |
| 021 | 2F | 00101111 | 061 | 2F | 00101111 | 0A1 | 2F | 00101111 | 0E1 | FF | 11111111 | 121 | 2F | 00101111 | 161 | 2F | 00101111 | 1A1 | 28 | 00101011 | 1E1 | 02 | 00000010 |
| 022 | 3A | 00111010 | 062 | 3A | 00111010 | 0A2 | 3A | 00111010 | 0E2 | FF | 11111111 | 122 | 3A | 00111010 | 162 | 3A | 00111010 | 1A2 | 2C | 00101100 | 1E2 | 02 | 00000010 |
| 023 | 2F | 00101111 | 063 | 2F | 00101111 | 0A3 | 2F | 00101111 | 0E3 | FF | 11111111 | 123 | 2F | 00101111 | 163 | 2F | 00101111 | 1A3 | 2C | 00101100 | 1E3 | 02 | 00000010 |
| 024 | 43 | 01000011 | 064 | 43 | 01000011 | 0A4 | 43 | 01000011 | 0E4 | FF | 11111111 | 124 | 43 | 01000011 | 164 | 43 | 01000011 | 1A4 | 31 | 00110001 | 1E4 | 02 | 00000010 |
| 025 | 43 | 01000011 | 065 | 43 | 01000011 | 0A5 | 43 | 01000011 | 0E5 | FF | 11111111 | 125 | 43 | 01000011 | 165 | 43 | 01000011 | 1A5 | 31 | 00110001 | 1E5 | 02 | 00000010 |
| 026 | 51 | 01010001 | 066 | 51 | 01010001 | 0A6 | 51 | 01010001 | 0E6 | FF | 11111111 | 126 | 51 | 01010001 | 166 | 51 | 01010001 | 1A6 | 38 | 00111000 | 1E6 | 02 | 00000010 |
| 027 | 43 | 01000011 | 067 | 43 | 01000011 | 0A7 | 43 | 01000011 | 0E7 | FF | 11111111 | 127 | 43 | 01000011 | 167 | 43 | 01000011 | 1A7 | 38 | 00111000 | 1E7 | 02 | 00000010 |
| 028 | 5B | 01011011 | 068 | 5B | 01011011 | 0A8 | 5B | 01011011 | 0E8 | FF | 11111111 | 128 | 5B | 01011011 | 168 | 5B | 01011011 | 1A8 | 41 | 01000001 | 1E8 | 02 | 00000010 |
| 029 | 5B | 01011011 | 069 | 5B | 01011011 | 0A9 | 5B | 01011011 | 0E9 | FF | 11111111 | 129 | 5B | 01011011 | 169 | 5B | 01011011 | 1A9 | 41 | 01000001 | 1E9 | 02 | 00000010 |
| 02A | 64 | 01100100 | 06A | 64 | 01100100 | 0AA | 64 | 01100100 | 0EA | FF | 11111111 | 12A | 64 | 01100100 | 16A | 64 | 01100100 | 1AA | 49 | 01001001 | 1EA | 02 | 00000010 |
| 02B | 5B | 01011011 | 06B | 5B | 01011011 | 0AB | 5B | 01011011 | 0EB | FF | 11111111 | 12B | 5B | 01011011 | 16B | 5B | 01011011 | 1AB | 49 | 01001001 | 1EB | 02 | 00000010 |
| 02C | 6D | 01101101 | 06C | 6D | 01101101 | 0AC | 6D | 01101101 | 0EC | FF | 11111111 | 12C | 6D | 01101101 | 16C | 6D | 01101101 | 1AC | 53 | 01010011 | 1EC | 02 | 00000010 |
| 02D | 6D | 01101101 | 06D | 6D | 01101101 | 0AD | 6D | 01101101 | 0ED | FF | 11111111 | 12D | 6D | 01101101 | 16D | 6D | 01101101 | 1AD | 53 | 01010011 | 1ED | 02 | 00000010 |
| 02E | 79 | 01111001 | 06E | 79 | 01111001 | 0AE | 79 | 01111001 | 0EE | FF | 11111111 | 12E | 79 | 01111001 | 16E | 79 | 01111001 | 1AE | 5C | 01011100 | 1EE | 02 | 00000010 |
| 02F | 6D | 01101101 | 06F | 6D | 01101101 | 0AF | 6D | 01101101 | 0EF | FF | 11111111 | 12F | 6D | 01101101 | 16F | 6D | 01101101 | 1AF | 5C | 01011100 | 1EF | 02 | 00000010 |
| 030 | 85 | 10000101 | 070 | 85 | 10000101 | 0B0 | 85 | 10000101 | 0F0 | FF | 11111111 | 130 | 85 | 10000101 | 170 | 85 | 10000101 | 1B0 | 28 | 00101011 | 1F0 | 03 | 00000011 |
| 031 | 85 | 10000101 | 071 | 85 | 10000101 | 0B1 | 85 | 10000101 | 0F1 | FF | 11111111 | 131 | 85 | 10000101 | 171 | 85 | 10000101 | 1B1 | 28 | 00101011 | 1F1 | 03 | 00000011 |
| 032 | 92 | 10010010 | 072 | 92 | 10010010 | 0B2 | 92 | 10010010 | 0F2 | FF | 11111111 | 132 | 92 | 10010010 | 172 | 92 | 10010010 | 1B2 | 2C | 00101100 | 1F2 | 03 | 00000011 |
| 033 | 85 | 10000101 | 073 | 85 | 10000101 | 0B3 | 85 | 10000101 | 0F3 | FF | 11111111 | 133 | 85 | 10000101 | 173 | 85 | 10000101 | 1B3 | 2C | 00101100 | 1F3 | 03 | 00000011 |
| 034 | 9F | 10011111 | 074 | 9F | 10011111 | 0B4 | 9F | 10011111 | 0F4 | FF | 11111111 | 134 | 9F | 10011111 | 174 | 9F | 10011111 | 1B4 | 31 | 00110001 | 1F4 | 03 | 00000011 |
| 035 | 9F | 10011111 | 075 | 9F | 10011111 | 0B5 | 9F | 10011111 | 0F5 | FF | 11111111 | 135 | 9F | 10011111 | 175 | 9F | 10011111 | 1B5 | 31 | 00110001 | 1F5 | 03 | 00000011 |
| 036 | AD | 10101101 | 076 | AD | 10101101 | 0B6 | AD | 10101101 | 0F6 | FF | 11111111 | 136 | AD | 10101101 | 176 | AD | 10101101 | 1B6 | 38 | 00111000 | 1F6 | 03 | 00000011 |
| 037 | 9F | 10011111 | 077 | 9F | 10011111 | 0B7 | 9F | 10011111 | 0F7 | FF | 11111111 | 137 | 9F | 10011111 | 177 | 9F | 10011111 | 1B7 | 38 | 00111000 | 1F7 | 03 | 00000011 |
| 038 | BB | 10111011 | 078 | BB | 10111011 | 0B8 | BB | 10111011 | 0F8 | FF | 11111111 | 138 | BB | 10111011 | 178 | BB | 10111011 | 1B8 | 41 | 01000001 | 1F8 | 03 | 00000011 |
| 039 | BB | 10111011 | 079 | BB | 10111011 | 0B9 | BB | 10111011 | 0F9 | FF | 11111111 | 139 | BB | 10111011 | 179 | BB | 10111011 | 1B9 | 41 | 01000001 | 1F9 | 03 | 00000011 |
| 03A | C8 | 11001000 | 07A | C8 | 11001000 | 0BA | C8 | 11001000 | 0FA | FF | 11111111 | 13A | C8 | 11001000 | 17A | C8 | 11001000 | 1BA | 49 | 01001001 | 1FA | 03 | 00000011 |
| 03B | BB | 10111011 | 07B | BB | 10111011 | 0BB | BB | 10111011 | 0FB | FF | 11111111 | 13B | BB | 10111011 | 17B | BB | 10111011 | 1BB | 49 | 01001001 | 1FB | 03 | 00000011 |
| 03C | D5 | 11010101 | 07C | D5 | 11010101 | 0BC | D5 | 11010101 | 0FC | FF | 11111111 | 13C | D5 | 11010101 | 17C | D5 | 11010101 | 1BC | 53 | 01010011 | 1FC | 03 | 00000011 |
| 03D | D5 | 11010101 | 07D | D5 | 11010101 | 0BD | D5 | 11010101 | 0FD | FF | 11111111 | 13D | D5 | 11010101 | 17D | D5 | 11010101 | 1BD | 53 | 01010011 | 1FD | 03 | 00000011 |
| 03E | E3 | 11100011 | 07E | E3 | 11100011 | 0BE | E3 | 11100011 | 0FE | FF | 11111111 | 13E | E3 | 11100011 | 17E | E3 | 11100011 | 1BE | 5C | 01011100 | 1FE | 03 | 00000011 |
| 03F | D5 | 11010101 | 07F | D5 | 11010101 | 0BF | D5 | 11010101 | 0FF | FF | 11111111 | 13F | D5 | 11010101 | 17F | D5 | 11010101 | 1BF | 5C | 01011100 | 1FF | 03 | 00000011 |

PART NUMBER: 23-06901-00
DEVICE TYPE:512 X 8
SCHEMATIC SHEET #:D-CS-M8390-0-DAPF
LOCATION/DESCRIPTION: E93 / SPECIFIER CONTROL

LEFT COLUMN OF BIN DATA IS MSB
BINARY DATA "1" = HIGH
BINARY DATA "0" = LOW



| REVISIONS | | | |
|---|---|---|---|
| C-K | C-HANGE NO. | REV |
| | | |

| | | | |
|---|---|---|---|
| DRN. D.Hoffman | DATE 11-SEP-81 | ENG. | DATE |
| CHK'D. | DATE | EV-PD LOCATION: | |
| | | SHEET 09 OF 14 | |

| | | | | |
|---|---|---|---|---|
| OSK:GLOP09.T2P[367,1500] 11-SEP-81 15:13 | NEXT HIGHER ASSEMBLY: B-DD-M8390-0-0 | SIZE D | CODE GL | NUMBER M8390-0-0 | REV. A |
| FIRST USED ON OPTION/MODEL: 11/730 | | | | | |

TITLE: DATA PATH ROM AND PAL LISTINGS

8 | 7 | 6 | 5 | 4 | 3 | 2 | 1

| HEX LOC | HEX DAT | BIN DAT | HEX LOC | HEX DAT | BIN DAT | HEX LOC | HEX DAT | BIN DAT | HEX LOC | HEX DAT | BIN DAT | HEX LOC | HEX DAT | BIN DAT | HEX LOC | HEX DAT | BIN DAT | HEX LOC | HEX DAT | BIN DAT |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 000 | 04 | 00000100 | 040 | 0E | 00001110 | 080 | 27 | 00100111 | 0C0 | 30 | 00110000 | 100 | 8D | 10001101 | 140 | DB | 11011011 | 180 | E2 | 10110010 | 1C0 | DB | 11011011 |
| 001 | 04 | 00000100 | 041 | 0E | 00001110 | 081 | 27 | 00100111 | 0C1 | 30 | 00110000 | 101 | B1 | 10110001 | 141 | DB | 11011011 | 181 | E2 | 10110010 | 1C1 | DB | 11011011 |
| 002 | 15 | 00010101 | 042 | 0E | 00001110 | 082 | 27 | 00100111 | 0C2 | 30 | 00110000 | 102 | B2 | 10110010 | 142 | DB | 11011011 | 182 | E2 | 10110010 | 1C2 | DB | 11011011 |
| 003 | 05 | 00000101 | 043 | 0E | 00001110 | 083 | 27 | 00100111 | 0C3 | 30 | 00110000 | 103 | B2 | 10110010 | 143 | DB | 11011011 | 183 | B2 | 10110010 | 1C3 | DB | 11011011 |
| 004 | 06 | 00000110 | 044 | 0E | 00001110 | 084 | 27 | 00100111 | 0C4 | 30 | 00110000 | 104 | B2 | 10110010 | 144 | DB | 11011011 | 184 | B2 | 10110010 | 1C4 | DB | 11011011 |
| 005 | 04 | 00000100 | 045 | 0E | 00001110 | 085 | 27 | 00100111 | 0C5 | 30 | 00110000 | 105 | B2 | 10110010 | 145 | DB | 11011011 | 185 | B2 | 10110010 | 1C5 | DB | 11011011 |
| 006 | 15 | 00010101 | 046 | 0E | 00001110 | 086 | 27 | 00100111 | 0C6 | 30 | 00110000 | 106 | B2 | 10110010 | 146 | DB | 11011011 | 186 | B2 | 10110010 | 1C6 | DB | 11011011 |
| 007 | 04 | 00000100 | 047 | 0E | 00001110 | 087 | 27 | 00100111 | 0C7 | 30 | 00110000 | 107 | B2 | 10110010 | 147 | DB | 11011011 | 187 | B2 | 10110010 | 1C7 | DB | 11011011 |
| 008 | 04 | 00000100 | 048 | 0E | 00001110 | 088 | 04 | 00000100 | 0C8 | 30 | 00110000 | 108 | 98 | 10011000 | 148 | DB | 11011011 | 188 | BB | 10111011 | 1C8 | DB | 11011011 |
| 009 | 04 | 00000100 | 049 | 0E | 00001110 | 089 | 04 | 00000100 | 0C9 | 30 | 00110000 | 109 | 98 | 10011000 | 149 | DB | 11011011 | 189 | BC | 10111100 | 1C9 | DB | 11011011 |
| 00A | 04 | 00000100 | 04A | 0E | 00001110 | 08A | 04 | 00000100 | 0CA | 30 | 00110000 | 10A | 7D | 01111101 | 14A | DB | 11011011 | 18A | 7D | 01111101 | 1CA | DB | 11011011 |
| 00B | 04 | 00000100 | 04B | 0E | 00001110 | 08B | 04 | 00000100 | 0CB | 30 | 00110000 | 10B | 80 | 10000000 | 14B | DB | 11011011 | 18B | 80 | 10000000 | 1CB | DB | 11011011 |
| 00C | 04 | 00000100 | 04C | 0E | 00001110 | 08C | 04 | 00000100 | 0CC | 30 | 00110000 | 10C | 83 | 10000011 | 14C | DB | 11011011 | 18C | 83 | 10000011 | 1CC | DB | 11011011 |
| 00D | 04 | 00000100 | 04D | 0E | 00001110 | 08D | 04 | 00000100 | 0CD | 30 | 00110000 | 10D | 86 | 10000110 | 14D | DB | 11011011 | 18D | 89 | 10001001 | 1CD | DB | 11011011 |
| 00E | 04 | 00000100 | 04E | 0E | 00001110 | 08E | 04 | 00000100 | 0CE | 30 | 00110000 | 10E | BD | 10111101 | 14E | DB | 11011011 | 18E | BD | 10111101 | 1CE | DB | 11011011 |
| 00F | 04 | 00000100 | 04F | 0E | 00001110 | 08F | 04 | 00000100 | 0CF | 30 | 00110000 | 10F | BD | 10111101 | 14F | DB | 11011011 | 18F | BD | 10111101 | 1CF | DB | 11011011 |
| 010 | 04 | 00000100 | 050 | 0E | 00001110 | 090 | 04 | 00000100 | 0D0 | 30 | 00110000 | 110 | BE | 10111110 | 150 | CF | 11001111 | 190 | C2 | 11000010 | 1D0 | CF | 11001111 |
| 011 | 04 | 00000100 | 051 | 0E | 00001110 | 091 | 04 | 00000100 | 0D1 | 30 | 00110000 | 111 | BE | 10111110 | 151 | CF | 11001111 | 191 | C2 | 11000010 | 1D1 | CF | 11001111 |
| 012 | 04 | 00000100 | 052 | 0E | 00001110 | 092 | 04 | 00000100 | 0D2 | 30 | 00110000 | 112 | BE | 10111110 | 152 | CF | 11001111 | 192 | C2 | 11000010 | 1D2 | CF | 11001111 |
| 013 | 04 | 00000100 | 053 | 0E | 00001110 | 093 | 04 | 00000100 | 0D3 | 30 | 00110000 | 113 | BE | 10111110 | 153 | CF | 11001111 | 193 | C2 | 11000010 | 1D3 | CF | 11001111 |
| 014 | 04 | 00000100 | 054 | 0E | 00001110 | 094 | 04 | 00000100 | 0D4 | 30 | 00110000 | 114 | BE | 10111110 | 154 | CF | 11001111 | 194 | C2 | 11000010 | 1D4 | CF | 11001111 |
| 015 | 04 | 00000100 | 055 | 0E | 00001110 | 095 | 04 | 00000100 | 0D5 | 30 | 00110000 | 115 | BE | 10111110 | 155 | CF | 11001111 | 195 | C2 | 11000010 | 1D5 | CF | 11001111 |
| 016 | 04 | 00000100 | 056 | 0E | 00001110 | 096 | 04 | 00000100 | 0D6 | 30 | 00110000 | 116 | BE | 10111110 | 156 | CF | 11001111 | 196 | C2 | 11000010 | 1D6 | CF | 11001111 |
| 017 | 04 | 00000100 | 057 | 0E | 00001110 | 097 | 04 | 00000100 | 0D7 | 30 | 00110000 | 117 | BE | 10111110 | 157 | CF | 11001111 | 197 | C2 | 11000010 | 1D7 | CF | 11001111 |
| 018 | 04 | 00000100 | 058 | 0E | 00001110 | 098 | 04 | 00000100 | 0D8 | 30 | 00110000 | 118 | BE | 10111110 | 158 | CF | 11001111 | 198 | C2 | 11000010 | 1D8 | CF | 11001111 |
| 019 | 04 | 00000100 | 059 | 0E | 00001110 | 099 | 04 | 00000100 | 0D9 | 30 | 00110000 | 119 | BE | 10111110 | 159 | CF | 11001111 | 199 | C2 | 11000010 | 1D9 | CF | 11001111 |
| 01A | 04 | 00000100 | 05A | 0E | 00001110 | 09A | 04 | 00000100 | 0DA | 30 | 00110000 | 11A | BE | 10111110 | 15A | CF | 11001111 | 19A | C2 | 11000010 | 1DA | CF | 11001111 |
| 01B | 04 | 00000100 | 05B | 0E | 00001110 | 09B | 04 | 00000100 | 0DB | 30 | 00110000 | 11B | BE | 10111110 | 15B | CF | 11001111 | 19B | C2 | 11000010 | 1DB | CF | 11001111 |
| 01C | 04 | 00000100 | 05C | 0E | 00001110 | 09C | 04 | 00000100 | 0DC | 30 | 00110000 | 11C | BE | 10111110 | 15C | CF | 11001111 | 19C | C2 | 11000010 | 1DC | CF | 11001111 |
| 01D | 04 | 00000100 | 05D | 0E | 00001110 | 09D | 04 | 00000100 | 0DD | 30 | 00110000 | 11D | BE | 10111110 | 15D | CF | 11001111 | 19D | C2 | 11000010 | 1DD | CF | 11001111 |
| 01E | 04 | 00000100 | 05E | 0E | 00001110 | 09E | 04 | 00000100 | 0DE | 30 | 00110000 | 11E | BE | 10111110 | 15E | CF | 11001111 | 19E | C2 | 11000010 | 1DE | CF | 11001111 |
| 01F | 04 | 00000100 | 05F | 0E | 00001110 | 09F | 04 | 00000100 | 0DF | 30 | 00110000 | 11F | BE | 10111110 | 15F | CF | 11001111 | 19F | C2 | 11000010 | 1DF | CF | 11001111 |
| 020 | 04 | 00000100 | 060 | 0E | 00001110 | 0A0 | 07 | 00000111 | 0E0 | 30 | 00110000 | 120 | CC | 11001100 | 160 | D3 | 11010011 | 1A0 | CC | 11001100 | 1E0 | D7 | 11010111 |
| 021 | 04 | 00000100 | 061 | 0E | 00001110 | 0A1 | 07 | 00000111 | 0E1 | 30 | 00110000 | 121 | CC | 11001100 | 161 | D3 | 11010011 | 1A1 | CC | 11001100 | 1E1 | D7 | 11010111 |
| 022 | 04 | 00000100 | 062 | 0E | 00001110 | 0A2 | 07 | 00000111 | 0E2 | 30 | 00110000 | 122 | CC | 11001100 | 162 | D3 | 11010011 | 1A2 | CC | 11001100 | 1E2 | D7 | 11010111 |
| 023 | 04 | 00000100 | 063 | 0E | 00001110 | 0A3 | 07 | 00000111 | 0E3 | 30 | 00110000 | 123 | CC | 11001100 | 163 | D3 | 11010011 | 1A3 | CC | 11001100 | 1E3 | D7 | 11010111 |
| 024 | 04 | 00000100 | 064 | 0E | 00001110 | 0A4 | 07 | 00000111 | 0E4 | 30 | 00110000 | 124 | CC | 11001100 | 164 | D3 | 11010011 | 1A4 | CC | 11001100 | 1E4 | D7 | 11010111 |
| 025 | 04 | 00000100 | 065 | 0E | 00001110 | 0A5 | 07 | 00000111 | 0E5 | 30 | 00110000 | 125 | CC | 11001100 | 165 | D3 | 11010011 | 1A5 | CC | 11001100 | 1E5 | D7 | 11010111 |
| 026 | 04 | 00000100 | 066 | 0E | 00001110 | 0A6 | 07 | 00000111 | 0E6 | 30 | 00110000 | 126 | CC | 11001100 | 166 | D3 | 11010011 | 1A6 | CC | 11001100 | 1E6 | D7 | 11010111 |
| 027 | 04 | 00000100 | 067 | 0E | 00001110 | 0A7 | 07 | 00000111 | 0E7 | 30 | 00110000 | 127 | CC | 11001100 | 167 | D3 | 11010011 | 1A7 | CC | 11001100 | 1E7 | D7 | 11010111 |
| 028 | 04 | 00000100 | 068 | 0E | 00001110 | 0A8 | 07 | 00000111 | 0E8 | 30 | 00110000 | 128 | CC | 11001100 | 168 | D3 | 11010011 | 1A8 | CC | 11001100 | 1E8 | D7 | 11010111 |
| 029 | 04 | 00000100 | 069 | 0E | 00001110 | 0A9 | 07 | 00000111 | 0E9 | 30 | 00110000 | 129 | CC | 11001100 | 169 | D3 | 11010011 | 1A9 | CC | 11001100 | 1E9 | D7 | 11010111 |
| 02A | 04 | 00000100 | 06A | 0E | 00001110 | 0AA | 07 | 00000111 | 0EA | 30 | 00110000 | 12A | CC | 11001100 | 16A | D3 | 11010011 | 1AA | CC | 11001100 | 1EA | D7 | 11010111 |
| 02B | 04 | 00000100 | 06B | 0E | 00001110 | 0AB | 07 | 00000111 | 0EB | 30 | 00110000 | 12B | CC | 11001100 | 16B | D3 | 11010011 | 1AB | CC | 11001100 | 1EB | D7 | 11010111 |
| 02C | 04 | 00000100 | 06C | 0E | 00001110 | 0AC | 07 | 00000111 | 0EC | 30 | 00110000 | 12C | CC | 11001100 | 16C | D3 | 11010011 | 1AC | CC | 11001100 | 1EC | D7 | 11010111 |
| 02D | 04 | 00000100 | 06D | 0E | 00001110 | 0AD | 07 | 00000111 | 0ED | 30 | 00110000 | 12D | CC | 11001100 | 16D | D3 | 11010011 | 1AD | CC | 11001100 | 1ED | D7 | 11010111 |
| 02E | 04 | 00000100 | 06E | 0E | 00001110 | 0AE | 07 | 00000111 | 0EE | 30 | 00110000 | 12E | CC | 11001100 | 16E | D3 | 11010011 | 1AE | CC | 11001100 | 1EE | D7 | 11010111 |
| 02F | 04 | 00000100 | 06F | 0E | 00001110 | 0AF | 07 | 00000111 | 0EF | 30 | 00110000 | 12F | CC | 11001100 | 16F | D3 | 11010011 | 1AF | CC | 11001100 | 1EF | D7 | 11010111 |
| 030 | 04 | 00000100 | 070 | 0E | 00001110 | 0B0 | 07 | 00000111 | 0F0 | 30 | 00110000 | 130 | C9 | 11001001 | 170 | 8E | 10001110 | 1B0 | C9 | 11001001 | 1F0 | BD | 10111101 |
| 031 | 04 | 00000100 | 071 | 0E | 00001110 | 0B1 | 07 | 00000111 | 0F1 | 30 | 00110000 | 131 | C9 | 11001001 | 171 | 8E | 10001110 | 1B1 | C9 | 11001001 | 1F1 | BD | 10111101 |
| 032 | 04 | 00000100 | 072 | 0E | 00001110 | 0B2 | 07 | 00000111 | 0F2 | 30 | 00110000 | 132 | C9 | 11001001 | 172 | 90 | 10010000 | 1B2 | C9 | 11001001 | 1F2 | BD | 10111101 |
| 033 | 04 | 00000100 | 073 | 0E | 00001110 | 0B3 | 07 | 00000111 | 0F3 | 30 | 00110000 | 133 | C9 | 11001001 | 173 | 90 | 10010000 | 1B3 | C9 | 11001001 | 1F3 | BD | 10111101 |
| 034 | 04 | 00000100 | 074 | 0E | 00001110 | 0B4 | 07 | 00000111 | 0F4 | 30 | 00110000 | 134 | C9 | 11001001 | 174 | 92 | 10010010 | 1B4 | C9 | 11001001 | 1F4 | BD | 10111101 |
| 035 | 04 | 00000100 | 075 | 0E | 00001110 | 0B5 | 07 | 00000111 | 0F5 | 30 | 00110000 | 135 | C9 | 11001001 | 175 | 92 | 10010010 | 1B5 | C9 | 11001001 | 1F5 | BD | 10111101 |
| 036 | 04 | 00000100 | 076 | 0E | 00001110 | 0B6 | 07 | 00000111 | 0F6 | 30 | 00110000 | 136 | C9 | 11001001 | 176 | 94 | 10010100 | 1B6 | C9 | 11001001 | 1F6 | BD | 10111101 |
| 037 | 04 | 00000100 | 077 | 0E | 00001110 | 0B7 | 07 | 00000111 | 0F7 | 30 | 00110000 | 137 | C9 | 11001001 | 177 | 94 | 10010100 | 1B7 | C9 | 11001001 | 1F7 | BD | 10111101 |
| 038 | 04 | 00000100 | 078 | 0E | 00001110 | 0B8 | 07 | 00000111 | 0F8 | 30 | 00110000 | 138 | C9 | 11001001 | 178 | 96 | 10010110 | 1B8 | C9 | 11001001 | 1F8 | BD | 10111101 |
| 039 | 04 | 00000100 | 079 | 0E | 00001110 | 0B9 | 07 | 00000111 | 0F9 | 30 | 00110000 | 139 | C9 | 11001001 | 179 | 96 | 10010110 | 1B9 | C9 | 11001001 | 1F9 | BD | 10111101 |
| 03A | 04 | 00000100 | 07A | 0E | 00001110 | 0BA | 07 | 00000111 | 0FA | 30 | 00110000 | 13A | C9 | 11001001 | 17A | BD | 10111101 | 1BA | C9 | 11001001 | 1FA | BD | 10111101 |
| 03B | 04 | 00000100 | 07B | 0E | 00001110 | 0BB | 07 | 00000111 | 0FB | 30 | 00110000 | 13B | C9 | 11001001 | 17B | BD | 10111101 | 1BB | C9 | 11001001 | 1FB | BD | 10111101 |
| 03C | 04 | 00000100 | 07C | 0E | 00001110 | 0BC | 07 | 00000111 | 0FC | 30 | 00110000 | 13C | C9 | 11001001 | 17C | BD | 10111101 | 1BC | C9 | 11001001 | 1FC | BD | 10111101 |
| 03D | 04 | 00000100 | 07D | 0E | 00001110 | 0BD | 07 | 00000111 | 0FD | 30 | 00110000 | 13D | C9 | 11001001 | 17D | BD | 10111101 | 1BD | C9 | 11001001 | 1FD | BD | 10111101 |
| 03E | 04 | 00000100 | 07E | 0E | 00001110 | 0BE | 07 | 00000111 | 0FE | 30 | 00110000 | 13E | C9 | 11001001 | 17E | A8 | 10101000 | 1BE | C9 | 11001001 | 1FE | BD | 10111101 |
| 03F | 04 | 00000100 | 07F | 0E | 00001110 | 0BF | 07 | 00000111 | 0FF | 30 | 00110000 | 13F | C9 | 11001001 | 17F | A8 | 10101000 | 1BF | C9 | 11001001 | 1FF | BD | 10111101 |

PART NUMBER: 23-133F3-00 ,PAGE 1
DEVICE TYPE:1024 X 8
SCHEMATIC SHEET #:D-CS-M8390-0-DAPF
LOCATION/DESCRIPTION: E103 / OPCODE DECODE

LEFT COLUMN OF BIN DATA IS MSB
BINARY DATA "1" = HIGH
BINARY DATA "0" = LOW



| REVISIONS | | |
|---|---|---|
| OK | CHANGE NO. | REV# |
| | | |

DRN: D. Mitchener | DATE: 11-SEP-81 | ENG. | DATE
CHK'D. | DATE | BOARD LOCATIONS: SHEET 10 OF 14
DSK: S:DP10.T2[1,362,1503] 11-SEP-81 15:13 | NEXT HIGHER ASSEMBLY: B-DD-M8390-0-0
FIRST USED ON OPTION/MODEL: 11///30

TITLE: DATA PATH ROM AND PAL LISTINGS

| SIZE | CODE | NUMBER | REV. |
|---|---|---|---|
| D | GL | M8390-0-0 | A |

8 7 6 5 4 3 2 1

| HEX LOC | HEX DAT | BIN DAT |
|---|---|---|
| 200 | D8 | 11011000 |
| 201 | EA | 11101010 |
| 202 | 00 | 00000000 |
| 203 | D9 | 11011001 |
| 204 | 00 | 00000000 |
| 205 | 00 | 00000000 |
| 206 | D8 | 11011011 |
| 207 | DC | 11011100 |
| 208 | 11 | 00010001 |
| 209 | 12 | 00010010 |
| 20A | 66 | 01100110 |
| 20B | E6 | 11100110 |
| 20C | D9 | 11011001 |
| 20D | DA | 11011010 |
| 20E | 18 | 00011000 |
| 20F | 3B | 00111011 |
| 210 | 00 | 00000000 |
| 211 | 00 | 00000000 |
| 212 | 00 | 00000000 |
| 213 | 00 | 00000000 |
| 214 | 00 | 00000000 |
| 215 | 00 | 00000000 |
| 216 | 00 | 00000000 |
| 217 | 00 | 00000000 |
| 218 | 00 | 00000000 |
| 219 | 00 | 00000000 |
| 21A | 00 | 00000000 |
| 21B | 00 | 00000000 |
| 21C | 00 | 00000000 |
| 21D | 00 | 00000000 |
| 21E | 00 | 00000000 |
| 21F | 00 | 00000000 |
| 220 | 07 | 00000111 |
| 221 | 08 | 00001000 |
| 222 | 09 | 00001001 |
| 223 | 0A | 00001010 |
| 224 | 0F | 00001111 |
| 225 | 08 | 00001011 |
| 226 | 10 | 00010000 |
| 227 | 0C | 00001100 |
| 228 | 1D | 00011101 |
| 229 | 21 | 00100001 |
| 22A | 25 | 00100101 |
| 22B | 26 | 00100110 |
| 22C | 1E | 00011110 |
| 22D | 22 | 00100010 |
| 22E | 1F | 00011111 |
| 22F | 20 | 00100000 |
| 230 | 00 | 00000000 |
| 231 | 00 | 00000000 |
| 232 | 96 | 10010110 |
| 233 | A8 | 10100000 |
| 234 | 04 | 00000100 |
| 235 | 05 | 00000101 |
| 236 | 0E | 00001110 |
| 237 | 06 | 00000110 |
| 238 | E7 | 11100111 |
| 239 | 27 | 00100111 |
| 23A | 23 | 00100011 |
| 23B | 24 | 00100100 |
| 23C | 82 | 10000010 |
| 23D | E3 | 11100011 |
| 23E | 02 | 00000010 |
| 23F | 04 | 00000100 |
| 240 | 03 | 00000011 |
| 241 | 0C | 00001100 |
| 242 | 00 | 00000000 |
| 243 | 09 | 00001001 |
| 244 | 49 | 01001001 |
| 245 | 4E | 01001110 |
| 246 | 28 | 00101000 |
| 247 | 2D | 00101101 |
| 248 | A8 | 10101000 |
| 249 | AD | 10101101 |
| 24A | B2 | 10110010 |
| 24B | B6 | 10110110 |
| 24C | FC | 11111100 |
| 24D | FC | 11111100 |
| 24E | FC | 11111100 |
| 24F | 3F | 00111111 |
| 250 | 05 | 00000101 |
| 251 | 68 | 01101000 |
| 252 | 04 | 00000100 |
| 253 | 29 | 00101001 |
| 254 | F1 | 11110001 |
| 255 | DD | 11011101 |
| 256 | CB | 11001011 |
| 257 | DF | 11011111 |
| 258 | DA | 11011010 |
| 259 | DF | 11011111 |
| 25A | DF | 11011111 |
| 25B | DF | 11011111 |
| 25C | 64 | 01100100 |
| 25D | A0 | 10100000 |
| 25E | E8 | 11101000 |
| 25F | E9 | 11101001 |
| 260 | 13 | 00010011 |
| 261 | 21 | 00100001 |
| 262 | 10 | 00010000 |
| 263 | 1E | 00011110 |
| 264 | 52 | 01010010 |
| 265 | 5F | 01011111 |
| 266 | 31 | 00110001 |
| 267 | 3F | 00111111 |
| 268 | 88 | 10001011 |
| 269 | 90 | 10010000 |
| 26A | 95 | 10010101 |
| 26B | 99 | 10011001 |
| 26C | F3 | 11110011 |
| 26D | F3 | 11110011 |
| 26E | F3 | 11110011 |
| 26F | 77 | 01110111 |
| 270 | 11 | 00010001 |
| 271 | 76 | 01110110 |
| 272 | 10 | 00010000 |
| 273 | 1D | 00011101 |
| 274 | F2 | 11110010 |
| 275 | DE | 11011110 |
| 276 | EB | 11101011 |
| 277 | DF | 11011111 |
| 278 | 01 | 00000001 |
| 279 | E0 | 11100000 |
| 27A | E6 | 11100110 |
| 27B | FD | 11111101 |
| 27C | 00 | 00000000 |
| 27D | 00 | 00000000 |
| 27E | E0 | 11100000 |
| 27F | E1 | 11100001 |
| 280 | 2A | 00101010 |
| 281 | 00 | 00000000 |
| 282 | 3D | 00111101 |
| 283 | 00 | 00000000 |
| 284 | 00 | 00000000 |
| 285 | 1A | 00011010 |
| 286 | 2C | 00101100 |
| 287 | 76 | 01110110 |
| 288 | 43 | 01000011 |
| 289 | 4B | 01001011 |
| 28A | 4C | 01001100 |
| 28B | 54 | 01010100 |
| 28C | 56 | 01010110 |
| 28D | 5E | 01011110 |
| 28E | 6A | 01101010 |
| 28F | 4C | 01001100 |
| 290 | 00 | 00000000 |
| 291 | 00 | 00000000 |
| 292 | 7A | 01111010 |
| 293 | CD | 11001101 |
| 294 | 00 | 00000000 |
| 295 | C6 | 11000110 |
| 296 | 00 | 00000000 |
| 297 | 00 | 00000000 |
| 298 | 86 | 10000110 |
| 299 | 8D | 10001101 |
| 29A | 7E | 01111110 |
| 29B | 7D | 01111101 |
| 29C | D1 | 11010001 |
| 29D | E3 | 11100011 |
| 29E | 01 | 00000001 |
| 29F | 04 | 00000100 |
| 2A0 | 2A | 00101010 |
| 2A1 | 00 | 00000000 |
| 2A2 | 3D | 00111101 |
| 2A3 | 00 | 00000000 |
| 2A4 | 0C | 00001100 |
| 2A5 | 20 | 00100000 |
| 2A6 | 37 | 00110111 |
| 2A7 | 7D | 01111101 |
| 2A8 | 43 | 01000011 |
| 2A9 | 4B | 01001011 |
| 2AA | 4C | 01001100 |
| 2AB | 54 | 01010100 |
| 2AC | 56 | 01010110 |
| 2AD | 5E | 01011110 |
| 2AE | 6A | 01101010 |
| 2AF | 4C | 01001100 |
| 2B0 | 00 | 00000000 |
| 2B1 | 00 | 00000000 |
| 2B2 | 7A | 01111010 |
| 2B3 | CD | 11001101 |
| 2B4 | 00 | 00000000 |
| 2B5 | C6 | 11000110 |
| 2B6 | 00 | 00000000 |
| 2B7 | 00 | 00000000 |
| 2B8 | 3D | 00111101 |
| 2B9 | 3C | 00111100 |
| 2BA | 81 | 10000001 |
| 2BB | A0 | 10100000 |
| 2BC | DB | 11011011 |
| 2BD | DE | 11011110 |
| 2BE | DC | 11011100 |
| 2BF | DD | 11011101 |
| 2C0 | 2A | 00101010 |
| 2C1 | 00 | 00000000 |
| 2C2 | 3D | 00111101 |
| 2C3 | 00 | 00000000 |
| 2C4 | 15 | 00010101 |
| 2C5 | 28 | 00101000 |
| 2C6 | 47 | 01000111 |
| 2C7 | 88 | 10001011 |
| 2C8 | 43 | 01000011 |
| 2C9 | 4B | 01001011 |
| 2CA | 4C | 01001100 |
| 2CB | 54 | 01010100 |
| 2CC | 56 | 01010110 |
| 2CD | 5E | 01011110 |
| 2CE | 6A | 01101010 |
| 2CF | 4C | 01001100 |
| 2D0 | 00 | 00000000 |
| 2D1 | 00 | 00000000 |
| 2D2 | 7A | 01111010 |
| 2D3 | CD | 11001101 |
| 2D4 | 00 | 00000000 |
| 2D5 | C6 | 11000110 |
| 2D6 | 00 | 00000000 |
| 2D7 | 00 | 00000000 |
| 2D8 | C1 | 11000001 |
| 2D9 | C8 | 11001000 |
| 2DA | E4 | 11100100 |
| 2DB | DF | 11011111 |
| 2DC | 00 | 00000000 |
| 2DD | 5F | 01011111 |
| 2DE | 00 | 00000000 |
| 2DF | 04 | 00000100 |
| 2E0 | 64 | 01100100 |
| 2E1 | 69 | 01101001 |
| 2E2 | 6E | 01101110 |
| 2E3 | 7E | 01111110 |
| 2E4 | 75 | 01110110 |
| 2E5 | 85 | 10000110 |
| 2E6 | 8E | 10001110 |
| 2E7 | 90 | 10010000 |
| 2E8 | 02 | 00000010 |
| 2E9 | 05 | 00000101 |
| 2EA | 21 | 00100001 |
| 2EB | 22 | 00100010 |
| 2EC | 14 | 00010100 |
| 2ED | 13 | 00010011 |
| 2EE | 09 | 00001001 |
| 2EF | 03 | 00001000 |
| 2F0 | E5 | 11100101 |
| 2F1 | E3 | 11100011 |
| 2F2 | 00 | 00000000 |
| 2F3 | 03 | 00000000 |
| 2F4 | 00 | 00000000 |
| 2F5 | 00 | 00000000 |
| 2F6 | A3 | 10100011 |
| 2F7 | B1 | 10110001 |
| 2F8 | 13 | 00010011 |
| 2F9 | 05 | 00001101 |
| 2FA | 03 | 00000000 |
| 2FB | 00 | 00000000 |
| 2FC | E2 | 11100010 |
| 2FD | E3 | 11100011 |
| 2FE | E4 | 11100100 |
| 2FF | E5 | 11100101 |
| 300 | BC | 10111100 |
| 301 | BC | 10111100 |
| 302 | BD | 10111101 |
| 303 | BC | 10111100 |
| 304 | BE | 10111110 |
| 305 | D8 | 11011000 |
| 306 | BC | 10111100 |
| 307 | BC | 10111100 |
| 308 | 79 | 01111001 |
| 309 | 79 | 01111001 |
| 30A | 66 | 01100110 |
| 30B | BC | 10111100 |
| 30C | 89 | 10001001 |
| 30D | 89 | 10001001 |
| 30E | 86 | 10000110 |
| 30F | 86 | 10000110 |
| 310 | C1 | 11000001 |
| 311 | B0 | 10110000 |
| 312 | AF | 10101111 |
| 313 | AF | 10101111 |
| 314 | AF | 10101111 |
| 315 | AF | 10101111 |
| 316 | ED | 11101101 |
| 317 | E6 | 11100110 |
| 318 | AF | 10101111 |
| 319 | AF | 10101111 |
| 31A | AF | 10101111 |
| 31B | AF | 10101111 |
| 31C | AF | 10101111 |
| 31D | AF | 10101111 |
| 31E | AF | 10101111 |
| 31F | AF | 10101111 |
| 320 | 79 | 01111001 |
| 321 | 79 | 01111001 |
| 322 | 79 | 01111001 |
| 323 | 79 | 01111001 |
| 324 | 79 | 01111001 |
| 325 | 79 | 01111001 |
| 326 | 79 | 01111001 |
| 327 | 79 | 01111001 |
| 328 | 8C | 10001100 |
| 329 | 8C | 10001100 |
| 32A | 9C | 10001100 |
| 32B | 8C | 10001100 |
| 32C | 8C | 10001100 |
| 32D | 8C | 10001100 |
| 32E | 8C | 10001100 |
| 32F | 8C | 10001100 |
| 330 | C2 | 11000010 |
| 331 | B5 | 10110101 |
| 332 | 73 | 01110011 |
| 333 | 73 | 01110011 |
| 334 | 79 | 01111001 |
| 335 | 79 | 01111001 |
| 336 | 79 | 01111001 |
| 337 | 79 | 01111001 |
| 338 | BC | 10111100 |
| 339 | 8C | 10001100 |
| 33A | 8C | 10001100 |
| 33B | 8C | 10001100 |
| 33C | 5C | 01011100 |
| 33D | 43 | 01000011 |
| 33E | 96 | 10000110 |
| 33F | 86 | 10000110 |
| 340 | 08 | 00001011 |
| 341 | 1D | 00011101 |
| 342 | 08 | 00001011 |
| 343 | 1D | 00011101 |
| 344 | 08 | 00001011 |
| 345 | 1D | 00011101 |
| 346 | 0B | 00001011 |
| 347 | 1D | 00011101 |
| 348 | 4C | 01001100 |
| 349 | 4C | 01001100 |
| 34A | 4C | 01001100 |
| 34B | 4C | 01001100 |
| 34C | 8D | 10001101 |
| 34D | 8D | 10001101 |
| 34E | 8D | 10001101 |
| 34F | 59 | 01011001 |
| 350 | 59 | 01011001 |
| 351 | 4C | 01001100 |
| 352 | 59 | 01011001 |
| 353 | 59 | 01011001 |
| 354 | 4C | 01001100 |
| 355 | BC | 10111100 |
| 356 | 4C | 01001100 |
| 357 | BC | 10111100 |
| 358 | BC | 10111100 |
| 359 | BC | 10111100 |
| 35A | BC | 10111100 |
| 35B | BC | 10111100 |
| 35C | 86 | 10000110 |
| 35D | 86 | 10000110 |
| 35E | BC | 10111100 |
| 35F | BC | 10111100 |
| 360 | 28 | 00101011 |
| 361 | 3C | 00111100 |
| 362 | 28 | 00101011 |
| 363 | 3C | 00111100 |
| 364 | 28 | 00101011 |
| 365 | 3C | 00111100 |
| 366 | 28 | 00101011 |
| 367 | 3C | 00111100 |
| 368 | 62 | 01100010 |
| 369 | 62 | 01100010 |
| 36A | 62 | 01100010 |
| 36B | 62 | 01100010 |
| 36C | 8D | 10001101 |
| 36D | 8D | 10001101 |
| 36E | 8D | 10001101 |
| 36F | 71 | 01110001 |
| 370 | 71 | 01110001 |
| 371 | 62 | 01100010 |
| 372 | 71 | 01110001 |
| 373 | 71 | 01110001 |
| 374 | 62 | 01100010 |
| 375 | BC | 10111100 |
| 376 | 62 | 01100010 |
| 377 | BC | 10111100 |
| 378 | 66 | 01100110 |
| 379 | 89 | 10001001 |
| 37A | 89 | 10001001 |
| 37B | 89 | 10001001 |
| 37C | 00 | 00000000 |
| 37D | 97 | 10010111 |
| 37E | BC | 10111100 |
| 37F | BC | 10111100 |
| 380 | 04 | 00000100 |
| 381 | C4 | 11000100 |
| 382 | 04 | 00000100 |
| 383 | CE | 11001110 |
| 384 | 24 | 00100100 |
| 385 | 43 | 01000011 |
| 386 | 24 | 00100100 |
| 387 | 43 | 01000011 |
| 388 | 04 | 00000100 |
| 389 | 33 | 00110011 |
| 38A | 04 | 00000100 |
| 38B | 33 | 00110011 |
| 38C | 04 | 00000100 |
| 38D | 33 | 00110011 |
| 38E | 5C | 01011100 |
| 38F | 66 | 01100110 |
| 390 | 91 | 10010001 |
| 391 | 98 | 10011000 |
| 392 | 5C | 01011100 |
| 393 | 33 | 00110011 |
| 394 | AA | 10101010 |
| 395 | 5C | 01011100 |
| 396 | A0 | 10100000 |
| 397 | A5 | 10100101 |
| 398 | 6B | 01101011 |
| 399 | 6B | 01101011 |
| 39A | 5C | 01011100 |
| 39B | 5C | 01011100 |
| 39C | 5C | 01011100 |
| 39D | 43 | 01000011 |
| 39E | 86 | 10000110 |
| 39F | 86 | 10000110 |
| 3A0 | 04 | 00000100 |
| 3A1 | C4 | 11000100 |
| 3A2 | 04 | 00000100 |
| 3A3 | CE | 11001110 |
| 3A4 | 24 | 00100100 |
| 3A5 | 43 | 01000011 |
| 3A6 | 24 | 00100100 |
| 3A7 | 43 | 01000011 |
| 3A8 | 04 | 00000100 |
| 3A9 | 33 | 00110011 |
| 3AA | 04 | 00000100 |
| 3AB | 33 | 00110011 |
| 3AC | 04 | 00000100 |
| 3AD | 33 | 00110011 |
| 3AE | 5C | 01011100 |
| 3AF | 66 | 01100110 |
| 3B0 | 91 | 10010001 |
| 3B1 | 98 | 10011000 |
| 3B2 | 5C | 01011100 |
| 3B3 | 33 | 00110011 |
| 3B4 | AA | 10101010 |
| 3B5 | 5C | 01011100 |
| 3B6 | A0 | 10100000 |
| 3B7 | A5 | 10100101 |
| 3B8 | 66 | 01100110 |
| 3B9 | 66 | 01100110 |
| 3BA | 66 | 01100110 |
| 3BB | 66 | 01100110 |
| 3BC | 89 | 10001001 |
| 3BD | 89 | 10001001 |
| 3BE | 89 | 10001001 |
| 3BF | 89 | 10001001 |
| 3C0 | 04 | 00000100 |
| 3C1 | C4 | 11000100 |
| 3C2 | 04 | 00000100 |
| 3C3 | CE | 11001110 |
| 3C4 | 14 | 00010100 |
| 3C5 | 50 | 01010000 |
| 3C6 | 14 | 00010100 |
| 3C7 | 50 | 01010000 |
| 3C8 | 04 | 00000100 |
| 3C9 | 33 | 00110011 |
| 3CA | 04 | 00000100 |
| 3CB | 33 | 00110011 |
| 3CC | 04 | 00000100 |
| 3CD | 33 | 00110011 |
| 3CE | 5C | 01011100 |
| 3CF | 66 | 01100110 |
| 3D0 | 91 | 10010001 |
| 3D1 | 98 | 10011000 |
| 3D2 | 5C | 01011100 |
| 3D3 | 33 | 00110011 |
| 3D4 | AA | 10101010 |
| 3D5 | 5C | 01011100 |
| 3D6 | A0 | 10100000 |
| 3D7 | A5 | 10100101 |
| 3D8 | 04 | 00000100 |
| 3D9 | 04 | 00000100 |
| 3DA | 43 | 01000011 |
| 3DB | 89 | 10001001 |
| 3DC | C3 | 11000011 |
| 3DD | 5C | 01011100 |
| 3DE | DF | 11011111 |
| 3DF | 86 | 10000110 |
| 3E0 | 7A | 01111010 |
| 3E1 | 7A | 01111010 |
| 3E2 | 7A | 01111010 |
| 3E3 | 7A | 01111010 |
| 3E4 | 7A | 01111010 |
| 3E5 | 7A | 01111010 |
| 3E6 | 7A | 01111010 |
| 3E7 | 7A | 01111010 |
| 3E8 | 66 | 01100110 |
| 3E9 | 66 | 01100110 |
| 3EA | 66 | 01100110 |
| 3EB | 66 | 01100110 |
| 3EC | 66 | 01100110 |
| 3ED | 66 | 01100110 |
| 3EE | 66 | 01100110 |
| 3EF | 66 | 01100110 |
| 3F0 | 43 | 01000011 |
| 3F1 | 43 | 01000011 |
| 3F2 | FA | 11111010 |
| 3F3 | F9 | 11111001 |
| 3F4 | BF | 10111111 |
| 3F5 | C0 | 11000000 |
| 3F6 | 80 | 10000000 |
| 3F7 | 80 | 10000000 |
| 3F8 | 79 | 01111001 |
| 3F9 | 79 | 01111001 |
| 3FA | 86 | 10000110 |
| 3FB | 66 | 01100110 |
| 3FC | BC | 10111100 |
| 3FD | BC | 10111100 |
| 3FE | BC | 10111100 |
| 3FF | BC | 10111100 |

PART NUMBER: 23-133F3-00 ,PAGE 2
DEVICE TYPE:1024 X 8
SCHEMATIC SHEET #:D-CS-M8390-0-DAPF
LOCATION/DESCRIPTION: E103 / OPCODE DECODE

LEFT COLUMN OF BIN DATA IS MSB
BINARY DATA "1" = HIGH
BINARY DATA "0" = LOW



| REVISIONS | | |
|---|---|---|
| CHK | CHANGE NO. | REV |

DRN: D.M.Hofmann
CHK'D:
DATE ENG. 11-SEP-81
DATE
DATE BOARD LOCATION:
SHEET 11 OF 14
DSK:GLDP10,T2PL362,1563]11-SEP-81 15:14
NEXT HIGHER ASSEMBLY: 8-DD-M8390-0-0
FIRST USED ON OPTION/MODEL: 11/730

TITLE: DATA PATH ROM AND PAL LISTINGS

| SIZE | CODE | NUMBER | REV. |
|---|---|---|---|
| D | GL | M8390-0-0 | A |

| HEX LOC | HEX DAT | BIN DAT | HEX LOC | HEX DAT | BIN DAT | HEX LOC | HEX DAT | BIN DAT | HEX LOC | HEX DAT | BIN DAT | HEX LOC | HEX DAT | BIN DAT | HEX LOC | HEX DAT | BIN DAT | HEX LOC | HEX DAT | BIN DAT |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 000 | 8 | 1000 | 040 | 3 | 0011 | 080 | 8 | 1000 | 0C0 | 3 | 0011 | 100 | 8 | 1000 | 140 | 0 | 0000 | 180 | 0 | 0000 | 1C0 | 8 | 1000 |
| 001 | 8 | 1000 | 041 | 3 | 0011 | 081 | 8 | 1000 | 0C1 | 3 | 0011 | 101 | 8 | 1000 | 141 | 0 | 0000 | 181 | 0 | 0000 | 1C1 | 8 | 1000 |
| 002 | 8 | 1000 | 042 | 3 | 0011 | 082 | A | 1010 | 0C2 | 3 | 0011 | 102 | 8 | 1000 | 142 | 0 | 0000 | 182 | 0 | 0000 | 1C2 | 8 | 1000 |
| 003 | 8 | 1000 | 043 | 3 | 0011 | 083 | F | 1111 | 0C3 | 3 | 0011 | 103 | 8 | 1000 | 143 | 0 | 0000 | 183 | 0 | 0000 | 1C3 | 8 | 1000 |
| 004 | 8 | 1000 | 044 | 3 | 0011 | 084 | 9 | 1001 | 0C4 | 3 | 0011 | 104 | 9 | 1001 | 144 | 1 | 0001 | 184 | 1 | 0001 | 1C4 | 9 | 1001 |
| 005 | 8 | 1000 | 045 | 3 | 0011 | 085 | B | 1011 | 0C5 | 3 | 0011 | 105 | 9 | 1001 | 145 | 1 | 0001 | 185 | 1 | 0001 | 1C5 | 9 | 1001 |
| 006 | 8 | 1000 | 046 | 3 | 0011 | 086 | B | 1011 | 0C6 | 3 | 0011 | 106 | 9 | 1001 | 146 | 1 | 0001 | 186 | 1 | 0001 | 1C6 | 9 | 1001 |
| 007 | 8 | 1000 | 047 | 3 | 0011 | 087 | B | 1011 | 0C7 | 3 | 0011 | 107 | 9 | 1001 | 147 | 1 | 0001 | 187 | 1 | 0001 | 1C7 | 9 | 1001 |
| 008 | 8 | 1000 | 048 | 3 | 0011 | 088 | 0 | 0000 | 0C8 | B | 1011 | 108 | C | 1100 | 148 | 2 | 0010 | 188 | 4 | 0100 | 1C8 | A | 1010 |
| 009 | 8 | 1000 | 049 | 3 | 0011 | 089 | 1 | 0001 | 0C9 | B | 1011 | 109 | C | 1100 | 149 | 2 | 0010 | 189 | 4 | 0100 | 1C9 | A | 1010 |
| 00A | 8 | 1000 | 04A | 3 | 0011 | 08A | B | 1011 | 0CA | B | 1011 | 10A | C | 1100 | 14A | 2 | 0010 | 18A | 4 | 0100 | 1CA | A | 1010 |
| 00B | 8 | 1000 | 04B | 3 | 0011 | 08B | 8 | 1000 | 0CB | B | 1011 | 10B | C | 1100 | 14B | 2 | 0010 | 18B | 4 | 0100 | 1CB | A | 1010 |
| 00C | 8 | 1000 | 04C | 3 | 0011 | 08C | 3 | 0011 | 0CC | B | 1011 | 10C | E | 1110 | 14C | 3 | 0011 | 18C | 6 | 0110 | 1CC | B | 1011 |
| 00D | 8 | 1000 | 04D | 3 | 0011 | 08D | B | 1011 | 0CD | B | 1011 | 10D | E | 1110 | 14D | 3 | 0011 | 18D | 6 | 0110 | 1CD | B | 1011 |
| 00E | 8 | 1000 | 04E | 3 | 0011 | 08E | 3 | 0011 | 0CE | B | 1011 | 10E | E | 1110 | 14E | 3 | 0011 | 18E | 6 | 0110 | 1CE | B | 1011 |
| 00F | 8 | 1000 | 04F | 3 | 0011 | 08F | B | 1011 | 0CF | B | 1011 | 10F | E | 1110 | 14F | 3 | 0011 | 18F | 6 | 0110 | 1CF | B | 1011 |
| 010 | 8 | 1000 | 050 | 3 | 0011 | 090 | 9 | 1001 | 0D0 | 3 | 0011 | 110 | 9 | 1001 | 150 | 5 | 0101 | 190 | 3 | 0011 | 1D0 | C | 1100 |
| 011 | 8 | 1000 | 051 | 3 | 0011 | 091 | B | 1011 | 0D1 | 3 | 0011 | 111 | 9 | 1001 | 151 | 5 | 0101 | 191 | 3 | 0011 | 1D1 | C | 1100 |
| 012 | 8 | 1000 | 052 | 3 | 0011 | 092 | A | 1010 | 0D2 | 3 | 0011 | 112 | 9 | 1001 | 152 | 5 | 0101 | 192 | 3 | 0011 | 1D2 | C | 1100 |
| 013 | 8 | 1000 | 053 | 3 | 0011 | 093 | 9 | 1001 | 0D3 | 3 | 0011 | 113 | 9 | 1001 | 153 | 5 | 0101 | 193 | 3 | 0011 | 1D3 | C | 1100 |
| 014 | 8 | 1000 | 054 | 3 | 0011 | 094 | 1 | 0001 | 0D4 | 3 | 0011 | 114 | D | 1101 | 154 | 6 | 0110 | 194 | C | 1100 | 1D4 | E | 1110 |
| 015 | 8 | 1000 | 055 | 3 | 0011 | 095 | 8 | 0000 | 0D5 | 3 | 0011 | 115 | D | 1101 | 155 | 6 | 0110 | 195 | C | 1100 | 1D5 | E | 1110 |
| 016 | 8 | 1000 | 056 | 3 | 0011 | 096 | 2 | 0010 | 0D6 | 3 | 0011 | 116 | D | 1101 | 156 | 6 | 0110 | 196 | C | 1100 | 1D6 | E | 1110 |
| 017 | 8 | 1000 | 057 | 3 | 0011 | 097 | 7 | 0111 | 0D7 | 3 | 0011 | 117 | D | 1101 | 157 | 6 | 0110 | 197 | C | 1100 | 1D7 | E | 1110 |
| 018 | 8 | 1000 | 058 | 3 | 0011 | 098 | C | 1100 | 0D8 | B | 1011 | 118 | 8 | 1000 | 158 | 4 | 0100 | 198 | 3 | 0011 | 1D8 | B | 1011 |
| 019 | 8 | 1000 | 059 | 3 | 0011 | 099 | A | 1010 | 0D9 | B | 1011 | 119 | 8 | 1000 | 159 | 4 | 0100 | 199 | 3 | 0011 | 1D9 | B | 1011 |
| 01A | 8 | 1000 | 05A | 3 | 0011 | 09A | B | 1011 | 0DA | B | 1011 | 11A | 8 | 1000 | 15A | 4 | 0100 | 19A | 3 | 0011 | 1DA | B | 1011 |
| 01B | 8 | 1000 | 05B | 3 | 0011 | 09B | 8 | 1000 | 0DB | B | 1011 | 11B | 8 | 1000 | 15B | 4 | 0100 | 19B | 3 | 0011 | 1DB | B | 1011 |
| 01C | 8 | 1000 | 05C | 3 | 0011 | 09C | B | 1011 | 0DC | B | 1011 | 11C | B | 1011 | 15C | C | 1100 | 19C | 0 | 0000 | 1DC | A | 1010 |
| 01D | 8 | 1000 | 05D | 3 | 0011 | 09D | B | 1011 | 0DD | B | 1011 | 11D | B | 1011 | 15D | C | 1100 | 19D | 0 | 0000 | 1DD | A | 1010 |
| 01E | 8 | 1000 | 05E | 3 | 0011 | 09E | B | 1011 | 0DE | B | 1011 | 11E | B | 1011 | 15E | C | 1100 | 19E | 0 | 0000 | 1DE | A | 1010 |
| 01F | 8 | 1000 | 05F | 3 | 0011 | 09F | B | 1011 | 0DF | B | 1011 | 11F | B | 1011 | 15F | C | 1100 | 19F | 0 | 0000 | 1DF | A | 1010 |
| 020 | B | 1011 | 060 | B | 1011 | 0A0 | 0 | 0000 | 0E0 | B | 1011 | 120 | 0 | 0000 | 160 | 3 | 0011 | 1A0 | A | 1010 | 1E0 | F | 1111 |
| 021 | B | 1011 | 061 | B | 1011 | 0A1 | 1 | 0001 | 0E1 | B | 1011 | 121 | 0 | 0000 | 161 | 3 | 0011 | 1A1 | A | 1010 | 1E1 | F | 1111 |
| 022 | B | 1011 | 062 | B | 1011 | 0A2 | 2 | 0010 | 0E2 | B | 1011 | 122 | 0 | 0000 | 162 | 3 | 0011 | 1A2 | A | 1010 | 1E2 | F | 1111 |
| 023 | B | 1011 | 063 | B | 1011 | 0A3 | 3 | 0011 | 0E3 | B | 1011 | 123 | 0 | 0000 | 163 | 3 | 0011 | 1A3 | A | 1010 | 1E3 | F | 1111 |
| 024 | B | 1011 | 064 | B | 1011 | 0A4 | 4 | 0100 | 0E4 | B | 1011 | 124 | 1 | 0001 | 164 | C | 1100 | 1A4 | 9 | 1001 | 1E4 | A | 1010 |
| 025 | B | 1011 | 065 | B | 1011 | 0A5 | 5 | 0101 | 0E5 | B | 1011 | 125 | 1 | 0001 | 165 | C | 1100 | 1A5 | 9 | 1001 | 1E5 | A | 1010 |
| 026 | B | 1011 | 066 | B | 1011 | 0A6 | 6 | 0110 | 0E6 | B | 1011 | 126 | 1 | 0001 | 166 | C | 1100 | 1A6 | 9 | 1001 | 1E6 | A | 1010 |
| 027 | B | 1011 | 067 | B | 1011 | 0A7 | B | 1011 | 0E7 | B | 1011 | 127 | 1 | 0001 | 167 | C | 1100 | 1A7 | 9 | 1001 | 1E7 | A | 1010 |
| 028 | B | 1011 | 068 | B | 1011 | 0A8 | 0 | 0000 | 0E8 | B | 1011 | 128 | 2 | 0010 | 168 | A | 1010 | 1A8 | 8 | 1000 | 1E8 | 8 | 1000 |
| 029 | B | 1011 | 069 | B | 1011 | 0A9 | 1 | 0001 | 0E9 | B | 1011 | 129 | 2 | 0010 | 169 | A | 1010 | 1A9 | 8 | 1000 | 1E9 | 8 | 1000 |
| 02A | B | 1011 | 06A | B | 1011 | 0AA | B | 1011 | 0EA | B | 1011 | 12A | 2 | 0010 | 16A | A | 1010 | 1AA | 8 | 1000 | 1EA | 8 | 1000 |
| 02B | B | 1011 | 06B | B | 1011 | 0AB | 3 | 0011 | 0EB | B | 1011 | 12B | 2 | 0010 | 16B | A | 1010 | 1AB | 8 | 1000 | 1EB | 8 | 1000 |
| 02C | B | 1011 | 06C | B | 1011 | 0AC | 4 | 0100 | 0EC | B | 1011 | 12C | 3 | 0011 | 16C | 9 | 1001 | 1AC | A | 1010 | 1EC | A | 1010 |
| 02D | B | 1011 | 06D | B | 1011 | 0AD | 5 | 0101 | 0ED | B | 1011 | 12D | 3 | 0011 | 16D | 9 | 1001 | 1AD | A | 1010 | 1ED | A | 1010 |
| 02E | B | 1011 | 06E | B | 1011 | 0AE | 6 | 0110 | 0EE | B | 1011 | 12E | 3 | 0011 | 16E | 9 | 1001 | 1AE | A | 1010 | 1EE | A | 1010 |
| 02F | B | 1011 | 06F | B | 1011 | 0AF | B | 1011 | 0EF | B | 1011 | 12F | 3 | 0011 | 16F | 9 | 1001 | 1AF | A | 1010 | 1EF | A | 1010 |
| 030 | B | 1011 | 070 | B | 1011 | 0B0 | 8 | 1000 | 0F0 | 8 | 1000 | 130 | 4 | 0100 | 170 | 8 | 1000 | 1B0 | 8 | 1000 | 1F0 | A | 1010 |
| 031 | B | 1011 | 071 | B | 1011 | 0B1 | 9 | 1001 | 0F1 | 8 | 1000 | 131 | 4 | 0100 | 171 | 8 | 1000 | 1B1 | 8 | 1000 | 1F1 | A | 1010 |
| 032 | B | 1011 | 072 | B | 1011 | 0B2 | A | 1010 | 0F2 | 8 | 1000 | 132 | 4 | 0100 | 172 | 8 | 1000 | 1B2 | 8 | 1000 | 1F2 | A | 1010 |
| 033 | B | 1011 | 073 | B | 1011 | 0B3 | B | 1011 | 0F3 | 8 | 1000 | 133 | 4 | 0100 | 173 | 8 | 1000 | 1B3 | 8 | 1000 | 1F3 | A | 1010 |
| 034 | B | 1011 | 074 | B | 1011 | 0B4 | C | 1100 | 0F4 | 8 | 1000 | 134 | 6 | 0110 | 174 | A | 1010 | 1B4 | B | 1011 | 1F4 | F | 1111 |
| 035 | B | 1011 | 075 | B | 1011 | 0B5 | B | 1011 | 0F5 | 8 | 1000 | 135 | 6 | 0110 | 175 | A | 1010 | 1B5 | B | 1011 | 1F5 | F | 1111 |
| 036 | B | 1011 | 076 | B | 1011 | 0B6 | E | 1110 | 0F6 | 8 | 1000 | 136 | 6 | 0110 | 176 | A | 1010 | 1B6 | B | 1011 | 1F6 | F | 1111 |
| 037 | B | 1011 | 077 | B | 1011 | 0B7 | C | 1100 | 0F7 | 8 | 1000 | 137 | 6 | 0110 | 177 | A | 1010 | 1B7 | B | 1011 | 1F7 | F | 1111 |
| 038 | B | 1011 | 078 | B | 1011 | 0B8 | 8 | 1000 | 0F8 | B | 1011 | 138 | A | 1010 | 178 | 9 | 1001 | 1B8 | C | 1100 | 1F8 | 9 | 1001 |
| 039 | B | 1011 | 079 | B | 1011 | 0B9 | 9 | 1001 | 0F9 | B | 1011 | 139 | A | 1010 | 179 | 9 | 1001 | 1B9 | C | 1100 | 1F9 | 9 | 1001 |
| 03A | B | 1011 | 07A | B | 1011 | 0BA | A | 1010 | 0FA | B | 1011 | 13A | A | 1010 | 17A | 9 | 1001 | 1BA | C | 1100 | 1FA | 9 | 1001 |
| 03B | B | 1011 | 07B | B | 1011 | 0BB | B | 1011 | 0FB | B | 1011 | 13B | A | 1010 | 17B | 9 | 1001 | 1BB | C | 1100 | 1FB | 9 | 1001 |
| 03C | B | 1011 | 07C | B | 1011 | 0BC | 9 | 1001 | 0FC | B | 1011 | 13C | 9 | 1001 | 17C | F | 1111 | 1BC | E | 1110 | 1FC | 8 | 1000 |
| 03D | B | 1011 | 07D | B | 1011 | 0BD | D | 1101 | 0FD | B | 1011 | 13D | 9 | 1001 | 17D | F | 1111 | 1BD | E | 1110 | 1FD | 8 | 1000 |
| 03E | B | 1011 | 07E | B | 1011 | 0BE | E | 1110 | 0FE | B | 1011 | 13E | 9 | 1001 | 17E | F | 1111 | 1BE | E | 1110 | 1FE | 8 | 1000 |
| 03F | B | 1011 | 07F | B | 1011 | 0BF | C | 1100 | 0FF | B | 1011 | 13F | 9 | 1001 | 17F | F | 1111 | 1BF | E | 1110 | 1FF | 8 | 1000 |

PART NUMBER: 23-945A9-00
DEVICE TYPE:512 X 4
SCHEMATIC SHEET #:D-CS-M8390-0-DAPA
LOCATION/DESCRIPTION: E46 / ALU CONTROL

LEFT COLUMN OF BIN DATA IS MSB
BINARY DATA "1" = HIGH
BINARY DATA "0" = LOW



| REVISIONS | | |
|---|---|---|
| CHK | CHANGE NO. | REV |
| | | |

DRN [illegible] CHK'D.
DATE 21-SEP-81
DATE
ENG.
DATE
BOARD LOCATION:
SHEET 12 OF 13
TITLE: DATA PATH ROM AND PAL LISTINGS
DSK1GLOP12.T2R[357,1500]21-SEP-81 14:11
FIRST USED ON OPTION-MODEL: 11/730
NEXT HIGHER ASSEMBLY: B-DD-M9390-0-0
SIZE D | CODE GL | NUMBER M8390-0-0 | REV. A

| HEX LOC | HEX DAT | BIN DAT | HEX LOC | HEX DAT | BIN DAT | HEX LOC | HEX DAT | BIN DAT | HEX LOC | HEX DAT | BIN DAT | HEX LOC | HEX DAT | BIN DAT | HEX LOC | HEX DAT | BIN DAT | HEX LOC | HEX DAT | BIN DAT |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 000 | 3 | 0011 | 040 | C | 1100 | 080 | 0 | 0000 | 0C0 | C | 1100 | 100 | 7 | 0111 | 140 | 7 | 0111 | 180 | 6 | 0110 | 1C0 | 3 | 0011 |
| 001 | 3 | 0011 | 041 | C | 1100 | 081 | 0 | 0000 | 0C1 | C | 1100 | 101 | 0 | 0000 | 141 | 7 | 0111 | 181 | 6 | 0110 | 1C1 | 3 | 0011 |
| 002 | 3 | 0011 | 042 | C | 1100 | 082 | 1 | 0001 | 0C2 | D | 1101 | 102 | 0 | 0000 | 142 | 7 | 0111 | 182 | 1 | 0001 | 1C2 | 3 | 0011 |
| 003 | 3 | 0011 | 043 | C | 1100 | 083 | 1 | 0001 | 0C3 | D | 1101 | 103 | 0 | 0000 | 143 | 7 | 0111 | 183 | 1 | 0001 | 1C3 | 3 | 0011 |
| 004 | 3 | 0011 | 044 | C | 1100 | 084 | 0 | 0000 | 0C4 | C | 1100 | 104 | 7 | 0111 | 144 | 7 | 0111 | 184 | 2 | 0010 | 1C4 | 3 | 0011 |
| 005 | 3 | 0011 | 045 | C | 1100 | 085 | 0 | 0000 | 0C5 | C | 1100 | 105 | 7 | 0111 | 145 | 7 | 0111 | 185 | 2 | 0010 | 1C5 | 3 | 0011 |
| 006 | 3 | 0011 | 046 | C | 1100 | 086 | 0 | 0000 | 0C6 | C | 1100 | 106 | 5 | 0101 | 146 | 7 | 0111 | 186 | 3 | 0011 | 1C6 | 3 | 0011 |
| 007 | 3 | 0011 | 047 | C | 1100 | 087 | 0 | 0000 | 0C7 | C | 1100 | 107 | 5 | 0101 | 147 | 7 | 0111 | 187 | 3 | 0011 | 1C7 | 3 | 0011 |
| 008 | 7 | 0111 | 048 | C | 1100 | 088 | 3 | 0011 | 0C8 | F | 1111 | 108 | 7 | 0111 | 148 | 7 | 0111 | 188 | 7 | 0111 | 1C8 | 3 | 0011 |
| 009 | 7 | 0111 | 049 | C | 1100 | 089 | 3 | 0011 | 0C9 | F | 1111 | 109 | 7 | 0111 | 149 | 7 | 0111 | 189 | 7 | 0111 | 1C9 | 3 | 0011 |
| 00A | C | 1100 | 04A | C | 1100 | 08A | 3 | 0011 | 0CA | F | 1111 | 10A | 7 | 0111 | 14A | 7 | 0111 | 18A | 3 | 0011 | 1CA | 3 | 0011 |
| 00B | 3 | 0011 | 04B | C | 1100 | 08B | 3 | 0011 | 0CB | F | 1111 | 10B | 5 | 0101 | 14B | 7 | 0111 | 18B | 1 | 0001 | 1CB | 3 | 0011 |
| 00C | 3 | 0011 | 04C | 0 | 0000 | 08C | 3 | 0011 | 0CC | F | 1111 | 10C | 4 | 0100 | 14C | 7 | 0111 | 18C | 0 | 0000 | 1CC | 3 | 0011 |
| 00D | 3 | 0011 | 04D | 4 | 0100 | 08D | 3 | 0011 | 0CD | F | 1111 | 10D | 7 | 0111 | 14D | 7 | 0111 | 18D | 7 | 0111 | 1CD | 3 | 0011 |
| 00E | 2 | 0010 | 04E | C | 1100 | 08E | 0 | 0000 | 0CE | C | 1100 | 10E | 7 | 0111 | 14E | 7 | 0111 | 18E | 7 | 0111 | 1CE | 3 | 0011 |
| 00F | 2 | 0010 | 04F | F | 1111 | 08F | 2 | 0010 | 0CF | E | 1110 | 10F | 7 | 0111 | 14F | 7 | 0111 | 18F | 7 | 0111 | 1CF | 3 | 0011 |
| 010 | 0 | 0000 | 050 | F | 1111 | 090 | 3 | 0011 | 0D0 | F | 1111 | 110 | 7 | 0111 | 150 | 7 | 0111 | 190 | 3 | 0011 | 1D0 | 3 | 0011 |
| 011 | 0 | 0000 | 051 | C | 1100 | 091 | 2 | 0010 | 0D1 | E | 1110 | 111 | 7 | 0111 | 151 | 7 | 0111 | 191 | 3 | 0011 | 1D1 | 3 | 0011 |
| 012 | 0 | 0000 | 052 | C | 1100 | 092 | 3 | 0011 | 0D2 | F | 1111 | 112 | 7 | 0111 | 152 | 7 | 0111 | 192 | 3 | 0011 | 1D2 | 3 | 0011 |
| 013 | 0 | 0000 | 053 | C | 1100 | 093 | 3 | 0011 | 0D3 | F | 1111 | 113 | 7 | 0111 | 153 | 7 | 0111 | 193 | 3 | 0011 | 1D3 | 3 | 0011 |
| 014 | 4 | 0100 | 054 | C | 1100 | 094 | 3 | 0011 | 0D4 | F | 1111 | 114 | 7 | 0111 | 154 | 7 | 0111 | 194 | 3 | 0011 | 1D4 | 3 | 0011 |
| 015 | 4 | 0100 | 055 | C | 1100 | 095 | 0 | 0000 | 0D5 | C | 1100 | 115 | 7 | 0111 | 155 | 7 | 0111 | 195 | 3 | 0011 | 1D5 | 3 | 0011 |
| 016 | 0 | 0000 | 056 | C | 1100 | 096 | 0 | 0000 | 0D6 | C | 1100 | 116 | 7 | 0111 | 156 | 7 | 0111 | 196 | 3 | 0011 | 1D6 | 3 | 0011 |
| 017 | 0 | 0000 | 057 | F | 1111 | 097 | 1 | 0001 | 0D7 | D | 1101 | 117 | 7 | 0111 | 157 | 7 | 0111 | 197 | 3 | 0011 | 1D7 | 3 | 0011 |
| 018 | 6 | 0110 | 058 | 4 | 0100 | 098 | 0 | 0000 | 0D8 | C | 1100 | 118 | 7 | 0111 | 158 | 7 | 0111 | 198 | 3 | 0011 | 1D8 | 3 | 0011 |
| 019 | 6 | 0110 | 059 | F | 1111 | 099 | 0 | 0000 | 0D9 | D | 1101 | 119 | 7 | 0111 | 159 | 7 | 0111 | 199 | 3 | 0011 | 1D9 | 3 | 0011 |
| 01A | 1 | 0001 | 05A | F | 1111 | 09A | 3 | 0011 | 0DA | F | 1111 | 11A | 7 | 0111 | 15A | 7 | 0111 | 19A | 3 | 0011 | 1DA | 3 | 0011 |
| 01B | 1 | 0001 | 05B | F | 1111 | 09B | 3 | 0011 | 0DB | F | 1111 | 11B | 7 | 0111 | 15B | 7 | 0111 | 19B | 3 | 0011 | 1DB | 3 | 0011 |
| 01C | 2 | 0010 | 05C | 0 | 0000 | 09C | 3 | 0011 | 0DC | F | 1111 | 11C | 7 | 0111 | 15C | 7 | 0111 | 19C | 3 | 0011 | 1DC | 3 | 0011 |
| 01D | 2 | 0010 | 05D | 0 | 0000 | 09D | 3 | 0011 | 0DD | F | 1111 | 11D | 7 | 0111 | 15D | 7 | 0111 | 19D | 3 | 0011 | 1DD | 3 | 0011 |
| 01E | 3 | 0011 | 05E | 0 | 0000 | 09E | 3 | 0011 | 0DE | F | 1111 | 11E | 7 | 0111 | 15E | 7 | 0111 | 19E | 3 | 0011 | 1DE | 3 | 0011 |
| 01F | 3 | 0011 | 05F | 0 | 0000 | 09F | 3 | 0011 | 0DF | F | 1111 | 11F | 7 | 0111 | 15F | 7 | 0111 | 19F | 3 | 0011 | 1DF | 3 | 0011 |
| 020 | 4 | 0100 | 060 | C | 1100 | 0A0 | 4 | 0100 | 0E0 | F | 1111 | 120 | 5 | 0101 | 160 | 4 | 0100 | 1A0 | 1 | 0001 | 1E0 | 5 | 0101 |
| 021 | 4 | 0100 | 061 | C | 1100 | 0A1 | 4 | 0100 | 0E1 | F | 1111 | 121 | 5 | 0101 | 161 | 4 | 0100 | 1A1 | 1 | 0001 | 1E1 | 5 | 0101 |
| 022 | 4 | 0100 | 062 | C | 1100 | 0A2 | 5 | 0101 | 0E2 | F | 1111 | 122 | 5 | 0101 | 162 | 4 | 0100 | 1A2 | 1 | 0001 | 1E2 | 5 | 0101 |
| 023 | 4 | 0100 | 063 | C | 1100 | 0A3 | 5 | 0101 | 0E3 | F | 1111 | 123 | 5 | 0101 | 163 | 4 | 0100 | 1A3 | 1 | 0001 | 1E3 | 5 | 0101 |
| 024 | 7 | 0111 | 064 | C | 1100 | 0A4 | 4 | 0100 | 0E4 | F | 1111 | 124 | 5 | 0101 | 164 | 4 | 0100 | 1A4 | 1 | 0001 | 1E4 | 5 | 0101 |
| 025 | 4 | 0100 | 065 | C | 1100 | 0A5 | 4 | 0100 | 0E5 | F | 1111 | 125 | 5 | 0101 | 165 | 4 | 0100 | 1A5 | 1 | 0001 | 1E5 | 5 | 0101 |
| 026 | 7 | 0111 | 066 | C | 1100 | 0A6 | 4 | 0100 | 0E6 | F | 1111 | 126 | 5 | 0101 | 166 | 4 | 0100 | 1A6 | 1 | 0001 | 1E6 | 5 | 0101 |
| 027 | 4 | 0100 | 067 | C | 1100 | 0A7 | 4 | 0100 | 0E7 | F | 1111 | 127 | 5 | 0101 | 167 | 4 | 0100 | 1A7 | 1 | 0001 | 1E7 | 5 | 0101 |
| 028 | 7 | 0111 | 068 | C | 1100 | 0A8 | 7 | 0111 | 0E8 | F | 1111 | 128 | 5 | 0101 | 168 | 4 | 0100 | 1A8 | 1 | 0001 | 1E8 | 5 | 0101 |
| 029 | 6 | 0110 | 069 | C | 1100 | 0A9 | 7 | 0111 | 0E9 | F | 1111 | 129 | 5 | 0101 | 169 | 4 | 0100 | 1A9 | 1 | 0001 | 1E9 | 5 | 0101 |
| 02A | 7 | 0111 | 06A | C | 1100 | 0AA | 7 | 0111 | 0EA | C | 1100 | 12A | 5 | 0101 | 16A | 4 | 0100 | 1AA | 1 | 0001 | 1EA | 5 | 0101 |
| 02B | 7 | 0111 | 06B | C | 1100 | 0AB | 7 | 0111 | 0EB | C | 1100 | 12B | 5 | 0101 | 16B | 4 | 0100 | 1AB | 1 | 0001 | 1EB | 5 | 0101 |
| 02C | 6 | 0110 | 06C | 0 | 0000 | 0AC | 7 | 0111 | 0EC | E | 1110 | 12C | 5 | 0101 | 16C | 4 | 0100 | 1AC | 1 | 0001 | 1EC | 5 | 0101 |
| 02D | 6 | 0110 | 06D | 4 | 0100 | 0AD | 7 | 0111 | 0ED | E | 1110 | 12D | 5 | 0101 | 16D | 4 | 0100 | 1AD | 1 | 0001 | 1ED | 5 | 0101 |
| 02E | 6 | 0110 | 06E | C | 1100 | 0AE | 4 | 0100 | 0EE | F | 1111 | 12E | 5 | 0101 | 16E | 4 | 0100 | 1AE | 1 | 0001 | 1EE | 5 | 0101 |
| 02F | 6 | 0110 | 06F | F | 1111 | 0AF | 6 | 0110 | 0EF | F | 1111 | 12F | 5 | 0101 | 16F | 4 | 0100 | 1AF | 1 | 0001 | 1EF | 5 | 0101 |
| 030 | 0 | 0000 | 070 | F | 1111 | 0B0 | 7 | 0111 | 0F0 | C | 1100 | 130 | 7 | 0111 | 170 | 7 | 0111 | 1B0 | 3 | 0011 | 1F0 | 7 | 0111 |
| 031 | 0 | 0000 | 071 | C | 1100 | 0B1 | 6 | 0110 | 0F1 | F | 1111 | 131 | 7 | 0111 | 171 | 7 | 0111 | 1B1 | 3 | 0011 | 1F1 | 7 | 0111 |
| 032 | 4 | 0100 | 072 | C | 1100 | 0B2 | 7 | 0111 | 0F2 | F | 1111 | 132 | 7 | 0111 | 172 | 7 | 0111 | 1B2 | 3 | 0011 | 1F2 | 7 | 0111 |
| 033 | 4 | 0100 | 073 | C | 1100 | 0B3 | 7 | 0111 | 0F3 | F | 1111 | 133 | 7 | 0111 | 173 | 7 | 0111 | 1B3 | 3 | 0011 | 1F3 | 7 | 0111 |
| 034 | 7 | 0111 | 074 | C | 1100 | 0B4 | 7 | 0111 | 0F4 | F | 1111 | 134 | 7 | 0111 | 174 | 7 | 0111 | 1B4 | 3 | 0011 | 1F4 | 7 | 0111 |
| 035 | 4 | 0100 | 075 | C | 1100 | 0B5 | 4 | 0100 | 0F5 | F | 1111 | 135 | 7 | 0111 | 175 | 7 | 0111 | 1B5 | 3 | 0011 | 1F5 | 7 | 0111 |
| 036 | 7 | 0111 | 076 | C | 1100 | 0B6 | 4 | 0100 | 0F6 | C | 1100 | 136 | 7 | 0111 | 176 | 7 | 0111 | 1B6 | 3 | 0011 | 1F6 | 7 | 0111 |
| 037 | 4 | 0100 | 077 | F | 1111 | 0B7 | 5 | 0101 | 0F7 | C | 1100 | 137 | 7 | 0111 | 177 | 7 | 0111 | 1B7 | 3 | 0011 | 1F7 | 7 | 0111 |
| 038 | 4 | 0100 | 078 | 0 | 0000 | 0B8 | 4 | 0100 | 0F8 | 0 | 0000 | 138 | 7 | 0111 | 178 | 7 | 0111 | 1B8 | 3 | 0011 | 1F8 | 7 | 0111 |
| 039 | 7 | 0111 | 079 | 0 | 0000 | 0B9 | 4 | 0100 | 0F9 | F | 1111 | 139 | 7 | 0111 | 179 | 7 | 0111 | 1B9 | 3 | 0011 | 1F9 | 7 | 0111 |
| 03A | 3 | 0011 | 07A | C | 1100 | 0BA | 7 | 0111 | 0FA | 3 | 0011 | 13A | 7 | 0111 | 17A | 7 | 0111 | 1BA | 3 | 0011 | 1FA | 7 | 0111 |
| 03B | 3 | 0011 | 07B | C | 1100 | 0BB | 7 | 0111 | 0FB | F | 1111 | 13B | 7 | 0111 | 17B | 7 | 0111 | 1BB | 3 | 0011 | 1FB | 7 | 0111 |
| 03C | 7 | 0111 | 07C | F | 1111 | 0BC | 7 | 0111 | 0FC | F | 1111 | 13C | 7 | 0111 | 17C | 7 | 0111 | 1BC | 3 | 0011 | 1FC | 7 | 0111 |
| 03D | 7 | 0111 | 07D | F | 1111 | 0BD | 7 | 0111 | 0FD | F | 1111 | 13D | 7 | 0111 | 17D | 7 | 0111 | 1BD | 3 | 0011 | 1FD | 7 | 0111 |
| 03E | 7 | 0111 | 07E | F | 1111 | 0BE | 7 | 0111 | 0FE | F | 1111 | 13E | 7 | 0111 | 17E | 7 | 0111 | 1BE | 3 | 0011 | 1FE | 7 | 0111 |
| 03F | 7 | 0111 | 07F | F | 1111 | 0BF | 7 | 0111 | 0FF | F | 1111 | 13F | 7 | 0111 | 17F | 7 | 0111 | 1BF | 3 | 0011 | 1FF | 7 | 0111 |

PART NUMBER: 23-954A9-00
DEVICE TYPE:512 X 4
SCHEMATIC SHEET #:D-CS-M8390-0-DAPF
LOCATION/DESCRIPTION: E82 / D.T. & C.C. CLASS

LEFT COLUMN OF BIN DATA IS MSB
BINARY DATA "1" = HIGH
BINARY DATA "0" = LOW



| REVISIONS | | |
|---|---|---|
| CHK | CHANGE NO. | REV |
| | | |

DRN. W. Whalen
CHK'D.
DATE 21-SEP-81
ENG.
DATE
DSK:GLDP13.T2PC367,11*30]21-SEP-81 14:12
NEXT HIGHER ASSEMBLY: B-DD-M8390-0-0
FIRST USED ON OPTION/MODEL: 11/730
ACCSD LOCATION:
SHEET 12 OF 12

TITLE: DATA PATH ROM AND PAL LISTINGS

| SIZE | CODE | NUMBER | REV. |
|---|---|---|---|
| D | GL | M8390-0-0 | A |

DATA PATH

MAIN MEMORY CYCLES (ADRS OUT, WRITE DATA OUT AND DATA IN)

CSR DELAY 18 | LS ADRS GEN GATE 6 | MUX SELECT 15 | LOCAL STORE RAM ACCESS TIME 50 | LS LATCH DELAY 18 | XCVR DELAY TO MC BUS 18 | T125 ADDRESS/DATA OUT TO MEMORY CONTROLLER VALID | T145 MEMORY DATA IN VALID | SIGN EXTENDER MULTIPLEXER 12 | BUFFER 18 | 2901A D --> ALU 2, PASS MODE 55 | COND. CODE LOGIC SETUP TIME (PAL) ALU CC'S 40

DISABLE ALL D - BUS DRIVERS 45 | D - ADDRESS DECODERS (PALS) 40 | TRI-STATE ENABLE TIME 22 (MAX) | 2901A D --> G,P 35 | XCVR DELAY FROM MC BUS 18 | - 12 | 2901A D --> Y OUT, PASS MODE 40 | - 5 | LS RAM DATA SETUP 5 | LOCAL STORE RAM WRITE PULSE 45

ARITHMETIC READ-MODIFY-WRITE TO LOCAL STORE

CSR DELAY 18 | ALU FUNCTION CONTROL CODE GENERATION (ROM DELAY) 60 | 2901A ALU FUNCTION CTL ---> G,P | - 14 | 32-BIT CARRY LOOKAHEAD G,P-->G,P 10 | G,P->C 7 | C --> C 10 | 2901A CARRY ---> CONDITION CODES (Z) 50 | - 11 | CONDITION CODE LOGIC SETUP TIME 40

WORKING REG ADDRESS GENERATION (PAL) 40 | - 5 | 2901A A,B ADDRESS ---> G,P 65 | 2901A CARRY --> DATA OUT 30 | - 21 | LS RAM DATA SETUP 5 | LOCAL STORE RAM WRITE PULSE 45

ALU SOURCE CONTROL CODE GENERATION(PAL) 40 | - 25

2901 MULTIPLY CYCLE (MSB)

MULTIPLIER LSB ACCESS 25 | ALU SOURCE CONTROL CODE GENERATION 40 | - 18 | 2901A ALU FUNCTION CTL --> G,P 45 | 32 - BIT CARRY LOOKAHEAD G,P -> G,P 10 | G,P->C 7 | C --> C 10 | 2901A CARRY->CONDITION CODES (N, V, C) 30 | SHIFT DATA LOGIC (PAL) 40 | - 20 | 2901A RAM SHIFT IN SETUP 25

CSR DELAY 18 | WORKING REG ADDRESS GENERATION 40 | 2901A A,B ADRS ----> RAM SHIFT OUT 95 | SHIFT DATA LOGIC (PAL) 40 | — 52 | 2901A SHIFT IN SETUP 25

2901 SHIFT/MULTIPLY CYCLE RAM->Q, RAM->RAM

- 5 | 2901A RAM ADDRESS -> Y OUT (BYPASSING ALU) 45 | 100

ACCEL/PORT DATA TRANSFER

MICRO-SEQUENCER PATH

ALU DESTINATION CONTROL CODE GENERATION (ROM, PAL) 60 | 2901A DEST CTL --> Y OUT BYPASSING ALU 30 | TRANSMIT DATA VALID ON Y-BUS | 220 LS SETUP 5 | LOCAL STORE WRITE PULSE 45

SPECIFIER DECODE

PC (1:0) REG (PAL) 25 | IB BYTE SELECT GATE 6 | DECODER 12 | IB BYTE ENABLE 18 | GATE 6 | SPECIFIER ROM ACCESS TIME 60 | MICRO ADDRESS BITS (13:11, 3:0) VALID 133 | MUX 6 | CONTROL STORE ACCESS 132 | CSR SETUP 5

OPCODE DECODE (IRD)

CSR DELAY 18 | IB BYTE SELECT GATE 6 | DECODER 12 | IB BYTE ENABLE 18 | IRD ROM ACCESS TIME 70 | - 3

SCTL FIELD DECODE (PAL) 40 | GATE 9 | GATE 6 | µPC OUTPUT ENABLE 25 | LOW INCREMENTER D ->Y 24 | - 5 | MICRO ADDRESS BITS (10:4) VALID 161

JUMP INSTRUCTION DECODE (PAL) 40 | µSTACK OUTPUT ENABLE 30 | LOW INCREMENTER D --> C OUT 17 | HIGH INCREMENTER CIN --> D OUT (PAL) 40 | MUX 6 | CONTROL STORE ACCESS 104 | CSR SETUP 5

SKIP/RETURN

µSTACK ADDRESS GENERATION 45 | µSTACK RAM ACCESS TIME 48

SKIP CONDITIONS STABLE T39 | MUX 8 | SKIP CONDITION SELECTION 40 | GATE 6 | LOW INCREMENTER C IN --> C OUT 22

CPU MICROCYCLE TIMING
DATA PATH AND MICRO-SEQUENCER



| REVISIONS | | |
|---|---|---|
| C-NK | CHANGE NO. | REV |

digital

DRN D.M.Hafner DATE 26-SEP-81 | ENG. | DATE
CHK D. | DATE | BOARD LOCATION: SHEET 1 OF 1
[362,1590]CPUTD.DRW 26-SEP-81 18:04 | NEXT HIGHER ASSEMBLY:
FIRST USED ON OPTION/MODEL: 11/730

TITLE: 11/730 CPU MICROCYCLE TIMING

| SIZE | CODE | NUMBER | REV. |
|---|---|---|---|
| D | TD | M8390-0-X | A |

REV. A | NUMBER M8390-0-X | CODE TD | SIZE D | B | A

DEC-5013860-0-0 R

LAYER 1

0-1 0-2 0-3

CS*ABCDEFHJKLMNPRS

SIDE 1

digital

E115 E103 E93 E83 E72 E61 E50 E39 E29 E19 E10

| REVISION HISTORY | | |
|---|---|---|
| DATE | ECO NUMBER | REV |
| 7/11/80 | 118390-TWOOI | B |
| 11-OCT-81 | K. OKIN | |
| 23-JAN-82 | | |

| | | |
|---|---|---|
| DES ENG | | DATE 6/11/82 |
| RESP ENG | | DATE 6/11/82 |
| MFG ENG | | DATE 6/11/82 |
| NEXT HIGHER DOC | | |

TITLE digital

ETCH CUT DRAWING

DOCUMENT NUMBER

SIZE D CODE EC 5013860-0-0 REV B

SCALE 2 SHEET 1 OF 3

DFS 102E

DFC 5013860-0-0 REV B

DEC-5013860-0-0 B

LAYER 4

DAP

M8390 5013860B

| REVISION HISTORY | | |
|---|---|---|
| DATE | ECO NUMBER | REV |
| | | |

| TITLE | DOCUMENT NUMBER | | | |
|---|---|---|---|---|
| | SIZE | CODE | NUMBER | REV |
| ETCH CUT DRAWING | D | EC | 5013860-0-0 | B |
| | SCALE 2-1 | | SHEET 2 OF 2 | |

DEC 5013860-0-0 REV B

## REWORK INSTRUCTIONS

ETCH CUTS SIDE 1:

0-1 CUT THE ETCH, ON SIDE ONE, BETWEEN E73-01 AND PTH, BELOW E37-06, ABOVE AND TO THE LEFT OF PTH NEAR E36-15.

0-2 CUT THE ETCH, ON SIDE ONE, BETWEEN E73-03 AND E37-07 NEAR E37-07.

0-3 CUT THE ETCH, ON SIDE ONE, BETWEEN E73-04 AND E37-08 NEAR E37-07.

| SIZE | CODE | NUMBER | REV. |
|---|---|---|---|
| B | DD | M8391-0 | C |

| DRAWING NO. | NO. OF SHTS. | PART NO. | DESCRIPTION | REVISIONS |
|---|---|---|---|---|
| | | | MODULE REVISION | A B C |
| B-DD-M8391-0 | 1 | | DRAWING DIRECTORY | A B C |
| D-UA-M8391-0-0 | 2 | | UNIT ASSEMBLY | A B B |
| K-PL-M8391-0-DBP | 3 | | PARTS LIST | A B C |
| | | 5013893 | ETCH BOARD | B B B |
| K-PC-5013893-0-DBC | | | DESIGN DATA BASE PC BOARD | B B B |
| D-MD-5013893-0-0 | 5 | | MECHANICAL DRAWING | A A B |
| D-EC-5013893-0-0 | 3 | | ETCH CUT DRAWING | A B B |
| K-CS-M8391-0-DBS | | | DESIGN DATA BASE SUDS | A B B |
| D-CS-M8391-0-MCTA | 1 | * | ARRAY CONTROL | A B B |
| D-CS-M8391-0-MCTB | 1 | * | VAR AND ADDRESS DECODERS | A B B |
| D-CS-M8391-0-MCTC | 1 | * | TRANSLATION BUFFER | A B B |
| D-CS-M8391-0-MCTD | 1 | * | BUS MC DRIVERS, CLOCK GENERATION | A B B |
| D-CS-M8391-0-MCTE | 1 | * | ARBITRATOR AND POWER UP/DOWN | A B B |
| D-CS-M8391-0-MCTF | 1 | * | CONTROL AND STATUS REGISTERS | A B B |
| D-CS-M8391-0-MCTH | 1 | * | UNIBUS ADDRESS XCVRS AND TERMINATOR | A B B |
| D-CS-M8391-0-MCTJ | 1 | * | ECC CONTROL | A B B |
| D-CS-M8391-0-MCTK | 1 | * | DATA CONTROL AND REFRESH LOGIC | A B B |
| D-CS-M8391-0-MCTL | 1 | * | DATA ROTATORS/LATCHES | A B B |
| D-CS-M8391-0-MCTM | 1 | * | CONTROL STORE | A B B |
| D-CS-M8391-0-MCTN | 1 | * | FILTER CAPACITORS | A B B |
| D-BD-M8391-0-0 | 1 | * | MEMORY BLOCK DIAGRAM | - A B |
| D-GL-M8391-0-0 | 16 | * | ROM AND PAL LISTINGS | - A B |
| D-TD-M8391-0-0 | 3 | * | MEMORY TIMING DIAGRAM | - A B |
| | | | | |
| | | | | |

## NOTES:

| REVISIONS | | | |
|---|---|---|---|
| REV. | | B | C |
| CHG NO. | | TW001 | TW002 |
| DATE | | 10-81 | 4-82 |



digital

| USED ON OPTION/MODEL | | | |
|---|---|---|---|
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| | | | |

| | | |
|---|---|---|
| DRN. | J. CASEY | 8-6-80 |
| CHK'D | J. CASEY | 8-6-80 |
| ENG. | K. OKIN | 8-8-80 |
| PROD. | C.J. CONSIDINE | 8-8-80 |

TITLE: M C T

| SIZE | CODE | NUMBER | REV. |
|---|---|---|---|
| B | DD | M8391-0 | C |

SHEET 1 OF 2

DRB 126

| SIZE | CODE | NUMBER | REV. |
|---|---|---|---|
| B | DD | M8391-0 | C |

| DRAWING NO. | NO. OF SHTS. | PART NO. | DESCRIPTION | REVISIONS |
|---|---|---|---|---|
| D-FD-M8391-0-0 | 1 | | MEMORY FLOW DIAGRAM | A B |
| D-FD-M8391-0-1 | 1 | | MEMORY FLOW DIAGRAM | A B |
| D-FD-M8391-0-2 | 1 | | MEMORY FLOW DIAGRAM | A B |
| D-FD-M8391-0-3 | 1 | | MEMORY FLOW DIAGRAM | A B |
| D-FD-M8391-0-4 | 1 | | MEMORY FLOW DIAGRAM | A B |
| D-FD-M8391-0-5 | 1 | | MEMORY FLOW DIAGRAM | A B |
| D-FD-M8391-0-6 | 1 | | MEMORY FLOW DIAGRAM | A B |
| D-FD-M8391-0-7 | 1 | | MEMORY FLOW DIAGRAM | A B |
| D-FD-M8391-0-8 | 1 | | MEMORY FLOW DIAGRAM | A B |
| D-FD-M8391-0-9 | 1 | | MEMORY FLOW DIAGRAM | A B |
| D-FD-M8391-0-10 | 1 | | MEMORY FLOW DIAGRAM | A B |
| D-FD-M8391-0-11 | 1 | | MEMORY FLOW DIAGRAM | A B |
| D-FD-M8391-0-12 | 1 | | MEMORY FLOW DIAGRAM | A B |
| D-FD-M8391-0-13 | 1 | | MEMORY FLOW DIAGRAM | A B |
| D-FD-M8391-0-14 | 1 | | MEMORY FLOW DIAGRAM | A B |
| D-FD-M8391-0-15 | 1 | | MEMORY FLOW DIAGRAM | A B |
| D-FD-M8391-0-16 | 1 | | MEMORY FLOW DIAGRAM | A B |
| D-FD-M8391-0-17 | 1 | | MEMORY FLOW DIAGRAM | A B |
| D-FD-M8391-0-18 | 1 | | MEMORY FLOW DIAGRAM | A B |
| D-FD-M8391-0-19 | 1 | | MEMORY FLOW DIAGRAM | A B |
| D-FD-M8391-0-20 | 1 | | MEMORY FLOW DIAGRAM | A B |
| D-FD-M8391-0-21 | 1 | | MEMORY FLOW DIAGRAM | A B |

## NOTES:

| REVISIONS | REV. | CHG NO. | DATE |
|---|---|---|---|
| | B | TW001 | 1-82 |
| | C | TW002 | 2-82 |



digital

| USED ON OPTION/MODEL | | | |
|---|---|---|---|
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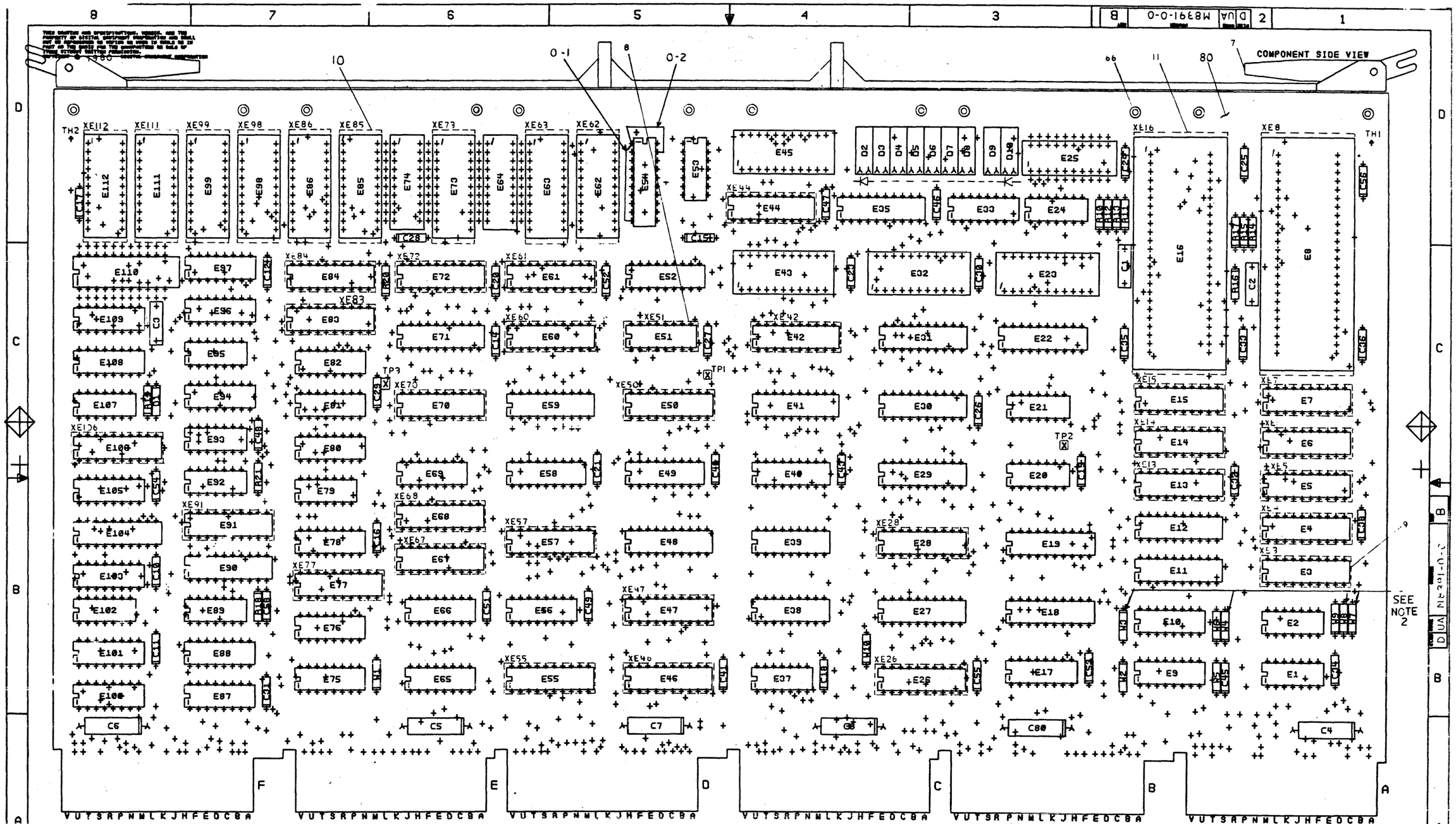
| | | |
|---|---|---|
| DRN. | J. CASEY | 8-6-80 |
| CHK'D | J. CASEY | 8-6-80 |
| ENG. | K. OKIN | 8-8-80 |
| PROD. | C. CONSIDINE | 8-8-80 |

TITLE: M C T

| SIZE | CODE | NUMBER | REV. |
|---|---|---|---|
| B | DD | M8391-0 | C |

SHEET 2 OF 2

DRB 126




NOTES:

1. SPARE LOCATIONS ARE E25, E64, E74, E110.
2. W1, W2, W4, W5, W7, AND W8 ARE NOT INSTALLED.

| | | | |
|---|---|---|---|
| STEP ℄ | ↑ Y AXIS 2 | STEP 2 | TIMES |
| REPEAT | → X AXIS 0 | STEP 2 | TIMES |

| CHK | CHANGE NO | REV |
|---|---|---|
| | M8391-TW001 | B |

K. OKIN

| | |
|---|---|
| ETCH REV. | B |
| DATA BASE REV. | B |

| SIGNATURES | DATE |
|---|---|
| DRN. | |
| CHK'D. | |
| MECH. ENG. | |
| PROJ. ENG. | |
| PROD. | |

digital

TITLE: M C T

| SCALE | SIZE | CODE | NUMBER | REV |
|---|---|---|---|---|
| 2/1 | D | UA | M8391-0-0 | B |
| SHT. 1 OF 2 | | | | |

NEXT HIGHER ASSY. 8-DD-M8391-0-0

1 MS# 17C16-B

## REWORK INSTRUCTIONS

WIRE ADDS SIDE 1:

0-1 FROM E54-1 TO E54-10

0-2 FROM E54-1 TO E54-19

~~0-3 FROM E53-1 TO E91-11~~

~~0-4 FROM E53-2 TO E105-7~~

~~0-5 FROM E53-3 TO E108-12~~

ECO # M8391-TW001

1-1 STEPS 0-3 THROUGH 0-5 HAVE BEEN REMOVED AS PER ECO M8391-TW001.

DUA M8391-0-0 B

REVISION HISTORY

| DATE | ECO NUMBER | REV. |
|---|---|---|
| | | |

TITLE: M C T

DOCUMENT NUMBER: SIZE D | CODE DUA | NUMBER M8391-0-0 | REV. B

SCALE 2-1 | SHEET 2 OF 2

TW

AUTOMATED BY PRTLST.3M(41) — P A R T S  L I S T — SHEET A1 OF A3

| LINE | ITEM | DOCUMENT NUMBER | PART NUMBER | DESCRIPTION | QTY PER VARIATION 00 | REFERENCE DESIGNATOR |
|---|---|---|---|---|---|---|
| 1 | 80 | D-MD-5013893-0-0 | 5013893-00 | NEBULA MCT | 1 | |
| 2 | 79 | | 1000064-00 | 3.9MFD 10V 10% S.TANT | 1 | C3 |
| 3 | 2 | | 1012084-01 | .8 MFD 25V +75-10% AL EL | 6 | C4-C8,C80 |
| 4 | 3 | | 1012784-00 | .047 MFD 50V +80-20% CER | 41 | C10-C12,C14-C21,C23-C36,C38,C40, |
| | | | | | CONT | C41,C43,C45-C49,C51-C56,C58 |
| 5 | 4 | | 1013466-11 | .22 MFD 50V +80-20% Z5U CER | 2 | C1,C2 |
| 6 | 5 | | 1105796-00 | 1N 4004 PIV=400 I= 1A DO41 SP | 1 | D1 |
| 7 | 6 | | 1112689-00 | LED .8MCD@16MA VF=5V | 9 | D2-D10 |
| 8 | 8 | | 1215006-02 | SKT,IC 16PIN DIP TIN PLATE | 1 | XE51 |
| 9 | 9 | | 1215006-04 | SKT,IC 20PIN DIP TIN PLATE | 28 | XE3-XE7,XE13-XE15,XE26,XE28, |
| | | | | | CONT | XE42,XE44,XE46,XE47,XE50,XE55, |
| | | | | | CONT | XE57,XE60,XE61,XE67,XE68,XE70, |
| | | | | | CONT | XE72,XE77,XE83,XE84,XE91,XE106 |
| 10 | 10 | | 1215006-05 | SKT,IC 22PIN DIP TIN PLATE | 9 | XE62,XE63,XE73,XE85,XE86,XE98, |
| | | | | | CONT | XE99,XE111,XE112 |
| 11 | 11 | | 1215924-00 | SKT,IC 48PIN DIP GOLD PLATE | 2 | XE8,XE16 |
| 12 | 12 | SEE NOTE 1 | 1215935-00 | GASKET, THERMAL .50"X.80" | 2 | |
| 13 | 13 | SEE NOTE 2 | 1215936-00 | HEAT SINK, FORCED CONVECTION | 2 | |
| 14 | 7 | | 1216988-02 | HANDLE,MODULE,HEX TWO EJECTORS | 1 | |
| 15 | 14 | | 1300229-00 | 100.0 .25 W 5.0 % CC | 3 | R18,R20,R21 |
| 16 | 16 | | 1302377-00 | 39.0 .25 W 5.0 % CC | 8 | R10-R17 |
| 17 | 15 | | 1302514-00 | 39.0 K .25 W 5.0 % CC | 1 | R19 |
| 18 | 69 | | 1311003-02 | R NETWORK 14-330 14-680 16PIN | 1 | E65 |
| 19 | 17 | | 1312628-00 | R NETWORK 14-176.5 14-375 16PIN | 4 | E56,E78,E88,E100 |
| 20 | 18 | | 1616322-00 | DELAY= 75NS,5TAPS | 1 | E2 |
| 21 | 19 | | 1910532-00 | 74S00 NAND GATE-QUAD 2IN | 1 | E93 |
| 22 | 20 | | 1910534-00 | 74S04 INVERTER GATE-HEX 1I | 2 | E79,E102 |
| 23 | 21 | | 1910548-00 | 74S157 MUX 1 OF 2 (QUAD) | 1 | E69 |
| 24 | 22 | | 1910549-00 | 74S158 MUX 1 OF 2 (QUAD) | 1 | E97 |
| 25 | 23 | | 1910550-00 | 74S174 FF-D HEX | 1 | E105 |

| REVISION HISTORY | | |
|---|---|---|
| ENG | ECO NUMBER | REV |
| --- | INITIAL | A |
| KO | M8391-TW001 | B |

BASIC PART NO: M8391

SECTION A OF A

SECTION.VARIATION INDEX
[A] 00
[B]
[C]
[D]
[E]
[F]
[H]
[J]
[K]
[L]
[M]
[N]

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| DRN: J.FERGUSON | DATE: 14-MAR-80 | | D | I | G | I | T | A | L | | |
| CHK'D: E.T.GERRY | DATE: 14-MAR-80 | TITLE: PARTS LIST | | | | | | | | | |
| DES.ENG: K.OKIN | DATE: 22-APR-80 | MCT | | | | | | | | | |
| RESP.ENG.: K.OKIN | DATE: 22-APR-80 | DOCUMENT NUMBER | | | | | | | | | |
| MFG.ENG.: J.CONSIDINE | DATE: 8-AUG-80 | SIZE: K | CODE: PL | NUMBER: M8391-0-DBP | REV: B | | | | | | |
| ASSEMBLY NUMBER: D-UA-M8391-0-0 | TOP DOCUMENT NUMBER: B-DD-M8391-0-0 | FILE NAME: Z1270B.PLS | EDIT #: 17 | | | | | | | | |

AUTOMATED BY PRTLST.3M(41)

# P A R T S  L I S T



| LINE | ITEM | DOCUMENT NUMBER | PART NUMBER | DESCRIPTION | QTY PER VARIATION 00 | REFERENCE DESIGNATOR |
|---|---|---|---|---|---|---|
| 26 | 24 | | 1910956-00 | 74S151 MUX 1 OF 8 | 4 | E94,E96,E108,E109 |
| 27 | 25 | | 1911116-00 | DEC 8837 RECEIVER,BUS,HEX,UN | 1 | E101 |
| 28 | 26 | | 1911573-00 | 74S280 PARITY GEN/CHKR,9BIT | 2 | E20,E21 |
| 29 | 27 | | 1911579-00 | 8641 TRANSCEIVER,BUS,QUA | 7 | E66,E75,E76,E80,E81,E87,E103 |
| 30 | 28 | | 1911641-00 | SN 74S257 MUX,QUAD 2 TO 1 | 3 | E9,E10,E17 |
| 31 | 29 | | 1911676-00 | 74S139 DECODER-DUAL TWO-INP | 1 | E82 |
| 32 | 30 | | 1911712-00 | 74S51 AND-OR GATE-INVERT D | 1 | E107 |
| 33 | 31 | | 1912388-00 | 74S02 NOR GATE-QUAD 2IN,PO | 2 | E24,E95 |
| 34 | 32 | | 1912389-00 | 74S08 AND GATE-QUAD 2IN,PO | 2 | E53,E92 |
| 35 | 33 | | 1912697-00 | LS174 FF-D HEX W/CLEAR | 1 | E33 |
| 36 | 34 | | 1912746-00 | DEC 74S37 NAND GATE-QUAD 2IN | 1 | E37 |
| 37 | 35 | | 1912799-00 | LS00 NAND-GATE-QUAD 2IN,P | 1 | E89 |
| 38 | 36 | | 1913670-00 | 74S373 LATCH 8BIT TRASP TR | 2 | E59,E71 |
| 39 | 37 | | 1913671-00 | 74S374 FF-D OCTAL TRISTATE | 2 | E90,E104 |
| 40 | 38 | | 1913888-00 | DC 102A EQUALS CHECKER 8BIT | 2 | E30,E35 |
| 41 | 39 | | 1914214-00 | LS374 FF-D OCTAL EDGE TRIG | 2 | E11,E12 |
| 42 | 40 | | 1914705-00 | DC 631B BIPOLAR,LS,400-GATE | 2 | E8,E16 |
| 43 | 41 | | 1915019-00 | 74S38 NAND BUFFER-QUAD 2IN | 1 | E1 |
| 44 | 42 | | 1915193-00 | LS244 DRIVER,LINE,OCTAL,T | 8 | E18,E19,E22,E27,E31,E54 |
| 45 | 43 | | 1915218-00 | LS245 TRANSCEIVER,BUS,OCT | 3 | E29,E41,E48 |
| 46 | 44 | | 1915697-00 | RAM 256X4 TRI-STATE | 4 | E23,E32,E43,E45 |
| 47 | 45 | | 2116957-02 | 1K MOS RAM 70NS 1 | 6 | E38-E40,E49,E52,E58 |
| 48 | 46 | | 23946A9-00 | A9-01 | 1 | E51 |
| 49 | 47 | | 23003K5-00 | K5-01 | 1 | E77 |
| 50 | 48 | | 23005K4-00 | K4-01 | 1 | E42 |
| 51 | 49 | | 23006K4-00 | K4-01 | 1 | E72 |
| 52 | 50 | | 23007K4-00 | K4-01 | 1 | E28 |
| 53 | 51 | | 23008K4-00 | K4-01 | 1 | E83 |
| 54 | 52 | | 23010K4-00 | K4-01 PAL,ARRA | 1 | E57 |
| 55 | 53 | | 23032D2-00 | D2-01 | 1 | E99 |
| 56 | 70 | | 23033D2-00 | D2-01 | 1 | E112 |
| 57 | 71 | | 23034D2-00 | D2-01 | 1 | E85 |
| 58 | 72 | | 23035D2-00 | D2-01 | 1 | E62 |
| 59 | 73 | | 23017K3-00 | K3-01 PAL,REG, CONT | 8 | E3-E7,E13-E15 |
| 60 | 74 | | 23036D2-00 | D2-01 | 1 | E98 |
| 61 | 55 | | 23018K3-00 | K3-01 PAL,REG, CONT | 2 | E47,E50 |
| 62 | 75 | | 23037D2-00 | D2-01 | 1 | E63 |
| 63 | 56 | | 23019K3-00 | K3-01 PAL,REG, CONT | 3 | E26,E67,E70 |
| 64 | 76 | | 23038D2-00 | D2-01 | 1 | E86 |
| 65 | 57 | | 23026K3-00 | K3-01 PAL,REG, CONT | 1 | E60 |
| 66 | 77 | | 23039D2-00 | D2-01 | 1 | E73 |
| 67 | 58 | | 23056K3-00 | K3-01 PAL,REG CONT | 1 | E91 |
| 68 | 78 | | 23040D2-00 | D2-01 | 1 | E111 |
| 69 | 59 | | 23060K3-00 | K3-01 PAL,REG, CONT | 1 | E68 |
| 70 | 60 | | 23023K3-00 | K3-01 PAL,REG, CONT | 1 | E106 |
| 71 | 61 | | 23061J5-00 | J5-01 PAL,LOGIC,CONT | 1 | E61 |
| 72 | 62 | | 23025J5-00 | J5-01 PAL,LOGIC,CONT | 1 | E44 |
| 73 | 63 | | 23042J5-00 | J5-01 PAL,LOGIC,CONT | 1 | E46 |

| D | I | G | I | T | A | L | TITLE | SECTION A OF A | SIZE | CODE | DOCUMENT NUMBER | REV |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | MCT | | K | PL | M8391-0-DBP | B |

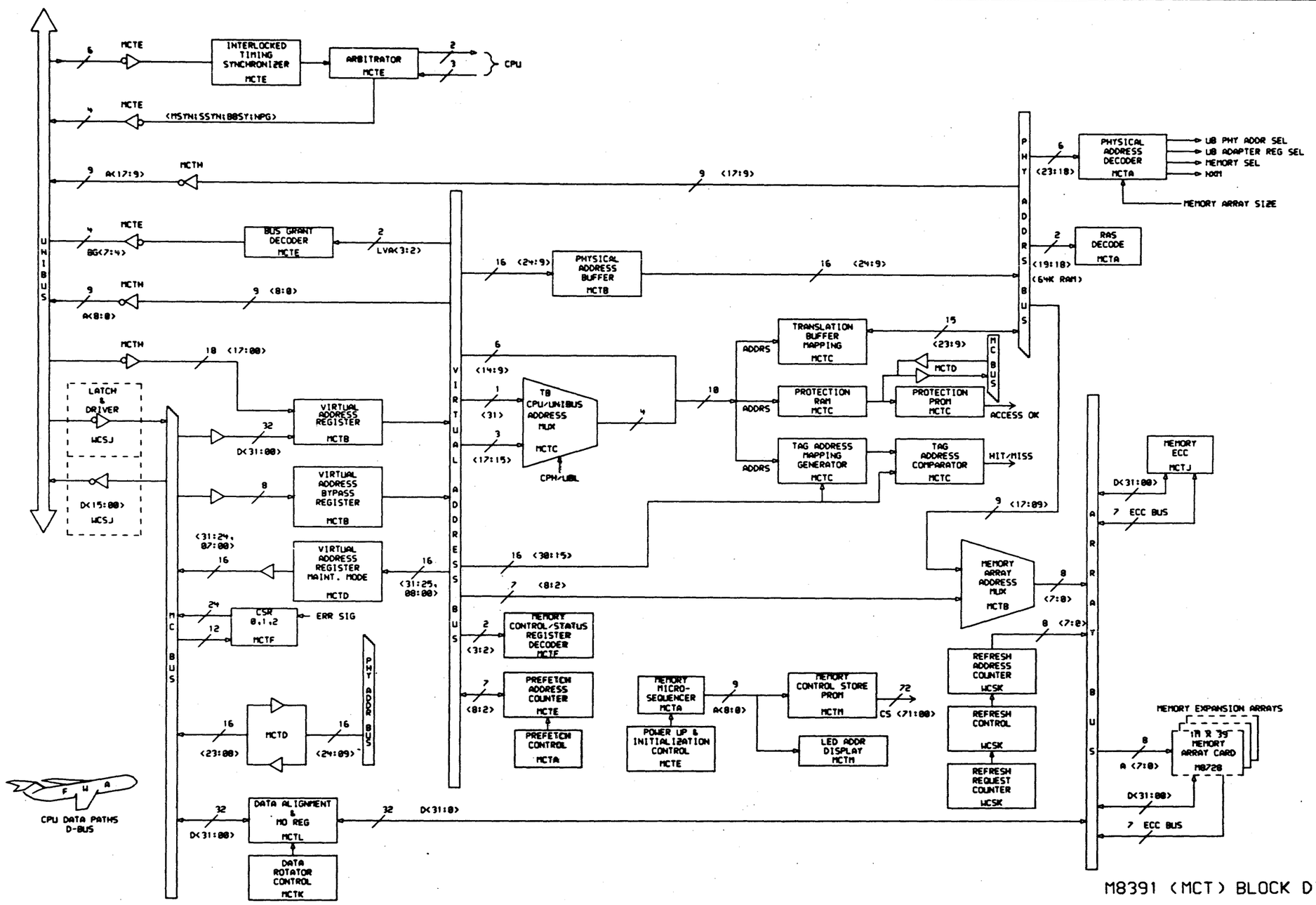
AUTOMATED BY PRTLST.3M(41) P A R T S L I S T SHEET A3 OF A3

| LINE | ITEM | DOCUMENT NUMBER | PART NUMBER | DESCRIPTION | QTY PER VARIATION 00 | REFERENCE DESIGNATOR |
|---|---|---|---|---|---|---|
| 74 | 64 | | 23043J5-00 | J5-01 PAL,LOGIC,CONT | 1 | E55 |
| 75 | 65 | | 23044J5-00 | J5-01 PAL,LOGIC,CONT | 1 | E84 |
| 76 | 66 | | 9009000-00 | EYELET,ROLL FLANGE .121ODX.156 | 12 | |
| 77 | 67 | | 9009149-00 | PIN, STAKING, P.C. BOARD, .025 X | 3 | TP1-TP3 |
| 78 | 68 | | 9009185-00 | JUMPER, WIRE, INSULATED, BLACK B | 4 | W3,W6,W9,W10 |
| 79 | 81 | | 9105740-55 | WIRE(WRAP)30AWG UL1423 | A/R | |

80 NOTE: NOTE 1 ITEM 12 USED IN REF DES E8,E16
81 NOTE: NOTE 2 ITEM 13 USED IN REF DES E8,E16

########## RELEASABLE/NO REF DES CHECK ##########

| D | I | G | I | T | A | L | TITLE | SECTION | SIZE | CODE | DOCUMENT NUMBER | REV |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | MCT | A OF A | K | PL | M8391-0-DBP | B |




M8391 (MCT) BLOCK DIAGRAM



| REVISIONS | | |
|---|---|---|
| CHK | CHANGE NO. | REV |

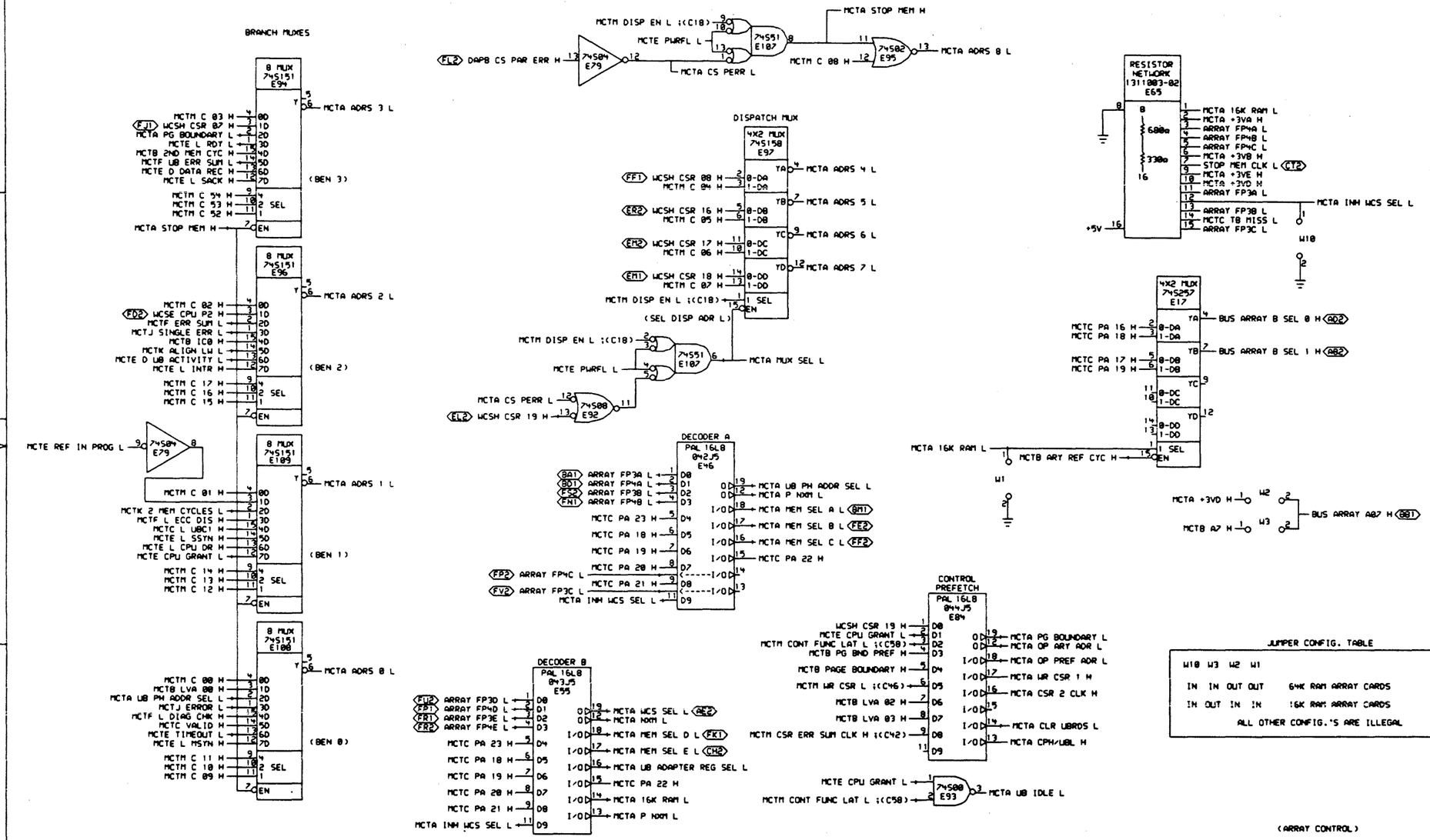
digital

DRN: G.M. Hafner — DATE: 10-DEC-81 — ENG. — DATE
CHK'D. — DATE
BOARD LOCATION: SHEET 1 OF 1
(367,1500)MCTBLK.DRW 05-OCT-81 12:27
NEXT HIGHER ASSEMBLY:
FIRST USED ON OPTION/MODEL: NEBULA

TITLE: NEBULA MEMORY CONTROLLER (MCT)

| SIZE | CODE | NUMBER | REV. |
|---|---|---|---|
| D | BD | M8391-0-0 | A |

G.M. HAFNER, (1186,1500)MCTBLK.DPL, SCALE 2, "D" RELEASE BOX
G.M. HAFNER MCTBLK.PLO(1186,1500) 10-DEC-81 17:42






| REVISIONS | | |
|---|---|---|
| CHK | CHANGE NO. | REV |

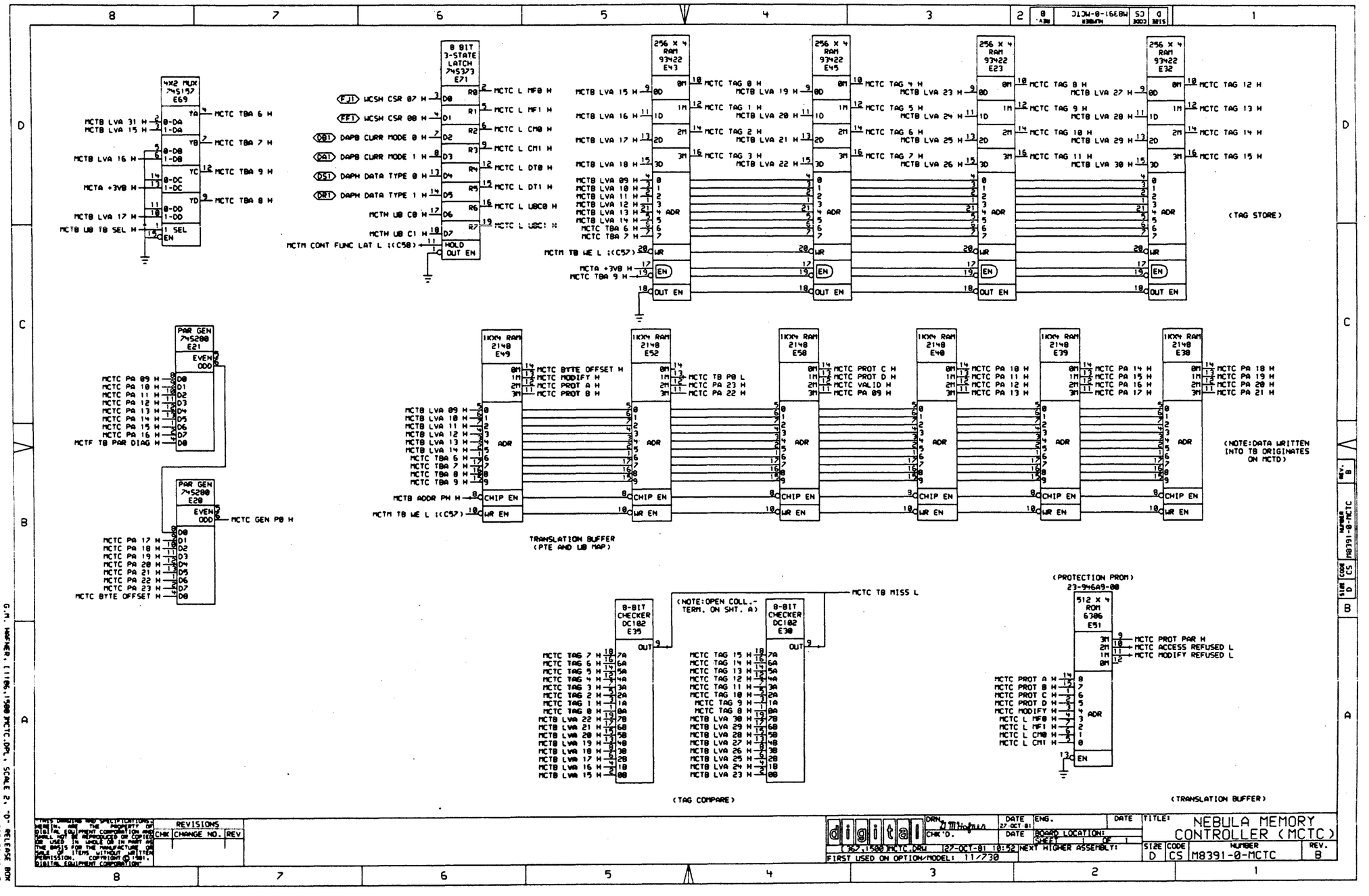
| | | | |
|---|---|---|---|
| DRN. M Hafner | DATE 27-OCT-81 | ENG. | DATE |
| CHK'D. | DATE | BOARD LOCATION: | |
| | | SHEET 1 OF 1 | |
| 362,1500 MCTA.DRW | 27-OCT-81 10:52 | NEXT HIGHER ASSEMBLY: | |
| FIRST USED ON OPTION/MODEL: 11/730 | | | |

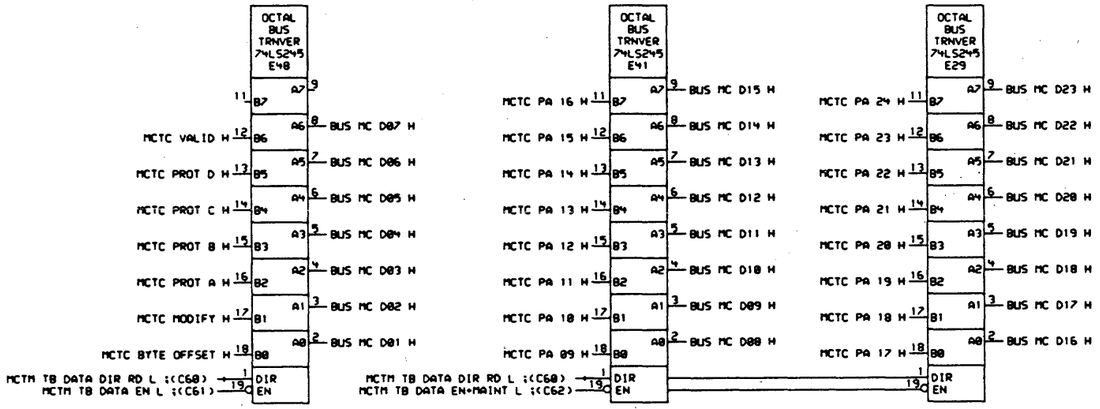
TITLE: NEBULA MEMORY CONTROLLER (MCTA)

| SIZE | CODE | NUMBER | REV. |
|---|---|---|---|
| D | CS | M8391-0-MCTA | B |

G.M. HAFNER (1105,1500)MCTA.DPL, SCALE 2, "D" RELEASE BOX
G.M. HAFNER MCTA.PLO( 1105,1500) 27-OCT-81 11:39

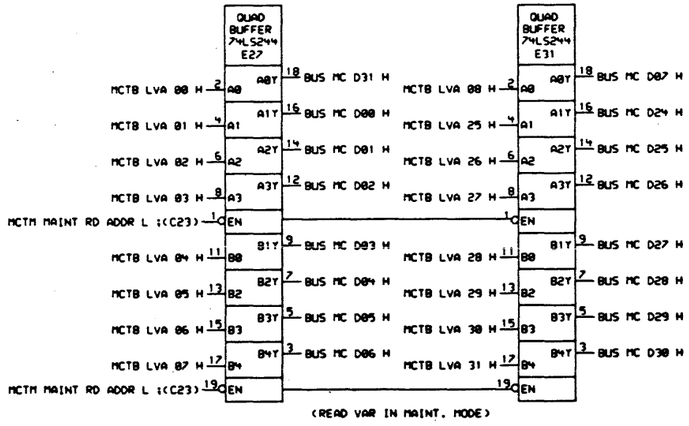
PAL 16R4 019K3 E26
BUS MC D01 H
MCTH UBS A01 H
BUS MC D02 H
MCTH UBS A02 H
BUS MC D03 H
MCTH UBS A03 H
BUS MC D04 H
MCTH UBS A04 H
MCTA +3VA H
MCTM VAR MUX SEL H
MCTM VAR LOAD H ;(C21)
MCTD T0 CLOCK (1) H
MCTB LVA 01 H
MCTB LVA 02 H
MCTB LVA 03 H
MCTB LVA 04 H
PAL 16R4 018K3 E47
BUS MC D05 H
MCTH UBS A05 H
BUS MC D06 H
MCTH UBS A06 H
BUS MC D07 H
MCTH UBS A07 H
BUS MC D08 H
MCTH UBS A08 H
MCTB LVA 05 H
MCTB LVA 06 H
MCTB LVA 07 H
MCTB LVA 08 H
MCTB PAGE BOUNDARY H
MCTA OP ARY ADR L
PAL 16R4 018K3 E50
BUS MC D09 H
MCTH UBS A09 H
BUS MC D10 H
MCTH UBS A10 H
BUS MC D11 H
MCTH UBS A11 H
BUS MC D12 H
MCTH UBS A12 H
MCTB LVA 09 H
MCTB LVA 10 H
MCTB LVA 11 H
MCTB LVA 12 H
MCTM VAR BYP EN H
PAL 16R4 019K3 E70
BUS MC D31 H
BUS MC D13 H
MCTH UBS A13 H
BUS MC D14 H
MCTH UBS A14 H
BUS MC D15 H
MCTH UBS A15 H
MCTB LVA 31 H
MCTB LVA 13 H
MCTB LVA 14 H
MCTB LVA 15 H
PAL 16R4 019K3 E67
BUS MC D00 H
MCTH UBS A00 H
BUS MC D16 H
MCTH UBS A16 H
BUS MC D17 H
MCTH UBS A17 H
BUS MC D18 H
MCTB LVA 00 H
MCTB LVA 16 H
MCTB LVA 17 H
MCTB LVA 18 H
(VIRTUAL ADDRESS REGISTER)
VAR LOAD
VAR MUX SEL
FUNCTION
L L NOP
L H INCR VAR
H L LOAD MC BUS
H H LOAD UNIBUS
[V.A.R. IS E26,E47,E50,E70,E67,E28, & E42]
74S04 E79
MCTM VAR BYP EN H
MCTB VAR BYP EN L
74S00 E93
MCTB UB TB SEL L
MCTA CPM/UBL H
MCTB UB TB SEL H
PREFETCH ADDRESS COUNT
PAL 16R8 003K5 E77
MCTB LVA 02 H
MCTB LVA 03 H
MCTB LVA 04 H
MCTB LVA 05 H
MCTB LVA 06 H
MCTB LVA 07 H
MCTB LVA 08 H
MCTK LOAD IB H
MCTA OP PREF ADR L
MCTB LVA 25 H
MCTB LVA 26 H
MCTB LVA 27 H
MCTB LVA 28 H
MCTB LVA 29 H
MCTB LVA 30 H
PAL 16R6 005K4 E42
(NCR)
MCTB SYS ADDR VIOL H
PAL 16R6 007K4 E28
BUS MC D19 H
BUS MC D20 H
BUS MC D21 H
BUS MC D22 H
BUS MC D23 H
BUS MC D24 H
MCTB LVA 19 H
MCTB LVA 20 H
MCTB LVA 21 H
MCTB LVA 22 H
MCTB LVA 23 H
MCTB LVA 24 H
74S08 E92
MISC. CONTROL
PAL 16R6 008K4 E83
MCTF L MME H
MCTA CPM/UBL H
MCTM SPF0 H ;(C22)
MCTM CONT FUNC LAT L ;(C58)
MCTM TB DATA EN L ;(C61)
MCTM SPF1 H ;(C58)
MCTM SPF2 H ;(C38)
MCTC L DT0 H
MCTM I BBSY A H ;(C68)
MCTD T0 CLOCK (1) H
MCTB ISSUE BG L
MCTB ADDR PH L
MCTB UB TB SEL L
MCTB 2ND MEM CYC H
MCTB IC1 H
MCTB IC0 H
MCTB I BBSY H
74S04 E102
MCTB ADDR PH H
R20 100Ω
QUAD BUFFER 74LS244 E18
MCTB LVA 09 H
MCTB LVA 10 H
MCTB LVA 11 H
MCTB LVA 12 H
MCTB LVA 13 H
MCTB LVA 14 H
MCTB LVA 15 H
MCTB LVA 16 H
MCTC PA 09 H
MCTC PA 10 H
MCTC PA 11 H
MCTC PA 12 H
MCTC PA 13 H
MCTC PA 14 H
MCTC PA 15 H
MCTC PA 16 H
QUAD BUFFER 74LS244 E19
MCTB LVA 17 H
MCTB LVA 18 H
MCTB LVA 19 H
MCTB LVA 20 H
MCTB LVA 21 H
MCTB LVA 22 H
MCTB LVA 23 H
MCTB LVA 24 H
MCTB ADDR PH L
MCTC PA 17 H
MCTC PA 18 H
MCTC PA 19 H
MCTC PA 20 H
MCTC PA 21 H
MCTC PA 22 H
MCTC PA 23 H
MCTC PA 24 H
(AD1) ARRAY REF CYC L
74S04 E102
MCTB ARY REF CYC H
(VAR BYPASS REGISTER)
8 BIT 3-STATE LATCH 74S373 E59
BUS MC D09 H
BUS MC D10 H
BUS MC D11 H
BUS MC D12 H
BUS MC D31 H
BUS MC D13 H
BUS MC D14 H
BUS MC D15 H
MCTM CONT FUNC LAT L ;(C58)
MCTB VAR BYP EN L
HOLD
OUT EN
MCTB LVA 09 H
MCTB LVA 10 H
MCTB LVA 11 H
MCTB LVA 12 H
MCTB LVA 31 H
MCTB LVA 13 H
MCTB LVA 14 H
MCTB LVA 15 H
4X2 MUX 74S257 E9
MCTC PA 09 H
MCTB LVA 02 H
MCTC PA 10 H
MCTB LVA 03 H
MCTC PA 12 H
MCTB LVA 05 H
MCTC PA 11 H
MCTB LVA 04 H
MCTK COLAD H
BUS ARRAY A0 H (AK1)
BUS ARRAY A1 H (AP1)
BUS ARRAY A3 H (AJ2)
BUS ARRAY A2 H (AP2)
4X2 MUX 74S257 E10
MCTC PA 13 H
MCTB LVA 06 H
MCTC PA 14 H
MCTB LVA 07 H
MCTC PA 17 H
MCTC PA 16 H
MCTC PA 15 H
MCTB LVA 08 H
BUS ARRAY A4 H (AV2)
BUS ARRAY A5 H (AP1)
MCTB A7 H
BUS ARRAY A6 H (AL2)
(VIRTUAL ADDR REGISTER & ADDR DECODERS)
THIS DRAWING AND SPECIFICATIONS, AS AN UNPUBLISHED WORK, ARE THE PROPERTY OF DIGITAL EQUIPMENT CORPORATION AND SHALL NOT BE REPRODUCED OR COPIED OR USED IN WHOLE OR IN PART AS THE BASIS FOR THE MANUFACTURE OR SALE OF ITEMS WITHOUT WRITTEN PERMISSION. COPYRIGHT © 1981, DIGITAL EQUIPMENT CORPORATION
REVISIONS
CHK CHANGE NO. REV
digital
DRN. J.M.Hofman 27-OCT-81
CHK'D.
DATE
ENG.
BOARD LOCATION:
SHEET OF
(367,1500)MCTB.DRW 27-OCT-81 10:52
NEXT HIGHER ASSEMBLY:
FIRST USED ON OPTION/MODEL: 11/730
TITLE: NEBULA MEMORY CONTROLLER (MCTB)
SIZE D CODE CS NUMBER M8391-0-MCTB REV. B
M8391-0-MCTB
REV. B
SIZE D CODE CS NUMBER M8391-0-MCTB
G.M. HARNER MCTB.PLOT SCALE 2.0 22-OCT-81 11:49


4X2 MUX 74S157 E69
MCTB LVA 31 H
MCTB LVA 15 H
MCTB LVA 16 H
MCTA +3V8 H
MCTB LVA 17 H
MCTB UB TB SEL H
MCTC TBA 6 H
MCTC TBA 7 H
MCTC TBA 9 H
MCTC TBA 8 H
8 BIT 3-STATE LATCH 74S373 E71
FJ1 UCSH CSR 07 H
FE1 UCSH CSR 00 H
DB1 DAPB CURR MODE 0 H
DA1 DAPB CURR MODE 1 H
DS1 DAPH DATA TYPE 0 H
DR1 DAPH DATA TYPE 1 H
MCTH UB C0 H
MCTH UB C1 H
MCTH CONT FUNC LAT L ;(C58)
MCTC L MF0 H
MCTC L MF1 H
MCTC L CM0 H
MCTC L CM1 H
MCTC L DT0 H
MCTC L DT1 H
MCTC L UBC0 H
MCTC L UBC1 H
256 X 4 RAM 93422 E43
256 X 4 RAM 93422 E45
256 X 4 RAM 93422 E23
256 X 4 RAM 93422 E32
MCTB LVA 15 H
MCTB LVA 16 H
MCTB LVA 17 H
MCTB LVA 18 H
MCTB LVA 09 H
MCTB LVA 10 H
MCTB LVA 11 H
MCTB LVA 12 H
MCTB LVA 13 H
MCTB LVA 14 H
MCTC TBA 6 H
MCTC TBA 7 H
MCTM TB WE L ;(C52)
MCTA +3V8 H
MCTC TBA 9 H
MCTC TAG 0 H
MCTC TAG 1 H
MCTC TAG 2 H
MCTC TAG 3 H
MCTB LVA 19 H
MCTB LVA 20 H
MCTB LVA 21 H
MCTB LVA 22 H
MCTC TAG 4 H
MCTC TAG 5 H
MCTC TAG 6 H
MCTC TAG 7 H
MCTB LVA 23 H
MCTB LVA 24 H
MCTB LVA 25 H
MCTB LVA 26 H
MCTC TAG 8 H
MCTC TAG 9 H
MCTC TAG 10 H
MCTC TAG 11 H
MCTB LVA 27 H
MCTB LVA 28 H
MCTB LVA 29 H
MCTB LVA 30 H
MCTC TAG 12 H
MCTC TAG 13 H
MCTC TAG 14 H
MCTC TAG 15 H
(TAG STORE)
PAR GEN 74S280 E21
PAR GEN 74S280 E20
MCTC PA 09 H
MCTC PA 10 H
MCTC PA 11 H
MCTC PA 12 H
MCTC PA 13 H
MCTC PA 14 H
MCTC PA 15 H
MCTC PA 16 H
MCTF TB PAR DIAG H
MCTC PA 17 H
MCTC PA 18 H
MCTC PA 19 H
MCTC PA 20 H
MCTC PA 21 H
MCTC PA 22 H
MCTC PA 23 H
MCTC BYTE OFFSET H
MCTC GEN PB H
1Kx4 RAM 2148 E49
1Kx4 RAM 2148 E52
1Kx4 RAM 2148 E58
1Kx4 RAM 2148 E40
1Kx4 RAM 2148 E39
1Kx4 RAM 2148 E38
MCTC BYTE OFFSET H
MCTC MODIFY H
MCTC PROT A H
MCTC PROT B H
MCTB ADDR PH H
MCTM TB WE L ;(C52)
MCTC TB PB L
MCTC PA 23 H
MCTC PA 22 H
MCTC PROT C H
MCTC PROT D H
MCTC VALID H
MCTC PA 09 H
MCTC PA 10 H
MCTC PA 11 H
MCTC PA 12 H
MCTC PA 13 H
MCTC PA 14 H
MCTC PA 15 H
MCTC PA 16 H
MCTC PA 17 H
MCTC PA 18 H
MCTC PA 19 H
MCTC PA 20 H
MCTC PA 21 H
(NOTE:DATA WRITTEN INTO TB ORIGINATES ON MCTD)
TRANSLATION BUFFER (PTE AND UB MAP)
8-BIT CHECKER DC182 E35
8-BIT CHECKER DC182 E30
(NOTE:OPEN COLL.- TERM. ON SHT. A)
MCTC TB MISS L
MCTC TAG 7 H
MCTC TAG 6 H
MCTC TAG 5 H
MCTC TAG 4 H
MCTC TAG 3 H
MCTC TAG 2 H
MCTC TAG 1 H
MCTC TAG 0 H
MCTB LVA 22 H
MCTB LVA 21 H
MCTB LVA 20 H
MCTB LVA 19 H
MCTB LVA 18 H
MCTB LVA 17 H
MCTB LVA 16 H
MCTB LVA 15 H
MCTC TAG 15 H
MCTC TAG 14 H
MCTC TAG 13 H
MCTC TAG 12 H
MCTC TAG 11 H
MCTC TAG 10 H
MCTC TAG 9 H
MCTC TAG 8 H
MCTB LVA 30 H
MCTB LVA 29 H
MCTB LVA 28 H
MCTB LVA 27 H
MCTB LVA 26 H
MCTB LVA 25 H
MCTB LVA 24 H
MCTB LVA 23 H
(TAG COMPARE)
(PROTECTION PROM)
23-946A9-00
512 X 4 ROM 6306 E51
MCTC PROT PAR H
MCTC ACCESS REFUSED L
MCTC MODIFY REFUSED L
MCTC PROT A H
MCTC PROT B H
MCTC PROT C H
MCTC PROT D H
MCTC MODIFY H
MCTC L MF0 H
MCTC L MF1 H
MCTC L CM0 H
MCTC L CM1 H
(TRANSLATION BUFFER)
REVISIONS
CHK CHANGE NO. REV
digital
DRN
CHK'D.
DATE 27-OCT-81
ENG.
BOARD LOCATION:
SHEET OF 1
NEXT HIGHER ASSEMBLY:
FIRST USED ON OPTION/MODEL: 11/730
TITLE: NEBULA MEMORY CONTROLLER (MCTC)
SIZE D
CODE CS
NUMBER M8391-0-MCTC
REV. B
G.M. MARKER: [11:58,1500]MCTC.DPL; SCALE 2.0 RELEASED
G.M. MARKER MCTC.PLOT[11:58,1500] 27-OCT-81 11:48



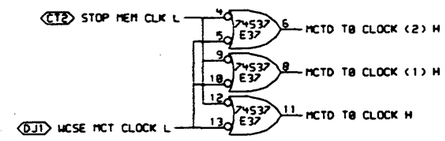

74LS245
BI-DIRECTIONAL DRIVER

| EN | DIR | FUNCTION |
|---|---|---|
| L | L | B ---> A |
| L | H | A ---> B |
| H | X | TRI-STATE DISABLE |




(READ VAR IN MAINT. MODE)

NOTE:STOP MEM CLK IS TERMINATED ON SHEET MCTA (E65)




(BUS MC DRIVERS,CLOCK GENER'N)

G.M. HARPER, [11-OCT-1988 MCTD.DPL, SCALE 2, 'D' RELEASE BOM
G.M. HARPER MCTD.PLO[11,1568] 27-OCT-81 11:48



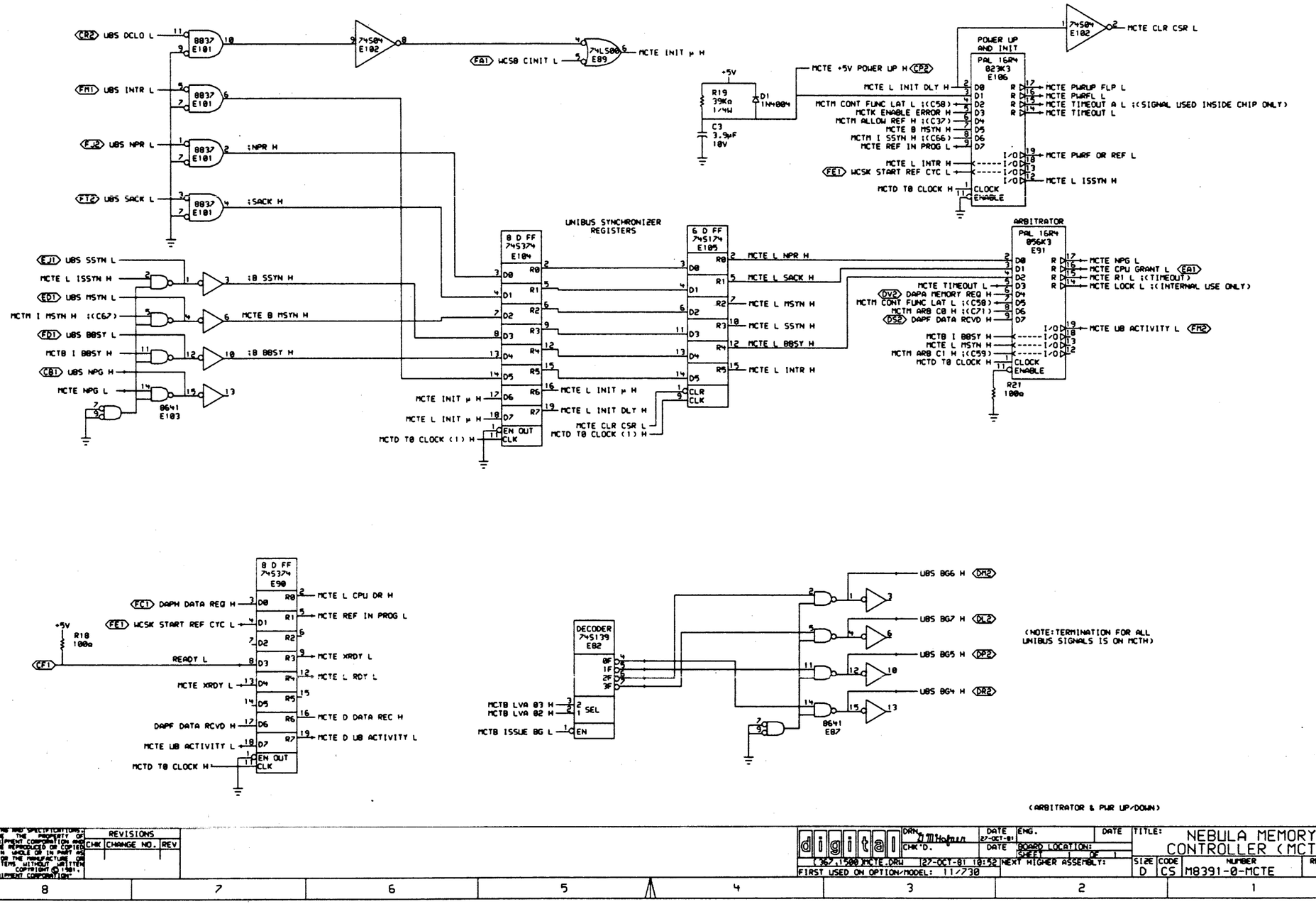
| REVISIONS | | |
|---|---|---|
| CHK | CHANGE NO. | REV |
| | | |

digital

DRN G.M.Harper 27-OCT-81
CHK'D. DATE
ENG. DATE
BOARD LOCATION:
SHEET OF
[35,1568]MCTD.DRW 27-OCT-81 10:52
NEXT HIGHER ASSEMBLY:
FIRST USED ON OPTION/MODEL: 11/730

TITLE: NEBULA MEMORY CONTROLLER (MCTD)

| SIZE | CODE | NUMBER | REV. |
|---|---|---|---|
| D | CS | M8391-0-MCTD | B |






| REVISIONS | | |
|---|---|---|
| CHK | CHANGE NO. | REV |

| | | | |
|---|---|---|---|
| DRN | DATE 27-OCT-81 | ENG. | DATE |
| CHK D. | DATE | BOARD LOCATION: SHEET 1 OF 1 | |

(367,1500)MCTE.DRW 27-OCT-81 10:52 | NEXT HIGHER ASSEMBLY:

FIRST USED ON OPTION/MODEL: 11/730

TITLE: NEBULA MEMORY CONTROLLER (MCTE)

| SIZE | CODE | NUMBER | REV. |
|---|---|---|---|
| D | CS | M8391-0-MCTE | B |

G.M. HARTNER, (1186,1500)MCTE.DPL, SCALE 2, "D" RELEASE BOM
G.M. HARTNER MCTE.PLO( 1186,1500) 27-OCT-81 11:49

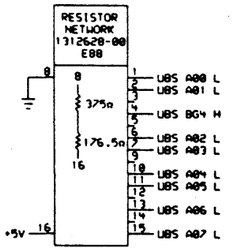
NOTE:ROT C0 IS USED HERE TO SET NXM DURING CPU TO UNIBUS TRANSACTIONS IF A TIMEOUT OCCURS.

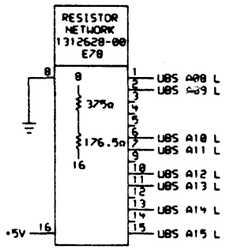
NOTE: RD CSR (C47) IS USED HERE [PIN 19] TO INDICATE A CPU WRCHK CYCLE

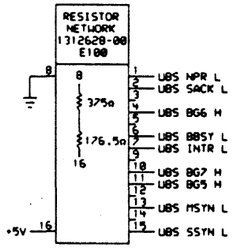
(CSR 0 & 1)

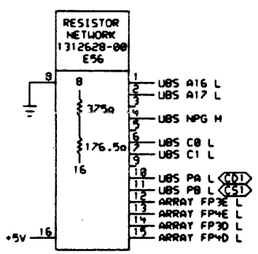
| REVISIONS | | |
|---|---|---|
| CHK | CHANGE NO. | REV |

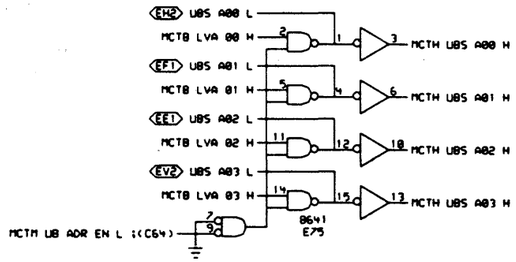
| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| DRN. | DATE | ENG. | DATE | TITLE: NEBULA MEMORY CONTROLLER (MCTF) | | | | | |
| CHK'D. | DATE | BOARD LOCATION: | | | | | | | |
| | | SHEET OF | | | | | | | |
| 367:1500 MCTF.DRW | 27-OCT-81 10:52 | NEXT HIGHER ASSEMBLY: | | SIZE | CODE | NUMBER | REV. | | |
| FIRST USED ON OPTION/MODEL: 11/730 | | | | D | CS | M8391-0-MCTF | B | | |

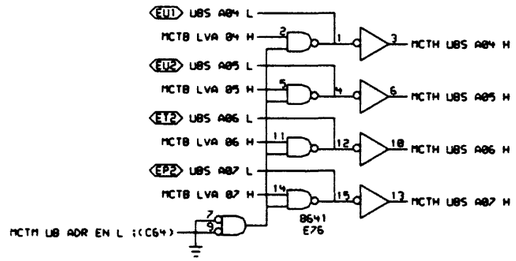


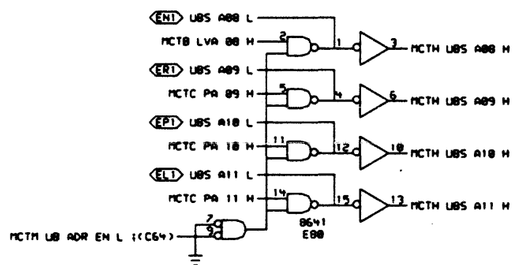



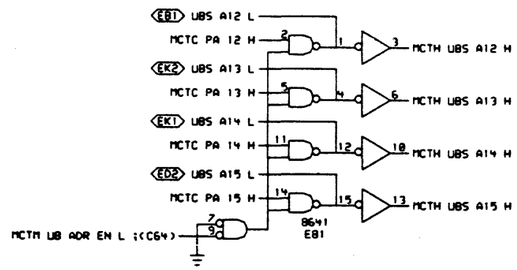



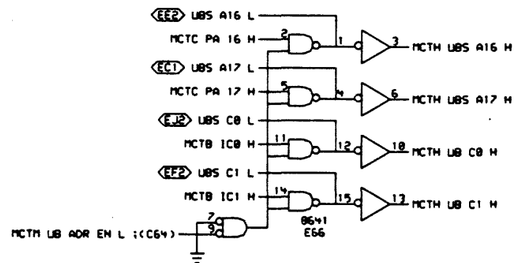




(UBUS ADRS XCVRS & TERM.)
(DATA XCVRS AND LATCHES ON UCS)



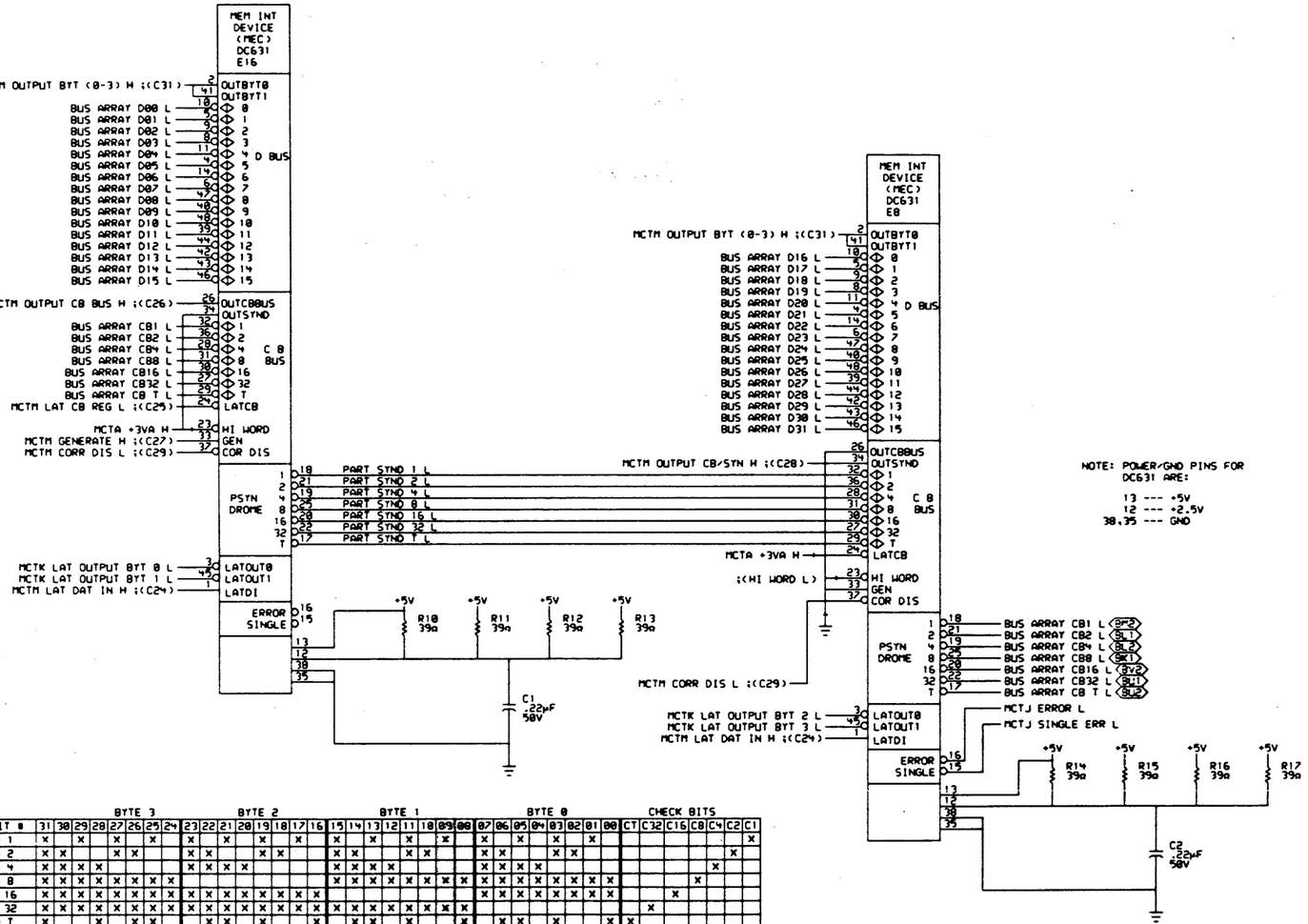
| REVISIONS | | |
|---|---|---|
| CHK | CHANGE NO. | REV |

| | | | |
|---|---|---|---|
| digital | DRN. D.M.Hofmann | DATE 27-OCT-81 | ENG. |
| | CHK'D. | DATE | DATE |
| | BOARD LOCATION: | SHEET 1 OF 1 | |
| | (369,1500)MCTH.DRW 27-OCT-81 10:52 | NEXT HIGHER ASSEMBLY: | |
| | FIRST USED ON OPTION/MODEL: 11/730 | | |

TITLE: NEBULA MEMORY CONTROLLER (MCTH)

| SIZE | CODE | NUMBER | REV. |
|---|---|---|---|
| D | CS | M8391-0-MCTH | B |

G.M. HAFNER, [1186,1500]MCTH.DPL, SCALE 2, 'D' RELEASE BOX
G.M. HAFNER MCTH.PLO[1186,1500] 27-OCT-81 11:41




NOTE: POWER/GND PINS FOR DC631 ARE:

13 --- +5V
12 --- +2.5V
38,35 --- GND

| BAD BIT # | 31 | 30 | 29 | 28 | 27 | 26 | 25 | 24 | 23 | 22 | 21 | 20 | 19 | 18 | 17 | 16 | 15 | 14 | 13 | 12 | 11 | 10 | 09 | 08 | 07 | 06 | 05 | 04 | 03 | 02 | 01 | 00 | CT | C32 | C16 | C8 | C4 | C2 | C1 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | BYTE 3 | | | | | | | | BYTE 2 | | | | | | | | BYTE 1 | | | | | | | | BYTE 0 | | | | | | | | CHECK BITS | | | | | | |
| SYND 1 | x | | | x | | x | | x | x | | x | | x | | x | | x | | x | | x | | x | | x | | x | | x | | x | | | | | | | | x |
| SYND 2 | x | x | | | x | x | | | x | x | | | x | x | | | x | x | | | x | x | | | x | x | | | x | x | | | | | | | | x | |
| SYND 4 | x | x | x | x | | | | | x | x | x | x | | | | | x | x | x | x | | | | | x | x | x | x | | | | | | | | | x | | |
| SYND 8 | x | x | x | x | x | x | x | x | | | | | | | | | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | | | | x | | | |
| SYND 16 | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | | | | | | | | | x | x | x | x | x | x | x | x | | | x | | | | |
| SYND 32 | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | | | | | | | | | | x | | | | | |
| SYND T | x | | | x | | x | x | | | x | x | | x | | | x | | x | x | | x | | | x | | x | x | | x | | | x | x | | | | | | |
| SYNDROME CODE (HEX) | 7F | 3E | 3D | 7C | 3B | 7A | 79 | 38 | 37 | 76 | 75 | 34 | 73 | 32 | 31 | 70 | 2F | 6E | 6D | 2C | 6B | 2A | 29 | 68 | 1F | 5E | 5D | 1C | 5B | 1A | 19 | 58 | 40 | 20 | 16 | 8 | 4 | 2 | 1 |

MODIFIED HAMMING CODE

X=1=H

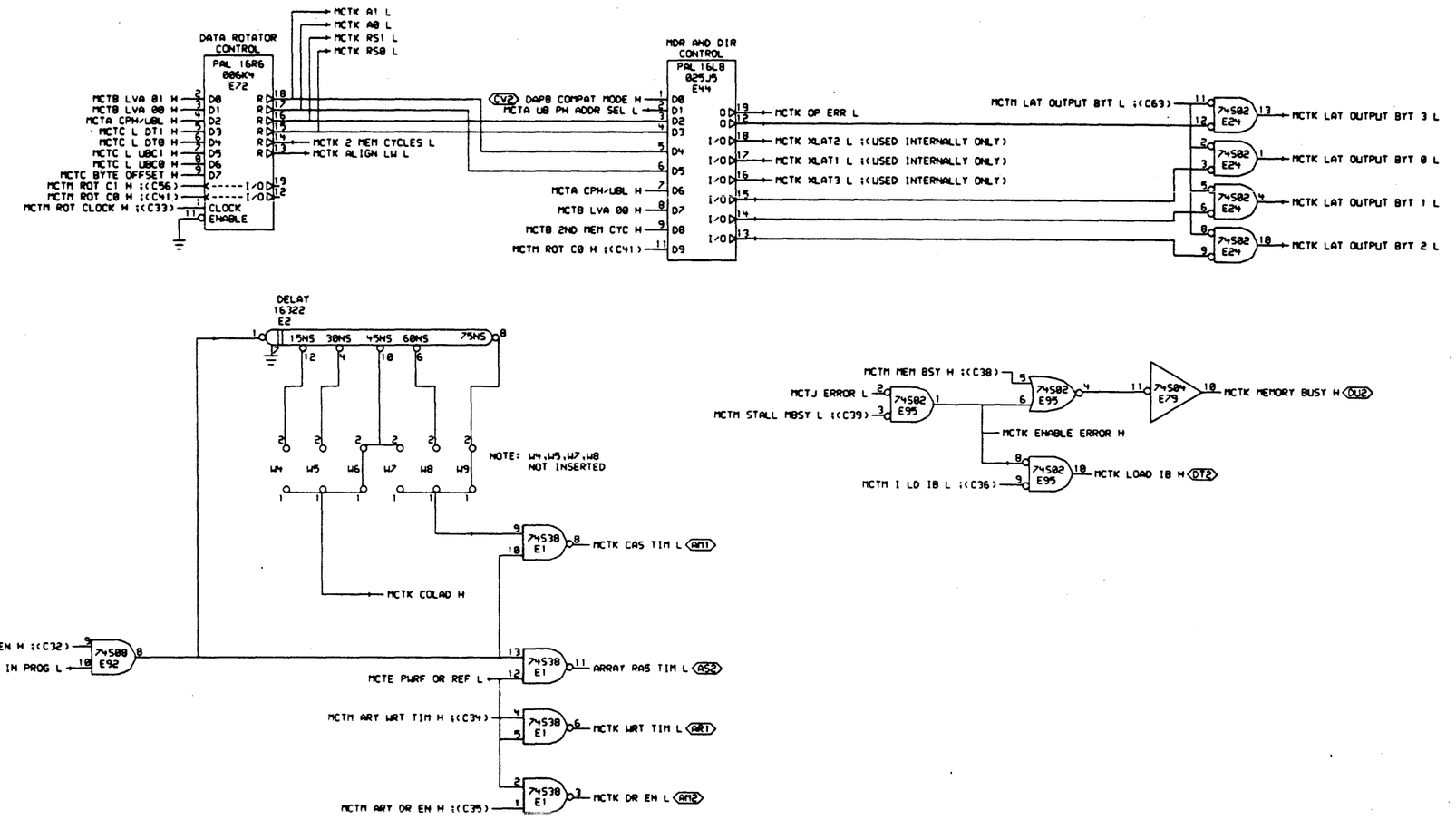
EVEN PARITY IS GENERATED ON 1,2 AND T
ODD PARITY IS GENERATED ON 4,8,16 AND 32
ALL UNUSED CODES ARE CONSIDERED AN RDS (UNCORRECTABLE ERROR)



| REVISIONS | | |
|---|---|---|
| CHK | CHANGE NO. | REV |
| | | |

| | | | | |
|---|---|---|---|---|
| DRN | DATE | ENG. | DATE | TITLE: NEBULA MEMORY CONTROLLER (MCTJ) |
| CHK'D. | 27-OCT-81 | DATE | | |
| (367,1500)MCTJ.DRW 27-OCT-81 10:52 | | BOARD LOCATION: SHEET 1 OF 1 | | |
| FIRST USED ON OPTION/MODEL: 11/730 | | NEXT HIGHER ASSEMBLY: | | SIZE D · CODE CS · NUMBER M8391-0-MCTJ · REV. B |

G.M. HARMER MCTJ.PLOT 1106.1500 27-OCT-81 11:14
G.M. HARMER (1106,1500)MCTJ.DPL SCALE 2 "D" RELEASE BOM






REVISIONS

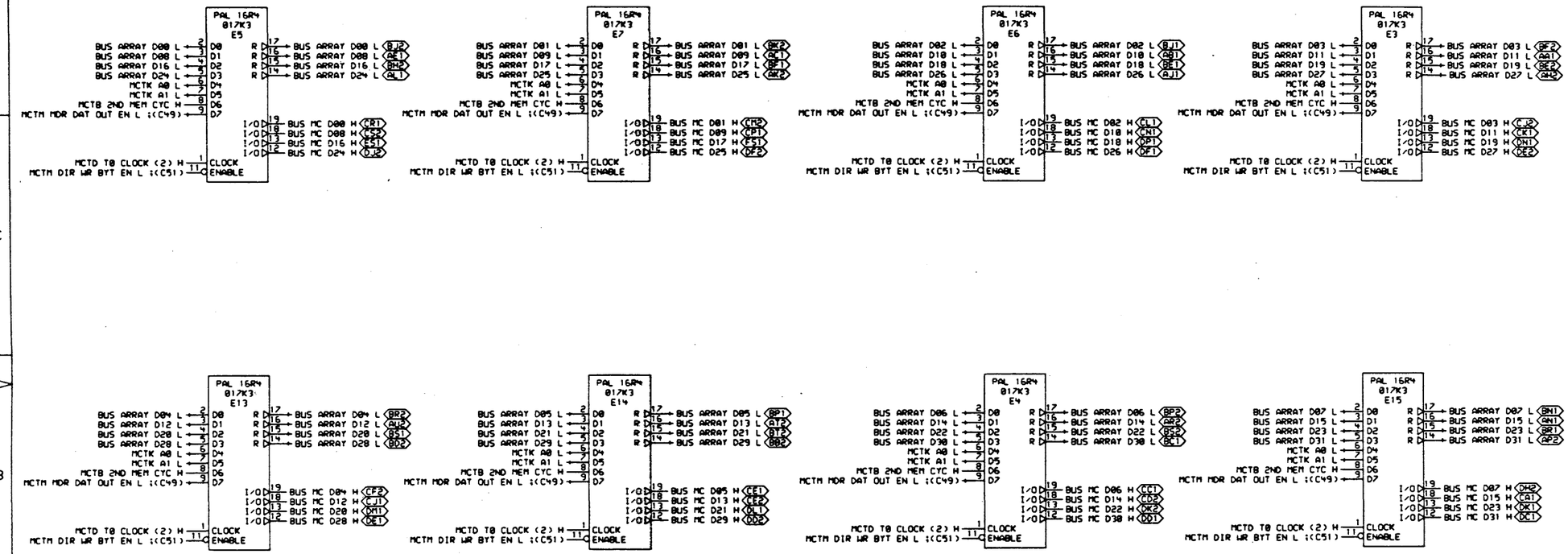
| CHK | CHANGE NO. | REV |
|---|---|---|

| | | | |
|---|---|---|---|
| DRN. D.Mahoney | DATE 27-OCT-81 | ENG. | DATE |
| CHK'D. | DATE | BOARD LOCATION: SHEET 1 OF | |
| C367 1500 MCTK.DRW 27-OCT-81 10:52 | | NEXT HIGHER ASSEMBLY: | |
| FIRST USED ON OPTION/MODEL: 11/730 | | | |

TITLE: NEBULA MEMORY CONTROLLER (MCTK)

| SIZE | CODE | NUMBER | REV. |
|---|---|---|---|
| D | CS | M8391-0-MCTK | B |

G.N. HAFNER, (1106,1500)MCTK.DPL, SCALE 2, "D" RELEASE BOM
G.N. HAFNER MCTK.PLO(1106,1500) 27-OCT-81 11:41




| A1 L | A0 L | FUNCTION |
|---|---|---|
| H | H | NO ROTATE |
| H | L | ROTATE BYTE |
| L | H | ROTATE WORD |
| L | L | ROTATE 3 BYTES |

(DATA ROTATORS/LATCHES)



| REVISIONS | | |
|---|---|---|
| CHK | CHANGE NO. | REV. |

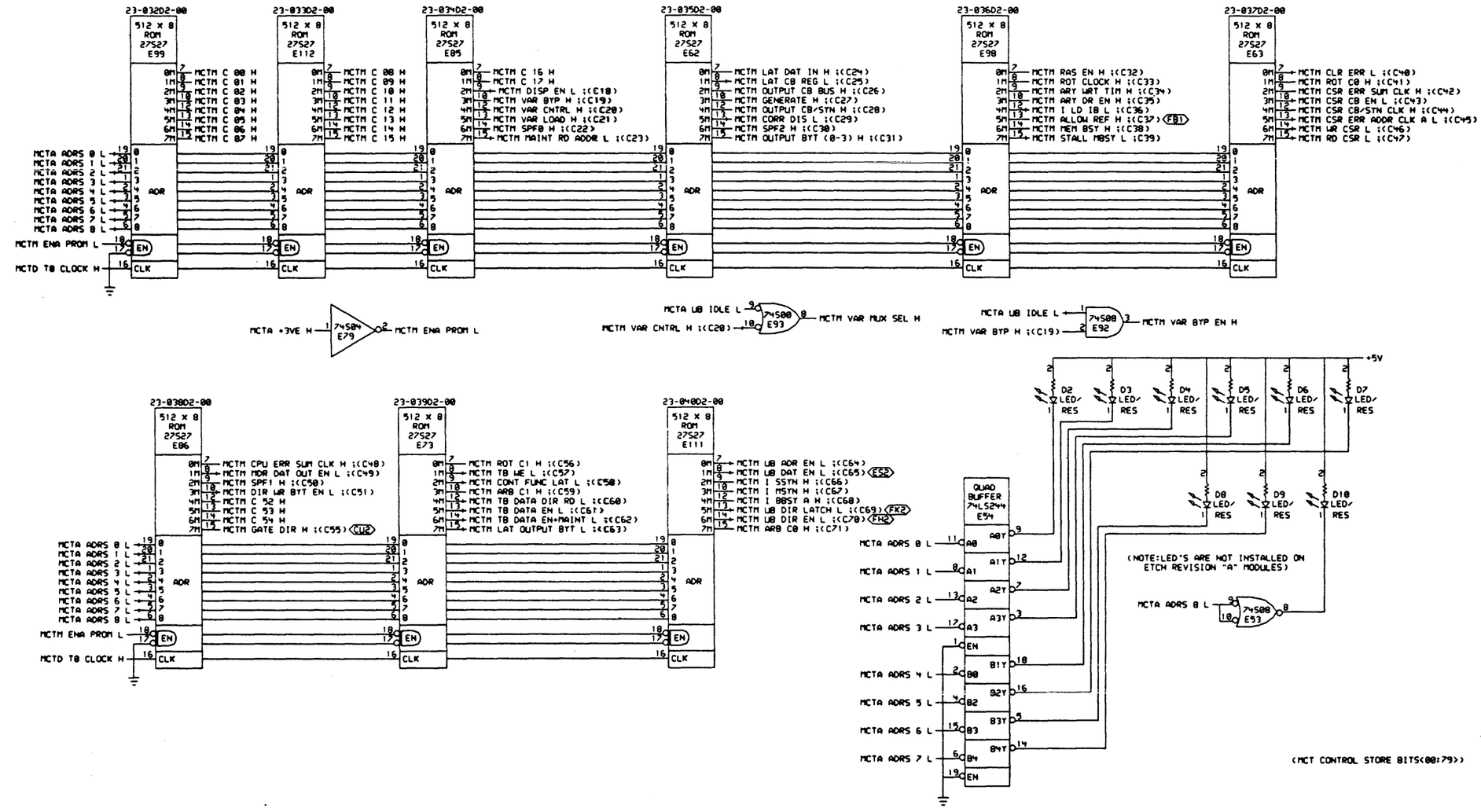
digital

DRN: J.M.Hafner | DATE: 27-OCT-81 | ENG. | DATE
CHK'D. | DATE | BOARD LOCATION: | SHEET 1 OF 1
(362)1500MCTL.DRW 27-OCT-81 10:52 | NEXT HIGHER ASSEMBLY:
FIRST USED ON OPTION/MODEL: 11/730

TITLE: NEBULA MEMORY CONTROLLER (MCTL)

| SIZE | CODE | NUMBER | REV. |
|---|---|---|---|
| D | CS | M8391-0-MCTL | B |

G.M. HAFNER, [1106,1500]MCTL.DPL;SCALE 2, "D" RELEASE BOM
G.M. HAFNER MCTL.PLO[1106,1500] 27-OCT-81 11:42



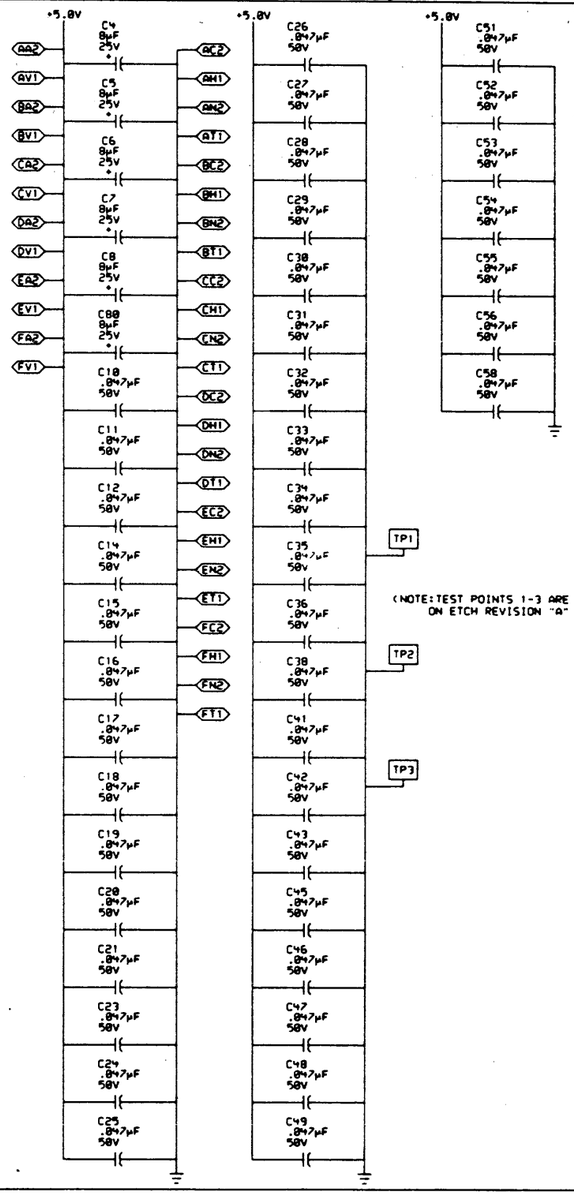



| REVISIONS | | |
|---|---|---|
| CHK | CHANGE NO. | REV |

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| DRN | J.M.Hafner | DATE 27-OCT-81 | ENG. | DATE | TITLE: NEBULA MEMORY CONTROLLER (MCTM) | | | | |
| CHK'D. | | DATE | BOARD LOCATION: SHEET OF | | | | | | |
| 367_1500 MCTM.DRW | 27-OCT-81 10:52 | NEXT HIGHER ASSEMBLY: | | | SIZE D | CODE CS | NUMBER M8391-0-MCTM | REV. B |
| FIRST USED ON OPTION-MODEL: 11/730 | | | | | | | | |

SIZE D | CODE CS | M8391-0-MCTM | REV. B

8 7 6 5 4 3 2 1






| REVISIONS | | |
|---|---|---|
| CHK | CHANGE NO. | REV |
| | | |

digital

DRN. D.M.Hafner 27-OCT-81
CHK'D. DATE
ENG. DATE
BOARD LOCATION:
SHEET 1 OF 1

367,1500 MCTN.DRW 27-OCT-81 10:53
FIRST USED ON OPTION/MODEL: 11/730
NEXT HIGHER ASSEMBLY: B-DD-M8391-0

TITLE: NEBULA MEMORY CONTROLLER (MCTN)

| SIZE | CODE | NUMBER | REV. |
|---|---|---|---|
| D | CS | M8391-0-MCTN | B |

G.H. HAFNER [111,1500]MCTN.DRW; SCALE 2. -D- RELEASE BOX
G.H. HAFNER MCTN.PLT[111,1500] 22-OCT-81 11:42

CPU RD PHY
000011

CPU RD V
NO CHK
001220

RD V WCHK LOCK
011001

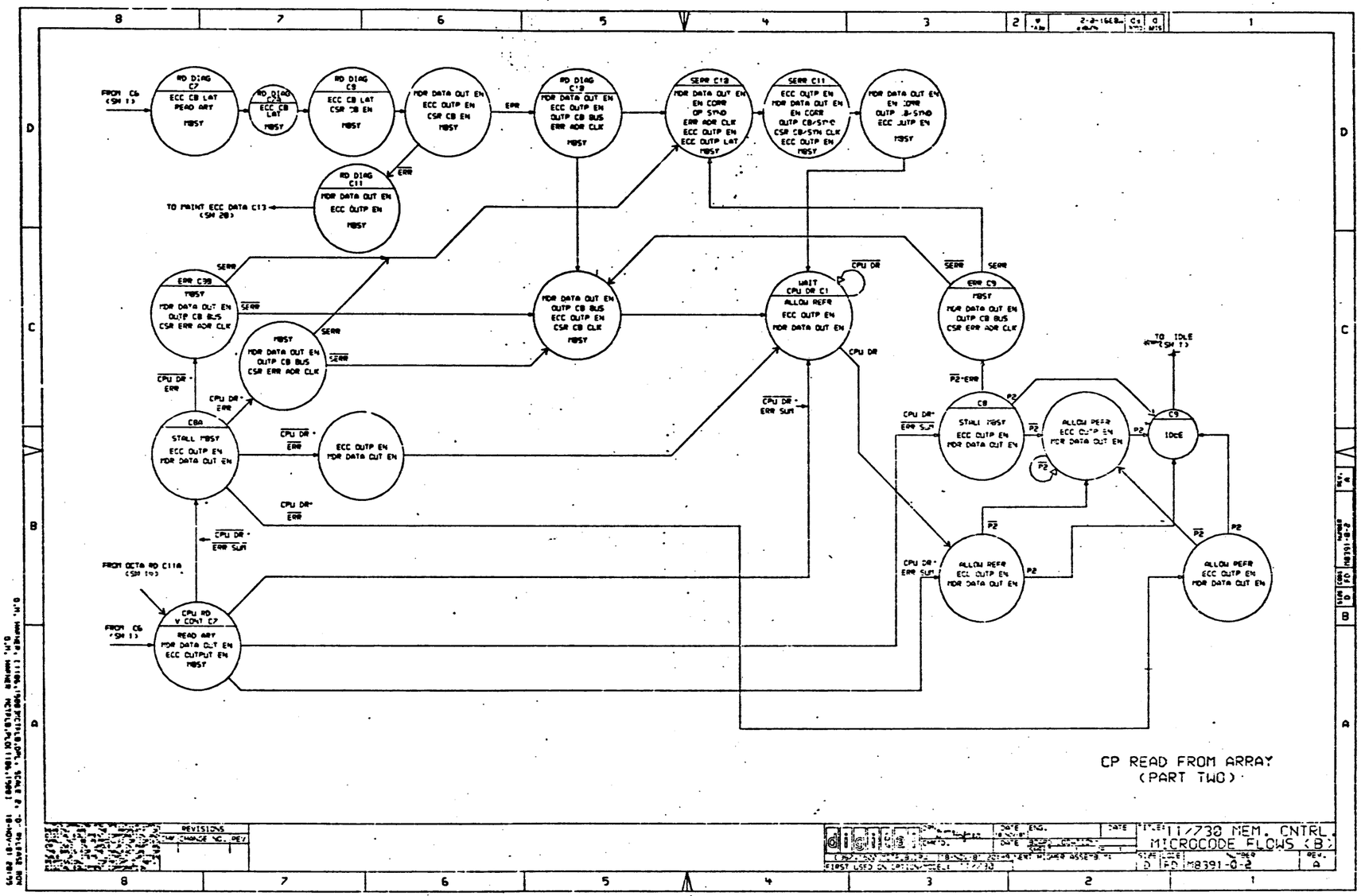
CPU RD
V RCHK
001010

CPU RD
V WCHK
001001

CP READ FROM ARRAY
(PART ONE)

| REVISIONS | | |
|---|---|---|
| CHAR | CHANGE NO. | REV |

| | | | | |
|---|---|---|---|---|
| DRAWN | DATE | ENG. | DATE | TITLE: 11/730 MEM. CNTRL. MICROCODE FLOWS (A) |
| CHK'D | DATE | MGR. | DATE | |
| FIRST USED ON OPTION/MODEL: 11/730 | | NEXT HIGHER ASSY | | SIZE D / CODE FD / NUMBER M8391-0-1 / REV. A |

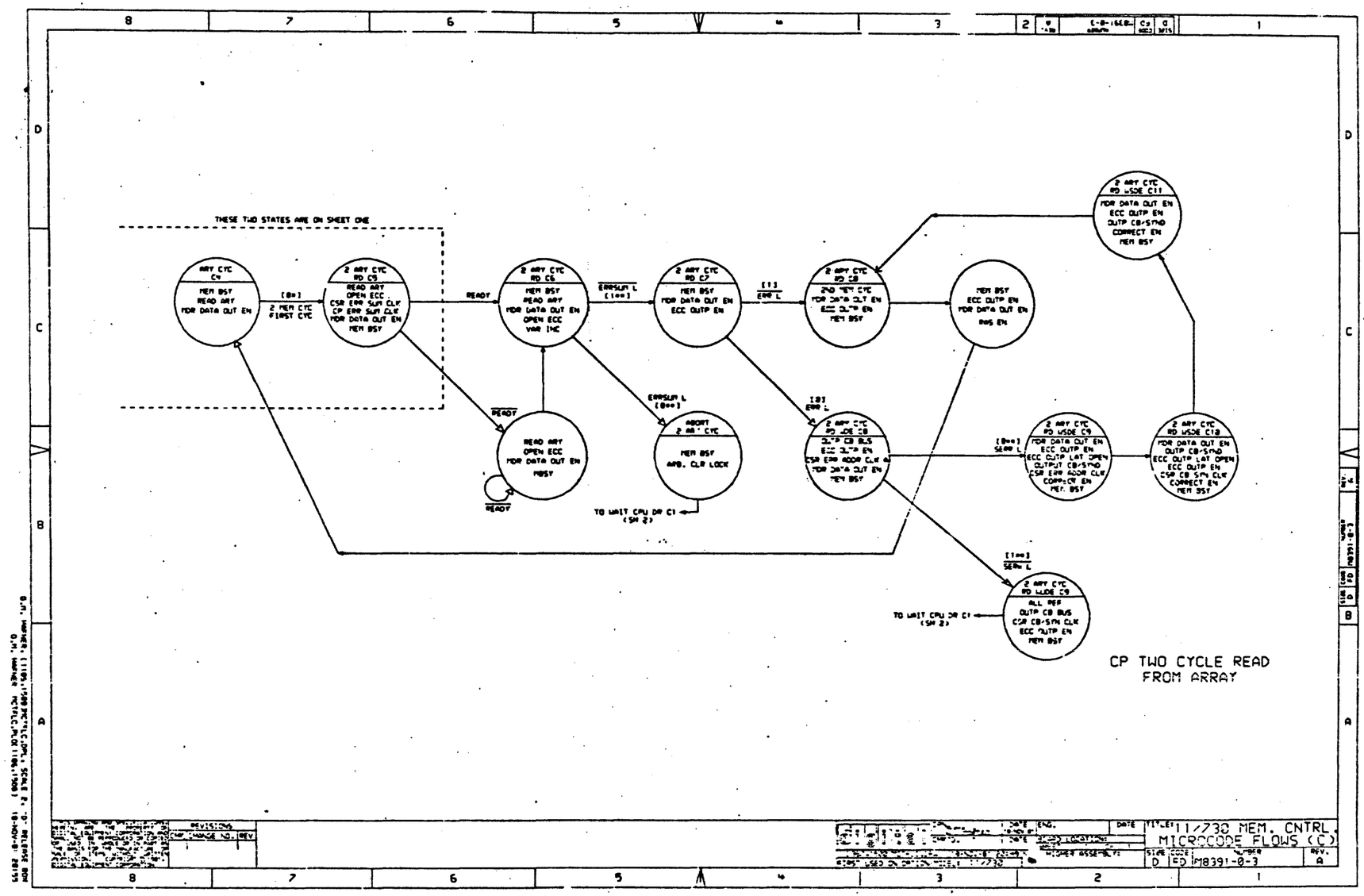



CP READ FROM ARRAY
(PART TWO)

| REVISIONS | | | |
|---|---|---|---|
| LTR | CHANGE NO. | DESCRIPTION | DATE |

| | | | |
|---|---|---|---|
| DRAWN | DATE | SIZE | DRAWING NUMBER |
| CHK'D | DATE | D | MP-8391-0-2 |
| FIRST USED ON | | | REV. A |

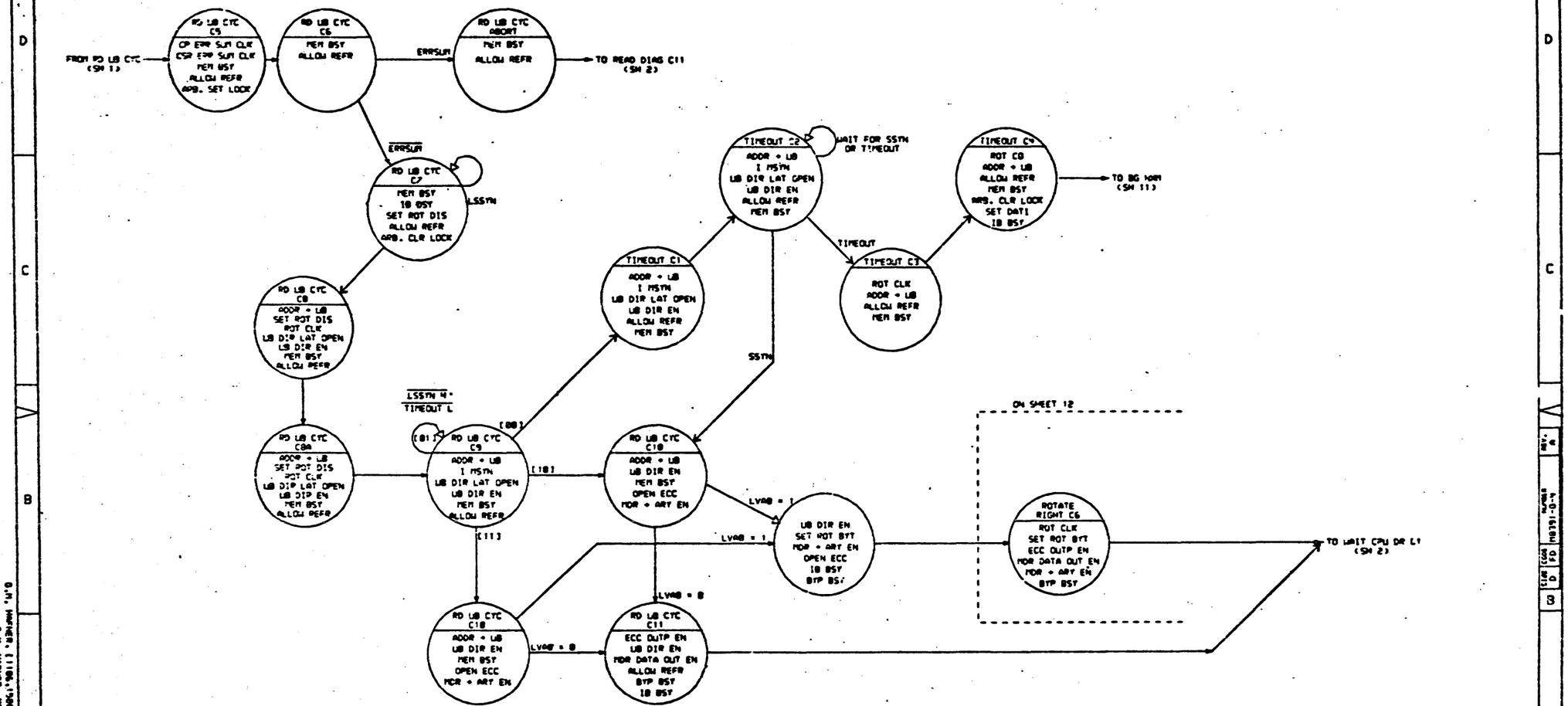
11/730 MEM. CNTRL.
MICROCODE FLOWS (B)




CP TWO CYCLE READ FROM ARRAY

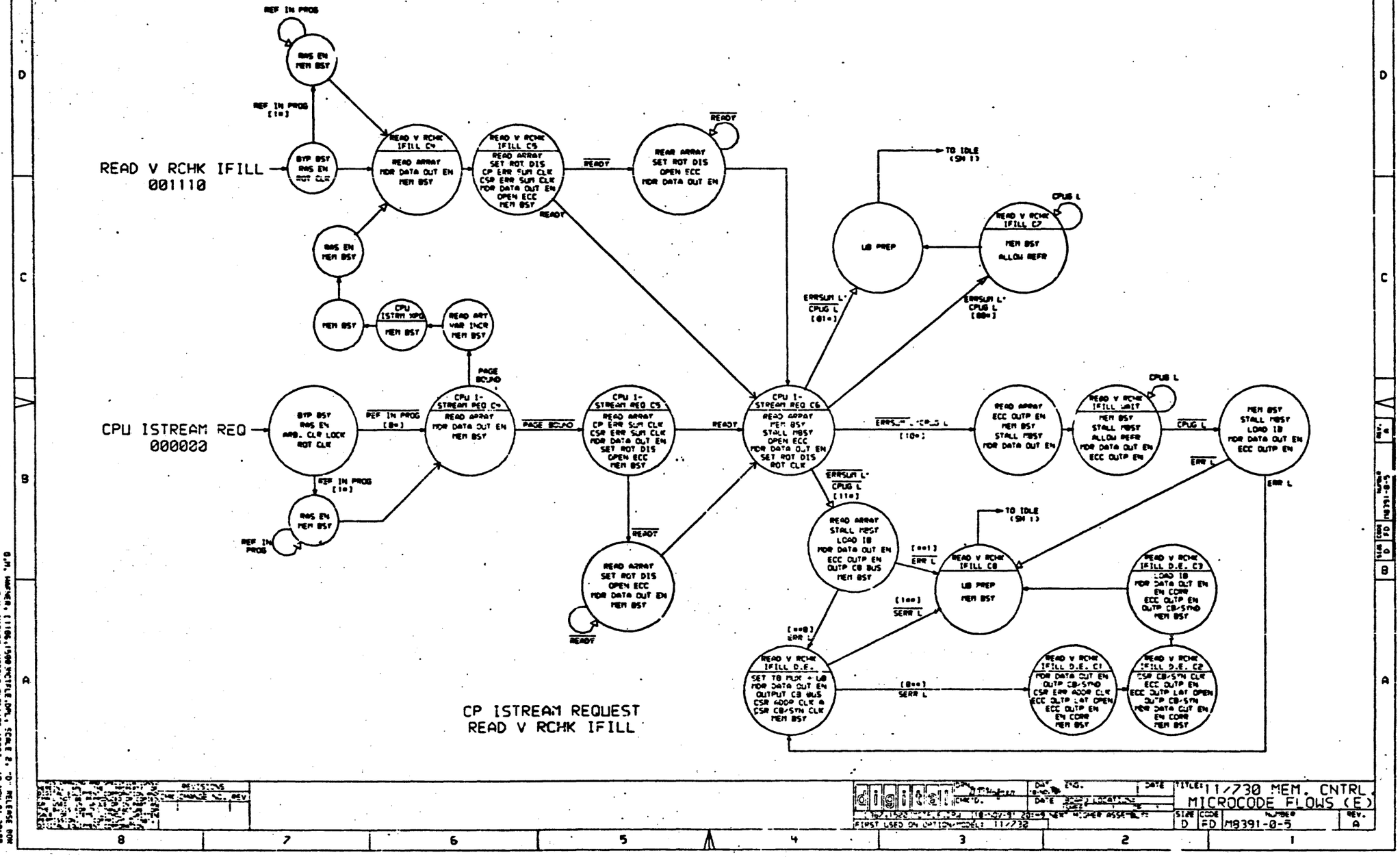
| REVISIONS | | |
|---|---|---|
| CHANGE NO. | REV | |

| | | | | |
|---|---|---|---|---|
| DRAWN | DATE | ENG. | DATE | TITLE 11/730 MEM. CNTRL. MICROCODE FLOWS (C) |
| | | | | SIZE D · CODE ED · NUMBER M8391-0-3 · REV. A |






DRN. D.M. Marker
DATE 18-NOV-81
CHK'D.
DATE
DWG LOCATION:
DATE
TITLE: 11/730 MEM. CNTRL. MICROCODE FLOWS (D)
367 11-30-MCTRLD.DRW 18-NOV-81 20:49
NEXT HIGHER ASSEMBLY:
FIRST USED ON OPTION/MODEL: 11/730
SIZE D
CODE FD
MB391-0-4
REV. A



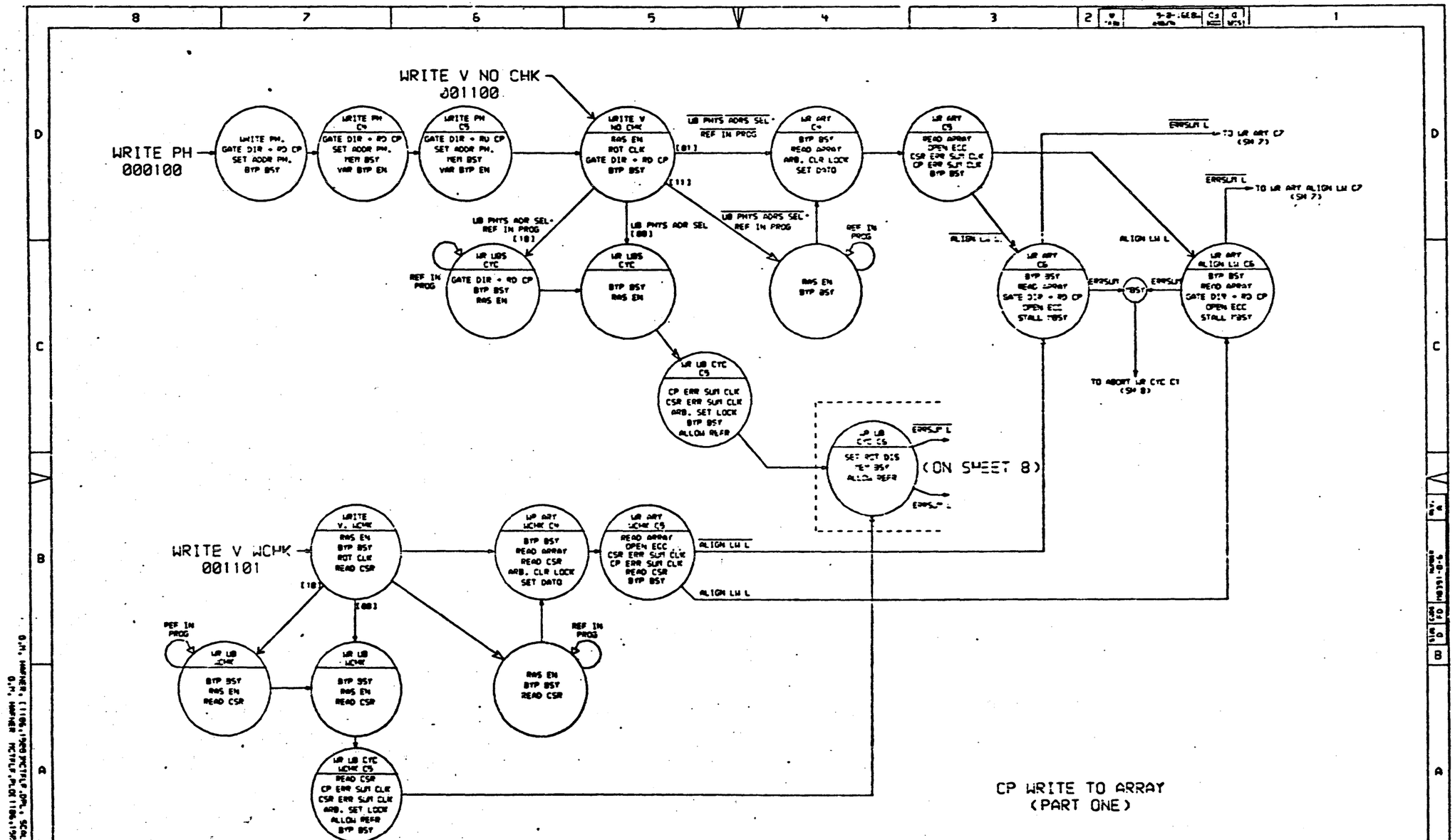
CP ISTREAM REQUEST
READ V RCHK IFILL

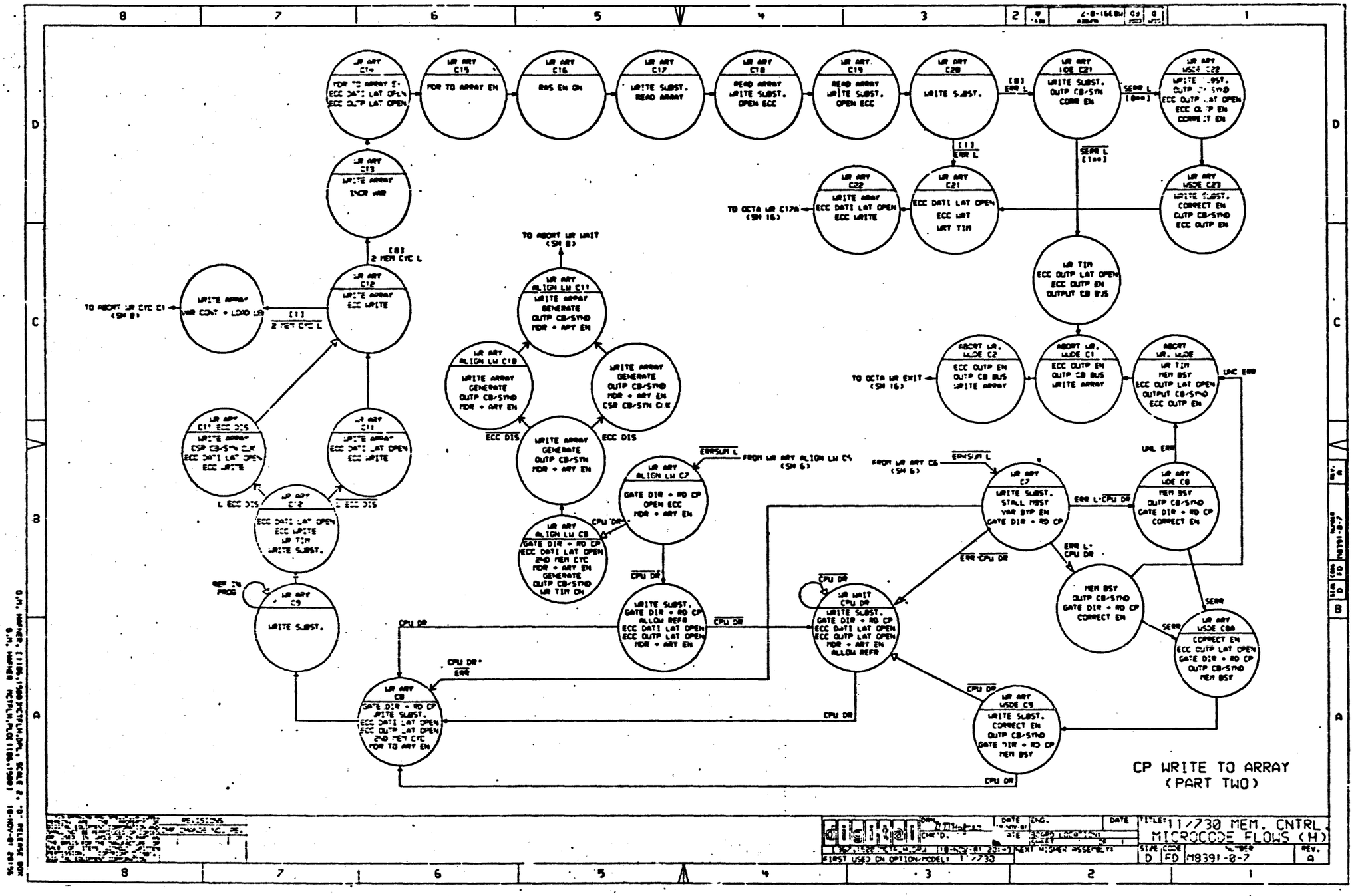
D.M. HARNER, [1106,1500]MCTFLE.DPL, SCALE 2, 'D' RELEASE ROM
D.M. HARNER MCTFLE.PLO[1106,1500] 18-NOV-81 20:55

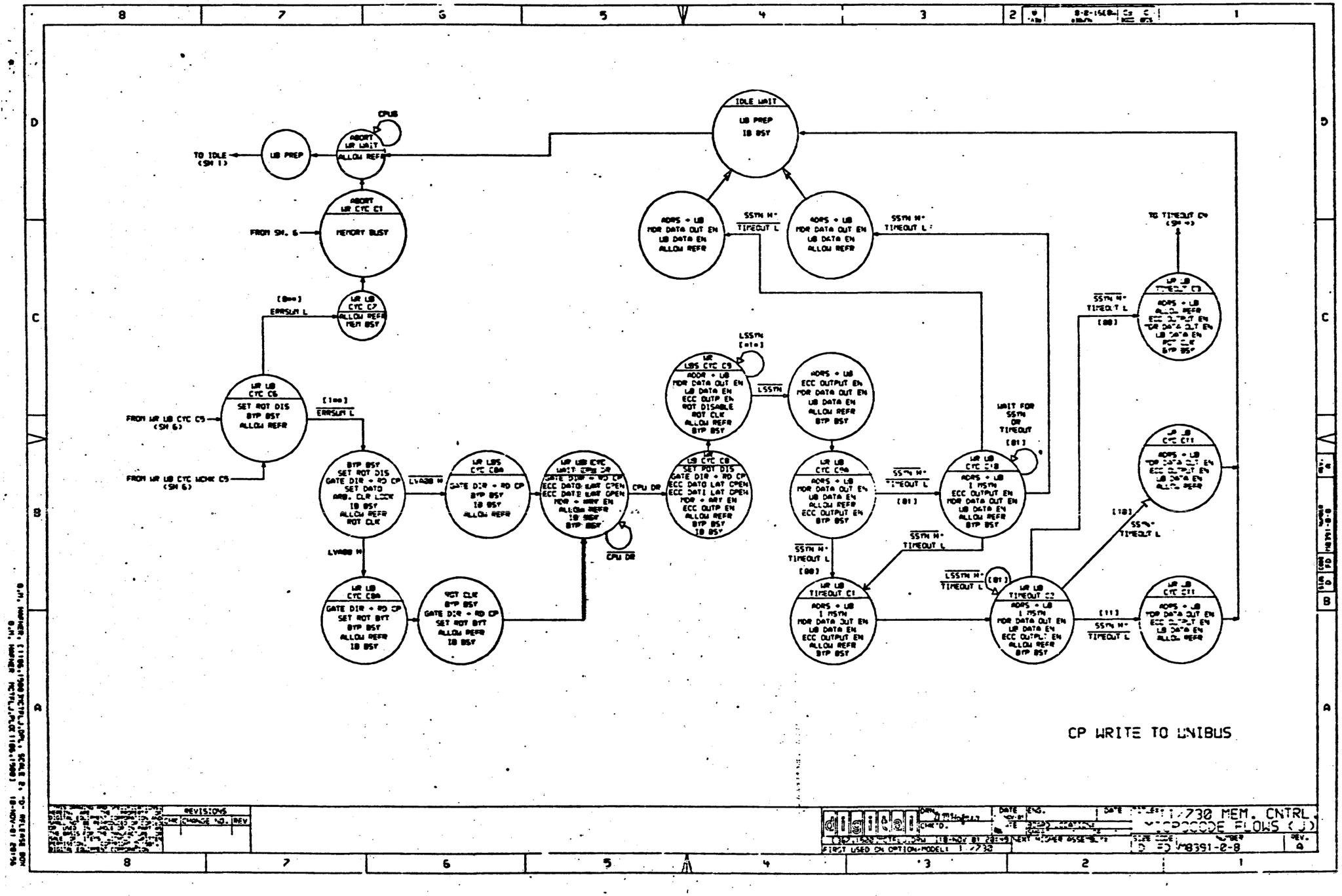
| | | |
|---|---|---|
| digital | DRN. D.M. Harner | ENG. |
| | CHK'D. | DATE |
| TITLE: | 11/730 MEM. CNTRL. MICROCODE FLOWS (E) | |
| SIZE | CODE | NUMBER | REV. |

SIZE D CODE FD NUMBER M8391-0-5 REV. A

FIRST USED ON OPTION/MODEL: 11/730


WRITE V NO CHK
001100
WRITE PH
000100
WRITE PH.
GATE DIR + RD CP
SET ADDR PH.
BYP BSY
WRITE PH
C4
GATE DIR + RD CP
SET ADDR PH.
MEM BSY
VAR BYP EN
WRITE PH
C5
GATE DIR + RD CP
SET ADDR PH.
MEM BSY
VAR BYP EN
WRITE V
NO CHK
RAS EN
ROT CLK
GATE DIR + RD CP
BYP BSY
LB PHYS ADRS SEL
REF IN PROG
[01]
[11]
LB PHYS ADR SEL
REF IN PROG
[10]
LB PHYS ADR SEL
[00]
LB PHYS ADRS SEL
REF IN PROG
REF IN PROG
LB LBS
CYC
GATE DIR + RD CP
BYP BSY
RAS EN
REF IN PROG
LB LBS
CYC
BYP BSY
RAS EN
RAS EN
BYP BSY
LB ARY
C4
BYP BSY
READ ARRAY
ARB. CLR LOCK
SET DATO
LB ARY
C5
READ ARRAY
OPEN ECC
CSR ERR SUM CLR
CP ERR SUM CLR
BYP BSY
ERRSUM L
TO LB ARY CP
(SH 7)
ALIGN LW L
ERRSUM L
TO LB ARY ALIGN LW CP
(SH 7)
ALIGN LW L
LB ARY
C6
BYP BSY
READ ARRAY
GATE DIR + RD CP
OPEN ECC
STALL MBSY
ERRSUM
MBSY
ERRSUM
LB ARY
ALIGN LW C6
BYP BSY
READ ARRAY
GATE DIR + RD CP
OPEN ECC
STALL MBSY
TO ABORT LB CYC C1
(SH 8)
LB LB CYC
C5
CP ERR SUM CLR
CSR ERR SUM CLR
ARB. SET LOCK
BYP BSY
ALLOW REFR
LB LB
CYC C5
SET ROT DIS
"E" BSY
ALLOW REFR
ERRSUM L
ERRSUM L
(ON SHEET 8)
WRITE V WCHK
001101
WRITE
V. WCHK
RAS EN
BYP BSY
ROT CLR
READ CSR
[10]
[00]
LB ARY
WCHK C4
BYP BSY
READ ARRAY
READ CSR
ARB. CLR LOCK
SET DATO
LB ARY
WCHK C5
READ ARRAY
OPEN ECC
CSR ERR SUM CLR
CP ERR SUM CLR
READ CSR
BYP BSY
ALIGN LW L
ALIGN LW L
REF IN
PROG
LB LB
WCHK
BYP BSY
RAS EN
READ CSR
LB LB
WCHK
BYP BSY
RAS EN
READ CSR
RAS EN
BYP BSY
READ CSR
REF IN
PROG
LB LB CYC
WCHK C5
READ CSR
CP ERR SUM CLR
CSR ERR SUM CLR
ARB. SET LOCK
ALLOW REFR
BYP BSY
CP WRITE TO ARRAY
(PART ONE)
REVISIONS
TITLE: 11/730 MEM. CNTRL.
MICROCODE FLOWS (F)
SIZE CODE
D IFD
NUMBER
8391-0-5
REV.
A


LM ARY C10
FOR TO ARRAY E-
ECC DATI LAT OPEN
ECC OUTP LAT OPEN
LM ARY C15
FOR TO ARRAY EN
LM ARY C16
RMS EN ON
LM ARY C17
WRITE SUBST.
READ ARRAY
LM ARY C18
READ ARRAY
WRITE SUBST.
OPEN ECC
LM ARY C19
READ ARRAY
WRITE SUBST.
OPEN ECC
LM ARY C20
WRITE SUBST.
[8]
ERR L
LM ARY MSDE C21
WRITE SUBST.
OUTP CB-SYN
CORR EN
SERR L
[8ms]
LM ARY MSDE C22
WRITE SUBST.
OUTP CB-SYN
ECC OUTP LAT OPEN
ECC OUTP EN
CORRECT EN
SERR L
[1ms]
LM ARY C13
WRITE ARRAY
INCR MAR
[8]
2 MEM CYC L
LM ARY C12
WRITE ARRAY
ECC WRITE
TO ABORT LM CYC C1
(SH 8)
WRITE ARRAY
MAR CONT + LOAD LM
[1]
2 MEM CYC L
LM ARY C14 ECC DIS
WRITE ARRAY
CSR CB-SYN CLK
ECC DATI LAT OPEN
ECC WRITE
LM ARY C11
WRITE ARRAY
ECC DATI LAT OPEN
ECC WRITE
L ECC DIS
L ECC DIS
LM ARY C12
ECC DATI LAT OPEN
ECC WRITE
LM TIM
WRITE SUBST.
MEM TIM
PROG
LM ARY C9
WRITE SUBST.
TO ABORT LM WAIT
(SH 8)
LM ARY
ALIGN LM C11
WRITE ARRAY
GENERATE
OUTP CB-SYN
MDR + ARY EN
LM ARY
ALIGN LM C10
WRITE ARRAY
GENERATE
OUTP CB-SYN
MDR + ARY EN
WRITE ARRAY
GENERATE
OUTP CB-SYN
MDR + ARY EN
CSR CB-SYN CLK
ECC DIS
ECC DIS
WRITE ARRAY
GENERATE
OUTP CB-SYN
MDR + ARY EN
LM ARY
ALIGN LM C8
GATE DIR + RD CP
ECC DATI LAT OPEN
2ND MEM CYC
MDR + ARY EN
GENERATE
OUTP CB-SYN
LM TIM ON
CPU DR
ERRSUM L
FROM LM ARY ALIGN LM C5
(SH 6)
LM ARY
ALIGN LM C7
GATE DIR + RD CP
OPEN ECC
MDR + ARY EN
CPU DR
WRITE SUBST.
GATE DIR + RD CP
ALLOW REFR
ECC DATI LAT OPEN
ECC OUTP LAT OPEN
MDR + ARY EN
ALLOW REFR
CPU DR
CPU DR
ERR
LM ARY
CB
GATE DIR + RD CP
WRITE SUBST.
ECC DATI LAT OPEN
ECC OUTP LAT OPEN
2ND MEM CYC
MDR TO ARY EN
CPU DR
LM ARY C22
WRITE ARRAY
ECC DATI LAT OPEN
ECC WRITE
TO OCTA LM C17A
(SH 16)
LM ARY C21
ECC DATI LAT OPEN
ECC LMT
LMT TIM
SERR L
[1ms]
LM TIM
ECC OUTP LAT OPEN
ECC OUTP EN
OUTPUT CB B/S
TO OCTA LM EXIT
(SH 16)
ABORT LM.
MODE C2
ECC OUTP EN
OUTP CB BUS
WRITE ARRAY
ABORT LM.
MODE C1
ECC OUTP EN
OUTP CB BUS
WRITE ARRAY
ABORT LM.
MODE
LM TIM
MEM BSY
ECC OUTP LAT OPEN
OUTPUT CB-SYND
ECC OUTP EN
UNC ERR
UNC ERR
FROM LM ARY C6
(SH 6)
ERRSUM L
LM ARY
C7
WRITE SUBST.
STALL MBST
WDR BYP EN
GATE DIR + RD CP
ERR L·CPU DR
ERR·CPU DR
ERR L·
CPU DR
LM ARY
MDE C8
MEM BSY
OUTP CB-SYND
GATE DIR + RD CP
CORRECT EN
MEM BSY
OUTP CB-SYND
GATE DIR + RD CP
OUTP CB-SYND
MEM BSY
SERR
SERR
LM ARY
MSDE C8A
CORRECT EN
ECC OUTP LAT OPEN
GATE DIR + RD CP
OUTP CB-SYND
MEM BSY
LM ARY
MSDE C9
WRITE SUBST.
CORRECT EN
OUTP CB-SYND
GATE DIR + RD CP
MEM BSY
CPU DR
CPU DR
CP WRITE TO ARRAY
(PART TWO)
REVISIONS
DWN
CHK'D
DATE
ENG.
DATE
TITLE: 11/730 MEM. CNTRL.
MICROCODE FLOWS (H)
FIRST USED ON OPTION/MODEL: 11/730
NEXT HIGHER ASSEMBLY:
SIZE D
CODE FD
NUMBER M8391-0-7
REV. A




| REVISIONS | | |
|---|---|---|
| LTR | CHANGE NO. | REV |

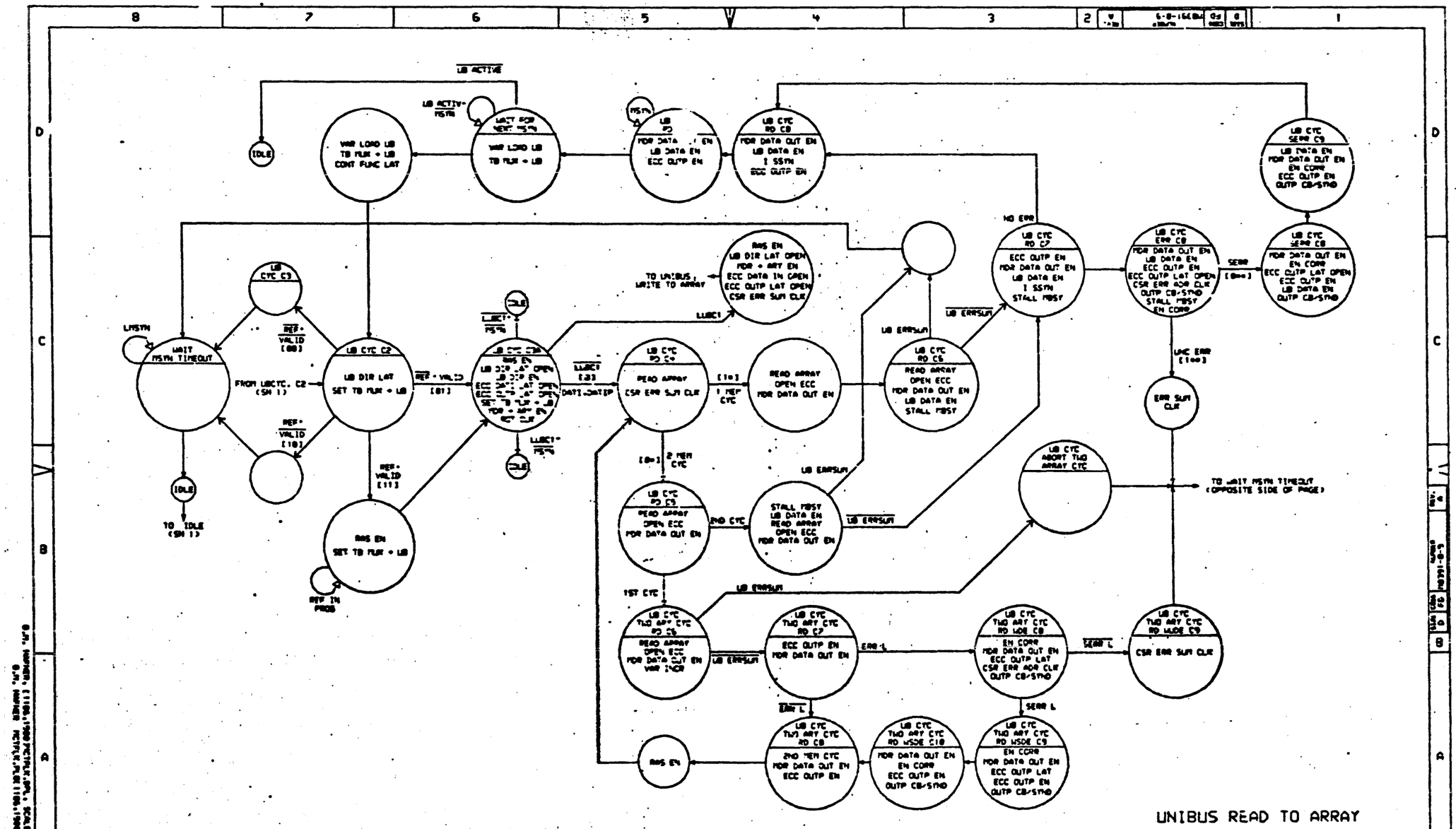
DRN | DATE ENG. | DATE

11/730 MEM. CNTRL. MICROCODE FLOWS (3)

FIRST USED ON OPTION-MODEL: 11/730

ED-M8391-0-8 | REV. A

D.M. HARMER [1198,1900] MCTRL/PL:DP, SCALE 8, D-REV 8391 ADR 18-NOV-81 20:56




REVISIONS

| CHK | CHANGE NO. | REV |
|---|---|---|

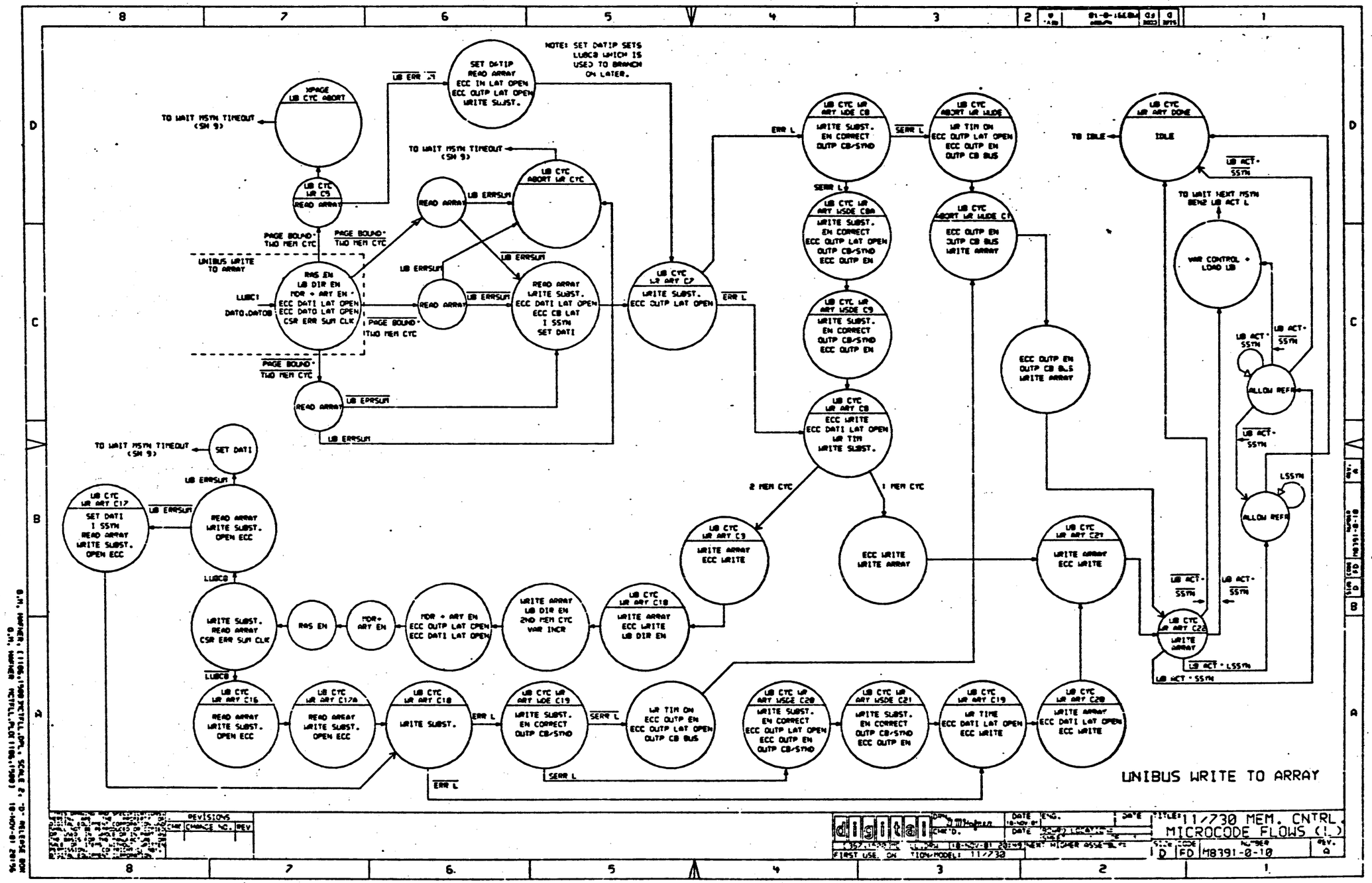
DRN. [illegible] DATE 8-NOV-81 ENG. DATE

CHK'D. DATE BOARD LOCATIONS

FIRST USED ON OPTION/MODEL: 11/730 NEXT HIGHER ASSEMBLY:

TITLE: 11/730 MEM. CNTRL MICROCODE FLOWS (K)

SIZE D CODE FD M8391-0-9 REV. A




| REVISIONS | | |
|---|---|---|
| ZONE | CHANGE NO. | REV |

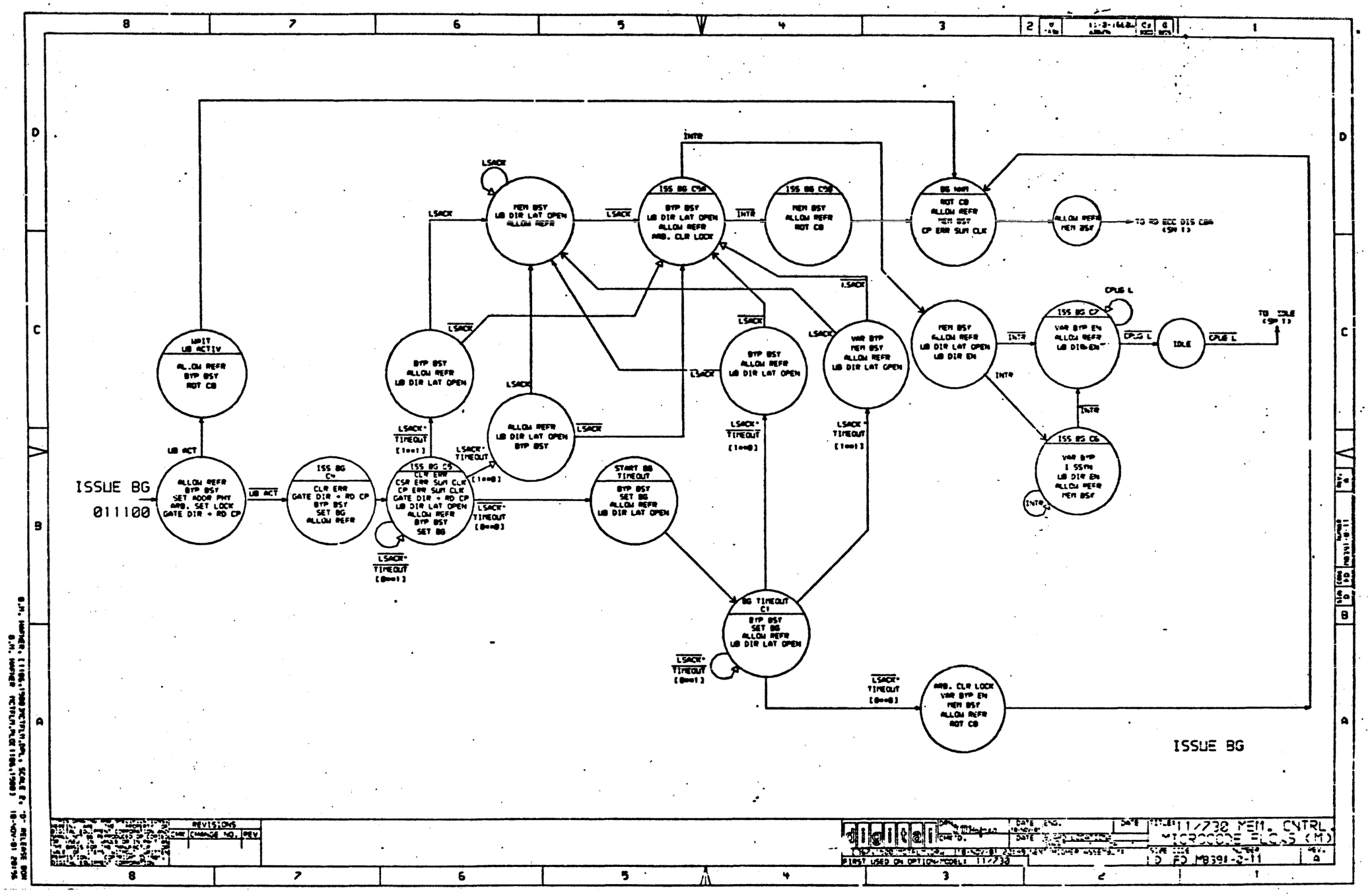
digital

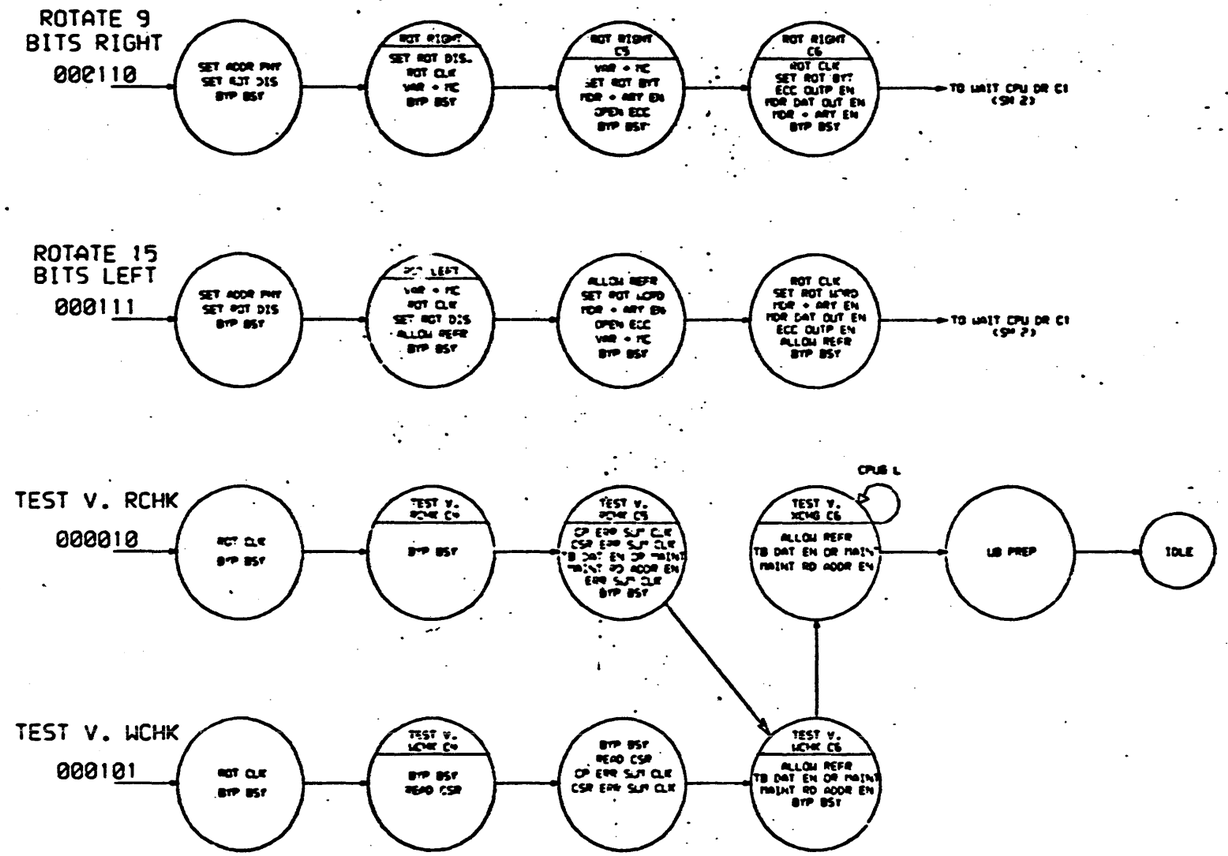
| | | |
|---|---|---|
| DRN | | DATE 18-NOV-81 |
| CHK'D | | DATE |
| ENG. | | DATE |

FIRST USE ON: TION-MODEL: 11/730

TITLE: 11/730 MEM. CNTRL MICROCODE FLOWS (1)

| SIZE | CODE | NO. | REV |
|---|---|---|---|
| D | FD | M8391-0-10 | A |


WAIT
LB ACTIV
ALLOW REFR
BYP BSY
RQT CB
LB ACT
ISSUE BG
011100
ALLOW REFR
BYP BSY
SET ADDR PHY
ARB. SET LOCK
GATE DIR + RD CP
ISS BG C=
CLR ERR
GATE DIR + RD CP
BYP BSY
SET BG
ALLOW REFR
ISS BG C5
CLR ERR
CSR ERR SUM CLR
CP ERR SUM CLR
GATE DIR + RD CP
LB DIR LAT OPEN
ALLOW REFR
BYP BSY
SET BG
START BG
TIMEOUT
BYP BSY
SET BG
ALLOW REFR
LB DIR LAT OPEN
BG TIMEOUT
C1
BYP BSY
SET BG
ALLOW REFR
LB DIR LAT OPEN
ARB. CLR LOCK
VAR BYP EN
MEM BSY
ALLOW REFR
RQT CB
BYP BSY
ALLOW REFR
LB DIR LAT OPEN
ALLOW REFR
LB DIR LAT OPEN
BYP BSY
MEM BSY
ALLOW REFR
LB DIR LAT OPEN
VAR BYP
MEM BSY
ALLOW REFR
LB DIR LAT OPEN
MEM BSY
ALLOW REFR
LB DIR LAT OPEN
LB DIR EN
ISS BG C6
VAR BYP
I SSYN
LB DIR EN
ALLOW REFR
MEM BSY
ISS BG C7
VAR BYP EN
ALLOW REFR
LB DIR EN
IDLE
MEM BSY
ALLOW REFR
BYP BSY
SET ADDR PHY
ARB. SET LOCK
GATE DIR + RD CP
ALLOW REFR
MEM BSY
CP ERR SUM CLR
TO RD ECC DIS CSR
(SH 1)
TO IDLE
(SH 1)
LSACK
INTR
CPLB L
LSACK*
TIMEOUT
[1==1]
[1==0]
[0==1]
[0==0]
ISSUE BG




TEST V. RCHK, WCHK
ROTATE BYTE, WORD

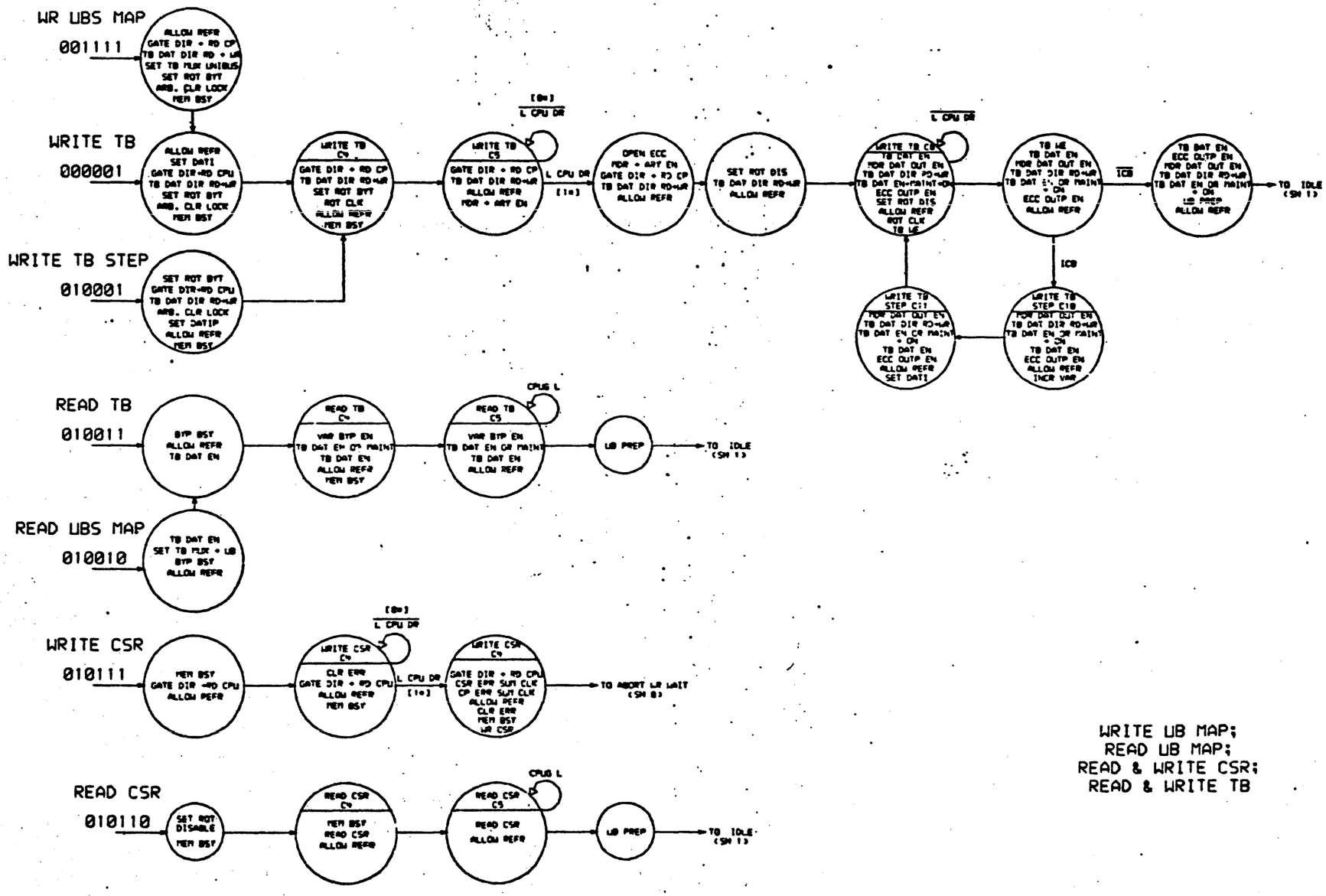
| REVISIONS | | |
|---|---|---|
| LTR | CHANGE NO. | REV |

| | | | |
|---|---|---|---|
| DRAWN | DATE | ENG. | DATE |
| 18-NOV-81 | | | |

TITLE: 11/730 MEM. CNTRL.
MICROCODE FLOWS (N)

FIRST USED ON SYSTEM CODE: 11/730

| SIZE | CODE | DWG NO. | REV. |
|---|---|---|---|
| D | FD | M8391-0-12 | A |

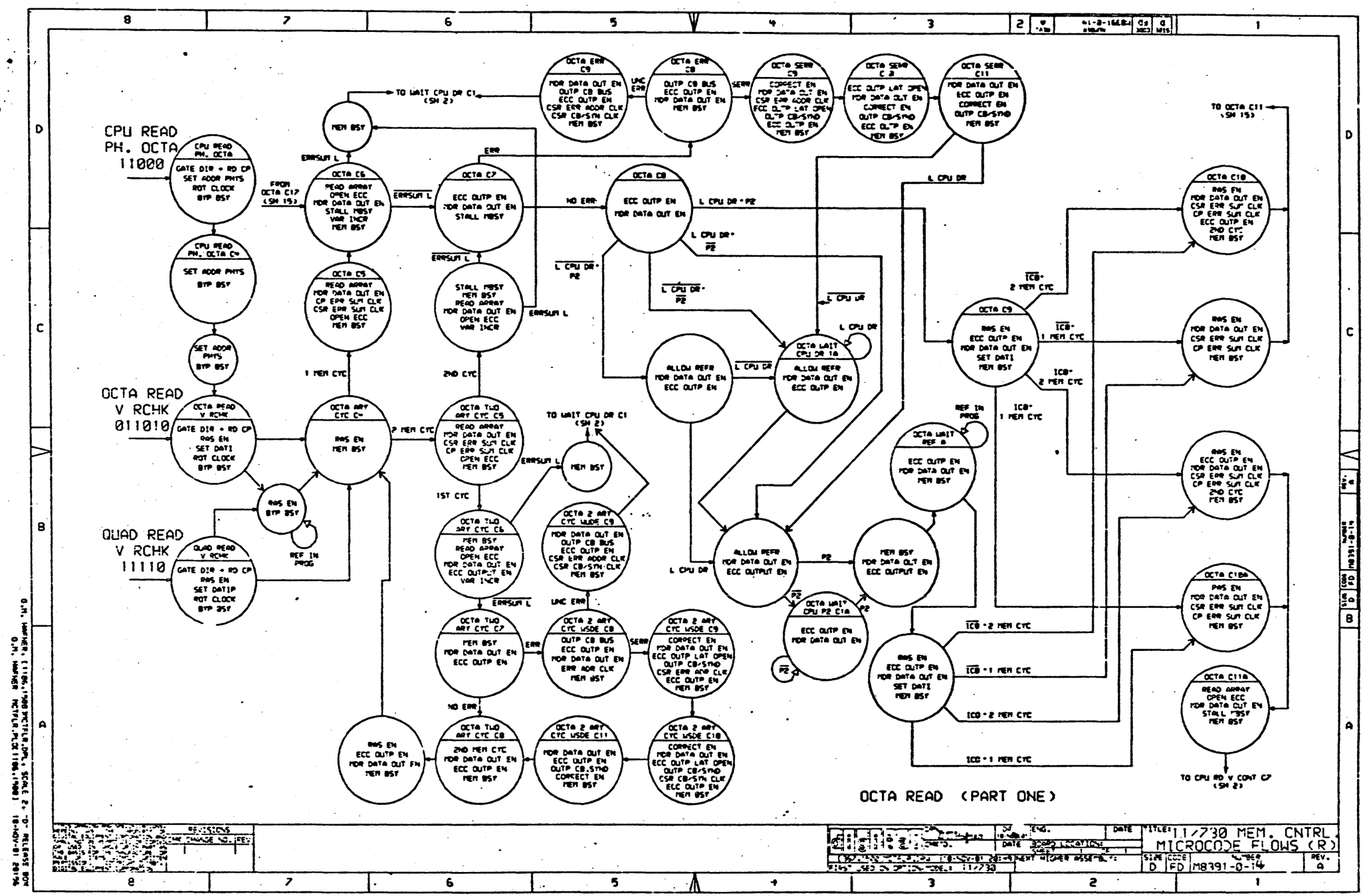


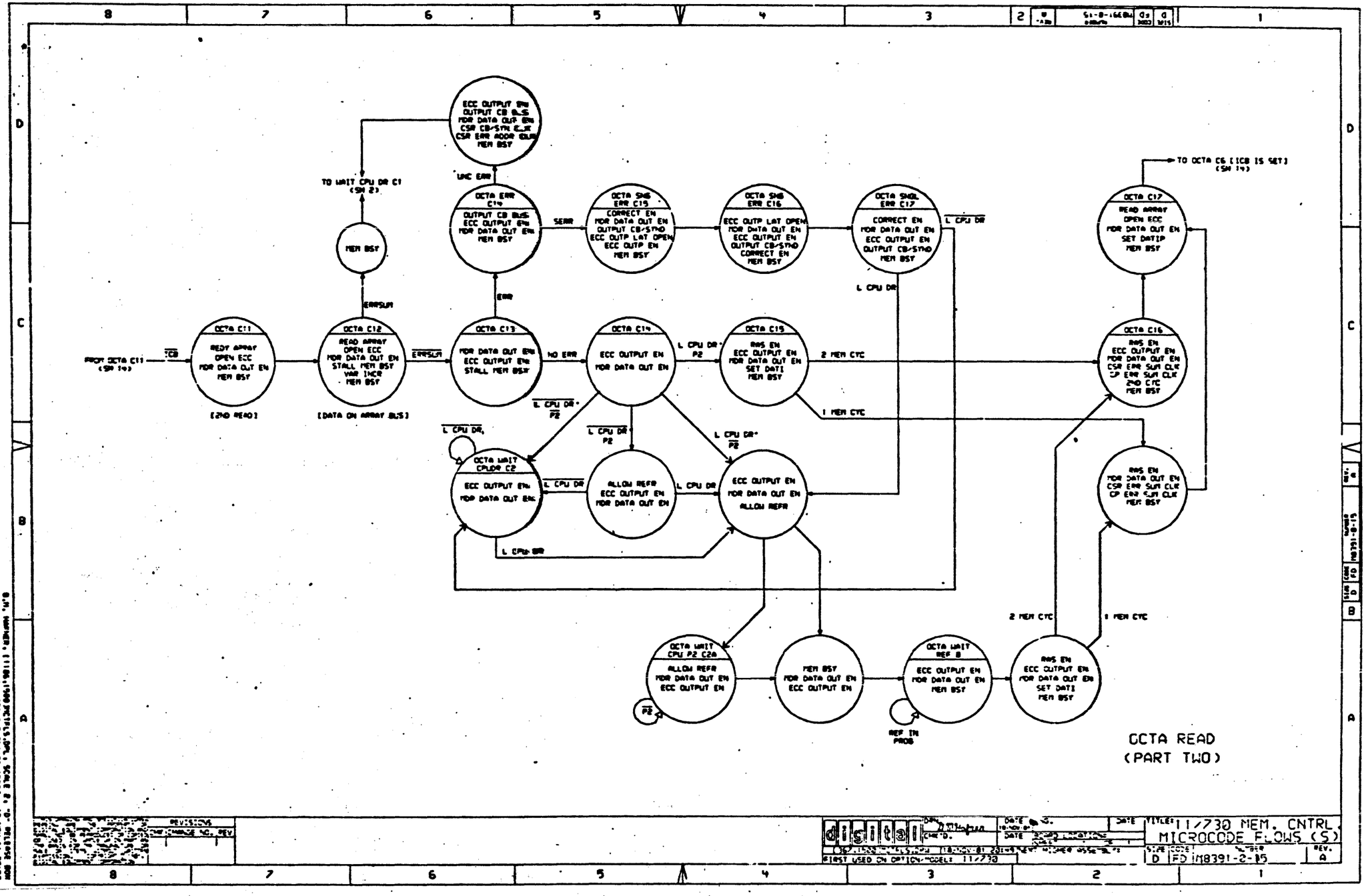

| REVISIONS | | |
|---|---|---|
| CHANGE NO. | REV | |

| | | | |
|---|---|---|---|
| DRAWN | DATE | ENG. | DATE |
| CHECKED | DATE | BOARD LOCATIONS | |

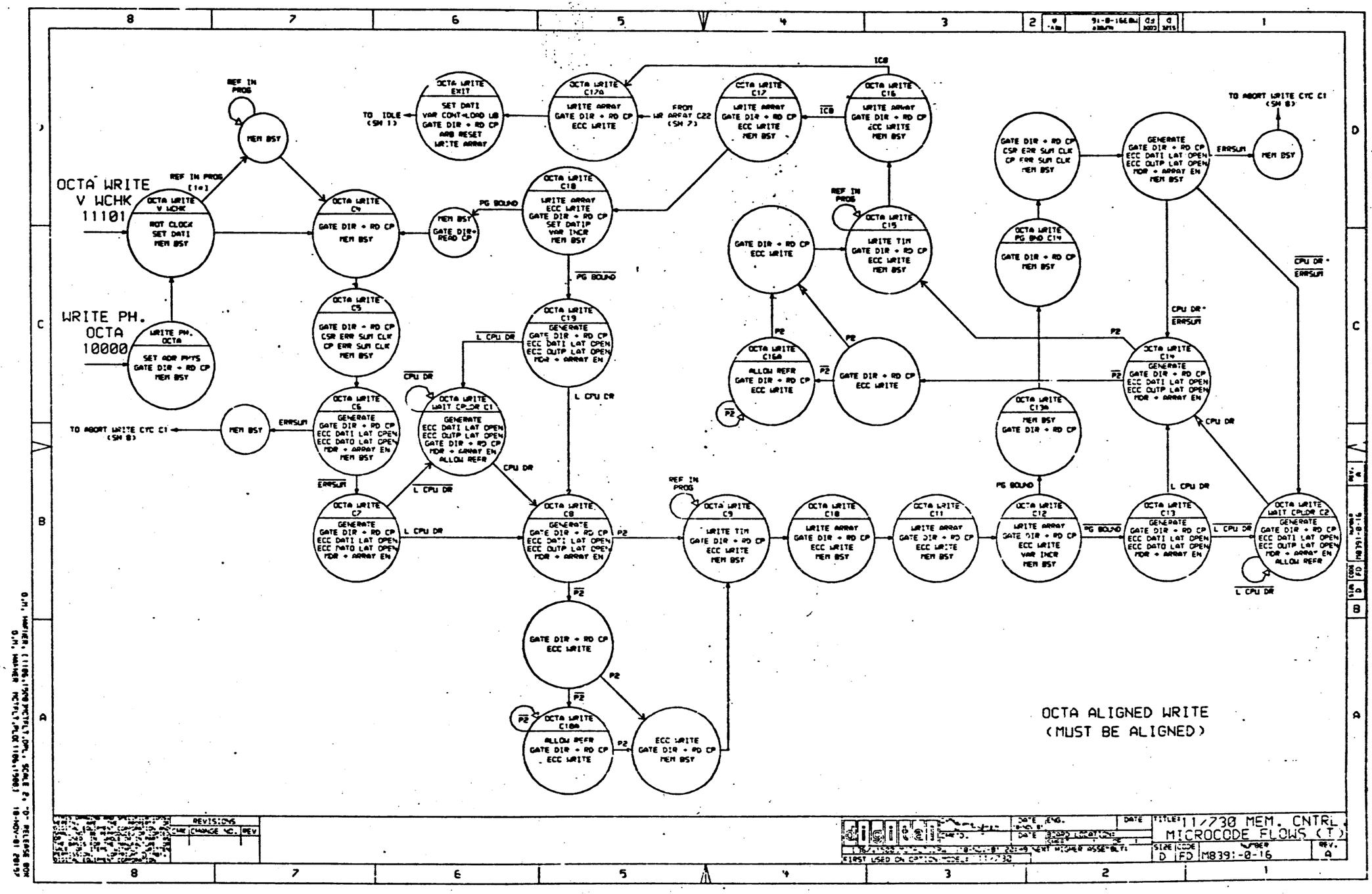
TITLE: 11/730 MEM. CNTRL. MICROCODE FLOWS (2)

| SIZE | CODE | NUMBER | REV. |
|---|---|---|---|
| D | FD | MB391-0-13 | A |


CPU READ PH. OCTA 11000
OCTA READ V RCHK 01101 0
QUAD READ V RCHK 11110
OCTA READ (PART ONE)
TO WAIT CPU DR C1 (SH 2)
FROM OCTA C17 (SH 15)
TO OCTA C11 (SH 15)
TO CPU RD V CONT C7 (SH 2)
REF IN PROG
1 MEM CYC
2 MEM CYC
1ST CYC
2ND CYC
ERR
NO ERR
L CPU DR
L CPU DR • P2
L CPU DR • P2
ICB • 2 MEM CYC
ICB • 1 MEM CYC
ICB • 2 MEM CYC
ICB • 1 MEM CYC
OCTA C6 READ ARRAY OPEN ECC MDR DATA OUT EN STALL MBSY VAR INCR MEM BSY
OCTA C7 ECC OUTP EN MDR DATA OUT EN STALL MBSY
OCTA C8 ECC OUTP EN MDR DATA OUT EN
OCTA C9 RAS EN ECC OUTP EN MDR DATA OUT EN SET DATI MEM BSY
OCTA C10 RAS EN MDR DATA OUT EN CSR ERR SUM CLK CP ERR SUM CLK ECC OUTP EN 2ND CYC MEM BSY
OCTA C10A RAS EN MDR DATA OUT EN CSR ERR SUM CLK CP ERR SUM CLK MEM BSY
OCTA C11A READ ARRAY OPEN ECC MDR DATA OUT EN STALL "BSY MEM BSY
OCTA C11 MDR DATA OUT EN CSR ERR SUM CLK CP ERR SUM CLK ECC OUTP EN 2ND CYC MEM BSY
OCTA C5 READ ARRAY MDR DATA OUT EN CP ERR SUM CLK CSR ERR SUM CLK OPEN ECC MEM BSY
STALL MBSY MEM BSY READ ARRAY MDR DATA OUT EN OPEN ECC VAR INCR
OCTA ARY CYC C* RAS EN MEM BSY
OCTA TLO ARY CYC C5 READ ARRAY MDR DATA OUT EN CSR ERR SUM CLK CP ERR SUM CLK OPEN ECC MEM BSY
OCTA TLO ARY CYC C6 MEM BSY READ ARRAY OPEN ECC MDR DATA OUT EN ECC OUTPUT EN VAR INCR
OCTA TLO ARY CYC C7 MEM BSY MDR DATA OUT EN ECC OUTP EN
OCTA TLO ARY CYC C8 2ND MEM CYC MDR DATA OUT EN ECC OUTP EN MEM BSY
OCTA 2 ARY CYC WSDE C8 OUTP CB BUS ECC OUTP EN MDR DATA OUT EN ERR ADR CLK MEM BSY
OCTA 2 ARY CYC WSDE C9 CORRECT EN MDR DATA OUT EN ECC OUTP LAT OPEN OUTP CB-SYND CSR ERR ADR CLK ECC OUTP EN MEM BSY
OCTA 2 ARY CYC WSDE C10 CORRECT EN MDR DATA OUT EN ECC OUTP LAT OPEN OUTP CB-SYND CSR CB-SYN CLK ECC OUTP EN MEM BSY
OCTA 2 ARY CYC WSDE C11 MDR DATA OUT EN ECC OUTP EN OUTP CB-SYND CORRECT EN MEM BSY
OCTA WAIT CPU DR 1A ALLOW REFR MDR DATA OUT EN ECC OUTP EN
OCTA WAIT CPU P2 C1A ECC OUTP EN MDR DATA OUT EN
OCTA WAIT REF A ECC OUTP EN MDR DATA OUT EN MEM BSY
ALLOW REFR MDR DATA OUT EN ECC OUTPUT EN
MEM BSY MDR DATA OUT EN ECC OUTPUT EN
RAS EN ECC OUTP EN MDR DATA OUT EN SET DATI MEM BSY
RAS EN ECC OUTP EN MDR DATA OUT FN MEM BSY
MEM BSY
QUAD READ V RCHC GATE DIR • RD CP RAS EN SET DATIP ROT CLOCK BYP BSY
RAS EN BYP BSY
CPU READ PH. OCTA GATE DIR • RD CP SET ADDR PHYS ROT CLOCK BYP BSY
CPU READ PH. OCTA C* SET ADDR PHYS BYP BSY
SET ADDR PHYS BYP BSY
OCTA READ V RCHK GATE DIR • RD CP RAS EN SET DATI ROT CLOCK BYP BSY
ERRSUM L
UNC ERR
SERR
REVISIONS
TITLE: 11/730 MEM. CNTRL MICROCODE FLOWS (R)
SIZE D
CODE FD
NUMBER M8391-0-14
REV. A
SCALE: 11/730
DATE
ENG.



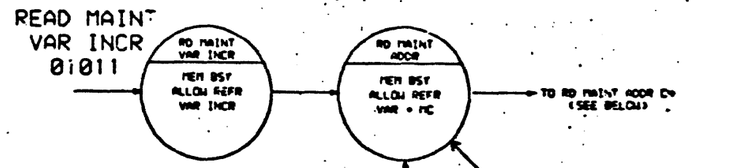

OCTA READ
(PART TWO)



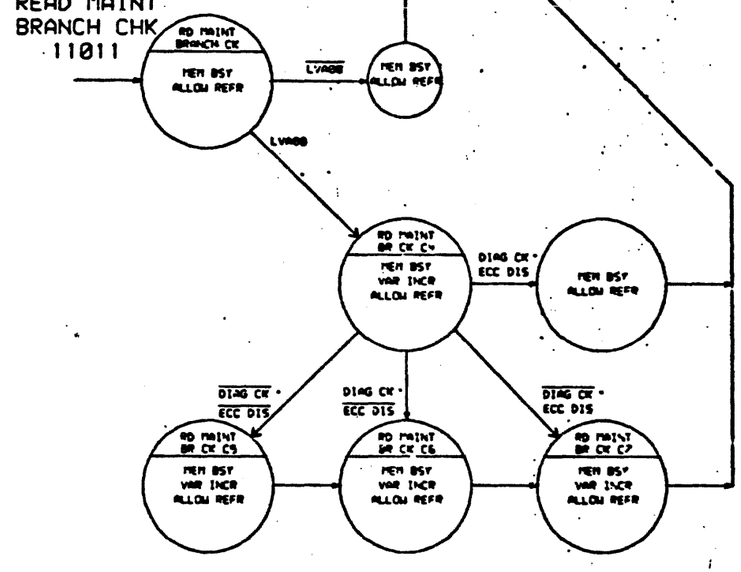

| REVISIONS | | |
|---|---|---|
| LTR | CHANGE NO. | REV |

| | | | |
|---|---|---|---|
| DRWN | DATE ENG. | DATE | TITLE: 11/730 MEM. CNTRL. MICROCODE FLOWS (T) |
| CHKD | DATE BOARD LOCATION | | |
| FIRST USED ON CPU 11/730 | NEXT HIGHER ASSEMBLY | SIZE D | CODE FD |
| | | NUMBER M839:-0-16 | REV. A |

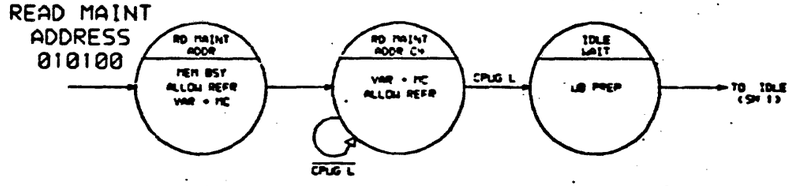
READ MAINT
VAR INCR
01011




READ MAINT
BRANCH CHK
11011




READ MAINT
ADDRESS
010100




RD MAINT ADDR;
RD MAINT VAR INCR;
RD MAINT BRANCH CK

| REVISIONS | | | |
|---|---|---|---|
| ZONE | CHANGE NO. | REV | |

| | | | |
|---|---|---|---|
| DRAWN | DATE | ENG. | DATE |
| CHECKED | | MFGR | |
| APPROVED | | QUALITY ASSURANCE | |

TITLE: 11/730 MEM. CNTRL. MICROCODE FLOWS (LD)

| SIZE | CODE | DEC | REV. |
|---|---|---|---|
| D | FD | M8391-0-17 | A |

READ MAINT
UBS
011111

RD MAINT UBS
UB ADR EN
SET ADRS PARS
UB DATA EN
SET DATIP
I BBSY
ALLOW REFR
MEM BSY

DIAG CK* ECC DIS

RD MAINT UB SYN C9
ISSUE SSYN
ISSUE MSYN
UB ADRS EN
I BBSY
MEM BSY*
ALLOW REFR

RD MAINT UB SYN C9
ISSUE SSYN
ISSUE MSYN
UB ADRS EN
I BBSY
ALLOW REFR
MEM BSY

RD MAINT UB SYN C6
UB ADRS EN
I BBSY
ALLOW REFR
MEM BSY

LMSYN

RD MAINT UB SYN C7
UB ADRS EN
I BBSY
ALLOW REFR
MEM BSY

LSSYN

RD MAINT UB SYN C8
VAR INCR
UB ADRS EN
I BBSY
ALLOW REFR
MEM BSY

LSSYN

RD MAINT UB SYN C9
VAR INCR
ALLOW REFR
MEM BSY

LSSYN

RD MAINT UB SYN C10
VAR INCR
ALLOW REFR
MEM BSY

TO READ MAINT ADRS (SH 17)

RD MAINT UB SYN ERR C9
MEM BSY
ALLOW REFR

TO READ MAINT ADRS (SH 17)

RD MAINT UB SYN C8
VAR INCR
UB ADRS EN
I BBSY
ALLOW REFR
MEM BSY

TO READ MAINT ADRS (SH 17)

RD MAINT UB SYN C7
UB ADRS EN
VAR INCR
I BBSY
ALLOW REFR
MEM BSY

TO READ MAINT ADRS (SH 17)

RD MAINT UB SYN C6
UB ADRS EN
I BBSY
ALLOW REFR
MEM BSY

LMSYN

RD MAINT UB SYN C5
ISSUE SSYN
ISSUE MSYN
UB ADRS EN
I BBSY
ALLOW REFR
MEM BSY

RD MAINT UB SYN C9
ISSUE SSYN
ISSUE MSYN
UB ADRS EN
I BBSY
ALLOW REFR
MEM BSY

RD MAINT UB SYN C9
UB ADRS EN
I BBSY
ALLOW REFR
MEM BSY

DIAG CK* ECC DIS

RD MAINT UB ADRS C4
UB ADRS EN
I BBSY
ALLOW REFR
MEM BSY

RD MAINT UB ADRS C5
UB ADRS EN
VAR DATA LOAD UB
I BBSY*
ALLOW REFR
MEM BSY*

TO READ MAINT ADRS (SH 17)

DIAG CK* ECC DIS

RD MAINT UB DATA C4
UB DATA EN
UB DIR LAT OPEN
TB DAT EN OR MAINT
MAINT RD ADDR EN
ALLOW REFR
I BBSY
MEM BSY

RD MAINT UB DATA C5
UB DATA EN
UB DIR LAT OPEN
TB DAT EN OR MAINT
MAINT RD ADDR EN
ALLOW REFR
I BBSY
MEM BSY

RD MAINT UB DATA C6
UB DATA EN
I BBSY
ALLOW REFR
MEM BSY

RD MAINT UB DATA C7
MEM BSY
UB DIR EN
ALLOW REFR

CPLUS L

RD MAINT UB DATA C8
UB DIR EN
ALLOW REFR

IDLE → TO IDLE (SH 1)

RD MAINT UB CNTR C8
SET DATI
VAR INCR
UB ADRS EN
OPEN CNTR FUNC LAT
I BBSY
ALLOW REFR
MEM BSY

LICT

RD MAINT UB CNTR C9
MEM BSY
ALLOW REFR

RD MAINT UB CNTR C10
MEM BSY
VAR INCR.
ALLOW REFR

UB ACT L

RD MAINT UB CNTR C11
MEM BSY
ALLOW REFR

RD MAINT UB CNTR C12
MEM BSY
ALLOW REFR

RD MAINT UB CNTR C13
MEM BSY
VAR INCR
ALLOW REFR

UB ACT L

RD MAINT UB CNTR C14
MEM BSY
VAR INCR
ALLOW REFR

TO READ MAINT ADRS (SH 17)

ICB

MEM BSY
ALLOW REFR
→ TO READ MAINT ADRS (SH 17)

RD MAINT UB CNTR C5
INCR UB
UB ADRS EN
OPEN CNTR FUNC LAT
I BBSY
ALLOW REFR
MEM BSY

RD MAINT UB CNTR C7
I BBSY
UB ADRS EN
OPEN CNTR FUNC LAT
ALLOW REFR
MEM BSY

I BBSY
ALLOW REFR
MEM BSY
→ TO READ MAINT ADRS (SH 17)

I BBSY
MEM BSY*
ALLOW REFR
→ TO READ MAINT ADRS (SH 17)

RD MAINT UB CNTR C6
SET DATI
VAR INCR
OPEN CNTR FUNC LAT
UB ADRS EN
I BBSY
ALLOW REFR
MEM BSY

MEM BSY
ALLOW REFR
→ TO READ MAINT ADRS (SH 17)

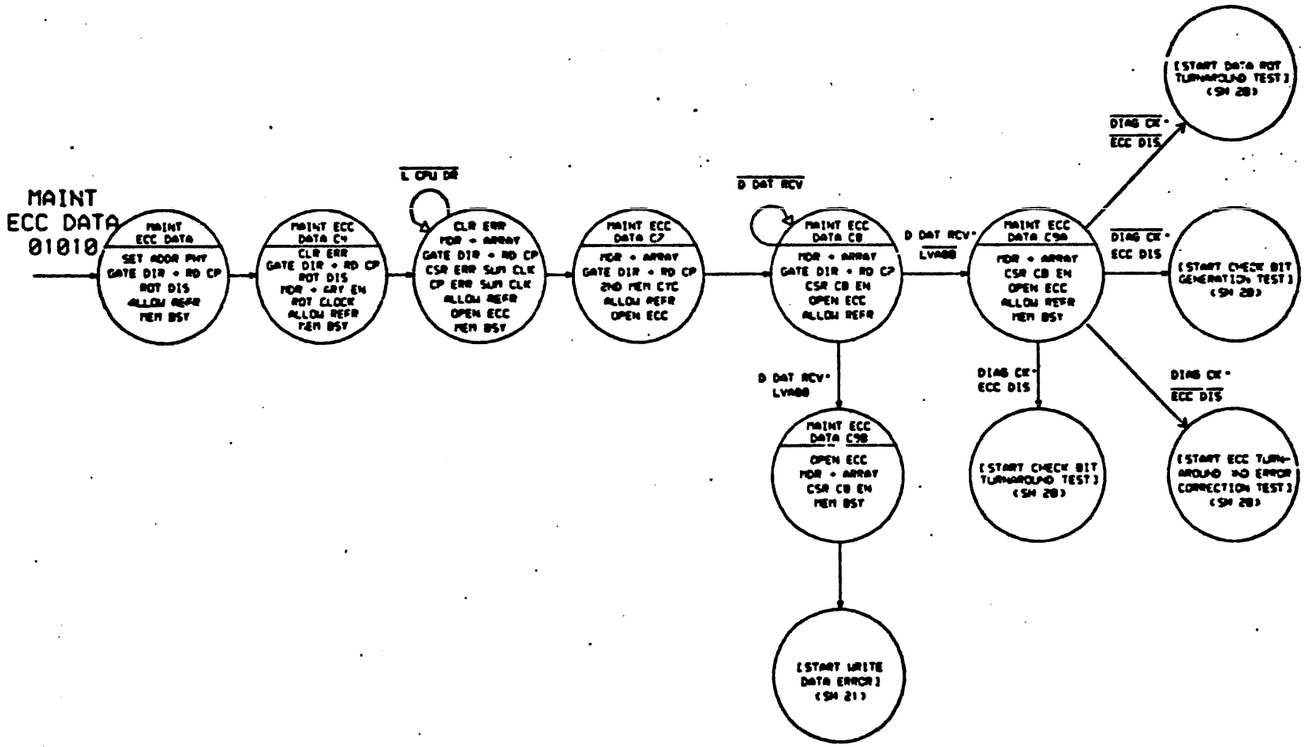
MEM BSY
ALLOW REFR
→ TO READ MAINT ADRS (SH 17)

MEM BSY
ALLOW REFR
→ TO READ MAINT ADRS (SH 17)

READ MAINT. UBS



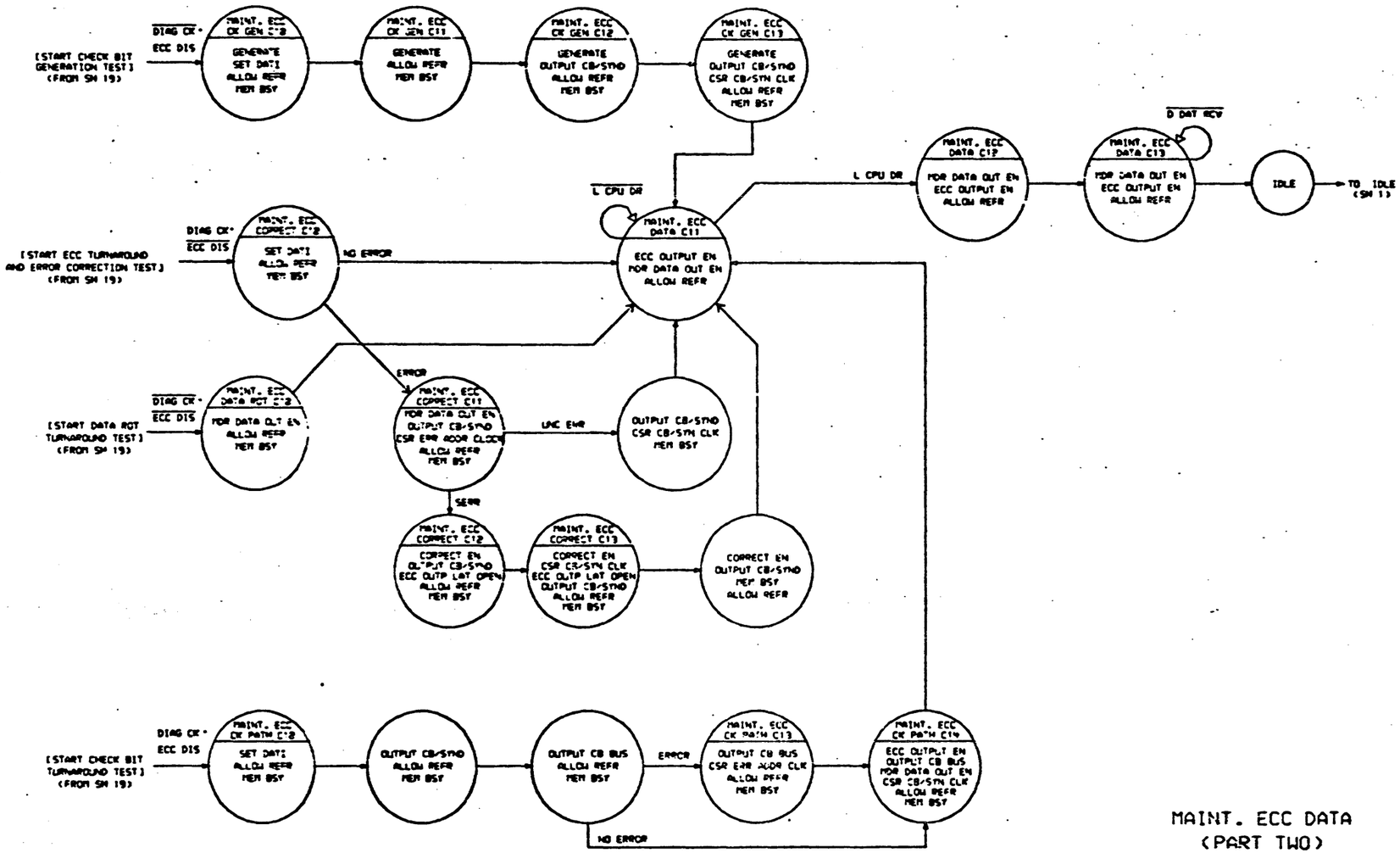
REVISIONS
LTR | DESCRIPTION | CHANGE NO. | REV
DRAWN 18-NOV-81 22:58
FIRST USED ON OPTION/MODEL: 11/730
DATE ENG. DATE
DATE BOARD LOCATION
SHEET
TITLE: 11/730 MEM. CNTRL MICROCODE FLOWS (V)
SIZE D | CODE FD | NUMBER M8391-0-18 | REV A




MAINT. ECC DATA
(PART ONE)

| REVISIONS | | |
|---|---|---|
| | CHANGE NO. | REV |

11/730 MEM. CNTRL.
MICROCODE FLOWS (N)
D ED M8391-2-19 REV. A




MAINT. ECC DATA
(PART TWO)

| REVISIONS | | |
|---|---|---|
| CHK | CHANGE NO. | REV |

| | | | |
|---|---|---|---|
| DRWN | | DATE 18-NOV-81 | TITLE 11/730 MEM. CNTRL MICROCODE FLOWS (X) |
| CHK'D. | | DATE | SIZE D / CODE FD / NUMBER M8391-0-20 / REV. A |
| ISSUED | | 18-NOV-81 | |
| FIRST USED ON OPTION/MODEL: 11/730 | | | |

PART NUMBER: 23-025J5-00

DEVICE TYPE: PAL16L8

SCHEMATIC SHEET #:D-CS-M8391-0-MCTK

LOCATION/DESCRIPTION: E44/ MCTK MDR AND DIR CONTROL

ASSIGNED PIN NUMBER:

| | | |
|---|---|---|
| 1= COMP.MODE | 8= LVA00 | 15=/OPEN.LAT0 |
| 2=/X.PHYS.ADDR.SEL | 9=/W0 | 16=/X.LAT3 |
| 3=/RS1 | 10= GND | 17=/X.LAT1 |
| 4=/RS0 | 11= WR.SUB | 18=/X.LAT2 |
| 5=/A1 | 12=/OPEN.LAT3 | 19=/OP.ERR |
| 6=/A0 | 13=/OPEN.LAT2 | 20= VCC |
| 7= CPU.CYCLE | 14=/OPEN.LAT1 | |

EQUATIONS:

```
IF(VCC) OPEN.LAT3:=/WR.SUB
                  +/CPU.CYCLE=X.LAT3
                  +CPU.CYCLE=W0=WR.SUB=/RS1=/RS0=A1=A0
                  +CPU.CYCLE=W0=WR.SUB=/RS1=RS0=A1
                  +CPU.CYCLE=/W0=WR.SUB=/RS1=RS0=A1=A0
                  +CPU.CYCLE=WR.SUB=RS1=RS0

IF(VCC) X.LAT3:=W0=WR.SUB=/A1
               +W0=WR.SUB=A1=/A0=/RS0=/LVA00
               +W0=WR.SUB=A1=A0=/RS0=LVA00
               +/W0=WR.SUB

IF(VCC) X.LAT2:=/CPU.CYCLE=W0=WR.SUB=/A1=/A0
               +/CPU.CYCLE=W0=WR.SUB=A1=A0
               +/CPU.CYCLE=W0=WR.SUB=/A1=A0=/RS0=/LVA00
               +/CPU.CYCLE=W0=WR.SUB=A1=/A0=/RS0=LVA00
               +/CPU.CYCLE=/W0=WR.SUB
               +/WR.SUB

IF(VCC) OPEN.LAT2:=X.LAT2
                  +CPU.CYCLE=W0=WR.SUB=/A1=A0=/RS1=RS0
                  +CPU.CYCLE=W0=WR.SUB=A1=/A0=/RS1
                  +CPU.CYCLE=/W0=WR.SUB=A1=A0=/RS1=RS0
                  +CPU.CYCLE=W0=WR.SUB=/A1=/A0=RS1=RS0
                  +CPU.CYCLE=WR.SUB=/A1=A0=RS1=RS0
                  +CPU.CYCLE=WR.SUB=A1=/A0=RS1=RS0

IF(VCC) X.LAT1:=W0=WR.SUB=A1
               +W0=WR.SUB=/A1=/A0=/RS0=/LVA00
               +W0=WR.SUB=/A1=A0=/RS0=LVA00
               +/W0=WR.SUB

IF(VCC) OPEN.LAT1:=/WR.SUB
                  +/CPU.CYCLE=X.LAT1
                  +CPU.CYCLE=W0=WR.SUB=/A1=A0=/RS1=/RS0
                  +CPU.CYCLE=W0=WR.SUB=/A1=/RS1=RS0
                  +CPU.CYCLE=/W0=WR.SUB=A1=A0=/RS1=RS0
                  +CPU.CYCLE=W0=WR.SUB=/A1=/A0=RS1=RS0
                  +CPU.CYCLE=WR.SUB=/A1=A0=RS1=RS0

IF(VCC) OPEN.LAT0:=/WR.SUB
                  +/CPU.CYCLE=W0=WR.SUB=A1
                  +/CPU.CYCLE=W0=WR.SUB=/A1=A0
                  +/CPU.CYCLE=W0=WR.SUB=LVA00=/RS0
                  +CPU.CYCLE=W0=WR.SUB=/A1=/A0

IF(VCC) OP.ERR:=COMP.MODE=RS0=A0
               +X.PHYS.ADDR.SEL=RS1
               +X.PHYS.ADDR.SEL=RS0=A0
```

PART NUMBER: 23-042J5-00

DEVICE TYPE: PAL16L8

SCHEMATIC SHEET #:D-CS-M8391-0-MCTA

LOCATION/DESCRIPTION: E46/ PHYSICAL ADDRESS DECODER A

ASSIGNED PIN NUMBER:

| | | |
|---|---|---|
| 1=/FP3A | 8= PA20 | 15= PA22 |
| 2=/FP4A | 9= PA21 | 16=/SELC |
| 3=/FP3B | 10= GND | 17=/SELB |
| 4=/FP4B | 11=/INH.WCS.SEL | 18=/SELA |
| 5= PA23 | 12=/PNXM | 19=/UB.PH.ADDR.SEL |
| 6= PA18 | 13=/FP3C | 20= VCC |
| 7= PA19 | 14=/FP4C | |

EQUATIONS:

```
IF(VCC) PNXM:=/SELA=/SELB=/SELC=/PA23
             +/SELA=/SELB=/SELC=/PA22
             +/SELA=/SELB=/SELC=/PA21
             +/SELA=/SELB=/SELC=/PA20
             +/SELA=/SELB=/SELC=/PA19
             +/SELA=/SELB=/SELC=/PA18

IF(VCC) UB.PH.ADDR.SEL:=PA23*PA22*PA21*PA20*PA19*PA18

IF(VCC) SELC:=FP4C*/PA23*/PA22*PA21*/PA20*/PA19*PA18
             +FP4C*/PA23*/PA22*PA21*/PA20*PA19*/PA18*/INH.WCS.SEL
             +FP4C*FP3C*/PA23*/PA22*PA21*/PA20*PA19*PA18
             +FP4C*FP3C*/PA23*/PA22*PA21*/PA20*/PA19*/PA18*/INH.WCS.S
             +/FP4C*FP3C*/PA23*/PA22*/PA21*/PA20*PA19*/PA18
             +FP4C*/PA23*/PA22*PA21*/PA20*/PA19*/PA18*INH.WCS.SEL
             +FP4C*FP3C*/PA23*/PA22*PA21*/PA20*PA19*/PA18*INH.WCS.SE

IF(VCC) SELB:=FP4B*/PA23*/PA22*/PA21*PA20*/PA19*PA18
             +FP4B*/PA23*/PA22*/PA21*PA20*PA19*/PA18*/INH.WCS.SEL
             +FP4B*FP3B*/PA23*/PA22*/PA21*PA20*PA19*PA18
             +FP4B*FP3B*/PA23*/PA22*PA21*/PA20*/PA19*/PA18*/INH.WCS.
             +/FP4B*FP3B*/PA23*/PA22*/PA21*/PA20*/PA19*PA18
             +FP4B*/PA23*/PA22*/PA21*PA20*/PA19*/PA18*INH.WCS.SEL
             +FP4B*FP3B*/PA23*/PA22*/PA21*PA20*PA19*/PA18*INH.WCS.SE

IF(VCC) SELA:=FP4A*/PA23*/PA22*/PA21*/PA20*/PA19*PA18
             +FP4A*/PA23*/PA22*/PA21*/PA20*PA19*/PA18*/INH.WCS.SEL
             +FP4A*FP3A*/PA23*/PA22*/PA21*/PA20*PA19*PA18
             +FP4A*FP3A*/PA23*/PA22*/PA21*PA20*/PA19*/PA18*/INH.WCS.
             +/FP4A*FP3A*/PA23*/PA22*/PA21*/PA20*/PA19*PA18
             +FP4A*/PA23*/PA22*/PA21*/PA20*/PA19*/PA18*INH.WCS.SEL
             +FP4A*FP3A*/PA23*/PA22*/PA21*/PA20*PA19*/PA18*INH.WCS.S
```

PART NUMBER: 23-043J5-00

DEVICE TYPE: PAL16L8

SCHEMATIC SHEET #:D-CS-M8391-0-MCTA

LOCATION/DESCRIPTION: E55/ PHYSICAL ADDRESS DECODER B

ASSIGNED PIN NUMBER:

| | | |
|---|---|---|
| 1=/FP3D | 8= PA20 | 15= PA22 |
| 2=/FP4D | 9= PA21 | 16=/UB.ADAP.REG.SEL |
| 3=/FP3E | 10= GND | 17=/SELE |
| 4=/FP4E | 11=/INH.WCS.SEL | 18=/SELD |
| 5= PA23 | 12=/NXM | 19=/SEL.WCS |
| 6= PA18 | 13=/PNXM | 20= VCC |
| 7= PA19 | 14=/16K.RAM | |

EQUATIONS:

```
IF(VCC) NXM:=PNXM=/UB.ADAP.REG.SEL=/SELD=/SELE=16K.RAM
            +PNXM=/UB.ADAP.REG.SEL=/SELD=/SELE=PA23
            +PNXM=/UB.ADAP.REG.SEL=/SELD=/SELE=PA22
            +PNXM=/UB.ADAP.REG.SEL=/SELD=/SELE=PA21
            +PNXM=/UB.ADAP.REG.SEL=/SELD=/SELE=PA20
            +PNXM=/UB.ADAP.REG.SEL=/SELD=/SELE=PA19
            +PNXM=/UB.ADAP.REG.SEL=/SELD=/SELE=PA18

IF(VCC) UB.ADAP.REG.SEL:=PA23*PA22*PA21*PA20*PA19*PA18
                        +PA23*PA22*PA21*PA20*PA19*/PA18
                        +PA23*PA22*PA21*PA20*/PA19*/PA18

IF(VCC) SEL.WCS:=/16K.RAM=/PA23*/PA22*/PA21*/PA20*/PA19
                =/PA18*/INH.WCS.SEL

IF(VCC) SELE:=/16K.RAM=FP4E*/PA23*PA22*/PA21*/PA20*/PA19*PA18
              +/16K.RAM=FP4E*/PA23*PA22*/PA21*/PA20*PA19
                =/PA18*/INH.WCS.SEL
              +/16K.RAM=FP4E*FP3E*/PA23*PA22*/PA21*/PA20*PA19*PA18
              +/16K.RAM=FP4E*FP3E*/PA23*PA22*/PA21*/PA20*/PA19
                =/PA18*/INH.WCS.SEL
              +16K.RAM=/FP4E*FP3E*/PA23*/PA22*/PA21*PA20*/PA19*/PA18
              +/16K.RAM=FP4E*/PA23*PA22*/PA21*/PA20*PA19
                =/PA18=INH.WCS.SEL
              +/16K.RAM=FP4E*FP3E*/PA23*PA22*/PA21*/PA20*PA19
                =/PA18=INH.WCS.SEL

IF(VCC) SELD:=/16K.RAM=FP4D*/PA23*/PA22*PA21*PA20*/PA19*PA18
              +/16K.RAM=FP4D*/PA23*/PA22*PA21*PA20*PA19
                =/PA18*/INH.WCS.SEL
              +/16K.RAM=FP4D*FP3D*/PA23*/PA22*PA21*PA20*PA19*PA18
              +/16K.RAM=FP4D*FP3D*/PA23*PA22*/PA21*/PA20*/PA19
                =/PA18*/INH.WCS.SEL
              +16K.RAM=/FP4D*FP3D*/PA23*/PA22*/PA21*/PA20*PA19
                #PA18
              +/16K.RAM=FP4D*/PA23*/PA22*PA21*PA20*/PA19
                =/PA18=INH.WCS.SEL
              +/16K.RAM=FP4D*FP3D*/PA23*/PA22*PA21*PA20*PA19
                =/PA18=INH.WCS.SEL
```

23-025J5-00
23-042J5-00
23-043J5-00



| REVISIONS | | |
|---|---|---|
| CHK | CHANGE NO. | REV |
| | | |

DRN: M.Hafner 27-OCT-81 | CHK: D. | ENG. | DATE | BOARD LOCATION: | SHEET 01 OF 16

DSK:GLMC01.T2P[1106,1500]27-OCT-81 19:22 | NEXT HIGHER ASSEMBLY: B-DD-M8391-0-0 | FIRST USED ON OPTION/MODEL: 11/730

TITLE: MEM. CTLR. ROM AND PAL LISTINGS

| SIZE | CODE | NUMBER | REV. |
|---|---|---|---|
| D | GL | M8391-0-0 | A |

G.M. HAFNER, [1106,1500]GLMC01.DPL, SCALE 2, "D" RELEASE BOX
G.M. HAFNER GLMC01.PLOT[1106,1500] 27-OCT-81 19:28

PART NUMBER: 23-044J5-00

DEVICE TYPE: PAL16L8

SCHEMATIC SHEET 8:D-CS-M8391-0-MCTA

LOCATION/DESCRIPTION: E84/ CONTROL PREFETCH

ASSIGNED PIN NUMBER:

| | | |
|---|---|---|
| 1= CSR.19 | 8= LVA3 | 15= NC |
| 2=/CPUG | 9= ERR.SUM.CLK | 16= CSR.2.CLK |
| 3= OPEN.CONT.LATCH | 10= GND | 17= WR.CSR.1 |
| 4= PG.BND.PREF | 11= NC | 18=/OP.PREF.ADDR |
| 5= PG.BND | 12=/OP.ARY.ADDR | 19=/PG.BOUND |
| 6=/WR.CSR | 13= CPU.CYCLE | 20= VCC |
| 7= LVA2 | 14=/CLR.UB.RDS | |

EQUATIONS:

```
IF[VCC] OP.ARY.ADDR:=/OP.PREF.ADDR

IF[VCC] CLR.UB.RDS:=WR.CSR*LVA3*/LVA2

IF[VCC] /CSR.2.CLK:=/ERR.SUM.CLK*LVA2
                   +/ERR.SUM.CLK*/LVA3
                   +/ERR.SUM.CLK*/WR.CSR
                   +/WR.CSR*CPU.CYCLE
                   +CPU.CYCLE*/LVA3
                   +CPU.CYCLE*LVA2

IF[VCC]  /WR.CSR.1:=/WR.CSR
                   +/LVA2
                   +LVA3

IF[VCC] OP.PREF.ADDR:=/CSR.19*CPUG*OPEN.CONT.LATCH
                     +OP.PREF.ADDR*/OPEN.CONT.LATCH
                     +OP.PREF.ADDR*CPUG

IF[VCC] PG.BOUND:=OP.PREF.ADDR*PG.BND.PREF
                 +/OP.PREF.ADDR*PG.BND


IF[VCC] /CPU.CYCLE:=/CPU.CYCLE*/CPUG
                   +/CPUG*OPEN.CONT.LATCH
```

PART NUMBER: 23-061J5-00

DEVICE TYPE: PAL16L8

SCHEMATIC SHEET 8:D-CS-M8391-0-MCTF

LOCATION/DESCRIPTION: E61/ MCTF CSR CONTROL

ASSIGNED PIN NUMBER:

| | | |
|---|---|---|
| 1=/ERR.ADDR.CLK.A | 8=/CLR.UB.RDS | 15=/UB.LRDS |
| 2=/SERR | 9= 2ND.MEM.CYC | 16= NC |
| 3=/ERR | 10= GND | 17= NC |
| 4= INH.REP.CRD | 11= L.ECC.DIS | 18= LRDS |
| 5= CPU.CYCLE | 12= NC | 19= NC |
| 6= ERR.SUM.CLK | 13= LCRD | 20= VCC |
| 7=/WR.CSR | 14=/DAT.ERR | |

EQUATIONS:

```
IF[VCC] UB.LRDS:=/SERR*ERR*ERR.ADDR.CLK.A*/CPU.CYCLE
                +/CLR.UB.RDS*UB.LRDS

IF[VCC] DAT.ERR:=/SERR*ERR*ERR.ADDR.CLK.A*CPU.CYCLE
                +ERR*ERR.ADDR.CLK.A*L.ECC.DIS*CPU.CYCLE
                +SERR*ERR*ERR.ADDR.CLK.A*/INH.REP.CRD*CPU.CYCLE
                +/CPU.CYCLE*/WR.CSR*DAT.ERR
                +/ERR.SUM.CLK*/WR.CSR*DAT.ERR
                +/WR.CSR*2ND.MEM.CYC*DAT.ERR

IF[VCC] /LRDS:=CPU.CYCLE*ERR.SUM.CLK*/2ND.MEM.CYC
              +WR.CSR
              +/LRDS*SERR
              +/LRDS*/ERR
              +/LRDS*/ERR.ADDR.CLK.A
              +/LRDS*/CPU.CYCLE

IF[VCC] /LCRD:=CPU.CYCLE*ERR.SUM.CLK*/2ND.MEM.CYC
              +WR.CSR
              +/LCRD*/SERR
              +/LCRD*/ERR
              +/LCRD*/ERR.ADDR.CLK.A
              +/LCRD*/CPU.CYCLE
              +/LCRD*INH.REP.CRD
```

PART NUMBER: 23-017K3-00

DEVICE TYPE: PAL16R4

SCHEMATIC SHEET 8:D-CS-M8391-0-MCTL

LOCATION/DESCRIPTION: E3-E7,E13-E15/ DATA ROTATOR & LATCH

ASSIGNED PIN NUMBER:

| | | |
|---|---|---|
| 1= REG.CLK.H | 8=/CYC1 | 15=/OA816 |
| 2=/IA800 | 9=/MDR.DATOUT.EN | 16=/OA808 |
| 3=/IA808 | 10= GND | 17=/OA800 |
| 4=/IA816 | 11=/DIR.WRBYT.EN | 18= MC08 |
| 5=/IA824 | 12= MC24 | 19= MC00 |
| 6=/A0 | 13= MC16 | 20= VCC |
| 7=/A1 | 14=/OA824 | |

EQUATIONS:

```
IF[MDR.DATOUT.EN] /MC24:= CYC1*/A1*/A0*/IA824
                        +/A1* A0*/IA808
                        + A1*/A0*/IA808
                        + A1* A0*/IA816
                       +/CYC1*/A1*/A0*/OA824

IF[MDR.DATOUT.EN] /MC16:=CYC1*/A1*/A0*/IA816
                       +CYC1*/A1* A0*/IA824
                        + A1*/A0*/IA808
                        + A1* A0*/IA808
                       +/CYC1*/A1*/OA816

OA824:= CYC1*/MDR.DATOUT.EN*/A1*/A0*MC24
      + CYC1*/MDR.DATOUT.EN*/A1* A0*MC16
      + CYC1*/MDR.DATOUT.EN* A1*/A0*MC08
      + CYC1*/MDR.DATOUT.EN* A1* A0*MC00
      +/CYC1*OA824

OA816:=CYC1*/MDR.DATOUT.EN*/A1*/A0*MC16
      +CYC1*/MDR.DATOUT.EN*/A1*A0*MC08
      +CYC1*/MDR.DATOUT.EN*A1*/A0*MC00
      +CYC1*/MDR.DATOUT.EN*A1*A0*MC24
      +/CYC1*OA816
      +CYC1*/A1*A0*IA824*MDR.DATOUT.EN

OA808:=CYC1*/MDR.DATOUT.EN*/A1*/A0*MC08
      +CYC1*/MDR.DATOUT.EN*/A1*A0*MC00
      +CYC1*/MDR.DATOUT.EN*A1*/A0*MC24
      +CYC1*/MDR.DATOUT.EN*A1*A0*MC16
      +/CYC1*OA808
      +CYC1*MDR.DATOUT.EN*/A1*A0*IA816
      +CYC1*MDR.DATOUT.EN*A1*/A0*IA824

OA800:=CYC1*/MDR.DATOUT.EN*/A1*/A0*MC00
      +CYC1*/MDR.DATOUT.EN*/A1*A0*MC24
      +CYC1*/MDR.DATOUT.EN*A1*/A0*MC16
      +CYC1*/MDR.DATOUT.EN*A1*A0*MC08
      +/CYC1*OA800
      +CYC1*MDR.DATOUT.EN*/A1*A0*IA808
      +CYC1*MDR.DATOUT.EN*A1*/A0*IA816
      +CYC1*MDR.DATOUT.EN*A1*A0*IA824

IF[MDR.DATOUT.EN] /MC08:=CYC1*/A1*/A0*/IA808
                        +CYC1*/A1*A0*/IA816
                        +CYC1*A1*/A0*/IA824
                        +A1*A0*/IA808
                        +/CYC1*/A1*/OA808
                        +/CYC1*A1*/A0*/OA808

IF[MDR.DATOUT.EN] /MC00:=CYC1*/A1*/A0*/IA808
                        +CYC1*/A1*A0*/IA808
                        +CYC1*A1*/A0*/IA816
                        +CYC1*A1*A0*/IA824
                        +/CYC1*/OA808
```

23-044J5-00
23-061J5-00
23-017K3-00

G.M. HAMFNER, [1106,1500]XLMC02.OPL, SCALE 2, "D" RELEASE BOX
G.M. HAMFNER GLMC02.PLOT[1106,1500] 27-OCT-81 18:22



| REVISIONS | | |
|---|---|---|
| CHK | CHANGE NO. | REV |
| | | |

| | | | |
|---|---|---|---|
| DRN. G.M.Hafner | DATE 27-OCT-81 | ENG. | DATE |
| CHK'D. | DATE | BOARD LOCATION: | |
| | | SHEET 32 OF 16 | |
| OSK:GLMC02.T2PT[1106,1500] 27-OCT-81 18:22 | | NEXT HIGHER ASSEMBLY: | |
| FIRST USED ON OPTION/MODEL: 11/730 | | B-DD-M8391-0-0 | |

TITLE: MEM. CTLR. ROM AND PAL LISTINGS

| SIZE | CODE | NUMBER | REV. |
|---|---|---|---|
| D | GL | M8391-0-0 | A |

PART NUMBER: 23-018K3-00

DEVICE TYPE: PAL16R4

SCHEMATIC SHEET #:D-CS-M8391-0-MCTB

LOCATION/DESCRIPTION: E47,E58/ VAR (2 INPUT MUX)

ASSIGNED PIN NUMBER:

| | | |
|---|---|---|
| 1= REG.CLK | 8= A3 | 15= LVA2 |
| 2= A0 | 9= B3 | 16= LVA1 |
| 3= B0 | 10= GND | 17= LVA0 |
| 4= A1 | 11= REG.OUT.EN.L | 18= CONTROL |
| 5= B1 | 12= CARRY3.OUT | 19= CIN |
| 6= A2 | 13= LOAD | 20= VCC |
| 7= B2 | 14= LVA3 | |

EQUATIONS:

```
IF(VCC) /CARRY3.OUT:=/LVA3
                    +/LVA2
                    +/LVA1
                    +/LVA0
                    +/CIN

/LVA3:=/LOAD*/CONTROL*/LVA3
      +LOAD*/CONTROL*/A3
      +LOAD*CONTROL*/B3
      +/LOAD*CONTROL*LVA3*LVA2*LVA1*LVA0*CIN
      +/LOAD*CONTROL*/LVA3*/LVA2
      +/LOAD*CONTROL*/LVA3*/LVA1
      +/LOAD*CONTROL*/LVA3*/LVA0
      +/LOAD*CONTROL*/LVA3*/CIN

/LVA2:=/LOAD*/CONTROL*/LVA2
      +LOAD*/CONTROL*/A2
      +LOAD*CONTROL*/B2
      +/LOAD*CONTROL*LVA2*LVA1*LVA0*CIN
      +/LOAD*CONTROL*/LVA2*/LVA1
      +/LOAD*CONTROL*/LVA2*/LVA0
      +/LOAD*CONTROL*/LVA2*/CIN

/LVA1:=/LOAD*/CONTROL*/LVA1
      +LOAD*/CONTROL*/A1
      +/LOAD*CONTROL*LVA1*LVA0*CIN
      +/LOAD*CONTROL*/LVA1*/LVA0
      +/LOAD*CONTROL*/LVA1*/CIN

/LVA0:=/LOAD*/CONTROL*/LVA0
      +LOAD*/CONTROL*/A0
      +LOAD*CONTROL*/B0
      +/LOAD*CONTROL*CIN*LVA0
      +/LOAD*CONTROL*/CIN*/LVA0
```

PART NUMBER: 23-019K3-00

DEVICE TYPE: PAL16R4

SCHEMATIC SHEET #:D-CS-M8391-0-MCTB

LOCATION/DESCRIPTION: E26,E70,E67/ VAR (2 INPUT MUX)

ASSIGNED PIN NUMBER:

| | | |
|---|---|---|
| 1= REG.CLK | 8= A3 | 15= LVA2 |
| 2= A0 | 9= B3 | 16= LVA1 |
| 3= B0 | 10= GND | 17= LVA0 |
| 4= A1 | 11= REG.OUT.EN.L | 18= CONTROL |
| 5= B1 | 12= CARRY3.OUT | 19= CIN |
| 6= A2 | 13= LOAD | 20= VCC |
| 7= B2 | 14= LVA3 | |

EQUATIONS:

```
IF(VCC) /CARRY3.OUT:=/LVA3
                    +/LVA2
                    +/LVA1
                    +/CIN

/LVA3:=/LOAD*/CONTROL*/LVA3
      +LOAD*/CONTROL*/A3
      +LOAD*CONTROL*/B3
      +/LOAD*CONTROL*LVA3*LVA2*LVA1*CIN
      +/LOAD*CONTROL*/LVA3*/LVA2
      +/LOAD*CONTROL*/LVA3*/LVA1
      +/LOAD*CONTROL*/LVA3*/CIN

/LVA2:=/LOAD*/CONTROL*/LVA2
      +LOAD*/CONTROL*/A2
      +LOAD*CONTROL*/B2
      +/LOAD*CONTROL*LVA2*LVA1*CIN
      +/LOAD*CONTROL*/LVA2*/LVA1
      +/LOAD*CONTROL*/LVA2*/CIN

/LVA1:=/LOAD*/CONTROL*/LVA1
      +LOAD*/CONTROL*/A1
      +LOAD*CONTROL*/B1
      +/LOAD*CONTROL*LVA1*CIN
      +/LOAD*CONTROL*/LVA1*/CIN

/LVA0:=/LOAD*/LVA0
      +LOAD*/CONTROL*/A0
      +LOAD*CONTROL*/B0
```

PART NUMBER: 23-023K3-00

DEVICE TYPE: PAL16R4

SCHEMATIC SHEET #:D-CS-M8391-0-MCTE

LOCATION/DESCRIPTION: E106/ MCTE POWER UP & INIT

ASSIGNED PIN NUMBER:

| | | |
|---|---|---|
| 1= REG.CLK | 8= ISSTN | 15=/TIMEOUT.A |
| 2= DCLO | 9=/REF.IN.PROG | 16=/PWR.FL |
| 3= 5V.PWR.UP | 10= GND | 17=/PWR.UP.FLP |
| 4= OPEN.FUNC.LAT | 11= REG.OUT.EN.L | 18= INTR |
| 5= ERROR | 12= LISSTN | 19=/PWRF.OR.REF |
| 6= ALLOW.REF | 13=/START.REF.CYC | 20= VCC |
| 7= BMSTN | 14=/TIMEOUT | |

EQUATIONS:

```
IF(VCC) PWRF.OR.REF:=START.REF.CYC
                    +PWR.FL

IF(VCC) /LISSTN:=/BMSTN*/INTR
                +/ISSTN*/LISSTN
                +ERROR

PWR.FL:=/PWR.UP.FLP
       +PWR.FL*DCLO
       +DCLO*OPEN.FUNC.LAT
       +DCLO*ALLOW.REF

PWR.UP.FLP:=5V.PWR.UP

TIMEOUT.A:=REF.IN.PROG

TIMEOUT:=TIMEOUT.A*/REF.IN.PROG
```

23-018K3-00
23-019K3-00
23-023K3-00



| REVISIONS | | |
|---|---|---|
| CHK | CHANGE NO. | REV |
| | | |

digital

DRN D.M.Hafner DATE 27-OCT-81 ENG. DATE
CHK D. DATE BOARD LOCATION:
SHEET 03 OF 16

DSKT:GLMCB3.Y2K[1166,1500]27-OCT-81 18:22
FIRST USED ON OPTION/MODEL: 11/730

NEXT HIGHER ASSEMBLY: B-DD-M8391-0-0

TITLE: MEM. CTLR. ROM AND PAL LISTINGS

| SIZE | CODE | NUMBER | REV. |
|---|---|---|---|
| D | GL | M8391-0-0 | A |

SIZE D | CODE GL | NUMBER M8391-0-0 | REV. A

G.H. HAFNER [1166,1500]GLMCB3.DPL, SCALE 2, "D" RELEASE BOM
G.H. HAFNER GLMCB3.PLO[1166,1500] 27-OCT-81 18:29

PART NUMBER: 23-026K3-00

DEVICE TYPE: PAL16R4

SCHEMATIC SHEET #:D-CS-M8391-0-MCTF

LOCATION/DESCRIPTION: E68/ MCTF UNIBUS CSR 2

ASSIGNED PIN NUMBER:

| | | |
|---|---|---|
| 1= REG.CLK | 8= VALID | 15= LUB.RDS |
| 2=/CLR.ERR | 9=/TBWE | 16= LUB.NXM |
| 3=/NXM | 10= GND | 17= LUB.TB.PAR.ERR |
| 4=/LUB.RDS | 11=/REG.OUT.EN | 18=/TBP0 |
| 5=/WR.NOT.VALID | 12=/TB.PAR.ERR | 19=/UB.ERR.SUM |
| 6= GEN.P0 | 13= PAR.A | 20= VCC |
| 7= PROT.PAR | 14= LWR.NOT.VALID | |

EQUATIONS:

```
IF(VCC) TB.PAR.ERR:=GEN.P0*PROT.PAR*/PAR.A
                    +GEN.P0*/PROT.PAR*PAR.A
                    +/GEN.P0*PROT.PAR*PAR.A
                    +/GEN.P0*/PROT.PAR*/PAR.A

/LWR.NOT.VALID :=LUB.NXM*/LWR.NOT.VALID
                +LUB.TB.PAR.ERR*/LWR.NOT.VALID
                +TB.PAR.ERR*/LWR.NOT.VALID
                +/LWR.NOT.VALID*/LWR.NOT.VALID
                +CLR.ERR
                +LUB.RDS*/LWR.NOT.VALID

/LUB.RDS:=/UB.RDS
         +CLR.ERR
         +LUB.TB.PAR.ERR*/LUB.RDS
         +LUB.NXM*/LUB.RDS
         +LWR.NOT.VALID*/LUB.RDS

/LUB.NXM:=/NXM*/LUB.NXM*VALID
         +CLR.ERR
         +LUB.TB.PAR.ERR*/LUB.NXM
         +TB.PAR.ERR*/LUB.NXM
         +LUB.RDS*/LUB.NXM
         +LWR.NOT.VALID*/LUB.NXM
         +WR.NOT.VALID*/LUB.NXM

/LUB.TB.PAR.ERR:=/LUB.TB.PAR.ERR*/PAR.A*/GEN.P0*PROT.PAR
                 +/LUB.TB.PAR.ERR*/PAR.A*GEN.P0*/PROT.PAR
                 +/LUB.TB.PAR.ERR*PAR.A*/GEN.P0*/PROT.PAR
                 +/LUB.TB.PAR.ERR*PAR.A*GEN.P0*PROT.PAR
                 +CLR.ERR
                 +LUB.RDS*/LUB.TB.PAR.ERR
                 +LWR.NOT.VALID*/LUB.TB.PAR.ERR
                 +LUB.NXM*/LUB.TB.PAR.ERR

IF(TBWE) TBP0:=/VALID*/GEN.P0*/PROT.PAR
              +VALID*/GEN.P0*PROT.PAR
              +VALID*GEN.P0*/PROT.PAR
              +/VALID*GEN.P0*PROT.PAR

IF(VCC) UB.ERR.SUM:=NXM
                   +/VALID
                   +WR.NOT.VALID
                   +GEN.P0*PROT.PAR*/PAR.A
                   +GEN.P0*/PROT.PAR*PAR.A
                   +/GEN.P0*PROT.PAR*PAR.A
                   +/GEN.P0*/PROT.PAR*/PAR.A

IF(VCC) /PAR.A:=/TBP0*/VALID
          +TBP0*VALID
```

PART NUMBER: 23-056K3-00

DEVICE TYPE: PAL16R4

SCHEMATIC SHEET #:D-CS-M8391-0-MCTE

LOCATION/DESCRIPTION: E91/ ARBITRATOR

ASSIGNED PIN NUMBER:

| | | |
|---|---|---|
| 1= REG.CLK | 8= SET.LOCK | 15=/R1 |
| 2= LNPR | 9= CPUDR | 16=/CPUG |
| 3= LSACK | 10= GND | 17=/NPG |
| 4= L88ST | 11=/REG.OUT.EN | 18= I88ST |
| 5=/TIMEOUT | 12= CLEAR.LOCK | 19=/UB.ACTIVITY |
| 6= CPUR | 13= LMSYN | 20= VCC |
| 7=/CONT.FUNC.LAT | 14=/LOCK | |

EQUATIONS:

```
LOCK:=LOCK*/CLEAR.LOCK
     +SET.LOCK*/CLEAR.LOCK

R1:=TIMEOUT*NPG
   +R1*NPG

NPG:=LNPR*/LSACK*/LOCK*/SET.LOCK
    +LNPR*/LSACK*LOCK*/CPUR*/CPUG
    +NPG*/LSACK*R1*/TIMEOUT
    +NPG*/LSACK*/R1

CPUG:=LOCK*/CONT.FUNC.LAT*CPUR*/CPUDR*/NPG*/LSACK*/L88SY*/I88SY
     +LOCK*/CONT.FUNC.LAT*CPUR*/CPUDR*I88SY
     +/LOCK*/CONT.FUNC.LAT*CPUR*/CPUDR*/LMSYN
     +CPUG*/CLEAR.LOCK*/SET.LOCK*/CPUDR
     +CPUG*/CLEAR.LOCK*SET.LOCK*/CPUDR
     +CPUG*CLEAR.LOCK*/SET.LOCK*/CPUDR

IF(VCC) UB.ACTIVITY:=LNPR*/I88SY*/LOCK
                    +LSACK*/I88SY*/LOCK
                    +NPG*/I88SY*/LOCK
                    +L88SY*/I88SY*/LOCK
```

PART NUMBER: 23-060K3-00

DEVICE TYPE: PAL16R4

SCHEMATIC SHEET #:D-CS-M8391-0-MCTF

LOCATION/DESCRIPTION: E68/ CSR 1B

ASSIGNED PIN NUMBER:

| | | |
|---|---|---|
| 1= REG.CLK | 8=/ADDR.PH | 15= ADP.REG.SEL |
| 2=/CLR.ERR | 9=/2.MEM.CYC | 16= UB.BUSY |
| 3=/UB.ACT | 10= GND | 17= LVALID |
| 4= VALID | 11=/REG.OUT.EN | 18=/WR.NOT.VALID |
| 5=/UB.PHYS.ADDR.SEL | 12=/P.ERR.SUM | 19=/WR.CHK |
| 6=/UB.REG.SEL | 13= SYS.ADRS.VIOL | 20= VCC |
| 7= PAGE.BOUND | 14= WR.XPG.ERR | |

EQUATIONS:

```
IF(VCC) P.ERR.SUM:=WR.XPG.ERR
                  +ADP.REG.SEL
                  +UB.BUSY
                  +LVALID

/WR.XPG.ERR:=CLR.ERR
             +/2.MEM.CYC
             +/PAGE.BOUND*/SYS.ADRS.VIOL
             +/SYS.ADRS.VIOL*/WR.CHK*/CLR.ERR
             +ADDR.PH*/SYS.ADRS.VIOL

/ADP.REG.SEL:=CLR.ERR
              +/UB.REG.SEL

/UB.BUSY:=CLR.ERR*/WR.CHK
         +/UB.ACT*/CLR.ERR*WR.CHK
         +/UB.ACT*/CLR.ERR*/WR.CHK
         +/UB.PHYS.ADDR.SEL*/CLR.ERR*WR.CHK
         +/UB.PHYS.ADDR.SEL*/CLR.ERR*/WR.CHK

/LVALID:=CLR.ERR
        +VALID
        +ADDR.PH

IF(VCC) WR.NOT.VALID:=2.MEM.CYC*/VALID*/ADDR.PH
                     +2.MEM.CYC*SYS.ADRS.VIOL
```

23-026K3-00
23-056K3-00
23-060K3-00



| REVISIONS | | |
|---|---|---|
| CHK | CHANGE NO. | REV |
| | | |

DRN: D.M.Hofmann DATE: 27-OCT-81 ENG. DATE
CHK'D. DATE BOARD LOCATION: SHEET 3a OF 16

DSK:GL,MC04,T2P[1106,1500]27-OCT-81 19:22 NEXT HIGHER ASSEMBLY:
FIRST USED ON OPTION/MODEL: 11/730 B-DD-M8391-0-0

TITLE: MEM. CTLR. ROM AND PAL LISTINGS

| SIZE | CODE | NUMBER | REV. |
|---|---|---|---|
| D | GL | M8391-0-0 | A |

G.M. HAFNER, [1106,1500]GLMC04.DPL, SCALE 2.0, RELEASE BOX
G.M. HAFNER GLMC04.PLO[1106,1500] 27-OCT-81 19:23

PART NUMBER: 23-005K4-00

DEVICE TYPE: PAL16R6

SCHEMATIC SHEET #:D-CS-M8391-0-MCT8

LOCATION/DESCRIPTION: E42/ MCT8 VAR & BIT COUNTER (8)

ASSIGNED PIN NUMBER:

| | | |
|---|---|---|
| 1= REG.CLK | 8= CONTROL | 15= LA3 |
| 2= A0 | 9= LOAD | 16= LA2 |
| 3= A1 | 10= GND | 17= LA1 |
| 4= A2 | 11=/REG.OUT.EN | 18= LA0 |
| 5= A3 | 12= SYS.ADRS.VIOL | 19= CIN |
| 6= A4 | 13= LA5 | 20= VCC |
| 7= A5 | 14= LA4 | |

EQUATIONS:

```
IF(VCC) /SYS.ADRS.VIOL:=/LA4
                        +/LA3
                        +/LA2
                        +/LA1
                        +/LA0
                        +/CIN

/LA5:=LOAD=/CONTROL=/A5
      +/LOAD=/LA5

/LA4:=LOAD=/CONTROL=/A4
      +/LOAD=/CONTROL=/LA4
      +/LOAD=CONTROL=LA4=LA3=LA2=LA1=LA0=CIN
      +/LOAD=CONTROL=/LA0=/LA4
      +/LOAD=CONTROL=/LA1=/LA4
      +/LOAD=CONTROL=/LA2=/LA4
      +/LOAD=CONTROL=/LA3=/LA4
      +/LOAD=CONTROL=/CIN=/LA4

/LA3:=LOAD=/CONTROL=/A3
      +/LOAD=/CONTROL=/LA3
      +/LOAD=CONTROL=LA3=LA2=LA1=LA0=CIN
      +/LOAD=CONTROL=/LA0=/LA3
      +/LOAD=CONTROL=/LA1=/LA3
      +/LOAD=CONTROL=/LA2=/LA3
      +/LOAD=CONTROL=/CIN=/LA3

/LA2:=LOAD=/CONTROL=/A2
      +/LOAD=/CONTROL=/LA2
      +/LOAD=CONTROL=LA2=LA1=LA0=CIN
      +/LOAD=CONTROL=/LA0=/LA2
      +/LOAD=CONTROL=/LA1=/LA2
      +/LOAD=CONTROL=/CIN=/LA2

/LA1:=LOAD=/CONTROL=/A1
      +/LOAD=/CONTROL=/LA1
      +/LOAD=CONTROL=LA1=LA0=CIN
      +/LOAD=CONTROL=/LA0=/LA1
      +/LOAD=CONTROL=/CIN=/LA1

/LA0 :=LOAD=/CONTROL=/A0
      +/LOAD=/CONTROL=/LA0
      +/LOAD=CONTROL=LA0=CIN
      +/LOAD=CONTROL=/CIN=/LA0
```

PART NUMBER: 23-006K4-00

DEVICE TYPE: PAL16R6

SCHEMATIC SHEET #:D-CS-M8391-0-MCTK

LOCATION/DESCRIPTION: E72/ MCTK DATA ROTATOR CONTROL

ASSIGNED PIN NUMBER:

| | | |
|---|---|---|
| 1= REG.CLK | 8= LUBC0 | 15=/RS0 |
| 2= LVA1 | 9= BYTE.OFFSET | 16=/RS1 |
| 3= LVA0 | 10= GND | 17=/A0 |
| 4= CPU.CYCLE | 11=/REG.OUT.EN | 18=/A1 |
| 5= LDT1 | 12= F0 | 19= F1 |
| 6= LDT0 | 13=/ALIGN.LW | 20= VCC |
| 7= LUBC1 | 14=/2.MEM.CYC | |

EQUATIONS:

```
/ALIGN.LW:=LDT1=LDT0=/LVA0=/LVA1

2.MEM.CYC:=CPU.CYCLE=LVA1=LDT1
           +CPU.CYCLE=/LVA1=LVA0=LDT1=LDT0
           +/CPU.CYCLE=/LUBC1=LVA1=BYTE.OFFSET
           +/CPU.CYCLE=LUBC1=LUBC0=LVA1=LVA0=BYTE.OFFSET
           +/CPU.CYCLE=LUBC1=/LUBC0=LVA1=BYTE.OFFSET
           +CPU.CYCLE=LVA1=LVA0=LDT0

RS0:=CPU.CYCLE=LDT0
     +/CPU.CYCLE=/LUBC1
     +/CPU.CYCLE=/LUBC0
     +F1
     +F0

RS1:=CPU.CYCLE=LDT1
     +F1
     +F0

A0:=CPU.CYCLE=LVA0=/F1=/F0
    +CPU.CYCLE=/F1=F0
    +/CPU.CYCLE=BYTE.OFFSET

A1:=CPU.CYCLE=LVA1=/F0=/F1
    +CPU.CYCLE=F1=/F0
    +/CPU.CYCLE=LVA1
```

PART NUMBER: 23-007K4-00

DEVICE TYPE: PAL16R6

SCHEMATIC SHEET #:D-CS-M8391-0-MCT8

LOCATION/DESCRIPTION: E28/ MCT8 VAR 6-BIT COUNTER(A)

ASSIGNED PIN NUMBER:

| | | |
|---|---|---|
| 1= REG.CLK | 8= CONTROL | 15= LA3 |
| 2= A0 | 9= LOAD | 16= LA2 |
| 3= A1 | 10= GND | 17= LA1 |
| 4= A2 | 11= REG.OUT.EN.L | 18= LA0 |
| 5= A3 | 12= CARRY4.OUT | 19= CIN |
| 6= A4 | 13= LA5 | 20= VCC |
| 7= A5 | 14= LA4 | |

EQUATIONS:

```
IF(VCC) /CARRY4.OUT:=/LA4
                     +/LA3
                     +/LA2
                     +/LA1
                     +/LA0
                     +/CIN

/LA5:=LOAD=/CONTROL=/A5
      +/LOAD=/CONTROL=/LA5
      +/LOAD=CONTROL=LA5=LA4=LA3=LA2=LA1=LA0=CIN
      +/LOAD=CONTROL=/CARRY4.OUT=/LA5

/LA4:=LOAD=/CONTROL=/A4
      +/LOAD=/CONTROL=/LA4
      +/LOAD=CONTROL=LA4=LA3=LA2=LA1=LA0=CIN
      +/LOAD=CONTROL=/LA0=/LA4
      +/LOAD=CONTROL=/LA1=/LA4
      +/LOAD=CONTROL=/LA2=/LA4
      +/LOAD=CONTROL=/LA3=/LA4
      +/LOAD=CONTROL=/CIN=/LA4

/LA3:=LOAD=/CONTROL=/A3
      +/LOAD=/CONTROL=/LA3
      +/LOAD=CONTROL=LA3=LA2=LA1=LA0=CIN
      +/LOAD=CONTROL=/LA0=/LA3
      +/LOAD=CONTROL=/LA1=/LA3
      +/LOAD=CONTROL=/LA2=/LA3
      +/LOAD=CONTROL=/CIN=/LA3

/LA2:=LOAD=/CONTROL=/A2
      +/LOAD=/CONTROL=/LA2
      +/LOAD=CONTROL=LA2=LA1=LA0=CIN
      +/LOAD=CONTROL=/LA0=/LA2
      +/LOAD=CONTROL=/LA1=/LA2
      +/LOAD=CONTROL=/CIN=/LA2

/LA1:=LOAD=/CONTROL=/A1
      +/LOAD=/CONTROL=/LA1
      +/LOAD=CONTROL=LA1=LA0=CIN
      +/LOAD=CONTROL=/LA0=/LA1
      +/LOAD=CONTROL=/CIN=/LA1

/LA0:=LOAD=/CONTROL=/A0
      +/LOAD=/CONTROL=/LA0
      +/LOAD=CONTROL=LA0=CIN
      +/LOAD=CONTROL=/CIN=/LA0
```

23-005K4-00
23-006K4-00
23-007K4-00



| REVISIONS | | |
|---|---|---|
| CHK | CHANGE NO. | REV |
| | | |

digital

| | | | | | |
|---|---|---|---|---|---|
| DRN D.M.Hafner | DATE 27-OCT-81 | ENG. | DATE | TITLE: MEM. CTLR. ROM AND PAL LISTINGS | |
| CHK D. | DATE | BOARD LOCATION: SHEET 8A OF 16 | | | |
| DSK:GL,MCB5,T2PL[106,1500]27-OCT-81 18:23 | | NEXT HIGHER ASSEMBLY: B-DD-M8391-0-0 | | SIZE D / CODE GL / NUMBER M8391-0-0 | REV. A |
| FIRST USED ON OPTION/MODEL: 11/730 | | | | | |

G.M. HAFNER,[106,1500]MCB5.PAL;SCALE 2.0 RELEASE MON 27-OCT-81 18:23
G.M. HAFNER,[106,1500]MCB5.PLT;106,1500] 27-OCT-81 18:23

PART NUMBER: 23-000K4-00

DEVICE TYPE: PAL16R6

SCHEMATIC SHEET #:D-CS-M8391-0-MCTB

LOCATION/DESCRIPTION: E83/ MCTB MISC CONTROL

ASSIGNED PIN NUMBER:

| | | |
|---|---|---|
| 1= REG.CLK | 8= SPF2 | 15= SEC.CYC |
| 2= L.MME | 9= LDT0 | 16=/UB.TB.SEL |
| 3= CPU.CYCLE | 10= GND | 17=/ADDR.PH |
| 4= SPF0 | 11=/REG.OUT.EN | 18=/BG |
| 5= OPEN.FUNC.LAT | 12= 00ST | 19= I00ST |
| 6=/TB.DATA.EN | 13= IC0 | 20= VCC |
| 7= SPF1 | 14= IC1 | |

EQUATIONS:

```
IF(VCC) /I00ST:=/00ST#/I00ST
              +/00ST=IC1
              +/00ST=/IC0

BG:=SPF2#SPF1#SPF0

/IC1:=SPF2#/SPF1
     +/SPF2#/IC1
     +SPF2#SPF1#SPF0#/IC1

/IC0:=SPF2#/SPF1#/SPF0
     +/SPF2#/IC0
     +SPF2#SPF1#SPF0#/IC0
     +SPF2#SPF1#/SPF0#LDT0

ADDR.PH:=/L.MME#CPU.CYCLE#/TB.DATA.EN
       +/SPF2#/SPF1#SPF0
       +ADDR.PH#/OPEN.FUNC.LAT#/TB.DATA.EN

UB.TB.SEL:=/OPEN.FUNC.LAT#UB.TB.SEL
         +/SPF2#SPF1#SPF0

/SEC.CYC:=OPEN.FUNC.LAT
        +/SEC.CYC#SPF2
        +/SEC.CYC#SPF0
        +/SEC.CYC#/SPF1
        +SPF2#/SPF1#/SPF0
```

PART NUMBER: 23-010K4-00

DEVICE TYPE: PAL16R6

SCHEMATIC SHEET #:D-CS-M8391-0-MCTF

LOCATION/DESCRIPTION: E57/ MEMORY CSR 1A

ASSIGNED PIN NUMBER:

| | | |
|---|---|---|
| 1= REG.CLK | 8= BYT.OFFSET | 15= L.ACC.REF |
| 2=/CLR.ERR | 9=/OP.ERR | 16= L.TB.MISS |
| 3=/ADDR.PH | 10= GND | 17= L.NXM |
| 4= NXM | 11=/REG.OUT.EN | 18= ILL.UB.OPER |
| 5=/TB.MISS | 12=/ERR.SUM | 19=/TB.PAR |
| 6=/ACC.REF | 13= L.TB.PAR | 20= VCC |
| 7=/MOD.REF | 14= L.MOD.REF | |

EQUATIONS:

```
IF(VCC) ERR.SUM:=L.TB.MISS
               +ILL.UB.OPER
               +L.TB.PAR
               +L.MOD.REF
               +L.ACC.REF
               +L.NXM

/L.TB.PAR:=CLR.ERR
         +/TB.PAR
         +ADDR.PH

/L.MOD.REF:=CLR.ERR
          +/MOD.REF
          +ADDR.PH

/L.ACC.REF:=CLR.ERR
          +/ACC.REF
          +ADDR.PH

/L.TB.MISS:=CLR.ERR
          +/TB.MISS#BYT.OFFSET
          +ADDR.PH

/L.NXM:=CLR.ERR
      +/NXM

/ILL.UB.OPER:=CLR.ERR
            +/OP.ERR
```

PART NUMBER: 23-003K5-00

DEVICE TYPE: PAL16R8

SCHEMATIC SHEET #:D-CS-M8391-0-MCTB

LOCATION/DESCRIPTION: E77/ MCTB PREFETCH ADDRESS REG/COUNT

ASSIGNED PIN NUMBER:

| | | |
|---|---|---|
| 1= REG.CLK. | 8= A0 | 15= LA6 |
| 2= A2 | 9= NC | 16= LA5 |
| 3= A3 | 10= GND | 17= LA4 |
| 4= A4 | 11= REG.OUT.EN.L | 18= LA3 |
| 5= A5 | 12= PAGE.BOUND.PREF | 19= LA2 |
| 6= A6 | 13= LA0 | 20= VCC |
| 7= A7 | 14= LA7 | |

EQUATIONS:

```
/PAGE.BOUND.PREF:=/A0
                +/A7
                +/A6
                +/A5
                +/A4
                +/A3
                +/A2

/LA0:=A2#A3#A4#A5#A6#A7#A0
     +/A0=/A7
     +/A0=/A6
     +/A0=/A5
     +/A0=/A4
     +/A0=/A3
     +/A0=/A2

/LA7:=A2#A3#A4#A5#A6#A7
     +/A7=/A6
     +/A7=/A5
     +/A7=/A4
     +/A7=/A3
     +/A7=/A2

/LA6:=A2#A3#A4#A5#A6
     +/A6=/A5
     +/A6=/A4
     +/A6=/A3
     +/A6=/A2

/LA5:=A2#A3#A4#A5
     +/A5=/A4
     +/A5=/A3
     +/A5=/A2

/LA4:=A2#A3#A4
     +/A4=/A3
     +/A4=/A2

/LA3:=A2#A3
     +/A3=/A2

/LA2:=A2
```

23-000K4-00
23-010K4-00
23-003K5-00



| REVISIONS | | |
|---|---|---|
| CHK | CHANGE NO. | REV |
| | | |

digital

DRN: M Hafner — DATE: 27-OCT-81 — ENG. — DATE

CHK'D. — DATE

DSK:GL.MC06,T2PL[1106,1500]27-OCT-81 18:23

FIRST USED ON OPTION/MODEL: 11/730

BOARD LOCATION:

SHEET 06 OF 16

NEXT HIGHER ASSEMBLY: B-DD-M8391-0-0

TITLE: MEM. CTLR. ROM AND PAL LISTINGS

| SIZE | CODE | NUMBER | REV. |
|---|---|---|---|
| D | GL | M8391-0-0 | A |

G.M. HAFNER, [1106,1500]GLMC06.DPL, SCALE 2: "D" RELEASE BOM
G.M. HAFNER GLMC06.PLC[1106,1500] 27-OCT-81 18:29

| HEX LOC | HEX DAT | BIN DAT | HEX LOC | HEX DAT | BIN DAT | HEX LOC | HEX DAT | BIN DAT | HEX LOC | HEX DAT | BIN DAT | HEX LOC | HEX DAT | BIN DAT | HEX LOC | HEX DAT | BIN DAT | HEX LOC | HEX DAT | BIN DAT |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 000 | 1D | 00011101 | 040 | 40 | 01000000 | 080 | B7 | 10110111 | 0C0 | C0 | 11000000 | 100 | 06 | 00000110 | 140 | CE | 11001110 | 180 | EE | 11101110 | 1C0 | 35 | 00110101 |
| 001 | 90 | 10010000 | 041 | 0C | 00001100 | 081 | E9 | 11101001 | 0C1 | 2E | 00101110 | 101 | A0 | 10100000 | 141 | CE | 11001110 | 181 | F0 | 11110000 | 1C1 | 8D | 10001101 |
| 002 | 08 | 00001011 | 042 | 06 | 00000110 | 082 | 43 | 01000011 | 0C2 | 61 | 01100001 | 102 | A1 | 10100001 | 142 | 48 | 01001000 | 182 | AA | 10101010 | 1C2 | 15 | 00010101 |
| 003 | 08 | 00001011 | 043 | BB | 10111011 | 083 | B5 | 10110101 | 0C3 | B7 | 10110111 | 103 | 5C | 01011100 | 143 | 47 | 01000111 | 183 | 81 | 10000001 | 1C3 | C4 | 11000100 |
| 004 | 01 | 00000001 | 044 | A0 | 10100000 | 084 | BD | 10111101 | 0C4 | C0 | 11000000 | 104 | 29 | 00101001 | 144 | 53 | 01010011 | 184 | 10 | 00010000 | 1C4 | C5 | 11000101 |
| 005 | 01 | 00000001 | 045 | 48 | 01001000 | 085 | BC | 10111100 | 0C5 | C5 | 11000101 | 105 | 6D | 01101101 | 145 | 9C | 10011100 | 185 | 87 | 10000111 | 1C5 | 10 | 00010000 |
| 006 | 04 | 00000100 | 046 | 4E | 01001110 | 086 | 84 | 10000100 | 0C6 | C8 | 11001000 | 106 | 07 | 00000111 | 146 | B2 | 10110010 | 186 | 87 | 10000111 | 1C6 | C7 | 11000111 |
| 007 | A4 | 10100100 | 047 | 10 | 00010000 | 087 | 85 | 10000101 | 0C7 | 86 | 00000110 | 107 | 6D | 01101101 | 147 | 47 | 01000111 | 187 | DE | 11011110 | 1C7 | C8 | 11001000 |
| 008 | 08 | 00001011 | 048 | 22 | 00100010 | 088 | 42 | 01000010 | 0C8 | E8 | 11101000 | 108 | 16 | 00010110 | 148 | D1 | 11010001 | 188 | 88 | 10001000 | 1C8 | 10 | 00010000 |
| 009 | 88 | 10001011 | 049 | 0C | 00001100 | 089 | 88 | 10001011 | 0C9 | 13 | 00010011 | 109 | 2D | 00101101 | 149 | D3 | 11010011 | 189 | 89 | 10001001 | 1C9 | CA | 11001010 |
| 00A | 4D | 01001101 | 04A | 7E | 01111110 | 08A | 10 | 00010000 | 0CA | E8 | 11101000 | 10A | 4C | 01001100 | 14A | 49 | 01001001 | 18A | F8 | 11111000 | 1CA | CD | 11001101 |
| 00B | 08 | 00001000 | 04B | 4A | 01001010 | 08B | C5 | 11000101 | 0CB | D4 | 11010100 | 10B | 6E | 01101110 | 14B | D2 | 11010010 | 18B | A8 | 10101000 | 1CB | CC | 11001100 |
| 00C | 28 | 00101000 | 04C | 4D | 01001101 | 08C | 95 | 10010101 | 0CC | E7 | 11100111 | 10C | 16 | 00010110 | 14C | B7 | 10110111 | 18C | DE | 11011110 | 1CC | CD | 11001101 |
| 00D | 00 | 00000000 | 04D | 23 | 00100011 | 08D | 8D | 10001101 | 0CD | CD | 11001101 | 10D | 2D | 00101101 | 14D | B7 | 10110111 | 18D | EE | 11101110 | 1CD | 39 | 00111001 |
| 00E | 0C | 00001100 | 04E | 4B | 01001011 | 08E | C2 | 11000010 | 0CE | E7 | 11100111 | 10E | 4C | 01001100 | 14E | 50 | 01010000 | 18E | F7 | 11110111 | 1CE | CF | 11001111 |
| 00F | 0D | 00001101 | 04F | 06 | 00000110 | 08F | C2 | 11000010 | 0CF | 86 | 00000110 | 10F | 6E | 01101110 | 14F | 51 | 01010001 | 18F | BF | 10111111 | 1CF | 4D | 01001101 |
| 010 | 10 | 00010000 | 050 | 58 | 01011000 | 090 | 38 | 00111000 | 0D0 | D0 | 11010000 | 110 | A7 | 10100111 | 150 | D5 | 11010101 | 190 | 81 | 10000001 | 1D0 | 88 | 10001000 |
| 011 | C9 | 11001001 | 051 | 0C | 00001100 | 091 | 99 | 10011001 | 0D1 | 55 | 01010101 | 111 | 11 | 00010001 | 151 | D8 | 11011000 | 191 | BF | 10111111 | 1D1 | 43 | 01000011 |
| 012 | 1F | 00011111 | 052 | 63 | 01100011 | 092 | 90 | 10010000 | 0D2 | 70 | 01110000 | 112 | 10 | 00010000 | 152 | DE | 11011110 | 192 | C5 | 11000101 | 1D2 | AD | 10101101 |
| 013 | 0A | 00001010 | 053 | 53 | 01010011 | 093 | A3 | 10100011 | 0D3 | B7 | 10110111 | 113 | 06 | 00000110 | 153 | E2 | 11100010 | 193 | A1 | 10100001 | 1D3 | 4B | 01001011 |
| 014 | 24 | 00100100 | 054 | 93 | 10010011 | 094 | FB | 11111011 | 0D4 | D0 | 11010000 | 114 | 14 | 00010100 | 154 | D6 | 11010110 | 194 | 95 | 10010101 | 1D4 | 4E | 01001110 |
| 015 | 1D | 00011101 | 055 | 97 | 10010111 | 095 | 95 | 10010101 | 0D5 | DF | 11011111 | 115 | 15 | 00010101 | 155 | 5D | 01011101 | 195 | 96 | 10010110 | 1D5 | 4F | 01001111 |
| 016 | 1F | 00011111 | 056 | 94 | 10010100 | 096 | C2 | 11000010 | 0D6 | 71 | 01110001 | 116 | 15 | 00010101 | 156 | ED | 11101101 | 196 | CD | 11001101 | 1D6 | D7 | 11010111 |
| 017 | 0C | 00001100 | 057 | E7 | 11100111 | 097 | C2 | 11000010 | 0D7 | 9A | 10011010 | 117 | 06 | 00000110 | 157 | 55 | 01010101 | 197 | 99 | 10011001 | 1D7 | E3 | 11100011 |
| 018 | 1E | 00011110 | 058 | 40 | 01000000 | 098 | 98 | 10011000 | 0D8 | 83 | 10000011 | 118 | 1D | 00011101 | 158 | 5A | 01011010 | 198 | 87 | 10000111 | 1D8 | D9 | 11011001 |
| 019 | 04 | 00000100 | 059 | A1 | 10100001 | 099 | 92 | 10010010 | 0D9 | 03 | 00000011 | 119 | AA | 10101010 | 159 | E1 | 11100001 | 199 | F3 | 11110011 | 1D9 | DA | 11011010 |
| 01A | 18 | 00011000 | 05A | 73 | 01110011 | 09A | 06 | 00000110 | 0DA | 88 | 10001000 | 11A | AA | 10101010 | 15A | E0 | 11100000 | 19A | DD | 11011101 | 1DA | DB | 11011011 |
| 01B | 1F | 00011111 | 05B | 73 | 01110011 | 09B | 88 | 10001000 | 0DB | D4 | 11010100 | 11B | AD | 10101101 | 15B | 5C | 01011100 | 19B | F5 | 11110101 | 1DB | DC | 11011100 |
| 01C | 10 | 00010000 | 05C | 5D | 01011101 | 09C | 98 | 10011000 | 0DC | F2 | 11110010 | 11C | 1E | 00011110 | 15C | 9D | 10011101 | 19C | F8 | 11111000 | 1DC | DD | 11011101 |
| 01D | 28 | 00101011 | 05D | 5E | 01011110 | 09D | 79 | 01111001 | 0DD | A1 | 10100001 | 11D | 22 | 00100010 | 15D | 75 | 01110101 | 19D | 9E | 10011110 | 1DD | 52 | 01010010 |
| 01E | 20 | 00100000 | 05E | A1 | 10100001 | 09E | 4C | 01001100 | 0DE | DC | 11011100 | 11E | 7C | 01111100 | 15E | D6 | 11010110 | 19E | FE | 11111110 | 1DE | DF | 11011111 |
| 01F | 06 | 00000110 | 05F | A1 | 10100001 | 09F | 9D | 10011101 | 0DF | A1 | 10100001 | 11F | AB | 10101011 | 15F | E4 | 11100100 | 19F | FD | 11111101 | 1DF | 58 | 01011000 |
| 020 | 10 | 00010000 | 060 | 60 | 01100000 | 0A0 | A0 | 10100000 | 0E0 | AA | 10101010 | 120 | 7F | 01111111 | 160 | 10 | 00010000 | 1A0 | A1 | 10100001 | 1E0 | 59 | 01011001 |
| 021 | BA | 10111010 | 061 | 74 | 01110100 | 0A1 | 3C | 00111100 | 0E1 | 44 | 01000100 | 121 | AF | 10101111 | 161 | 61 | 01100001 | 1A1 | 6D | 01101101 | 1E1 | E2 | 11100010 |
| 022 | 18 | 00011000 | 062 | CE | 11001110 | 0A2 | 4E | 01001110 | 0E2 | AA | 10101010 | 122 | AE | 10101110 | 162 | 69 | 01101001 | 1A2 | A3 | 10100011 | 1E2 | E3 | 11100011 |
| 023 | 60 | 01100000 | 063 | 63 | 01100011 | 0A3 | B7 | 10110111 | 0E3 | A1 | 10100001 | 123 | AF | 10101111 | 163 | C6 | 11000110 | 1A3 | 06 | 00000110 | 1E3 | BC | 10111100 |
| 024 | 18 | 00011000 | 064 | 6D | 01101101 | 0A4 | B7 | 10110111 | 0E4 | E6 | 11100110 | 124 | 25 | 00100101 | 164 | 63 | 01100011 | 1A4 | A5 | 10100101 | 1E4 | 64 | 01100100 |
| 025 | 18 | 00010000 | 065 | 6C | 01101100 | 0A5 | AD | 10101101 | 0E5 | B7 | 10110111 | 125 | B0 | 10110000 | 165 | 6A | 01101010 | 1A5 | A6 | 10100110 | 1E5 | E6 | 11100110 |
| 026 | 18 | 00011000 | 066 | A4 | 10100100 | 0A6 | B7 | 10110111 | 0E6 | EE | 11101110 | 126 | 24 | 00100100 | 166 | 72 | 01110010 | 1A6 | 6D | 01101101 | 1E6 | C0 | 11000000 |
| 027 | 1F | 00011111 | 067 | A2 | 10100010 | 0A7 | A5 | 10100101 | 0E7 | EB | 11101011 | 127 | B0 | 10110000 | 167 | D6 | 11010110 | 1A7 | F7 | 11110111 | 1E7 | 08 | 00001000 |
| 028 | E8 | 11101000 | 068 | 06 | 00000110 | 0A8 | A8 | 10101000 | 0E8 | 2E | 00101110 | 128 | B1 | 10110001 | 168 | C8 | 11001000 | 1A8 | 11 | 00010001 | 1E8 | E9 | 11101001 |
| 029 | CB | 11001011 | 069 | 84 | 10000100 | 0A9 | 9F | 10011111 | 0E9 | 81 | 10000001 | 129 | 41 | 01000001 | 169 | E5 | 11100101 | 1A9 | 18 | 00011000 | 1E9 | 6F | 01101111 |
| 02A | 23 | 00100011 | 06A | 73 | 01110011 | 0AA | 8F | 10001111 | 0EA | 89 | 10001001 | 12A | 15 | 00010101 | 16A | 6A | 01101010 | 1AA | 15 | 00010101 | 1EA | E4 | 11100100 |
| 02B | 10 | 00010000 | 06B | 73 | 01110011 | 0AB | 4A | 01001010 | 0EB | F6 | 11110110 | 12B | B8 | 10111000 | 16B | 10 | 00010000 | 1AB | AC | 10101100 | 1EB | EC | 11101100 |
| 02C | F0 | 11110000 | 06C | 01 | 00000001 | 0AC | 06 | 00000110 | 0EC | 8A | 10001010 | 12C | 2B | 00101011 | 16C | 71 | 01110001 | 1AC | F7 | 11110111 | 1EC | D0 | 11010000 |
| 02D | 45 | 01000101 | 06D | 6F | 01101111 | 0AD | 3D | 00111101 | 0ED | DF | 11011111 | 12D | B9 | 10111001 | 16D | 10 | 00010000 | 1AD | 7F | 01111111 | 1ED | 55 | 01010101 |
| 02E | 2E | 00101110 | 06E | 9E | 10011110 | 0AE | 06 | 00000110 | 0EE | EC | 11101100 | 12E | 31 | 00110001 | 16E | 6E | 01101110 | 1AE | 21 | 00100001 | 1EE | EF | 11101111 |
| 02F | 82 | 10000010 | 06F | 60 | 01100000 | 0AF | 70 | 01110000 | 0EF | A1 | 10100001 | 12F | AB | 10101011 | 16F | 67 | 01100111 | 1AF | 15 | 00010101 | 1EF | 7B | 01111011 |
| 030 | 36 | 00110110 | 070 | C3 | 11000011 | 0B0 | 06 | 00000110 | 0F0 | 35 | 00110101 | 130 | AA | 10101010 | 170 | 70 | 01110000 | 1B0 | 28 | 00101000 | 1F0 | F1 | 11110001 |
| 031 | C3 | 11000011 | 071 | 9D | 10011101 | 0B1 | A8 | 10101000 | 0F1 | 55 | 01010101 | 131 | D1 | 11010001 | 171 | EA | 11101010 | 1B1 | B2 | 10110010 | 1F1 | 86 | 10000110 |
| 032 | 3A | 00111010 | 072 | D3 | 11010011 | 0B2 | B2 | 10110010 | 0F2 | A1 | 10100001 | 132 | 35 | 00110101 | 172 | EB | 11101011 | 1B2 | B3 | 10110011 | 1F2 | F3 | 11110011 |
| 033 | 3A | 00111010 | 073 | 41 | 01000001 | 0B3 | 07 | 00000111 | 0F3 | D7 | 11010111 | 133 | C0 | 11000000 | 173 | EA | 11101010 | 1B3 | B4 | 10110100 | 1F3 | 7F | 01111111 |
| 034 | 3D | 00111101 | 074 | BE | 10111110 | 0B4 | 91 | 10010001 | 0F4 | A1 | 10100001 | 134 | 32 | 00110010 | 174 | 6E | 01101110 | 1B4 | B5 | 10110101 | 1F4 | F5 | 11110101 |
| 035 | 35 | 00110101 | 075 | A9 | 10101001 | 0B5 | 0D | 00001101 | 0F5 | 9C | 10011100 | 135 | 35 | 00110101 | 175 | 7C | 01111100 | 1B5 | B6 | 10110110 | 1F5 | F6 | 11110110 |
| 036 | 8A | 10001010 | 076 | 74 | 01110100 | 0B6 | 06 | 00000110 | 0F6 | 9B | 10011011 | 136 | 5B | 01011011 | 176 | 10 | 00010000 | 1B6 | B7 | 10110111 | 1F6 | E6 | 11100110 |
| 037 | 8A | 10001010 | 077 | 75 | 01110101 | 0B7 | B7 | 10110111 | 0F7 | A1 | 10100001 | 137 | 3A | 00111010 | 177 | F4 | 11110100 | 1B7 | 2C | 00101100 | 1F7 | 06 | 00000110 |
| 038 | 58 | 01011000 | 078 | D3 | 11010011 | 0B8 | B2 | 10110010 | 0F8 | 9D | 10011101 | 138 | C1 | 11000001 | 178 | 10 | 00010000 | 1B8 | 2D | 00101101 | 1F8 | 98 | 10011000 |
| 039 | C6 | 11000110 | 079 | 09 | 00001001 | 0B9 | 14 | 00010100 | 0F9 | 54 | 01010100 | 139 | 39 | 00111001 | 179 | 58 | 01011000 | 1B9 | 8E | 10001110 | 1F9 | 00 | 00000000 |
| 03A | 64 | 01100100 | 07A | D3 | 11010011 | 0BA | BC | 10111100 | 0FA | A1 | 10100001 | 13A | 3A | 00111010 | 17A | 80 | 10000000 | 1BA | B8 | 10111011 | 1FA | 00 | 00000000 |
| 03B | 12 | 00010010 | 07B | 73 | 01110011 | 0BB | D8 | 11011000 | 0FB | CE | 11001110 | 13B | 06 | 00000110 | 17B | ED | 11101101 | 1BB | 61 | 01100001 | 1FB | 00 | 00000000 |
| 03C | FB | 11111011 | 07C | 1B | 00011011 | 0BC | 06 | 00000110 | 0FC | A1 | 10100001 | 13C | 3C | 00111100 | 17C | 78 | 01111011 | 1BC | 18 | 00011000 | 1FC | 00 | 00000000 |
| 03D | 3D | 00111101 | 07D | 7F | 01111111 | 0BD | B4 | 10110100 | 0FD | FF | 11111111 | 13D | 93 | 10010011 | 17D | 64 | 01100100 | 1BD | BF | 10111111 | 1FD | 00 | 00000000 |
| 03E | 8A | 10001010 | 07E | 1B | 00011011 | 0BE | BC | 10111100 | 0FE | A1 | 10100001 | 13E | 06 | 00000110 | 17E | 4F | 01001111 | 1BE | BF | 10111111 | 1FE | 00 | 00000000 |
| 03F | 8A | 10001010 | 07F | 26 | 00100110 | 0BF | BD | 10111101 | 0FF | 32 | 00110010 | 13F | D0 | 11010000 | 17F | E6 | 11100110 | 1BF | 30 | 00110000 | 1FF | 00 | 00000000 |

PART NUMBER: 23-032D2-00
DEVICE TYPE:512 X 8
SCHEMATIC SHEET #:D-CS-M8391-0-MCTM
LOCATION/DESCRIPTION: E99 / UCODE<00-07>

LEFT COLUMN OF BIN DATA IS MSB
BINARY DATA "1" = HIGH
BINARY DATA "0" = LOW



| REVISIONS | | |
|---|---|---|
| CHK | CHANGE NO. | REV |
| | | |

| | | | |
|---|---|---|---|
| DRN. D.M.Hofmann | DATE 27-OCT-81 | ENG. | DATE |
| CHK D. | DATE | BOARD LOCATION: | |
| | | SHEET 02 OF 16 | |
| DSK:GL.MC07.T2PK 1106,1500 27-OCT-81 18:23 | | NEXT HIGHER ASSEMBLY: | |
| FIRST USED ON OPTION/MODEL: 11/730 | | B-DD-M8391-0-0 | |

TITLE: MEM. CTLR. ROM AND PAL LISTINGS

| SIZE | CODE | NUMBER | REV. |
|---|---|---|---|
| D | GL | M8391-0-0 | A |

G.H. HAFNER [1106,1500]GL.MC07.PRT, SCALE 2. "D" RELEASE BOX
G.H. HAFNER GL.MC07.PLO[1106,1500] 27-OCT-81 18:25

| HEX LOC | HEX DAT | BIN DAT | HEX LOC | HEX DAT | BIN DAT | HEX LOC | HEX DAT | BIN DAT | HEX LOC | HEX DAT | BIN DAT | HEX LOC | HEX DAT | BIN DAT | HEX LOC | HEX DAT | BIN DAT | HEX LOC | HEX DAT | BIN DAT |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 000 | 00 | 00000000 | 040 | 01 | 00000001 | 080 | 60 | 01100000 | 0C0 | 01 | 00000001 | 100 | 00 | 00000000 | 140 | 60 | 01100000 | 180 | 01 | 00000001 | 1C0 | 02 | 00000010 |
| 001 | 00 | 00000000 | 041 | 01 | 00000001 | 081 | 00 | 00000000 | 0C1 | 00 | 00000000 | 101 | 00 | 00000000 | 141 | 50 | 01010000 | 181 | 81 | 10000001 | 1C1 | 02 | 00000010 |
| 002 | 00 | 00000000 | 042 | 01 | 00000001 | 082 | 01 | 00000001 | 0C2 | 00 | 00000000 | 102 | 60 | 01100000 | 142 | 00 | 00000000 | 182 | 60 | 01100000 | 1C2 | 5C | 01011100 |
| 003 | 00 | 00000000 | 043 | 81 | 10000001 | 083 | 07 | 00000111 | 0C3 | 71 | 01110001 | 103 | 00 | 00000000 | 143 | 00 | 00000000 | 183 | 81 | 10000001 | 1C3 | 00 | 00000000 |
| 004 | 00 | 00000000 | 044 | 00 | 00000000 | 084 | 01 | 00000001 | 0C4 | 00 | 00000000 | 104 | 01 | 00000001 | 144 | 00 | 00000000 | 184 | 00 | 00000000 | 1C4 | 01 | 00000001 |
| 005 | 00 | 00000000 | 045 | 01 | 00000001 | 085 | 81 | 10000001 | 0C5 | 51 | 01010001 | 105 | 00 | 00000000 | 145 | 50 | 01010000 | 185 | 00 | 00000000 | 1C5 | 38 | 00111000 |
| 006 | 00 | 00000000 | 046 | 01 | 00000001 | 086 | 00 | 00000000 | 0C6 | 71 | 01110001 | 106 | 38 | 00111000 | 146 | 01 | 00000001 | 186 | 00 | 00000000 | 1C6 | 01 | 00000001 |
| 007 | 01 | 00000001 | 047 | 01 | 00000001 | 087 | 00 | 00000000 | 0C7 | 01 | 00000001 | 107 | 01 | 00000001 | 147 | 00 | 00000000 | 187 | 00 | 00000000 | 1C7 | 00 | 00000000 |
| 008 | 00 | 00000000 | 048 | 07 | 00000111 | 088 | 01 | 00000001 | 0C8 | 01 | 00000001 | 108 | 00 | 00000000 | 148 | 0E | 00001110 | 188 | 10 | 00010000 | 1C8 | 02 | 00000010 |
| 009 | 60 | 01100000 | 049 | 01 | 00000001 | 089 | 00 | 00000000 | 0C9 | 01 | 00000001 | 109 | 01 | 00000001 | 149 | 00 | 00000000 | 189 | 10 | 00010000 | 1C9 | 02 | 00000010 |
| 00A | 01 | 00000001 | 04A | 01 | 00000001 | 08A | 01 | 00000001 | 0CA | 61 | 01100001 | 10A | 01 | 00000001 | 14A | 00 | 00000000 | 18A | 01 | 00000001 | 1CA | 5C | 01011100 |
| 00B | 01 | 00000001 | 04B | 01 | 00000001 | 08B | 01 | 00000001 | 0CB | 03 | 00000011 | 10B | 00 | 00000000 | 14B | 01 | 00000001 | 18B | 01 | 00000001 | 1CB | 00 | 00000000 |
| 00C | 01 | 00000001 | 04C | 01 | 00000001 | 08C | 01 | 00000001 | 0CC | 01 | 00000001 | 10C | 50 | 01010000 | 14C | 00 | 00000000 | 18C | 81 | 10000001 | 1CC | 02 | 00000010 |
| 00D | 01 | 00000001 | 04D | 01 | 00000001 | 08D | 01 | 00000001 | 0CD | 01 | 00000001 | 10D | 00 | 00000000 | 14D | 0E | 00001110 | 18D | 00 | 00000000 | 1CD | 02 | 00000010 |
| 00E | 01 | 00000001 | 04E | 01 | 00000001 | 08E | 01 | 00000001 | 0CE | 00 | 00000000 | 10E | 11 | 00010001 | 14E | 01 | 00000001 | 18E | 10 | 00010000 | 1CE | 01 | 00000001 |
| 00F | 01 | 00000001 | 04F | 21 | 00100001 | 08F | 81 | 10000001 | 0CF | 01 | 00000001 | 10F | 00 | 00000000 | 14F | 00 | 00000000 | 18F | 00 | 00000000 | 1CF | 01 | 00000001 |
| 010 | 01 | 00000001 | 050 | 71 | 01110001 | 090 | 07 | 00000111 | 0D0 | 01 | 00000001 | 110 | 00 | 00000000 | 150 | 20 | 00100000 | 190 | 00 | 00000000 | 1D0 | 06 | 00000110 |
| 011 | 01 | 00000001 | 051 | 31 | 00110001 | 091 | 11 | 00010001 | 0D1 | 01 | 00000001 | 111 | 10 | 00010000 | 151 | 00 | 00000000 | 191 | 00 | 00000000 | 1D1 | 50 | 01010000 |
| 012 | 01 | 00000001 | 052 | 60 | 01100000 | 092 | 00 | 00000000 | 0D2 | 01 | 00000001 | 112 | 01 | 00000001 | 152 | 21 | 00100001 | 192 | 60 | 01100000 | 1D2 | 00 | 00000000 |
| 013 | 60 | 01100000 | 053 | 01 | 00000001 | 093 | 21 | 00100001 | 0D3 | 81 | 10000001 | 113 | 01 | 00000001 | 153 | 00 | 00000000 | 193 | 81 | 10000001 | 1D3 | 00 | 00000000 |
| 014 | 01 | 00000001 | 054 | 01 | 00000001 | 094 | 00 | 00000000 | 0D4 | 01 | 00000001 | 114 | 40 | 01000000 | 154 | 07 | 00000111 | 194 | 00 | 00000000 | 1D4 | 00 | 00000000 |
| 015 | 01 | 00000001 | 055 | 01 | 00000001 | 095 | 11 | 00010001 | 0D5 | 71 | 01110001 | 115 | 81 | 10000001 | 155 | 01 | 00000001 | 195 | 00 | 00000000 | 1D5 | 00 | 00000000 |
| 016 | 01 | 00000001 | 056 | 81 | 10000001 | 096 | 01 | 00000001 | 0D6 | 00 | 00000000 | 116 | 11 | 00010001 | 156 | 01 | 00000001 | 196 | 14 | 00010100 | 1D6 | 01 | 00000001 |
| 017 | 01 | 00000001 | 057 | 01 | 00000001 | 097 | 20 | 00100000 | 0D7 | 01 | 00000001 | 117 | 00 | 00000000 | 157 | 60 | 01100000 | 197 | 00 | 00000000 | 1D7 | 00 | 00000000 |
| 018 | 01 | 00000001 | 058 | 01 | 00000001 | 098 | E0 | 11100000 | 0D8 | 01 | 00000001 | 118 | 00 | 00000000 | 158 | 10 | 00010000 | 198 | 01 | 00000001 | 1D8 | 80 | 10000000 |
| 019 | 60 | 01100000 | 059 | 00 | 00000000 | 099 | 81 | 10000001 | 0D9 | 11 | 00010001 | 119 | 80 | 10000000 | 159 | 00 | 00000000 | 199 | 01 | 00000001 | 1D9 | 80 | 10000000 |
| 01A | 01 | 00000001 | 05A | 01 | 00000001 | 09A | 01 | 00000001 | 0DA | 01 | 00000001 | 11A | 00 | 00000000 | 15A | 4E | 01001110 | 19A | 06 | 00000110 | 1DA | 60 | 01100000 |
| 01B | 01 | 00000001 | 05B | 01 | 00000001 | 09B | 07 | 00000111 | 0DB | 31 | 00110001 | 11B | 60 | 01100000 | 15B | 00 | 00000000 | 19B | 00 | 00000000 | 1DB | 80 | 10000000 |
| 01C | 50 | 01010000 | 05C | 07 | 00000111 | 09C | E0 | 11100000 | 0DC | 01 | 00000001 | 11C | 00 | 00000000 | 15C | 00 | 00000000 | 19C | 0C | 00001100 | 1DC | 00 | 00000000 |
| 01D | 01 | 00000001 | 05D | 01 | 00000001 | 09D | 81 | 10000001 | 0DD | 01 | 00000001 | 11D | 01 | 00000001 | 15D | 06 | 00000110 | 19D | 01 | 00000001 | 1DD | 80 | 10000000 |
| 01E | 01 | 00000001 | 05E | 00 | 00000000 | 09E | 81 | 10000001 | 0DE | 01 | 00000001 | 11E | 01 | 00000001 | 15E | 01 | 00000001 | 19E | 14 | 00010100 | 1DE | 01 | 00000001 |
| 01F | 01 | 00000001 | 05F | 01 | 00000001 | 09F | 00 | 00000000 | 0DF | 60 | 01100000 | 11F | 01 | 00000001 | 15F | 70 | 01110000 | 19F | 00 | 00000000 | 1DF | 00 | 00000000 |
| 020 | 07 | 00000111 | 060 | 00 | 00000000 | 0A0 | 01 | 00000001 | 0E0 | 01 | 00000001 | 120 | 00 | 00000000 | 160 | 10 | 00010000 | 1A0 | 00 | 00000000 | 1E0 | 00 | 00000000 |
| 021 | 01 | 00000001 | 061 | 00 | 00000000 | 0A1 | 01 | 00000001 | 0E1 | 66 | 01100110 | 121 | 10 | 00010000 | 161 | 06 | 00000110 | 1A1 | 00 | 00000000 | 1E1 | 00 | 00000000 |
| 022 | 01 | 00000001 | 062 | 01 | 00000001 | 0A2 | 01 | 00000001 | 0E2 | 61 | 01100001 | 122 | 00 | 00000000 | 162 | 01 | 00000001 | 1A2 | 00 | 00000000 | 1E2 | 00 | 00000000 |
| 023 | 01 | 00000001 | 063 | 00 | 00000000 | 0A3 | 00 | 00000000 | 0E3 | 01 | 00000001 | 123 | 01 | 00000001 | 163 | 80 | 10000000 | 1A3 | 00 | 00000000 | 1E3 | 00 | 00000000 |
| 024 | 01 | 00000001 | 064 | 40 | 01000000 | 0A4 | 01 | 00000001 | 0E4 | 01 | 00000001 | 124 | 01 | 00000001 | 164 | 00 | 00000000 | 1A4 | 00 | 00000000 | 1E4 | 80 | 10000000 |
| 025 | 01 | 00000001 | 065 | 50 | 01010000 | 0A5 | 01 | 00000001 | 0E5 | 01 | 00000001 | 125 | 81 | 10000001 | 165 | 00 | 00000000 | 1A5 | 00 | 00000000 | 1E5 | 80 | 10000000 |
| 026 | 01 | 00000001 | 066 | 0E | 00001110 | 0A6 | 01 | 00000001 | 0E6 | 01 | 00000001 | 126 | 03 | 00000011 | 166 | 01 | 00000001 | 1A6 | 00 | 00000000 | 1E6 | 01 | 00000001 |
| 027 | 01 | 00000001 | 067 | 61 | 01100001 | 0A7 | 81 | 10000001 | 0E7 | 01 | 00000001 | 127 | 00 | 00000000 | 167 | 70 | 01110000 | 1A7 | 70 | 01110000 | 1E7 | 00 | 00000000 |
| 028 | 01 | 00000001 | 068 | 01 | 00000001 | 0A8 | 11 | 00010001 | 0E8 | 00 | 00000000 | 128 | 01 | 00000001 | 168 | 01 | 00000001 | 1A8 | 00 | 00000000 | 1E8 | 14 | 00010100 |
| 029 | 01 | 00000001 | 069 | 00 | 00000000 | 0A9 | 00 | 00000000 | 0E9 | 01 | 00000001 | 129 | 21 | 00100001 | 169 | 01 | 00000001 | 1A9 | 01 | 00000001 | 1E9 | 86 | 10000110 |
| 02A | 01 | 00000001 | 06A | 01 | 00000001 | 0AA | 21 | 00100001 | 0EA | 71 | 01110001 | 12A | 00 | 00000000 | 16A | 5C | 01011100 | 1AA | 01 | 00000001 | 1EA | 00 | 00000000 |
| 02B | 07 | 00000111 | 06B | 01 | 00000001 | 0AB | 01 | 00000001 | 0EB | 61 | 01100001 | 12B | 60 | 01100000 | 16B | 00 | 00000000 | 1AB | 01 | 00000001 | 1EB | 66 | 01100110 |
| 02C | 01 | 00000001 | 06C | 00 | 00000000 | 0AC | 01 | 00000001 | 0EC | 00 | 00000000 | 12C | 00 | 00000000 | 16C | 00 | 00000000 | 1AC | 0C | 00001100 | 1EC | 00 | 00000000 |
| 02D | 00 | 00000000 | 06D | 00 | 00000000 | 0AD | 01 | 00000001 | 0ED | 11 | 00010001 | 12D | 81 | 10000001 | 16D | 10 | 00010000 | 1AD | 00 | 00000000 | 1ED | 80 | 10000000 |
| 02E | 01 | 00000001 | 06E | 00 | 00000000 | 0AE | 01 | 00000001 | 0EE | 71 | 01110001 | 12E | 11 | 00010001 | 16E | 00 | 00000000 | 1AE | 14 | 00010100 | 1EE | 01 | 00000001 |
| 02F | 00 | 00000000 | 06F | 01 | 00000001 | 0AF | 01 | 00000001 | 0EF | 01 | 00000001 | 12F | 60 | 01100000 | 16F | 00 | 00000000 | 1AF | 00 | 00000000 | 1EF | 60 | 01100000 |
| 030 | 00 | 00000000 | 070 | 00 | 00000000 | 0B0 | 21 | 00100001 | 0F0 | 00 | 00000000 | 130 | 00 | 00000000 | 170 | 01 | 00000001 | 1B0 | 00 | 00000000 | 1F0 | 10 | 00010000 |
| 031 | 01 | 00000001 | 071 | 01 | 00000001 | 0B1 | 81 | 10000001 | 0F1 | 06 | 00000110 | 131 | 01 | 00000001 | 171 | 01 | 00000001 | 1B1 | 80 | 10000000 | 1F1 | 10 | 00010000 |
| 032 | 01 | 00000001 | 072 | 00 | 00000000 | 0B2 | 00 | 00000000 | 0F2 | 00 | 00000000 | 132 | 70 | 01110000 | 172 | 5C | 01011100 | 1B2 | 00 | 00000000 | 1F2 | 20 | 00100000 |
| 033 | 01 | 00000001 | 073 | 00 | 00000000 | 0B3 | 00 | 00000000 | 0F3 | 60 | 01100000 | 133 | 01 | 00000001 | 173 | 00 | 00000000 | 1B3 | 00 | 00000000 | 1F3 | 00 | 00000000 |
| 034 | 01 | 00000001 | 074 | 00 | 00000000 | 0B4 | 01 | 00000001 | 0F4 | 00 | 00000000 | 134 | 01 | 00000001 | 174 | 01 | 00000001 | 1B4 | 00 | 00000000 | 1F4 | 39 | 00111001 |
| 035 | 01 | 00000001 | 075 | 01 | 00000001 | 0B5 | 81 | 10000001 | 0F5 | 06 | 00000110 | 135 | 01 | 00000001 | 175 | 00 | 00000000 | 1B5 | 01 | 00000001 | 1F5 | 00 | 00000000 |
| 036 | 01 | 00000001 | 076 | 81 | 10000001 | 0B6 | 01 | 00000001 | 0F6 | 00 | 00000000 | 136 | 00 | 00000000 | 176 | 01 | 00000001 | 1B6 | 14 | 00010100 | 1F6 | 01 | 00000001 |
| 037 | 00 | 00000000 | 077 | 81 | 10000001 | 0B7 | 01 | 00000001 | 0F7 | 60 | 01100000 | 137 | 01 | 00000001 | 177 | 07 | 00000111 | 1B7 | 06 | 00000110 | 1F7 | 00 | 00000000 |
| 038 | 01 | 00000001 | 078 | 80 | 10000000 | 0B8 | 0F | 00001111 | 0F8 | 00 | 00000000 | 138 | 00 | 00000000 | 178 | 10 | 00010000 | 1B8 | 00 | 00000000 | 1F8 | 1A | 00011010 |
| 039 | 01 | 00000001 | 079 | 61 | 01100001 | 0B9 | 00 | 00000000 | 0F9 | 01 | 00000001 | 139 | 20 | 00100000 | 179 | 10 | 00010000 | 1B9 | 06 | 00000110 | 1F9 | 7E | 01111110 |
| 03A | 00 | 00000000 | 07A | 61 | 01100001 | 0BA | 80 | 10000000 | 0FA | 00 | 00000000 | 13A | 70 | 01110000 | 17A | 01 | 00000001 | 1BA | 00 | 00000000 | 1FA | 00 | 00000000 |
| 03B | 01 | 00000001 | 07B | 00 | 00000000 | 0BB | 00 | 00000000 | 0FB | 01 | 00000001 | 13B | 60 | 01100000 | 17B | 01 | 00000001 | 1BB | 70 | 01110000 | 1FB | 00 | 00000000 |
| 03C | 01 | 00000001 | 07C | 11 | 00010001 | 0BC | 01 | 00000001 | 0FC | 38 | 00111000 | 13C | 00 | 00000000 | 17C | 00 | 00000000 | 1BC | 00 | 00000000 | 1FC | 00 | 00000000 |
| 03D | 71 | 01110001 | 07D | 01 | 00000001 | 0BD | 81 | 10000001 | 0FD | 00 | 00000000 | 13D | 81 | 10000001 | 17D | 80 | 10000000 | 1BD | 00 | 00000000 | 1FD | 00 | 00000000 |
| 03E | 5C | 01011100 | 07E | 01 | 00000001 | 0BE | 01 | 00000001 | 0FE | 01 | 00000001 | 13E | 01 | 00000001 | 17E | 00 | 00000000 | 1BE | 14 | 00010100 | 1FE | 10 | 00010000 |
| 03F | 01 | 00000001 | 07F | 01 | 00000001 | 0BF | 01 | 00000001 | 0FF | 00 | 00000000 | 13F | 60 | 01100000 | 17F | 00 | 00000000 | 1BF | 70 | 01110000 | 1FF | 00 | 00000000 |

PART NUMBER: 23-033D2-00
DEVICE TYPE:512 X 8
SCHEMATIC SHEET #:D-CS-M8391-0-MCTM
LOCATION/DESCRIPTION: E112 / UCODE<08:15>

LEFT COLUMN OF BIN DATA IS MSB
BINARY DATA "1" = HIGH
BINARY DATA "0" = LOW



| REVISIONS | | |
|---|---|---|
| CHK | CHANGE NO. | REV |
| | | |

digital

DRN. T.M.Hofmeyer DATE 27-OCT-81 | ENG. DATE | TITLE: MEM. CTLR. ROM AND PAL LISTINGS
CHK'D. DATE | BOARD LOCATION:
SHEET 08 OF 16
DSK:GL,MC08,T2P[106,1500]27-OCT-81 10:24 | NEXT HIGHER ASSEMBLY: B-DD-M8391-0-0
FIRST USED ON OPTION/MODEL: 11/730

| SIZE | CODE | NUMBER | REV. |
|---|---|---|---|
| D | GL | M8391-0-0 | A |

G.M. HOFMEYER [106,1500]GLMC08.PLO<111>,1500] 27-OCT-81 10:29
G.M. HOFMEYER GLMC08.PAL[106,1500] SCALE 2. "D" RELEASE BOM

| HEX LOC | HEX DAT | BIN DAT | HEX LOC | HEX DAT | BIN DAT | HEX LOC | HEX DAT | BIN DAT | HEX LOC | HEX DAT | BIN DAT | HEX LOC | HEX DAT | BIN DAT | HEX LOC | HEX DAT | BIN DAT | HEX LOC | HEX DAT | BIN DAT | HEX LOC | HEX DAT | BIN DAT |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 000 | 00 | 00000000 | 040 | 9D | 10011101 | 080 | 94 | 10010100 | 0C0 | 94 | 10010100 | 100 | 94 | 10010100 | 140 | 94 | 10010100 | 180 | 94 | 10010100 | 1C0 | 9C | 10011100 |
| 001 | 00 | 00000000 | 041 | 9C | 10011100 | 081 | 94 | 10010100 | 0C1 | A4 | 10100100 | 101 | 84 | 10000100 | 141 | 94 | 10010100 | 181 | 95 | 10010101 | 1C1 | 9C | 10011100 |
| 002 | 00 | 00000000 | 042 | 9C | 10011100 | 082 | 85 | 10000101 | 0C2 | 94 | 10010100 | 102 | 94 | 10010100 | 142 | 96 | 10010110 | 182 | 94 | 10010100 | 1C2 | 9C | 10011100 |
| 003 | 00 | 00000000 | 043 | 9E | 10011110 | 083 | 94 | 10010100 | 0C3 | 54 | 01010100 | 103 | 94 | 10010100 | 143 | BC | 10111100 | 183 | 95 | 10010101 | 1C3 | 9C | 10011100 |
| 004 | 00 | 00000000 | 044 | DC | 11011100 | 084 | 94 | 10010100 | 0C4 | A4 | 10100100 | 104 | 94 | 10010100 | 144 | 94 | 10010100 | 184 | 94 | 10010100 | 1C4 | 94 | 10010100 |
| 005 | 00 | 00000000 | 045 | DC | 11011100 | 085 | 95 | 10010101 | 0C5 | 9C | 10011100 | 105 | 94 | 10010100 | 145 | 97 | 10010111 | 185 | 94 | 10010100 | 1C5 | 94 | 10010100 |
| 006 | 00 | 00000000 | 046 | 94 | 10010100 | 086 | 94 | 10010100 | 0C6 | 14 | 00010100 | 106 | D4 | 11010100 | 146 | 94 | 10010100 | 186 | D4 | 11010100 | 1C6 | DC | 11011100 |
| 007 | C4 | 11000100 | 047 | 94 | 10010100 | 087 | 94 | 10010100 | 0C7 | 9C | 10011100 | 107 | 94 | 10010100 | 147 | A7 | 10100111 | 187 | 94 | 10010100 | 1C7 | 94 | 10010100 |
| 008 | A4 | 10100100 | 048 | 94 | 10010100 | 088 | 94 | 10010100 | 0C8 | 9C | 10011100 | 108 | 94 | 10010100 | 148 | 94 | 10010100 | 188 | 9C | 10011100 | 1C8 | 9C | 10011100 |
| 009 | 95 | 10010101 | 049 | 94 | 10010100 | 089 | 94 | 10010100 | 0C9 | 94 | 10010100 | 109 | 94 | 10010100 | 149 | BC | 10111100 | 189 | 9C | 10011100 | 1C9 | 9C | 10011100 |
| 00A | 94 | 10010100 | 04A | 94 | 10010100 | 08A | 85 | 10000101 | 0CA | 9C | 10011100 | 10A | 94 | 10010100 | 14A | 94 | 10010100 | 18A | 9C | 10011100 | 1CA | 9C | 10011100 |
| 00B | 94 | 10010100 | 04B | 94 | 10010100 | 08B | 94 | 10010100 | 0CB | 9C | 10011100 | 10B | 94 | 10010100 | 14B | 84 | 10000100 | 18B | 9C | 10011100 | 1CB | 9C | 10011100 |
| 00C | 84 | 10000100 | 04C | 94 | 10010100 | 08C | 94 | 10010100 | 0CC | 9C | 10011100 | 10C | 94 | 10010100 | 14C | E4 | 11100100 | 18C | 9F | 10011111 | 1CC | 94 | 10010100 |
| 00D | 94 | 10010100 | 04D | 94 | 10010100 | 08D | 94 | 10010100 | 0CD | 9C | 10011100 | 10D | 94 | 10010100 | 14D | E7 | 11100111 | 18D | 94 | 10010100 | 1CD | 94 | 10010100 |
| 00E | 95 | 10010101 | 04E | 94 | 10010100 | 08E | 94 | 10010100 | 0CE | DC | 11011100 | 10E | DC | 11011100 | 14E | 94 | 10010100 | 18E | 9C | 10011100 | 1CE | DC | 11011100 |
| 00F | 94 | 10010100 | 04F | 94 | 10010100 | 08F | 94 | 10010100 | 0CF | 94 | 10010100 | 10F | 9C | 10011100 | 14F | A4 | 10100100 | 18F | 94 | 10010100 | 1CF | 84 | 10000100 |
| 010 | 94 | 10010100 | 050 | 94 | 10010100 | 090 | 94 | 10010100 | 0D0 | 94 | 10010100 | 110 | 94 | 10010100 | 150 | 94 | 10010100 | 190 | 94 | 10010100 | 1D0 | 94 | 10010100 |
| 011 | 94 | 10010100 | 051 | 94 | 10010100 | 091 | 94 | 10010100 | 0D1 | DC | 11011100 | 111 | 94 | 10010100 | 151 | BC | 10111100 | 191 | 94 | 10010100 | 1D1 | 94 | 10010100 |
| 012 | 94 | 10010100 | 052 | 94 | 10010100 | 092 | 94 | 10010100 | 0D2 | 94 | 10010100 | 112 | 94 | 10010100 | 152 | 94 | 10010100 | 192 | 94 | 10010100 | 1D2 | 94 | 10010100 |
| 013 | 94 | 10010100 | 053 | 94 | 10010100 | 093 | 94 | 10010100 | 0D3 | 95 | 10010101 | 113 | 96 | 10010110 | 153 | BC | 10111100 | 193 | 95 | 10010101 | 1D3 | 9C | 10011100 |
| 014 | 94 | 10010100 | 054 | 94 | 10010100 | 094 | 94 | 10010100 | 0D4 | 94 | 10010100 | 114 | 84 | 10000100 | 154 | 94 | 10010100 | 194 | 9C | 10011100 | 1D4 | 94 | 10010100 |
| 015 | D4 | 11010100 | 055 | 94 | 10010100 | 095 | 94 | 10010100 | 0D5 | A4 | 10100100 | 115 | 94 | 10010100 | 155 | 94 | 10010100 | 195 | 9C | 10011100 | 1D5 | 94 | 10010100 |
| 016 | 85 | 10000101 | 056 | 9E | 10011110 | 096 | 94 | 10010100 | 0D6 | DC | 11011100 | 116 | 94 | 10010100 | 156 | D4 | 11010100 | 196 | 9C | 10011100 | 1D6 | 9C | 10011100 |
| 017 | 94 | 10010100 | 057 | 94 | 10010100 | 097 | 96 | 10010110 | 0D7 | 84 | 10000100 | 117 | 95 | 10010101 | 157 | 94 | 10010100 | 197 | BC | 10111100 | 1D7 | 94 | 10010100 |
| 018 | 94 | 10010100 | 058 | 94 | 10010100 | 098 | 94 | 10010100 | 0D8 | 94 | 10010100 | 118 | 86 | 10000110 | 158 | D4 | 11010100 | 198 | 94 | 10010100 | 1D8 | 94 | 10010100 |
| 019 | 94 | 10010100 | 059 | 94 | 10010100 | 099 | 95 | 10010101 | 0D9 | 94 | 10010100 | 119 | 94 | 10010100 | 159 | 94 | 10010100 | 199 | 94 | 10010100 | 1D9 | 95 | 10010101 |
| 01A | 94 | 10010100 | 05A | 94 | 10010100 | 09A | 94 | 10010100 | 0DA | 94 | 10010100 | 11A | 94 | 10010100 | 15A | D4 | 11010100 | 19A | 94 | 10010100 | 1DA | 94 | 10010100 |
| 01B | 85 | 10000101 | 05B | 94 | 10010100 | 09B | 94 | 10010100 | 0DB | 94 | 10010100 | 11B | 94 | 10010100 | 15B | 94 | 10010100 | 19B | 94 | 10010100 | 1DB | 95 | 10010101 |
| 01C | 97 | 10010111 | 05C | 94 | 10010100 | 09C | 94 | 10010100 | 0DC | 94 | 10010100 | 11C | 94 | 10010100 | 15C | 94 | 10010100 | 19C | DC | 11011100 | 1DC | 94 | 10010100 |
| 01D | 94 | 10010100 | 05D | 94 | 10010100 | 09D | 95 | 10010101 | 0DD | 94 | 10010100 | 11D | 94 | 10010100 | 15D | 94 | 10010100 | 19D | 9C | 10011100 | 1DD | 95 | 10010101 |
| 01E | 94 | 10010100 | 05E | 94 | 10010100 | 09E | 94 | 10010100 | 0DE | 94 | 10010100 | 11E | DF | 11011111 | 15E | 54 | 01010100 | 19E | 9C | 10011100 | 1DE | DC | 11011100 |
| 01F | 94 | 10010100 | 05F | 94 | 10010100 | 09F | 94 | 10010100 | 0DF | 94 | 10010100 | 11F | 94 | 10010100 | 15F | 94 | 10010100 | 19F | 94 | 10010100 | 1DF | 94 | 10010100 |
| 020 | 94 | 10010100 | 060 | 94 | 10010100 | 0A0 | 94 | 10010100 | 0E0 | 94 | 10010100 | 120 | 94 | 10010100 | 160 | 94 | 10010100 | 1A0 | 94 | 10010100 | 1E0 | BC | 10111100 |
| 021 | 94 | 10010100 | 061 | 87 | 10000111 | 0A1 | 94 | 10010100 | 0E1 | 9C | 10011100 | 121 | 94 | 10010100 | 161 | 94 | 10010100 | 1A1 | 84 | 10000100 | 1E1 | 94 | 10010100 |
| 022 | 96 | 10010110 | 062 | 94 | 10010100 | 0A2 | 94 | 10010100 | 0E2 | 94 | 10010100 | 122 | 84 | 10000100 | 162 | 94 | 10010100 | 1A2 | 84 | 10000100 | 1E2 | 85 | 10000101 |
| 023 | 94 | 10010100 | 063 | 87 | 10000111 | 0A3 | 94 | 10010100 | 0E3 | 9D | 10011101 | 123 | 94 | 10010100 | 163 | 9F | 10011111 | 1A3 | 84 | 10000100 | 1E3 | 94 | 10010100 |
| 024 | 94 | 10010100 | 064 | 84 | 10000100 | 0A4 | 94 | 10010100 | 0E4 | 94 | 10010100 | 124 | 94 | 10010100 | 164 | 94 | 10010100 | 1A4 | 9C | 10011100 | 1E4 | 94 | 10010100 |
| 025 | 94 | 10010100 | 065 | 84 | 10000100 | 0A5 | 94 | 10010100 | 0E5 | 94 | 10010100 | 125 | 94 | 10010100 | 165 | BC | 10111100 | 1A5 | 9C | 10011100 | 1E5 | 95 | 10010101 |
| 026 | 84 | 10000100 | 066 | 94 | 10010100 | 0A6 | 94 | 10010100 | 0E6 | 94 | 10010100 | 126 | 94 | 10010100 | 166 | 9C | 10011100 | 1A6 | 84 | 10000100 | 1E6 | DC | 11011100 |
| 027 | 94 | 10010100 | 067 | 94 | 10010100 | 0A7 | 95 | 10010101 | 0E7 | 9D | 10011101 | 127 | 94 | 10010100 | 167 | 9C | 10011100 | 1A7 | 95 | 10010101 | 1E7 | 94 | 10010100 |
| 028 | 94 | 10010100 | 068 | 94 | 10010100 | 0A8 | 9C | 10011100 | 0E8 | A4 | 10100100 | 128 | 84 | 10000100 | 168 | 9C | 10011100 | 1A8 | 96 | 10010110 | 1E8 | 9C | 10011100 |
| 029 | 94 | 10010100 | 069 | 94 | 10010100 | 0A9 | 94 | 10010100 | 0E9 | 94 | 10010100 | 129 | 94 | 10010100 | 169 | 9C | 10011100 | 1A9 | 14 | 00010100 | 1E9 | 94 | 10010100 |
| 02A | 94 | 10010100 | 06A | 94 | 10010100 | 0AA | 94 | 10010100 | 0EA | 94 | 10010100 | 12A | 84 | 10000100 | 16A | 9C | 10011100 | 1AA | 94 | 10010100 | 1EA | 94 | 10010100 |
| 02B | 94 | 10010100 | 06B | 14 | 00010100 | 0AB | 94 | 10010100 | 0EB | 94 | 10010100 | 12B | 94 | 10010100 | 16B | 9C | 10011100 | 1AB | 94 | 10010100 | 1EB | 94 | 10010100 |
| 02C | 94 | 10010100 | 06C | A4 | 10100100 | 0AC | 94 | 10010100 | 0EC | A4 | 10100100 | 12C | 94 | 10010100 | 16C | 84 | 10000100 | 1AC | DC | 11011100 | 1EC | 9C | 10011100 |
| 02D | 94 | 10010100 | 06D | 9C | 10011100 | 0AD | 94 | 10010100 | 0ED | 94 | 10010100 | 12D | 94 | 10010100 | 16D | 94 | 10010100 | 1AD | DC | 11011100 | 1ED | 94 | 10010100 |
| 02E | 94 | 10010100 | 06E | 94 | 10010100 | 0AE | 94 | 10010100 | 0EE | 94 | 10010100 | 12E | 9C | 10011100 | 16E | DC | 11011100 | 1AE | 9C | 10011100 | 1EE | 9C | 10011100 |
| 02F | 94 | 10010100 | 06F | 94 | 10010100 | 0AF | 94 | 10010100 | 0EF | 94 | 10010100 | 12F | 94 | 10010100 | 16F | 94 | 10010100 | 1AF | 94 | 10010100 | 1EF | 94 | 10010100 |
| 030 | 94 | 10010100 | 070 | 94 | 10010100 | 0B0 | 94 | 10010100 | 0F0 | 94 | 10010100 | 130 | BC | 10111100 | 170 | 9C | 10011100 | 1B0 | A4 | 10100100 | 1F0 | 9C | 10011100 |
| 031 | 94 | 10010100 | 071 | 94 | 10010100 | 0B1 | 95 | 10010101 | 0F1 | 94 | 10010100 | 131 | 94 | 10010100 | 171 | 9C | 10011100 | 1B1 | 95 | 10010101 | 1F1 | 9C | 10011100 |
| 032 | 1C | 00011100 | 072 | 94 | 10010100 | 0B2 | 94 | 10010100 | 0F2 | 94 | 10010100 | 132 | 94 | 10010100 | 172 | 9C | 10011100 | 1B2 | 94 | 10010100 | 1F2 | 94 | 10010100 |
| 033 | 9C | 10011100 | 073 | 94 | 10010100 | 0B3 | 94 | 10010100 | 0F3 | 95 | 10010101 | 133 | 94 | 10010100 | 173 | 9C | 10011100 | 1B3 | 94 | 10010100 | 1F3 | 9C | 10011100 |
| 034 | 9C | 10011100 | 074 | 94 | 10010100 | 0B4 | 94 | 10010100 | 0F4 | 94 | 10010100 | 134 | D4 | 11010100 | 174 | 9C | 10011100 | 1B4 | 94 | 10010100 | 1F4 | 95 | 10010101 |
| 035 | 1C | 00011100 | 075 | 94 | 10010100 | 0B5 | 95 | 10010101 | 0F5 | 94 | 10010100 | 135 | 94 | 10010100 | 175 | 9C | 10011100 | 1B5 | 94 | 10010100 | 1F5 | 9C | 10011100 |
| 036 | 9C | 10011100 | 076 | 94 | 10010100 | 0B6 | 94 | 10010100 | 0F6 | 94 | 10010100 | 136 | DF | 11011111 | 176 | D4 | 11010100 | 1B6 | DC | 11011100 | 1F6 | 94 | 10010100 |
| 037 | 9C | 10011100 | 077 | 94 | 10010100 | 0B7 | 94 | 10010100 | 0F7 | 95 | 10010101 | 137 | 94 | 10010100 | 177 | 94 | 10010100 | 1B7 | 94 | 10010100 | 1F7 | 94 | 10010100 |
| 038 | 5C | 01011100 | 078 | 94 | 10010100 | 0B8 | 94 | 10010100 | 0F8 | 94 | 10010100 | 138 | A4 | 10100100 | 178 | 9C | 10011100 | 1B8 | 94 | 10010100 | 1F8 | D4 | 11010100 |
| 039 | 5C | 01011100 | 079 | 94 | 10010100 | 0B9 | A7 | 10100111 | 0F9 | 94 | 10010100 | 139 | 96 | 10010110 | 179 | 9C | 10011100 | 1B9 | 94 | 10010100 | 1F9 | BC | 10111100 |
| 03A | 9C | 10011100 | 07A | 94 | 10010100 | 0BA | 97 | 10010111 | 0FA | 94 | 10010100 | 13A | 9C | 10011100 | 17A | 9C | 10011100 | 1BA | 94 | 10010100 | 1FA | B8 | 10111000 |
| 03B | 5C | 01011100 | 07B | 94 | 10010100 | 0BB | DC | 11011100 | 0FB | DC | 11011100 | 13B | 94 | 10010100 | 17B | 9C | 10011100 | 1BB | 94 | 10010100 | 1FB | B8 | 10111000 |
| 03C | 5C | 01011100 | 07C | 94 | 10010100 | 0BC | 94 | 10010100 | 0FC | 84 | 10000100 | 13C | 94 | 10010100 | 17C | 94 | 10010100 | 1BC | 94 | 10010100 | 1FC | 94 | 10010100 |
| 03D | 94 | 10010100 | 07D | 94 | 10010100 | 0BD | 95 | 10010101 | 0FD | 94 | 10010100 | 13D | 94 | 10010100 | 17D | 95 | 10010101 | 1BD | A4 | 10100100 | 1FD | 94 | 10010100 |
| 03E | 9C | 10011100 | 07E | 94 | 10010100 | 0BE | 94 | 10010100 | 0FE | 94 | 10010100 | 13E | DC | 11011100 | 17E | D4 | 11010100 | 1BE | 9C | 10011100 | 1FE | 9C | 10011100 |
| 03F | 9C | 10011100 | 07F | 94 | 10010100 | 0BF | 9C | 10011100 | 0FF | BC | 10111100 | 13F | 94 | 10010100 | 17F | 94 | 10010100 | 1BF | 94 | 10010100 | 1FF | 94 | 10010100 |

PART NUMBER: 23-034D2-00
DEVICE TYPE:512 X 8
SCHEMATIC SHEET #:D-CS-M8391-0-MCTM
LOCATION/DESCRIPTION: E85 / UCODE<16:23>

LEFT COLUMN OF BIN DATA IS MSB
BINARY DATA "1" = HIGH
BINARY DATA "0" = LOW



| REVISIONS | | |
|---|---|---|
| CHK | CHANGE NO. | REV |

DRN: D.M.Hafner 27-OCT-81 | CHK'D. | ENG. | DATE | BOARD LOCATION: | SHEET 85 OF 16

TITLE: MEM. CTLR. ROM AND PAL LISTINGS

DSK:GLMC89.T2[1186,1500]27-OCT-81 18:24
FIRST USED ON OPTION/MODEL: 11/730
NEXT HIGHER ASSEMBLY: B-DD-M8391-0-0

| SIZE | CODE | NUMBER | REV. |
|---|---|---|---|
| D | GL | M8391-0-0 | A |

| HEX LOC | HEX DAT | BIN DAT | HEX LOC | HEX DAT | BIN DAT | HEX LOC | HEX DAT | BIN DAT | HEX LOC | HEX DAT | BIN DAT | HEX LOC | HEX DAT | BIN DAT | HEX LOC | HEX DAT | BIN DAT | HEX LOC | HEX DAT | BIN DAT |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 000 | 00 | 00000000 | 040 | 01 | 00000001 | 080 | 08 | 00001000 | 0C0 | 02 | 00000010 | 100 | 02 | 00000010 | 140 | 81 | 10000001 | 180 | 00 | 00000000 | 1C0 | 02 | 00000010 |
| 001 | 00 | 00000000 | 041 | 01 | 00000001 | 081 | B1 | 10110001 | 0C1 | 01 | 00000001 | 101 | 01 | 00000001 | 141 | 01 | 00000001 | 181 | 31 | 00110001 | 1C1 | 02 | 00000010 |
| 002 | 00 | 00000000 | 042 | 01 | 00000001 | 082 | 02 | 00000010 | 0C2 | 02 | 00000010 | 102 | 02 | 00000010 | 142 | 81 | 10000001 | 182 | 00 | 00000000 | 1C2 | 01 | 00000001 |
| 003 | 00 | 00000000 | 043 | 02 | 00000010 | 083 | 81 | 10000001 | 0C3 | 01 | 00000001 | 103 | 01 | 00000001 | 143 | 01 | 00000001 | 183 | 31 | 00110001 | 1C3 | 01 | 00000001 |
| 004 | 00 | 00000000 | 044 | 01 | 00000001 | 084 | 81 | 10000001 | 0C4 | 01 | 00000001 | 104 | 41 | 01000001 | 144 | B1 | 10110001 | 184 | 01 | 00000001 | 1C4 | 02 | 00000010 |
| 005 | 00 | 00000000 | 045 | 01 | 00000001 | 085 | 85 | 10000101 | 0C5 | 81 | 10000001 | 105 | 01 | 00000001 | 145 | 01 | 00000001 | 185 | 01 | 00000001 | 1C5 | 02 | 00000010 |
| 006 | 00 | 00000000 | 046 | 98 | 10011000 | 086 | 02 | 00000010 | 0C6 | 01 | 00000001 | 106 | 41 | 01000001 | 146 | 01 | 00000001 | 186 | 01 | 00000001 | 1C6 | 01 | 00000001 |
| 007 | D9 | 11011001 | 047 | B1 | 10110001 | 087 | 01 | 00000001 | 0C7 | 81 | 10000001 | 107 | 01 | 00000001 | 147 | 01 | 00000001 | 187 | 01 | 00000001 | 1C7 | 02 | 00000010 |
| 008 | 41 | 01000001 | 048 | 01 | 00000001 | 088 | 01 | 00000001 | 0C8 | 80 | 10000000 | 108 | 01 | 00000001 | 148 | 01 | 00000001 | 188 | 01 | 00000001 | 1C8 | 02 | 00000010 |
| 009 | 08 | 00001000 | 049 | 02 | 00000010 | 089 | 85 | 10000101 | 0C9 | 01 | 00000001 | 109 | 01 | 00000001 | 149 | 01 | 00000001 | 189 | 01 | 00000001 | 1C9 | 02 | 00000010 |
| 00A | 01 | 00000001 | 04A | 02 | 00000010 | 08A | 82 | 10000010 | 0CA | 00 | 00000000 | 10A | 01 | 00000001 | 14A | 81 | 10000001 | 18A | 41 | 01000001 | 1CA | 01 | 00000001 |
| 00B | 01 | 00000001 | 04B | 01 | 00000001 | 08B | 81 | 10000001 | 0CB | 41 | 01000001 | 10B | 01 | 00000001 | 14B | 81 | 10000001 | 18B | 01 | 00000001 | 1CB | 01 | 00000001 |
| 00C | 99 | 10011001 | 04C | 01 | 00000001 | 08C | 01 | 00000001 | 0CC | 01 | 00000001 | 10C | 01 | 00000001 | 14C | 01 | 00000001 | 18C | 01 | 00000001 | 1CC | 02 | 00000010 |
| 00D | 99 | 10011001 | 04D | 01 | 00000001 | 08D | B1 | 10110001 | 0CD | 01 | 00000001 | 10D | 01 | 00000001 | 14D | 01 | 00000001 | 18D | 01 | 00000001 | 1CD | 02 | 00000010 |
| 00E | 08 | 00001000 | 04E | 00 | 00000000 | 08E | 81 | 10000001 | 0CE | 01 | 00000001 | 10E | 41 | 01000001 | 14E | 01 | 00000001 | 18E | 01 | 00000001 | 1CE | 01 | 00000001 |
| 00F | 01 | 00000001 | 04F | 99 | 10011001 | 08F | 81 | 10000001 | 0CF | 01 | 00000001 | 10F | 01 | 00000001 | 14F | 81 | 10000001 | 18F | 01 | 00000001 | 1CF | 01 | 00000001 |
| 010 | B1 | 10110001 | 050 | 19 | 00011001 | 090 | 81 | 10000001 | 0D0 | 85 | 10000101 | 110 | 01 | 00000001 | 150 | 00 | 00000000 | 190 | 81 | 10000001 | 1D0 | 81 | 10000001 |
| 011 | B1 | 10110001 | 051 | 19 | 00011001 | 091 | 81 | 10000001 | 0D1 | 01 | 00000001 | 111 | 99 | 10011001 | 151 | 01 | 00000001 | 191 | 03 | 00000011 | 1D1 | 01 | 00000001 |
| 012 | 81 | 10000001 | 052 | 31 | 00110001 | 092 | 85 | 10000101 | 0D2 | 98 | 10011000 | 112 | 42 | 01000010 | 152 | 01 | 00000001 | 192 | 01 | 00000001 | 1D2 | 03 | 00000011 |
| 013 | B1 | 10110001 | 053 | 85 | 10000101 | 093 | C1 | 11000001 | 0D3 | 31 | 00110001 | 113 | 99 | 10011001 | 153 | 01 | 00000001 | 193 | 11 | 00010001 | 1D3 | 01 | 00000001 |
| 014 | B1 | 10110001 | 054 | 85 | 10000101 | 094 | 01 | 00000001 | 0D4 | B1 | 10110001 | 114 | 41 | 01000001 | 154 | 81 | 10000001 | 194 | 01 | 00000001 | 1D4 | 01 | 00000001 |
| 015 | 42 | 01000010 | 055 | 01 | 00000001 | 095 | 81 | 10000001 | 0D5 | 01 | 00000001 | 115 | 99 | 10011001 | 155 | 02 | 00000010 | 195 | 01 | 00000001 | 1D5 | 01 | 00000001 |
| 016 | 02 | 00000010 | 056 | 02 | 00000010 | 096 | B1 | 10110001 | 0D6 | 01 | 00000001 | 116 | 41 | 01000001 | 156 | 01 | 00000001 | 196 | 01 | 00000001 | 1D6 | 01 | 00000001 |
| 017 | 02 | 00000010 | 057 | 01 | 00000001 | 097 | C1 | 11000001 | 0D7 | 01 | 00000001 | 117 | 01 | 00000001 | 157 | 01 | 00000001 | 197 | 01 | 00000001 | 1D7 | 01 | 00000001 |
| 018 | 02 | 00000010 | 058 | 01 | 00000001 | 098 | 81 | 10000001 | 0D8 | 98 | 10011000 | 118 | 01 | 00000001 | 158 | 01 | 00000001 | 198 | 41 | 01000001 | 1D8 | 81 | 10000001 |
| 019 | B1 | 10110001 | 059 | 19 | 00011001 | 099 | 85 | 10000101 | 0D9 | 01 | 00000001 | 119 | 08 | 00001000 | 159 | 01 | 00000001 | 199 | 49 | 01001001 | 1D9 | 05 | 00000101 |
| 01A | B1 | 10110001 | 05A | 19 | 00011001 | 09A | 81 | 10000001 | 0DA | 98 | 10011000 | 11A | 41 | 01000001 | 15A | 00 | 00000000 | 19A | 41 | 01000001 | 1DA | 81 | 10000001 |
| 01B | 02 | 00000010 | 05B | 09 | 00001001 | 09B | 81 | 10000001 | 0DB | 98 | 10011000 | 11B | 08 | 00001000 | 15B | 01 | 00000001 | 19B | 01 | 00000001 | 1DB | 05 | 00000101 |
| 01C | 01 | 00000001 | 05C | 05 | 00000101 | 09C | 81 | 10000001 | 0DC | 19 | 00011001 | 11C | 01 | 00000001 | 15C | 01 | 00000001 | 19C | 41 | 01000001 | 1DC | 81 | 10000001 |
| 01D | 99 | 10011001 | 05D | 11 | 00010001 | 09D | 85 | 10000101 | 0DD | 18 | 00011000 | 11D | 01 | 00000001 | 15D | 81 | 10000001 | 19D | 01 | 00000001 | 1DD | 85 | 10000101 |
| 01E | 98 | 10011000 | 05E | 31 | 00110001 | 09E | 81 | 10000001 | 0DE | 19 | 00011001 | 11E | 01 | 00000001 | 15E | 01 | 00000001 | 19E | 01 | 00000001 | 1DE | 01 | 00000001 |
| 01F | B1 | 10110001 | 05F | 31 | 00110001 | 09F | 01 | 00000001 | 0DF | 00 | 00000000 | 11F | 01 | 00000001 | 15F | 81 | 10000001 | 19F | 81 | 10000001 | 1DF | B1 | 10110001 |
| 020 | 01 | 00000001 | 060 | 01 | 00000001 | 0A0 | 02 | 00000010 | 0E0 | 85 | 10000101 | 120 | 01 | 00000001 | 160 | 01 | 00000001 | 1A0 | 01 | 00000001 | 1E0 | 01 | 00000001 |
| 021 | 02 | 00000010 | 061 | 01 | 00000001 | 0A1 | 85 | 10000101 | 0E1 | 01 | 00000001 | 121 | 99 | 10011001 | 161 | 01 | 00000001 | 1A1 | 01 | 00000001 | 1E1 | B1 | 10110001 |
| 022 | 01 | 00000001 | 062 | 01 | 00000001 | 0A2 | 02 | 00000010 | 0E2 | 02 | 00000010 | 122 | 01 | 00000001 | 162 | 01 | 00000001 | 1A2 | 01 | 00000001 | 1E2 | 02 | 00000010 |
| 023 | 01 | 00000001 | 063 | 01 | 00000001 | 0A3 | 01 | 00000001 | 0E3 | 02 | 00000010 | 123 | 99 | 10011001 | 163 | 01 | 00000001 | 1A3 | 01 | 00000001 | 1E3 | 85 | 10000101 |
| 024 | 01 | 00000001 | 064 | 01 | 00000001 | 0A4 | 01 | 00000001 | 0E4 | 31 | 00110001 | 124 | 42 | 01000010 | 164 | 02 | 00000010 | 1A4 | 01 | 00000001 | 1E4 | 81 | 10000001 |
| 025 | 00 | 00000000 | 065 | 01 | 00000001 | 0A5 | B1 | 10110001 | 0E5 | 01 | 00000001 | 125 | 99 | 10011001 | 165 | 01 | 00000001 | 1A5 | 01 | 00000001 | 1E5 | 05 | 00000101 |
| 026 | 01 | 00000001 | 066 | 01 | 00000001 | 0A6 | 98 | 10011000 | 0E6 | 01 | 00000001 | 126 | 01 | 00000001 | 166 | 01 | 00000001 | 1A6 | 01 | 00000001 | 1E6 | 01 | 00000001 |
| 027 | 99 | 10011001 | 067 | 08 | 00001000 | 0A7 | 31 | 00110001 | 0E7 | 02 | 00000010 | 127 | B1 | 10110001 | 167 | 01 | 00000001 | 1A7 | 02 | 00000010 | 1E7 | B1 | 10110001 |
| 028 | 85 | 10000101 | 068 | 01 | 00000001 | 0A8 | 01 | 00000001 | 0E8 | 01 | 00000001 | 128 | 01 | 00000001 | 168 | 81 | 10000001 | 1A8 | 41 | 01000001 | 1E8 | 01 | 00000001 |
| 029 | 85 | 10000101 | 069 | 01 | 00000001 | 0A9 | 02 | 00000010 | 0E9 | 01 | 00000001 | 129 | C1 | 11000001 | 169 | 81 | 10000001 | 1A9 | 01 | 00000001 | 1E9 | 81 | 10000001 |
| 02A | B1 | 10110001 | 06A | 01 | 00000001 | 0AA | 01 | 00000001 | 0EA | 01 | 00000001 | 12A | 01 | 00000001 | 16A | 81 | 10000001 | 1AA | 01 | 00000001 | 1EA | 02 | 00000010 |
| 02B | 01 | 00000001 | 06B | 01 | 00000001 | 0AB | 85 | 10000101 | 0EB | 01 | 00000001 | 12B | 81 | 10000001 | 16B | 81 | 10000001 | 1AB | 01 | 00000001 | 1EB | 81 | 10000001 |
| 02C | B1 | 10110001 | 06C | 01 | 00000001 | 0AC | 99 | 10011001 | 0EC | 01 | 00000001 | 12C | 01 | 00000001 | 16C | 02 | 00000010 | 1AC | 41 | 01000001 | 1EC | 01 | 00000001 |
| 02D | 01 | 00000001 | 06D | 01 | 00000001 | 0AD | 02 | 00000010 | 0ED | 01 | 00000001 | 12D | 81 | 10000001 | 16D | 01 | 00000001 | 1AD | 41 | 01000001 | 1ED | 81 | 10000001 |
| 02E | B1 | 10110001 | 06E | C1 | 11000001 | 0AE | 99 | 10011001 | 0EE | 01 | 00000001 | 12E | 41 | 01000001 | 16E | 01 | 00000001 | 1AE | 41 | 01000001 | 1EE | 01 | 00000001 |
| 02F | 02 | 00000010 | 06F | 01 | 00000001 | 0AF | B1 | 10110001 | 0EF | 01 | 00000001 | 12F | 81 | 10000001 | 16F | 01 | 00000001 | 1AF | 02 | 00000010 | 1EF | 81 | 10000001 |
| 030 | 01 | 00000001 | 070 | 01 | 00000001 | 0B0 | 98 | 10011000 | 0F0 | 03 | 00000011 | 130 | 01 | 00000001 | 170 | 81 | 10000001 | 1B0 | 01 | 00000001 | 1F0 | 01 | 00000001 |
| 031 | 01 | 00000001 | 071 | 99 | 10011001 | 0B1 | 31 | 00110001 | 0F1 | 01 | 00000001 | 131 | 01 | 00000001 | 171 | 81 | 10000001 | 1B1 | 05 | 00000101 | 1F1 | 01 | 00000001 |
| 032 | 01 | 00000001 | 072 | 99 | 10011001 | 0B2 | 01 | 00000001 | 0F2 | 03 | 00000011 | 132 | 01 | 00000001 | 172 | 81 | 10000001 | 1B2 | 81 | 10000001 | 1F2 | 01 | 00000001 |
| 033 | 01 | 00000001 | 073 | 99 | 10011001 | 0B3 | 01 | 00000001 | 0F3 | 81 | 10000001 | 133 | 81 | 10000001 | 173 | 81 | 10000001 | 1B3 | 01 | 00000001 | 1F3 | 01 | 00000001 |
| 034 | 01 | 00000001 | 074 | 01 | 00000001 | 0B4 | 81 | 10000001 | 0F4 | 03 | 00000011 | 134 | 42 | 01000010 | 174 | 02 | 00000010 | 1B4 | B1 | 10110001 | 1F4 | 02 | 00000010 |
| 035 | 01 | 00000001 | 075 | 99 | 10011001 | 0B5 | 31 | 00110001 | 0F5 | 01 | 00000001 | 135 | 01 | 00000001 | 175 | 81 | 10000001 | 1B5 | B1 | 10110001 | 1F5 | 01 | 00000001 |
| 036 | 01 | 00000001 | 076 | 99 | 10011001 | 0B6 | B1 | 10110001 | 0F6 | 03 | 00000011 | 136 | 41 | 01000001 | 176 | 41 | 01000001 | 1B6 | 41 | 01000001 | 1F6 | 41 | 01000001 |
| 037 | 81 | 10000001 | 077 | 99 | 10011001 | 0B7 | B1 | 10110001 | 0F7 | 81 | 10000001 | 137 | 81 | 10000001 | 177 | 81 | 10000001 | 1B7 | 81 | 10000001 | 1F7 | 02 | 00000010 |
| 038 | 02 | 00000010 | 078 | 08 | 00001000 | 0B8 | 81 | 10000001 | 0F8 | 85 | 10000101 | 138 | 01 | 00000001 | 178 | 01 | 00000001 | 1B8 | 85 | 10000101 | 1F8 | 01 | 00000001 |
| 039 | 01 | 00000001 | 079 | 08 | 00001000 | 0B9 | 01 | 00000001 | 0F9 | 05 | 00000101 | 139 | C1 | 11000001 | 179 | 01 | 00000001 | 1B9 | 05 | 00000101 | 1F9 | 01 | 00000001 |
| 03A | 81 | 10000001 | 07A | 08 | 00001000 | 0BA | 01 | 00000001 | 0FA | 11 | 00010001 | 13A | 01 | 00000001 | 17A | 41 | 01000001 | 1BA | 03 | 00000011 | 1FA | 01 | 00000001 |
| 03B | 02 | 00000010 | 07B | 85 | 10000101 | 0BB | 41 | 01000001 | 0FB | 01 | 00000001 | 13B | 81 | 10000001 | 17B | 01 | 00000001 | 1BB | 81 | 10000001 | 1FB | 01 | 00000001 |
| 03C | 01 | 00000001 | 07C | 01 | 00000001 | 0BC | 81 | 10000001 | 0FC | 01 | 00000001 | 13C | 01 | 00000001 | 17C | 81 | 10000001 | 1BC | B1 | 10110001 | 1FC | 02 | 00000010 |
| 03D | 01 | 00000001 | 07D | 01 | 00000001 | 0BD | B1 | 10110001 | 0FD | 01 | 00000001 | 13D | 81 | 10000001 | 17D | 85 | 10000101 | 1BD | 01 | 00000001 | 1FD | 02 | 00000010 |
| 03E | 81 | 10000001 | 07E | 01 | 00000001 | 0BE | 01 | 00000001 | 0FE | 31 | 00110001 | 13E | 01 | 00000001 | 17E | 01 | 00000001 | 1BE | 41 | 01000001 | 1FE | 01 | 00000001 |
| 03F | 01 | 00000001 | 07F | B1 | 10110001 | 0BF | 01 | 00000001 | 0FF | 41 | 01000001 | 13F | 81 | 10000001 | 17F | 01 | 00000001 | 1BF | 01 | 00000001 | 1FF | 02 | 00000010 |

PART NUMBER: 23-035D2-00
DEVICE TYPE:512 X 8
SCHEMATIC SHEET #:D-CS-M8391-0-MCTM
LOCATION/DESCRIPTION: E62 / UCODE<24:31>

LEFT COLUMN OF BIN DATA IS MSB
BINARY DATA "1" = HIGH
BINARY DATA "0" = LOW



| REVISIONS | | |
|---|---|---|
| CHK | CHANGE NO. | REV |
| | | |

digital

DRN: D.M.Hafner | DATE: 27-OCT-81 | ENG. | DATE
CHK: D. | DATE | BOARD LOCATION: | SHEET 10 OF 16

TITLE: MEM. CTLR. ROM AND PAL LISTINGS

OSK:GL,MC10.T2P[1106,1500]27-OCT-81 10:24 | NEXT HIGHER ASSEMBLY: | SIZE D | CODE GL | NUMBER M8391-0-0 | REV. A
FIRST USED ON OPTION/MODEL: 11/730 | B-DD-M8391-0-0

G.M. HAFNER [1106,1500]GL,MC10.DPL; SCALE 2. "D" RELEASE ROM
G.M. HAFNER GL,MC10.PLO[1106,1500] 27-OCT-81 10:36

| HEX LOC | HEX DAT | BIN DAT | HEX LOC | HEX DAT | BIN DAT | HEX LOC | HEX DAT | BIN DAT | HEX LOC | HEX DAT | BIN DAT | HEX LOC | HEX DAT | BIN DAT | HEX LOC | HEX DAT | BIN DAT | HEX LOC | HEX DAT | BIN DAT |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 000 | 00 | 00000000 | 040 | F0 | 11110000 | 080 | 90 | 10010000 | 0C0 | 99 | 10011001 | 100 | B0 | 10110000 | 140 | B2 | 10110010 | 180 | 90 | 10010000 | 1C0 | D0 | 11010000 |
| 001 | 00 | 00000000 | 041 | F0 | 11110000 | 081 | C0 | 11000000 | 0C1 | 90 | 10010000 | 101 | F0 | 11110000 | 141 | B0 | 10110000 | 181 | D0 | 11010000 | 1C1 | D0 | 11010000 |
| 002 | 00 | 00000000 | 042 | F0 | 11110000 | 082 | 59 | 01011001 | 0C2 | 99 | 10011001 | 102 | F0 | 11110000 | 142 | B0 | 10110000 | 182 | B0 | 10110000 | 1C2 | F0 | 11110000 |
| 003 | 00 | 00000000 | 043 | D9 | 11011001 | 083 | D0 | 11010000 | 0C3 | B0 | 10110000 | 103 | F0 | 11110000 | 143 | B0 | 10110000 | 183 | D0 | 11010000 | 1C3 | F2 | 11110010 |
| 004 | 00 | 00000000 | 044 | D0 | 11010000 | 084 | D0 | 11010000 | 0C4 | 90 | 10010000 | 104 | F0 | 11110000 | 144 | D0 | 11010000 | 184 | F0 | 11110000 | 1C4 | D0 | 11010000 |
| 005 | 00 | 00000000 | 045 | D0 | 11010000 | 085 | D0 | 11010000 | 0C5 | F2 | 11110010 | 105 | F0 | 11110000 | 145 | B0 | 10110000 | 185 | 99 | 10011001 | 1C5 | F0 | 11110000 |
| 006 | 00 | 00000000 | 046 | 95 | 10010101 | 086 | D9 | 11011001 | 0C6 | B0 | 10110000 | 106 | F0 | 11110000 | 146 | F0 | 11110000 | 186 | F0 | 11110000 | 1C6 | D0 | 11010000 |
| 007 | D5 | 11010101 | 047 | 90 | 10010000 | 087 | D0 | 11010000 | 0C7 | F0 | 11110000 | 107 | F0 | 11110000 | 147 | 90 | 10010000 | 187 | 99 | 10011001 | 1C7 | D9 | 11011001 |
| 008 | 95 | 10010101 | 048 | 90 | 10010000 | 088 | D0 | 11010000 | 0C8 | F0 | 11110000 | 108 | F0 | 11110000 | 148 | 90 | 10010000 | 188 | D1 | 11010001 | 1C8 | D0 | 11010000 |
| 009 | D0 | 11010000 | 049 | 99 | 10011001 | 089 | D0 | 11010000 | 0C9 | D0 | 11010000 | 109 | F0 | 11110000 | 149 | B0 | 10110000 | 189 | D1 | 11010001 | 1C9 | D0 | 11010000 |
| 00A | D0 | 11010000 | 04A | 99 | 10011001 | 08A | D9 | 11011001 | 0CA | F0 | 11110000 | 10A | F0 | 11110000 | 14A | D1 | 11010001 | 18A | D9 | 11011001 | 1CA | F0 | 11110000 |
| 00B | D0 | 11010000 | 04B | 99 | 10011001 | 08B | D0 | 11010000 | 0CB | F2 | 11110010 | 10B | F0 | 11110000 | 14B | B0 | 10110000 | 18B | D1 | 11010001 | 1CB | F0 | 11110000 |
| 00C | D5 | 11010101 | 04C | 91 | 10010001 | 08C | D1 | 11010001 | 0CC | F0 | 11110000 | 10C | F0 | 11110000 | 14C | 90 | 10010000 | 18C | F0 | 11110000 | 1CC | B0 | 10110000 |
| 00D | D5 | 11010101 | 04D | 90 | 10010000 | 08D | D0 | 11010000 | 0CD | F0 | 11110000 | 10D | F0 | 11110000 | 14D | 90 | 10010000 | 18D | 99 | 10011001 | 1CD | B0 | 10110000 |
| 00E | D0 | 11010000 | 04E | 90 | 10010000 | 08E | D1 | 11010001 | 0CE | D0 | 11010000 | 10E | D3 | 11010011 | 14E | D0 | 11010000 | 18E | D3 | 11010011 | 1CE | D0 | 11010000 |
| 00F | D0 | 11010000 | 04F | 95 | 10010101 | 08F | B0 | 10110000 | 0CF | F0 | 11110000 | 10F | F2 | 11110010 | 14F | B0 | 10110000 | 18F | 99 | 10011001 | 1CF | D9 | 11011001 |
| 010 | D0 | 11010000 | 050 | 95 | 10010101 | 090 | 10 | 00010000 | 0D0 | 94 | 10010100 | 110 | F0 | 11110000 | 150 | 91 | 10010001 | 190 | B0 | 10110000 | 1D0 | D0 | 11010000 |
| 011 | D0 | 11010000 | 051 | 95 | 10010101 | 091 | D0 | 11010000 | 0D1 | D0 | 11010000 | 111 | D4 | 11010100 | 151 | B0 | 10110000 | 191 | D0 | 11010000 | 1D1 | F0 | 11110000 |
| 012 | D1 | 11010001 | 052 | D0 | 11010000 | 092 | D0 | 11010000 | 0D2 | 94 | 10010100 | 112 | 99 | 10011001 | 152 | 99 | 10011001 | 192 | F0 | 11110000 | 1D2 | D0 | 11010000 |
| 013 | D0 | 11010000 | 053 | 95 | 10010101 | 093 | D1 | 11010001 | 0D3 | 90 | 10010000 | 113 | D5 | 11010101 | 153 | B0 | 10110000 | 193 | F0 | 11110000 | 1D3 | F2 | 11110010 |
| 014 | D0 | 11010000 | 054 | 95 | 10010101 | 094 | D0 | 11010000 | 0D4 | 90 | 10010000 | 114 | F0 | 11110000 | 154 | 90 | 10010000 | 194 | F0 | 11110000 | 1D4 | D0 | 11010000 |
| 015 | D9 | 11011001 | 055 | D0 | 11010000 | 095 | D0 | 11010000 | 0D5 | 95 | 10010101 | 115 | 90 | 10010000 | 155 | B0 | 10110000 | 195 | F0 | 11110000 | 1D5 | F0 | 11110000 |
| 016 | 59 | 01011001 | 056 | D9 | 11011001 | 096 | D0 | 11010000 | 0D6 | D0 | 11010000 | 116 | D2 | 11010010 | 156 | F0 | 11110000 | 196 | D3 | 11010011 | 1D6 | D2 | 11010010 |
| 017 | D9 | 11011001 | 057 | F0 | 11110000 | 097 | D1 | 11010001 | 0D7 | 95 | 10010101 | 117 | F0 | 11110000 | 157 | B0 | 10110000 | 197 | B0 | 10110000 | 1D7 | F0 | 11110000 |
| 018 | 59 | 01011001 | 058 | D5 | 11010101 | 098 | 90 | 10010000 | 0D8 | 95 | 10010101 | 118 | F0 | 11110000 | 158 | 91 | 10010001 | 198 | F0 | 11110000 | 1D8 | B0 | 10110000 |
| 019 | D0 | 11010000 | 059 | F0 | 11110000 | 099 | D0 | 11010000 | 0D9 | 90 | 10010000 | 119 | 90 | 10010000 | 159 | 90 | 10010000 | 199 | F0 | 11110000 | 1D9 | D0 | 11010000 |
| 01A | D0 | 11010000 | 05A | F0 | 11110000 | 09A | D0 | 11010000 | 0DA | 95 | 10010101 | 11A | 90 | 10010000 | 15A | 93 | 10010011 | 19A | F0 | 11110000 | 1DA | 90 | 10010000 |
| 01B | 59 | 01011001 | 05B | F0 | 11110000 | 09B | 10 | 00010000 | 0DB | 94 | 10010100 | 11B | B0 | 10110000 | 15B | 90 | 10010000 | 19B | F0 | 11110000 | 1DB | D0 | 11010000 |
| 01C | 95 | 10010101 | 05C | F0 | 11110000 | 09C | 90 | 10010000 | 0DC | 95 | 10010101 | 11C | F0 | 11110000 | 15C | 90 | 10010000 | 19C | F0 | 11110000 | 1DC | D0 | 11010000 |
| 01D | 95 | 10010101 | 05D | F0 | 11110000 | 09D | D0 | 11010000 | 0DD | 94 | 10010100 | 11D | D0 | 11010000 | 15D | 40 | 01000000 | 19D | F0 | 11110000 | 1DD | D0 | 11010000 |
| 01E | 95 | 10010101 | 05E | F0 | 11110000 | 09E | B0 | 10110000 | 0DE | 95 | 10010101 | 11E | F0 | 11110000 | 15E | F0 | 11110000 | 19E | D3 | 11010011 | 1DE | D0 | 11010000 |
| 01F | 90 | 10010000 | 05F | F0 | 11110000 | 09F | D0 | 11010000 | 0DF | B0 | 10110000 | 11F | D0 | 11010000 | 15F | 70 | 01110000 | 19F | B0 | 10110000 | 1DF | D0 | 11010000 |
| 020 | 90 | 10010000 | 060 | F2 | 11110010 | 0A0 | D9 | 11011001 | 0E0 | 94 | 10010100 | 120 | F0 | 11110000 | 160 | D1 | 11010001 | 1A0 | F0 | 11110000 | 1E0 | B0 | 10110000 |
| 021 | 99 | 10011001 | 061 | F0 | 11110000 | 0A1 | 94 | 10010100 | 0E1 | 10 | 00010000 | 121 | D4 | 11010100 | 161 | D0 | 11010000 | 1A1 | F0 | 11110000 | 1E1 | D0 | 11010000 |
| 022 | 99 | 10011001 | 062 | F0 | 11110000 | 0A2 | D9 | 11011001 | 0E2 | 90 | 10010000 | 122 | F0 | 11110000 | 162 | D9 | 11011001 | 1A2 | F0 | 11110000 | 1E2 | D9 | 11011001 |
| 023 | 91 | 10010001 | 063 | F0 | 11110000 | 0A3 | D1 | 11010001 | 0E3 | 59 | 01011001 | 123 | D5 | 11010101 | 163 | F0 | 11110000 | 1A3 | F0 | 11110000 | 1E3 | D0 | 11010000 |
| 024 | 90 | 10010000 | 064 | F0 | 11110000 | 0A4 | D0 | 11010000 | 0E4 | D0 | 11010000 | 124 | 99 | 10011001 | 164 | 19 | 00011001 | 1A4 | F0 | 11110000 | 1E4 | B0 | 10110000 |
| 025 | 90 | 10010000 | 065 | F0 | 11110000 | 0A5 | 90 | 10010000 | 0E5 | D0 | 11010000 | 125 | 90 | 10010000 | 165 | B0 | 10110000 | 1A5 | F0 | 11110000 | 1E5 | D0 | 11010000 |
| 026 | 95 | 10010101 | 066 | F0 | 11110000 | 0A6 | 94 | 10010100 | 0E6 | D0 | 11010000 | 126 | F0 | 11110000 | 166 | F0 | 11110000 | 1A6 | F0 | 11110000 | 1E6 | D2 | 11010010 |
| 027 | 95 | 10010101 | 067 | 90 | 10010000 | 0A7 | 90 | 10010000 | 0E7 | 59 | 01011001 | 127 | D0 | 11010000 | 167 | B0 | 10110000 | 1A7 | 5B | 01011011 | 1E7 | D0 | 11010000 |
| 028 | 95 | 10010101 | 068 | F0 | 11110000 | 0A8 | D1 | 11010001 | 0E8 | 90 | 10010000 | 128 | F0 | 11110000 | 168 | B0 | 10110000 | 1A8 | F0 | 11110000 | 1E8 | D3 | 11010011 |
| 029 | 95 | 10010101 | 069 | F0 | 11110000 | 0A9 | 99 | 10011001 | 0E9 | F0 | 11110000 | 129 | D1 | 11010001 | 169 | B0 | 10110000 | 1A9 | F0 | 11110000 | 1E9 | 10 | 00010000 |
| 02A | 90 | 10010000 | 06A | F0 | 11110000 | 0AA | D1 | 11010001 | 0EA | B0 | 10110000 | 12A | F0 | 11110000 | 16A | F0 | 11110000 | 1AA | F0 | 11110000 | 1EA | D9 | 11011001 |
| 02B | 90 | 10010000 | 06B | F0 | 11110000 | 0AB | 94 | 10010100 | 0EB | F0 | 11110000 | 12B | B0 | 10110000 | 16B | F2 | 11110010 | 1AB | F0 | 11110000 | 1EB | 10 | 00010000 |
| 02C | 90 | 10010000 | 06C | F0 | 11110000 | 0AC | 95 | 10010101 | 0EC | 90 | 10010000 | 12C | 90 | 10010000 | 16C | 99 | 10011001 | 1AC | F0 | 11110000 | 1EC | D0 | 11010000 |
| 02D | 91 | 10010001 | 06D | F0 | 11110000 | 0AD | 99 | 10011001 | 0ED | D4 | 11010100 | 12D | B0 | 10110000 | 16D | D1 | 11010001 | 1AD | F0 | 11110000 | 1ED | B0 | 10110000 |
| 02E | 90 | 10010000 | 06E | B0 | 10110000 | 0AE | 95 | 10010101 | 0EE | B0 | 10110000 | 12E | D3 | 11010011 | 16E | F0 | 11110000 | 1AE | D3 | 11010011 | 1EE | D2 | 11010010 |
| 02F | 19 | 00011001 | 06F | D0 | 11010000 | 0AF | 90 | 10010000 | 0EF | D5 | 11010101 | 12F | B0 | 10110000 | 16F | D9 | 11011001 | 1AF | D9 | 11011001 | 1EF | B0 | 10110000 |
| 030 | F0 | 11110000 | 070 | B0 | 10110000 | 0B0 | 94 | 10010100 | 0F0 | D1 | 11010001 | 130 | B0 | 10110000 | 170 | B0 | 10110000 | 1B0 | D0 | 11010000 | 1F0 | D1 | 11010001 |
| 031 | F0 | 11110000 | 071 | 95 | 10010101 | 0B1 | 90 | 10010000 | 0F1 | D9 | 11011001 | 131 | D1 | 11010001 | 171 | B0 | 10110000 | 1B1 | D0 | 11010000 | 1F1 | D1 | 11010001 |
| 032 | F0 | 11110000 | 072 | 90 | 10010000 | 0B2 | 90 | 10010000 | 0F2 | D9 | 11011001 | 132 | B0 | 10110000 | 172 | F0 | 11110000 | 1B2 | D0 | 11010000 | 1F2 | D9 | 11011001 |
| 033 | D0 | 11010000 | 073 | D0 | 11010000 | 0B3 | 90 | 10010000 | 0F3 | 19 | 00011001 | 133 | D1 | 11010001 | 173 | F0 | 11110000 | 1B3 | D0 | 11010000 | 1F3 | D1 | 11010001 |
| 034 | D0 | 11010000 | 074 | F2 | 11110010 | 0B4 | 90 | 10010000 | 0F4 | D9 | 11011001 | 134 | 99 | 10011001 | 174 | D0 | 11010000 | 1B4 | D0 | 11010000 | 1F4 | 59 | 01011001 |
| 035 | D0 | 11010000 | 075 | D5 | 11010101 | 0B5 | 90 | 10010000 | 0F5 | D9 | 11011001 | 135 | D1 | 11010001 | 175 | F0 | 11110000 | 1B5 | D0 | 11010000 | 1F5 | D0 | 11010000 |
| 036 | D0 | 11010000 | 076 | B0 | 10110000 | 0B6 | 90 | 10010000 | 0F6 | D9 | 11011001 | 136 | D0 | 11010000 | 176 | F0 | 11110000 | 1B6 | D3 | 11010011 | 1F6 | F0 | 11110000 |
| 037 | F2 | 11110010 | 077 | B0 | 10110000 | 0B7 | 90 | 10010000 | 0F7 | D9 | 11011001 | 137 | D1 | 11010001 | 177 | 10 | 00010000 | 1B7 | D0 | 11010000 | 1F7 | D9 | 11011001 |
| 038 | F0 | 11110000 | 078 | 90 | 10010000 | 0B8 | 90 | 10010000 | 0F8 | F0 | 11110000 | 138 | 90 | 10010000 | 178 | D1 | 11010001 | 1B8 | F0 | 11110000 | 1F8 | 90 | 10010000 |
| 039 | F2 | 11110010 | 079 | 90 | 10010000 | 0B9 | 90 | 10010000 | 0F9 | F0 | 11110000 | 139 | D1 | 11010001 | 179 | D1 | 11010001 | 1B9 | 49 | 01001001 | 1F9 | B0 | 10110000 |
| 03A | D2 | 11010010 | 07A | B0 | 10110000 | 0BA | F0 | 11110000 | 0FA | F0 | 11110000 | 13A | B0 | 10110000 | 17A | D9 | 11011001 | 1BA | D0 | 11010000 | 1FA | 90 | 10010000 |
| 03B | D0 | 11010000 | 07B | D0 | 11010000 | 0BB | F0 | 11110000 | 0FB | D0 | 11010000 | 13B | B0 | 10110000 | 17B | D1 | 11010001 | 1BB | 59 | 01011001 | 1FB | 90 | 10010000 |
| 03C | D2 | 11010010 | 07C | D0 | 11010000 | 0BC | 90 | 10010000 | 0FC | F0 | 11110000 | 13C | 90 | 10010000 | 17C | D0 | 11010000 | 1BC | D0 | 11010000 | 1FC | 59 | 01011001 |
| 03D | 90 | 10010000 | 07D | D0 | 11010000 | 0BD | 10 | 00010000 | 0FD | F0 | 11110000 | 13D | B0 | 10110000 | 17D | D0 | 11010000 | 1BD | 90 | 10010000 | 1FD | D9 | 11011001 |
| 03E | F0 | 11110000 | 07E | D0 | 11010000 | 0BE | F0 | 11110000 | 0FE | F0 | 11110000 | 13E | D2 | 11010010 | 17E | D0 | 11010000 | 1BE | D3 | 11010011 | 1FE | D3 | 11010011 |
| 03F | F2 | 11110010 | 07F | D0 | 11010000 | 0BF | F0 | 11110000 | 0FF | B0 | 10110000 | 13F | B0 | 10110000 | 17F | 90 | 10010000 | 1BF | F0 | 11110000 | 1FF | D9 | 11011001 |

PART NUMBER: 23-036D2-00
DEVICE TYPE:512 X 8
SCHEMATIC SHEET #:D-CS-M8391-0-MCTM
LOCATION/DESCRIPTION: E98 / UCODE<32:39>

LEFT COLUMN OF BIN DATA IS MSB
BINARY DATA "1" = HIGH
BINARY DATA "0" = LOW



| REVISIONS | | |
|---|---|---|
| CHK | CHANGE NO. | REV |
| | | |

digital

DRN. W.M.Hafner 27-OCT-81 | ENG. | DATE
CHK'D. | DATE | BOARD LOCATION: SHEET 11 OF 16

OSK:GLMC11.T2M[1186,1500]22-OCT-81 18:25 | NEXT HIGHER ASSEMBLY: B-DD-M8391-0-0 | FIRST USED ON OPTION/MODEL: 11/730

TITLE: MEM. CTLR. ROM AND PAL LISTINGS

| SIZE | CODE | NUMBER | REV. |
|---|---|---|---|
| D | GL | M8391-0-0 | A |

G.M. HAFNER, [1186,1500]GLMC11.DPL, SCALE 2, "D" RELEASE BOM
G.M. HAFNER GLMC11.PLOT[1186,1500] 22-OCT-81 18:30

| HEX LOC | HEX DAT | BIN DAT | HEX LOC | HEX DAT | BIN DAT | HEX LOC | HEX DAT | BIN DAT | HEX LOC | HEX DAT | BIN DAT | HEX LOC | HEX DAT | BIN DAT | HEX LOC | HEX DAT | BIN DAT | HEX LOC | HEX DAT | BIN DAT | HEX LOC | HEX DAT | BIN DAT |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 000 | 00 | 00000000 | 040 | EB | 11101011 | 080 | E9 | 11101001 | 0C0 | E9 | 11101001 | 100 | E9 | 11101001 | 140 | EB | 11101011 | 180 | EB | 11101011 | 1C0 | E9 | 11101001 |
| 001 | 00 | 00000000 | 041 | ED | 11101101 | 081 | E9 | 11101001 | 0C1 | E9 | 11101001 | 101 | E9 | 11101001 | 141 | E9 | 11101001 | 181 | E9 | 11101001 | 1C1 | E9 | 11101001 |
| 002 | 00 | 00000000 | 042 | 6D | 01101101 | 082 | E9 | 11101001 | 0C2 | E9 | 11101001 | 102 | EC | 11101100 | 142 | E9 | 11101001 | 182 | EB | 11101011 | 1C2 | E9 | 11101001 |
| 003 | 00 | 00000000 | 043 | 6D | 01101101 | 083 | E9 | 11101001 | 0C3 | E9 | 11101001 | 103 | E9 | 11101001 | 143 | E9 | 11101001 | 183 | E9 | 11101001 | 1C3 | E9 | 11101001 |
| 004 | 00 | 00000000 | 044 | E9 | 11101001 | 084 | E9 | 11101001 | 0C4 | E9 | 11101001 | 104 | EB | 11101011 | 144 | F9 | 11111001 | 184 | E9 | 11101001 | 1C4 | E1 | 11100001 |
| 005 | 00 | 00000000 | 045 | E9 | 11101001 | 085 | E9 | 11101001 | 0C5 | EB | 11101011 | 105 | E9 | 11101001 | 145 | E9 | 11101001 | 185 | E9 | 11101001 | 1C5 | E1 | 11100001 |
| 006 | 00 | 00000000 | 046 | E9 | 11101001 | 086 | EF | 11101111 | 0C6 | E9 | 11101001 | 106 | E9 | 11101001 | 146 | E9 | 11101001 | 186 | EB | 11101011 | 1C6 | EB | 11101011 |
| 007 | E9 | 11101001 | 047 | EB | 11101011 | 087 | E9 | 11101001 | 0C7 | E9 | 11101001 | 107 | E9 | 11101001 | 147 | E9 | 11101001 | 187 | E9 | 11101001 | 1C7 | EF | 11101111 |
| 008 | E9 | 11101001 | 048 | EB | 11101011 | 088 | E9 | 11101001 | 0C8 | EB | 11101011 | 108 | E9 | 11101001 | 148 | E9 | 11101001 | 188 | E9 | 11101001 | 1C8 | E9 | 11101001 |
| 009 | E9 | 11101001 | 049 | EB | 11101011 | 089 | D9 | 11011001 | 0C9 | E9 | 11101001 | 109 | E9 | 11101001 | 149 | E9 | 11101001 | 189 | E9 | 11101001 | 1C9 | E9 | 11101001 |
| 00A | ED | 11101101 | 04A | EB | 11101011 | 08A | E9 | 11101001 | 0CA | E9 | 11101001 | 10A | E9 | 11101001 | 14A | E9 | 11101001 | 18A | E9 | 11101001 | 1CA | E9 | 11101001 |
| 00B | E9 | 11101001 | 04B | EB | 11101011 | 08B | E9 | 11101001 | 0CB | EB | 11101011 | 10B | E9 | 11101001 | 14B | E9 | 11101001 | 18B | E9 | 11101001 | 1CB | E9 | 11101001 |
| 00C | E9 | 11101001 | 04C | E9 | 11101001 | 08C | ED | 11101101 | 0CC | EB | 11101011 | 10C | E9 | 11101001 | 14C | E9 | 11101001 | 18C | E9 | 11101001 | 1CC | E1 | 11100001 |
| 00D | E9 | 11101001 | 04D | E9 | 11101001 | 08D | E9 | 11101001 | 0CD | E9 | 11101001 | 10D | E9 | 11101001 | 14D | E9 | 11101001 | 18D | E9 | 11101001 | 1CD | E1 | 11100001 |
| 00E | E9 | 11101001 | 04E | E9 | 11101001 | 08E | ED | 11101101 | 0CE | E9 | 11101001 | 10E | E9 | 11101001 | 14E | EB | 11101011 | 18E | E9 | 11101001 | 1CE | EB | 11101011 |
| 00F | ED | 11101101 | 04F | E9 | 11101001 | 08F | E9 | 11101001 | 0CF | E9 | 11101001 | 10F | EB | 11101011 | 14F | E9 | 11101001 | 18F | E9 | 11101001 | 1CF | E9 | 11101001 |
| 010 | E9 | 11101001 | 050 | E9 | 11101001 | 090 | E9 | 11101001 | 0D0 | E9 | 11101001 | 110 | E9 | 11101001 | 150 | ED | 11101101 | 190 | E9 | 11101001 | 1D0 | E9 | 11101001 |
| 011 | E9 | 11101001 | 051 | E9 | 11101001 | 091 | E9 | 11101001 | 0D1 | E9 | 11101001 | 111 | E9 | 11101001 | 151 | E9 | 11101001 | 191 | E1 | 11100001 | 1D1 | EB | 11101011 |
| 012 | E9 | 11101001 | 052 | EB | 11101011 | 092 | D9 | 11011001 | 0D2 | E9 | 11101001 | 112 | EB | 11101011 | 152 | ED | 11101101 | 192 | E9 | 11101001 | 1D2 | E9 | 11101001 |
| 013 | E9 | 11101001 | 053 | E9 | 11101001 | 093 | E9 | 11101001 | 0D3 | EB | 11101011 | 113 | E9 | 11101001 | 153 | E9 | 11101001 | 193 | C9 | 11001001 | 1D3 | EB | 11101011 |
| 014 | E9 | 11101001 | 054 | E9 | 11101001 | 094 | E9 | 11101001 | 0D4 | EB | 11101011 | 114 | E9 | 11101001 | 154 | E9 | 11101001 | 194 | E9 | 11101001 | 1D4 | E9 | 11101001 |
| 015 | E9 | 11101001 | 055 | E9 | 11101001 | 095 | E9 | 11101001 | 0D5 | E9 | 11101001 | 115 | E9 | 11101001 | 155 | E9 | 11101001 | 195 | E9 | 11101001 | 1D5 | E9 | 11101001 |
| 016 | E9 | 11101001 | 056 | ED | 11101101 | 096 | E9 | 11101001 | 0D6 | E9 | 11101001 | 116 | E9 | 11101001 | 156 | EB | 11101011 | 196 | 69 | 01101001 | 1D6 | E9 | 11101001 |
| 017 | E9 | 11101001 | 057 | 69 | 01101001 | 097 | E9 | 11101001 | 0D7 | E9 | 11101001 | 117 | E9 | 11101001 | 157 | E9 | 11101001 | 197 | E9 | 11101001 | 1D7 | ED | 11101101 |
| 018 | E9 | 11101001 | 058 | E1 | 11100001 | 098 | E9 | 11101001 | 0D8 | F9 | 11111001 | 118 | E9 | 11101001 | 158 | E9 | 11101001 | 198 | E9 | 11101001 | 1D8 | E9 | 11101001 |
| 019 | E9 | 11101001 | 059 | F9 | 11111001 | 099 | E9 | 11101001 | 0D9 | EB | 11101011 | 119 | E9 | 11101001 | 159 | E9 | 11101001 | 199 | E9 | 11101001 | 1D9 | C9 | 11001001 |
| 01A | E9 | 11101001 | 05A | E9 | 11101001 | 09A | E9 | 11101001 | 0DA | E9 | 11101001 | 11A | E9 | 11101001 | 15A | E9 | 11101001 | 19A | E9 | 11101001 | 1DA | E9 | 11101001 |
| 01B | E9 | 11101001 | 05B | E9 | 11101001 | 09B | E9 | 11101001 | 0DB | EB | 11101011 | 11B | E9 | 11101001 | 15B | E9 | 11101001 | 19B | E9 | 11101001 | 1DB | C9 | 11001001 |
| 01C | E9 | 11101001 | 05C | E9 | 11101001 | 09C | E9 | 11101001 | 0DC | F9 | 11111001 | 11C | E9 | 11101001 | 15C | E9 | 11101001 | 19C | E9 | 11101001 | 1DC | E9 | 11101001 |
| 01D | E9 | 11101001 | 05D | E9 | 11101001 | 09D | E9 | 11101001 | 0DD | E9 | 11101001 | 11D | E9 | 11101001 | 15D | E9 | 11101001 | 19D | EB | 11101011 | 1DD | C9 | 11001001 |
| 01E | E9 | 11101001 | 05E | E9 | 11101001 | 09E | E9 | 11101001 | 0DE | E9 | 11101001 | 11E | E9 | 11101001 | 15E | E9 | 11101001 | 19E | E9 | 11101001 | 1DE | E9 | 11101001 |
| 01F | EB | 11101011 | 05F | F9 | 11111001 | 09F | E9 | 11101001 | 0DF | EB | 11101011 | 11F | E9 | 11101001 | 15F | E9 | 11101001 | 19F | E9 | 11101001 | 1DF | E9 | 11101001 |
| 020 | EB | 11101011 | 060 | EA | 11101010 | 0A0 | ED | 11101101 | 0E0 | E9 | 11101001 | 120 | E9 | 11101001 | 160 | E9 | 11101001 | 1A0 | E9 | 11101001 | 1E0 | E9 | 11101001 |
| 021 | EB | 11101011 | 061 | E9 | 11101001 | 0A1 | E9 | 11101001 | 0E1 | EB | 11101011 | 121 | E9 | 11101001 | 161 | F1 | 11110001 | 1A1 | E9 | 11101001 | 1E1 | F9 | 11111001 |
| 022 | EF | 11101111 | 062 | E9 | 11101001 | 0A2 | ED | 11101101 | 0E2 | E9 | 11101001 | 122 | E9 | 11101001 | 162 | E9 | 11101001 | 1A2 | E9 | 11101001 | 1E2 | E9 | 11101001 |
| 023 | E9 | 11101001 | 063 | E9 | 11101001 | 0A3 | E9 | 11101001 | 0E3 | E9 | 11101001 | 123 | E9 | 11101001 | 163 | E9 | 11101001 | 1A3 | E9 | 11101001 | 1E3 | F9 | 11111001 |
| 024 | E9 | 11101001 | 064 | E9 | 11101001 | 0A4 | E9 | 11101001 | 0E4 | E9 | 11101001 | 124 | EB | 11101011 | 164 | E9 | 11101001 | 1A4 | E9 | 11101001 | 1E4 | E9 | 11101001 |
| 025 | E9 | 11101001 | 065 | E9 | 11101001 | 0A5 | EB | 11101011 | 0E5 | E9 | 11101001 | 125 | E9 | 11101001 | 165 | E9 | 11101001 | 1A5 | E9 | 11101001 | 1E5 | C9 | 11001001 |
| 026 | E9 | 11101001 | 066 | E9 | 11101001 | 0A6 | E9 | 11101001 | 0E6 | E9 | 11101001 | 126 | E9 | 11101001 | 166 | E9 | 11101001 | 1A6 | E9 | 11101001 | 1E6 | E9 | 11101001 |
| 027 | E9 | 11101001 | 067 | E9 | 11101001 | 0A7 | EB | 11101011 | 0E7 | E9 | 11101001 | 127 | E9 | 11101001 | 167 | E9 | 11101001 | 1A7 | EB | 11101011 | 1E7 | C9 | 11001001 |
| 028 | E9 | 11101001 | 068 | E9 | 11101001 | 0A8 | E9 | 11101001 | 0E8 | E9 | 11101001 | 128 | E9 | 11101001 | 168 | E9 | 11101001 | 1A8 | E9 | 11101001 | 1E8 | E9 | 11101001 |
| 029 | E9 | 11101001 | 069 | E9 | 11101001 | 0A9 | EB | 11101011 | 0E9 | AC | 10101100 | 129 | E9 | 11101001 | 169 | E9 | 11101001 | 1A9 | E9 | 11101001 | 1E9 | E9 | 11101001 |
| 02A | EB | 11101011 | 06A | E9 | 11101001 | 0AA | E9 | 11101001 | 0EA | E9 | 11101001 | 12A | E9 | 11101001 | 16A | E9 | 11101001 | 1AA | E9 | 11101001 | 1EA | E9 | 11101001 |
| 02B | EB | 11101011 | 06B | E9 | 11101001 | 0AB | E9 | 11101001 | 0EB | E8 | 11101000 | 12B | E9 | 11101001 | 16B | E9 | 11101001 | 1AB | E9 | 11101001 | 1EB | E9 | 11101001 |
| 02C | E9 | 11101001 | 06C | E9 | 11101001 | 0AC | E9 | 11101001 | 0EC | E9 | 11101001 | 12C | E9 | 11101001 | 16C | E9 | 11101001 | 1AC | EC | 11101100 | 1EC | 68 | 01101000 |
| 02D | E9 | 11101001 | 06D | E9 | 11101001 | 0AD | EB | 11101011 | 0ED | E1 | 11100001 | 12D | E9 | 11101001 | 16D | E9 | 11101001 | 1AD | E9 | 11101001 | 1ED | E9 | 11101001 |
| 02E | E9 | 11101001 | 06E | E9 | 11101001 | 0AE | E9 | 11101001 | 0EE | 69 | 01101001 | 12E | E9 | 11101001 | 16E | E9 | 11101001 | 1AE | E9 | 11101001 | 1EE | E9 | 11101001 |
| 02F | E9 | 11101001 | 06F | E9 | 11101001 | 0AF | EB | 11101011 | 0EF | E1 | 11100001 | 12F | E9 | 11101001 | 16F | E9 | 11101001 | 1AF | EB | 11101011 | 1EF | E9 | 11101001 |
| 030 | E9 | 11101001 | 070 | EB | 11101011 | 0B0 | EB | 11101011 | 0F0 | E9 | 11101001 | 130 | E9 | 11101001 | 170 | E9 | 11101001 | 1B0 | E9 | 11101001 | 1F0 | E9 | 11101001 |
| 031 | EB | 11101011 | 071 | E9 | 11101001 | 0B1 | EB | 11101011 | 0F1 | F9 | 11111001 | 131 | ED | 11101101 | 171 | E9 | 11101001 | 1B1 | D9 | 11011001 | 1F1 | E9 | 11101001 |
| 032 | E9 | 11101001 | 072 | E9 | 11101001 | 0B2 | ED | 11101101 | 0F2 | E9 | 11101001 | 132 | E9 | 11101001 | 172 | E9 | 11101001 | 1B2 | E9 | 11101001 | 1F2 | E9 | 11101001 |
| 033 | 6D | 01101101 | 073 | E9 | 11101001 | 0B3 | ED | 11101101 | 0F3 | E9 | 11101001 | 133 | ED | 11101101 | 173 | E9 | 11101001 | 1B3 | C9 | 11001001 | 1F3 | E9 | 11101001 |
| 034 | 69 | 01101001 | 074 | EB | 11101011 | 0B4 | E9 | 11101001 | 0F4 | E9 | 11101001 | 134 | EB | 11101011 | 174 | EB | 11101011 | 1B4 | C9 | 11001001 | 1F4 | E9 | 11101001 |
| 035 | ED | 11101101 | 075 | E9 | 11101001 | 0B5 | C9 | 11001001 | 0F5 | F9 | 11111001 | 135 | ED | 11101101 | 175 | E9 | 11101001 | 1B5 | F9 | 11111001 | 1F5 | 6C | 01101100 |
| 036 | E9 | 11101001 | 076 | E9 | 11101001 | 0B6 | E9 | 11101001 | 0F6 | E9 | 11101001 | 136 | E9 | 11101001 | 176 | EB | 11101011 | 1B6 | E9 | 11101001 | 1F6 | EB | 11101011 |
| 037 | E9 | 11101001 | 077 | E9 | 11101001 | 0B7 | E9 | 11101001 | 0F7 | E9 | 11101001 | 137 | ED | 11101101 | 177 | E9 | 11101001 | 1B7 | E1 | 11100001 | 1F7 | ED | 11101101 |
| 038 | E9 | 11101001 | 078 | E9 | 11101001 | 0B8 | E9 | 11101001 | 0F8 | F9 | 11111001 | 138 | E9 | 11101001 | 178 | 69 | 01101001 | 1B8 | F9 | 11111001 | 1F8 | E9 | 11101001 |
| 039 | EB | 11101011 | 079 | E9 | 11101001 | 0B9 | E9 | 11101001 | 0F9 | C9 | 11001001 | 139 | E9 | 11101001 | 179 | 69 | 01101001 | 1B9 | E9 | 11101001 | 1F9 | E9 | 11101001 |
| 03A | EB | 11101011 | 07A | E9 | 11101001 | 0BA | E9 | 11101001 | 0FA | F9 | 11111001 | 13A | E9 | 11101001 | 17A | 69 | 01101001 | 1BA | E1 | 11100001 | 1FA | E9 | 11101001 |
| 03B | EB | 11101011 | 07B | D9 | 11011001 | 0BB | E8 | 11101000 | 0FB | E9 | 11101001 | 13B | E9 | 11101001 | 17B | 69 | 01101001 | 1BB | E9 | 11101001 | 1FB | E9 | 11101001 |
| 03C | EB | 11101011 | 07C | E9 | 11101001 | 0BC | E9 | 11101001 | 0FC | E9 | 11101001 | 13C | E9 | 11101001 | 17C | E9 | 11101001 | 1BC | C9 | 11001001 | 1FC | E9 | 11101001 |
| 03D | E9 | 11101001 | 07D | E9 | 11101001 | 0BD | C9 | 11001001 | 0FD | E9 | 11101001 | 13D | E9 | 11101001 | 17D | C9 | 11001001 | 1BD | E9 | 11101001 | 1FD | ED | 11101101 |
| 03E | E9 | 11101001 | 07E | E9 | 11101001 | 0BE | EB | 11101011 | 0FE | E9 | 11101001 | 13E | E9 | 11101001 | 17E | E9 | 11101001 | 1BE | E9 | 11101001 | 1FE | E9 | 11101001 |
| 03F | EB | 11101011 | 07F | E9 | 11101001 | 0BF | EB | 11101011 | 0FF | E9 | 11101001 | 13F | E9 | 11101001 | 17F | E9 | 11101001 | 1BF | E9 | 11101001 | 1FF | ED | 11101101 |

PART NUMBER: 23-037D2-00
DEVICE TYPE:512 X 8
SCHEMATIC SHEET #:D-CS-M8391-0-MCTM
LOCATION/DESCRIPTION: E63 / UCODE<40:47>

LEFT COLUMN OF BIN DATA IS MSB
BINARY DATA "1" = HIGH
BINARY DATA "0" = LOW



| REVISIONS | | |
|---|---|---|
| CHK | CHANGE NO. | REV |

| | | | |
|---|---|---|---|
| digital | DRN. D.M.Hofner | DATE 27-OCT-81 | ENG. DATE |
| | CHK'D. | DATE | BOARD LOCATION: SHEET 12 OF 16 |
| DSK:GL,MC12,T2P(1106,1500)] 27-OCT-81 18:25 | | NEXT HIGHER ASSEMBLY: | |
| FIRST USED ON OPTION/MODEL: 11/730 | | B-DD-M8391-0-0 | |

TITLE: MEM. CTLR. ROM AND PAL LISTINGS

| SIZE | CODE | NUMBER | REV. |
|---|---|---|---|
| D | GL | M8391-0-0 | A |

G.M. HAFNER, [1106,1500]DL,MC12.DPL, SCALE 2, "D" RELEASE BOOK
G.M. HAFNER GLMC12.PLOT[1106,1500] 27-OCT-81 18:31

| HEX LOC | HEX DAT | BIN DAT | HEX LOC | HEX DAT | BIN DAT | HEX LOC | HEX DAT | BIN DAT | HEX LOC | HEX DAT | BIN DAT | HEX LOC | HEX DAT | BIN DAT | HEX LOC | HEX DAT | BIN DAT | HEX LOC | HEX DAT | BIN DAT |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 000 | 00 | 00000000 | 040 | 0A | 00001010 | 080 | 82 | 10000010 | 0C0 | 08 | 00001000 | 100 | 86 | 10000110 | 140 | 08 | 00001000 | 180 | 86 | 10000110 | 1C0 | 02 | 00000010 |
| 001 | 00 | 00000000 | 041 | 0B | 00001011 | 081 | 08 | 00001000 | 0C1 | 8A | 10001010 | 101 | 0A | 00001010 | 141 | 0A | 00001010 | 181 | 8A | 10001010 | 1C1 | 02 | 00000010 |
| 002 | 00 | 00000000 | 042 | 0B | 00001011 | 082 | 08 | 00001000 | 0C2 | 48 | 01001000 | 102 | 83 | 10000011 | 142 | 08 | 00001000 | 182 | 82 | 10000010 | 1C2 | 0A | 00001010 |
| 003 | 00 | 00000000 | 043 | 0B | 00001011 | 083 | 08 | 00001000 | 0C3 | 0A | 00001010 | 103 | 0A | 00001010 | 143 | 8A | 10001010 | 183 | 8A | 10001010 | 1C3 | 0A | 00001010 |
| 004 | 00 | 00000000 | 044 | 8A | 10001010 | 084 | 0C | 00001100 | 0C4 | 8A | 10001010 | 104 | 0A | 00001010 | 144 | 08 | 00001000 | 184 | 7A | 01111010 | 1C4 | 02 | 00000010 |
| 005 | 00 | 00000000 | 045 | 8A | 10001010 | 085 | 08 | 00001000 | 0C5 | 0A | 00001010 | 105 | 0A | 00001010 | 145 | 0A | 00001010 | 185 | 5A | 01011010 | 1C5 | 02 | 00000010 |
| 006 | 00 | 00000000 | 046 | 0A | 00001010 | 086 | 39 | 00111001 | 0C6 | 0A | 00001010 | 106 | 0A | 00001010 | 146 | 8A | 10001010 | 186 | 8E | 10001110 | 1C6 | 0A | 00001010 |
| 007 | AA | 10101010 | 047 | 0A | 00001010 | 087 | 0A | 00001010 | 0C7 | 08 | 00001000 | 107 | 0A | 00001010 | 147 | 0A | 00001010 | 187 | 5A | 01011010 | 1C7 | 39 | 00111001 |
| 008 | 8A | 10001010 | 048 | 0A | 00001010 | 088 | 8A | 10001010 | 0C8 | 82 | 10000010 | 108 | 0A | 00001010 | 148 | 0A | 00001010 | 188 | 0A | 00001010 | 1C8 | 02 | 00000010 |
| 009 | 82 | 10000010 | 049 | 0A | 00001010 | 089 | 08 | 00001000 | 0C9 | 0A | 00001010 | 109 | 0A | 00001010 | 149 | 8A | 10001010 | 189 | 0A | 00001010 | 1C9 | 02 | 00000010 |
| 00A | 8B | 10001011 | 04A | 0A | 00001010 | 08A | 08 | 00001000 | 0CA | 82 | 10000010 | 10A | 0A | 00001010 | 14A | 08 | 00001000 | 18A | 0E | 00001110 | 1CA | 0A | 00001010 |
| 00B | 8A | 10001010 | 04B | 0A | 00001010 | 08B | 08 | 00001000 | 0CB | 8E | 10001110 | 10B | 0A | 00001010 | 14B | 08 | 00001000 | 18B | 0A | 00001010 | 1CB | 0A | 00001010 |
| 00C | AA | 10101010 | 04C | 0A | 00001010 | 08C | 09 | 00001001 | 0CC | 8A | 10001010 | 10C | 0A | 00001010 | 14C | 0E | 00001110 | 18C | 0A | 00001010 | 1CC | E2 | 11100010 |
| 00D | 8A | 10001010 | 04D | 02 | 00000010 | 08D | 08 | 00001000 | 0CD | 8A | 10001010 | 10D | 0A | 00001010 | 14D | 0E | 00001110 | 18D | 5A | 01011010 | 1CD | E2 | 11100010 |
| 00E | 82 | 10000010 | 04E | 02 | 00000010 | 08E | 0D | 00001101 | 0CE | 0A | 00001010 | 10E | 8A | 10001010 | 14E | 0A | 00001010 | 18E | 0A | 00001010 | 1CE | 0A | 00001010 |
| 00F | 8B | 10001011 | 04F | 0A | 00001010 | 08F | 08 | 00001000 | 0CF | 0A | 00001010 | 10F | 0A | 00001010 | 14F | 88 | 10001000 | 18F | 5A | 01011010 | 1CF | 0A | 00001010 |
| 010 | 08 | 00001000 | 050 | 02 | 00000010 | 090 | 08 | 00001000 | 0D0 | 0A | 00001010 | 110 | 0A | 00001010 | 150 | 22 | 00100010 | 190 | 08 | 00001000 | 1D0 | 08 | 00001000 |
| 011 | 08 | 00001000 | 051 | 02 | 00000010 | 091 | 08 | 00001000 | 0D1 | 0A | 00001010 | 111 | 8A | 10001010 | 151 | 8A | 10001010 | 191 | 0A | 00001010 | 1D1 | 0A | 00001010 |
| 012 | 08 | 00001000 | 052 | 8A | 10001010 | 092 | 08 | 00001000 | 0D2 | 0A | 00001010 | 112 | 0A | 00001010 | 152 | 0A | 00001010 | 192 | 08 | 00001000 | 1D2 | 0A | 00001010 |
| 013 | 08 | 00001000 | 053 | 0A | 00001010 | 093 | 08 | 00001000 | 0D3 | 0A | 00001010 | 113 | 8A | 10001010 | 153 | 8A | 10001010 | 193 | 08 | 00001000 | 1D3 | 0A | 00001010 |
| 014 | 08 | 00001000 | 054 | 0A | 00001010 | 094 | 0A | 00001010 | 0D4 | 0A | 00001010 | 114 | 0A | 00001010 | 154 | 08 | 00001000 | 194 | 7A | 01111010 | 1D4 | 0A | 00001010 |
| 015 | 08 | 00001000 | 055 | 0A | 00001010 | 095 | 08 | 00001000 | 0D5 | 0A | 00001010 | 115 | 8A | 10001010 | 155 | 82 | 10000010 | 195 | 7A | 01111010 | 1D5 | 0A | 00001010 |
| 016 | 08 | 00001000 | 056 | 0B | 00001011 | 096 | 08 | 00001000 | 0D6 | 0A | 00001010 | 116 | 0A | 00001010 | 156 | 8A | 10001010 | 196 | 0A | 00001010 | 1D6 | 0A | 00001010 |
| 017 | 08 | 00001000 | 057 | 0A | 00001010 | 097 | 08 | 00001000 | 0D7 | 0A | 00001010 | 117 | 0A | 00001010 | 157 | 82 | 10000010 | 197 | 8A | 10001010 | 1D7 | 0B | 00001011 |
| 018 | 08 | 00001000 | 058 | 02 | 00000010 | 098 | 08 | 00001000 | 0D8 | 0A | 00001010 | 118 | 0A | 00001010 | 158 | 0E | 00001110 | 198 | 0A | 00001010 | 1D8 | 08 | 00001000 |
| 019 | 08 | 00001000 | 059 | 0A | 00001010 | 099 | 08 | 00001000 | 0D9 | 0A | 00001010 | 119 | 82 | 10000010 | 159 | 0A | 00001010 | 199 | 0A | 00001010 | 1D9 | 08 | 00001000 |
| 01A | 08 | 00001000 | 05A | 0A | 00001010 | 09A | 08 | 00001000 | 0DA | 0A | 00001010 | 11A | 0A | 00001010 | 15A | 06 | 00000110 | 19A | 0A | 00001010 | 1DA | 08 | 00001000 |
| 01B | 08 | 00001000 | 05B | 0A | 00001010 | 09B | 08 | 00001000 | 0DB | 0A | 00001010 | 11B | 82 | 10000010 | 15B | 0A | 00001010 | 19B | 08 | 00001000 | 1DB | 08 | 00001000 |
| 01C | 0A | 00001010 | 05C | 0A | 00001010 | 09C | 08 | 00001000 | 0DC | 02 | 00000010 | 11C | 0A | 00001010 | 15C | 0A | 00001010 | 19C | 7E | 01111110 | 1DC | 08 | 00001000 |
| 01D | 0A | 00001010 | 05D | 0A | 00001010 | 09D | 08 | 00001000 | 0DD | 86 | 10000110 | 11D | 0A | 00001010 | 15D | 08 | 00001000 | 19D | 0A | 00001010 | 1DD | 08 | 00001000 |
| 01E | 0A | 00001010 | 05E | 0A | 00001010 | 09E | 08 | 00001000 | 0DE | 02 | 00000010 | 11E | 8A | 10001010 | 15E | 0A | 00001010 | 19E | 8A | 10001010 | 1DE | 8A | 10001010 |
| 01F | 0A | 00001010 | 05F | 0A | 00001010 | 09F | 0A | 00001010 | 0DF | 82 | 10000010 | 11F | 0A | 00001010 | 15F | 08 | 00001000 | 19F | 68 | 01101000 | 1DF | 08 | 00001000 |
| 020 | 0A | 00001010 | 060 | 82 | 10000010 | 0A0 | 09 | 00001001 | 0E0 | 0A | 00001010 | 120 | 0A | 00001010 | 160 | 0A | 00001010 | 1A0 | 0A | 00001010 | 1E0 | 8A | 10001010 |
| 021 | 0A | 00001010 | 061 | 0A | 00001010 | 0A1 | 0A | 00001010 | 0E1 | 8A | 10001010 | 121 | 8A | 10001010 | 161 | 0A | 00001010 | 1A1 | 0A | 00001010 | 1E1 | 08 | 00001000 |
| 022 | 0A | 00001010 | 062 | 0A | 00001010 | 0A2 | 49 | 01001001 | 0E2 | 82 | 10000010 | 122 | 0A | 00001010 | 162 | 08 | 00001000 | 1A2 | 0A | 00001010 | 1E2 | 08 | 00001000 |
| 023 | 0A | 00001010 | 063 | 0A | 00001010 | 0A3 | 0A | 00001010 | 0E3 | 8A | 10001010 | 123 | 8A | 10001010 | 163 | 0A | 00001010 | 1A3 | 0A | 00001010 | 1E3 | 08 | 00001000 |
| 024 | 02 | 00000010 | 064 | 0A | 00001010 | 0A4 | 0A | 00001010 | 0E4 | 8A | 10001010 | 124 | 0A | 00001010 | 164 | 58 | 01011000 | 1A4 | 7A | 01111010 | 1E4 | 08 | 00001000 |
| 025 | 02 | 00000010 | 065 | 0A | 00001010 | 0A5 | 0A | 00001010 | 0E5 | 0A | 00001010 | 125 | 8A | 10001010 | 165 | 8A | 10001010 | 1A5 | 7A | 01111010 | 1E5 | 08 | 00001000 |
| 026 | 0E | 00001110 | 066 | 0A | 00001010 | 0A6 | 0A | 00001010 | 0E6 | 0A | 00001010 | 126 | 0A | 00001010 | 166 | 0A | 00001010 | 1A6 | 0A | 00001010 | 1E6 | 8A | 10001010 |
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| 028 | 0A | 00001010 | 068 | 0A | 00001010 | 0A8 | 0A | 00001010 | 0E8 | 8A | 10001010 | 128 | 0A | 00001010 | 168 | 08 | 00001000 | 1A8 | 0E | 00001110 | 1E8 | 8A | 10001010 |
| 029 | 0A | 00001010 | 069 | 0A | 00001010 | 0A9 | 5A | 01011010 | 0E9 | 8B | 10001011 | 129 | 08 | 00001000 | 169 | 08 | 00001000 | 1A9 | 0A | 00001010 | 1E9 | 08 | 00001000 |
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| 02B | 0A | 00001010 | 06B | 0A | 00001010 | 0AB | 0A | 00001010 | 0EB | 8A | 10001010 | 12B | 08 | 00001000 | 16B | 08 | 00001000 | 1AB | 0A | 00001010 | 1EB | 08 | 00001000 |
| 02C | 08 | 00001000 | 06C | 0A | 00001010 | 0AC | 0A | 00001010 | 0EC | 8A | 10001010 | 12C | 0A | 00001010 | 16C | 58 | 01011000 | 1AC | FF | 11111111 | 1EC | 0A | 00001010 |
| 02D | 0A | 00001010 | 06D | 0A | 00001010 | 0AD | 0A | 00001010 | 0ED | 02 | 00000010 | 12D | 08 | 00001000 | 16D | 0A | 00001010 | 1AD | 0E | 00001110 | 1ED | 08 | 00001000 |
| 02E | 08 | 00001000 | 06E | 08 | 00001000 | 0AE | 0A | 00001010 | 0EE | 0A | 00001010 | 12E | 8A | 10001010 | 16E | 0E | 00001110 | 1AE | 8A | 10001010 | 1EE | 0A | 00001010 |
| 02F | 58 | 01011000 | 06F | 8A | 10001010 | 0AF | 0A | 00001010 | 0EF | 02 | 00000010 | 12F | 08 | 00001000 | 16F | 28 | 00101000 | 1AF | 38 | 00111000 | 1EF | 08 | 00001000 |
| 030 | 0A | 00001010 | 070 | 0A | 00001010 | 0B0 | 0A | 00001010 | 0F0 | 0A | 00001010 | 130 | 8A | 10001010 | 170 | 08 | 00001000 | 1B0 | 8A | 10001010 | 1F0 | 0A | 00001010 |
| 031 | 0B | 00001011 | 071 | 8A | 10001010 | 0B1 | 0A | 00001010 | 0F1 | 0A | 00001010 | 131 | 09 | 00001001 | 171 | 08 | 00001000 | 1B1 | 08 | 00001000 | 1F1 | 0A | 00001010 |
| 032 | 0A | 00001010 | 072 | 8A | 10001010 | 0B2 | 0A | 00001010 | 0F2 | 0A | 00001010 | 132 | 0A | 00001010 | 172 | 08 | 00001000 | 1B2 | 08 | 00001000 | 1F2 | 48 | 01001000 |
| 033 | 0B | 00001011 | 073 | 8A | 10001010 | 0B3 | 0A | 00001010 | 0F3 | 08 | 00001000 | 133 | 0D | 00001101 | 173 | 08 | 00001000 | 1B3 | 0A | 00001010 | 1F3 | 0A | 00001010 |
| 034 | 0A | 00001010 | 074 | 8A | 10001010 | 0B4 | 0C | 00001100 | 0F4 | 0A | 00001010 | 134 | 0A | 00001010 | 174 | 02 | 00000010 | 1B4 | 08 | 00001000 | 1F4 | 08 | 00001000 |
| 035 | 0B | 00001011 | 075 | 8A | 10001010 | 0B5 | 08 | 00001000 | 0F5 | 0A | 00001010 | 135 | 09 | 00001001 | 175 | 08 | 00001000 | 1B5 | 08 | 00001000 | 1F5 | 0B | 00001011 |
| 036 | 0A | 00001010 | 076 | 8A | 10001010 | 0B6 | 08 | 00001000 | 0F6 | 0A | 00001010 | 136 | 0A | 00001010 | 176 | 8A | 10001010 | 1B6 | 8A | 10001010 | 1F6 | 8A | 10001010 |
| 037 | 00 | 00000000 | 077 | 8A | 10001010 | 0B7 | 08 | 00001000 | 0F7 | 08 | 00001000 | 137 | 0D | 00001101 | 177 | 08 | 00001000 | 1B7 | 08 | 00001000 | 1F7 | 39 | 00111001 |
| 038 | 02 | 00000010 | 078 | 82 | 10000010 | 0B8 | 08 | 00001000 | 0F8 | 08 | 00001000 | 138 | 8A | 10001010 | 178 | 0A | 00001010 | 1B8 | 0A | 00001010 | 1F8 | 0E | 00001110 |
| 039 | 0A | 00001010 | 079 | 82 | 10000010 | 0B9 | 0A | 00001010 | 0F9 | 0A | 00001010 | 139 | 08 | 00001000 | 179 | 0A | 00001010 | 1B9 | 08 | 00001000 | 1F9 | 8A | 10001010 |
| 03A | 00 | 00000000 | 07A | 82 | 10000010 | 0BA | 0A | 00001010 | 0FA | 0A | 00001010 | 13A | 0A | 00001010 | 17A | 0E | 00001110 | 1BA | 0A | 00001010 | 1FA | 9A | 10011010 |
| 03B | 02 | 00000010 | 07B | 08 | 00001000 | 0BB | 8E | 10001110 | 0FB | 0A | 00001010 | 13B | 08 | 00001000 | 17B | 0A | 00001010 | 1BB | 08 | 00001000 | 1FB | 9A | 10011010 |
| 03C | 0A | 00001010 | 07C | 0A | 00001010 | 0BC | 08 | 00001000 | 0FC | 0A | 00001010 | 13C | 0A | 00001010 | 17C | 0C | 00001100 | 1BC | 08 | 00001000 | 1FC | 38 | 00111000 |
| 03D | 0A | 00001010 | 07D | 0A | 00001010 | 0BD | 08 | 00001000 | 0FD | 0A | 00001010 | 13D | 08 | 00001000 | 17D | 08 | 00001000 | 1BD | 8A | 10001010 | 1FD | 39 | 00111001 |
| 03E | 08 | 00001000 | 07E | 8A | 10001010 | 0BE | 0A | 00001010 | 0FE | 0A | 00001010 | 13E | 8A | 10001010 | 17E | 8A | 10001010 | 1BE | 8A | 10001010 | 1FE | 0A | 00001010 |
| 03F | 8A | 10001010 | 07F | 08 | 00001000 | 0BF | 0A | 00001010 | 0FF | 8E | 10001110 | 13F | 08 | 00001000 | 17F | 0A | 00001010 | 1BF | 0A | 00001010 | 1FF | 39 | 00111001 |

PART NUMBER: 23-03802-00
DEVICE TYPE:512 X 8
SCHEMATIC SHEET #:D-CS-M8391-0-MCTM
LOCATION/DESCRIPTION: E86 / UCODE<48:55>

LEFT COLUMN OF BIN DATA IS MSB
BINARY DATA "1" = HIGH
BINARY DATA "0" = LOW



REVISIONS

| CHK | CHANGE NO. | REV |
|---|---|---|
| | | |

DRN: M Hofmann
CHK'D.
DATE 27-OCT-81
ENG.
DATE
BOARD LOCATION:
SHEET 13 OF 16
NEXT HIGHER ASSEMBLY: B-DD-M8391-0-0
FIRST USED ON OPTION/MODEL: 11/730

TITLE: MEM. CTLR. ROM AND PAL LISTINGS

| SIZE | CODE | NUMBER | REV. |
|---|---|---|---|
| D | GL | M8391-0-0 | A |

DSK:GLMC13.T2P[1186,1500]27-OCT-81 18:26

G.M. HAFNER, [1186,1500]GLMC13.DPL, SCALE 2, "D" RELEASE BOM
G.M. HAFNER GLMC13.PLT[1186,1500] 27-OCT-81 18:31

| HEX LOC | HEX DAT | BIN DAT | HEX LOC | HEX DAT | BIN DAT | HEX LOC | HEX DAT | BIN DAT | HEX LOC | HEX DAT | BIN DAT | HEX LOC | HEX DAT | BIN DAT | HEX LOC | HEX DAT | BIN DAT | HEX LOC | HEX DAT | BIN DAT |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 000 | 00 | 00000000 | 040 | E3 | 11100011 | 080 | 62 | 01100010 | 0C0 | 62 | 01100010 | 100 | 62 | 01100010 | 140 | 91 | 10010001 | 180 | 62 | 01100010 | 1C0 | 62 | 01100010 |
| 001 | 00 | 00000000 | 041 | E2 | 11100010 | 081 | E2 | 11100010 | 0C1 | E6 | 11100110 | 101 | E2 | 11100010 | 141 | E2 | 11100010 | 181 | E2 | 11100010 | 1C1 | 62 | 01100010 |
| 002 | 00 | 00000000 | 042 | E2 | 11100010 | 082 | 62 | 01100010 | 0C2 | 62 | 01100010 | 102 | 62 | 01100010 | 142 | 90 | 10010000 | 182 | 62 | 01100010 | 1C2 | E2 | 11100010 |
| 003 | 00 | 00000000 | 043 | 62 | 01100010 | 083 | E2 | 11100010 | 0C3 | A2 | 10100010 | 103 | E2 | 11100010 | 143 | E6 | 11100110 | 183 | E2 | 11100010 | 1C3 | E2 | 11100010 |
| 004 | 00 | 00000000 | 044 | E2 | 11100010 | 084 | E2 | 11100010 | 0C4 | E6 | 11100110 | 104 | EA | 11101010 | 144 | 62 | 01100010 | 184 | E2 | 11100010 | 1C4 | 62 | 01100010 |
| 005 | 00 | 00000000 | 045 | E2 | 11100010 | 085 | E2 | 11100010 | 0C5 | E3 | 11100011 | 105 | E2 | 11100010 | 145 | E2 | 11100010 | 185 | E2 | 11100010 | 1C5 | 62 | 01100010 |
| 006 | 00 | 00000000 | 046 | E2 | 11100010 | 086 | 63 | 01100011 | 0C6 | A2 | 10100010 | 106 | E2 | 11100010 | 146 | E2 | 11100010 | 186 | FA | 11111010 | 1C6 | E3 | 11100011 |
| 007 | E2 | 11100010 | 047 | E2 | 11100010 | 087 | E2 | 11100010 | 0C7 | E2 | 11100010 | 107 | E2 | 11100010 | 147 | E2 | 11100010 | 187 | E2 | 11100010 | 1C7 | 63 | 01100011 |
| 008 | EA | 11101010 | 048 | E2 | 11100010 | 088 | E2 | 11100010 | 0C8 | 63 | 01100011 | 108 | E2 | 11100010 | 148 | E2 | 11100010 | 188 | E2 | 11100010 | 1C8 | 62 | 01100010 |
| 009 | 62 | 01100010 | 049 | 62 | 01100010 | 089 | E2 | 11100010 | 0C9 | E2 | 11100010 | 109 | E6 | 11100110 | 149 | E6 | 11100110 | 189 | E2 | 11100010 | 1C9 | 62 | 01100010 |
| 00A | E2 | 11100010 | 04A | 62 | 01100010 | 08A | 62 | 01100010 | 0CA | 62 | 01100010 | 10A | E2 | 11100010 | 14A | EA | 11101010 | 18A | EA | 11101010 | 1CA | E2 | 11100010 |
| 00B | E2 | 11100010 | 04B | E2 | 11100010 | 08B | E2 | 11100010 | 0CB | EB | 11101011 | 10B | E2 | 11100010 | 14B | 92 | 10010010 | 18B | E2 | 11100010 | 1CB | E2 | 11100010 |
| 00C | E2 | 11100010 | 04C | E2 | 11100010 | 08C | E2 | 11100010 | 0CC | E2 | 11100010 | 10C | E2 | 11100010 | 14C | E6 | 11100110 | 18C | EA | 11101010 | 1CC | 62 | 01100010 |
| 00D | E2 | 11100010 | 04D | E2 | 11100010 | 08D | 62 | 01100010 | 0CD | E2 | 11100010 | 10D | E2 | 11100010 | 14D | E2 | 11100010 | 18D | E2 | 11100010 | 1CD | 62 | 01100010 |
| 00E | 62 | 01100010 | 04E | 62 | 01100010 | 08E | E2 | 11100010 | 0CE | E2 | 11100010 | 10E | E2 | 11100010 | 14E | E3 | 11100011 | 18E | EA | 11101010 | 1CE | E3 | 11100011 |
| 00F | E2 | 11100010 | 04F | E2 | 11100010 | 08F | E2 | 11100010 | 0CF | E2 | 11100010 | 10F | E3 | 11100011 | 14F | 96 | 10010110 | 18F | E2 | 11100010 | 1CF | E2 | 11100010 |
| 010 | E2 | 11100010 | 050 | E2 | 11100010 | 090 | E2 | 11100010 | 0D0 | 62 | 01100010 | 110 | E2 | 11100010 | 150 | 62 | 01100010 | 190 | E2 | 11100010 | 1D0 | E2 | 11100010 |
| 011 | 62 | 01100010 | 051 | E2 | 11100010 | 091 | E2 | 11100010 | 0D1 | E2 | 11100010 | 111 | E2 | 11100010 | 151 | E6 | 11100110 | 191 | E2 | 11100010 | 1D1 | EB | 11101011 |
| 012 | E2 | 11100010 | 052 | E2 | 11100010 | 092 | E2 | 11100010 | 0D2 | E2 | 11100010 | 112 | 62 | 01100010 | 152 | E2 | 11100010 | 192 | E2 | 11100010 | 1D2 | E2 | 11100010 |
| 013 | E2 | 11100010 | 053 | E2 | 11100010 | 093 | E2 | 11100010 | 0D3 | E2 | 11100010 | 113 | E2 | 11100010 | 153 | E6 | 11100110 | 193 | E2 | 11100010 | 1D3 | E3 | 11100011 |
| 014 | 62 | 01100010 | 054 | E2 | 11100010 | 094 | E2 | 11100010 | 0D4 | 62 | 01100010 | 114 | E6 | 11100110 | 154 | E2 | 11100010 | 194 | E2 | 11100010 | 1D4 | EA | 11101010 |
| 015 | 62 | 01100010 | 055 | E2 | 11100010 | 095 | E2 | 11100010 | 0D5 | E2 | 11100010 | 115 | E2 | 11100010 | 155 | 72 | 01110010 | 195 | E2 | 11100010 | 1D5 | E2 | 11100010 |
| 016 | 62 | 01100010 | 056 | 62 | 01100010 | 096 | 62 | 01100010 | 0D6 | E2 | 11100010 | 116 | E2 | 11100010 | 156 | E3 | 11100011 | 196 | E2 | 11100010 | 1D6 | E2 | 11100010 |
| 017 | 62 | 01100010 | 057 | E2 | 11100010 | 097 | E2 | 11100010 | 0D7 | E2 | 11100010 | 117 | E2 | 11100010 | 157 | F2 | 11110010 | 197 | E6 | 11100110 | 1D7 | E2 | 11100010 |
| 018 | 62 | 01100010 | 058 | E2 | 11100010 | 098 | E2 | 11100010 | 0D8 | E2 | 11100010 | 118 | E6 | 11100110 | 158 | E2 | 11100010 | 198 | E2 | 11100010 | 1D8 | E2 | 11100010 |
| 019 | E2 | 11100010 | 059 | E2 | 11100010 | 099 | E2 | 11100010 | 0D9 | E2 | 11100010 | 119 | 62 | 01100010 | 159 | E2 | 11100010 | 199 | E2 | 11100010 | 1D9 | E2 | 11100010 |
| 01A | 62 | 01100010 | 05A | E2 | 11100010 | 09A | E2 | 11100010 | 0DA | E2 | 11100010 | 11A | E2 | 11100010 | 15A | 62 | 01100010 | 19A | E2 | 11100010 | 1DA | E2 | 11100010 |
| 01B | 62 | 01100010 | 05B | E2 | 11100010 | 09B | E2 | 11100010 | 0DB | E2 | 11100010 | 11B | 62 | 01100010 | 15B | E2 | 11100010 | 19B | E2 | 11100010 | 1DB | E2 | 11100010 |
| 01C | E2 | 11100010 | 05C | E2 | 11100010 | 09C | E2 | 11100010 | 0DC | E2 | 11100010 | 11C | E2 | 11100010 | 15C | E2 | 11100010 | 19C | E2 | 11100010 | 1DC | E2 | 11100010 |
| 01D | E2 | 11100010 | 05D | E2 | 11100010 | 09D | E2 | 11100010 | 0DD | E2 | 11100010 | 11D | E2 | 11100010 | 15D | E2 | 11100010 | 19D | EA | 11101010 | 1DD | E2 | 11100010 |
| 01E | E2 | 11100010 | 05E | E2 | 11100010 | 09E | E2 | 11100010 | 0DE | E2 | 11100010 | 11E | E2 | 11100010 | 15E | A2 | 10100010 | 19E | E2 | 11100010 | 1DE | E2 | 11100010 |
| 01F | E2 | 11100010 | 05F | 62 | 01100010 | 09F | E2 | 11100010 | 0DF | 62 | 01100010 | 11F | E2 | 11100010 | 15F | E2 | 11100010 | 19F | E2 | 11100010 | 1DF | E2 | 11100010 |
| 020 | E2 | 11100010 | 060 | E3 | 11100011 | 0A0 | 62 | 01100010 | 0E0 | 62 | 01100010 | 120 | E2 | 11100010 | 160 | E2 | 11100010 | 1A0 | E2 | 11100010 | 1E0 | E6 | 11100110 |
| 021 | 62 | 01100010 | 061 | E2 | 11100010 | 0A1 | 62 | 01100010 | 0E1 | E2 | 11100010 | 121 | E2 | 11100010 | 161 | E2 | 11100010 | 1A1 | E2 | 11100010 | 1E1 | 62 | 01100010 |
| 022 | E2 | 11100010 | 062 | E2 | 11100010 | 0A2 | 62 | 01100010 | 0E2 | 62 | 01100010 | 122 | E2 | 11100010 | 162 | E2 | 11100010 | 1A2 | E2 | 11100010 | 1E2 | 62 | 01100010 |
| 023 | E2 | 11100010 | 063 | E2 | 11100010 | 0A3 | E2 | 11100010 | 0E3 | 62 | 01100010 | 123 | E2 | 11100010 | 163 | E2 | 11100010 | 1A3 | E2 | 11100010 | 1E3 | E2 | 11100010 |
| 024 | E2 | 11100010 | 064 | E6 | 11100110 | 0A4 | E2 | 11100010 | 0E4 | 62 | 01100010 | 124 | E2 | 11100010 | 164 | 62 | 01100010 | 1A4 | E2 | 11100010 | 1E4 | E2 | 11100010 |
| 025 | 62 | 01100010 | 065 | E2 | 11100010 | 0A5 | 62 | 01100010 | 0E5 | E2 | 11100010 | 125 | E2 | 11100010 | 165 | E6 | 11100110 | 1A5 | E2 | 11100010 | 1E5 | E2 | 11100010 |
| 026 | E2 | 11100010 | 066 | E2 | 11100010 | 0A6 | E2 | 11100010 | 0E6 | E2 | 11100010 | 126 | E2 | 11100010 | 166 | C2 | 11000010 | 1A6 | E2 | 11100010 | 1E6 | E2 | 11100010 |
| 027 | E2 | 11100010 | 067 | 62 | 01100010 | 0A7 | E2 | 11100010 | 0E7 | 62 | 01100010 | 127 | E2 | 11100010 | 167 | E2 | 11100010 | 1A7 | 63 | 01100011 | 1E7 | 62 | 01100010 |
| 028 | E2 | 11100010 | 068 | E2 | 11100010 | 0A8 | E2 | 11100010 | 0E8 | E6 | 11100110 | 128 | E2 | 11100010 | 168 | E2 | 11100010 | 1A8 | E6 | 11100110 | 1E8 | E2 | 11100010 |
| 029 | E2 | 11100010 | 069 | E2 | 11100010 | 0A9 | 62 | 01100010 | 0E9 | E2 | 11100010 | 129 | E2 | 11100010 | 169 | E2 | 11100010 | 1A9 | A2 | 10100010 | 1E9 | E2 | 11100010 |
| 02A | E2 | 11100010 | 06A | E2 | 11100010 | 0AA | E2 | 11100010 | 0EA | E2 | 11100010 | 12A | E2 | 11100010 | 16A | E2 | 11100010 | 1AA | E2 | 11100010 | 1EA | 62 | 01100010 |
| 02B | 62 | 01100010 | 06B | A2 | 10100010 | 0AB | 62 | 01100010 | 0EB | E2 | 11100010 | 12B | E2 | 11100010 | 16B | E2 | 11100010 | 1AB | E2 | 11100010 | 1EB | E2 | 11100010 |
| 02C | E2 | 11100010 | 06C | E2 | 11100010 | 0AC | E2 | 11100010 | 0EC | E6 | 11100110 | 12C | E2 | 11100010 | 16C | 62 | 01100010 | 1AC | E2 | 11100010 | 1EC | E2 | 11100010 |
| 02D | E2 | 11100010 | 06D | 82 | 10000010 | 0AD | 62 | 01100010 | 0ED | E2 | 11100010 | 12D | E2 | 11100010 | 16D | E2 | 11100010 | 1AD | E2 | 11100010 | 1ED | EA | 11101010 |
| 02E | E2 | 11100010 | 06E | 92 | 10010010 | 0AE | E2 | 11100010 | 0EE | E2 | 11100010 | 12E | E2 | 11100010 | 16E | C2 | 11000010 | 1AE | E2 | 11100010 | 1EE | E2 | 11100010 |
| 02F | 62 | 01100010 | 06F | E2 | 11100010 | 0AF | 62 | 01100010 | 0EF | E2 | 11100010 | 12F | E2 | 11100010 | 16F | E2 | 11100010 | 1AF | 63 | 01100011 | 1EF | E2 | 11100010 |
| 030 | E2 | 11100010 | 070 | F3 | 11110011 | 0B0 | E2 | 11100010 | 0F0 | E2 | 11100010 | 130 | E6 | 11100110 | 170 | E2 | 11100010 | 1B0 | E6 | 11100110 | 1F0 | E2 | 11100010 |
| 031 | E2 | 11100010 | 071 | E2 | 11100010 | 0B1 | E2 | 11100010 | 0F1 | E2 | 11100010 | 131 | E2 | 11100010 | 171 | E2 | 11100010 | 1B1 | E2 | 11100010 | 1F1 | E2 | 11100010 |
| 032 | A2 | 10100010 | 072 | E2 | 11100010 | 0B2 | E2 | 11100010 | 0F2 | E2 | 11100010 | 132 | E2 | 11100010 | 172 | E2 | 11100010 | 1B2 | E2 | 11100010 | 1F2 | E2 | 11100010 |
| 033 | E2 | 11100010 | 073 | E2 | 11100010 | 0B3 | E2 | 11100010 | 0F3 | E2 | 11100010 | 133 | E2 | 11100010 | 173 | E2 | 11100010 | 1B3 | E2 | 11100010 | 1F3 | E2 | 11100010 |
| 034 | E2 | 11100010 | 074 | F2 | 11110010 | 0B4 | E2 | 11100010 | 0F4 | E2 | 11100010 | 134 | E2 | 11100010 | 174 | 62 | 01100010 | 1B4 | 62 | 01100010 | 1F4 | 62 | 01100010 |
| 035 | A2 | 10100010 | 075 | E2 | 11100010 | 0B5 | 62 | 01100010 | 0F5 | E2 | 11100010 | 135 | E2 | 11100010 | 175 | E2 | 11100010 | 1B5 | 62 | 01100010 | 1F5 | E2 | 11100010 |
| 036 | E2 | 11100010 | 076 | E2 | 11100010 | 0B6 | 62 | 01100010 | 0F6 | E2 | 11100010 | 136 | E2 | 11100010 | 176 | FA | 11111010 | 1B6 | E2 | 11100010 | 1F6 | FA | 11111010 |
| 037 | E3 | 11100011 | 077 | E2 | 11100010 | 0B7 | 62 | 01100010 | 0F7 | E2 | 11100010 | 137 | E2 | 11100010 | 177 | E2 | 11100010 | 1B7 | E2 | 11100010 | 1F7 | 62 | 01100010 |
| 038 | 23 | 00100011 | 078 | 62 | 01100010 | 0B8 | E2 | 11100010 | 0F8 | E2 | 11100010 | 138 | E6 | 11100110 | 178 | E2 | 11100010 | 1B8 | E2 | 11100010 | 1F8 | E2 | 11100010 |
| 039 | A3 | 10100011 | 079 | 62 | 01100010 | 0B9 | E2 | 11100010 | 0F9 | E2 | 11100010 | 139 | E2 | 11100010 | 179 | E2 | 11100010 | 1B9 | E2 | 11100010 | 1F9 | E6 | 11100110 |
| 03A | E2 | 11100010 | 07A | 62 | 01100010 | 0BA | E2 | 11100010 | 0FA | E2 | 11100010 | 13A | 82 | 10000010 | 17A | EA | 11101010 | 1BA | E2 | 11100010 | 1FA | E2 | 11100010 |
| 03B | 22 | 00100010 | 07B | E2 | 11100010 | 0BB | E2 | 11100010 | 0FB | E2 | 11100010 | 13B | E2 | 11100010 | 17B | E2 | 11100010 | 1BB | E2 | 11100010 | 1FB | E2 | 11100010 |
| 03C | A3 | 10100011 | 07C | E2 | 11100010 | 0BC | E2 | 11100010 | 0FC | E2 | 11100010 | 13C | E2 | 11100010 | 17C | E2 | 11100010 | 1BC | 62 | 01100010 | 1FC | 62 | 01100010 |
| 03D | E2 | 11100010 | 07D | E2 | 11100010 | 0BD | 62 | 01100010 | 0FD | E2 | 11100010 | 13D | E2 | 11100010 | 17D | E2 | 11100010 | 1BD | E6 | 11100110 | 1FD | 62 | 01100010 |
| 03E | E2 | 11100010 | 07E | E2 | 11100010 | 0BE | E2 | 11100010 | 0FE | 62 | 01100010 | 13E | E2 | 11100010 | 17E | E2 | 11100010 | 1BE | E2 | 11100010 | 1FE | EA | 11101010 |
| 03F | E2 | 11100010 | 07F | 62 | 01100010 | 0BF | E2 | 11100010 | 0FF | EE | 11101110 | 13F | E2 | 11100010 | 17F | E2 | 11100010 | 1BF | E2 | 11100010 | 1FF | 62 | 01100010 |

PART NUMBER: 23-039D2-00
DEVICE TYPE:512 X 8
SCHEMATIC SHEET #:D-CS-M8391-0-MCTM
LOCATION/DESCRIPTION: E73 / UCODE<56:63>

LEFT COLUMN OF BIN DATA IS MSB
BINARY DATA "1" = HIGH
BINARY DATA "0" = LOW



| REVISIONS | | |
|---|---|---|
| CHK | CHANGE NO. | REV |
| | | |

digital

DRN. D.M.Holmes 27-OCT-81 | CHK'D. | ENG. | DATE | BOARD LOCATION: | SHEET 14 OF 16

DSK:GLMC14.T2P(1186,1500) 27-OCT-81 18:26 | FIRST USED ON OPTION/MODEL: 11/730 | NEXT HIGHER ASSEMBLY: B-DD-M8391-0-0

TITLE: MEM. CTLR. ROM AND PAL LISTINGS

| SIZE | CODE | NUMBER | REV. |
|---|---|---|---|
| D | GL | M8391-0-0 | A |

G.M. HAFNER, [1186,1500]GLMC14.DPL, SCALE 2, "D" RELEASE BOM
G.M. HAFNER GLMC14.PLOT[1186,1500] 27-OCT-81 18:31

| HEX LOC | HEX DAT | BIN DAT | HEX LOC | HEX DAT | BIN DAT | HEX LOC | HEX DAT | BIN DAT | HEX LOC | HEX DAT | BIN DAT | HEX LOC | HEX DAT | BIN DAT | HEX LOC | HEX DAT | BIN DAT | HEX LOC | HEX DAT | BIN DAT |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 000 | 00 | 00000000 | 040 | 43 | 01000011 | 080 | 43 | 01000011 | 0C0 | 43 | 01000011 | 100 | 43 | 01000011 | 140 | 43 | 01000011 | 180 | 43 | 01000011 | 1C0 | 12 | 00010010 |
| 001 | 00 | 00000000 | 041 | C3 | 11000011 | 081 | 43 | 01000011 | 0C1 | 43 | 01000011 | 101 | 43 | 01000011 | 141 | 43 | 01000011 | 181 | 43 | 01000011 | 1C1 | 12 | 00010010 |
| 002 | 00 | 00000000 | 042 | C3 | 11000011 | 082 | 43 | 01000011 | 0C2 | 43 | 01000011 | 102 | 43 | 01000011 | 142 | 43 | 01000011 | 182 | 43 | 01000011 | 1C2 | 3A | 00111010 |
| 003 | 00 | 00000000 | 043 | 43 | 01000011 | 083 | 43 | 01000011 | 0C3 | 43 | 01000011 | 103 | 43 | 01000011 | 143 | 43 | 01000011 | 183 | 43 | 01000011 | 1C3 | 52 | 01010010 |
| 004 | 00 | 00000000 | 044 | 43 | 01000011 | 084 | 43 | 01000011 | 0C4 | 53 | 01010011 | 104 | 53 | 01010011 | 144 | 43 | 01000011 | 184 | 63 | 01100011 | 1C4 | 43 | 01000011 |
| 005 | 00 | 00000000 | 045 | 43 | 01000011 | 085 | 43 | 01000011 | 0C5 | 52 | 01010010 | 105 | 43 | 01000011 | 145 | 43 | 01000011 | 185 | 43 | 01000011 | 1C5 | 43 | 01000011 |
| 006 | 00 | 00000000 | 046 | 43 | 01000011 | 086 | 43 | 01000011 | 0C6 | 43 | 01000011 | 106 | 50 | 01010000 | 146 | 43 | 01000011 | 186 | 43 | 01000011 | 1C6 | 43 | 01000011 |
| 007 | 43 | 01000011 | 047 | 43 | 01000011 | 087 | 43 | 01000011 | 0C7 | 50 | 01010000 | 107 | 43 | 01000011 | 147 | 43 | 01000011 | 187 | 43 | 01000011 | 1C7 | 43 | 01000011 |
| 008 | C3 | 11000011 | 048 | 43 | 01000011 | 088 | 43 | 01000011 | 0C8 | 53 | 01010011 | 108 | 53 | 01010011 | 148 | 43 | 01000011 | 188 | 43 | 01000011 | 1C8 | 12 | 00010010 |
| 009 | 43 | 01000011 | 049 | 43 | 01000011 | 089 | 43 | 01000011 | 0C9 | 43 | 01000011 | 109 | 52 | 01010010 | 149 | 43 | 01000011 | 189 | 43 | 01000011 | 1C9 | 12 | 00010010 |
| 00A | 43 | 01000011 | 04A | 43 | 01000011 | 08A | 43 | 01000011 | 0CA | 53 | 01010011 | 10A | 43 | 01000011 | 14A | 43 | 01000011 | 18A | 43 | 01000011 | 1CA | 3A | 00111010 |
| 00B | 43 | 01000011 | 04B | 43 | 01000011 | 08B | 43 | 01000011 | 0CB | 53 | 01010011 | 10B | 43 | 01000011 | 14B | 43 | 01000011 | 18B | 43 | 01000011 | 1CB | 3A | 00111010 |
| 00C | 43 | 01000011 | 04C | 43 | 01000011 | 08C | 43 | 01000011 | 0CC | 53 | 01010011 | 10C | 52 | 01010010 | 14C | 43 | 01000011 | 18C | 63 | 01100011 | 1CC | 43 | 01000011 |
| 00D | 43 | 01000011 | 04D | 43 | 01000011 | 08D | 43 | 01000011 | 0CD | 53 | 01010011 | 10D | 52 | 01010010 | 14D | 43 | 01000011 | 18D | 43 | 01000011 | 1CD | 43 | 01000011 |
| 00E | 43 | 01000011 | 04E | 43 | 01000011 | 08E | 43 | 01000011 | 0CE | 53 | 01000011 | 10E | 43 | 01000011 | 14E | 43 | 01000011 | 18E | 43 | 01000011 | 1CE | 43 | 01000011 |
| 00F | 43 | 01000011 | 04F | 43 | 01000011 | 08F | 43 | 01000011 | 0CF | 43 | 01000011 | 10F | 32 | 00110010 | 14F | 43 | 01000011 | 18F | 43 | 01000011 | 1CF | 43 | 01000011 |
| 010 | 43 | 01000011 | 050 | 43 | 01000011 | 090 | 43 | 01000011 | 0D0 | 53 | 01010011 | 110 | 53 | 01010011 | 150 | 03 | 00000011 | 190 | 43 | 01000011 | 1D0 | 43 | 01000011 |
| 011 | 43 | 01000011 | 051 | 43 | 01000011 | 091 | 43 | 01000011 | 0D1 | 43 | 01000011 | 111 | 43 | 01000011 | 151 | 43 | 01000011 | 191 | 43 | 01000011 | 1D1 | 53 | 01010011 |
| 012 | 43 | 01000011 | 052 | 43 | 01000011 | 092 | 43 | 01000011 | 0D2 | 43 | 01000011 | 112 | 47 | 01000111 | 152 | 43 | 01000011 | 192 | 43 | 01000011 | 1D2 | 43 | 01000011 |
| 013 | 43 | 01000011 | 053 | 43 | 01000011 | 093 | 43 | 01000011 | 0D3 | 43 | 01000011 | 113 | 43 | 01000011 | 153 | 43 | 01000011 | 193 | 43 | 01000011 | 1D3 | 32 | 00110010 |
| 014 | 43 | 01000011 | 054 | 43 | 01000011 | 094 | 43 | 01000011 | 0D4 | 43 | 01000011 | 114 | 52 | 01010010 | 154 | 43 | 01000011 | 194 | 63 | 01100011 | 1D4 | 43 | 01000011 |
| 015 | 43 | 01000011 | 055 | 43 | 01000011 | 095 | 43 | 01000011 | 0D5 | 43 | 01000011 | 115 | 43 | 01000011 | 155 | 43 | 01000011 | 195 | 63 | 01100011 | 1D5 | 43 | 01000011 |
| 016 | 43 | 01000011 | 056 | 43 | 01000011 | 096 | 43 | 01000011 | 0D6 | 43 | 01000011 | 116 | 43 | 01000011 | 156 | 43 | 01000011 | 196 | 43 | 01000011 | 1D6 | 43 | 01000011 |
| 017 | 43 | 01000011 | 057 | 43 | 01000011 | 097 | 43 | 01000011 | 0D7 | 43 | 01000011 | 117 | 43 | 01000011 | 157 | 43 | 01000011 | 197 | 43 | 01000011 | 1D7 | C3 | 11000011 |
| 018 | 43 | 01000011 | 058 | 43 | 01000011 | 098 | 43 | 01000011 | 0D8 | 43 | 01000011 | 118 | 52 | 01010010 | 158 | 43 | 01000011 | 198 | 43 | 01000011 | 1D8 | 43 | 01000011 |
| 019 | 43 | 01000011 | 059 | 43 | 01000011 | 099 | 43 | 01000011 | 0D9 | 43 | 01000011 | 119 | 43 | 01000011 | 159 | 43 | 01000011 | 199 | 43 | 01000011 | 1D9 | 43 | 01000011 |
| 01A | 43 | 01000011 | 05A | 43 | 01000011 | 09A | 43 | 01000011 | 0DA | 43 | 01000011 | 11A | 43 | 01000011 | 15A | 23 | 00100011 | 19A | 43 | 01000011 | 1DA | 43 | 01000011 |
| 01B | 43 | 01000011 | 05B | 43 | 01000011 | 09B | 43 | 01000011 | 0DB | 43 | 01000011 | 11B | 43 | 01000011 | 15B | 43 | 01000011 | 19B | 43 | 01000011 | 1DB | 43 | 01000011 |
| 01C | 43 | 01000011 | 05C | 43 | 01000011 | 09C | 43 | 01000011 | 0DC | 43 | 01000011 | 11C | 43 | 01000011 | 15C | 43 | 01000011 | 19C | 63 | 01100011 | 1DC | 43 | 01000011 |
| 01D | 43 | 01000011 | 05D | 43 | 01000011 | 09D | 43 | 01000011 | 0DD | 43 | 01000011 | 11D | 43 | 01000011 | 15D | 43 | 01000011 | 19D | 43 | 01000011 | 1DD | 43 | 01000011 |
| 01E | 43 | 01000011 | 05E | 43 | 01000011 | 09E | 43 | 01000011 | 0DE | 43 | 01000011 | 11E | C3 | 11000011 | 15E | 43 | 01000011 | 19E | 43 | 01000011 | 1DE | 43 | 01000011 |
| 01F | 43 | 01000011 | 05F | 43 | 01000011 | 09F | 43 | 01000011 | 0DF | 43 | 01000011 | 11F | 43 | 01000011 | 15F | 43 | 01000011 | 19F | 43 | 01000011 | 1DF | 43 | 01000011 |
| 020 | 43 | 01000011 | 060 | 43 | 01000011 | 0A0 | 43 | 01000011 | 0E0 | 43 | 01000011 | 120 | 43 | 01000011 | 160 | 43 | 01000011 | 1A0 | 43 | 01000011 | 1E0 | 43 | 01000011 |
| 021 | 43 | 01000011 | 061 | 43 | 01000011 | 0A1 | 43 | 01000011 | 0E1 | 43 | 01000011 | 121 | 43 | 01000011 | 161 | 43 | 01000011 | 1A1 | 43 | 01000011 | 1E1 | 43 | 01000011 |
| 022 | 43 | 01000011 | 062 | 43 | 01000011 | 0A2 | 43 | 01000011 | 0E2 | 43 | 01000011 | 122 | 43 | 01000011 | 162 | 43 | 01000011 | 1A2 | 43 | 01000011 | 1E2 | 43 | 01000011 |
| 023 | 43 | 01000011 | 063 | 43 | 01000011 | 0A3 | 43 | 01000011 | 0E3 | 43 | 01000011 | 123 | 43 | 01000011 | 163 | 07 | 00000111 | 1A3 | 43 | 01000011 | 1E3 | 43 | 01000011 |
| 024 | 43 | 01000011 | 064 | 52 | 01010010 | 0A4 | 43 | 01000011 | 0E4 | 43 | 01000011 | 124 | 47 | 01000111 | 164 | 41 | 01000001 | 1A4 | 63 | 01100011 | 1E4 | 43 | 01000011 |
| 025 | 43 | 01000011 | 065 | 43 | 01000011 | 0A5 | 43 | 01000011 | 0E5 | 43 | 01000011 | 125 | 43 | 01000011 | 165 | 43 | 01000011 | 1A5 | 63 | 01100011 | 1E5 | 43 | 01000011 |
| 026 | 03 | 00000011 | 066 | 52 | 01010010 | 0A6 | 43 | 01000011 | 0E6 | 43 | 01000011 | 126 | 43 | 01000011 | 166 | 43 | 01000011 | 1A6 | 43 | 01000011 | 1E6 | 43 | 01000011 |
| 027 | 03 | 00000011 | 067 | 43 | 01000011 | 0A7 | 43 | 01000011 | 0E7 | 43 | 01000011 | 127 | 43 | 01000011 | 167 | 03 | 00000011 | 1A7 | 43 | 01000011 | 1E7 | 43 | 01000011 |
| 028 | 43 | 01000011 | 068 | 5E | 01011110 | 0A8 | 43 | 01000011 | 0E8 | 43 | 01000011 | 128 | 52 | 01010010 | 168 | 50 | 01010000 | 1A8 | 52 | 01010010 | 1E8 | 53 | 01010011 |
| 029 | 43 | 01000011 | 069 | 03 | 00000011 | 0A9 | 43 | 01000011 | 0E9 | 43 | 01000011 | 129 | 43 | 01000011 | 169 | 50 | 01010000 | 1A9 | 71 | 01110001 | 1E9 | 43 | 01000011 |
| 02A | 43 | 01000011 | 06A | 51 | 01010001 | 0AA | 43 | 01000011 | 0EA | 43 | 01000011 | 12A | 52 | 01010010 | 16A | 58 | 01011000 | 1AA | 5E | 01011110 | 1EA | 43 | 01000011 |
| 02B | 43 | 01000011 | 06B | 71 | 01110001 | 0AB | 43 | 01000011 | 0EB | 43 | 01000011 | 12B | 43 | 01000011 | 16B | 50 | 01010000 | 1AB | 52 | 01010010 | 1EB | 43 | 01000011 |
| 02C | 43 | 01000011 | 06C | 52 | 01010010 | 0AC | 43 | 01000011 | 0EC | 43 | 01000011 | 12C | 43 | 01000011 | 16C | 43 | 01000011 | 1AC | 63 | 01100011 | 1EC | 43 | 01000011 |
| 02D | 43 | 01000011 | 06D | 43 | 01000011 | 0AD | 43 | 01000011 | 0ED | 43 | 01000011 | 12D | 43 | 01000011 | 16D | 43 | 01000011 | 1AD | 63 | 01100011 | 1ED | 43 | 01000011 |
| 02E | 41 | 01000001 | 06E | 43 | 01000011 | 0AE | 43 | 01000011 | 0EE | 43 | 01000011 | 12E | 43 | 01000011 | 16E | 43 | 01000011 | 1AE | 43 | 01000011 | 1EE | 43 | 01000011 |
| 02F | 41 | 01000001 | 06F | 43 | 01000011 | 0AF | 43 | 01000011 | 0EF | 43 | 01000011 | 12F | 43 | 01000011 | 16F | 43 | 01000011 | 1AF | 43 | 01000011 | 1EF | 43 | 01000011 |
| 030 | 43 | 01000011 | 070 | 43 | 01000011 | 0B0 | 43 | 01000011 | 0F0 | 43 | 01000011 | 130 | 43 | 01000011 | 170 | 50 | 01010000 | 1B0 | 43 | 01000011 | 1F0 | 43 | 01000011 |
| 031 | 43 | 01000011 | 071 | 43 | 01000011 | 0B1 | 43 | 01000011 | 0F1 | 43 | 01000011 | 131 | 43 | 01000011 | 171 | 50 | 01010000 | 1B1 | 43 | 01000011 | 1F1 | 43 | 01000011 |
| 032 | 43 | 01000011 | 072 | 43 | 01000011 | 0B2 | 43 | 01000011 | 0F2 | 43 | 01000011 | 132 | 03 | 00000011 | 172 | 58 | 01011000 | 1B2 | 43 | 01000011 | 1F2 | 43 | 01000011 |
| 033 | 43 | 01000011 | 073 | 43 | 01000011 | 0B3 | 43 | 01000011 | 0F3 | 43 | 01000011 | 133 | 43 | 01000011 | 173 | 58 | 01011000 | 1B3 | 43 | 01000011 | 1F3 | 43 | 01000011 |
| 034 | 43 | 01000011 | 074 | 43 | 01000011 | 0B4 | 43 | 01000011 | 0F4 | 43 | 01000011 | 134 | 43 | 01000011 | 174 | 13 | 00010011 | 1B4 | 43 | 01000011 | 1F4 | 43 | 01000011 |
| 035 | 43 | 01000011 | 075 | 43 | 01000011 | 0B5 | 43 | 01000011 | 0F5 | 43 | 01000011 | 135 | 43 | 01000011 | 175 | 53 | 01010011 | 1B5 | 43 | 01000011 | 1F5 | 43 | 01000011 |
| 036 | 43 | 01000011 | 076 | 43 | 01000011 | 0B6 | 43 | 01000011 | 0F6 | 43 | 01000011 | 136 | C3 | 11000011 | 176 | 43 | 01000011 | 1B6 | 43 | 01000011 | 1F6 | 43 | 01000011 |
| 037 | 43 | 01000011 | 077 | 43 | 01000011 | 0B7 | 41 | 01000001 | 0F7 | 43 | 01000011 | 137 | 43 | 01000011 | 177 | 45 | 01000101 | 1B7 | 43 | 01000011 | 1F7 | 43 | 01000011 |
| 038 | 43 | 01000011 | 078 | 43 | 01000011 | 0B8 | 41 | 01000001 | 0F8 | 43 | 01000011 | 138 | 43 | 01000011 | 178 | 43 | 01000011 | 1B8 | 43 | 01000011 | 1F8 | 63 | 01100011 |
| 039 | 43 | 01000011 | 079 | 43 | 01000011 | 0B9 | 43 | 01000011 | 0F9 | 43 | 01000011 | 139 | 43 | 01000011 | 179 | 43 | 01000011 | 1B9 | 43 | 01000011 | 1F9 | 43 | 01000011 |
| 03A | 43 | 01000011 | 07A | 43 | 01000011 | 0BA | 23 | 00100011 | 0FA | 43 | 01000011 | 13A | 43 | 01000011 | 17A | 43 | 01000011 | 1BA | 43 | 01000011 | 1FA | 43 | 01000011 |
| 03B | 43 | 01000011 | 07B | 43 | 01000011 | 0BB | 43 | 01000011 | 0FB | 43 | 01000011 | 13B | 43 | 01000011 | 17B | 43 | 01000011 | 1BB | 43 | 01000011 | 1FB | 43 | 01000011 |
| 03C | 43 | 01000011 | 07C | 43 | 01000011 | 0BC | 45 | 01000101 | 0FC | 43 | 01000011 | 13C | 43 | 01000011 | 17C | 43 | 01000011 | 1BC | 43 | 01000011 | 1FC | 43 | 01000011 |
| 03D | 53 | 01010011 | 07D | 43 | 01000011 | 0BD | 41 | 01000001 | 0FD | 43 | 01000011 | 13D | 43 | 01000011 | 17D | 43 | 01000011 | 1BD | 43 | 01000011 | 1FD | 43 | 01000011 |
| 03E | 50 | 01010000 | 07E | 43 | 01000011 | 0BE | 43 | 01000011 | 0FE | 43 | 01000011 | 13E | 43 | 01000011 | 17E | 43 | 01000011 | 1BE | 43 | 01000011 | 1FE | 43 | 01000011 |
| 03F | 53 | 01010011 | 07F | 43 | 01000011 | 0BF | 43 | 01000011 | 0FF | C3 | 11000011 | 13F | 43 | 01000011 | 17F | 43 | 01000011 | 1BF | 43 | 01000011 | 1FF | 43 | 01000011 |

PART NUMBER: 23-040D2-00
DEVICE TYPE:512 X 8
SCHEMATIC SHEET #:D-CS-M8391-0-MCTM
LOCATION/DESCRIPTION: E111 / UCODE<64:71>

LEFT COLUMN OF BIN DATA IS MSB
BINARY DATA "1" = HIGH
BINARY DATA "0" = LOW



| REVISIONS | | |
|---|---|---|
| CHK | CHANGE NO. | REV |
| | | |

DSK:GLMC15.T2P[1106,1500]27-OCT-81 18:27
FIRST USED ON OPTION/MODEL: 11/730

DRN: D.M.Hoffman 27-OCT-81
CHK'D.
ENG. DATE
DATE
BOARD LOCATION:
SHEET 14 OF 16
NEXT HIGHER ASSEMBLY: B-DD-M8391-0-0

TITLE: MEM. CTLR. ROM AND PAL LISTINGS

| SIZE | CODE | NUMBER | REV. |
|---|---|---|---|
| D | GL | M8391-0-0 | A |

G.M. HAFNER, [1106,1500]GLMC15.OPL, SCALE 2, "D" RELEASE BOM
G.M. HAFNER GLMC15.PLX[1106,1500] 27-OCT-81 18:32

| HEX LOC | HEX DAT | BIN DAT | HEX LOC | HEX DAT | BIN DAT | HEX LOC | HEX DAT | BIN DAT | HEX LOC | HEX DAT | BIN DAT | HEX LOC | HEX DAT | BIN DAT | HEX LOC | HEX DAT | BIN DAT | HEX LOC | HEX DAT | BIN DAT | HEX LOC | HEX DAT | BIN DAT |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 000 | E | 1110 | 040 | 6 | 0110 | 080 | 6 | 0110 | 0C0 | E | 1110 | 100 | 6 | 0110 | 140 | E | 1110 | 180 | E | 1110 | 1C0 | 6 | 0110 |
| 001 | E | 1110 | 041 | 6 | 0110 | 081 | 6 | 0110 | 0C1 | E | 1110 | 101 | 6 | 0110 | 141 | E | 1110 | 181 | E | 1110 | 1C1 | 6 | 0110 |
| 002 | E | 1110 | 042 | 6 | 0110 | 082 | 6 | 0110 | 0C2 | E | 1110 | 102 | 6 | 0110 | 142 | E | 1110 | 182 | E | 1110 | 1C2 | 6 | 0110 |
| 003 | E | 1110 | 043 | 6 | 0110 | 083 | 6 | 0110 | 0C3 | E | 1110 | 103 | 6 | 0110 | 143 | E | 1110 | 183 | E | 1110 | 1C3 | 6 | 0110 |
| 004 | A | 1010 | 044 | 6 | 0110 | 084 | 6 | 0110 | 0C4 | E | 1110 | 104 | 2 | 0010 | 144 | E | 1110 | 184 | E | 1110 | 1C4 | 6 | 0110 |
| 005 | A | 1010 | 045 | 6 | 0110 | 085 | 2 | 0010 | 0C5 | A | 1010 | 105 | 2 | 0010 | 145 | A | 1010 | 185 | A | 1010 | 1C5 | 2 | 0010 |
| 006 | A | 1010 | 046 | 6 | 0110 | 086 | 2 | 0010 | 0C6 | E | 1110 | 106 | 2 | 0010 | 146 | E | 1110 | 186 | A | 1010 | 1C6 | 6 | 0110 |
| 007 | A | 1010 | 047 | 6 | 0110 | 087 | 2 | 0010 | 0C7 | A | 1010 | 107 | 2 | 0010 | 147 | A | 1010 | 187 | A | 1010 | 1C7 | 2 | 0010 |
| 008 | A | 1010 | 048 | 4 | 0100 | 088 | 4 | 0100 | 0C8 | C | 1100 | 108 | 2 | 0010 | 148 | C | 1100 | 188 | A | 1010 | 1C8 | 2 | 0010 |
| 009 | A | 1010 | 049 | 4 | 0100 | 089 | 2 | 0010 | 0C9 | A | 1010 | 109 | 2 | 0010 | 149 | A | 1010 | 189 | A | 1010 | 1C9 | 2 | 0010 |
| 00A | A | 1010 | 04A | 4 | 0100 | 08A | 2 | 0010 | 0CA | A | 1010 | 10A | 2 | 0010 | 14A | C | 1100 | 18A | A | 1010 | 1CA | 2 | 0010 |
| 00B | A | 1010 | 04B | 4 | 0100 | 08B | 2 | 0010 | 0CB | A | 1010 | 10B | 2 | 0010 | 14B | A | 1010 | 18B | A | 1010 | 1CB | 2 | 0010 |
| 00C | E | 1110 | 04C | 6 | 0110 | 08C | 6 | 0110 | 0CC | E | 1110 | 10C | 6 | 0110 | 14C | E | 1110 | 18C | E | 1110 | 1CC | 6 | 0110 |
| 00D | E | 1110 | 04D | 6 | 0110 | 08D | 6 | 0110 | 0CD | E | 1110 | 10D | 6 | 0110 | 14D | E | 1110 | 18D | E | 1110 | 1CD | 6 | 0110 |
| 00E | E | 1110 | 04E | 6 | 0110 | 08E | 6 | 0110 | 0CE | E | 1110 | 10E | 6 | 0110 | 14E | E | 1110 | 18E | E | 1110 | 1CE | 6 | 0110 |
| 00F | E | 1110 | 04F | 6 | 0110 | 08F | 6 | 0110 | 0CF | E | 1110 | 10F | 6 | 0110 | 14F | E | 1110 | 18F | E | 1110 | 1CF | 6 | 0110 |
| 010 | 6 | 0110 | 050 | E | 1110 | 090 | E | 1110 | 0D0 | 6 | 0110 | 110 | E | 1110 | 150 | 6 | 0110 | 190 | 6 | 0110 | 1D0 | E | 1110 |
| 011 | 6 | 0110 | 051 | E | 1110 | 091 | E | 1110 | 0D1 | 6 | 0110 | 111 | E | 1110 | 151 | 6 | 0110 | 191 | 6 | 0110 | 1D1 | E | 1110 |
| 012 | 6 | 0110 | 052 | E | 1110 | 092 | E | 1110 | 0D2 | 6 | 0110 | 112 | E | 1110 | 152 | 6 | 0110 | 192 | 6 | 0110 | 1D2 | E | 1110 |
| 013 | 6 | 0110 | 053 | E | 1110 | 093 | E | 1110 | 0D3 | 6 | 0110 | 113 | E | 1110 | 153 | 6 | 0110 | 193 | 6 | 0110 | 1D3 | E | 1110 |
| 014 | 2 | 0010 | 054 | E | 1110 | 094 | E | 1110 | 0D4 | 6 | 0110 | 114 | A | 1010 | 154 | 6 | 0110 | 194 | 6 | 0110 | 1D4 | E | 1110 |
| 015 | 2 | 0010 | 055 | E | 1110 | 095 | A | 1010 | 0D5 | 2 | 0010 | 115 | A | 1010 | 155 | 2 | 0010 | 195 | 2 | 0010 | 1D5 | A | 1010 |
| 016 | 2 | 0010 | 056 | E | 1110 | 096 | A | 1010 | 0D6 | 6 | 0110 | 116 | A | 1010 | 156 | 6 | 0110 | 196 | 2 | 0010 | 1D6 | E | 1110 |
| 017 | 2 | 0010 | 057 | E | 1110 | 097 | A | 1010 | 0D7 | 2 | 0010 | 117 | A | 1010 | 157 | 2 | 0010 | 197 | 2 | 0010 | 1D7 | A | 1010 |
| 018 | 2 | 0010 | 058 | E | 1110 | 098 | E | 1110 | 0D8 | 6 | 0110 | 118 | A | 1010 | 158 | 6 | 0110 | 198 | 2 | 0010 | 1D8 | A | 1010 |
| 019 | 2 | 0010 | 059 | E | 1110 | 099 | A | 1010 | 0D9 | 2 | 0010 | 119 | A | 1010 | 159 | 2 | 0010 | 199 | 2 | 0010 | 1D9 | A | 1010 |
| 01A | 2 | 0010 | 05A | E | 1110 | 09A | A | 1010 | 0DA | 2 | 0010 | 11A | A | 1010 | 15A | 6 | 0110 | 19A | 2 | 0010 | 1DA | A | 1010 |
| 01B | 2 | 0010 | 05B | E | 1110 | 09B | A | 1010 | 0DB | 2 | 0010 | 11B | A | 1010 | 15B | 2 | 0010 | 19B | 2 | 0010 | 1DB | A | 1010 |
| 01C | 6 | 0110 | 05C | E | 1110 | 09C | E | 1110 | 0DC | 6 | 0110 | 11C | E | 1110 | 15C | 6 | 0110 | 19C | 6 | 0110 | 1DC | E | 1110 |
| 01D | 6 | 0110 | 05D | E | 1110 | 09D | E | 1110 | 0DD | 6 | 0110 | 11D | E | 1110 | 15D | 6 | 0110 | 19D | 6 | 0110 | 1DD | E | 1110 |
| 01E | 6 | 0110 | 05E | E | 1110 | 09E | E | 1110 | 0DE | 6 | 0110 | 11E | E | 1110 | 15E | 6 | 0110 | 19E | 6 | 0110 | 1DE | E | 1110 |
| 01F | 6 | 0110 | 05F | E | 1110 | 09F | E | 1110 | 0DF | 6 | 0110 | 11F | E | 1110 | 15F | 6 | 0110 | 19F | 6 | 0110 | 1DF | E | 1110 |
| 020 | 6 | 0110 | 060 | E | 1110 | 0A0 | E | 1110 | 0E0 | 6 | 0110 | 120 | E | 1110 | 160 | 6 | 0110 | 1A0 | 6 | 0110 | 1E0 | E | 1110 |
| 021 | 6 | 0110 | 061 | E | 1110 | 0A1 | E | 1110 | 0E1 | 6 | 0110 | 121 | E | 1110 | 161 | 6 | 0110 | 1A1 | 6 | 0110 | 1E1 | E | 1110 |
| 022 | 6 | 0110 | 062 | E | 1110 | 0A2 | E | 1110 | 0E2 | 6 | 0110 | 122 | E | 1110 | 162 | 6 | 0110 | 1A2 | 6 | 0110 | 1E2 | E | 1110 |
| 023 | 6 | 0110 | 063 | E | 1110 | 0A3 | E | 1110 | 0E3 | 6 | 0110 | 123 | E | 1110 | 163 | 6 | 0110 | 1A3 | 6 | 0110 | 1E3 | E | 1110 |
| 024 | 6 | 0110 | 064 | E | 1110 | 0A4 | E | 1110 | 0E4 | 6 | 0110 | 124 | E | 1110 | 164 | 6 | 0110 | 1A4 | 6 | 0110 | 1E4 | E | 1110 |
| 025 | 6 | 0110 | 065 | E | 1110 | 0A5 | E | 1110 | 0E5 | 6 | 0110 | 125 | E | 1110 | 165 | 6 | 0110 | 1A5 | 6 | 0110 | 1E5 | E | 1110 |
| 026 | 6 | 0110 | 066 | E | 1110 | 0A6 | E | 1110 | 0E6 | 6 | 0110 | 126 | E | 1110 | 166 | 6 | 0110 | 1A6 | 6 | 0110 | 1E6 | E | 1110 |
| 027 | 2 | 0010 | 067 | E | 1110 | 0A7 | A | 1010 | 0E7 | 6 | 0110 | 127 | A | 1010 | 167 | 6 | 0110 | 1A7 | 2 | 0010 | 1E7 | E | 1110 |
| 028 | 4 | 0100 | 068 | C | 1100 | 0A8 | C | 1100 | 0E8 | 4 | 0100 | 128 | C | 1100 | 168 | 4 | 0100 | 1A8 | 2 | 0010 | 1E8 | A | 1010 |
| 029 | 4 | 0100 | 069 | C | 1100 | 0A9 | A | 1010 | 0E9 | 2 | 0010 | 129 | A | 1010 | 169 | 2 | 0010 | 1A9 | 2 | 0010 | 1E9 | A | 1010 |
| 02A | 4 | 0100 | 06A | C | 1100 | 0AA | A | 1010 | 0EA | 2 | 0010 | 12A | C | 1100 | 16A | 4 | 0100 | 1AA | 2 | 0010 | 1EA | A | 1010 |
| 02B | 2 | 0010 | 06B | A | 1010 | 0AB | A | 1010 | 0EB | 2 | 0010 | 12B | A | 1010 | 16B | 2 | 0010 | 1AB | 2 | 0010 | 1EB | A | 1010 |
| 02C | 6 | 0110 | 06C | E | 1110 | 0AC | E | 1110 | 0EC | 6 | 0110 | 12C | E | 1110 | 16C | 6 | 0110 | 1AC | 6 | 0110 | 1EC | E | 1110 |
| 02D | 6 | 0110 | 06D | E | 1110 | 0AD | E | 1110 | 0ED | 6 | 0110 | 12D | E | 1110 | 16D | 6 | 0110 | 1AD | 6 | 0110 | 1ED | E | 1110 |
| 02E | 6 | 0110 | 06E | E | 1110 | 0AE | E | 1110 | 0EE | 6 | 0110 | 12E | E | 1110 | 16E | 6 | 0110 | 1AE | 6 | 0110 | 1EE | E | 1110 |
| 02F | 6 | 0110 | 06F | E | 1110 | 0AF | E | 1110 | 0EF | 6 | 0110 | 12F | E | 1110 | 16F | 6 | 0110 | 1AF | 6 | 0110 | 1EF | E | 1110 |
| 030 | E | 1110 | 070 | 6 | 0110 | 0B0 | 6 | 0110 | 0F0 | E | 1110 | 130 | 6 | 0110 | 170 | E | 1110 | 1B0 | E | 1110 | 1F0 | 6 | 0110 |
| 031 | E | 1110 | 071 | 6 | 0110 | 0B1 | 6 | 0110 | 0F1 | E | 1110 | 131 | 6 | 0110 | 171 | E | 1110 | 1B1 | E | 1110 | 1F1 | 6 | 0110 |
| 032 | E | 1110 | 072 | 6 | 0110 | 0B2 | 6 | 0110 | 0F2 | E | 1110 | 132 | 6 | 0110 | 172 | E | 1110 | 1B2 | E | 1110 | 1F2 | 6 | 0110 |
| 033 | E | 1110 | 073 | 6 | 0110 | 0B3 | 6 | 0110 | 0F3 | E | 1110 | 133 | 6 | 0110 | 173 | E | 1110 | 1B3 | E | 1110 | 1F3 | 6 | 0110 |
| 034 | E | 1110 | 074 | 6 | 0110 | 0B4 | 6 | 0110 | 0F4 | E | 1110 | 134 | 6 | 0110 | 174 | E | 1110 | 1B4 | E | 1110 | 1F4 | 6 | 0110 |
| 035 | E | 1110 | 075 | 6 | 0110 | 0B5 | 6 | 0110 | 0F5 | E | 1110 | 135 | 6 | 0110 | 175 | E | 1110 | 1B5 | E | 1110 | 1F5 | 6 | 0110 |
| 036 | E | 1110 | 076 | 6 | 0110 | 0B6 | 6 | 0110 | 0F6 | E | 1110 | 136 | 6 | 0110 | 176 | E | 1110 | 1B6 | E | 1110 | 1F6 | 6 | 0110 |
| 037 | A | 1010 | 077 | 6 | 0110 | 0B7 | 2 | 0010 | 0F7 | E | 1110 | 137 | 2 | 0010 | 177 | E | 1110 | 1B7 | A | 1010 | 1F7 | 6 | 0110 |
| 038 | E | 1110 | 078 | 6 | 0110 | 0B8 | 6 | 0110 | 0F8 | E | 1110 | 138 | 6 | 0110 | 178 | E | 1110 | 1B8 | A | 1010 | 1F8 | 2 | 0010 |
| 039 | E | 1110 | 079 | 6 | 0110 | 0B9 | 2 | 0010 | 0F9 | A | 1010 | 139 | 2 | 0010 | 179 | A | 1010 | 1B9 | A | 1010 | 1F9 | 2 | 0010 |
| 03A | E | 1110 | 07A | 6 | 0110 | 0BA | 2 | 0010 | 0FA | A | 1010 | 13A | 6 | 0110 | 17A | E | 1110 | 1BA | A | 1010 | 1FA | 2 | 0010 |
| 03B | A | 1010 | 07B | 2 | 0010 | 0BB | 2 | 0010 | 0FB | A | 1010 | 13B | 2 | 0010 | 17B | A | 1010 | 1BB | A | 1010 | 1FB | 2 | 0010 |
| 03C | E | 1110 | 07C | 6 | 0110 | 0BC | 6 | 0110 | 0FC | E | 1110 | 13C | 6 | 0110 | 17C | E | 1110 | 1BC | E | 1110 | 1FC | 6 | 0110 |
| 03D | E | 1110 | 07D | 6 | 0110 | 0BD | 6 | 0110 | 0FD | E | 1110 | 13D | 6 | 0110 | 17D | E | 1110 | 1BD | E | 1110 | 1FD | 6 | 0110 |
| 03E | E | 1110 | 07E | 6 | 0110 | 0BE | 6 | 0110 | 0FE | E | 1110 | 13E | 6 | 0110 | 17E | E | 1110 | 1BE | E | 1110 | 1FE | 6 | 0110 |
| 03F | E | 1110 | 07F | 6 | 0110 | 0BF | 6 | 0110 | 0FF | E | 1110 | 13F | 6 | 0110 | 17F | E | 1110 | 1BF | E | 1110 | 1FF | 6 | 0110 |

PART NUMBER: 23-946A9-00
DEVICE TYPE:512 X 4
SCHEMATIC SHEET #:D-CS-M8391-0-MCTC
LOCATION/DESCRIPTION: E51 / PROTECTION ROM

LEFT COLUMN OF BIN DATA IS MSB
BINARY DATA "1" = HIGH
BINARY DATA "0" = LOW



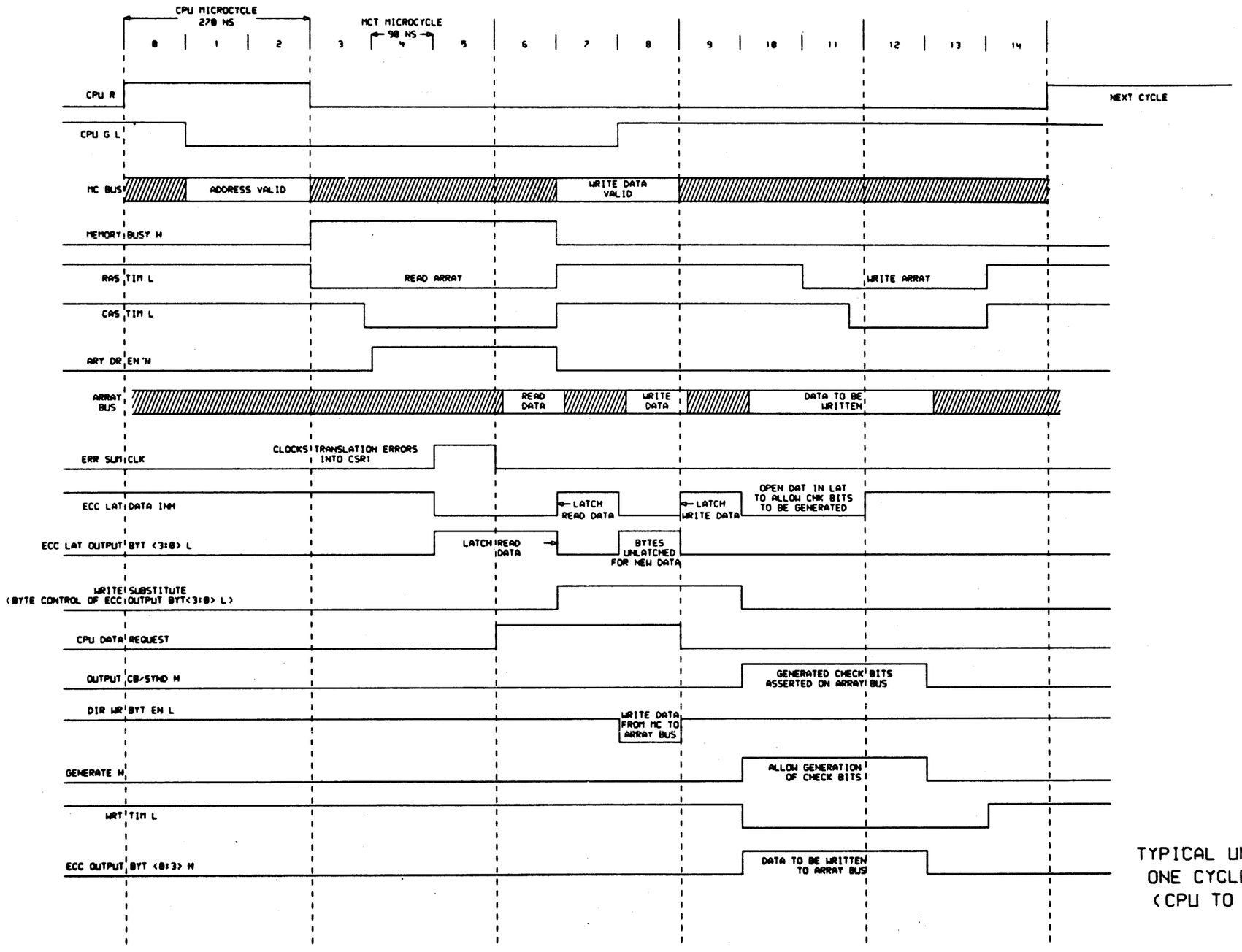
| REVISIONS | | |
|---|---|---|
| CHK | CHANGE NO. | REV |

digital

DRN: G.M.Hafner 27-OCT-81 | ENG. | DATE | TITLE: MEM. CTLR. ROM AND PAL LISTINGS
CHK'D. | DATE | BOARD LOCATION: | SHEET 16 OF 16
DSK:GLMC16.T2PI1106,1500]27-OCT-81 18:27 | NEXT HIGHER ASSEMBLY: B-DD-M8391-0-0
FIRST USED ON OPTION/MODEL: 11/730

| SIZE | CODE | NUMBER | REV. |
|---|---|---|---|
| D | GL | M8391-0-0 | A |

G.M. HAFNER, [1196,1500]GLMC16.PLO/1196,1500] SCALE 2. D-CS-M8391-0-MCTC 27-OCT-81 18:32




TYPICAL UNALIGNED
ONE CYCLE WRITE
(CPU TO ARRAY)

| REVISIONS | | |
|---|---|---|
| CHK | CHANGE NO. | REV |

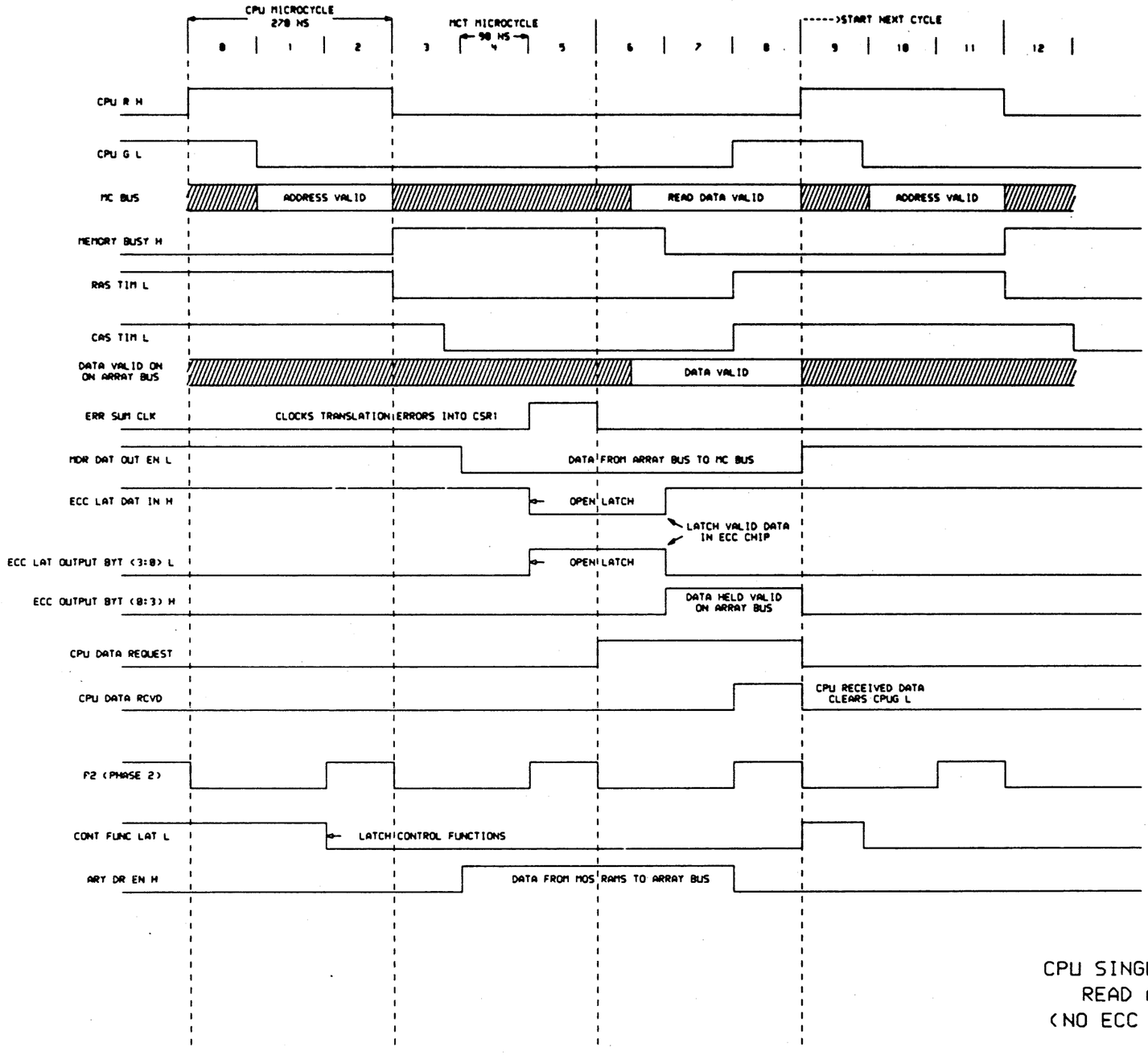
digital

DRN. D.M. Hafner
CHK'D.
DATE 10-DEC-81
ENG.
DATE
BOARD LOCATION:
SHEET 1 OF 1
NEXT HIGHER ASSEMBLY:
FIRST USED ON OPTION/MODEL: NEBULA
MCT1D1.DRN 05-OCT-81 12:28

TITLE: MCT TIMING DIAGRAM #1

| SIZE | CODE | NUMBER | REV. |
|---|---|---|---|
| D | TD | M8391-0-0 | A |

D.M. HAFNER, [1186,1500]MCTTD1.DPL, SCALE 2, "D" RELEASE BOX
D.M. HAFNER MCTTD1.PLOT[1186,1500] 10-DEC-81 12:43




CPU SINGLE CYCLE
READ ARRAY
(NO ECC ERRORS)



| REVISIONS | | |
|---|---|---|
| CHK | CHANGE NO. | REV |
| | | |

digital

DRN D.M.Hafner — DATE 10-DEC-81 — ENG. — DATE

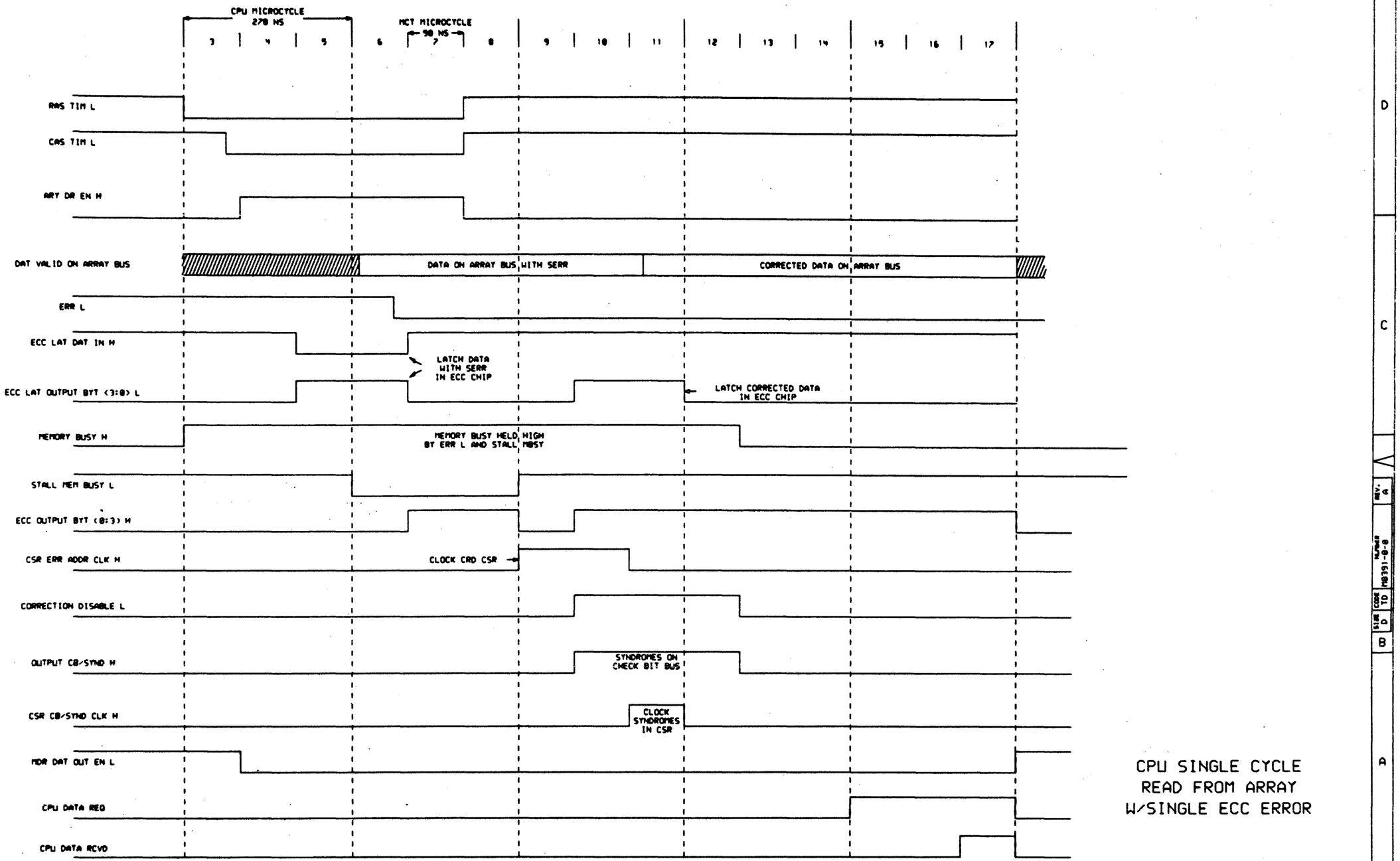
CHK D. — DATE — BOARD LOCATION: — SHEET 2 OF 3

(362,1500)MCTTD2.DRW 05-OCT-81 12:28 — NEXT HIGHER ASSEMBLY:

FIRST USED ON OPTION/MODEL: NEBULA

TITLE: MCT TIMING DIAGRAM #2

| SIZE | CODE | NUMBER | REV. |
|---|---|---|---|
| D | TD | M8391-0-0 | A |




CPU SINGLE CYCLE
READ FROM ARRAY
W/SINGLE ECC ERROR

| REVISIONS | | |
|---|---|---|
| CHK | CHANGE NO. | REV |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| digital | DRN: D.M.Hoffman | DATE: 10-SEP-81 | ENG. | DATE | TITLE: | MCT TIMING DIAGRAM #3 | |
| | CHK'D. | DATE | BOARD LOCATION: | | | | |
| (362.1500)MCTTD1.DRN 05-OCT-81 12:28 | | | SHEET 3 OF 3 | | SIZE: D | CODE: TD | NUMBER: M8391-0-0 REV: A |
| FIRST USED ON OPTION/MODEL: NEBULA | | | NEXT HIGHER ASSEMBLY: | | | | |

G.M. HARPER, (1186,1500)MCTTD1.DPL, SCALE 2, "D" RELEASE BOX
G.M. HARPER MCTTD1.PLO[1186,1500] 18-OCT-81 17:43

DEC 5013893-0-0 B

LAYER 1

SIDE 1

digital

CS*ABCDEFHJKLMNPRS

E112 E111 E99 E98 E86 E85 E74 E73 E64 E63 E62 E54 E53 E45 E25 E16 E8

| REVISION HISTORY | | | |
|---|---|---|---|
| DATE | ECO NUMBER | REV | |
| 22-OCT-91 | TW001 | B | |
| 22-OCT-91 | K. Okin | | |
| 31-MAY-92 | D.M. Lindsay | | |

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES AND THE FOLLOWING TOLERANCES APPLY (PER DEC STD 114)

| ANGLES | FRACTIONS | DECIMALS | | | | | MICROINCHES |
|---|---|---|---|---|---|---|---|
| ±0°30' | ±1/64 | OVER 0 TO 12 | OVER 12 TO 40 | OVER 40 TO 60 | OVER 60 TO 100 | OVER 100 TO 120 | |
| SURFACE QUALITY | | ± .004 | ± .008 | ± .012 | ± .016 | ± .024 | ± .04 |

QUANTITY & VARIATION: XX = ± .02, XXX = ± .005

THIRD ANGLE PROJECTION

DO NOT SCALE DRAWING

REMOVE BURRS AND BREAK SHARP CORNERS

MATERIAL

FINISH

| | | |
|---|---|---|
| DRN | J. Casey | DATE 7-9-80 |
| CHK'D | J. Casey | DATE 7-9-80 |
| DES ENG | Richard Wilk | DATE 8-8-80 |
| RESP ENG | Richard Wilk | DATE 8-8-80 |
| MFG ENG | [illegible] | DATE 7-9-80 |
| NEXT HIGHER DOC | | |

TITLE: digital

ETCH CUT DRAWING

DOCUMENT NUMBER

| SIZE | CODE | NUMBER | REV |
|---|---|---|---|
| D | EC | 5013893-0-0 | B |

SCALE 2-1 SHEET 1 OF 3

8 | 7 | 6 | 5 | 4 | 3 | 2 | 1

LAYER 4

5013893B M8391

SIDE 2 MCT

D

C

B

A

| REVISION HISTORY | | |
|---|---|---|
| DATE | E.C.O NUMBER | REV |
| | | |

| TITLE | DOCUMENT NUMBER | | | |
|---|---|---|---|---|
| ETCH CUT DRAWING | SIZE | CODE | NUMBER | REV |
| | D | EC | 5013893 - 0 - 0 | B |
| | SCALE 2 - 1 | | SHEET 2 OF 3 | |

8 | 7 | 6 | 5 | 4 | 3 | 2 | 1

REWORK INSTRUCTIONS:

ETCH CUT SIDE 2:

~~0-1 BETWEEN E108-12 TO E105-7.~~

ECO#M8391 TW001

1-1. STEP *0-1 OF THIS DRAWING IS ELIMINATED AS PER ECO M8391-TW001.

| REVISION HISTORY | | |
|---|---|---|
| DATE | ECO NUMBER | REV. |
| | | |

| TITLE | DOCUMENT NUMBER | | | |
|---|---|---|---|---|
| | SIZE | CODE | NUMBER | REV. |
| ETCH CUT DRAWING | D | EC | 5013893-0-0 | B |
| | SCALE 2:1 | | SHEET 3 OF 3 | |

DID 1328

TW

| SIZE | CODE | NUMBER | REV. |
|---|---|---|---|
| B | DD | M8394-0 | C |

| DRAWING NO. | NO. OF SHTS. | PART NO. | DESCRIPTION | REVISIONS |
|---|---|---|---|---|
| | | | MODULE REVISION | A B |
| B-DD-M8394-0 | 1 | | DRAWING DIRECTORY | A B |
| D-UA-M8394-0-0 | 3 | | UNIT ASSEMBLY | A B |
| K-PL-M8394-0-DBP | 3 | | PARTS LIST | A B |
| | | 5014438 | ETCH BOARD | A A |
| K-PC-M8394-0-DBC | | | PC DATA PATH | A A |
| D-MD-5014438-0-0 | 5 | | MECHANICAL DRAWINGS | A A |
| D-EC-5014438-0-0 | 3 | | ETCH CUT DRAWING | A B |
| K-CS-M8394-0-DBS | 1 | | DESIGN DATA BASE SUDS | A B |
| D-CS-M8394-0-WCSA | 1 | * | 8085, A/D BUS, AND CONTROL | A B |
| D-CS-M8394-0-WCSB | 1 | * | CONSOLE PANEL AND CPU CONTROL | A B |
| D-CS-M8394-0-WCSC | 1 | * | CONSOLE INTERFACE | A B |
| D-CS-M8394-0-WCSE | 1 | * | 8085 MEMORY AND CONTROL | A B |
| D-CS-M8394-0-WCSF | 1 | * | BASIC CLOCK GENERATOR | A B |
| D-CS-M8394-0-WCSH | 1 | * | CONTROL STORE DATA (00:15) | A B |
| D-CS-M8394-0-WCSJ | 1 | * | CONTROL STORE DATA (16:23) | A B |
| D-CS-M8394-0-WCSK | 1 | * | MEMORY REFRESH CONTROL | A B |
| D-CS-M8394-0-WCSL | 1 | * | XCS WRITE AND SELECT CONTROL | A B |
| D-CS-M8394-0-WCSM | 1 | * | OPTIONAL CONTROL STORE - HIGH | A B |
| D-CS-M8394-0-WCSN | 1 | * | OPTIONAL CONTROL STORE - LOW | A B |
| D-CS-M8394-0-WCSP | 1 | * | MODEM INTERFACE AND 8085 RAM | A B |
| D-CS-M8394-0-WCSR | 1 | * | FILTER CAPACITORS | A B |
| D-BD-M8394-0-0 | 1 | * | WCS BLOCK DIAGRAM | A |
| D-TD-M8394-0-0 | 1 | * | WCS TIMING DIAGRAM | A |
| D-GL-M8394-0-0 | | | ROM & PAL LISTINGS | A |
| | | | | |

## NOTES:

*CONTROL SOURCE IS THE SUDS DATA BASE

NO CONTROLLED PAPER ORIGINALS EXIST

| REVISIONS | REV | B |
|---|---|---|
| | CHG NO. | TW001 |
| | DATE | 12-81 |



digital

| USED ON OPTION/MODEL | | | |
|---|---|---|---|
| | | | |
| | | | |
| | | | |
| | | | |

| | | |
|---|---|---|
| DRN. | J. CASEY | 8-26-80 |
| CHK'D | J. CASEY | 8-26-80 |
| ENG. | S. LACHEY | 9-19-80 |
| PROD. | C. CONSIDINE | 10-8-80 |

TITLE: WCS

| SIZE | CODE | NUMBER | REV. |
|---|---|---|---|
| B | DD | M8394-0 | C |

SHEET 1 OF 1

DRB 126

COMPONENT SIDE VIEW

NOTES:
1. SPARE I.C. LOCATIONS ARE E99, E117, E131.
2. INSTALL SOCKET ITEM 97 AT E49 THRU E54, E75-E77, E79-E81, E90-E92, E94-E96 E103-E107, E109
3. INSTALL SOCKET ITEM 96 AT E21, E39, E58, E85.
4. INSTALL SOCKET ITEM 107 AT E3, E4

| STEP E | ↑ Y AXIS 2 STEP 2 TIMES |
|---|---|
| REPEAT | → X AXIS 2 STEP 2 TIMES |

| CHK | CHANGE NO | REV |
|---|---|---|
| TW | M8394-TW001 | B |
| R. DAY | | |

| SIGNATURES | DATE |
|---|---|
| DRN. | |
| CHK'D. E.T.GERRY | |
| MECH. ENG. | |
| PROJ. ENG. | |
| PROD. | |

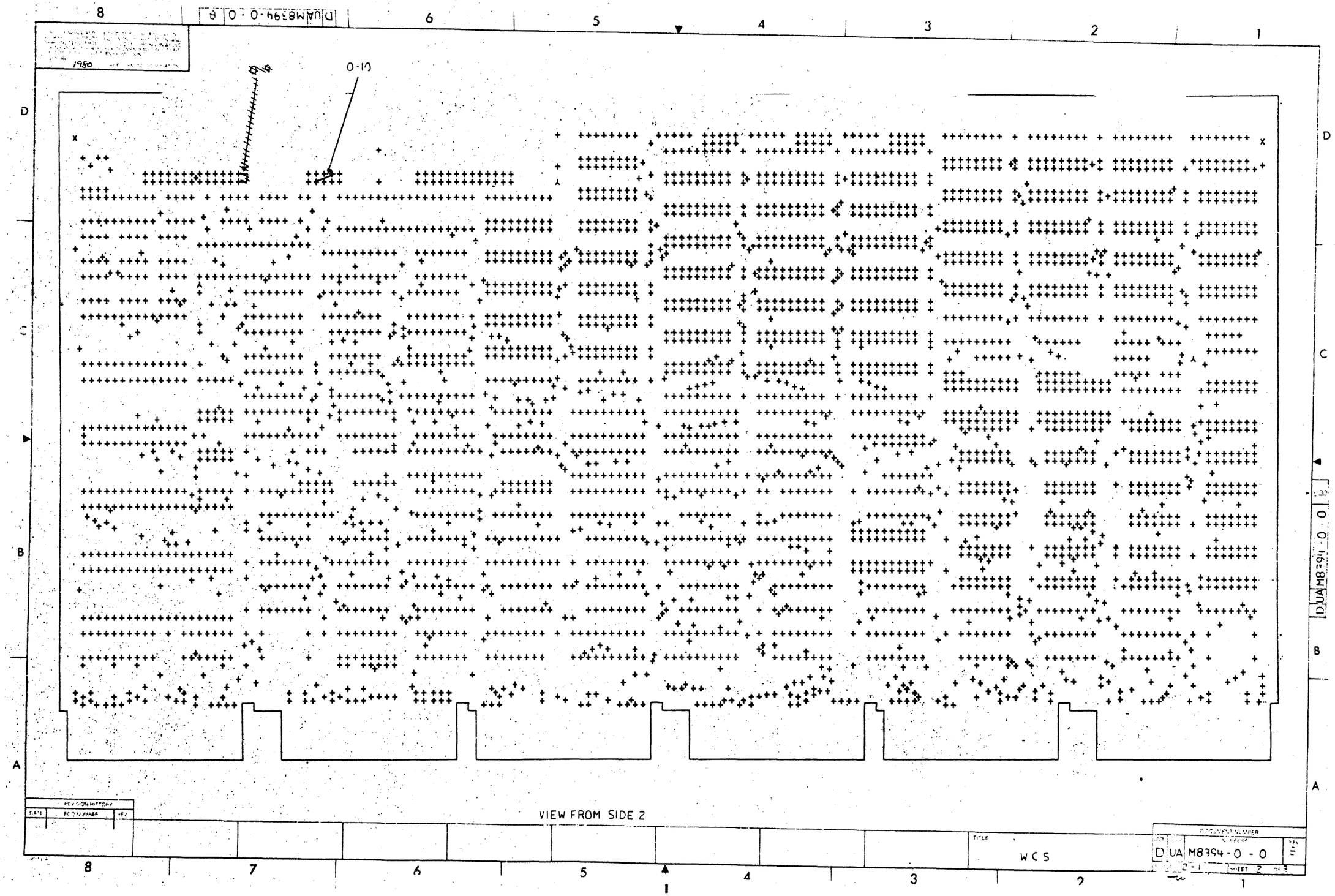
ETCH REV. A
DATA BASE REV A

digital

TITLE: W C S

SCALE 2/1 | SIZE D | CODE UA | NUMBER M8394-0-0 | REV B
SHT. 1 OF 3
NEXT HIGHER ASSY. B-DD-M8394-0

MS# 170299A


0·10
VIEW FROM SIDE 2
WCS
DUA M8394-0-0

REWORK INSTRUCTIONS

WIRE ADDS SIDE 1:

0-1 FROM Q1-1 TO E24-16
0-2 FROM E24-3 TO E87-11
0-3 FROM E24-6 TO E87-8
0-4 FROM E24-10 TO E87-13
0-5 FROM E24-13 TO E87-12,
0-6 FROM E23-3 TO E87-10
0-7 FROM E23-6 TO E87-9
~~0-8 FROM E87-18 TO E88-20~~

WIRE ADDS SIDE 2:

~~0-9 FROM J1-25 TO J1-26~~
0-10 FROM J2-4 TO J2-7

ECO#1

COMPONENT ADDS:

1-15 STEP 0-9 HAS BEEN ELIMINATED.
1-16 ADD A 74S175 IN SPARE LOCATION E117.
1-17 ADD A 100 OHM RESISTOR (R136) FROM PTH, CONNECTED TO AA2, TO FINGER PIN AM1.
1-18 ADD A 100 OHM RESISTOR (R138) FROM PTH, CONNECTED TO AV1 NEAR R99, TO PTH GOING TO AR1.
1-19 ADD A 100 OHM RESISTOR (R137) TO PTH, CONNECTED TO AV1 AND NEAR PTH MENTIONED IN STEP 1-4, TO PTH CONNECTED TO AM2 NEAR C81.

WIRE ADDS SIDE 1:

1-20 FROM E86-01 TO E154-01.
1-21 FROM E117-01 TO E128-03.
1-22 FROM E117-04 TO E29-02.
1-23 FROM E117-02 TO E117-05.
1-24 FROM E117-09 TO E115-11.
1-25 FROM E117-06 TO E129-02.
1-26 FROM E128-01 TO E128-10.
1-27 FROM E86-03 TO E129-05.
1-28 FROM E85-09 TO E85-11.
1-29 FROM E47-09 TO J1-25.
1-30 FROM E57-06 TO E3-28.
1-31 FROM E117-08 TO E116-7.
1-32 FROM BOTTOM OF C81 TO E3-01.
1-33 FROM E3-4 TO E117-14.
1-34 FROM E117-14 TO E3-01.

ECO#1

WIRE ADDS SIDE 1:

1-35 FROM E47-08 TO BOTTOM OF R94.
1-36 FROM E45-02 TO E21-11.
1-37 FROM E15-02 TO E33-04.
1-38 FROM E88-20 TO E87-14, REPLACES STEP 0-8.
1-39 FROM E4-09 TO E32-08.
1-40 FROM E4-10 TO E4-06.

| REVISION HISTORY | | |
|---|---|---|
| DATE | ECO NUMBER | REV. |

TITLE: WCS

DOCUMENT NUMBER: SIZE D | CODE UA | NUMBER M8394-0-0 | REV. B

SCALE 2-1 | SHEET 3 OF 3

DRD 137A

AUTOMATED BY PRTLST,3N(43)

# P A R T S  L I S T



| LINE | ITEM | DOCUMENT NUMBER | PART NUMBER | DESCRIPTION | QTY PER VARIATION 00 | REFERENCE DESIGNATOR |
|---|---|---|---|---|---|---|
| 1 | 1 | D-MD-5014439-0-0 | 5014439-00 | DRILL AND ETCH BRD WCS | 1 | |
| 2 | 85 | | 1000043-00 | 100.0 MMF 250V 20% Y5F DISC | 4 | C7-C9,C118 |
| 3 | 86 | | 1010274-01 | .22 MFD 50V +80-20% Z5U CER | 45 | C22,C23,C25,C31,C32,C34-C36,C41, |
| | | | | | | CONT C42,C44,C45,C47,C48,C50-C53,C62, |
| | | | | | | CONT C70-C72,C88-C96,C98-C109,C200, |
| | | | | | | CONT C201 |
| 4 | 88 | | 1012784-00 | .047 MFD 50V +80-20% CER | 49 | C2-C6,C12,C19,C21,C27,C33, |
| | | | | | | CONT C37-C40,C46,C49,C54-C61,C63-C69, |
| | | | | | | CONT C73-C75,C81-C84,C111-C117,C119, |
| | | | | | | CONT C77,C79,C86 |
| 5 | 89 | | 1013466-11 | .22 MFD 50V +80-20% Z5U CER | 1 | C80 |
| 6 | 87 | | 1017472-00 | 10 MFD 35V +50-10% AL EL | 7 | C13-C18,C85 |
| 7 | 90 | | 1100122-00 | 1N 748A VZ= 3.9 5% | 1 | D15 |
| 8 | 91 | | 1105796-00 | 1N 4004 PIV=400 I= 1A D041 SP | 7 | D1-D6,D16 |
| 9 | 93 | | 1209941-09 | HEADER 26POS RT ANGLE RCPT | 2 | J1,J3 |
| 10 | 92 | | 1209941-05 | HEADER,100 10POS RT ANGLE | 1 | J2 |
| 11 | 94 | | 1216988-02 | HANDLE,MODULE,HEX TWO EJECTORS | 1 | |
| 12 | 95 | | 1211164-04 | SW,DIP 1P 1A 8POS | 1 | E47 |
| 13 | 96 | | 1211164-06 | SW,DIP 1P 1A 10POS | 1 | E14 |
| 14 | 97 | | 1215006-03 | SOCKET 18PIN IC LOW PROFILE | 24 | XE49-XE54,XE75-XE77,XE79-XE81, |
| | | | | | | CONT XE90-XE92,XE94-XE96,XE103-XE107, |
| | | | | | | CONT XE109 |
| 15 | 98 | | 1215006-04 | SOCKET 20PIN IC LOW PROFILE | 4 | XF21,XE39,XE85,XE58 |
| 16 | 2 | | 1300197-00 | 33.0 .25 W 5.0 % CC | 1 | R80 |
| 17 | 3 | | 1300229-00 | 100.0 .25 W 5.0 % CC | 33 | R11-R16,R25,R35,R37,R39,R41,R43, |
| | | | | | | CONT R45,R47,R51,R53,R61,R62,R70,R74, |
| | | | | | | CONT R93,R96,R98,R99,R101,R102, |
| | | | | | | CONT R116-R118,R135,R17,R19,R21 |
| 18 | 4 | | 1300295-00 | 330.0 .25 W 5.0 % CC | 1 | R73 |
| 19 | 5 | | 1300309-00 | 390.0 .25 W 5.0 % CC | 2 | R64,R65 |

| REVISION HISTORY | | | BASIC PART NO: M8394 | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ENG | ECO NUMBER | REV | SECTION A OF A | DRN: J.CASEY | DATE: 12-JUN-80 | | D | I | G | I | T | A | L | | |
| | INITIAL | A | SECTION,VARIATION INDEX [A] 00 | CHK'D: E.T.GERRY | DATE: 12-JUN-80 | TITLE | PARTS LIST | | | | | | | | |
| | | | [B] | | | WCS | | | | | | | | | |
| | | | [C] | DES.ENG: S.LACKEY | DATE: 7-29-80 | | | | | | | | | | |
| | | | [D] | | | DOCUMENT NUMBER | | | | | | | | | |
| | | | [E] | | | | | | | | | | | | |
| | | | [F] | RESP.ENG.: S.LACKEY | DATE: 7-29-80 | SIZE | CODE | NUMBER | | | | | | REV | |
| | | | [H] | | | | | | | | | | | | |
| | | | [J] | | | | | | | | | | | | |
| | | | [K] | MFG.ENG.: J.CONSIDINE | DATE: 08-OCT-80 | K | PL | M8394-0-DBP | | | | | | A | |
| | | | [L] | | | | | | | | | | | | |
| | | | [M] | ASSEMBLY NUMBER: | TOP DOCUMENT NUMBER: | FILE NAME: | | | | | | | | EDIT # | |
| | | | [N] | D-UA-M8394-0-0 | | Z1272.PLS | | | | | | | | 19 | |



TW

# P A R T S  L I S T



| LINE | ITEM | DOCUMENT NUMBER | PART NUMBER | DESCRIPTION | QTY PER VARIATION 00 | REFERENCE DESIGNATOR |
|---|---|---|---|---|---|---|
| 20 | 6 | | 1300316-00 | 470.0 .25 W 5.0 % CC | 2 | R66,R67 |
| 21 | 7 | | 1300365-00 | 1.0 K .25 W 5.0 % CC | 13 | R18,R20,R22,R32,R68,R69,R72,R76, |
| | | | | | | CONT R91,R94,R103,R119,R131 |
| 22 | 8 | | 1302394-00 | 30.0 K .25 W 5.0 % CC | 9 | R24,R26,R29,R30,R56,R130, |
| | | | | | | CONT R132-R134 |
| 23 | 9 | | 1300479-00 | 10.0 K .25 W 5.0 % CC | 3 | R89,R90,R106 |
| 24 | 11 | | 1301322-00 | 180.0 .25 W 5.0 % CC | 1 | R75 |
| 25 | 12 | | 1301522-00 | 27.0 .25 W 5.0 % CC | 21 | R34,R36,R38,R40,R42,R44,R50,R52, |
| | | | | | | CONT R54,R55,R120-R129,R46 |
| 26 | 13 | | 1302177-00 | 47.0 K .25 W 5.0 % CC | 4 | R23,R31,R48,R49 |
| 27 | 14 | | 1302379-00 | 75.0 .25 W 5.0 % CC | 1 | R78 |
| 28 | 15 | | 1302391-00 | 20.0 K .25 W 5.0 % CC | 1 | R92 |
| 29 | 16 | | 1302685-00 | 909.0 .25 W 1.0 % RN55D-F10 | 2 | R81,R104 |
| 30 | 17 | | 1303114-00 | 1.0 K .25 W 1.0 % RN55D-F10 | 1 | R105 |
| 31 | 18 | | 1303313-00 | 12.10 K .25 W 1.0 % RN55D-F10 | 1 | R86 |
| 32 | 19 | | 1309295-00 | 1.80 K .25 W .10% RN55E-B 2 | 1 | R84 |
| 33 | 20 | | 1310634-00 | 2.67 K .25 W 1.0 % RN55D-F10 | 1 | R87 |
| 34 | 21 | | 1312628-00 | R NETWORK 14-176.5 14-375 16PIN | 2 | E57,E84 |
| 35 | 22 | | 1312990-00 | 12.70 K .25 W 1.0 % RN55D 10 | 1 | R85 |
| 36 | 23 | | 1313150-00 | 430.0 .25 W 5.0 % CC | 1 | R79 |
| 37 | 24 | | 1313155-00 | 604.0 .25 W 1.0 % RN55D-F10 | 2 | R82,R83 |
| 38 | 25 | | 1313595-00 | 17.40 K .25 W 1.0 % RN55D-F10 | 1 | R88 |
| 39 | 26 | | 1314386-00 | 91.0 .25 W 5.0 % CC | 9 | R107-R115 |
| 40 | 27 | | 1501913-00 | 2N 2904A PNP 600MW SI 60 40 Y | 2 | Q1,Q2 |
| 41 | 28 | | 1503100-00 | DEC3009B NPN 200MW SI 20 25 | 1 | Q3 |
| 42 | 29 | | 1601562-00 | 1.0 UH 10% 475MA #DD1.00 | 1 | L2 |
| 43 | 30 | | 1612946-01 | 33 UH 10% 260MA | 1 | L1 |
| 44 | 31 | | 1616322-00 | DELAY= 75NS,5TAPS | 1 | E130 |
| 45 | 32 | | 1811660-01 | OSCILLATOR, XTAL 10.000 MHZ | 1 | E20 |
| 46 | 33 | | 1811660-26 | OSCILLATOR, XTAL 44.4444 MHZ | 1 | E151 |
| 47 | 34 | | 1813951-00 | OSCILLATOR, XTAL 1.0 KHZ | 1 | E16 |
| 48 | 35 | | 1910532-00 | 74S00 NAND GATE-QUAD 2IN | 1 | E86 |
| 49 | 36 | | 1910534-00 | 74S04 INVERTER GATE-HEX 1I | 5 | E18,E114,E124,E144,E157 |
| 50 | 37 | | 1910536-00 | 74S10 NAND GATE-TRIPLE 3IN | 1 | E128 |
| 51 | 38 | | 1910544-00 | 74S74 FF-D DUAL,EDGE TRIGG | 2 | E113,E140 |
| 52 | 39 | | 1910545-00 | 74S112 FF-JK DUAL,EDGE TRIG | 1 | E41 |
| 53 | 40 | | 1910550-00 | 74S174 FF-D HEX | 1 | E38 |
| 54 | 41 | | 1910552-00 | 74S194 SHIFT REG.,4BIT RIGH | 6 | E98,E111,F125,E138,E139,R152 |
| 55 | 42 | | 1910957-00 | 74S175 FF-D QUAD COMMON CLO | 2 | E36,E97 |
| 56 | 43 | | 1911579-00 | 8641 TRANSCEIVER,BUS,QUA | 5 | E27,E44,E56,E70,E83 |
| 57 | 44 | | 1911676-00 | 74S139 DECODER-DUAL TWO-INP | 2 | E30,E100 |
| 58 | 45 | | 1911712-00 | 74S51 AND-OR GATE-INVERT D | 2 | E35,E127 |
| 59 | 46 | | 1912108-00 | 339 VOLT CMPRTR,QUAD | 1 | E31 |
| 60 | 47 | | 1912388-00 | 74S02 NOR GATE-QUAD 2IN,PO | 1 | E112 |
| 61 | 48 | | 1912647-00 | LS257 MUX 1 OF 2 (QUAD) | 2 | E23,E24 |
| 62 | 49 | | 1912648-00 | LS251 MUX 8 INPUT,TRI-STA | 2 | E29,E33 |
| 63 | 50 | | 1912746-00 | DEC 74S37 NAND GATE-QUAD 2IN | 3 | E110,E115,E129 |
| 64 | 51 | | 1912799-00 | LS00 NAND-GATE-QUAD 2IN,P | 2 | E17,E32 |

| D | I | G | I | T | A | L | TITLE | SECTION A OF A |
|---|---|---|---|---|---|---|---|---|
| | | | | | | | WCS | |

| SIZE | CODE | DOCUMENT NUMBER | REV |
|---|---|---|---|
| K | PL | M8394-0-DBP | A |

TW

AUTOMATED BY PRTLST,3N(43)

# P A R T S  L I S T

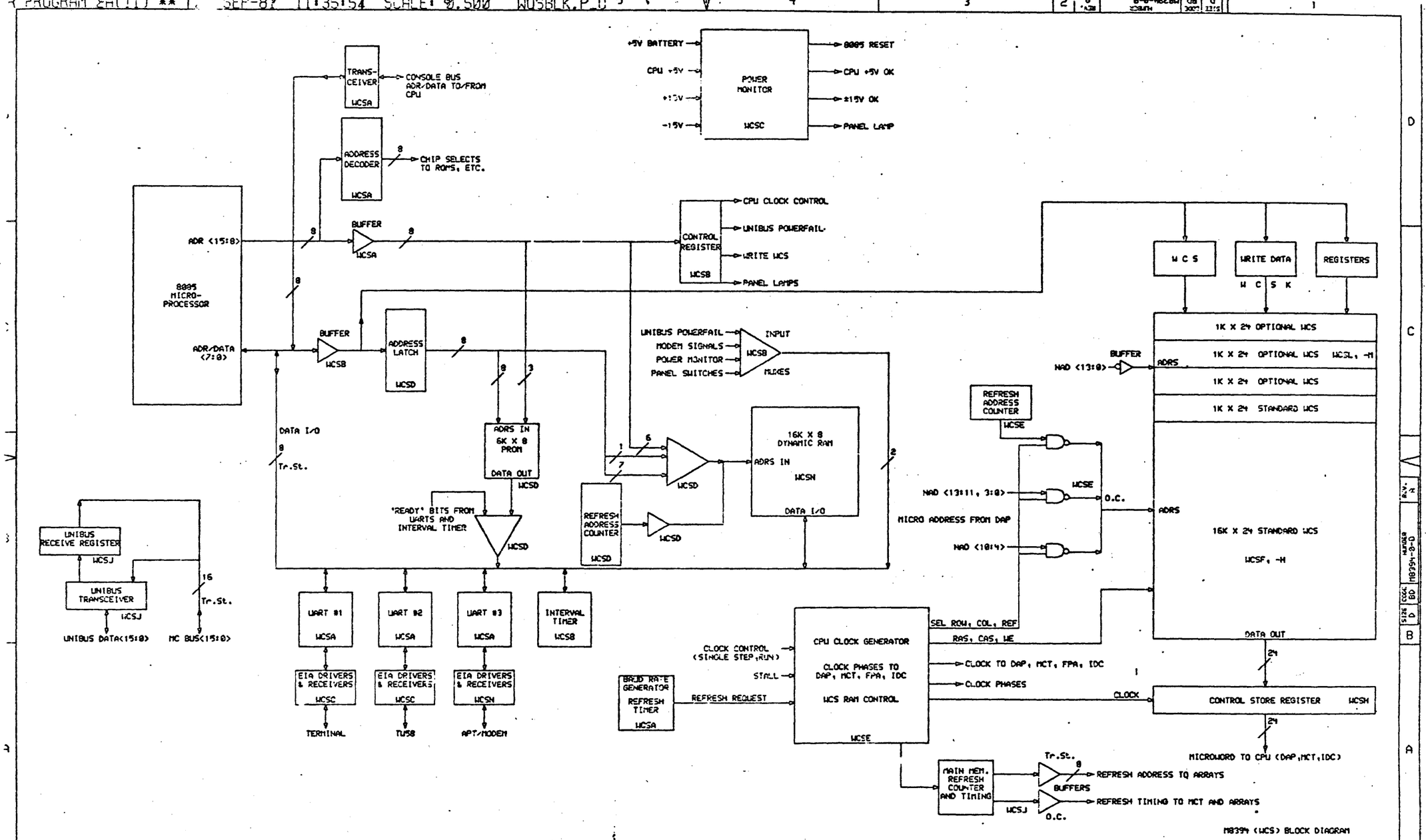


| LINE | ITEM | DOCUMENT NUMBER | PART NUMBER | DESCRIPTION | QTY PER VARIATION 00 | REFERENCE DESIGNATOR |
|---|---|---|---|---|---|---|
| 65 | 52 | | 1912808-00 | LS11 AND GATE-TRIPLE 3IN | 1 | E28 |
| 66 | 53 | | 1912824-00 | LS74 FF-D DUAL,EDGE TR'GG | 1 | E42 |
| 67 | 54 | | 1912830-00 | LS90 COUNTER,ASYNCH UP,DE | 1 | E43 |
| 68 | 55 | | 1912860-00 | LS259 LATCH 8BIT | 2 | E22,E37 |
| 69 | 56 | | 1913340-00 | 74S32 OR GATE-QUAD 2IN | 1 | E116 |
| 70 | 57 | | 1913462-00 | 74S240 OCTAL BUFFER,INVERTI | 2 | E46,E34 |
| 71 | 58 | | 1913493-00 | 74S241 OCTAL BUFFER,TRI-STA | 1 | E19 |
| 72 | 59 | | 1913670-00 | 74S373 LATCH 8BIT TRASP TR | 3 | E55,E60,E69 |
| 73 | 60 | | 1913671-00 | 74S374 FF-D OCTAL TRISTATE | 1 | E71 |
| 74 | 61 | | 1913777-00 | LS240 DRIVER,LINE,OCTAL,T | 1 | E1 |
| 75 | 62 | | 1913887-00 | 74S258 MUX 1 OF 2(QUAD)TRI | 2 | E40,E48 |
| 76 | 63 | | 1914214-00 | LS374 FF-D OCTAL EDGE TRIG | 3 | E74,E88,E101 |
| 77 | 64 | | 1914451-00 | 74LS393 COUNTER,BINARY,4BIT | 4 | E2,E45,E72,E154 |
| 78 | 65 | | 1915019-00 | 74S38 NAND BUFFER-QUAD 2IN | 7 | E126,E141-E143,E153,E155,E156 |
| 79 | 66 | | 1915218-00 | LS245 TRANSCEIVER,BUS,OCT | 1 | E73 |
| 80 | 67 | | 1915219-00 | LS373 FF-D OCTAL-TRANSPARE | 1 | E59 |
| 81 | 68 | | 1915415-00 | 9636 DRIVER,DUAL,EIA RS- | 4 | E13,E9,E10,E12 |
| 82 | 69 | | 1915416-00 | 9637 RECEIVER,DUAL,RS-42 | 5 | E8,E11,E15,E25,E26 |
| 83 | 70 | | 2115103-00 | RECEIVER-PCI | 3 | E5-E7 |
| 84 | 71 | | 2116957-02 | 1K MOS RAM 70NS 1 | 6 | E78,E82,E89,E93,E102,E108 |
| 85 | 72 | | 2116962-00 | UP,8-BIT NMOS .8MICRO SEC. INSTR | 1 | E4 |
| 86 | 73 | | 2117247-02 | 2118-1 | 8 | E61-E68 |
| 87 | 74 | | 2117247-04 | 2118 RAM,16KX1,DYNAMIC,10 | 24 | E118-E123,E132-E137,E145-E150, |
| 88 | 75 | | 2117497-00 | 9513 SYSTEM TIMING CONTRO | 1 | CONT E158-E163 |
| 89 | 77 | | 23002K5-00 | K5-01 | 1 | E3 |
| 90 | 78 | | 23012K4-00 | K4-01 PAL ARRAY | 1 | E85 |
| 91 | 79 | | 23024K3-00 | K3-01 PAL,REG, CONT | 1 | E39 |
| 92 | 80 | | 23045J5-00 | J5-01 PAL,LOGIC,CONT | 1 | E58 |
| 93 | 81 | | 7010918-01 | DIODE STICK G652 | 1 | E21 |
| 94 | 82 | | 9000024-01 | EYELET, ROLLED FLANGE, .121 OD X | 15 | D13,D14,D17-D26,D30-D32 |
| 95 | 83 | | 9009149-00 | PIN, STAKING, P.C. BOARD, .025 X | 12 | |
| 96 | 84 | | 9009185-00 | JUMPER, WIRE, INSULATED, BLACK B | 3 | TP1-TP3 |
| 97 | 100 | | 1300005-04 | R NETWORK 15-470 5.0 % 16PIN | 2 | W1,W2 |
| 98 | 102 | | 23034F2-00 | F2-01 | 1 | E87 |
| 99 | 103 | | 23035F2-00 | F2-01 | 1 | E54 |
| 100 | 104 | | 23036F2-00 | F2-01 | 1 | E53 |
| 101 | 105 | | 23037F2-00 | F2-01 | 1 | E51 |
| 102 | 106 | | 1215006-02 | *** THIS ITEM IS NOT USED *** | 1 | E49 |
| 103 | 107 | | 1215006-08 | SOCKET 40PIN IC LOW PROFILE | - | |
| | | | | | 2 | XE3,XE4 |

| D | I | G | I | T | A | L | TITLE | SECTION A OF A |
|---|---|---|---|---|---|---|---|---|
| | | | | | | | WCS | |

| SIZE | CODE | DOCUMENT NUMBER | REV |
|---|---|---|---|
| K | PL | M8394-0-D8P | A |

TW




M8394 (WCS) BLOCK DIAGRAM

| REVISIONS | | |
|---|---|---|
| ECR | CHANGE NO. | REV |

DRN D. Mitchell DATE 26-SEP-81 ENG. DATE
CHK'D. DATE BOARD LOCATION: SHEET 1 OF 1
C:\SZ\150\WCSBLK.DRW 26-SEP-81 10:06 NEXT HIGHER ASSEMBLY:
FIRST USED ON OPTION/MODEL: 11/730

TITLE: 11/730 WCS BLOCK DIAGRAM

| SIZE | CODE | NUMBER | REV. |
|---|---|---|---|
| D | BD | M8394-0-0 | A |

WCSA A14 H

ADRS DECODE
PAL 16L8
845J5
E21

WCSA A13 H
WCSA A12 H

WCSA SEL CPU REGS L (DK1)
WCSA SEL ROM MUX L
WCSA SEL STATUS L
WCSA WRT M1 L
WCSA WRT WHD REG H
WCSA WRT M0 L
WCSA SEL TIMER H

R119 1Ka

WCSD GR INIT H

4-BUF DRIVERS 74S241 E19

WCSA A11 H
WCSA A10 H
WCSA A09 H
WCSA A08 H
WCSA A13 H
WCSA A12 H
WCSA LATCH ADRS H
WCSA CLK H

R78 100a
WCSJ +3VE H

74S04 E114
WCSA LATCH ADRS L (DL1)

OCTAL BUS TRNVER 74LS245 E73

BUS CONS D7 H (DL2)
BUS CONS D6 H (DM2)
BUS CONS D5 H (DP2)
BUS CONS D4 H (DR2)
BUS CONS D3 H (DS2)
BUS CONS D2 H (DT2)
BUS CONS D1 H (DU2)
BUS CONS D0 H (DV2)

MICRO PROCESR 8085A-2 E4

A15
A14
A13
A12
A11
A10
A09
A08

HLDA
RST OUT
INTA

R96 100a

WCSC RESET 8085 L
WCSB SEE AC LO H
WCSE PAR ERR H
WCSB TIMER INTR H

HOLD
RST IN
INTR
RST 7.5
RST 6.5
RST 5.5
TRAP
READY

WCSD LONG CYCLE L
R102 100a

AD7
AD6
AD5
AD4
AD3
AD2
AD1
AD0

BUS AD7 H
BUS AD6 H
BUS AD5 H
BUS AD4 H
BUS AD3 H
BUS AD2 H
BUS AD1 H
BUS AD0 H

WCSB HOLD 8085 L (FOR GR TEST)

SOD
SID

WCSA 8085 SER OUT H

ALE
IO
RD
WR
S1
S0

WCSA 8085 IO H
WCSA RD L
WCSA WR L

R11 100a

CLK OUT
X2
X1

74S32 E116
WCSA 8085 WRT CYC L

WCSD 8085 REFR CYC H

74S04 E18
WCSA RESET L
WCSA RESET H

(TERMINAL)

PRGM COMM INTRF 2651 E5

(TU58)

PRGM COMM INTRF 2651 E6

NOTE: PWR/GND FOR 2651:
VCC = PIN 26
GND = PIN 4

(REMOTE)

PRGM COMM INTRF 2651 E7

RESET
A0
A1
WR
EN

BRCLK
TXC
RXC

DSR
DCD
CTS

RTS
DTR
DSCHG

TXRDY
TXD

RXRDY
RXD

WCSA RESET H
WCSA A08 H
WCSA A09 H
WCSD SEL U1 L
WCSD SEL U2 L
WCSD SEL U3 L

WCSJ TER BAUD CK L
WCSA 38.4K H
WCSC REMOTE BAUD CK L

WCSN REM USER.RX L
WCSN REM DSR L
WCSN REM CAR L
WCSN REM CTS L

WCSA REM DSRS L
WCSA REM USER.TX L
WCSA REM S.RTS L
WCSA REM RTS L
WCSA REM DTR L

WCSA TER TX RDY L
WCSA U1 DOUT L
WCSA TU TX RDY L
WCSA U2 DOUT L
WCSA REM TX RDY L
WCSA REM DOUT L

WCSA TER RX RDY L
WCSA TU RX RDY L
WCSA REM RX RDY L

WCSC U1 DIN L
WCSC U2 DIN L
WCSN REM RCV L

10 MHZ CRYSTAL OSC E28

CLK

R13 100a

74S04 E18

+5.0V
R66 470a
R67 470a

(BAUD X 100)

4-BIT BIN CTR 74LS393 E72

0 CLK
0 CLR
1 CLK
1 CLR

38.4 00R
19.2 01R
96 02R
48 03R
24 10R
12 11R
6 12R
3 13R

WCSA 38.4K H
WCSA 9600 H
WCSA REQ 8085 REF H
WCSA 2400 H
WCSA 1200 H
WCSA 300 H

WCSD CLK BAUD GEN H
WCSA REQ 8085 REF H

R101 100a

WCSA 8085 WRT CYC L

(8085, A/D BUS & CONTROL)



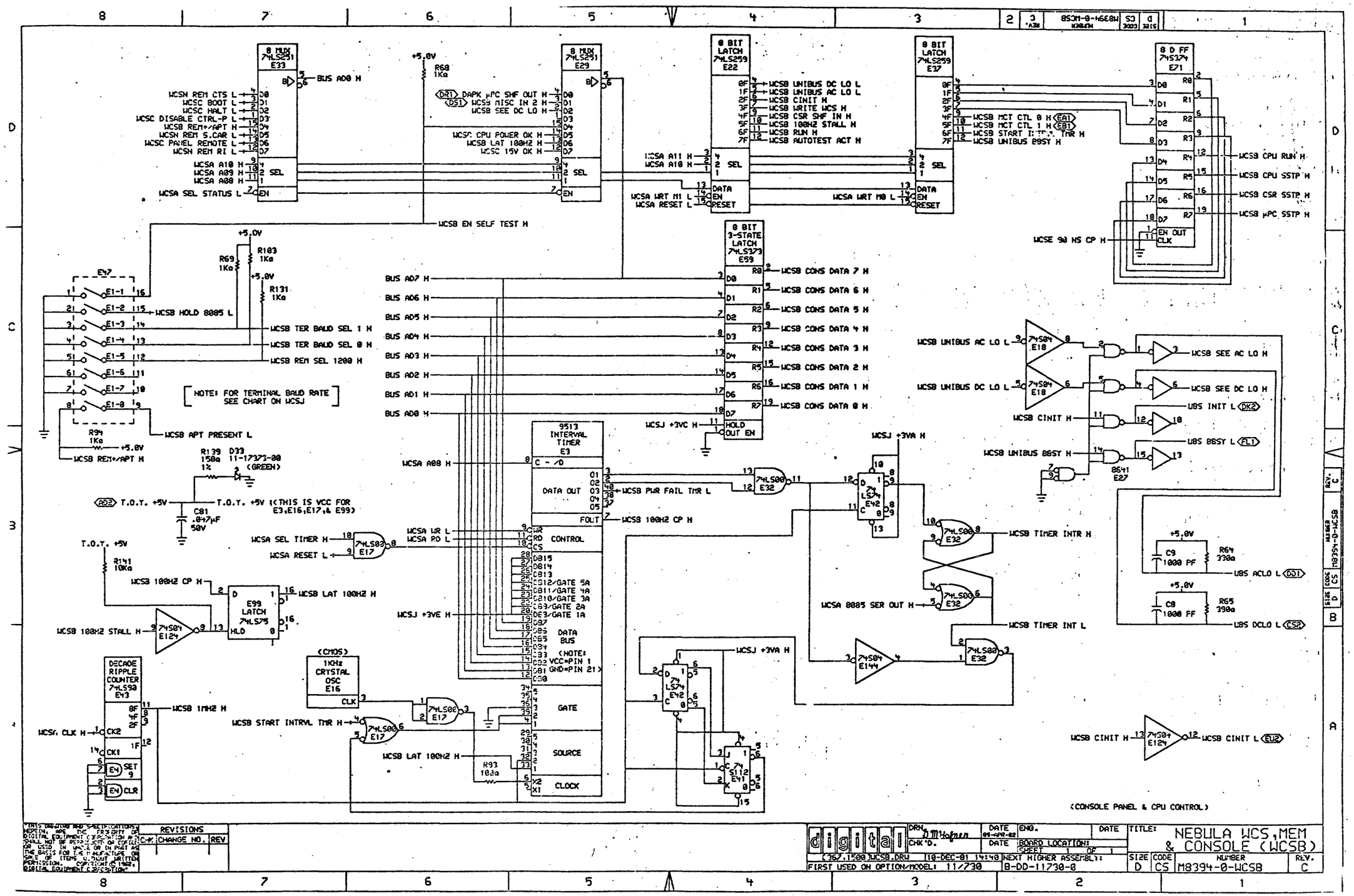
| REVISIONS | | |
|---|---|---|
| CHK | CHANGE NO. | REV |

| | | | |
|---|---|---|---|
| DRN: D.M.Hofner | DATE: 10-DEC-82 | ENG. | DATE |
| CHK'D. | DATE | BOARD LOCATION: SHEET 1 OF 1 | |

C362,1500 WCSA.DRW | 10-DEC-82 14:40 | NEXT HIGHER ASSEMBLY: B-DD-11730-0
FIRST USED ON OPTION/MODEL: 11/730

TITLE: NEBULA WCS,MEM & CONSOLE (WCSA)

| SIZE | CODE | NUMBER | REV. |
|---|---|---|---|
| D | CS | M8394-0-WCSA | B |

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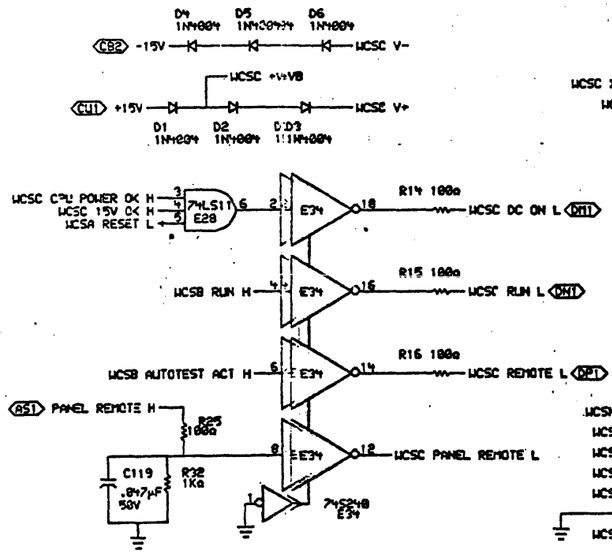
| REVISIONS | | |
|---|---|---|
| C-K | CHANGE NO. | REV |

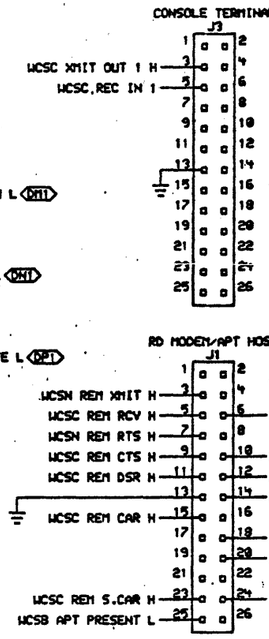
digital

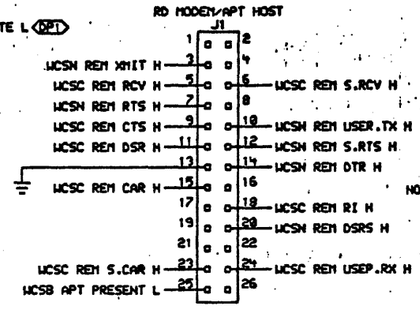
DRN: D.Mishpen
CHK'D:
DATE: 09-APR-82
ENG.
DATE
BOARD LOCATION:
SHEET 1 OF 1
C357.1500.WCSB.DRW 10-DEC-81 14:40
NEXT HIGHER ASSEMBLY:
FIRST USED ON OPTION/MODEL: 11/730
B-DD-11730-0

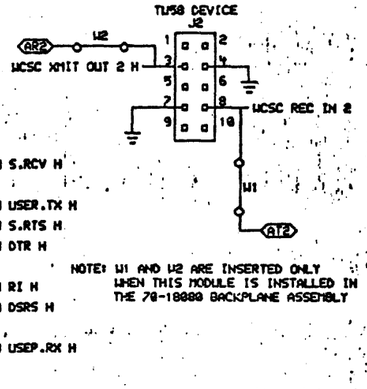
TITLE: NEBULA WCS, MEM & CONSOLE (WCSB)

| SIZE | CODE | NUMBER | REV. |
|---|---|---|---|
| D | CS | M8394-0-WCSB | C |

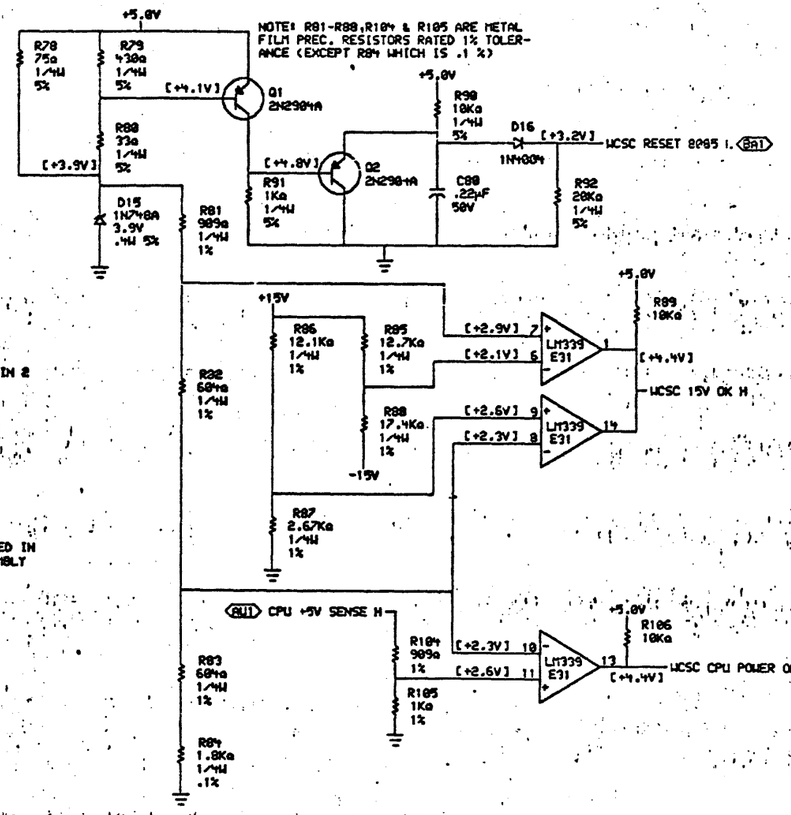


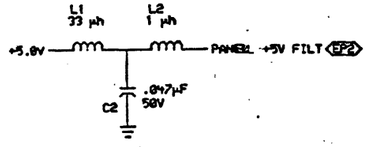



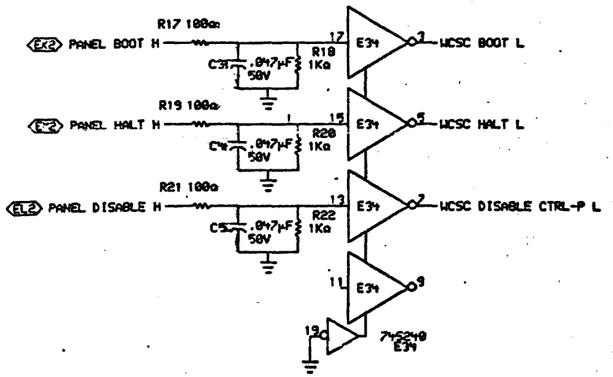

NOTE: W1 AND W2 ARE INSERTED ONLY WHEN THIS MODULE IS INSTALLED IN THE 70-10880 BACKPLANE ASSEMBLY

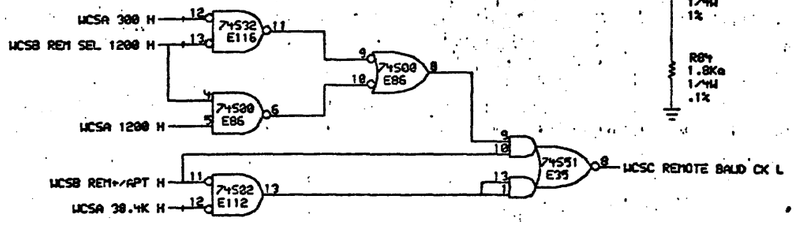


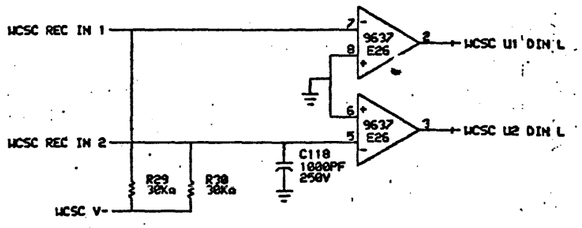

NOTE: R81-R88,R104 & R105 ARE METAL FILM PREC. RESISTORS RATED 1% TOLERANCE (EXCEPT R84 WHICH IS .1 %)

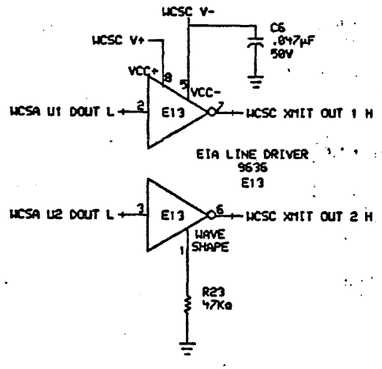



(CONSOLE INTERFACE)



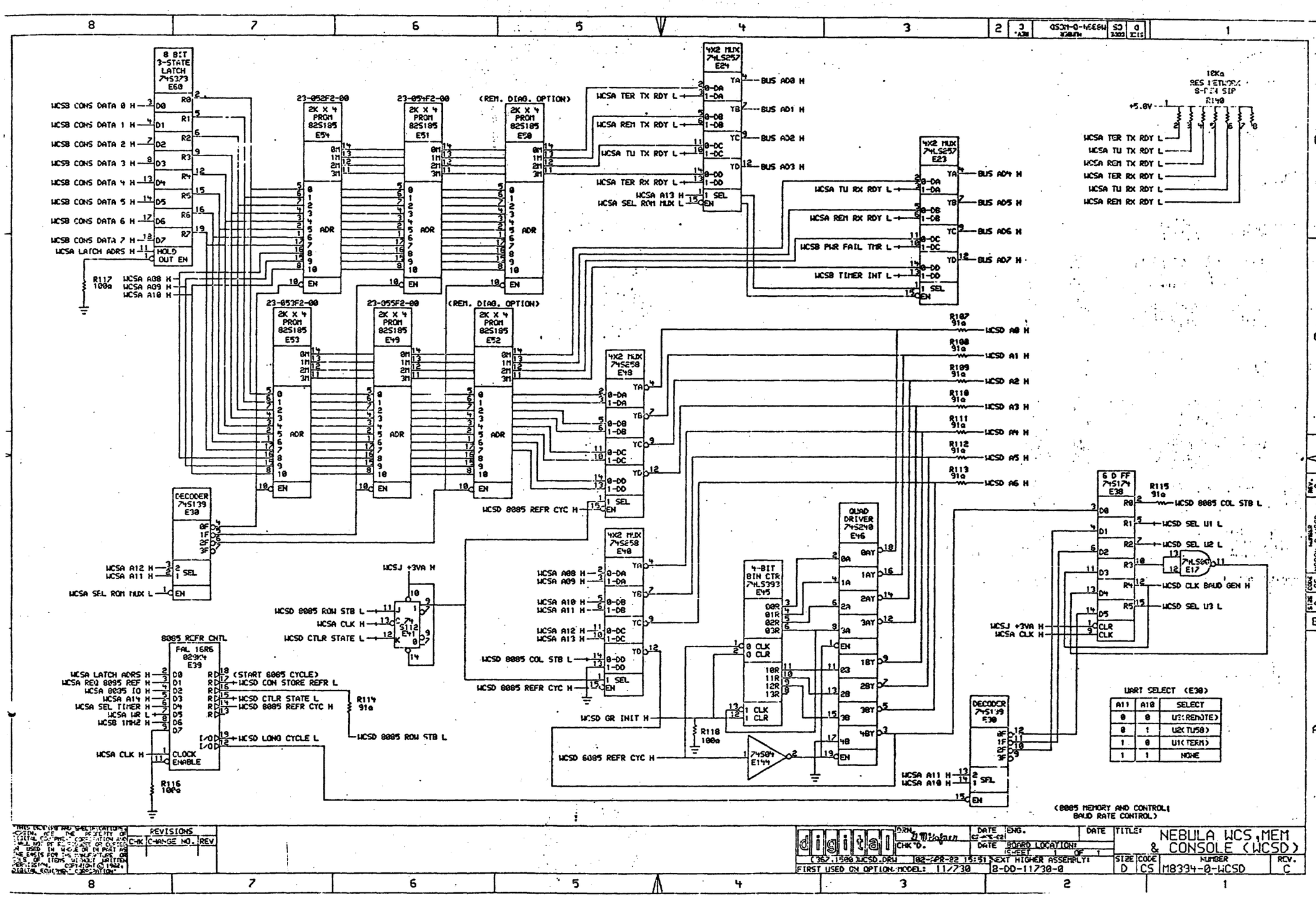
| REVISIONS | | |
|---|---|---|
| CHK | CHANGE NO. | REV |

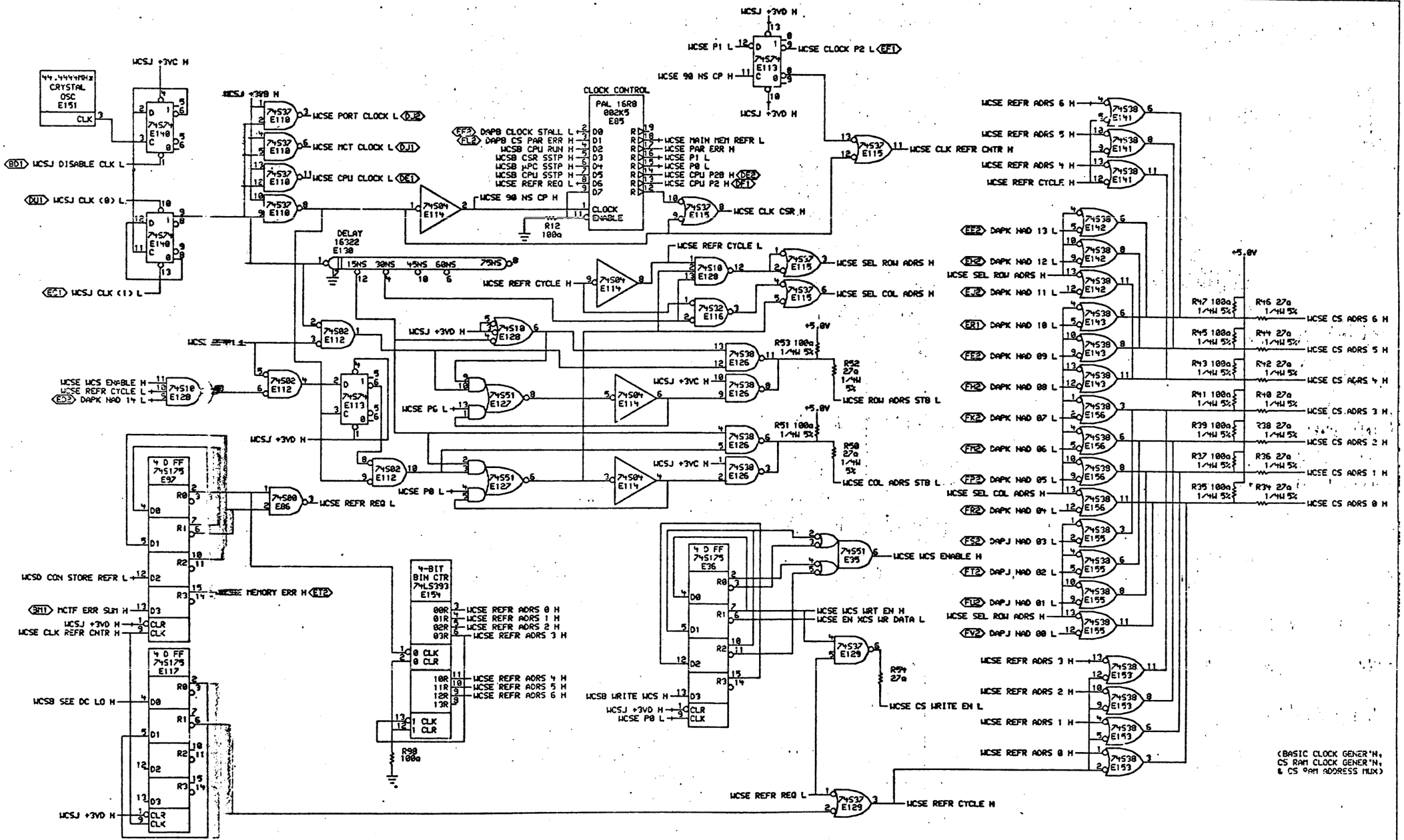
| | | | |
|---|---|---|---|
| DRN | | DATE 09-APR-82 | ENG. |
| CHK'D. | | DATE | PCORD LOCATION: |
| | | | SHEET 1 OF 1 |

C367-1500 WCSC.DRW 10-DEC-81 14:40
FIRST USED ON OPTION/MODEL: 11/730
NEXT HIGHER ASSEMBLY: B-DD-11730-0

TITLE: NEBULA WCS,MEM & CONSOLE (WCSC)

| SIZE | CODE | NUMBER | REV. |
|---|---|---|---|
| D | CS | M8394-0-WCSC | B |


8 8:T 3-STATE LATCH 74S373 E60
WCSB CONS DATA 0 H
WCSB CONS DATA 1 H
WCSB CONS DATA 2 H
WCSB CONS DATA 3 H
WCSB CONS DATA 4 H
WCSB CONS DATA 5 H
WCSB CONS DATA 6 H
WCSB CONS DATA 7 H
WCSA LATCH ADRS H
HOLD OUT EN
R117 100a
WCSA A08 H
WCSA A09 H
WCSA A10 H
23-052F2-00
2K X 4 PROM 825185 E54
23-054F2-00
2K X 4 PROM 825185 E51
(REM. DIAG. OPTION)
2K X 4 PROM 825185 E50
23-053F2-00
2K X 4 PROM 825185 E53
23-055F2-00
2K X 4 PROM 825185 E49
(REM. DIAG. OPTION)
2K X 4 PROM 825185 E52
ADR
EN
4X2 MUX 74LS257 E24
4X2 MUX 74LS257 E23
WCSA TER TX RDY L
WCSA REM TX RDY L
WCSA TU TX RDY L
WCSA TER RX RDY L
WCSA A13 H
WCSA SEL ROM MUX L
SEL
EN
BUS AD0 H
BUS AD1 H
BUS AD2 H
BUS AD3 H
WCSA TU RX RDY L
WCSA REM RX RDY L
WCSB PWR FAIL TMR L
WCSB TIMER INT L
BUS AD4 H
BUS AD5 H
BUS AD6 H
BUS AD7 H
10Ka RES NETWORK 8-PIN SIP R140
+5.0V
WCSA TER TX RDY L
WCSA TU TX RDY L
WCSA REM TX RDY L
WCSA TER RX RDY L
WCSA TU RX RDY L
WCSA REM RX RDY L
4X2 MUX 74S258 E48
WCSA A08 H
WCSA A09 H
WCSA A10 H
WCSA A11 H
WCSA A12 H
WCSA A13 H
WCSD 8085 REFR CYC H
WCSD 8085 COL STB L
WCSD GR INIT H
R118 100a
74S04 E144
4-BIT BIN CTR 74LS393 E45
QUAD DRIVER 74S240 E46
R107 91a
R108 91a
R109 91a
R110 91a
R111 91a
R112 91a
R113 91a
WCSD A0 H
WCSD A1 H
WCSD A2 H
WCSD A3 H
WCSD A4 H
WCSD A5 H
WCSD A6 H
6 D FF 74S174 E38
R115 91a
WCSD 8085 COL STB L
WCSD SEL U1 L
WCSD SEL U2 L
74LS00 E17
WCSD CLK BAUD GEN H
WCSD SEL U3 L
WCSJ +3VA H
WCSA CLK H
DECODER 74S139 E30
WCSA A12 H
WCSA A11 H
WCSA SEL ROM MUX L
WCSJ +3VA H
WCSD 8085 ROM STB L
WCSA CLK H
WCSD CTLR STATE L
74S112 E41
WCSD 8085 REFR CYC H
8085 REFR CNTL
PAL 16R6 823K4 E39
WCSA LATCH ADRS H
WCSA REQ 8085 REF H
WCSA 8035 IO H
WCSA A14 H
WCSA SEL TIMER H
WCSA WR L
WCSB 1MH2 H
WCSA CLK H
CLOCK ENABLE
(START 8085 CYCLE)
WCSD CON STORE REFR L
WCSD CTLR STATE L
WCSD 8085 REFR CYC H
WCSD LONG CYCLE L
WCSD 8085 ROM STB L
R116 100a
R119 91a
UART SELECT (E30)
A11 A10 SELECT
0 0 U3(REMOTE)
0 1 U2(TU58)
1 0 U1(TERM)
1 1 NONE
(8085 MEMORY AND CONTROL & BAUD RATE CONTROL)
REVISIONS
CHK CHANGE NO. REV
digital
DRN. M.Nelson
CHK'D.
DATE ENG.
DATE BOARD LOCATION:
SHEET 1 OF 1
(362.1500)WCSD.DRW 02-APR-82 15:51
NEXT HIGHER ASSEMBLY: 8-DD-11730-0
FIRST USED ON OPTION MODEL: 11/730
TITLE: NEBULA WCS,MEM & CONSOLE (WCSD)
SIZE D CODE CS NUMBER M8394-0-WCSD REV. C




| REVISIONS | | |
|---|---|---|
| CHK | CHANGE NO. | REV |

| | | | | | |
|---|---|---|---|---|---|
| digital | DRN: D. Mishnen | DATE: 03-APR-82 | ENG. | DATE | TITLE: NEBULA WCS, MEM & CONSOLE (WCSE) |
| | CHK'D. | DATE | BOARD LOCATION: SHEET 1 OF 1 | | |
| C362.1500 WCSE.DRW | 10-DEC-81 14:40 | NEXT HIGHER ASSEMBLY: B-DD-11730-0 | | | SIZE D \| CODE CS \| NUMBER M8394-0-WCSE \| REV. B |
| FIRST USED ON OPTION/MODEL: 11/730 | | | | | |

WCSE CS ADRS 0 H
WCSE CS ADRS 1 H
WCSE CS ADRS 2 H
WCSE CS ADRS 3 H
WCSE CS ADRS 4 H
WCSE CS ADRS 5 H
WCSE CS ADRS 6 H
WCSE ROW ADRS STB L
WCSE COL ADRS STB L
WCSE CS WRITE EN L
BUS CS DOUT 00 H
BUS CS DOUT 01 H
BUS CS DOUT 02 H
BUS CS DOUT 03 H

16K X 1 RAM 2118-3 E163 — OUT 14 — BUS CS DOUT 00 H
16K X 1 RAM 2118-3 E159 — OUT 14 — BUS CS DOUT 04 H
16K X 1 RAM 2118-3 E148 — OUT 14 — BUS CS DOUT 08 H
16K X 1 RAM 2118-3 E137 — OUT 14 — BUS CS DOUT 12 H
16K X 1 RAM 2118-3 E162 — OUT 14 — BUS CS DOUT 01 H
16K X 1 RAM 2118-3 E158 — OUT 14 — BUS CS DOUT 05 H
16K X 1 RAM 2118-3 E147 — OUT 14 — BUS CS DOUT 09 H
16K X 1 RAM 2118-3 E136 — OUT 14 — BUS CS DOUT 13 H
16K X 1 RAM 2118-3 E161 — OUT 14 — BUS CS DOUT 02 H
16K X 1 RAM 2118-3 E150 — OUT 14 — BUS CS DOUT 06 H
16K X 1 RAM 2118-3 E146 — OUT 14 — BUS CS DOUT 10 H
16K X 1 RAM 2118-3 E135 — OUT 14 — BUS CS DOUT 14 H
16K X 1 RAM 2118-3 E160 — OUT 14 — BUS CS DOUT 03 H
16K X 1 RAM 2118-3 E149 — OUT 14 — BUS CS DOUT 07 H
16K X 1 RAM 2118-3 E145 — OUT 14 — BUS CS DOUT 11 H
16K X 1 RAM 2118-3 E134 — OUT 14 — BUS CS DOUT 15 H

Each RAM: ADR 0 1 2 3 4 5 6; RAS 4; CAS 15; WR 3; DATA IN 2

70-10918 D22 — WCSP DIODE BUS
70-10918 D21
70-10918 D23

<CONTROL STORE DATA<03:15>>

(NOTE: ALL RAMS ON THIS PAGE ARE POWERED BY +5.0VA, WHICH IS SEPARATE FROM THE REST OF THE +5V INNER LAYER)



REVISIONS

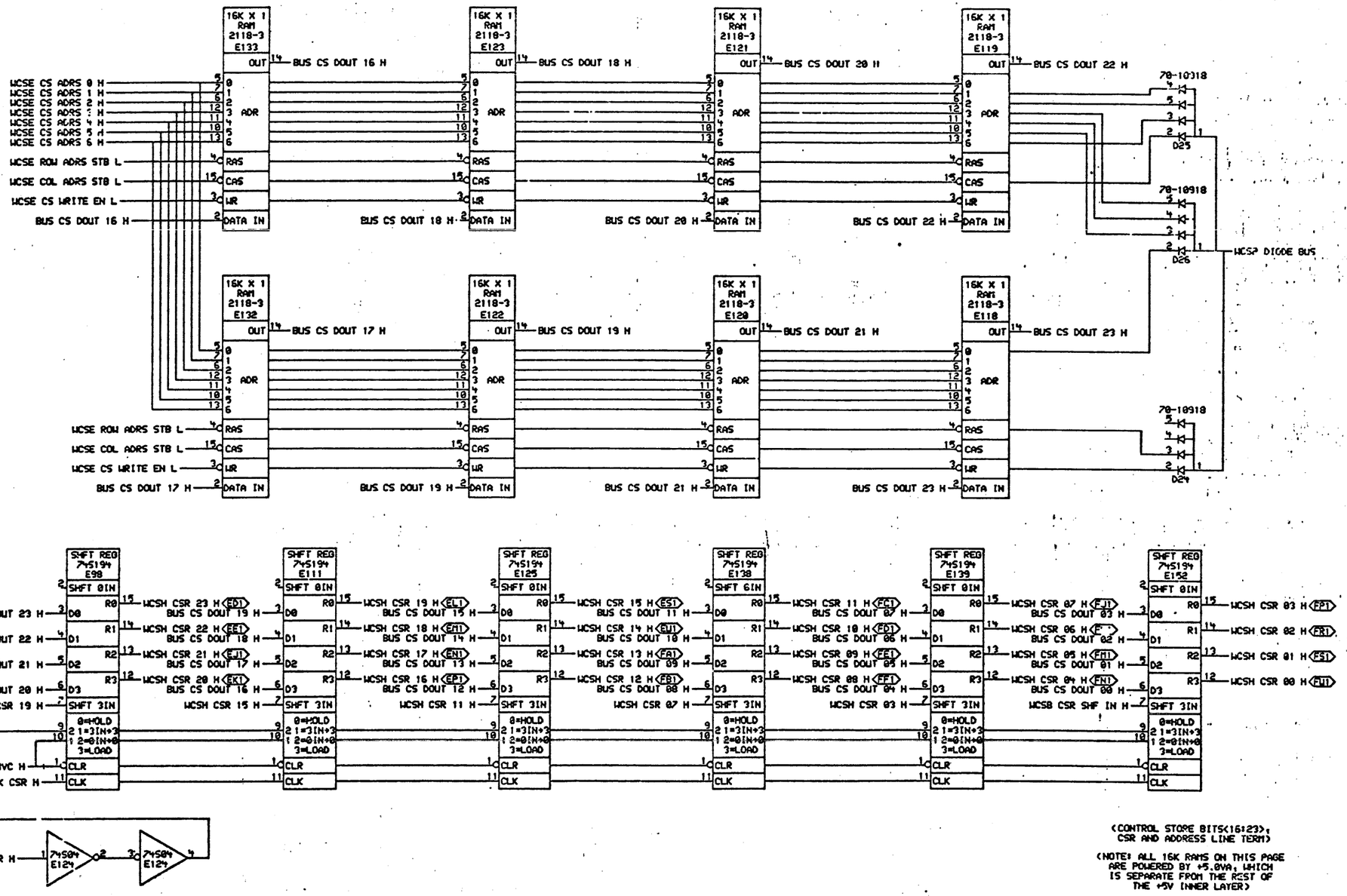
| CHK | CHANGE NO. | REV |
|---|---|---|

DRN D.Mahnn — CHK'D. — DATE ENG. 09-APR-82 — DATE — DATE PCBPD LOCATION: — SHEET 1 OF 1

(367,1580)WCSF.DRW — 10-DEC-81 14:40 — NEXT HIGHER ASSEMBLY: 8-DD-11730-0 — FIRST USED ON OPTION/MODEL: 11/730

TITLE: NEBULA WCS,MEM & CONSOLE (WCSF)

| SIZE | CODE | NUMBER | REV. |
|---|---|---|---|
| D | CS | M8394-0-WCSF | 8 |




(CONTROL STORE BITS<16:23>, CSR AND ADDRESS LINE TERM)

(NOTE: ALL 16K RAMS ON THIS PAGE ARE POWERED BY +5.0VA, WHICH IS SEPARATE FROM THE REST OF THE +5V INNER LAYER)



| REVISIONS | | |
|---|---|---|
| CHK | CHANGE NO. | REV |

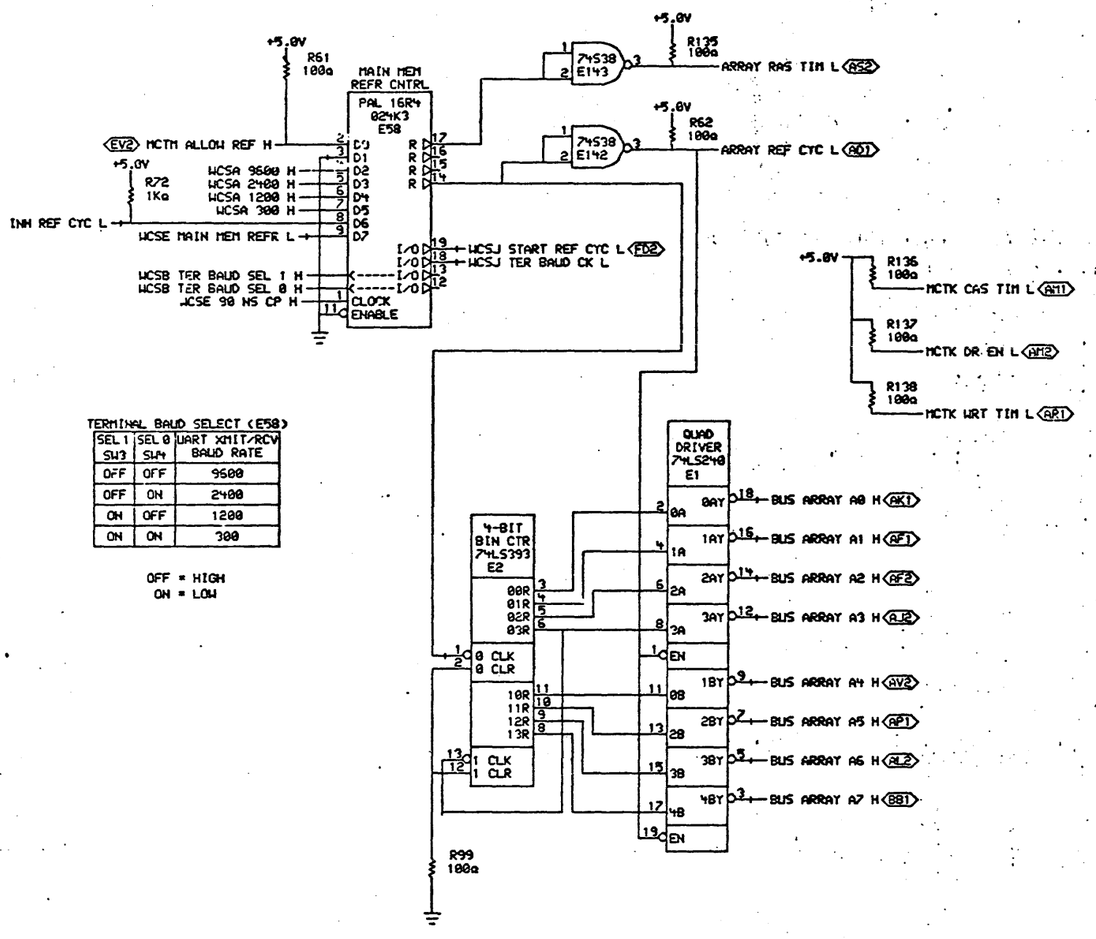
| | | | |
|---|---|---|---|
| DRN: D.M.Hofmeyer | DATE: 09-APR-82 | END. | DATE |
| CHK'D. | DATE | BOARD LOCATION: SHEET 1 OF 1 | |

TITLE: NEBULA WCS,MEM & CONSOLE (WCSH)

| SIZE | CODE | NUMBER | REV. |
|---|---|---|---|
| D | CS | M8394-0-WCSH | B |

(367,1508)WCSH.DPW | 10-DEC-81 14:40 | NEXT HIGHER ASSEMBLY: 8-DD-11730-0

FIRST USED ON OPTION/MODEL: 11/730





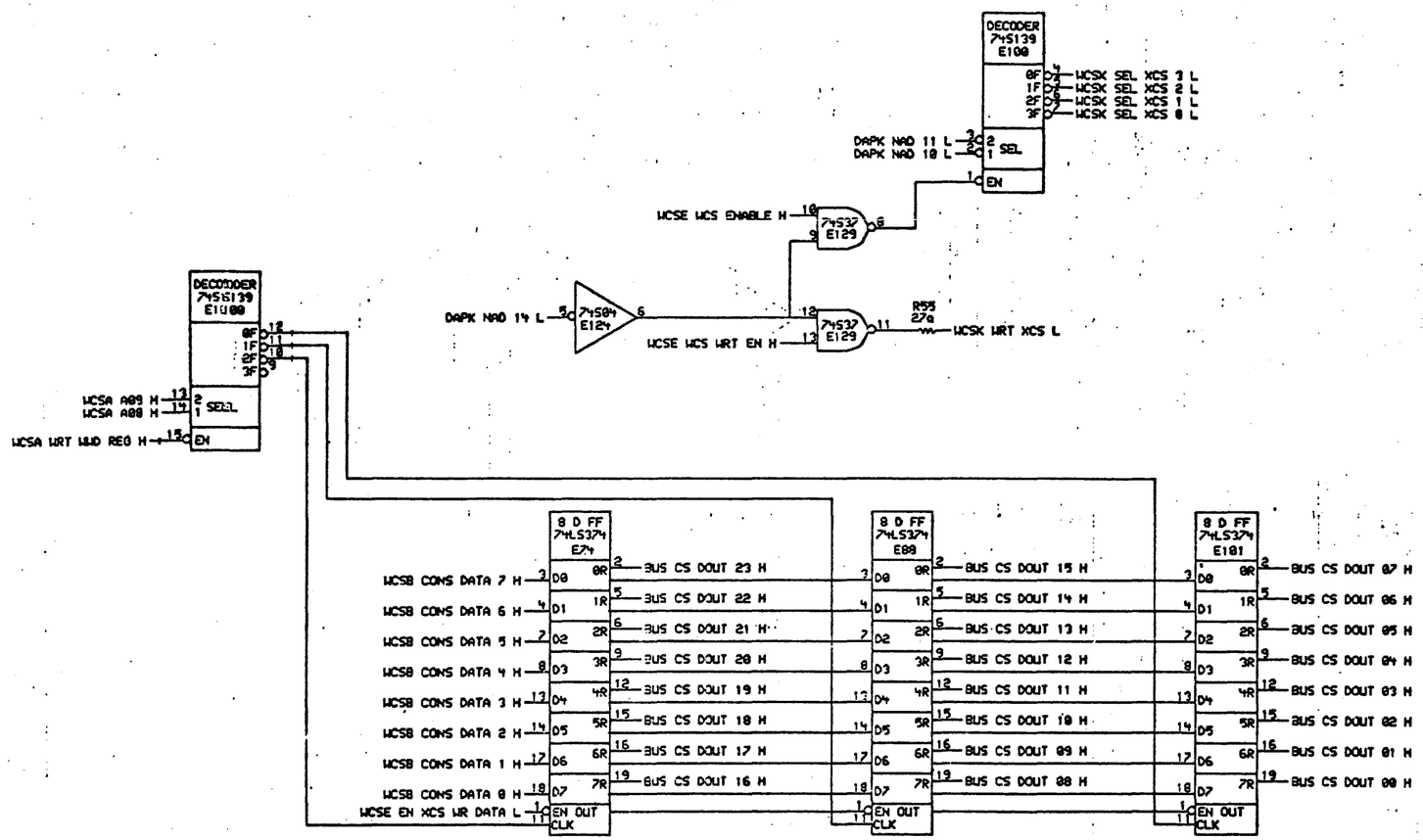

| REVISIONS | | |
|---|---|---|
| CHK | CHANGE NO. | REV |

digital

DRN. M.Holmes | DATE 24-APR-82 | ENG. | DATE
CHK D. | DATE | BOARD LOCATION: | SHEET 1 OF 1
(367,1500)WCSJ.DRW | 10-DEC-81 14:40 | NEXT HIGHER ASSEMBLY: B-DD-11730-0
FIRST USED ON OPTION/MODEL: 11/730

TITLE: NEBULA WCS,MEM & CONSOLE (WCSJ)

| SIZE | CODE | NUMBER | REV. |
|---|---|---|---|
| D | CS | M8394-0-WCSJ | B |




(XCS WRITE AND SELECT CONTROL & BUS CS DRIVERS)

| REVISIONS | | |
|---|---|---|
| C-K | CHANGE NO. | REV |

| | | | | | |
|---|---|---|---|---|---|
| DRN. | DATE | ENG. | DATE | TITLE: | NEBULA WCS, MEM & CONSOLE (WCSK) |
| CHK'D. | DATE | BOARD LOCATION: SHEET 1 OF 1 | | | |
| (362,1500)WCSK.DRW 10-DEC-81 14:40 | NEXT HIGHER ASSEMBLY: | | | SIZE D | CODE CS |
| FIRST USED ON OPTION/MODEL: 1.1/730 | B-DD-11730-0 | | | NUMBER M8394-0-WCSK | REV. B |

DAPK NAD 09 L
DAPK NAD 08 L
DAPK NAD 07 L
DAPK NAD 06 L
DAPK NAD 05 L
DAPK NAD 04 L
DAPJ NAD 03 L
DAPJ NAD 02 L
DAPJ NAD 01 L
DAPJ NAD 00 L

74S04 E157
74S04 E144

R129 27Ω
R128 27Ω
R127 27Ω
R126 27Ω
R125 27Ω
R124 27Ω
R123 27Ω
R122 27Ω
R121 27Ω
R120 27Ω

1KX4 RAM 2148 E88
1KX4 RAM 2148 E81
1KX4 RAM 2148 E79
1KX4 RAM 2148 E82
1KX4 RAM 2148 E87
1KX4 RAM 2148 E75
1KX4 RAM 2148 E76
1KX4 RAM 2148 E78
1KX4 RAM 2148 E92
1KX4 RAM 2148 E91
1KX4 RAM 2148 E90
1KX4 RAM 2148 E89

ADR
CHIP EN
WR EN

BUS CS DOUT 23 H
BUS CS DOUT 22 H
BUS CS DOUT 21 H
BUS CS DOUT 20 H
BUS CS DOUT 19 H
BUS CS DOUT 18 H
BUS CS DOUT 17 H
BUS CS DOUT 16 H
BUS CS DOUT 15 H
BUS CS DOUT 14 H
BUS CS DOUT 13 H
BUS CS DOUT 12 H

WCSL XCS ADRS 9 H
WCSL XCS ADRS 8 H
WCSL XCS ADRS 7 H
WCSL XCS ADRS 6 H
WCSL XCS ADRS 5 H
WCSL XCS ADRS 4 H
WCSL XCS ADRS 3 H
WCSL XCS ADRS 2 H
WCSL XCS ADRS 1 H
WCSL XCS ADRS 0 H

70-10918
D17
D20
D14
D13

WCSK SEL XCS 3 L
WCSK SEL XCS 2 L
WCSK SEL XCS 1 L
WCSK SEL XCS 0 L
WCSK WRT XCS L
WCSP DIODE BUS

# OPTIONAL CONTROL STORE- XCS HI

NOTE: E82,E78 & E89 ARE THE EXTRA WRITEABLE CONTROL STORE FOR THE IDC OPTION



| REVISIONS | | |
|---|---|---|
| C-K | CHANGE NO. | REV |

digital

DRN. D.M.Hafner 18-DEC-81 14:40
CHK'D.
DATE ENG. DATE
DATE BOARD LOCATION:
SHEET 1 OF 1
(367,1500)WCSL.DRW
NEXT HIGHER ASSEMBLY:
FIRST USED ON OPTION/MODEL: 11/730 B-DD-11730-0

TITLE: NEBULA WCS,MEM & CONSOLE (WCSL)

| SIZE | CODE | NUMBER | REV. |
|---|---|---|---|
| D | CS | M8394-0-WCSL | B |

1K×4 RAM 2148 E96
1K×4 RAM 2148 E95
1K×4 RAM 2148 E94
1K×4 RAM 2148 E93
1K×4 RAM 2148 E104
1K×4 RAM 2148 E105
1K×4 RAM 2148 E103
1K×4 RAM 2148 E102
1K×4 RAM 2148 E106
1K×4 RAM 2148 E107
1K×4 RAM 2148 E139
1K×4 RAM 2148 E108
ADR
CHIP EN
WR EN

WCSK XCS ADRS 9 H
WCSK XCS ADRS 8 H
WCSK XCS ADRS 7 H
WCSK XCS ADRS 6 H
WCSK XCS ADRS 5 H
WCSK XCS ADRS 4 H
WCSK XCS ADRS 3 H
WCSK XCS ADRS 2 H
WCSK XCS ADRS 1 H
WCSK XCS ADRS 0 H

BUS CS DOUT 11 H
BUS CS DOUT 10 H
BUS CS DOUT 09 H
BUS CS DOUT 08 H
BUS CS DOUT 07 H
BUS CS DOUT 06 H
BUS CS DOUT 05 H
BUS CS DOUT 04 H
BUS CS DOUT 03 H
BUS CS DOUT 02 H
BUS CS DOUT 01 H
BUS CS DOUT 00 H

D31
D30
D32
D19
D18
70-10918

WCSK SEL XCS 3 L
WCSK SEL XCS 2 L
WCSK SEL XCS 1 L
WCSK SEL XCS 0 L
WCSK WRT XCS L
WCSP DIODE BUS

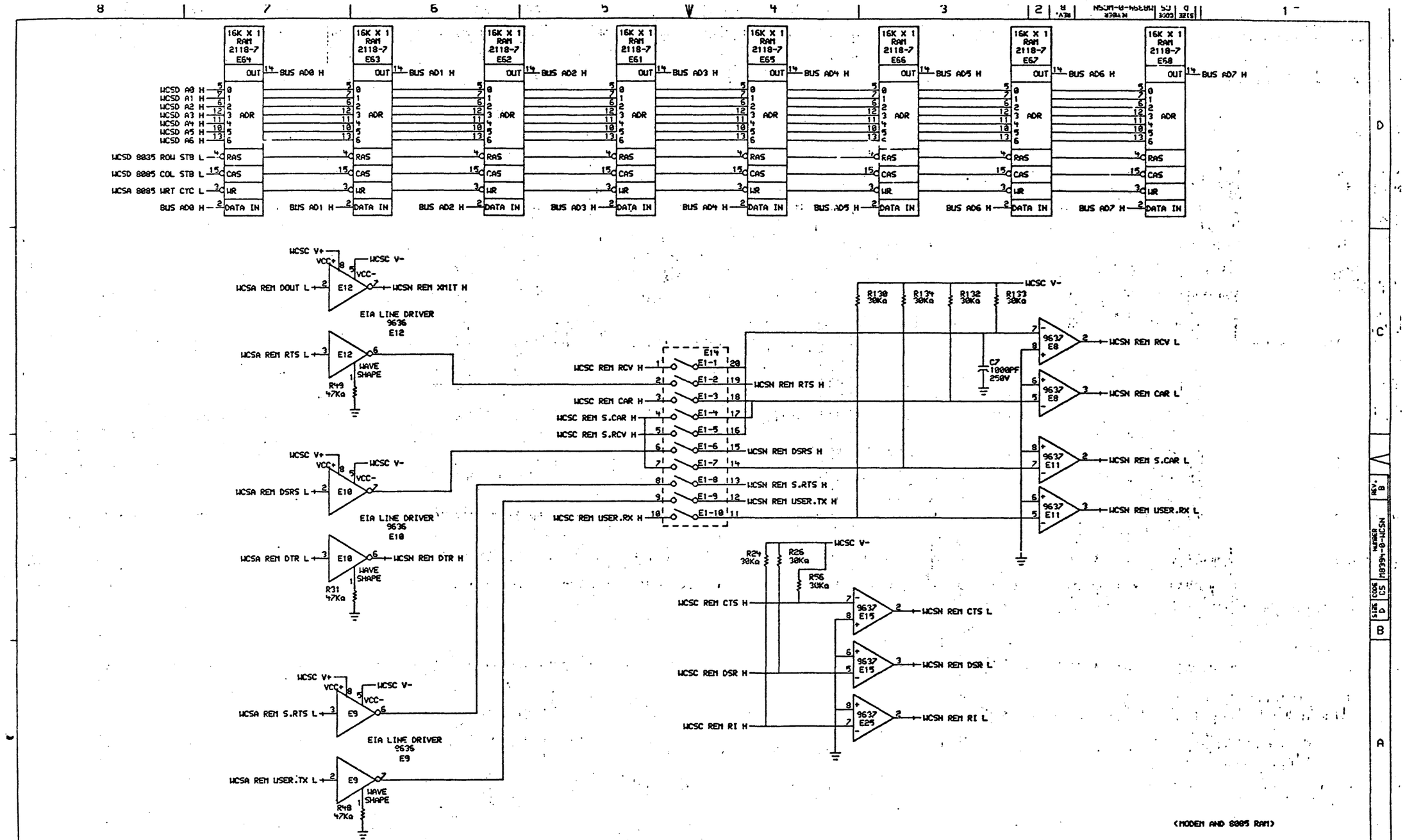
# OPTIONAL CONTROL STORE- XCS LO

NOTE: E93,E102, & E108 ARE THE EXTRA WRITEABLE CONTROL STORE FOR THE IDC OPTION

| REVISIONS | | |
|---|---|---|
| CHK | CHANGE NO. | REV |

| | | | | | |
|---|---|---|---|---|---|
| DRN. J.Hofsess | DATE 09-APR-82 | ENG. | DATE | TITLE: NEBULA WCS,MEM & CONSOLE (WCSM) | |
| CHK'D. | DATE | BOARD LOCATION: SHEET 1 OF 1 | | | |
| (362,1500)WCSM.DRW 10-DEC-81 14:42 | | NEXT HIGHER ASSEMBLY: | | SIZE D | CODE CS |
| FIRST USED ON OPTION/MODEL: 11/730 | | B-DD-11730-0 | | NUMBER M8394-0-WCSM | REV. B |

SIZE D | CODE CS | NUMBER M8394-0-WCSM | REV. B | SHT. 9

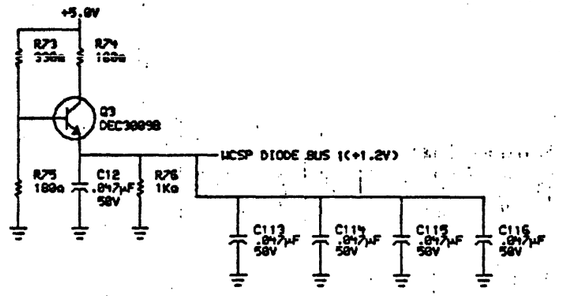



| REVISIONS | | |
|---|---|---|
| C-K | CHANGE NO. | REV |

DRN: D.Meisner | DATE: 08-APR-82 | ENG. | DATE
CHK'D. | DATE | BOARD LOCATION: | SHEET 1 OF 1
(367,1500)WCSN.DRW | 10-DEC-81 14:40 | NEXT HIGHER ASSEMBLY: B-DD-11730-0
FIRST USED ON OPTION/MODEL: 11730

TITLE: NEBULA WCS,MEM & CONSOLE (WCSN)

| SIZE | CODE | NUMBER | REV. |
|---|---|---|---|
| D | CS | M8394-0-WCSN | B |




(DIODE BUS FOR ADDRESS LINE TERMINATION)

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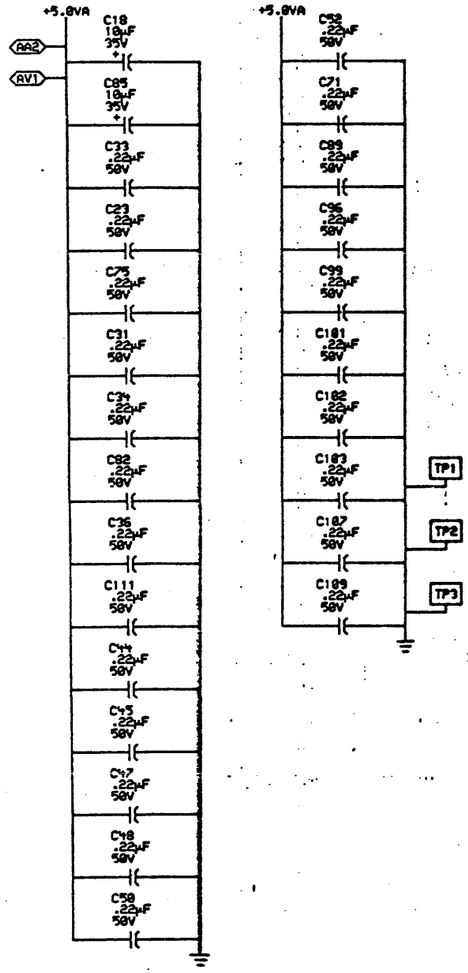
| REVISIONS | | |
|---|---|---|
| CHK | CHANGE NO. | REV |

DRN: D.M.Hofmann
CHK'D:
DATE: 08-OCT-82
ENG.
DATE
BOARD LOCATION:
SHEET 1 OF 1
162.1500.WCSP.DRW 10-DEC-81 14:43
FIRST USED ON OPTION/MODEL: 11/730
NEXT HIGHER ASSEMBLY: 2-DD-11730-0

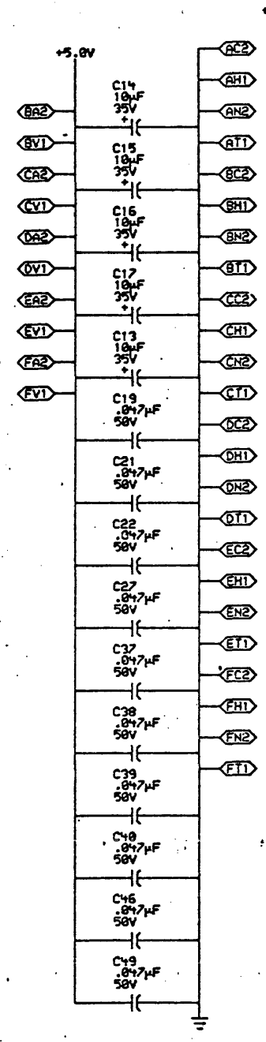
TITLE: NEBULA WCS,MEM & CONSOLE (WCSP)

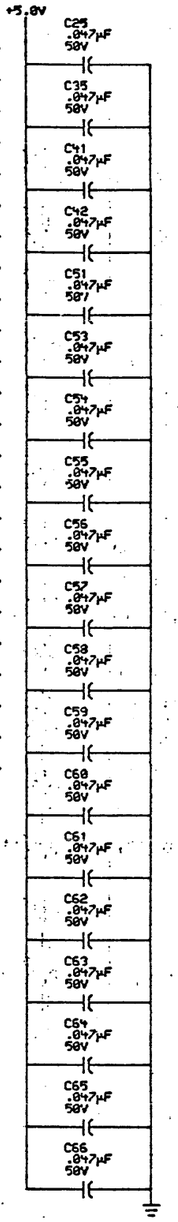
| SIZE | CODE | NUMBER | REV. |
|---|---|---|---|
| D | CS | M8394-0-WCSP | B |

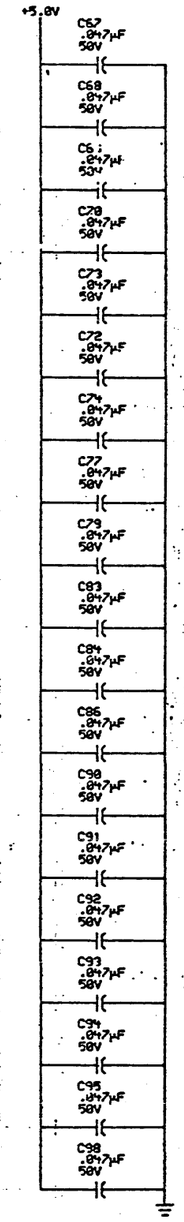


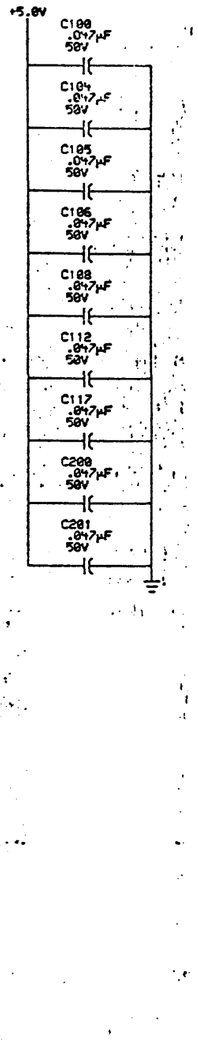







(WCS BYPASS/FILTER CAPS)
(NOTE:POWER INNER LAYER IS PHYSICALLY SPLIT; NO CONNECTION EXISTS BETWEEN +5V AND +5VA.)



| REVISIONS | | |
|---|---|---|
| CHK | CHANGE NO. | REV |
| | | |

digital

DRN: D.M.Holmes 10-DEC-81 14:41
CHK'D.
DATE ENG. 04-APR-82
DATE
BOARD LOCATION:
SHEET 1 OF 1
NEXT HIGHER ASSEMBLY: B-DD-11730-0
FIRST USED ON OPTION/MODEL: 11/730
C367,1500 WCSR.DRW

TITLE: NEBULA WCS, MEMORY AND CONSOLE (WCSR)

| SIZE | CODE | NUMBER | REV. |
|---|---|---|---|
| D | CS | M8394-0-WCSR | C |

PART NUMBER: 23-045J5-[illegible]

DEVICE TYPE: PAL16L8

SCHEMATIC SHEET #:D-CS [illegible]-0-WCSA

LOCATION/DESCRIPTION: [illegible] E21/ ADDRESS DECODE

ASSIGNED PIN NUMBER:

| | | |
|---|---|---|
| 1= A7 | 8=/RD | 15= WRT.WBD.REG |
| 2= A6 | 9=/WR | 16=/WRITE.M1 |
| 3= A5 | 10= GROUND | 17=/SEL.STATUS |
| 4= A4 | 11=/TSE | 18=/SEL.ROM.MUX |
| 5= A3 | 12= DIR | 19=/SEL.CPU.REGS |
| 6= IO | 13= SEL.TIMER | 20= VCC |
| 7= NC | 14=/WRITE.M0 | |

EQUATIONS:

```
IF(TSE) SEL.CPU.REGS [illegible] 65= IO*/A7*/A6*/A5*/A4*/A3*RD
        +IO*A7*WR

IF(TSE) SEL.ROM.MUX [illegible] 20= /IO*/A7*/A6*/A5*RD
        +IO*/A7*/A6*A4* [illegible] 5*A4*/A3*RD

IF(TSE) SEL.STATUS [illegible] := IO*/A7*/A6*/A5*/A4*/A3*RD

IF(TSE) WRITE.M1 = [illegible] IO*/A7*/A6*A5*A4*WR

IF(TSE) /WRT.WBD.REG [illegible] 0= IO*/A7*/A6*/A5*/A4*/A3*WR

IF(TSE) WRITE.M0 = [illegible] IO*/A7*/A6*A5*/A4*WR

IF(TSE) /SEL.TIMER [illegible] := /80
      +A7
      +A5
      +/A4
      +/A3

IF(TSE) /DIR= IO* [illegible] A6*/A5*/A4*/A3*RD
```

PART NUMBER: 23-024K3-00

DEVICE TYPE: PAL16R4

SCHEMATIC SHEET #:D-CS-M8394-0-WCSJ

LOCATION/DESCRIPTION: E58/ MEMORY REFRESH CONTROL AND SEQUENCER

ASSIGNED PIN NUMBER:

| | | |
|---|---|---|
| 1= REGISTER.CLK | 8=/INHIBIT.REFRESH | 15=/REFR.PENDING |
| 2= ALLOW.REFR.CYC | 9=/REFR.REQUEST | 16=/STATE |
| 3= PRELOAD | 10= GROUND | 17= RAS |
| 4= 9600.BAUD | 11= REG.OUT.EN | 18= TERM.BAUD |
| 5= 2400.BAUD | 12= BAUD.SEL.0 | 19=/START.REFR.CYC |
| 6= 1200.BAUD | 13= BAUD.SEL.1 | 20= VCC |
| 7= 300.BAUD | 14= REFR.CYCLE | |

EQUATIONS:

```
IF(VCC) START.REFR.CYC:=REFR.PENDING*ALLOW.REFR.CYC
      +STATE
      +REFR.CYCLE

STATE:=REFR.PENDING*/REFR.CYCLE*/STATE*ALLOW.REFR.CYC*/PRELOAD
      +REFR.PENDING*RAS*/PRELOAD
      +PRELOAD*ALLOW.REFR.CYC

REFR.PENDING:=REFR.REQUEST*/REFR.PENDING*/REFR.CYCLE
      */INHIBIT.REFRESH*/PRELOAD
      +REFR.PENDING*/RAS*/PRELOAD
      +PRELOAD*INHIBIT.REFRESH

/REFR.CYCLE:=/REFR.PENDING*/RAS*/PRELOAD
      +/REFR.CYCLE*/STATE*/PRELOAD
      +PRELOAD*REFR.REQUEST

/RAS:=/REFR.PENDING*/STATE*/PRELOAD
      +/REFR.CYCLE*/PRELOAD
      +PRELOAD*BAUD.SEL.0

IF(VCC) /TERM.BAUD:=/BAUD.SEL.1*/BAUD.SEL.0*300.BAUD
      +/BAUD.SEL.1*BAUD.SEL.0*1200.BAUD
      +BAUD.SEL.1*/BAUD.SEL.0*2400.BAUD
      +BAUD.SEL.1*BAUD.SEL.0*9600.BAUD
```

PART NUMBER: 23-004K4-00

DEVICE TYPE: PAL16R6

SCHEMATIC SHEET #:D-CS-M8394-0-WCSD

LOCATION/DESCRIPTION: E39/ MICRO PROCESSOR DYNAMIC RAM CONTROLLER

ASSIGNED PIN NUMBER:

| | | |
|---|---|---|
| 1= CLOCK | 8= NC | 15= STATE |
| 2= ALE | 9= RESET | 16=/RAS |
| 3= REQUEST.REFR | 10= GROUND | 17= REFRESH.DONE |
| 4= IO | 11= OUT.EN | 18=/START.8085.CYC |
| 5= A14 | 12=/UART.CHIP.SEL | 19=/LONG.CYCLE |
| 6= NC | 13=/UART.ENA | 20= VCC |
| 7= NC | 14= REFRESH.CYC | |

EQUATIONS:

```
START.8085.CYC:=ALE
      +REFRESH.CYC*START.8085.CYC*A14

RAS:=/RAS*REFRESH.CYC
      +RAS*STATE
      +START.8085.CYC*/RAS*/IO*A14
      +RESET

/STATE:=/START.8085.CYC
      +RAS
      +/A14

/REFRESH.CYC:=START.8085.CYC
      +RAS*REFRESH.CYC
      +RAS*STATE
      +/REFRESH.CYC*/REQUEST.REFR
      +/REFRESH.CYC*REFRESH.DONE
      +/REFRESH.CYC*/RAS*ALE*/STATE
      +UART.ENA
      +RESET

/REFRESH.DONE:=/REQUEST.REFR
      +/REFRESH.DONE*/REFRESH.CYC

IF(VCC)LONG.CYCLE:=START.8085.CYC*A14

IF(VCC)UART.CHIP.SEL:=START.8085.CYC*IO*A14*/RAS
      +/RAS*STATE

UART.ENA:=START.8085.CYC*IO*A14*/RAS
      +/RAS*STATE
```

23-045J5-00
23-024K3-00
23-012K4-00

| REVISIONS | | |
|---|---|---|
| CHK | CHANGE NO. | REV |

DRN [illegible] DATE 10-DEC-81 ENG. DATE

CHK D. [illegible] DATE

DSK1:GL.CS01.TZF[1186,1233]10-DEC-81 10:23 SHEET 1 OF 2

FIRST USED ON OPTION/MODEL: 11/730 NEXT HIGHER ASSEMBLY: B-CD-M8394-0-0

TITLE: WCS ROM AND PAL LISTINGS

| SIZE | CODE | NUMBER | REV. |
|---|---|---|---|
| D | GL | M8394-0-0 | A |

PART NUMBER: 23-002K5-00

DEVICE TYPE: PAL16R8

SCHEMATIC SHEET #:D-CS-M8394-0-WCSE

LOCATION/DESCRIPTION: E95/ CLOCK CONTROL AND SINGLE STEP

ASSIGNED PIN NUMBER:

| | | |
|---|---|---|
| 1= REGISTER.CLOCK.H | 8=/REFR.REQ | 15=/P0 |
| 2=/STALL | 9= RESET | 16=/P1 |
| 3= CSPE | 10= GROUND | 17= PAR.ERR |
| 4= CPU.RUN | 11= REQ.OUT.EN.L | 18=/MAIN.MEM.REFR.REQ |
| 5= CSR.STEP | 12= CLK.CSR | 19=/WAIT |
| 6= UPC.STEP | 13= CLK.CPU | 20= VCC |
| 7= CPU.STEP | 14= CLK.UPC | |

EQUATIONS:

```
WAIT:= CSR.STEP*CLK.CSR
     +WAIT*CSR.STEP
     +UPC.STEP*CLK.UPC
     +WAIT*UPC.STEP
     +CPU.STEP*CLK.CPU
     +WAIT*CPU.STEP
     +RESET

MAIN.MEM.REFR.REQ:= REFR.REQ*/P0*/P1

/PAR.ERR:= P0*/PAR.ERR
     +P1*/PAR.ERR
     +/P0*/P1*/CSPE
     +RESET

P1:= P0
     +RESET

P0:= /P0*/P1
     +RESET

/CLK.UPC:= /P1
     +STALL*CPU.RUN
     +STALL*CPU.STEP
     +REFR.REQ
     +/CPU.RUN*/UPC.STEP*/CPU.STEP
     +/CPU.RUN*WAIT
     +RESET

/CLK.CPU:= /P1
     +STALL
     +REFR.REQ
     +/CPU.RUN*/CPU.STEP
     +/CPU.RUN*WAIT
     +RESET

/CLK.CSR:= /P1
     +STALL*CPU.RUN
     +STALL*CPU.STEP
     +REFR.REQ
     +/CPU.RUN*/CSR.STEP*/CPU.STEP
     +/CPU.RUN*WAIT
     +RESET
```

23-002K5-09

| REVISIONS | | |
|---|---|---|
| CHK | CHANGE NO. | REV |

DRN: A. Mahajan — DATE: 10-DEC-81 — ENG. — DATE — TITLE: WCS ROM AND PAL LISTINGS

CHK'D. — DATE — BOARD LOCATION: SHEET 2 OF 2

D3K10LCS02.T2PL] 106,1200] 10-DEC-81 10:29 — NEXT HIGHER ASSEMBLY: B-DD-M8394-0-0

FIRST USED ON OPTION/MODEL: 117730

| SIZE | CODE | NUMBER | REV. |
|---|---|---|---|
| D | GL | M8394-0-0 | A |

LAYER 1

CS*ABCDEFHJKLMNPRS

SIDE 1

digital

E213 E150 E137 E123 E109 E96 E82 E68

J3 J2 J1

M8394

5014439A

1-1 1-2 1-3 1-4 1-5 1-6 1-7 1-8 1-9

| REVISION HISTORY | | | |
|---|---|---|---|
| DATE | ECO NUMBER | REV | |
| 28-MAR-82 | M8394-TW001 | B | |
| 21-MAY-82 | R. DAY | | |
| 11-DEC-81 | M. EUSEBIO | | |

| | | |
|---|---|---|
| DRN | J.J. Casey | DATE 2-26-82 |
| CHK | J.J. Casey | DATE 2-26-82 |
| TEST | [illegible] | DATE 3-19-82 |
| REVIEWED | [illegible] | DATE 3-19-82 |
| MFG ENG | [illegible] | DATE 3-19-82 |
| NEXT HIGHER DOC | | |

TITLE: digital

ETCH CUT DRAWING

DOCUMENT NUMBER

DEC 5014439-0-0 B

SIZE D CODE 50144 REV B

SHEET 2 OF 3

DEC 5014439-0-0 B

8 7 6 5 4 3 2 1

A B C D

LAYER H

5014439A
WCS SIDE 2

1-13

1-11

1-10

1-12

1-14

| REVISION HISTORY | | |
|---|---|---|
| DATE | ECO NUMBER | REV |
| | | |

TITLE: ETCH CUT DRAWING

DOCUMENT NUMBER: SIZE DEC | CODE | NUMBER 5014439-0-0 | REV B

SCALE 2-1 | SHEET 2 OF 3

TU

DEC 5014439-0-0 B

# REWORK INSTRUCTIONS

## ECO#1

ETCH CUTS SIDE 1:

1-1 NEAR E154-01 GOING FROM E154-01 TO E153-12.
1-2 BETWEEN E85-09 GOING TO E85-10.
1-3 NEAR E21-11 GOING FROM E21-11 TO E19-01.
1-4 BETWEEN E47-07 GOING TO E47-08.
1-5 NEAR PTH TO THE LEFT OF R66 SEPARATING ETCH FROM E38-01 AND E19-19.
1-6 DRILL OUT PTH AT E17-14.
1-7 DRILL OUT PTH AT E16-4.
1-8 BETWEEN E4-09 GOING TO E4-10.
1-9 BETWEEN E4-09 GOING TO E4-06.

ETCH CUTS SIDE 2

1-10 NEAR E129-02 GOING FROM E129-02 TO E128-03.
1-11 BETWEEN E128-10 GOING TO E129-05.
1-12 BETWEEN E128-10 AND PTH GOING TO E86-03.
1-13 NEAR BOTTOM OF R94 GOING TO J1-26.
1-14 BETWEEN E3-01 GOING TO E2-14.

| REVISION HISTORY | | |
|---|---|---|
| DATE | ECO NUMBER | REV. |
| | | |

TITLE: ETCH CUT DRAWING

| DOCUMENT NUMBER | | | |
|---|---|---|---|
| SIZE | CODE | NUMBER | REV. |
| D | EC | 5014439-0-0 | B |

SCALE: NONE SHEET 3 OF 3

DEC 5014439-0-0 B

SIZE B | CODE DD | NUMBER G7273 - 0 | REV. *

| DRAWING NO. | NO. OF SHTS. | PART NO. | DESCRIPTION | REVISIONS |
|---|---|---|---|---|
| | | G7273 | MODULE REVISION | * |
| B-DD-G7273-0 | 1 | | DOUBLE GRANT | * |
| D-UA-G7273-0-0 | 3 | | DOUBLE GRANT | * |
| K-FL-G7273-0-DBR | 1 | | DOUBLE GRANT | * |
| D-MD-5013871-0-0 | 3 | | DRILL AND ETCH DRAWING | * |
| | | 5013871 | ETCHED BOARD | A |
| K-FC-G7273-0-DBG | | | FC DESIGN DATA BASE | A |

**NOTES:**

REVISIONS: REV. / CHG NO. / DATE

digital

USED ON OPTION/MODEL

| | | |
|---|---|---|
| DRN | J. Casey | 4-30-80 |
| CHK'D | J. Casey | 4-30-80 |
| ENG | R. [illegible] | 4-30-80 |
| PROD. | [illegible] | 5-5-80 |

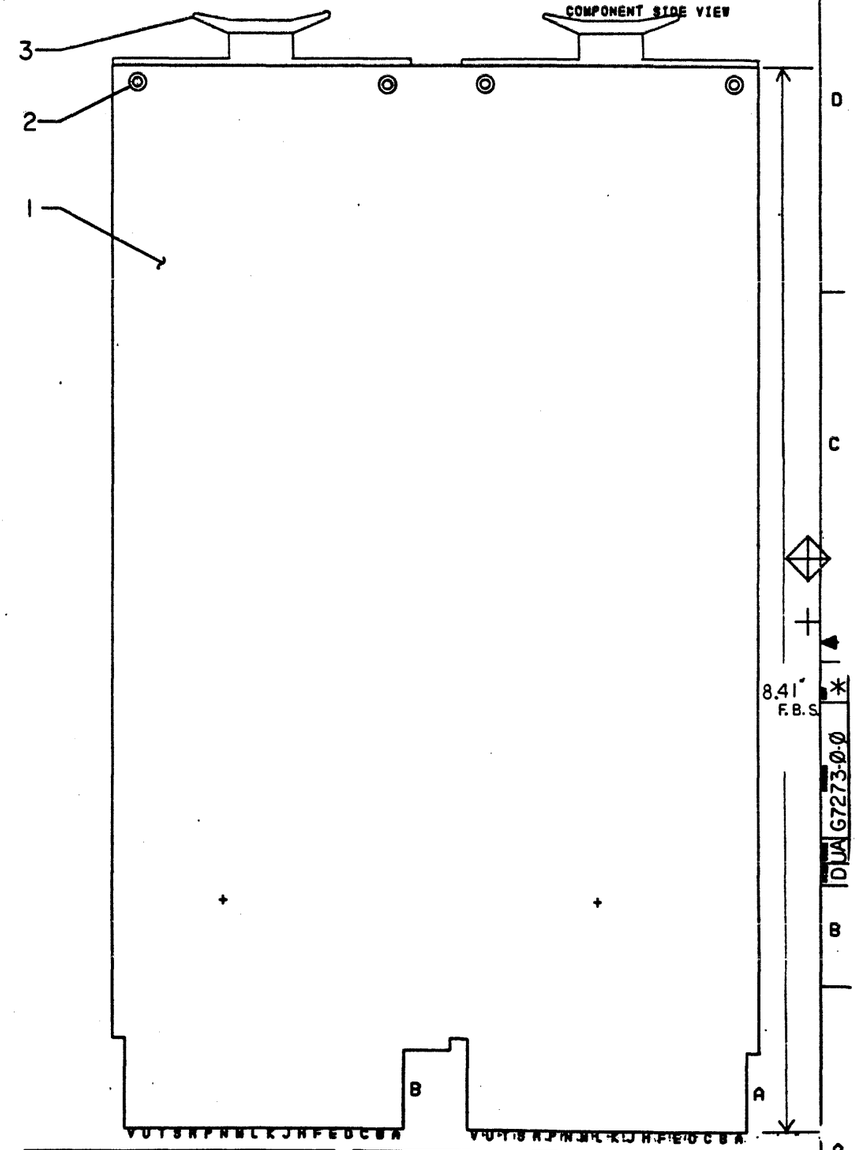
TITLE DOUBLE GRANT

SIZE B | CODE DD | NUMBER G7273 - 0 | REV. *

SHEET 1 OF 1

TW

DRB 126




NOTES:
1. STEP / REPEAT - 2 ML 2

| | | |
|---|---|---|
| STEP & | Y AXIS | STEP Ø TIMES |
| REPEAT | X AXIS 5.250 | STEP 1 TIMES |

| CHG | CHANGE NO. | REV |
|---|---|---|
| | | |

ETCH REV. A

| SIGNATURES | DATE |
|---|---|
| DRN. | 2-16-79 |
| CHK'D. | 2-16-79 |
| MECH. ENG. | |
| PROJ. ENG. | |
| PROD. | 5-5-79 |

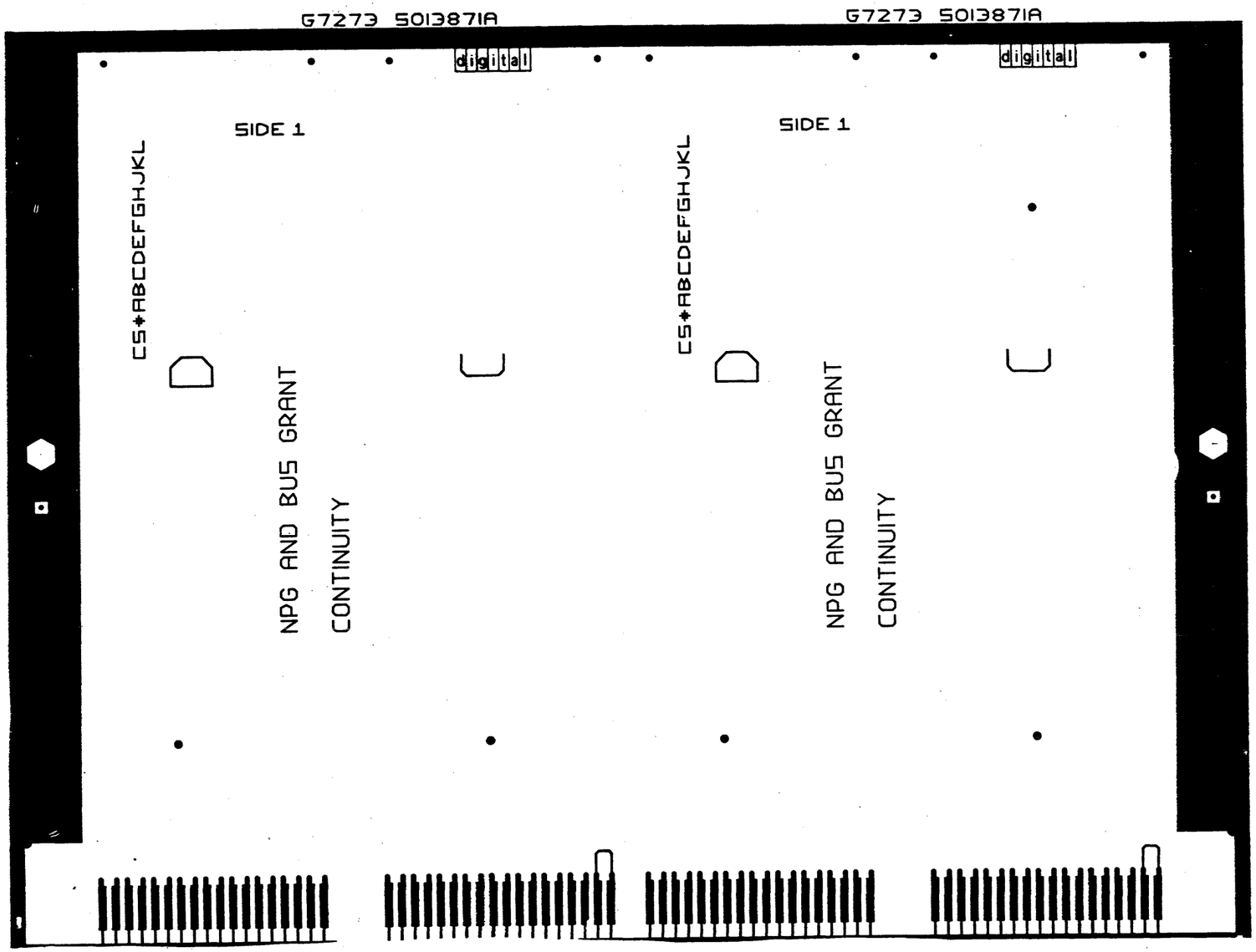
SCALE 2/1
SHT. 1 OF 3
NEXT HIGHER ASSY. B-DD-G7273-Ø

digital

TITLE
DOUBLE GRANT

| SIZE | CODE | NUMBER | REV |
|---|---|---|---|
| D | UA | G7273-Ø-Ø | * |

MS# 170164A




| REVISIONS | | |
|---|---|---|
| CHK | CHANGE NO | REV |
| | | |

| TITLE | SIZE | CODE | NUMBER | REV. |
|---|---|---|---|---|
| DOUBLE GRANT | D | UA | G7273-0-0 | * |
| SCALE 2-1 SHEET 2 OF 3 | DIST. | | | |

DUA G7273-0-0 *

L4 L4

5013871A
67273
SIDE 2

5013871A
67273
SIDE 2

DOUBLE GRANT

DOUBLE GRANT

UAG7273-0-0 *

| REVISIONS | | |
|---|---|---|
| CHK | CHANGE NO. | REV |
| | | |

| TITLE | SIZE | CODE | NUMBER | |
|---|---|---|---|---|
| DOUBLE GRANT | D | UA | G7273-0-0 | * |
| SCALE 2-1 SHEET 3 OF 3 | DIST. | | | |

AUTOMATED BY PRTLST.3L(32)

# P A R T S  L I S T



| LINE | ITEM | DOCUMENT NUMBER | PART NUMBER | DESCRIPTION | QUANTITY PER VARIATION 00 |
|---|---|---|---|---|---|
| 1 | 1 | D-MD-5013871-0-0 | 5013871-00 | (11/24) BOARD FOR G7273 | 1 |
| 2 | 2 | | 9006732-00 | FYFLET, ROLLED FLANGE, .121 OD X | 4 |
| 3 | 3 | | 9008337-01 | HANDLE, FLIP CHIP, GREEN | 2 |

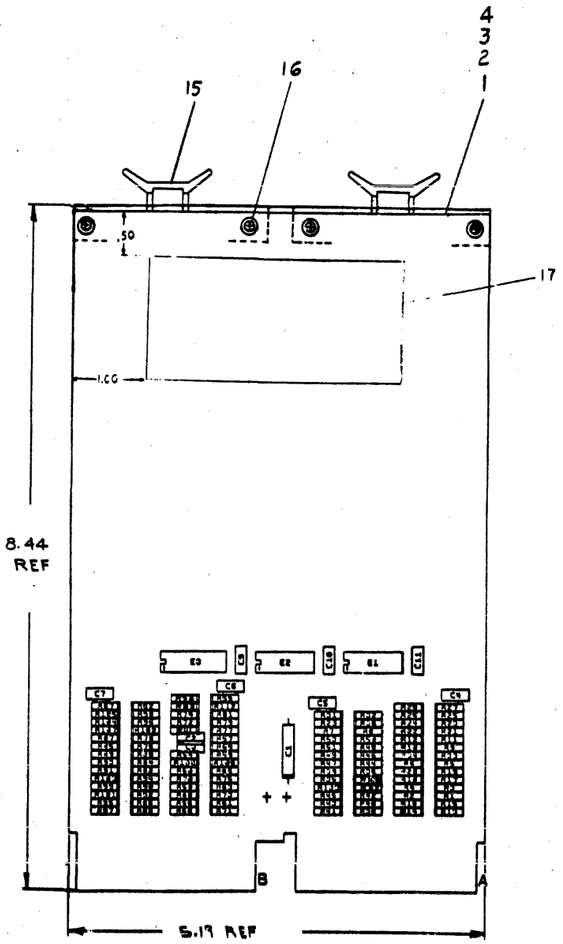
| REVISION HISTORY | | | BASIC PART NO: G7273 |
|---|---|---|---|
| ENG | ECO NUMBER | REV | SECTION A OF A |
| --- | INITIAL | * | SECTION, VARIATION INDEX |
| | | | [A] 00 |
| | | | [B] |
| | | | [C] |
| | | | [D] |
| | | | [E] |
| | | | [F] |

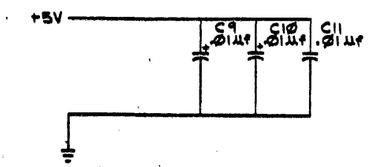
| | | |
|---|---|---|
| DRN: F.SMART | DATE: 18-JUL-79 | D I G I T A L |
| CHK'D: F.GAPOFALO | DATE: 18-JUL-79 | TITLE PARTS LIST |
| DES.ENG.: R.GRUDA | DATE: 5-MAY-80 | DOUBLE GRANT |
| RESP.ENG.: P.GRUDA | DATE: 5-MAY-80 | DOCUMENT NUMBER |
| MFG.ENG.: G.ABREU | DATE: 5-MAY-80 | SIZE: K CODE: PL NUMBER: G7273-0-DBP REV: * |
| ASSEMBLY NUMBER: D-UA-G7273-0-0 | TOP DOCUMENT NUMBER: B-DD-G7273-0-0 | FILE NAME: Z1264.PLS EDIT #: 4 |



TW

**NOTES:**
1.) THE FOLLOWING REFERENCE DESIGNATIONS ARE NOT USED: C8, R64, AND R118.




| IC DEC 8881 | 8 | 16 |
|---|---|---|
| IC TYPE | GND | + 5V |

GND AND 5V ARE USUALLY PIN 7 AND 16 RESPECTIVELY EXCEPTIONS ARE STATED ABOVE

IC PIN LOCATIONS

| REF | | | | |
|---|---|---|---|---|
| REF | | X-Y HOLE COORDINATE HOLE LOCATION | K-CO-M9302-0-4 | 1 |
| | | ASSY-DRILLING HOLE LAYOUT | D-AH-M9302-0-5 | 2 |
| | | | | 3 |
| 1 | | ETCHED CIRCUIT BOARD | 5011311 | 4 |
| 3 | C9,C10,C11 | CAP .01 uf 100V 20% DISC | 1001810-01 | 5 |
| 1 | C1 | CAP 39 µf 10V 10% | 1000076 | 6 |
| ~~1~~ | ~~C8~~ | ~~CAP 6.8 µf 35V 10%~~ | ~~1005308~~ | 7 |
| 4 | C4 THRU C7 | CAP 22 µf 50V X% | 1010274-01 | 8 |
| 2 | C2,C3 | CAP .001 µf 250V 20% DISC | 1000043 | 9 |
| 56 | R2,R4,R6,R8,R10,R12,R14,R16 R18,R20,R22,R24,R26,R28,R30 R32,R34,R36,R38,R40,R42,R44 R46,R48,R50,R54,R58,R58,R60 R62,R66,R69,R70,R72,R74,R76 R78,R80,R82,R84,R86,R88,R90 R92,R94,R96,R98,R100,R102,R57,R66,R37,R52,R53,R108,R111 | RES 220 OHM 1/4W 5% | 130CZ71 | 10 |
| 54 | R1,R3,R5,R7,R9,R11,R13,R15 R17,R19,R21,R23,R25,R27,R29 R31,R33,R35,R39,R41,R43,R45 R47,R49,R51,R53,R55,R59 R61,R63,R65,R67,R71,R73 R75,R77,R79,R81,R85,R87,R89 R91,R93,R95,R97,R99,R101, R103 THRU R107,R109,R112 | RES 15[illegible] OHM 1/4W 5% | 130C250 | 11 |
| 1 | E2 | I C DEC 7430 | 1905578 | 12 |
| 1 | E1 | I.C DEC 8881 | 1909705 | 13 |
| 1 | E3 | I C DEC 8837 | 1911116 | 14 |
| 2 | | HANDLE, FLIP-CHIP (MAGENTA) | 9008337-6 | 15 |
| 4 | | EYELETS | 9006732 | 16 |
| 1 | | DECAL | 8-00-74679-C-C | 17 |

| QTY | REF DESIGNATION | DESCRIPTION | PART NO. | ITEM NO |
|---|---|---|---|---|

PARTS LIST

FIRST USED ON OPTION MODEL

ETCH BOARD REV B

| REV | CHANGE NO | DEC NO. | EIA NO. | DEC NO. | EIA NO. |
|---|---|---|---|---|---|
| | | | | | |

SEMICONDUCTOR CONVERSION CHART

| | |
|---|---|
| DRAWN | Tobey 7/8/76 |
| CHECKED | Tobey 9/1/76 |
| ENGR | Tobey 6/28/76 |
| MFG | Tobey 6/28/76 |
| NEXT HIGHER ASSY | Mullin 6 Oct 76 |
| SCALE | |
| SHEET | 1 OF 2 |

digital EQUIPMENT CORPORATION

TITLE
UNIBUS TERMINATOR

SIZE/CODE DCS | NUMBER M9302-YA-1 | REV *

DIST

DCS M9302-YA-1 * 2

+5V AA2, BA2

GND AB2, AC2, AN1, API, ARI, AS1, ATI, AV2, BB2, BC2, BDI, BE1, BT1, BV2

C4 THRU C7 .22µF

C1 39µF 10V 10%

BUS D05 L BUS D07 L BUS D09 L BUS DII L BUS D03 L BUS D0I L BUS D04 L BUS D06 L BUS D08 L BUS DI0 L BUS D02 L BUS D00 L BUS INTR L BUS INIT L BUS PA L BUS DI4 L BUS DI2 L BUS NPG H BUS BG7 H BUS SACK L BUS NPR L BUS BR7 L BUS BR6 L BUS BBSY L BUS PB L BUS DI5 L BUS DI3 L BUS BG6 H

R1 150 R3 150 R5 150 R7 150 R9 150 R11 150 R13 150 R15 150 R17 150 R19 150 R21 150 R23 150 R25 150 R27 150 R29 150 R31 150 R33 150 R35 150 R109 150 R39 150 R41 150 R43 150 R45 150 R47 150 R49 150 R51 150 R53 150 R55 150

R2 220 R4 220 R6 220 R8 220 R10 220 R12 220 R14 220 R16 220 R18 220 R20 220 R22 220 R24 220 R26 220 R28 220 R30 220 R32 220 R34 220 R108 220 R37 220 R36 220 R38 220 R40 220 R42 220 R44 220 R46 220 R48 220 R50 220 R52 220

AF2 AH2 AJ2 AK2 AE2 AD2 AE1 AF1 AH1 AJ1 AD1 AC1 AB1 AA1 AM1 AL1 AK1 AU1 AV1 AR2 AS2 AT2 AU2 AP2 AN2 AM2 AL2 BA1

BF1 BH1 EJ1 BK1 BL1 BM1 BF2 BH2 BJ2 BK2 BE2 BD2 BC1 BB1 BP2 BP1 BR1 BS1 BR2 BS2 BT2 BU2 BU1 BV1 BN2 BM2 BL2 BN1

R57 220 R59 150 R61 150 R63 150 R65 150 R67 150 R69 220 R71 150 R73 150 R75 150 R77 150 R79 150 R81 150 R112 150 R85 150 R87 150 R89 150 R91 150 R93 150 R95 150 R97 150 R99 150 R101 150 R103 150 R104 150 R105 150 R106 150 R107 150

C2 .001 µF C3 .001 µF

R54 220 R56 220 R58 220 R60 220 R62 220 R66 220 R68 220 R70 220 R111 220 R72 220 R74 220 R83 220 R76 220 R78 220 R80 220 R82 220 R84 220 R86 220 R88 220 R90 220 R92 220 R94 220 R96 220 R98 220 R100 220 R102 220

BUS AC LO L BUS A01 L BUS A03 L BUS A05 L BUS A07 L BUS A09 L BUS DC LO L BUS A00 L BUS A02 L BUS A04 L BUS BG4 H BUS BR4 L BUS BR5 L BUS BG5 H BUS AI2 L BUS AI3 L BUS AI5 L BUS AI7 L BUS AI4 L BUS AI6 L BUS CI L BUS C0 L BUS SSYN L BUS MSYN L BUS AI0 L BUS A08 L BUS A06 L BUS AII L

SPARES

E1 8881 E3 8837

BUS NPG H AU1
BUS BG7 H AV1
BUS BG6 H BA1
BUS BG5 H BE2
BUS BG4 H BB1

E3 8837 E2 7430 E1 8881

AR2 BUS SACK L

| REVISIONS | | |
|---|---|---|
| CHK | CHANGE NO | REV |

| TITLE | SIZE | CODE | NUMBER | REV. |
|---|---|---|---|---|
| UNIBUS TERMINATOR | D | DCS | M9302-YA-1 | * |
| SCALE | SHEET 2 OF 2 | DIST. | | |

# FIELD MAINTENANCE PRINT SET



## TABLE OF CONTENTS


| | |
|---|---|
| B-TC-MS730-C-1 | FIELD MAINT. PRINT SET MP01366 |
| B-DD-MS730-C | 1 MB 64K ECC MEMORY ARRAY - DRAWING DIRECTORY |
| B-PL-MS730-C-0 | 1 MB 64K ECC MEMORY ARRAY - PARTS LIST |
| B-DD-M8750-0 | MOS MEMORY ARRAY - DRAWING DIRECTORY |
| D-UA-M8750-0-0 | MOS MEMORY ARRAY ASSY |
| K-PL-M8750-CA-DBP | MOS MEMORY ARRAY - PARTS LIST |
| D-CS-M8750-0-1 | MOS MEMORY ARRAY - CIRCUIT SCHEMATIC |


| UNIT VARIATIONS COVERED BY THIS PRINT SET |
|---|
| MS730-CA |
| MS730-CB |
| MS730-CC |
| MS730-CD |
| MS730-CF |

MS730-C

**Field Maintenance Print Set**

**Digital Equipment Corporation**

PRINT SET ORDER
NO. MP01366

SIZE B | CODE TC | NUMBER MS730-C-1 | REV. A

| REVISIONS | | |
|---|---|---|
| REV | | |
| CHG. NO. | | |
| DATE | | |

| USED ON OPTION/MODEL | |
|---|---|
| 11730 | |

SHEET 1 OF 1

| | | |
|---|---|---|
| DRN. A. ROCHA | DATE 13APR82 | digital |
| CHK'D | DATE 20APR82 | TITLE: 1 MB 64K ECC MEMORY ARRAY FIELD MAINT. PRINT SET |
| PROJ. ENG. D.M. Landry | DATE 20APR82 | SIZE B / CODE TC / NUMBER MS730-C-1 / REV. A |
| FIELD SERV. | DATE 21 APR82 | DIST. |

DRB 124

TW

# DRAWING DIRECTORY



## UNIT VARIATIONS

| VAR | TITLE |
|---|---|
| MS730-CA | 1 MB 64K ECC MEMORY ARRAY - QTY 1 |
| MS730-CB | 1 MB 64K ECC MEMORY ARRAY - QTY 2 |
| MS730-CC | 1 MB 64K ECC MEMORY ARRAY - QTY 3 |
| MS730-CD | 1 MB 64K ECC MEMORY ARRAY - QTY 4 |
| MS730-CF | 1 MB 64K ECC MEMORY ARRAY - QTY 10 |

REVISIONS

| REV. | CHANGE NO. | CHK |
|---|---|---|
| | | |

USED ON OPTION/MODEL: 11730

SHEET 1 OF 3

| | | |
|---|---|---|
| DRN. A. ROCHA | DATE 13APR82 | TITLE: 1 MB 64K ECC MEMORY ARRAY |
| CHK'D. R.P. Morin | DATE 20APR82 | |
| PROJ. ENG. D.M. Landry | DATE 20APR82 | |
| PROD. S.A. Castagna | DATE 21APR82 | |

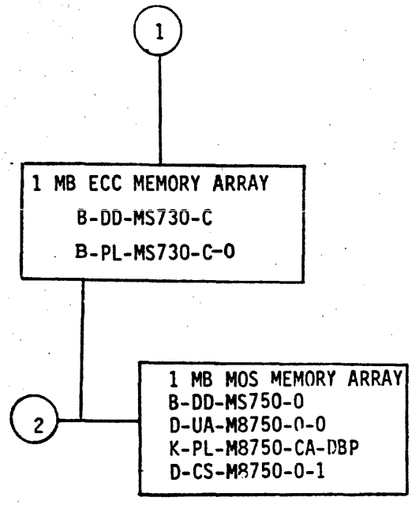
digital

| SIZE | CODE | NUMBER | REV |
|---|---|---|---|
| B | DD | MS730-C | A |

DIST.

DRB 106A

TW




| TITLE | | SIZE | CODE | NUMBER | REV |
|---|---|---|---|---|---|
| 1 MB 64K ECC MEMORY ARRAY | SHEET 2 OF 3 | B | DD | MS730-C | A |



TW

| FIND NO. | DRAWING NO. | DESCRIPTION | TYPE |
|---|---|---|---|
| 1 | MP01366 | FIELD MAINTENANCE PRINT SET (MP) | - |
| | B-TC-MS730-C-1 | FIELD MAINTENANCE PRINT SET (TC) | - |
| | B-DD-MS730-C | 1 MB 64K ECC MEMORY ARRAY - DRAWING DIRECTORY | - |
| | B-PL-MS730-C-0 | 1 MB 64K ECC MEMORY ARRAY - PARTS LIST | - |
| 2 | B-DD-M8750-0 | 1 MB MOS MEMORY ARRAY - DRAWING DIRECTORY | - |
| | D-UA-M8750-0-0 | 1 MB MOS MEMORY ARRAY ARRAY | E/M |
| | K-PL- M8750-CA-DBP | 1 MB MOS MEMORY ARRAY - PARTS LIST | - |
| | D-CS-M8750-0-1 | 1 MB MOS MEMORY ARRAY - CIRCUIT SCHEMATIC | E |

| FIND NO. | DRAWING NO. | DESCRIPTION | TYPE |
|---|---|---|---|

TYPE: E ELECTRICAL
M MECHANICAL
E/M ELECTRO/MECHANICAL

digital

| TITLE | SHEET | SIZE | CODE | NUMBER | REV |
|---|---|---|---|---|---|
| 1 MB 64K ECC MEMORY ARRAY | 3 OF 3 | B | DD | MS730-C | A |

DRB 108A

TW

# DIGITAL EQUIPMENT CORPORATION
# PARTS LIST

| | | |
|---|---|---|
| MADE BY A.ROCHA 13APR82 | CHECKED RPZ 20 APR 82 | SECTION |
| ENG RPZ 20 APR 82 | PROD SQ Casty Cox 21 APR82 | ISSUED SECTION |

| ITEM NO. | DRAWING NO. | PART NO. | DESCRIPTION | MS730-CA | MS730-CB | MS730-CC | MS730-CD | MS730-CF | | | | | | | REF DESIGNATION |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | QUANTITY / VARIATION | | | | | | | | | | | NOTES: |
| 1 | B-DD-M8750-0 | M8750-CA | 1 MB ARRAY MOS MEMORY | 1 | 2 | 3 | 4 | 10 | | | | | | | |

E.C.O. NO.



| TITLE | ASSY NO. | SIZE | CODE | NUMBER | REV. |
|---|---|---|---|---|---|
| 1 MB 64K ECC MEMORY ARRAY | B-DD-MS730-C | B | PL | MS730-C-0 | A |
| | SHEET 1 OF 1 | INSERTION PARTS LIST DATA BASE REV | | | |

DRB 125

TW

| SIZE | CODE | NUMBER | REV. |
|---|---|---|---|
| B | DD | M875Ø-Ø | D |

| DRAWING NO. | NO. OF SHTS. | PART NO. | DESCRIPTION | REVISIONS |
|---|---|---|---|---|
| | - | M8750-00 | MOS MEMORY ARRAY | A A A A |
| | | | | |
| D-UA-M875Ø-Ø-Ø | 4 | | MOS MEMORY ARRAY | A B B C |
| D-CS-M875Ø-Ø-1 | 15 | | MOS MEMORY ARRAY | A A A A |
| K-PL-M875Ø-BA-DBP | 3 | | PARTS LIST DATA BASE | A B B C |
| K-PC-M875Ø-0-DBC | - | | P. C. DESIGN DATA BASE | A A A A |
| | | | | |
| | | 5Ø137Ø6 | ETCH BOARD | C C C C |
| K-PL-M875Ø-CA-DBP | - | | PARTS LIST DATA BASE | A A A A |
| K-CS-M875Ø-Ø-DBS | - | | CIRCUIT SCHEMATIC DATA BASE | A A A A |
| A-SP-M875Ø-Ø-2 | 14 | | M8750 MOS STORAGE ARRAY | - - A A |

**NOTES:** 1. Uses Etch of D-MD-5Ø137Ø6-Ø-Ø (M8728)

| REVISIONS | REV. | CHG NO. | DATE |
|---|---|---|---|
| | A | INITIAL | 1/81 |
| | B | ML ØØ1 | 2/82 |
| | C | ML ØØ2 | 6/82 |
| | D | ML ØØ3 | 7/82 |



digital

USED ON OPTION/MODEL

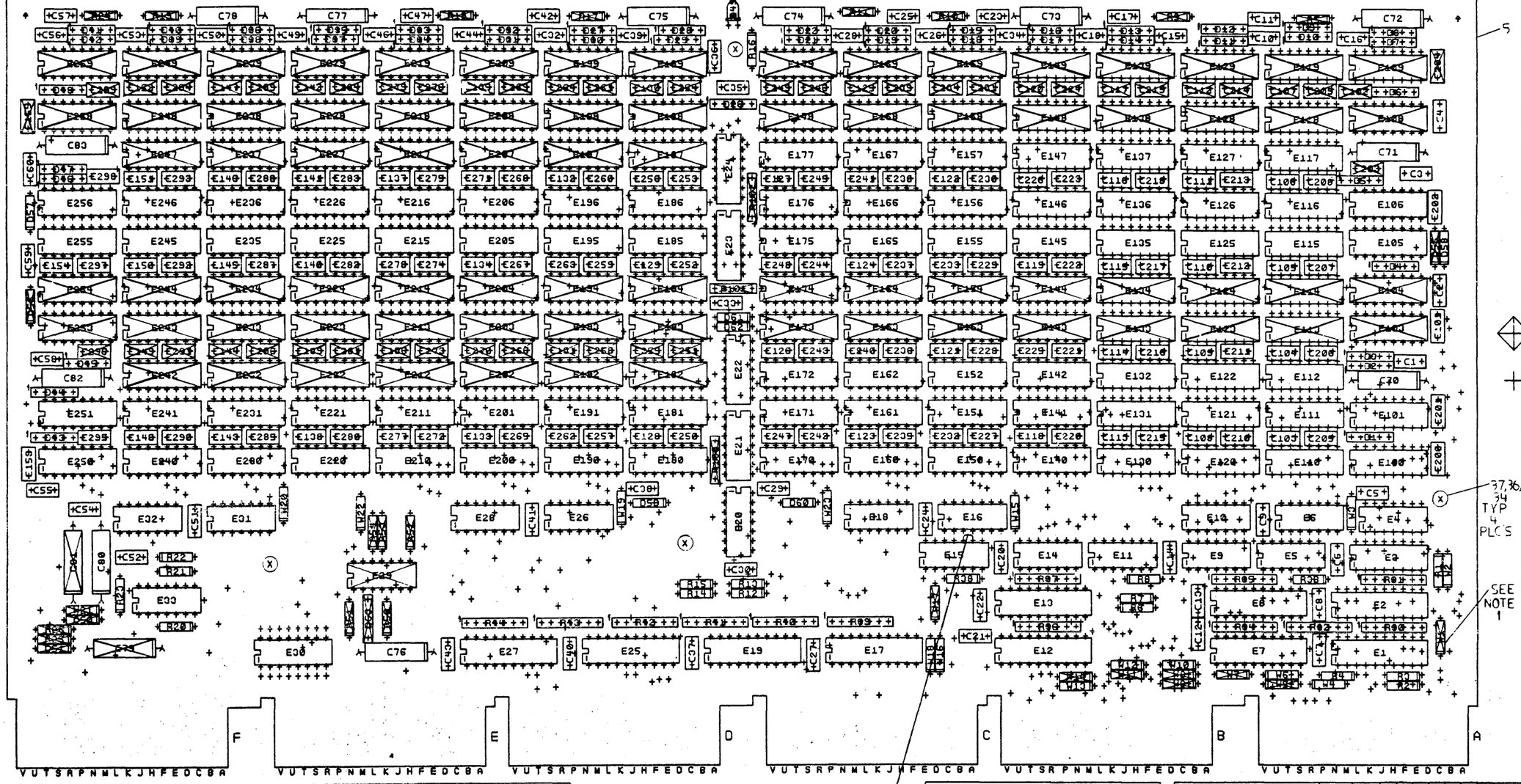
| | | |
|---|---|---|
| DRN. V. MANGAUDIS | 21JAN81 | TITLE MOS MEMORY ARRAY |
| CHK'D P. Boesman | 10 MAR 81 | |
| ENG. K. Marnoyek | 24 JUN 81 | SIZE B CODE DD NUMBER M875Ø-Ø REV. D |
| PROD. | 24 JUN 81 | SHEET 1 OF 1 |

DRB 126

ML2

VARIATION BA

COMPONENT SIDE VIEW

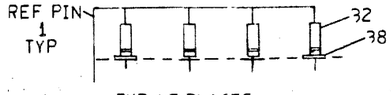



37,36, 34 TYP 4 PLCS

SEE NOTE 1

SEE NOTE 2

TYP DIODE PACK WITH SPACERS




TYP 45 PLACES

NOTES: 1. ALL COMPONENTS CROSSED OUT SHOULD NOT BE INSTALLED.
2. WIRE ADD SIDE 1: FROM E15-9 TO E15-10
3. E30 IS A SPARE IC LOCATION.

| STEP E | ↑ Y AXIS ____ STEP ____ TIMES |
|---|---|
| REPEAT | → X AXIS ____ STEP ____ TIMES |

| REV | CHK | CHANGE NO |
|---|---|---|
| B | JNH | M8750-0001 |
| C | JNH | M8750-ML00-1 |

ETCH REV. C

| SIGNATURES | DATE |
|---|---|
| DRN. | |
| CHK'D. | |
| MECH. ENG. | |
| PROJ. ENG. K. Mamayek | |
| PROD. | |
| SCALE 2:1 | |
| SHT. 1 OF 4 | |
| NEXT HIGHER ASSY. B-DD-M8750-0 | |

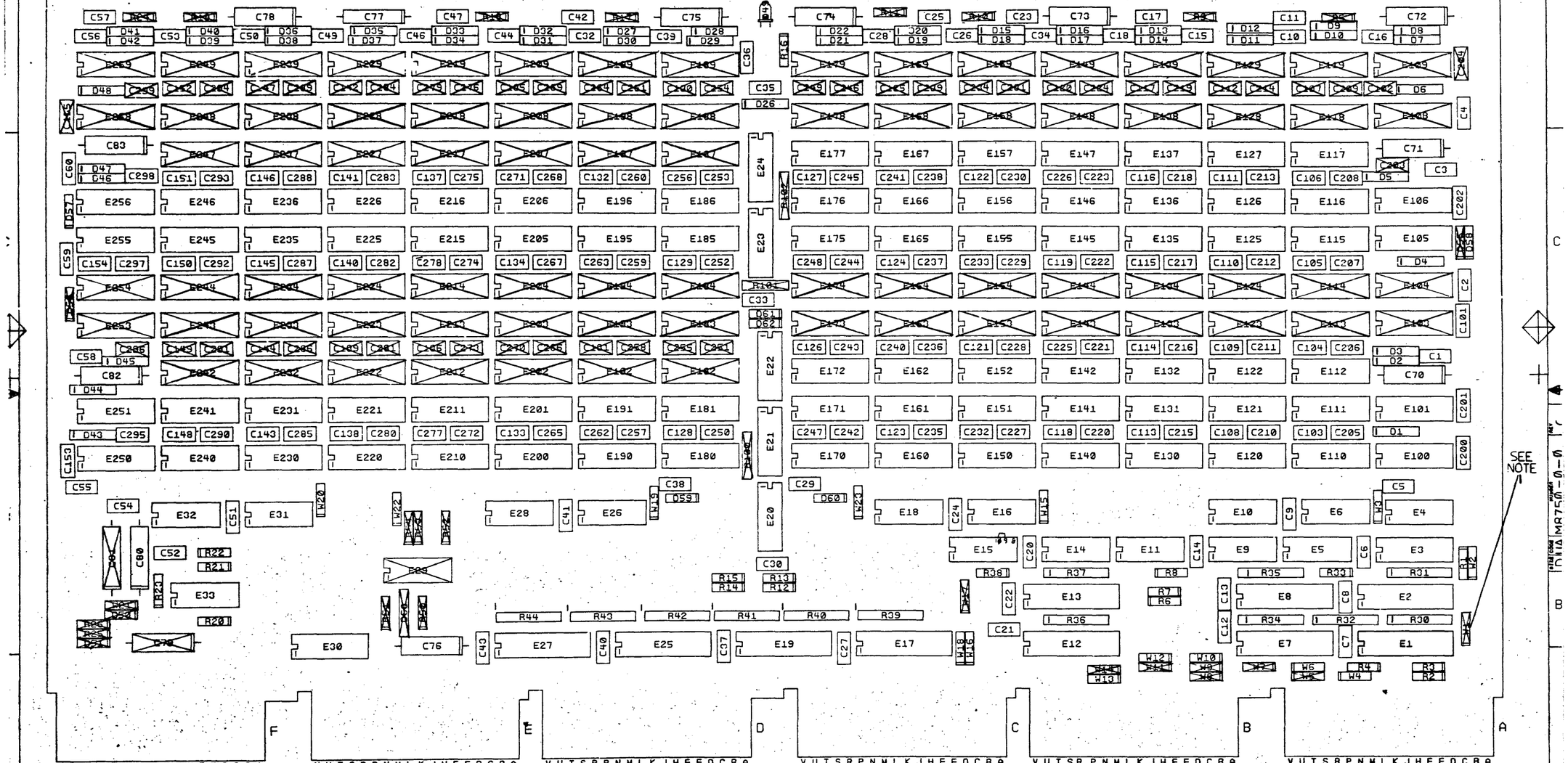
digital

TITLE MOS MEMORY ARRAY

| SIZE | CODE | NUMBER | REV |
|---|---|---|---|
| D | UA | M8750-0-0 | C |

ML2 1 WO#____

VARIATION BA




NOTES:
1. ALL COMPONENTS CROSSED OUT SHOULD NOT BE INSTALLED.
2. WIRE-ADD SIDE 1: FROM E15-9 TO E15-10
3. E30 IS A SPARE LOCATION.

| | |
|---|---|
| STEP E | ↑ Y AXIS ___ STEP ___ TIMES |
| REPEAT | → X AXIS ___ STEP ___ TIMES |

| REV | CHANGE NO | CHK |
|---|---|---|
| | | |

| SIGNATURES | DATE |
|---|---|
| DRN. D Marquardt | 19 JAN 87 |
| CHK'D. | |
| MECH.ENG. | |
| PROJ.ENG. | |
| PROD. | |

digital

TITLE MOS MEMORY ARRAY

SCALE 2:1 | SIZE D | CODE UA | NUMBER M8750-0-0 | REV C

SHT. 2 OF 4

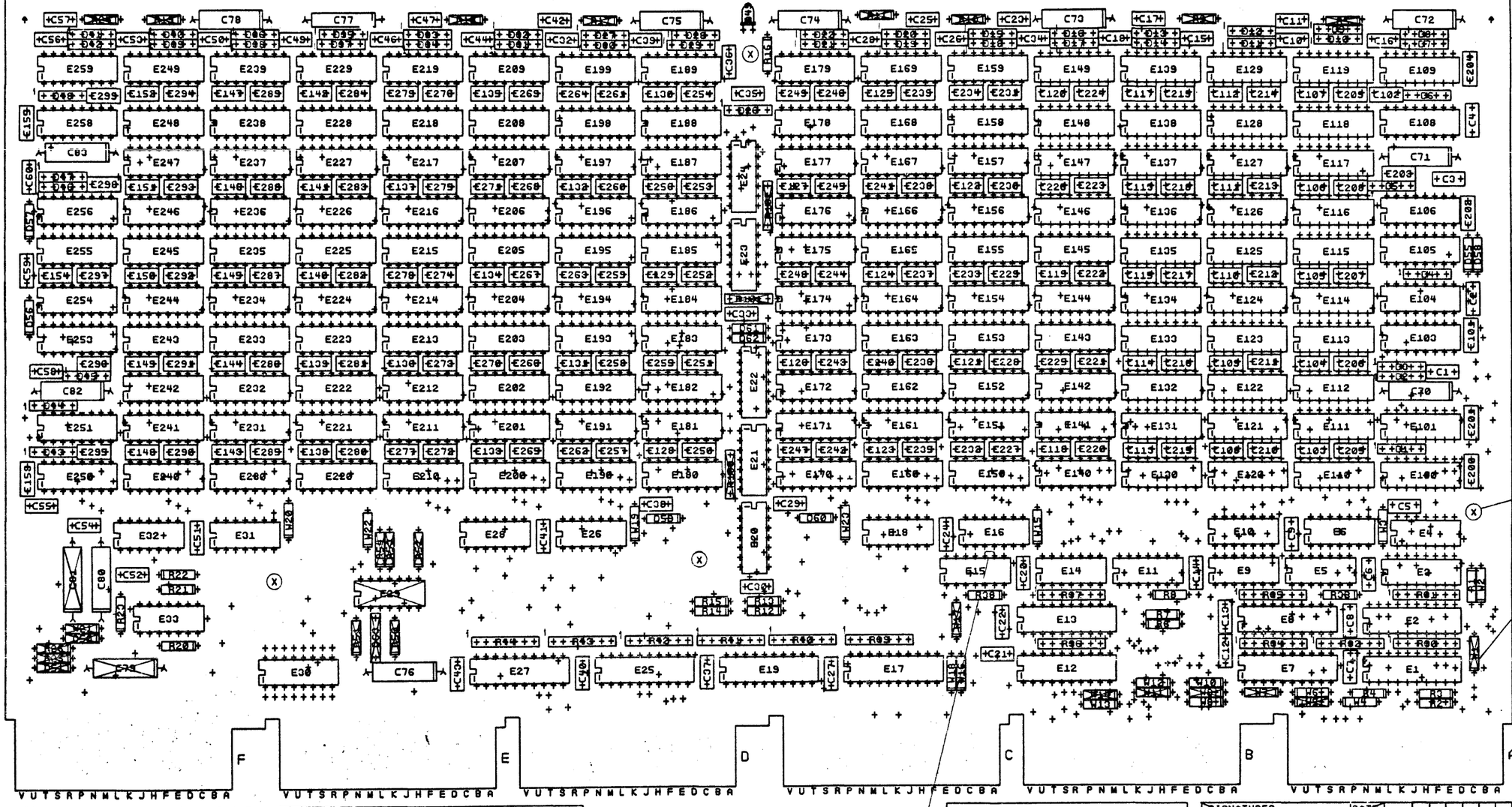
NEXT HIGHER ASSY. B-DD-M8750-0

ML2 1 WO#

VARIATION CA

Z1

COMPONENT SIDE VIEW

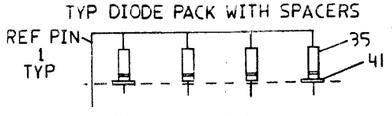



NOTES: 1. ALL COMPONENTS CROSSED OUT SHOULD NOT BE INSTALLED.
2. WIRE ADD SIDE 1: FROM E15-9 TO E15-10
3. E30 IS A SPARE IC LOCATION.

| STEP & REPEAT | ↑ Y AXIS ___ STEP ___ TIMES |
|---|---|
| | → X AXIS ___ STEP ___ TIMES |

| CHK | CHANGE NO | REV |
|---|---|---|
| | | |

TYP DIODE PACK WITH SPACERS




TYP 45 PLACES

ETCH REV.

| SIGNATURES | DATE |
|---|---|
| DRN. | |
| CHK'D. | |
| MECH. ENG. | |
| PROJ. ENG. | |
| PROD. | |

digital

TITLE MOS MEMORY ARRAY

| SCALE 2:1 | SIZE | CODE | NUMBER | REV |
|---|---|---|---|---|
| SHT. 3 OF 4 | D | UA | M8750-0-0 | C |
| NEXT HIGHER ASSY. B-DD-M8750-0 | | | | |

UA M8750-0-0 C

ML2 1 WO#

VARIATION CA

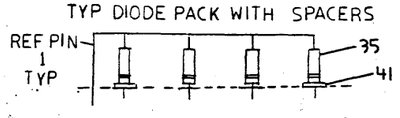
SEE NOTE 1

NOTES:
1. ALL COMPONANTS CROSSED OUT SHOULD NOT BE INSTALLED.
2. WIRE ADD SIDE 1: FROM E15-9 TO 15-10
3. E30 IS A SPARE IC LOCATION.

| STEP E | ↑ Y AXIS ___ STEP ___ TIMES |
|---|---|
| REPEAT | → X AXIS ___ STEP ___ TIMES |

| CHK | CHANGE NO | REV |
|---|---|---|
| | | |

TYP DIODE PACK WITH SPACERS




TYP 45 PLACES

| SIGNATURES | DATE |
|---|---|
| DRN. | |
| CHK'D. | |
| MECH.ENG. | |
| PROJ.ENG. | |
| PROD. | |
| SCALE 2/1 | |
| SHT. 4 OF 4 | |
| NEXT HIGHER ASSY. B-DD-M8750-0 | |

digital

TITLE MOS MEMORY ARRAY

| SIZE | CODE | NUMBER | REV |
|---|---|---|---|
| D | UA | M8750-0-0 | C |

ML2 1 WO#

AUTOMATED BY PRTLST.3P(44) — P A R T S  L I S T — SHEET A1 OF A2

| LINE | ITEM | DOCUMENT NUMBER | PART NUMBER | DESCRIPTION | QTY PER VARIATION CB | CD | CH | REFERENCE DESIGNATOR |
|---|---|---|---|---|---|---|---|---|
| 1 | 1 | D-UA-M8750-0-0 | | UNIT ASSEMBLY | REF | REF | REF | |
| 2 | 2 | D-CS-M8750-0-1 | | CIRCUIT SCHEMATIC | REF | REF | REF | |
| 3 | 3 | D-MD-5013706-0-0 | | DRILL & ETCH DRAWING | REF | REF | REF | |
| 4 | 4 | B-DD-M8750-0 | | DRAWING DIRECTORY | REF | REF | REF | |
| 5 | 5 | | 5013706-00 | DRILL+ETCH MEMORY | 1 | 1 | 1 | |
| 6 | 6 | SPARE IC | | SPARE IC | 1 | 1 | 1 | E30 |
| 7 | 7 | | 1001610-00 | .01 MFD 50V +80-20% Z5U CER | 47 | 47 | 47 | C1-C10,C12-C16,C18,C20-C24, |
| | | | | | | | CONT | C27-C30,C32-C41,C43,C44,C46,C49, |
| | | | | | | | CONT | C51,C53-C56,C58-C60 |
| 8 | 8 | | 1010274-00 | .22 MFD 50V +80-20% Z5U CER | 164 | 164 | 164 | C101-C155,C11,C17,C25,C26,C42, |
| | | | | | | | CONT | C52,C47,C200-C299,C50,C57 |
| 9 | 9 | | 1012084-01 | 8 MFD 25V +75-10% AL EL | 12 | 12 | 12 | C70-C78,C80,C82,C83 |
| 10 | 10 | | 1105275-00 | D 672 TR= 15NS PIV= 60V SI | 8 | 8 | 8 | D55-D62 |
| 11 | 11 | | 1109991-00 | *** THIS ITEM IS NOT USED *** | - | - | - | |
| 12 | 12 | | 1114384-00 | LED 105MW 35MA GREEN | 1 | 1 | 1 | D49 |
| 13 | 13 | | 1216988-02 | HANDLE,MODULE,HEX TWO EJECTORS | 1 | 1 | 1 | |
| 14 | 14 | | 1300309-00 | 390.0 .25 W 5.0 % CC | 1 | 1 | 1 | R20 |
| 15 | 15 | | 1300365-00 | 1.0 K .25 W 5.0 % CC | 1 | 1 | 1 | R22 |
| 16 | 16 | | 1301317-00 | 10.0 .25 W 5.0 % CC | 2 | 2 | 2 | R21,R23 |
| 17 | 17 | | 1301972-00 | 270.0 .25 W 5.0 % CC | 1 | 1 | 1 | R16 |
| 18 | 18 | | 1302124-00 | 18.0 .25 W 5.0 % CC | 2 | 2 | 2 | R33,R38 |
| 19 | 19 | | 1302177-00 | 47.0 K .25 W 5.0 % CC | 11 | 11 | 11 | R1-R4,R6-R8,R12-R15 |
| 20 | 20 | | 1315678-00 | R NETWORK 3-18 5.0 % 7PIN | 13 | 13 | 13 | R30-R32,R34-R37,R39-R44 |
| 21 | 21 | | 1513265-00 | 3725 QUAD CORE DRIVER | 1 | 1 | 1 | E33 |
| 22 | 22 | | 1910091-00 | DEC 7437 AND GATE-QUAD 2IN,BU | 2 | 2 | 2 | E15,E20 |
| 23 | 23 | | 1910532-00 | 74S00 NAND GATE-QUAD 2IN | 1 | 1 | 1 | E22 |
| 24 | 24 | | 1910534-00 | 74S04 INVERTER GATE-HEX 11 | 1 | 1 | 1 | E11 |
| 25 | 25 | | 1911676-00 | 745139 DECODER-DUAL TWO-INP | 1 | 1 | 1 | E3 |
| 26 | 26 | | 1912068-00 | 74128 DRIVER,LINE,QUAD,50 | 1 | 1 | 1 | E14 |
| 27 | 27 | | 1912388-00 | 74S02 NOR GATE-QUAD 2IN,PO | 2 | 2 | 2 | E5,E9 |

| REVISION HISTORY | | | BASIC PART NO: M8750 | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ENG | ECO NUMBER | REV | SECTION A OF A | DRN: K. CROUSE | DATE: 13-JAN-81 | | D | I | G | I | T | A | L |
| --- | INITIAL | A | SECTION,VARIATION INDEX [A] CB,CD,CH | CHK'D: P.BOSSMAN | DATE: 4-FEB-81 | TITLE | PARTS LIST | | | | | | |
| | | | [B] | | | | MOS MEMORY ARRAY | | | | | | |
| | | | [C] | DES.ENG: K. MAMAYEK | DATE: 13-JAN-81 | | | | | | | | |
| | | | [D] | | | | DOCUMENT NUMBER | | | | | | |
| | | | [E] | RESP.ENG.: K. MAMAYEK | DATE: 13-JAN-81 | SIZE | CODE | NUMBER | | | | REV | |
| | | | [F] | | | | | | | | | | |
| | | | [H] | | | | | | | | | | |
| | | | [J] | MFG.ENG.: D. TAYLOR | DATE: 13-JAN-81 | K | PL | M8750-CA-DBP | | | | A | |
| | | | [K] | | | | | | | | | | |
| | | | [L] | ASSEMBLY NUMBER: | TOP DOCUMENT NUMBER: | | | FILE NAME: | | | | EDIT # | |
| | | | [M] | D-UA-M8750-0-0 | #B-DD-M8750-0 | | | Z2111A.PLS | | | | 15 | |
| | | | [N] | | | | | | | | | | |

AUTOMATED BY PRTLST.3P(44) — P A R T S  L I S T — SHEET A2 OF A2

| LINE | ITEM | DOCUMENT NUMBER | PART NUMBER | DESCRIPTION | QTY PER VARIATION CB | CD | CH | REFERENCE DESIGNATOR |
|---|---|---|---|---|---|---|---|---|
| 28 | 28 | | 1912389-00 | 74S08 AND GATE-QUAD 2IN,PO | 1 | 1 | 1 | E4 |
| 29 | 29 | | 1912746-00 | DEC 74S37 NAND GATE-QUAD 2IN | 11 | 11 | 11 | E6,E10,E16,E18,E21,E23,E24,E26, |
| | | | | | | | CONT | E28,E31,E32 |
| 30 | 30 | | 1913777-00 | LS240 DRIVER,LINE,OCTAL,T | 10 | 10 | 10 | E1,E2,E7,E8,E12,E13,E17,E19,E25, |
| | | | | | | | CONT | E27 |
| 31 | 31 | | 2113825-01 | *** THIS ITEM IS NOT USED *** | - | - | - | |
| 32 | 32 | | 2118467-01 | 8264-20 RAM 64K X1,200NS 1 | - | 156 | - | E100,E101,E103-E106,E108-E251, |
| | | | | | | | CONT | E253-E256,E258,E259 |
| 33 | 33 | | 2118472-01 | 4164-2 MOS RAM 64K X1,200 | - | - | 156 | E100,E101,E103-E106,E108-E251, |
| | | | | | | | CONT | E253-E256,E258,E259 |
| 34 | 34 | | 2118470-01 | 4864-1 MOS RAM 64K X1,200 | 156 | - | - | E100,E101,E103-E106,E108-E251, |
| | | | | | | | CONT | E253-E256,E258,E259 |
| 35 | 35 | | 7010918-01 | DIODE STICK G652 | 45 | 45 | 45 | D1-D22,D26-D48 |
| 36 | 36 | | 9000024-01 | EYELET,ROLL FLANGE .1210DX .192 | 12 | 12 | 12 | |
| 37 | 37 | | 9006968-00 | SPACER, FIBER, RND, 4-40, .250 X | 4 | 4 | 4 | |
| 38 | 38 | | 9009185-00 | JUMPER, WIRE, INSULATED, BLACK B | 15 | 15 | 15 | |
| | | | | | | | CONT | W2-W4,W6,W8,W10,W12,W13,W15,W16, |
| 39 | 39 | | 9009233-04 | SCREW, NYLON, SLTD BINDER HD, 4- | 4 | 4 | 4 | W18-W20,W22,W23 |
| 40 | 40 | | 9009321-00 | LOCK TITE, SCREW LOCK, 1000 PER | 4 | 4 | 4 | |
| 41 | 41 | | 9107771-00 | TUBING,STRD WALL,.040ID UL | 90 | 90 | 90 | |

42 NOTE: M8750-CA IS THE PRIMARY VARIATION 256K X 39 BITS SYSTEM (NOT A MODULE TYPE).
43 NOTE: M8750-CB IS A MODULE TYPE USING HITACHI 64K MOS DEVICES.
44 NOTE: M8750-CD IS A MODULE TYPE USING FUJITSU 64K MOS DEVICES.
45 NOTE: M8750-CH IS A MODULE TYPE USING NEC 64K MOS DEVICES.

| D | I | G | I | T | A | L | TITLE | SECTION A OF A |
|---|---|---|---|---|---|---|---|---|
| | | | | | | | MOS MEMORY ARRAY | |

| SIZE | CODE | DOCUMENT NUMBER | REV |
|---|---|---|---|
| K | PL | M8750-CA-DBP | A |

NOTE: USE ON M8728 ONLY.

+12V BAT. AR1 — W7 (1 — 2) — VDD[+5.0V RAM]

+12V BAT. AU1

+5.0V AA2 — +5.0V

+5.0V DA2

+5.0V BAT. BD1 — VCC BAT.[15]

GND AC2 — GND[15]

GND AT1

GND BC2

GND DC2

GND DT1

GND BT1

GND CC2

BG 4 SO DS2 — DT2 BG 4 OUT

BG 5 SO DP2 — DR2 BG 5 OUT

BG 6 SO DM2 — DN2 BG 6 OUT

BG 7 SO DK2 — DL2 BG 7 OUT

NPG SO CA1 — CB1 NPG OUT

BN1 T.P.

CE1 T.P.

NOTE: USE ON M8728 ONLY.

W21

-5.0 V

W16 — CK1 FNGP1 L

W18 — CM1 FNGP2 L

W8 — BA1 FNGP3 L

MEM PRES L AB2 — W1

VDD[+5.0V RAM] — W22 / W23 — IL +5.0 V

VCC BAT.[15]

R16 270Ω

D49 1114384-00 +5 BATTERY INDICATOR GREEN

SPARES

R40 18Ω

R43 18Ω

7404 E11

7404 E11

74128 E14

74128 E14

7437 E15

7408 E4

7408 E4

7408 E4

NOTE: 1. AN ASTERISK ON A DEVICE INDICATES IT IS CONNECTED TO THE +5V BATTERY.

2. ALL RESISTORS WITH PIN NUMBERS ARE 1/8WATT SIPS. ALL OTHERS ARE 1/4W 5%.

3. CC2 MAY BE FLOATED TO VARY -5V (VBB). THE VARIABLE VBB IS APPLIED TO PIN CE1.(M8728 ONLY)

4. INT BUS A6 MAY BE CALLED INT BUS CS(CHIP SEL) ON SYSTEMS ORIGINALLY DESIGNED FOR 4K RAMS.

5. FOR VARIATION M8750 CA, INSTALL JUMPERS: W2,W3,W4,W6,W8,W10, W12,W13,W15,W16,W18,W19, W20,W22,W23

6. FOR VARIATION M8750 BA, INSTALL JUMPERS: W2,W3,W4,W6,W10,W12, W13,W15,W16,W18,W19,W20, W22,W23.

7. SOURCE CODES PRECEDE THE SIGNAL NAME. DESTINATION CODES, ENCLOSED IN PARENTHESIS, FOLLOW THE NAME WHERE:

(X), X DENOTES THE PAGE DESTINATION WHERE THE SIGNAL APPEARS ONCE.

(X-Y), X DENOTES THE PAGE DESTINATION.

Y DENOTES THE NUMBER OF PLACES THE SIGNAL APPEARS ON THE PAGE.

(X,-Y) DENOTES THE SIGNAL DESTINATION APPEARING ON PAGE X THROUGH Y.

VCC BAT.[15]

R20 390Ω

E33 3725

R21 10Ω

E33 3725

MA01 TERM A (7,-14) H

EL2 T.P.TERM H

R23 10Ω

R22 1KΩ

C52 .22μF 50V

(MA01)



| REVISIONS | | |
|---|---|---|
| CHK | CHANGE NO. | REV |

digital

DRN. RCROUSE — DATE 30-JUL-81 — ENG N. Mayanagh — DATE 7-3-81

CHK'D D. Eastman — DATE — BOARD LOCATION: — SHEET 01 OF 15

[710,1324]M750A01.DRW 30-JUL-81 13:23 — NEXT HIGHER ASSEMBLY: B-DD-M8750-0

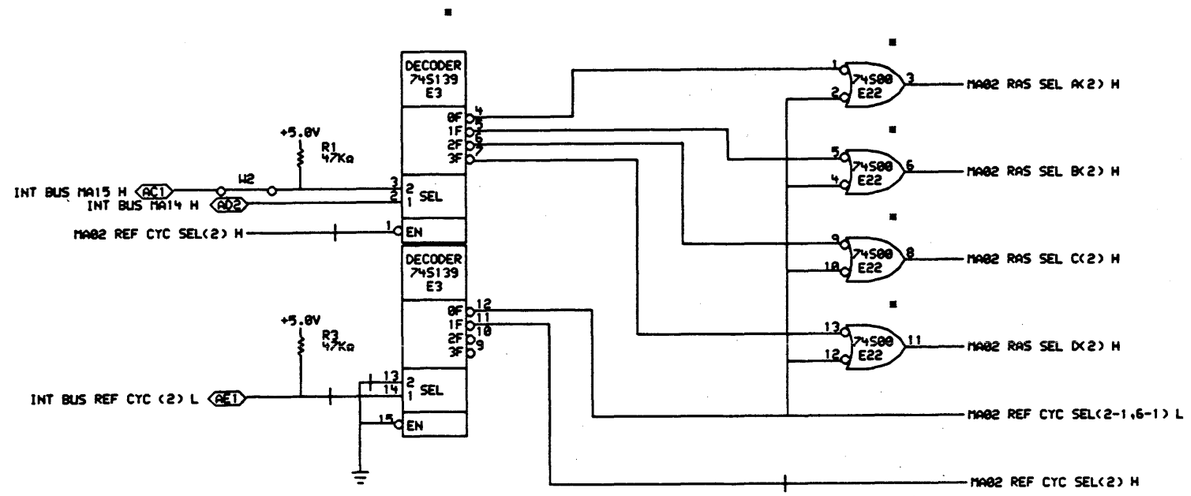
FIRST USED ON OPTION/MODEL: 11/750

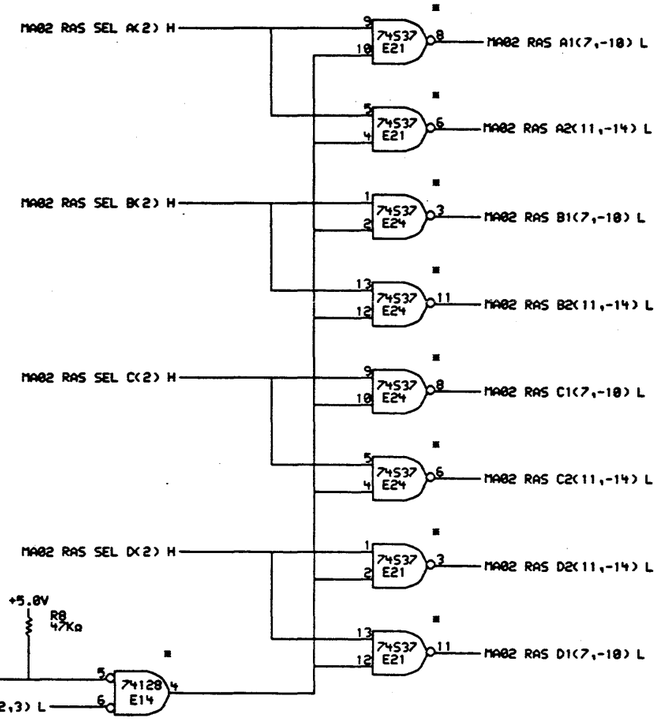
TITLE: MOS MEMORY ARRAY

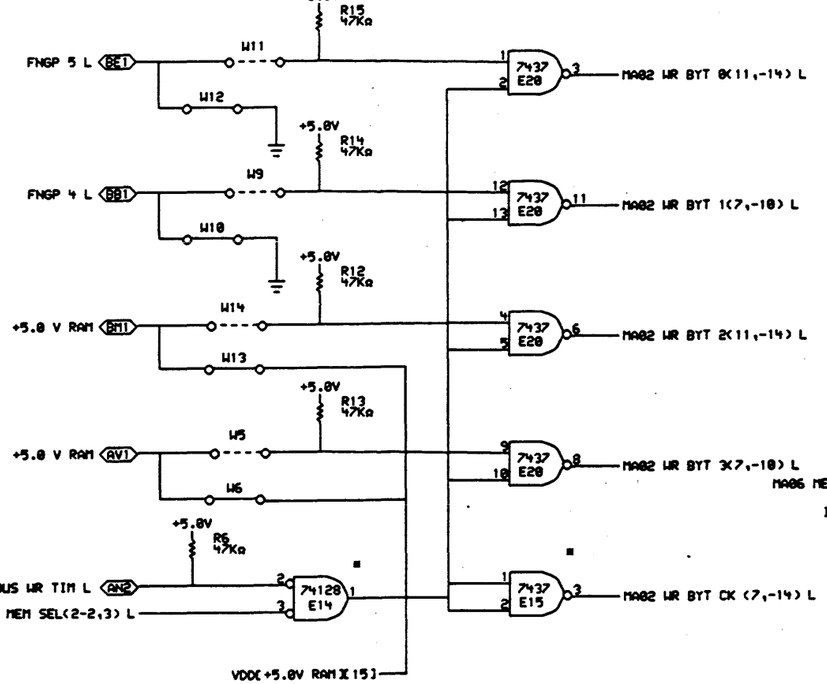
| SIZE | CODE | NUMBER | REV. |
|---|---|---|---|
| D | CS | M8750-0-1 | A |

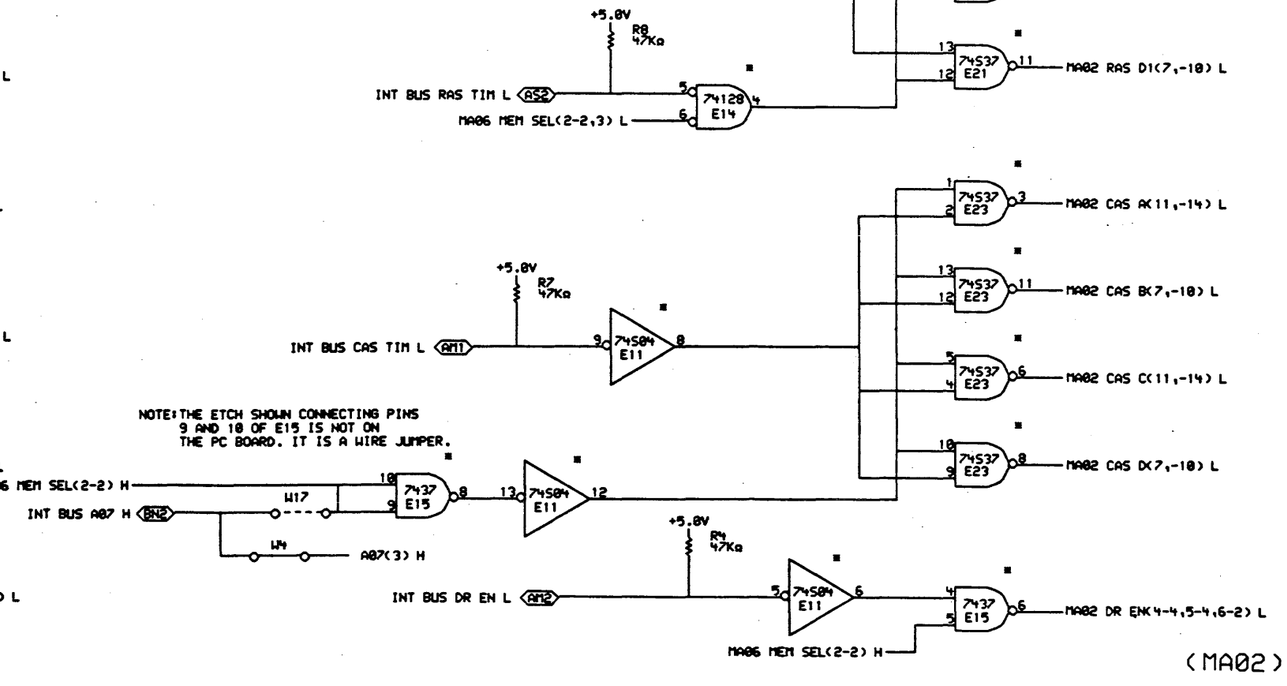
ML2

MAMAYEK KEN, [710,1324]M750A01.DPL, SCALE 2, "D" RELEASE BOX




(MA02)



| REVISIONS | | |
|---|---|---|
| CHK | CHANGE NO. | REV |

digital

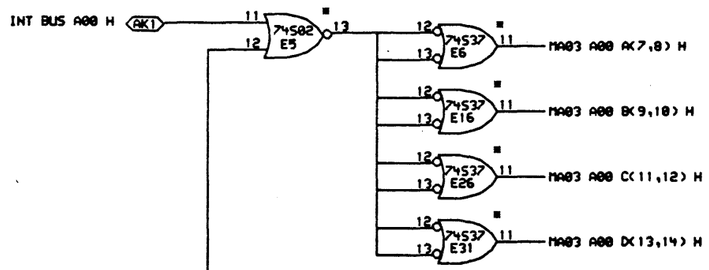
DRN: RCRAWFF DATE 11-MAY-81
CHK D. DATE
ENG. DATE
BOARD LOCATION:
SHEET 02 OF 14

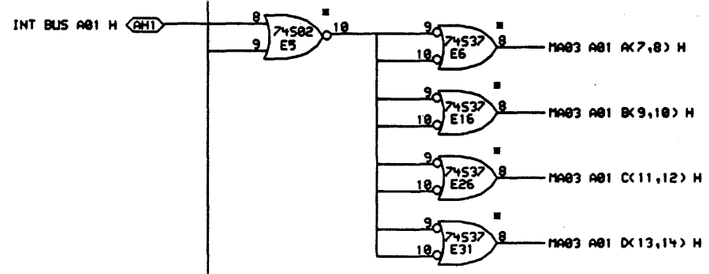
{710,1324 XM50A02.DRW 08-MAY-81 09:33 NEXT HIGHER ASSEMBLY:
FIRST USED ON OPTION/MODEL: 11/750 B-DD-M8750-0

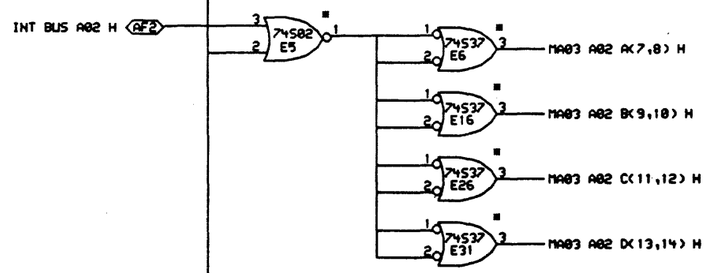
TITLE: MOS MEMORY ARRAY

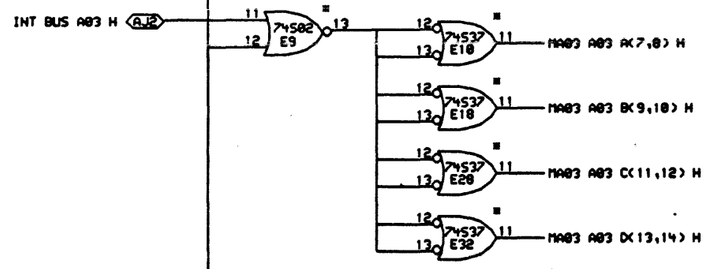
| SIZE | CODE | NUMBER | REV. |
|---|---|---|---|
| D | CS | M8750-0-1 | A |

ML2

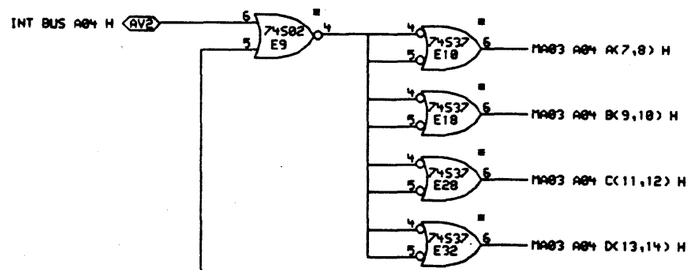


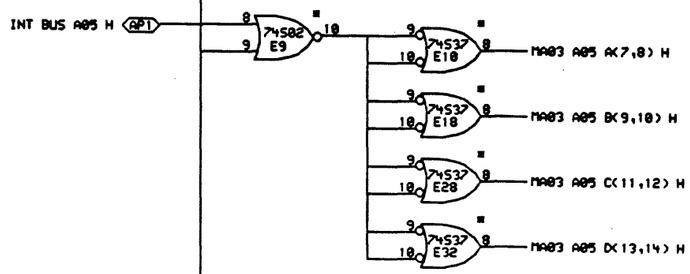



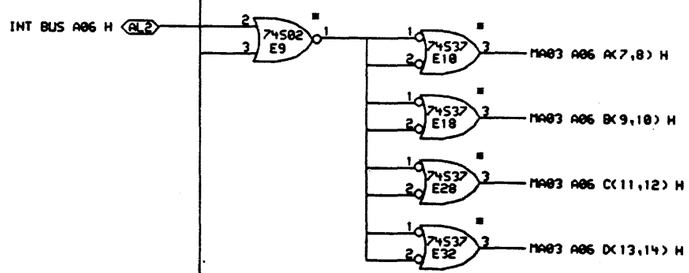



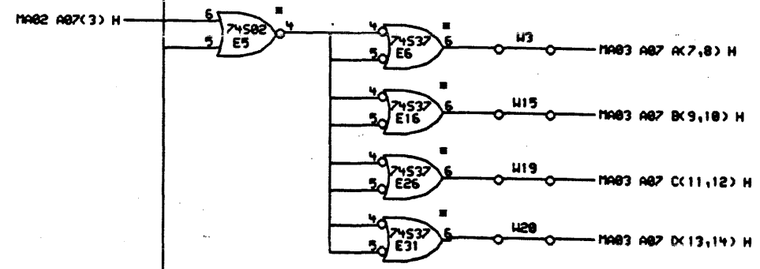




MA06 MEM SEL(2-2,3) L




(MA03)



| REVISIONS | | |
|---|---|---|
| CHK | CHANGE NO. | REV |

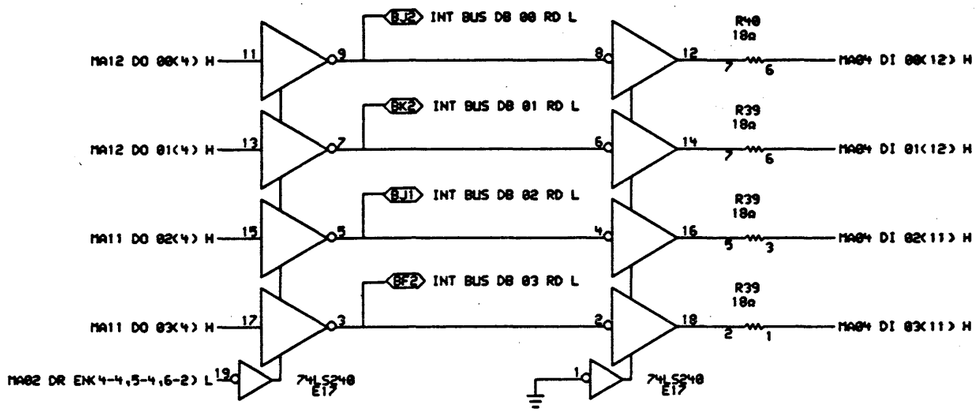
digital

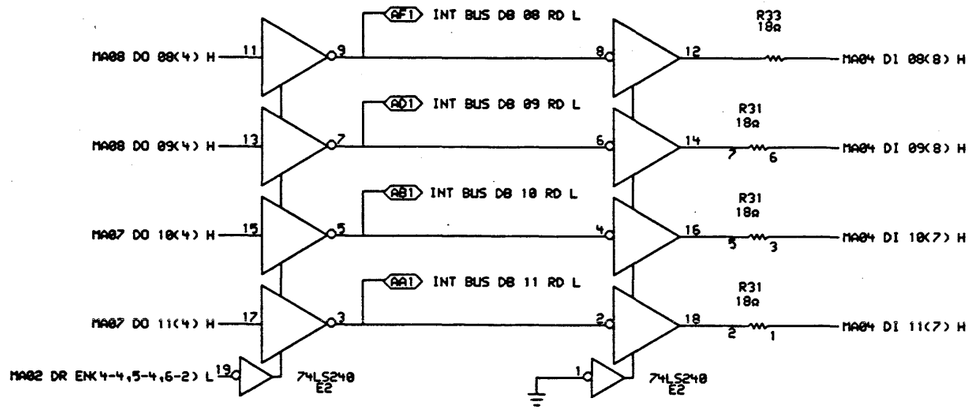
DRN. R.CROUSE DATE 11-MAY-81 ENG. DATE
CHK'D: DATE BOARD LOCATION:
SHEET 03 OF 14
(Z10,L324)M8503.DRW 08-MAY-81 09:34 NEXT HIGHER ASSEMBLY: B-DD-M8750-0
FIRST USED ON OPTION/MODEL: 11/750

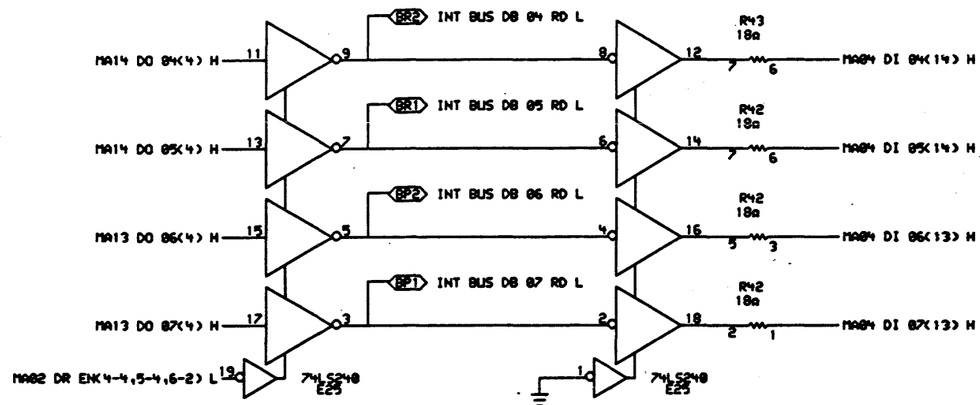
TITLE: MOS MEMORY ARRAY

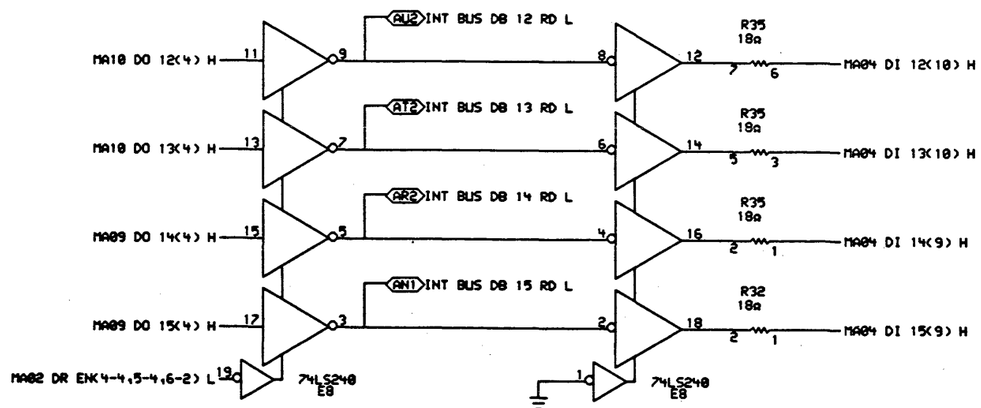
| SIZE | CODE | NUMBER | REV. |
|---|---|---|---|
| D | CS | M8750-0-1 | A |

ML2




(MA04)

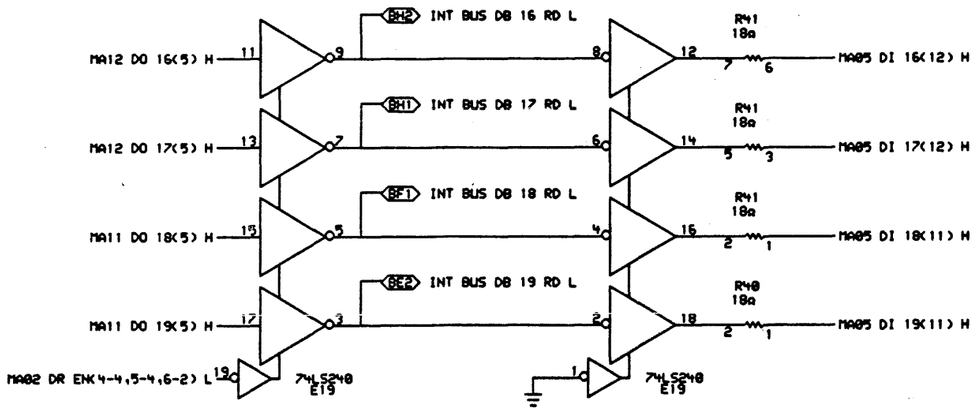


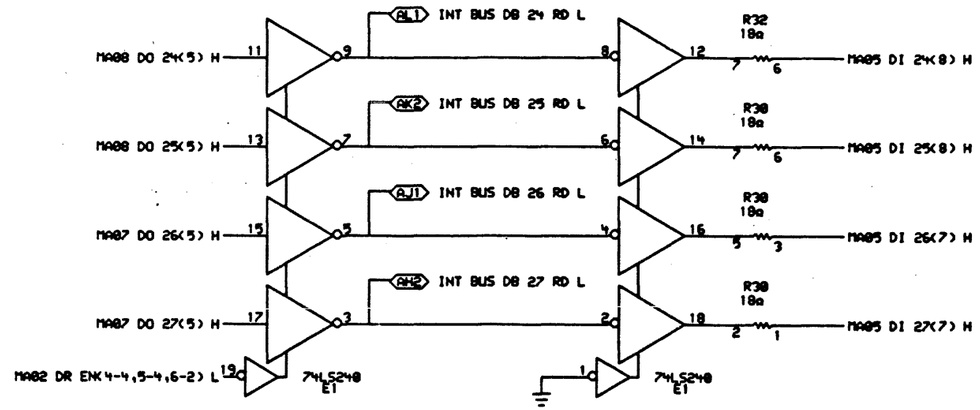
| REVISIONS | | |
|---|---|---|
| CHK | CHANGE NO. | REV |

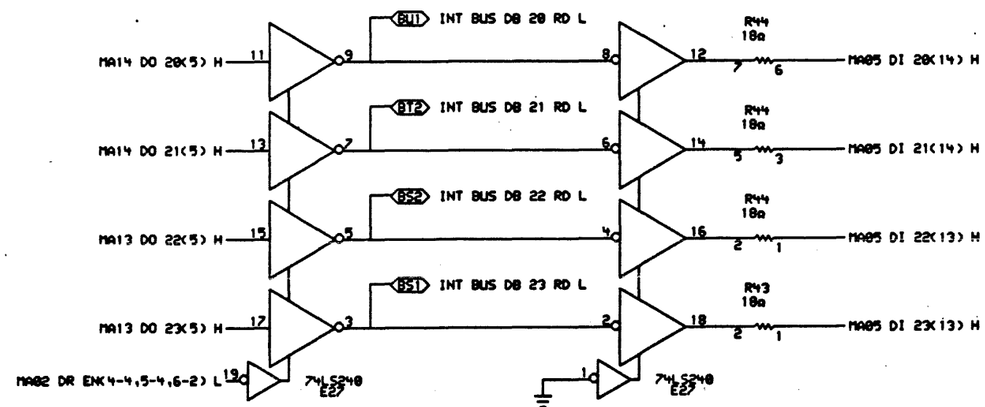
| | | | |
|---|---|---|---|
| digital | DRN. RCROUSE | DATE 11-MAY-81 | ENG. DATE |
| | CHK D. | DATE | BOARD LOCATION: |
| | | | SHEET 04 OF 15 |
| [710,1324]M750A04.DRW 08-MAY-81 09:36 | | | NEXT HIGHER ASSEMBLY: |
| FIRST USED ON OPTION/MODEL: 11/750 | | | B-DD-M8750-0 |

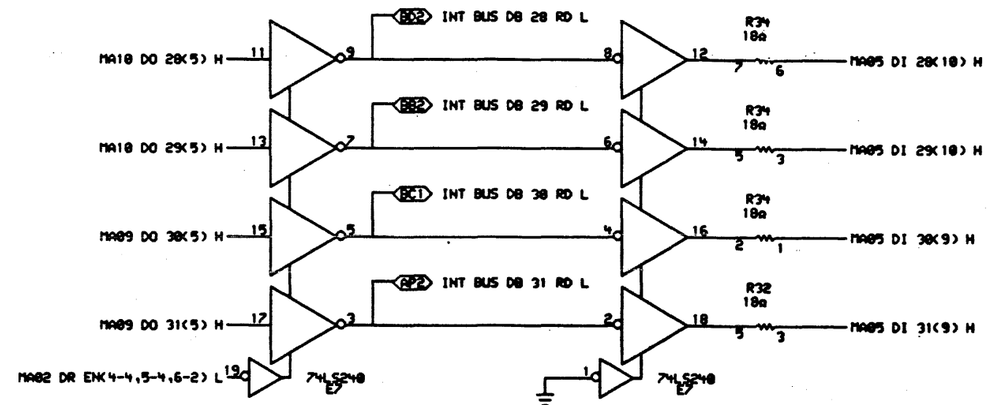
| TITLE: | | | |
|---|---|---|---|
| MOS MEMORY ARRAY | | | |
| SIZE | CODE | NUMBER | REV. |
| D | CS | M8750-0-1 | A |

ML2




(MA05)



| REVISIONS | | |
|---|---|---|
| CHK | CHANGE NO. | REV |

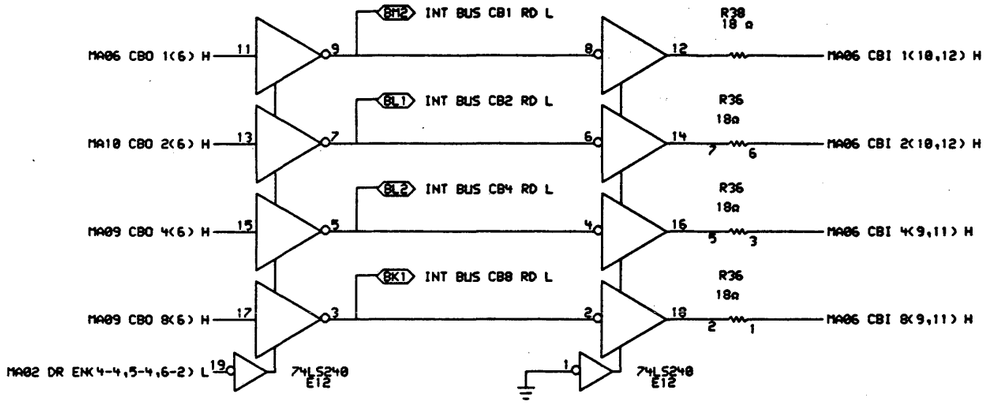
digital

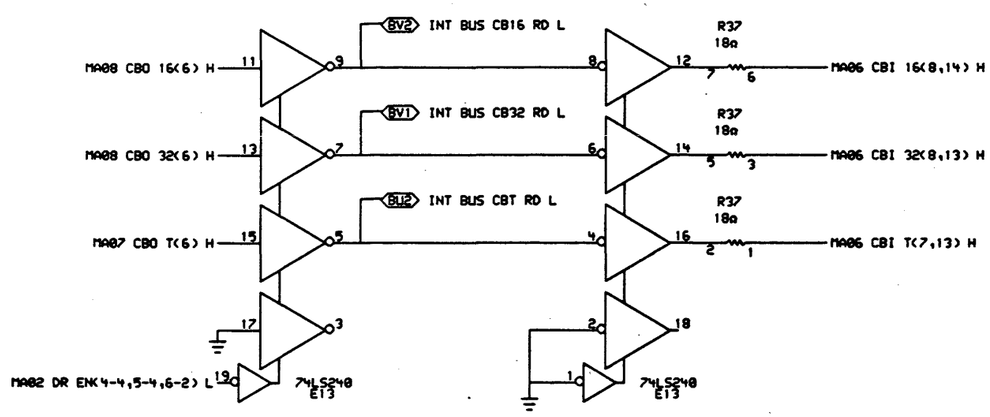
DRN. R.CROUSE DATE 11-MAY-81 ENG. DATE
CHK D. DATE BOARD LOCATION:
(710,1324)M750A05.DRW 08-MAY-81 09:37 SHEET 05 OF 14
FIRST USED ON OPTION/MODEL: 11/750 NEXT HIGHER ASSEMBLY: B-DD-M8750-0

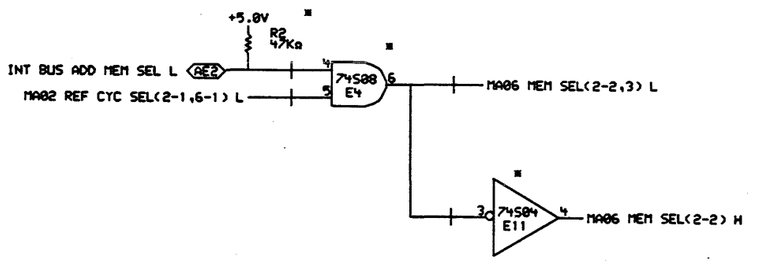
TITLE: MOS MEMORY ARRAY

| SIZE | CODE | NUMBER | REV. |
|---|---|---|---|
| D | CS | M8750-0-1 | A |

ML2








| REVISIONS | | |
|---|---|---|
| CHK | CHANGE NO. | REV |

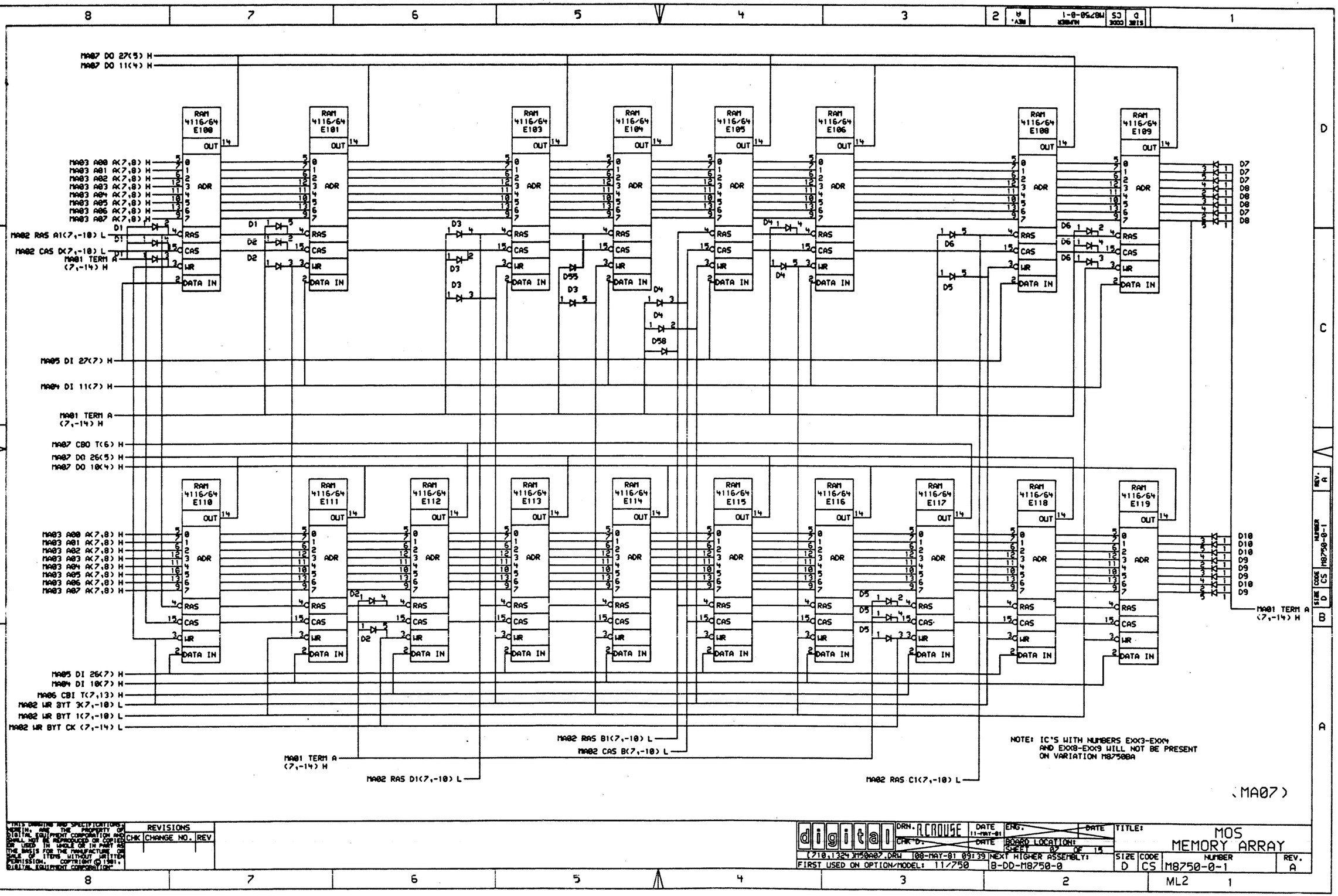
digital

DRN. RCROUSE DATE 11-MAY-81
CHK D. DATE
ENG. DATE
BOARD LOCATION:
SHEET 06 OF 15
(710,1324)M750A06.DRW 08-MAY-81 09:39
NEXT HIGHER ASSEMBLY:
FIRST USED ON OPTION/MODEL: 11/750
B-DD-M8750-0

TITLE: MOS MEMORY ARRAY

| SIZE | CODE | NUMBER | REV. |
|---|---|---|---|
| D | CS | M8750-0-1 | A |

ML2






| REVISIONS | | |
|---|---|---|
| CHK | CHANGE NO. | REV |
| | | |

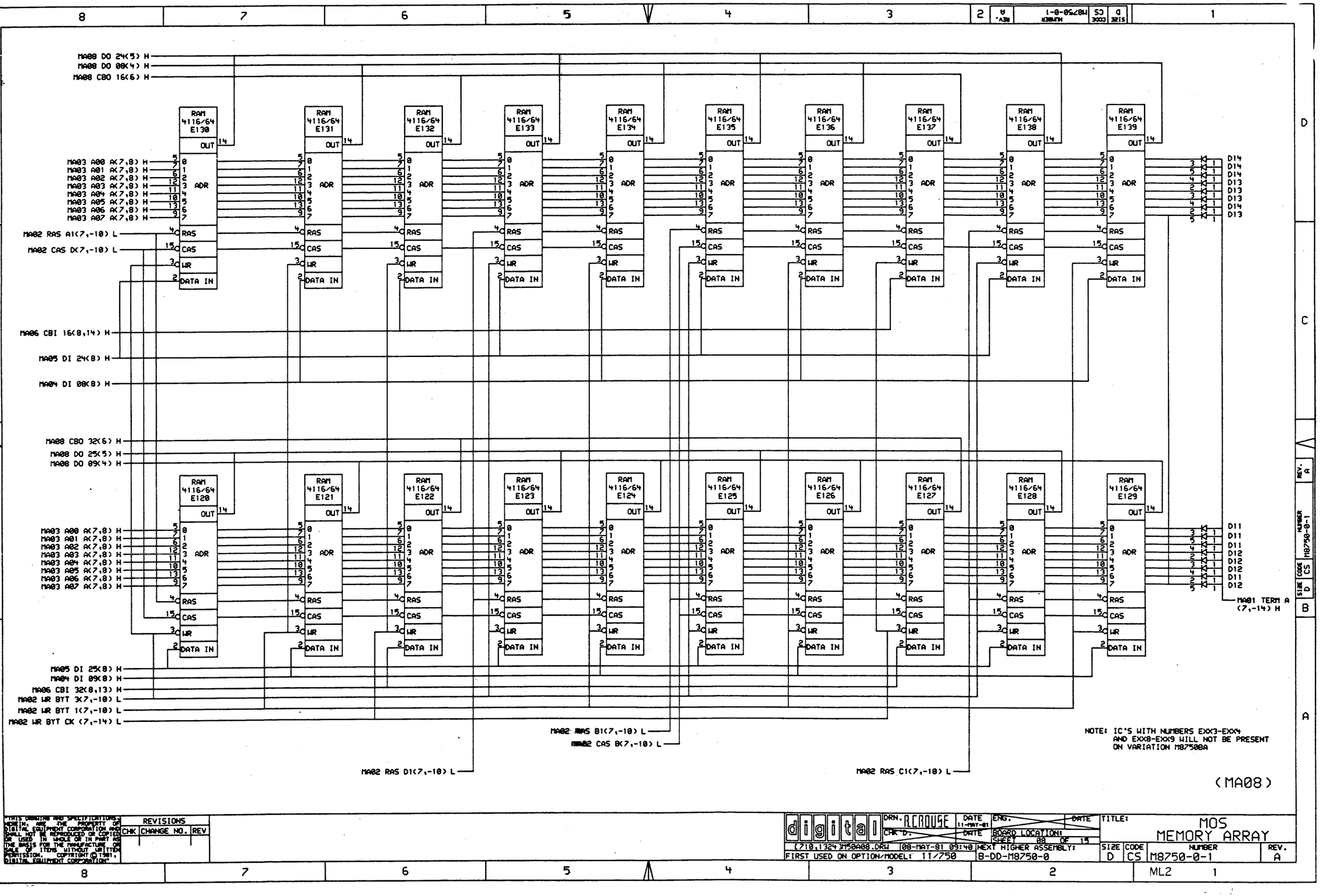
digital

DRN. R.CROUSE DATE 11-MAY-81
CHK D. DATE
ENG. DATE
BOARD LOCATION:
SHEET 07 OF 15
(210,1324)M750A07.DRW 08-MAY-81 09:39
NEXT HIGHER ASSEMBLY: B-DD-M8750-0
FIRST USED ON OPTION/MODEL: 11/750

TITLE: MOS MEMORY ARRAY

| SIZE | CODE | NUMBER | REV. |
|---|---|---|---|
| D | CS | M8750-0-1 | A |

ML2






| REVISIONS | | |
|---|---|---|
| CHK | CHANGE NO. | REV |

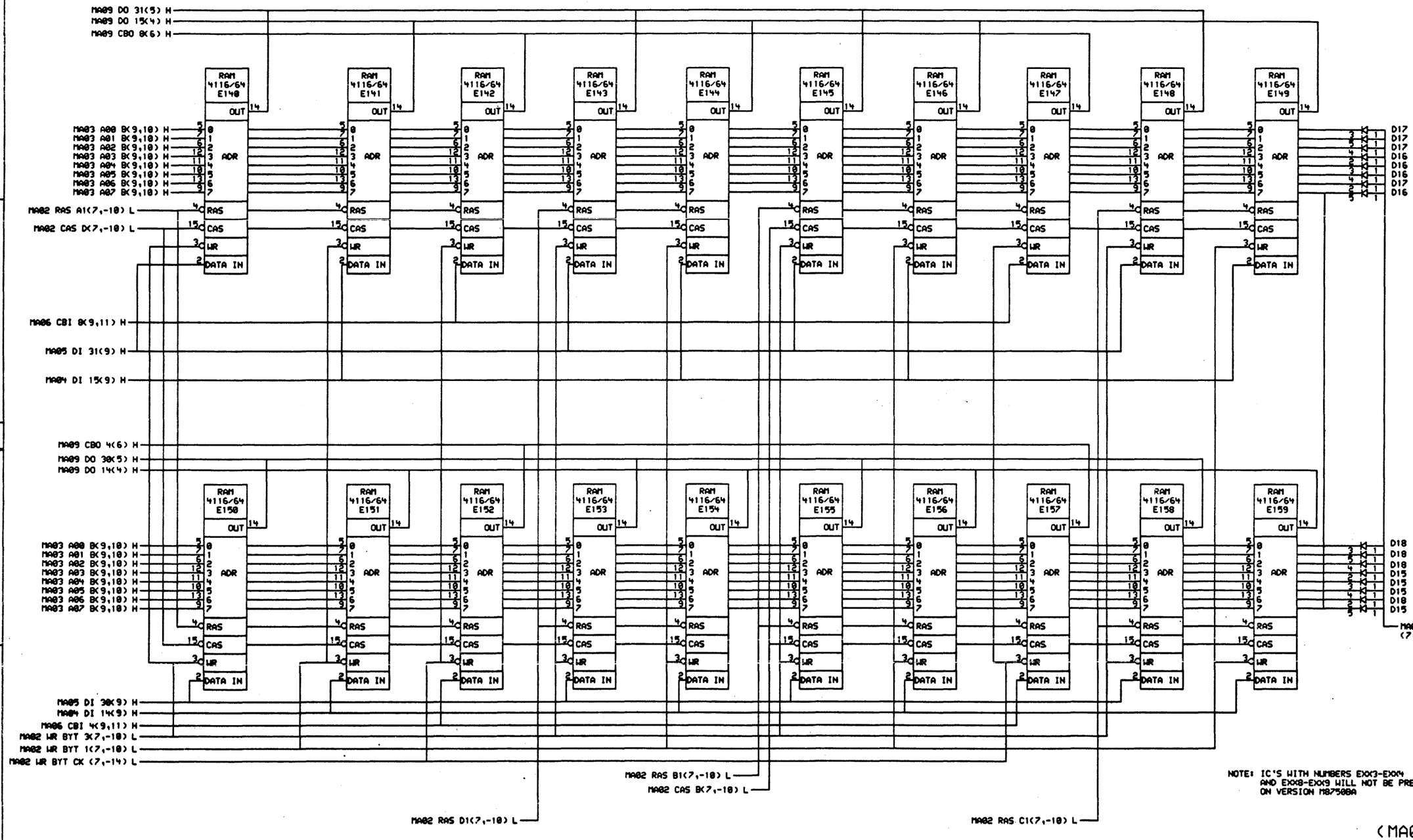
digital

DRN. R.CROUSE DATE 11-MAY-81 ENG. DATE
CHK D. DATE BOARD LOCATION:
SHEET 08 OF 15
C210,1324 M50A08.DRW 08-MAY-81 09:40 NEXT HIGHER ASSEMBLY:
FIRST USED ON OPTION/MODEL: 11/750 B-DD-M8750-0

TITLE: MOS MEMORY ARRAY

| SIZE | CODE | NUMBER | REV. |
|---|---|---|---|
| D | CS | M8750-0-1 | A |

ML2






| REVISIONS | | |
|---|---|---|
| CHK | CHANGE NO. | REV |
| | | |

digital

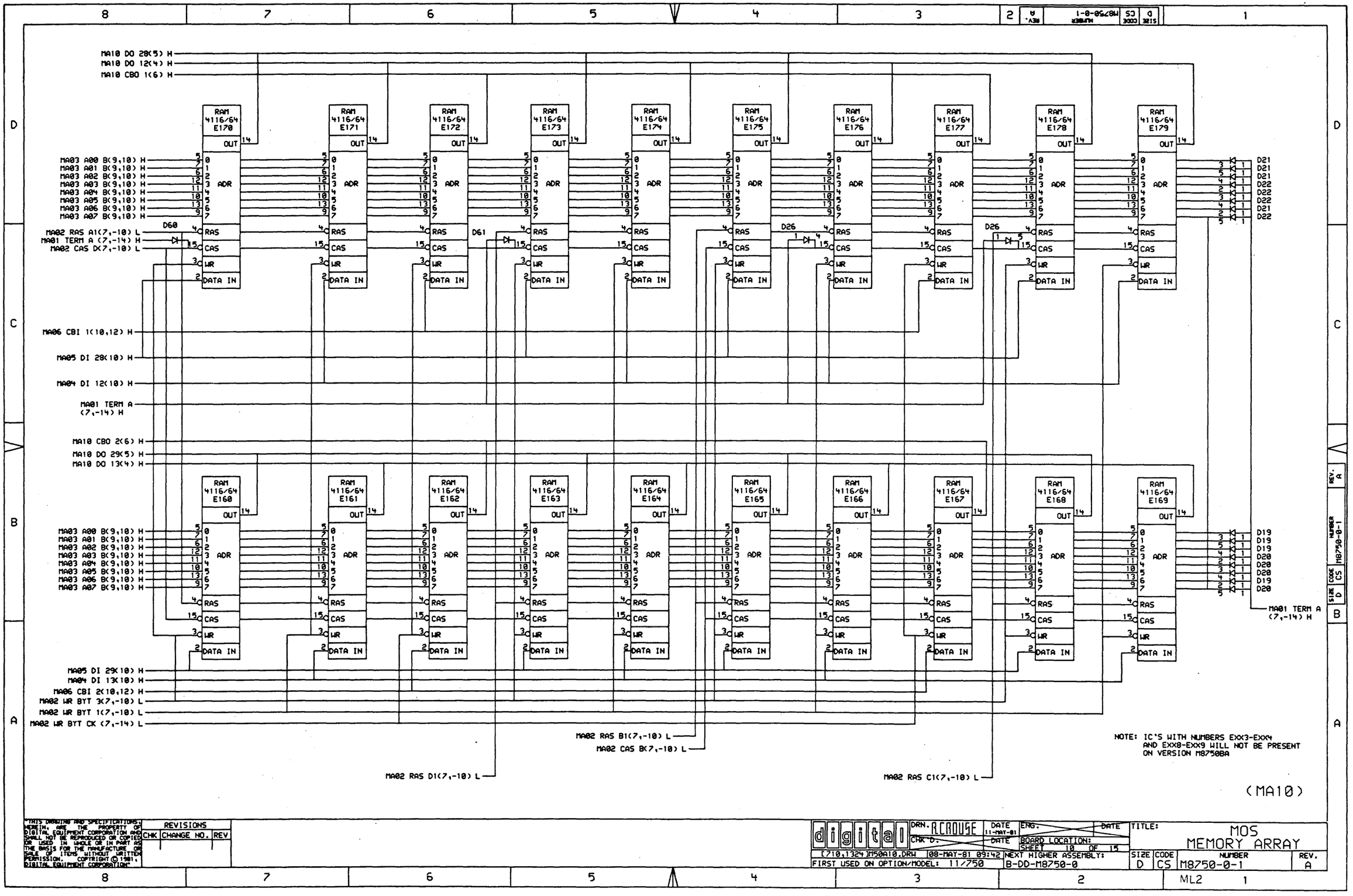
DRN. A.CROUSE DATE 11-MAY-81 ENG. DATE
CHK D. DATE BOARD LOCATION:
SHEET 03 OF 14

(710,1324)M750A09.DRW 08-MAY-81 09:41 NEXT HIGHER ASSEMBLY:
FIRST USED ON OPTION/MODEL: 11/750 B-DD-M8750-0

TITLE: MOS MEMORY ARRAY

| SIZE | CODE | NUMBER | REV. |
|---|---|---|---|
| D | CS | M8750-0-1 | A |

ML2


MA10 DO 28(5) H
MA10 DO 12(4) H
MA10 CBO 1(6) H
RAM 4116/64 E170
RAM 4116/64 E171
RAM 4116/64 E172
RAM 4116/64 E173
RAM 4116/64 E174
RAM 4116/64 E175
RAM 4116/64 E176
RAM 4116/64 E177
RAM 4116/64 E178
RAM 4116/64 E179
OUT
ADR
RAS
CAS
WR
DATA IN
MA03 A00 B(9,10) H
MA03 A01 B(9,10) H
MA03 A02 B(9,10) H
MA03 A03 B(9,10) H
MA03 A04 B(9,10) H
MA03 A05 B(9,10) H
MA03 A06 B(9,10) H
MA03 A07 B(9,10) H
MA02 RAS A1(7,-10) L
MA01 TERM A (7,-14) H
MA02 CAS DX(7,-10) L
D60
D61
D26
D21
D22
MA06 CBI 1(10,12) H
MA05 DI 28(10) H
MA04 DI 12(10) H
MA01 TERM A (7,-14) H
MA10 CBO 2(6) H
MA10 DO 29(5) H
MA10 DO 13(4) H
RAM 4116/64 E160
RAM 4116/64 E161
RAM 4116/64 E162
RAM 4116/64 E163
RAM 4116/64 E164
RAM 4116/64 E165
RAM 4116/64 E166
RAM 4116/64 E167
RAM 4116/64 E168
RAM 4116/64 E169
D19
D20
MA01 TERM A (7,-14) H
MA05 DI 29(10) H
MA04 DI 13(10) H
MA06 CBI 2(10,12) H
MA02 WR BYT 3(7,-10) L
MA02 WR BYT 1(7,-10) L
MA02 WR BYT CK (7,-14) L
MA02 RAS B1(7,-10) L
MA02 CAS B(7,-10) L
MA02 RAS D1(7,-10) L
MA02 RAS C1(7,-10) L
NOTE: IC'S WITH NUMBERS EXX3-EXX4
AND EXX8-EXX9 WILL NOT BE PRESENT
ON VERSION M8750BA
(MA10)
REV. A
SIZE D
CODE CS
NUMBER M8750-0-1
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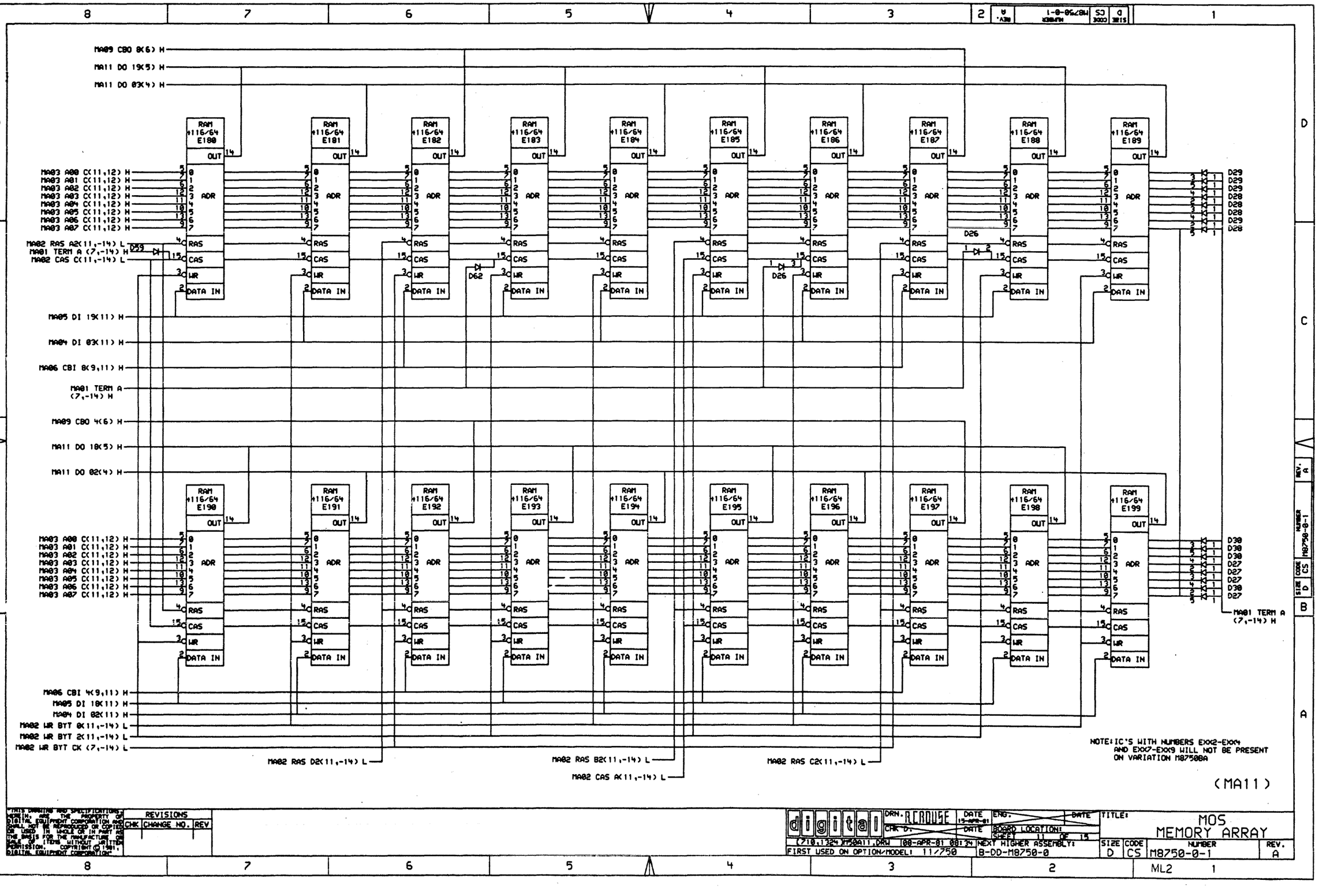
REVISIONS
CHK | CHANGE NO. | REV
digital
DRN. RCROUSE
DATE 11-MAY-81
CHK D.
DATE
ENG.
DATE
(710,1324)M50A10.DRW 08-MAY-81 09:42
FIRST USED ON OPTION/MODEL: 11/750
BOARD LOCATION:
SHEET 10 OF 15
NEXT HIGHER ASSEMBLY:
B-DD-M8750-0
TITLE: MOS MEMORY ARRAY
SIZE D | CODE CS | NUMBER M8750-0-1 | REV. A
8 7 6 5 4 3 2 ML2 1






| REVISIONS | | |
|---|---|---|
| CHK | CHANGE NO. | REV |

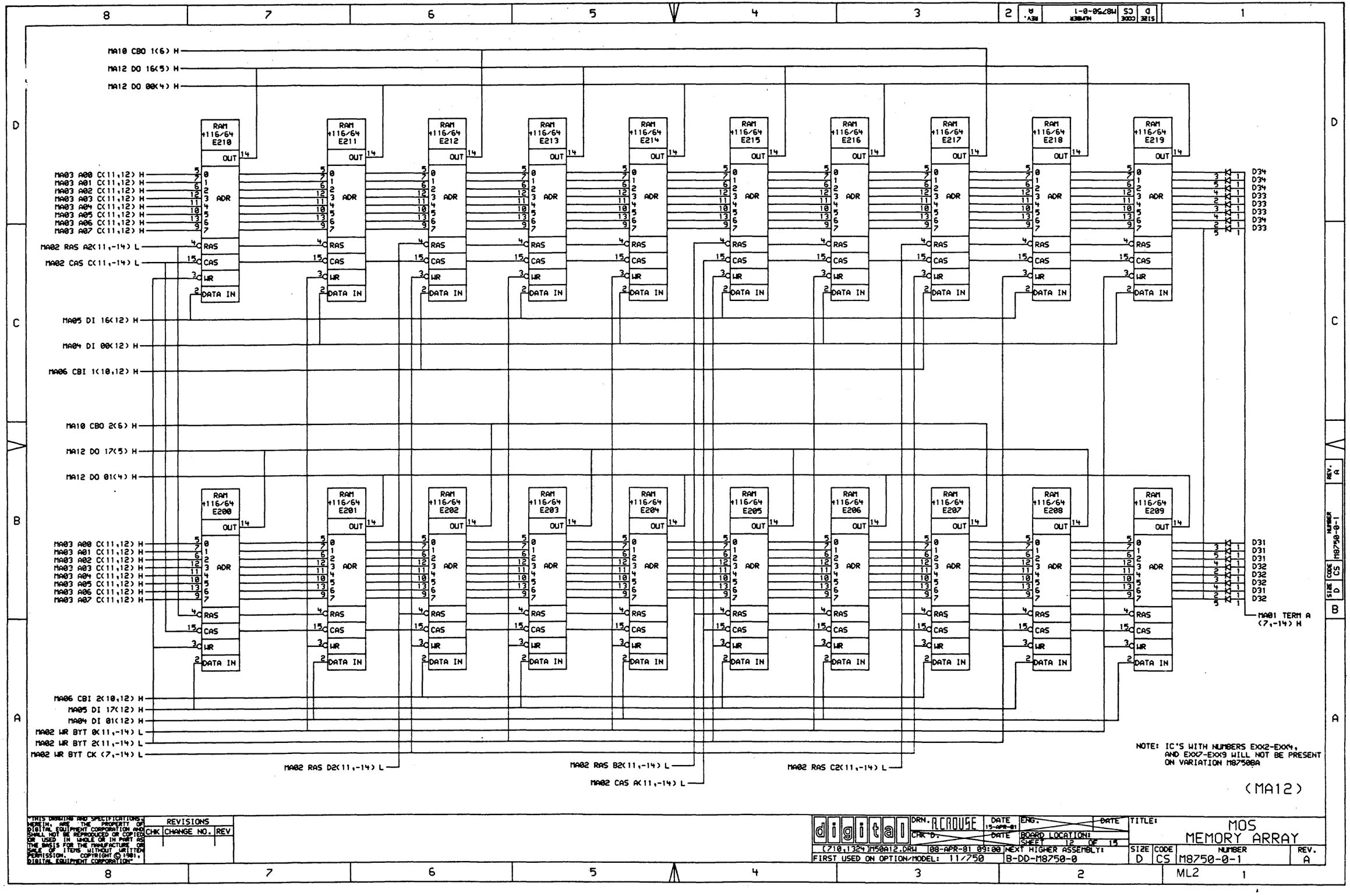
digital

DRN. REDOUSE DATE 15-APR-81
CHK D. DATE
ENG. DATE
BOARD LOCATION:
SHEET 11 OF 15
(710,1324)M750A11.DRW 08-APR-81 08:34
NEXT HIGHER ASSEMBLY: B-DD-M8750-0
FIRST USED ON OPTION/MODEL: 11/750

TITLE: MOS MEMORY ARRAY

| SIZE | CODE | NUMBER | REV. |
|---|---|---|---|
| D | CS | M8750-0-1 | A |

ML2




| REVISIONS | | |
|---|---|---|
| CHK | CHANGE NO. | REV |

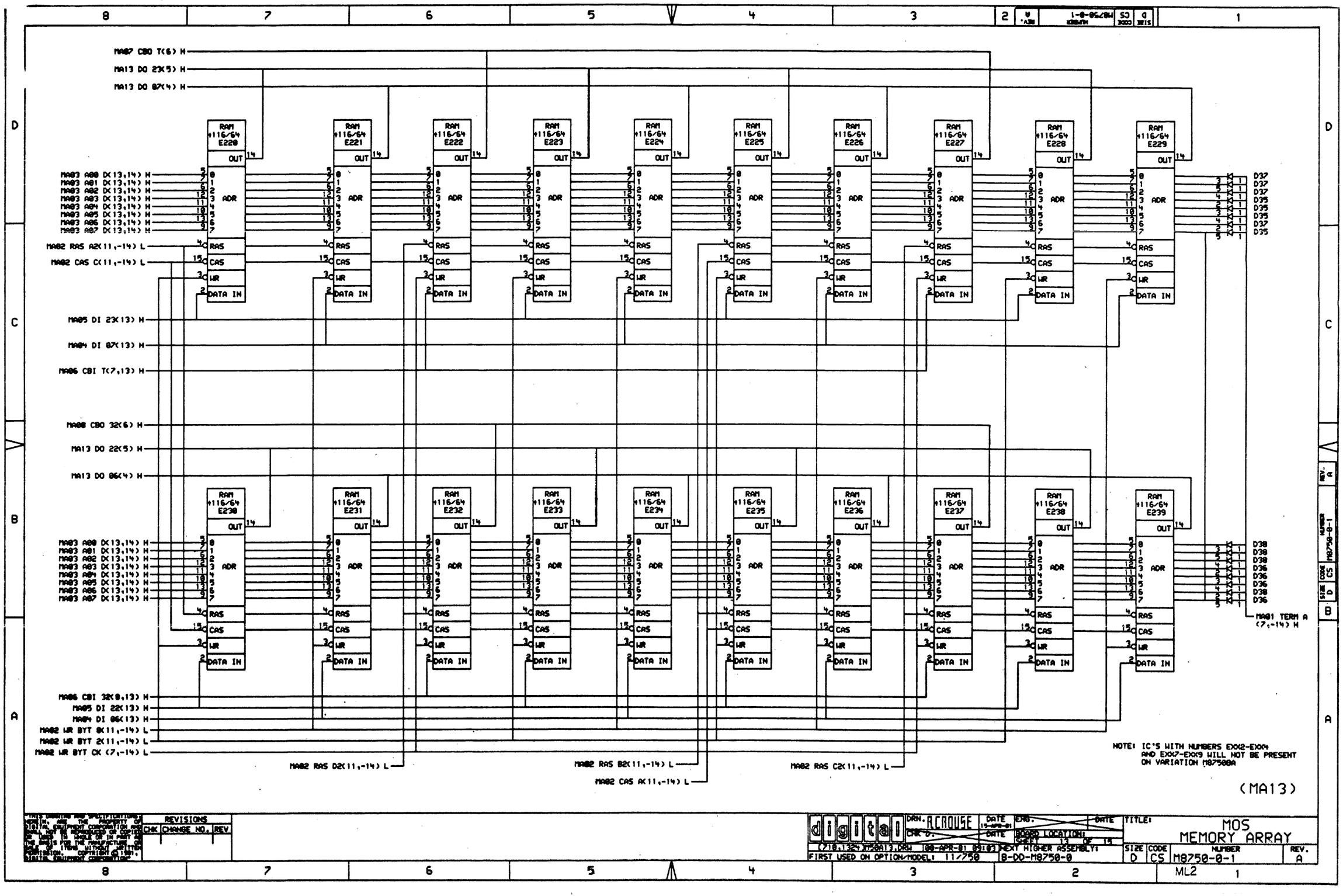


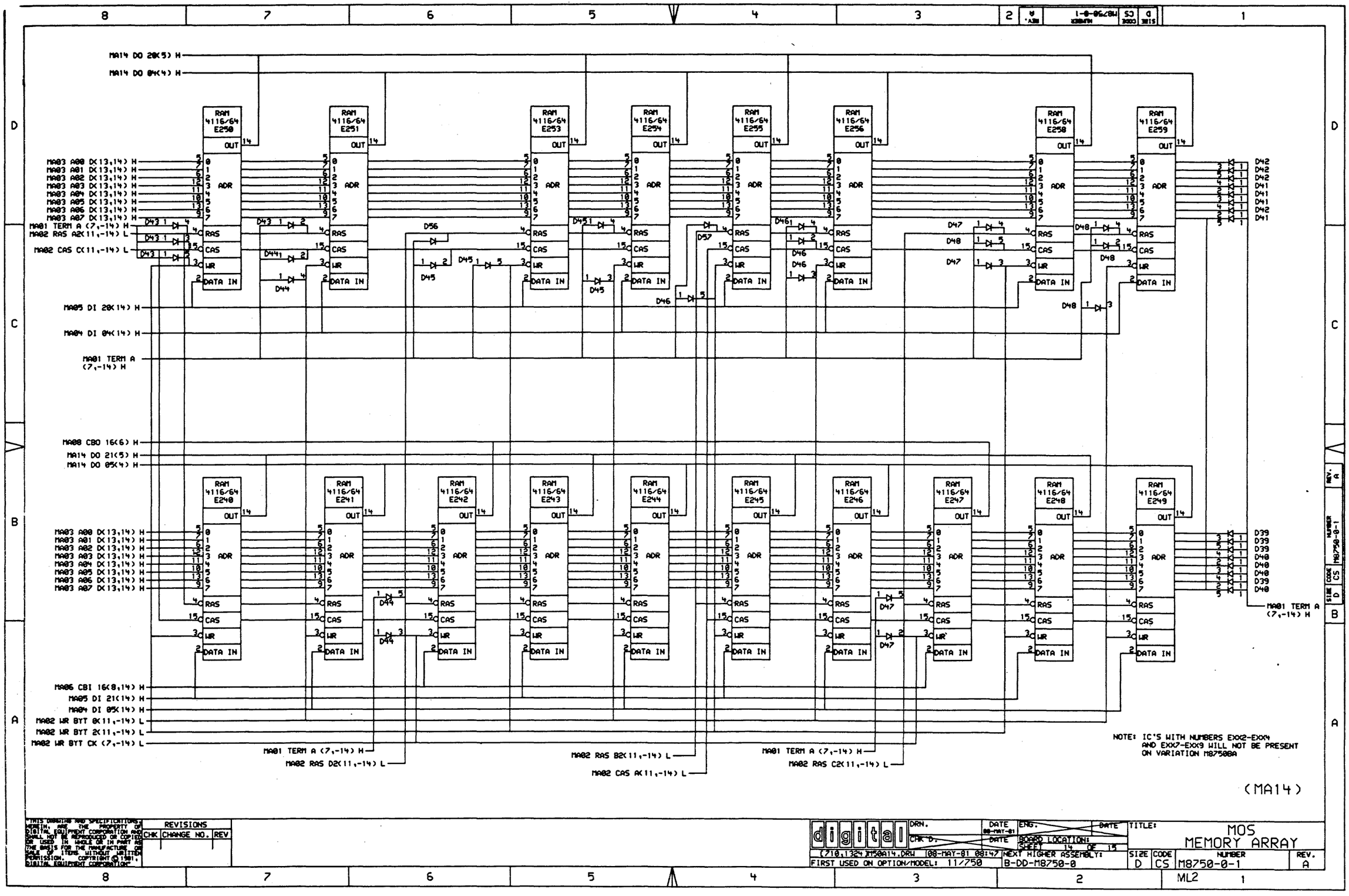
| | | | |
|---|---|---|---|
| digital | DRN. RCROUSE | DATE 15-APR-81 | ENG. DATE |
| | CHK D. DATE | BOARD LOCATION: SHEET 12 OF 15 | |
| [710,1324]M50A12.DRW 08-APR-81 09:00 | | NEXT HIGHER ASSEMBLY: B-DD-M8750-0 | |
| FIRST USED ON OPTION/MODEL: 11/750 | | | |

TITLE: MOS MEMORY ARRAY

| SIZE | CODE | NUMBER | REV. |
|---|---|---|---|
| D | CS | M8750-0-1 | A |

ML2


MA07 CBO T(6) H
MA13 DO 23(5) H
MA13 DO 07(4) H
RAM 4116/64 E220
RAM 4116/64 E221
RAM 4116/64 E222
RAM 4116/64 E223
RAM 4116/64 E224
RAM 4116/64 E225
RAM 4116/64 E226
RAM 4116/64 E227
RAM 4116/64 E228
RAM 4116/64 E229
OUT
ADR
RAS
CAS
WR
DATA IN
MA03 A00 D(13,14) H
MA03 A01 D(13,14) H
MA03 A02 D(13,14) H
MA03 A03 D(13,14) H
MA03 A04 D(13,14) H
MA03 A05 D(13,14) H
MA03 A06 D(13,14) H
MA03 A07 D(13,14) H
MA02 RAS A2(11,-14) L
MA02 CAS C(11,-14) L
D37
D37
D37
D35
D35
D35
D37
D35
MA05 DI 23(13) H
MA04 DI 07(13) H
MA06 CBI T(7,13) H
MA00 CBO 32(6) H
MA13 DO 22(5) H
MA13 DO 06(4) H
RAM 4116/64 E230
RAM 4116/64 E231
RAM 4116/64 E232
RAM 4116/64 E233
RAM 4116/64 E234
RAM 4116/64 E235
RAM 4116/64 E236
RAM 4116/64 E237
RAM 4116/64 E238
RAM 4116/64 E239
MA03 A00 D(13,14) H
MA03 A01 D(13,14) H
MA03 A02 D(13,14) H
MA03 A03 D(13,14) H
MA03 A04 D(13,14) H
MA03 A05 D(13,14) H
MA03 A06 D(13,14) H
MA03 A07 D(13,14) H
D38
D38
D36
D36
D36
D38
D36
MA01 TERM A (7,-14) H
MA06 CBI 32(8,13) H
MA05 DI 22(13) H
MA04 DI 06(13) H
MA02 WR BYT 0(11,-14) L
MA02 WR BYT 2(11,-14) L
MA02 WR BYT CK (7,-14) L
MA02 RAS D2(11,-14) L
MA02 RAS B2(11,-14) L
MA02 CAS A(11,-14) L
MA02 RAS C2(11,-14) L
NOTE: IC'S WITH NUMBERS EXX2-EXX4
AND EXX7-EXX9 WILL NOT BE PRESENT
ON VARIATION M8750BA
(MA13)
REVISIONS
CHK
CHANGE NO.
REV
digital
DRN. RCROUSE
DATE 15-APR-81
CHK D.
DATE
ENG.
DATE
BOARD LOCATION:
SHEET 13 OF 15
(710,1324)M750A13.DRW 08-APR-81 05:03
NEXT HIGHER ASSEMBLY: B-DD-M8750-0
FIRST USED ON OPTION/MODEL: 11/750
TITLE: MOS MEMORY ARRAY
SIZE D
CODE CS
NUMBER M8750-0-1
REV. A
ML2






| REVISIONS | | |
|---|---|---|
| CHK | CHANGE NO. | REV |
| | | |

digital

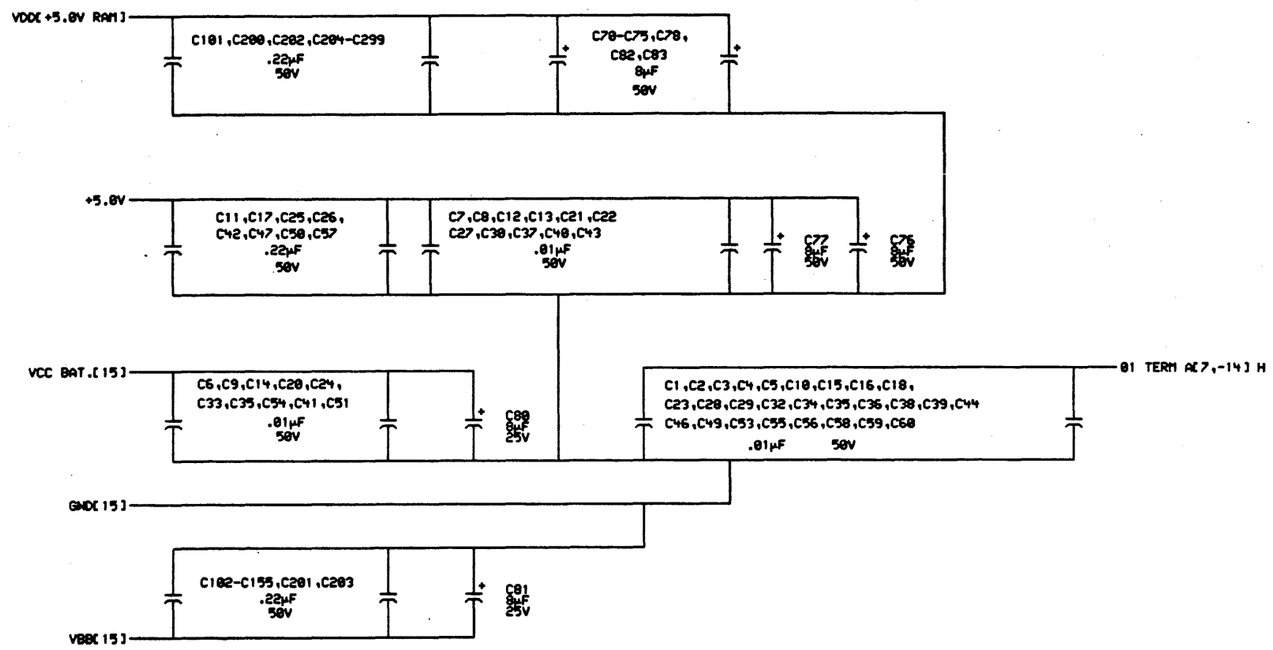
| | | | |
|---|---|---|---|
| DRN. | DATE 08-MAY-81 | ENG. | DATE |
| CHK D. | DATE | BOARD LOCATION: | |
| | | SHEET 14 OF 15 | |

(710,1324)M750A14.DRW 08-MAY-81 08:47 NEXT HIGHER ASSEMBLY:
FIRST USED ON OPTION/MODEL: 11/750 B-DD-M8750-0

TITLE: MOS MEMORY ARRAY

| SIZE | CODE | NUMBER | REV. |
|---|---|---|---|
| D | CS | M8750-0-1 | A |

ML2




(MA15)

| REVISIONS | | |
|---|---|---|
| CHK | CHANGE NO. | REV |



digital

DRN. RCROUSE DATE 15-APR-81
CHK. D. DATE
ENG. DATE
BOARD LOCATION:
SHEET 14 OF 14
(710,132) M750A15.DRW 08-APR-81 09:22
NEXT HIGHER ASSEMBLY: B-DD-M8750-0
FIRST USED ON OPTION/MODEL: 11/750

TITLE: MOS MEMORY ARRAY

| SIZE | CODE | NUMBER | REV. |
|---|---|---|---|
| D | CS | M8750-0-1 | A |

ML2

# ***** FIELD MAINTENANCE PRINT SET *****

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| K-PL-7017646-0-DBP | HARDWARE CONF. PKG #75 PARTS LIST |
| D-AD-7017646-0-0 | HARDWARE CONF. PKG #75 ASSY DRAWING |
| E-UA-BC21Z-0-0 | I/O CABLE ASSEMBLY - UNIT ASSEMBLY |
| K-PL-BC21Z-0-DBP | I/O CABLE ASSEMBLY - PARTS LIST |
| D-UA-BC22D-0-0 | NULL MODEM CABLE - UNIT ASSEMBLY |
| K-PL-BC22D-0-DBP | NULL MODEM CABLE - PARTS LIST |
| D-UA-BC06R-0-0 | I/O CABLE - UNIT ASSEMBLY |
| D-IA-7012293-0-0 | TERMINATOR ASSEMBLY - INSEPARABLE ASSEMBLY |
| D-UA-H026-0-0 | RL CABLE RETRACTOR ASSY - UNIT ASSY |
| K-PL-H026-0-DBP | RL CABLE RETRACTOR ASSY - PARTS LIST |
| C-IA-7008288-0-0 | CABLE ASSEMBLY - INSEPARABLE ASSEMBLY |
| B-DD-H9544-H | CABINET ACCESSORY KIT - DRAWING DIRECTORY |
| E-UA-H9544-H-0 | CABINET ACCESSORY KIT - UNIT ASSEMBLY |
| K-PL-H9544-H-DBP | CABINET ACCESSORY KIT - PARTS LIST |


| UNIT VARIATIONS |
|---|
| 7017646-00 |
| 7017646-01 |
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| |
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| |

FIELD MAINTENANCE PRINT SET

CONFIGURATION PKG #75

DIGITAL EQUIPMENT CORPORATION

MP01277

| | | | USED ON OPTION/MODEL | |
|---|---|---|---|---|
| | | | | |
| | | | SVCXNMA | |
| | | | | |
| | | | | |
| | | | | |
| | | | SHEET | OF 1 |

| | DATE |
|---|---|
| DRN. R. J. RILEY | 4-13-82 |
| CHK'D S. DUNCANSON | 4-13-82 |
| PROJ. ENG. D. CARLSON | 4-13-82 |
| FIELD SERV. H. HUNTER | 4-13-82 |

digital

TITLE:
FIELD MAINT. PRINT SET
(CONFIGURATION PKG #75)

| SIZE | CODE | NUMBER | REV |
|---|---|---|---|
| B | TC | 7017646-0-1 | A |
| DIST. | | | |



NR

*** DRAWING DIRECTORY ***

| UNIT VARIATIONS | |
|---|---|
| VAR | TITLE |
| -00 | HARDWARE CONFIGURATION |
| | PKG NO. 76 |
| -01 | HARDWARE CONFIGURATION |
| | PKG NO. 76, 240V |

| | | | |
|---|---|---|---|
| | | | USED ON OPTION/MODEL |
| | | | SV-CXMMA |

| | | |
|---|---|---|
| DRN. P.TOUSIGNANT | DATE 11 MARCH 82 | |
| CHK'D R. RILEY | DATE 11 MARCH 82 | |
| PROJ. ENG. D. CARLSON | DATE 11 MARCH 82 | |
| PROD. S.CASTIGLIONE | DATE 11 MARCH 82 | |

SHEET 1 OF 2



digital

TITLE: HARDWARE CONFIGURATION PKG NO. 75

| SIZE | CODE | NUMBER | REV |
|---|---|---|---|
| B | DD | 7017646-0 | A |

DIST.

| | DRAWING NUMBER | DESCRIPTION | |
|---|---|---|---|
| 1 | D-AD-7017646-0-0, | HARDWARE CONFIGURATION PKG. NO.75 | E/M |
| | K-PL-7017646-0-DBP | HARDWARE CONFIG. PKG. NO. 75 P/L | E/M |
| | A-PS-3700436-0-0 | PKG CAB H9642/H9645/H9646 | |
| | C-MD-7419856-0-0 | BRKT., RL01 SHIPPING BLACK | M |
| | A-PS-3618384-0-0 | LABEL, CAUTION STABILIZER FOOT | M |
| | A-PS-1213756-0-0 | GROUND STRAP | E/M |
| | A-PS-3617880-0-0 | LABEL, FCC CLASS A PROCESSOR | M |
| | A-PS-3617674-0-0 | LABEL, SERIAL & POWER W/UL & CSA | M |
| | A-PS-3618058-0-0 | LABEL, CAUTION STABILITY 11V23-WA | M |
| | A-PS-3618057-0-0 | LABEL, CAUT. SERV. INTERLOCK 11V | |
| 2 | B-DD-11730-Z | 11730-Z UNIT ASSY | E/M |
| 3 | B-DD-874-0 | 874 POWER CONTROL | E/M |
| 4 | B-DD-M8338-0 | IDC | E/M |
| 5 | B-DD-RL02-F | RL02 DISK DRIVE | E/M |
| 6 | B-DD-H9542-F | H9542-F 40 INCH FRAME ASSY | M |
| 7 | B-DD-H9544-A | END PANEL ASSY | M |
| 8 | B-DD-H9544-B | H9544-B REAR DOOR | M |
| 9 | B-DD-H9544-C | H9544-C TRIM KIT | M |
| 10 | B-DD-H9544-D | H9544-D BEZEL ASSY | M |
| 11 | B-DD-H9544-H | CABINET ACCESSORY KIT | E/M |
| 12 | B-DD-H026-0 | RL RETRACTOR ASSY | M |
| 13 | B-DD-DMF32-A | DMF32 OPTION | E/M |
| 14 | D-IA-7012293-0-0 | TERMINATOR ASSY | E/M |
| | A-DC-7416678-0-0 | TERMINATOR LOGO | E/M |
| 15 | D-UA-BC06R-0-0 | BC06R I/O CABLE | E |
| | A-PS-3616989-0-0 | CABLE ID LABEL | M |
| | A-PS-3616073-0-0 | IDENTIFICATION LABEL | M |
| 16 | C-IA-7003288-0-0 | CABLE ASSY | E |
| 17 | E-UA-BC21Z-0-0 | I/O CABLE ASSY | E |
| | K-PL-BC21Z-0-DBP | I/O CABLE ASSY PARTS LIST | E |
| | A-PS-3616073-0-0 | IDENTIFICATION LABEL | M |
| 18 | B-DD-BC22D-0 | CABLE, NULL MODEM | E |
| 19 | A-PL-7012938-0-0 | UNIT SELECT PLUG KIT | M |

TYPE: E = ELECTRICAL
M = MECHANICAL
E/M = ELECTRO/MECHANICAL

Digital

TITLE: HARDWARE CONFIGURATION PACKAGE NO. 75

| SHEET 2 OF 2 | SIZE B | CODE DD | NUMBER 7017646-0 | REV A |
|---|---|---|---|---|

.IT Z3335A.LST

AUTOMATED BY PRTLST.3P(44)

# P A R T S  L I S T



| LINE | ITEM | DOCUMENT NUMBER | PART NUMBER | DESCRIPTION | QUANTITY PER VARIATION 00 | 01 |
|---|---|---|---|---|---|---|
| 1 | 1 | E-UA-11730-Z-0 | 11730-ZA | KA730-A,BA11-ZA,2 TU58,MS730-CA, | 1 | 1 |
| 2 | 2 | A-PS-3700436-0-0 | 3700436-08 | CAB H9642 REPLACES VAR. 00, 01, | 1 | 1 |
| 3 | 3 | E-UA-874-0-0 | 00874-C | 120V 16A FILTERED POWER CONT,6 S | 1 | 0 |
| 4 | 4 | E-UA-874-0-0 | 00874-B | 220-240V 12A FILTERED PWR CONT,6 | 0 | 1 |
| 5 | 5 | D-UA-M8388-0-0 | M8388-00 | RB730 IDC (INTEGRATED DISK CONTR | 1 | 1 |
| 6 | 6 | E-UA-RL02-0-0 | ORL02-FK | RL02-F + RL02K-DC,120V/240V | 2 | 2 |
| 7 | 7 | E-UA-H9542-0-0 | H9542-FB | 40" 10.5" TOP LOADING CAB FRAME | 1 | 1 |
| 8 | 8 | D-UA-H9544-A-0 | H9544-AA | 40"END PANEL,GREY FRAME,DARK BRO | 2 | 2 |
| 9 | 9 | D-UA-H9544-B-0 | H9544-BK | EXTENDED DEPTH REAR DOOR FOR H96 | 1 | 1 |
| 10 | 10 | D-UA-H9544-C-0 | H9544-CA | RL01/RL02 TRIM FILLER STRIP KIT | 1 | 1 |
| 11 | 11 | D-UA-H9544-D-0 | H9544-DA | 1.75" BEZEL ASSY FOR H9642 | 1 | 1 |
| 12 | 12 | D-UA-H9544-D-0 | H9544-DB | 6"X19" FRONT COVER FOR BOTTOM OF | 1 | 1 |
| 13 | 13 | E-UA-H9544-H-0 | H9544-HA | KIT OF 4 LEVELERS,1 PULL-OUT STA | 1 | 1 |
| 14 | 14 | D-UA-H026-0-0 | 0H026-00 | CABLE RETRACTOR FOR RL01,RL02 | 2 | 2 |
| 15 | 15 | C-MD-7419856-0-0 | 7419856-01 | BRKT,RL01 SHIPPING BLACK | 1 | 1 |
| 16 | 16 | D-UA-DMF32-A-0 | DMF32-AA | 8 EIA ASYNC SLU,SYNC SLU,PARALLE | 1 | 1 |
| 17 | 17 | | 9009700-00 | SCREW,TRUS,PHIL,SEMS10-32X .500L | 6 | 6 |
| 18 | 18 | | 9007032-00 | TIE,CABLE BUNDL.DIA 0-1-3/4"=101 | 10 | 10 |
| 19 | 19 | | 9009636-00 | CLAMP, CABLE, FOR FLAT CABLE | 1 | 1 |
| 20 | 20 | | 9007867-00 | MOUNT, PUSH,CABLE TIE | 1 | 1 |
| 21 | 21 | A-PS-1218912-0-0 | 1218912-01 | CLIP,CABLE 3/4 | 2 | 2 |
| 22 | 22 | | 9007786-00 | RETAINER, U-NUT, 10-32 | 5 | 5 |
| 23 | 23 | A-PS-3618384-0-0 | 3618384-01 | LABEL,CAUTION STABILIZER FOOT | 1 | 1 |
| 24 | 24 | D-IA-7012293-0-0 | 7012293-00 | TERMINATOR ASSEMBLY | 1 | 1 |
| 25 | 25 | D-UA-BC06R-0-0 | BC06R-8F | I/O CABLE | 1 | 1 |
| 26 | 26 | C-IA-7008288-0-0 | 7008288-06 | CABLE ASSY | 1 | 1 |
| 27 | 27 | E-UA-BC21Z-0-0 | BC21Z-06 | SHIELDED I/O CABLE,RL01/RL02,PAS | 1 | 1 |
| 28 | 28 | B-UA-BC22D-0-0 | BC22D-25 | 25FT CABLE,ASYNC,NULL MODEM,6 WI | 1 | 1 |
| 29 | 29 | A-PS-1213756-0-0 | 1213756-12 | GROUND STRAP | 1 | 1 |
| 30 | 30 | | 9007083-00 | CLAMP,CABLE,SCREW MTD. 3/8 " | 1 | 1 |

| REVISION HISTORY | | | |
|---|---|---|---|
| ENG | ECO NUMBER | REV | |
| | INITIAL | X00 | |

BASIC PART NO: 7017646

SECTION A OF A

SECTION. VARIATION INDEX

[A] 00,01

[B]

[C]

[D]

[E]

[F]

DRN: P. TOUSIGNANT DATE: 24-FEB-82

CHK'D: S. DUNCANSON DATE: 24-FEB-82

DES.ENG.: D. CARLSON DATE: 24-FEB-82

RESP.ENG.: D. CARLSON DATE: 24-FEB-82

MFG.ENG.: S. CASTIGLIONE DATE: 24-FEB-82

ASSEMBLY NUMBER: D-AD-7017646-0-0

TOP DOCUMENT NUMBER: B-DD-7017646-0-0

D I G I T A L

TITLE PARTS LIST

HARDWARE CONFIG. PKG. NO. 75

DOCUMENT NUMBER

| SIZE | CODE | NUMBER | REV |
|---|---|---|---|
| K | PL | 7017646-0-DBP | X00 |

FILE NAME: Z3335A.PLS

EDIT #: 16

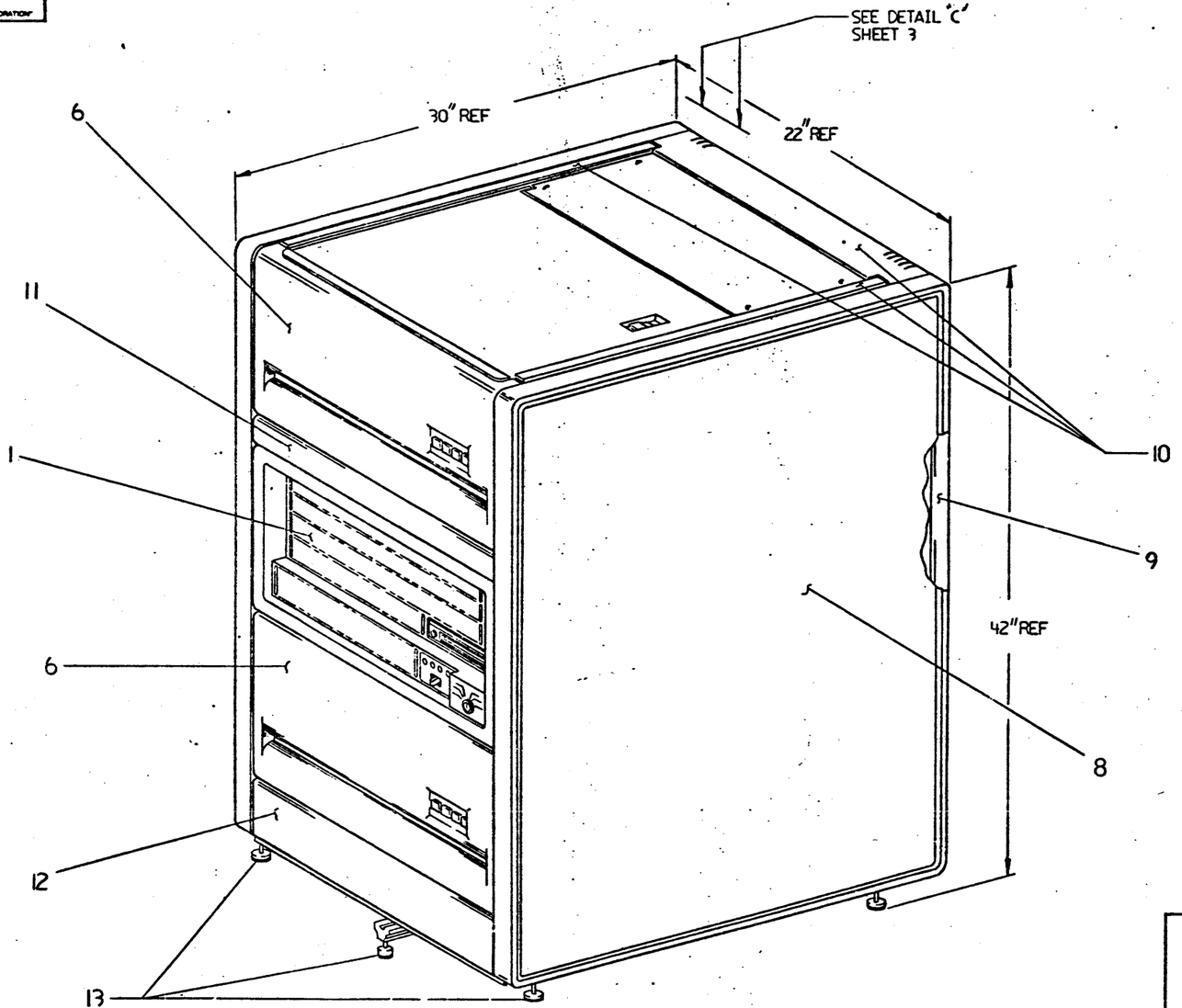
AUTOMATED BY PRTLST.3P(44) — P A R T S  L I S T — SHEET A2 OF A2

| LINE | ITEM | DOCUMENT NUMBER | PART NUMBER | DESCRIPTION | QUANTITY PER VARIATION 00 | 01 |
|---|---|---|---|---|---|---|
| 31 | 31 | E-UA-BC21Z-0-0 | BC21Z-08 | SHIELDED I/O CABLE,RL01/RL02,PAS | 1 | 1 |
| 32 | 32 | A-PS-3617880-0-0 | 3617880-02 | LABEL,FCC CLASS A PROCESSOR | 1 | 1 |
| 33 | 33 | A-PS-3617674-0-0 | 3617674-01 | LABEL,SERIAL & POWER W/UL & CSA | 1 | 1 |
| 34 | 34 | A-PS-3618058-0-0 | 3618058-01 | LABEL,CAUTION STABILITY 11V23-WA | 1 | 1 |
| 35 | 35 | A-PS-3618057-0-0 | 3618057-01 | LABEL,CAUTION SERV.INTERLOCK 11V | 4 | 4 |
| 36 | 36 | A-PS-1218912-0-0 | 1218912-C0 | CLIP,CABLE 1/2 | 1 | 1 |
| 37 | 37 | A-PL-7012938-0-0 | 7012938-00 | 70-12938 UNIT SELECT PLUG KIT | 1 | 1 |

########## RELEASABLE ##########

| D | I | G | I | T | A | L | TITLE | SECTION A OF A | SIZE | CODE | DOCUMENT NUMBER | REV |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | HARDWARE CONFIG. PKG. NO. 75 | | K | PL | 7017646-0-DBP | X00 |

NOTE:
1. FOR DETAIL CONFIGURATION INFORMATION OF ITEMS 5, 16, 25 WITHIN THE CPU BOX REFERENCE E-UA-11730-Z-0




CAUTION: SEE OFF SHEETS PARTS LIST
K-PL-7017646-0-DBP (Z3335A)

| DESCRIPTION | DRAWING NO. | PART NO. | ITEM NO. |
|---|---|---|---|

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES AND THE FOLLOWING TOLERANCES APPLY (PER DEC STD 114)

| INCHES TOLERANCES | ANGLES ± 0° 30' | APPLICABLE DIMENSION RANGE (CHECK ONE) | DIMENSION RANGE IN INCHES: OVER 0 TO 0.2 | OVER 0.2 TO 1.2 | OVER 1.2 TO 4.8 | OVER 4.8 TO 12.8 | OVER 12.8 TO 48.8 | OVER 48.8 TO 192.8 |
|---|---|---|---|---|---|---|---|---|
| X = ± .1 | SURFACE QUALITY | ☐ | | ± .02 | | ± .05 | | ± .10 |
| XX = ± .03 | | ☐ | | | | | | |
| XXX = ± .005 | | ☐ | ± .004 | ± .005 | ± .012 | ± .015 | ± .024 | ± .04 |
| QUANTITY & VARIATION | MICROINCHES | ☐ | | | | | | |

THIRD ANGLE PROJECTION

DO NOT SCALE DRAWING

REMOVE BURRS AND BREAK SHARP CORNERS

MATERIAL: SEE PARTS LIST

FINISH

| | | |
|---|---|---|
| DRN R.L. Tousignant | DATE 2/24/82 | |
| CHK'D Mark Dinneen | DATE 2/24/82 | |
| DES ENG David A. Colon | DATE 2/24/82 | |
| RESP ENG David A. Colon | DATE 2/24/82 | |
| SOFTWARE Scott Castagna | DATE 25 FEB 82 | |
| NEXT HIGHER DOC B-DD-7017646-0-0 | | |

TITLE: digital

HARDWARE CONFIG. PACKAGE NO. 75

DOCUMENT NUMBER: SIZE D | CODE AD | 7017646-0-0 | REV A

SCALE ——— | SHEET 1 OF 3

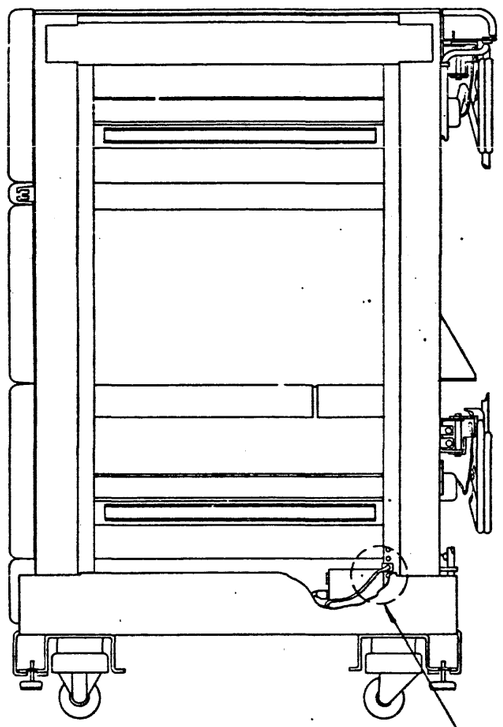
REVISION HISTORY

| REV. | ECO NUMBER | DATE |
|---|---|---|

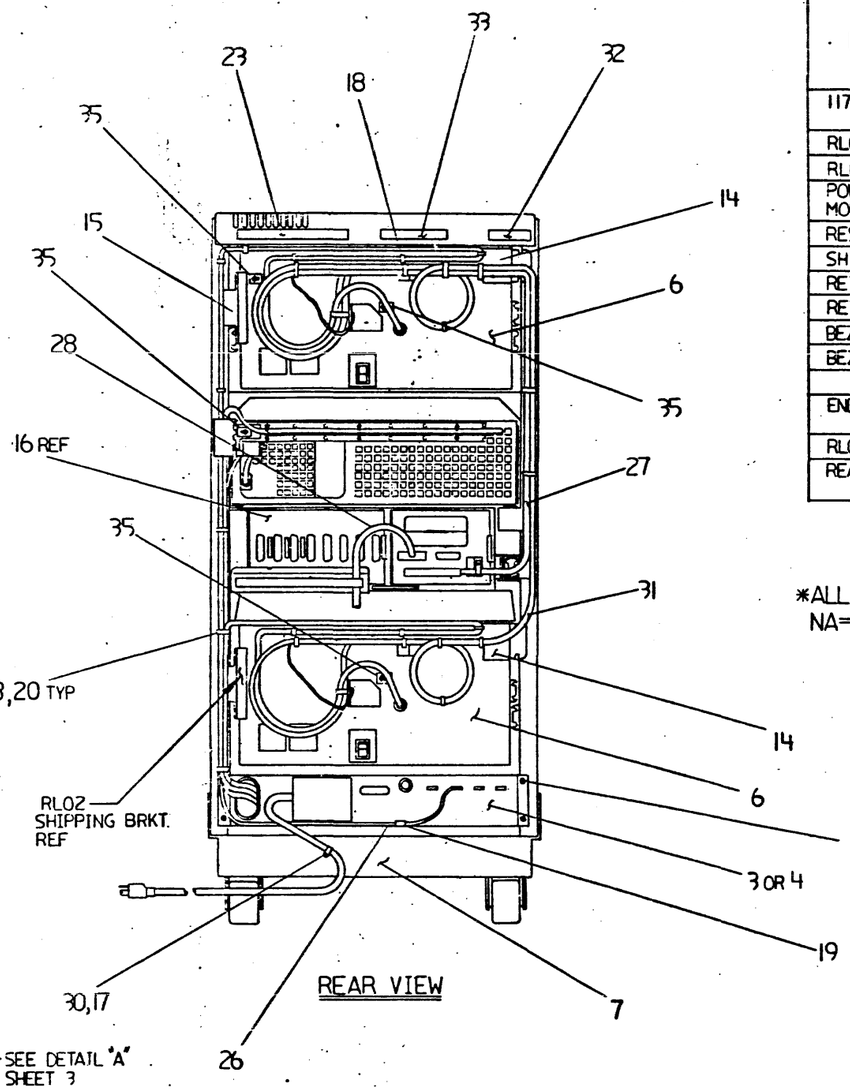
DRD 1000

| DESCRIPTION | PL ITEM NO'S | LOCATION: HOLE NO'S | LOCATION: RAIL 1 | RAIL 2 | RAIL 3 | RAIL 4 | MOUNTING HARDWARE: PL ITEM NO'S | MOUNTING HARDWARE: QTY | REMARKS |
|---|---|---|---|---|---|---|---|---|---|
| 11730 (FRONT) (REAR) | 1 | 26,27 26,27 | E | E | E | E | SWI | NA | SEE E-UA-11730-Z-0 SEE E-UA-BA11-Z-0 |
| RL02 (DRIVE 1) | 6 | 48,52 | E | E | E | E | SWI | NA | SEE D-UA-RL02-FK-0 |
| RL02 (DRIVE 0) | 6 | 9,13 | E | E | E | E | SWI | NA | SEE D-UA-RL02-FK-0 |
| POWER CONTROL, BA74, MOUNTING GND STRAP | 3,4 29 | 2,5, 6 | | E S | | E | 17,22 17,22 | 4 1 | |
| RESTRAIN BRKT. (DRIVE 1) | 15 | 53,55 | | E | | | SWI | NA | MT. LIKE SHPNG BRKT |
| SHIPPING BRKT. (DRIVE 0) | 6 | 14,16 | | E | | | SWI | | SEE D-UA-RL02-FK-0 |
| RETRACTOR ASSY (DRIVE 1) | 14 | 57,59 | | | | E | SWI | | SEE D-UA-H026-0-0 |
| RETRACTOR ASSY (DRIVE 0) | 14 | 18,20 | | | | E | SWI | NA | SEE D-UA-H026-J-0 |
| BEZEL, 6.00" | 12 | | E | | E | | SWI | NA | SEE D-UA-H9544-D-0 |
| BEZEL, 1.75" | 11 | 44 | E | | E | | SWI | NA | SEE D-UA-H9544-D-0 |
| | | | | | | | | | |
| END PANEL, LEFT, GND STRAP RIGHT, GND STRAP | 8 | 44 44 | | S S | | | SWI | NA | SEE D-UA-H9544-A-0 |
| RL02 TRIM/FILLER | 10 | 62 | | E | | E | SWI | NA | SEE D-UA-H9544-C-0 |
| REAR DOOR, DOOR STOPS GND STRAP | 9 | 7,54, 15 | | E | | E | SWI | NA | SEE D-UA-H9544-B-0 |

*ALL LOCATIONS ARE REFERENCED FROM DIAGRAMS 1&2;
NA= NOT APPLICABLE; SWI= SUPPLIED WITH ITEM.



RIGHT SIDE VIEW




REAR VIEW

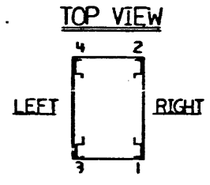



DIAGRAM 1

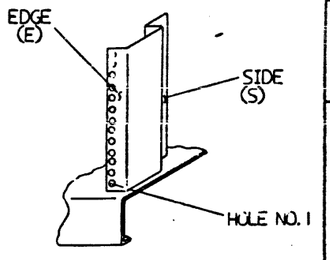


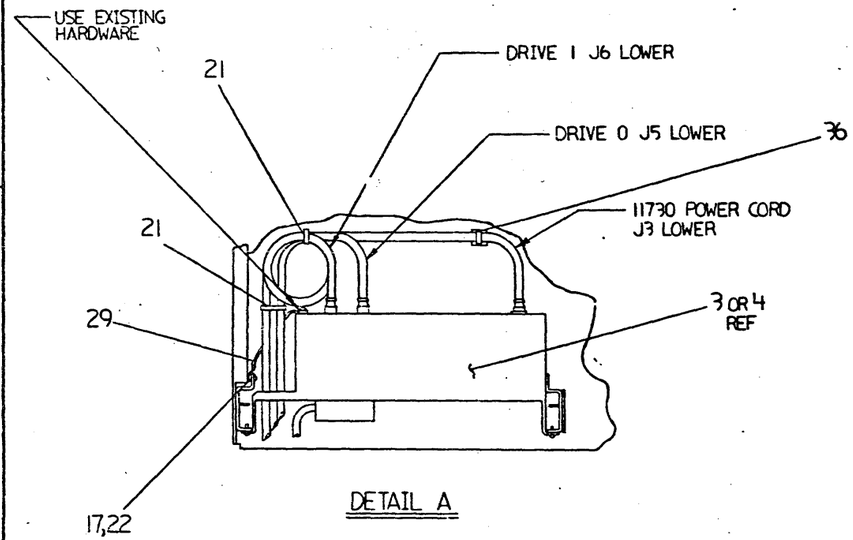

DIAGRAM 2

| REVISION HISTORY | | |
|---|---|---|
| DATE | ECO NUMBER | REV. |

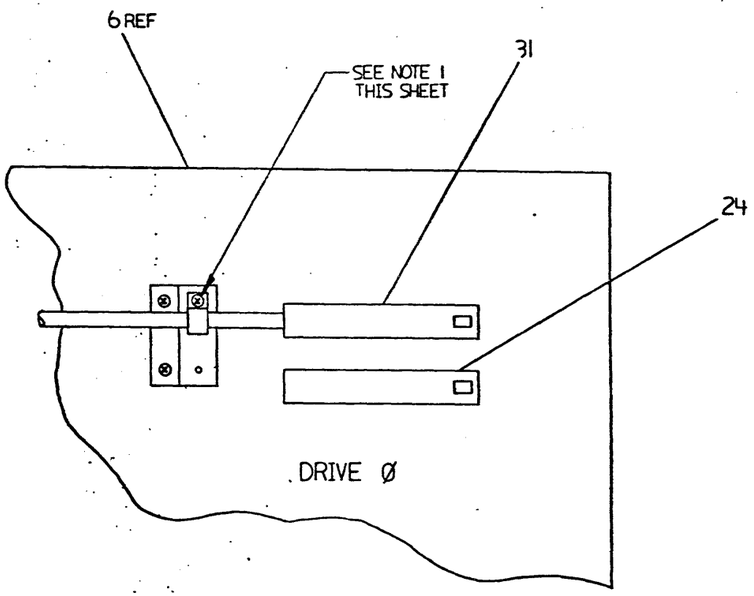
TITLE HARDWARE CONFIG. PACKAGE NO. 75

| DOCUMENT NUMBER | | | |
|---|---|---|---|
| SIZE | CODE | NUMBER | REV. |
| D | AD | 7017646-0-0 | A |

SCALE NONE SHEET 2 OF 3



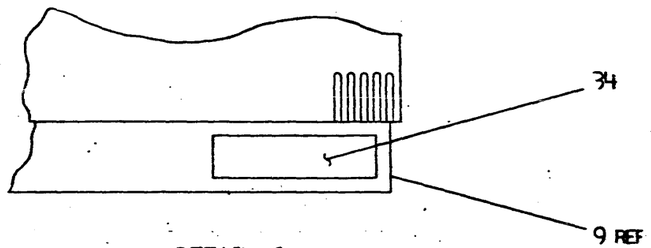

DETAIL A




DETAIL B

REAR VIEW OF RL02

NOTE: 1. ATTACH BC21Z SHIELD WITH HARDWARE SUPPLIED WITH ITEM TYPICAL TO DRIVE 0, 1, AND 11730-ZA.




DETAIL C

REVISION HISTORY

| DATE | ECO NUMBER | REV. |
|---|---|---|
| | | |

TITLE HARDWARE CONFIG. PACKAGE NO. 75

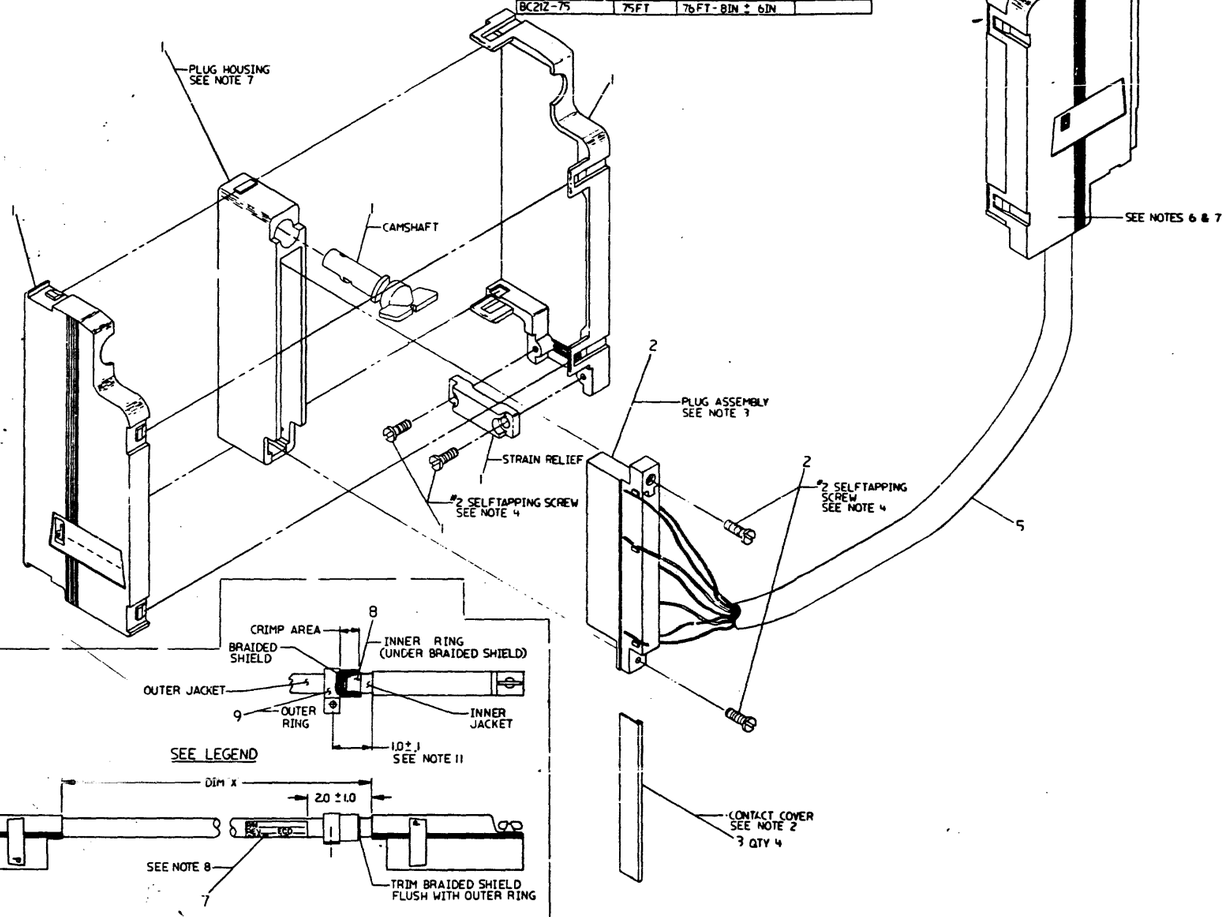
DOCUMENT NUMBER: SIZE D | CODE AD | NUMBER 7017646-0-0 | REV. A

SCALE — | SHEET 3 OF 3

TW

## LEGEND

| NUMBER | DIM "X" | PRE-CUT LENGTH | REMARKS |
|---|---|---|---|
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |
| BC21Z-06 | 6 FT | 7FT-8IN ± 2 IN | |
| BC21Z-08 | 8 FT | 9FT-8IN ± 2 IN | |
| BC21Z-10 | 10FT | 11FT-8IN ± 2 IN | |
| BC21Z-12 | 12FT | 13FT-8IN ± 3 IN | |
| BC21Z-20 | 20FT | 21FT-8IN ± 3 IN | |
| BC21Z-25 | 25FT | 26FT-8IN ± 3 IN | |
| BC21Z-30 | 30FT | 31FT-8IN ± 6 IN | |
| BC21Z-40 | 40FT | 41FT-8IN ± 6 IN | |
| BC21Z-50 | 50FT | 51FT-8IN ± 6 IN | |
| BC21Z-60 | 60FT | 61FT-8IN ± 6 IN | |
| BC21Z-75 | 75FT | 76FT-8IN ± 6IN | |




NOTES:

1. "CUT AND REMOVE 9.0 ± .5 INCHES OF THE OUTER CABLE JACKET FROM BOTH ENDS OF CABLE. CAUTION: DO NOT CUT OR NICK BRAID WIRE UNDER OUTER JACKET. REMOVE THE MYLAR WRAP AND ALUMINUM SHIELD FLUSH TO JACKET."
2. "AMP SEMI-AUTOMATIC INSERTION MACHINES (CHAMPOMATIC OR CHAMPOMATIC) MUST BE USED TO TERMINATE THE LEADS TO PLUG ASSEMBLIES ITEM 2. THE STANDARD CABLE CLAMP SUPPLIED WITH THE AMP MACHINES MAY REQUIRE MODIFYING TO POSITION CABLE, ITEM 5, TO PLUG ASSEMBLY, ITEM 2, PER DETAIL B. AFTER ASSEMBLY OF WIRES TO PLUG, INSTALL COVER, ITEM 3, TO EACH SIDE OF PLUG."
3. "THE BRAID WIRE AND INNER RING WIRE MUST BE PREPARED AS FOLLOWS BEFORE TERMINATING CABLE TO PLUG. THESE PROCEDURES ARE PRESCRIBED TO DEC ASSEMBLY PROCESSES FOR THIS ASSEMBLY. A SIGNED DISCLOSURE STATEMENT IS REQUIRED TO OBTAIN COPIES OF ANY DEC PROCESS SPECIFICATION."

3.1 "CUT BACK THE CORRECT BLACK GND WIRE .4 ± .1 INCH ABOVE JACKET. STRIP END .25 ± .06 INCH."

3.2 "FIND AND SEPARATE THE SOLID WHITE AND YELLOW PAIRED WIRES. CUT THE WHITE WIRE FLUSH WITH JACKET. STRIP END OF LOOSE WHITE WIRE .25 ± .06 INCH."

3.3 "POSITION STRIPPED END OF WHITE WIRE PARALLEL TO THE STRIPPED END OF THE BLACK GND WIRE. WRAP THE BRAID WIRE AROUND THE STRIPPED END OF THE BLACK AND WHITE WIRE 2-4 TIMES. SOLDER WIRE SPLICE AND CUT OFF END OF BRAID FLUSH WITH SPLICE."

5.4 "COVER SPLICE WITH 0.5 ± .05 INCH OF SHRINK TUBING, ITEM 9, TWIST THE WHITE AND YELLOW WIRES (PREVIOUSLY SEPARATED) BACK TOGETHER FOR APPROXIMATELY (5) THREE INCHES."

4. "SCREWS (2 X .31 S.T.) ARE PART OF ITEM 1. TORQUE SCREWS TO 2.5 ± .5 IN/LBS CABLE CLAMP SHOULD BE CLAMPED IN POSITION BEFORE INSTALLING SCREWS. CABLE CLAMP MUST BE FLUSH TO HOUSING BOTH SIDES."
5. "ACTIVE CONTACT (DEC 12115981-27) AND BLACK 28 AWG WIRE (DEC 9307799-000 IS FOR PRODUCTION REPAIR ONLY. REF AMP CONTACT (66555-3 L.P.) HAND CRIMP TOOL (90209-1) EXTRACTION TOOL(90918-1)."
6. "BAG, ITEM 8, TO BE INSTALLED OVER EACH CONNECTOR AND SECURED AFTER COMPLETION OF ASSEMBLY."
7. "PRIOR TO SNAPPING SIDES OF HOUSING TOGETHER, ASSURE THAT ALL WIRES ARE WELL WITHIN HOUSING."
8. "LABEL, ITEM 9, TO CONTAIN:
   ASSEMBLY P/N
   REVISION (LEVEL)
   MFG (PLACE OF BUILD) DATE (DF MFD)
   TEST (STAMP) INSP. (STAMP)
9. "DEC STANDARD 136 (NONPURCHASE) APPLIED TO THIS ASSEMBLY."
10. "MARK SHIPPING CONTAINER AS TO:
    ASSEMBLY NO.
    REVISION (LEVEL)
    MFG BY
    DATE
    QTY
11. CONN, GROUNDING SHEATH/STRAIN RELIEF (ITEM 9) TO BE PLACED AT RIGHT ANGLE (± 20°) TO CONN, ZIF (ITEMS 1,2 & 3) AS SHOWN (BOTH ENDS).

CAUTION: OFF SHEET PARTS LIST EXISTS.
SEE K-PL-BC21Z-Ø-DBP (Z2929)

| REV | DESCRIPTION | ENGR/APPR | DATE |
|---|---|---|---|
| A | RELEASED TO E.C.O. CONTROL AT REV A | | |

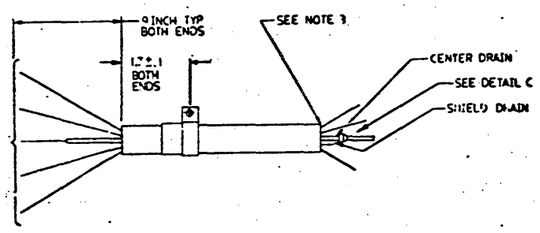
| | | | |
|---|---|---|---|
| QUANTITY & MATERIAL PER | DESCRIPTION | DRAWING/PART NO. | ITEM NO. |
| | UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES | | |
| | ANGLES ± 30' | | |
| | DECIMALS: TWO PLACES ± .01 | | |
| | THREE PLACES ± .005 | | |
| | FOUR PLACES ± .0005 | | |
| | FINISH: MICRO-INCHES | | |
| | MATERIAL: | | |
| | DO NOT SCALE DRAWING | | |
| | WEIGHT: | | |
| | NEXT HIGHER ASSY. | | |
| SEE PARTS LIST | | | |

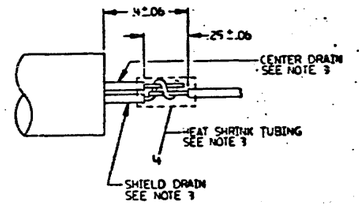
| | | | |
|---|---|---|---|
| DRAWN | | FIRST USED ON | RL01 |
| CHECK | | | |
| ENG | | | |
| PROJ ENG | | | |
| PROG | | | |
| QUALITY | | | |
| MFG | | | |

TITLE: I/O CABLE ASSEMBLY

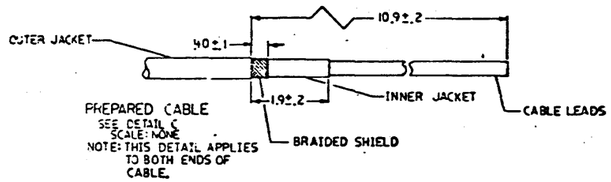
| | | | |
|---|---|---|---|
| SIZE | CAGE | DRAWING NO. | REV |
| E | UA | BC21Z-Ø-Ø | A |
| SCALE | NONE | SHEET 1 OF 2 | |

K-UA-BC21Z-Ø-Ø



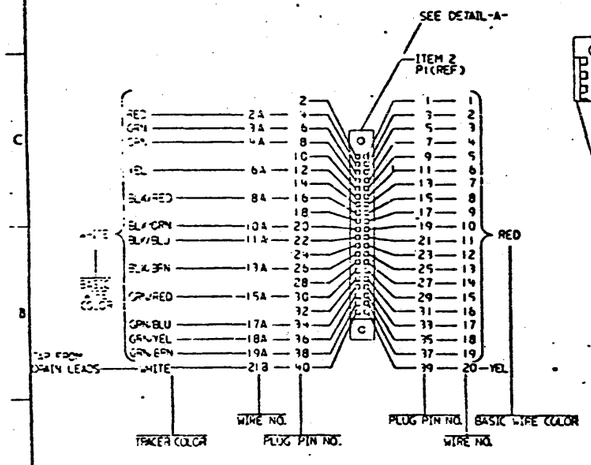

DETAIL C
SCALE: NONE

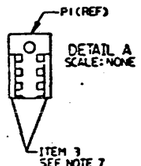



PREPARED CABLE
SEE DETAIL C
SCALE: NONE
NOTE: THIS DETAIL APPLIES TO BOTH ENDS OF CABLE.

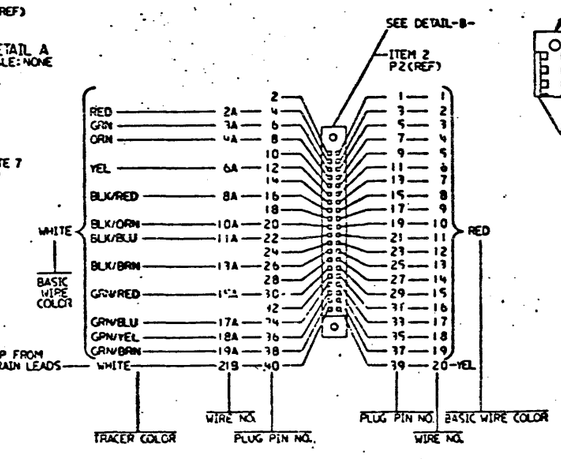
WIRE TABLE

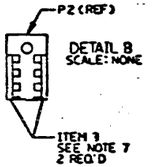
| WIRE NO. | FROM CONNECTOR PLUG | PLUG PIN NO. | BASIC WIRE COLOR | WITH TRACER COLOR | TO CONNECTOR PLUG | PLUG PIN NO. | REMARKS |
|---|---|---|---|---|---|---|---|
| 1 | | | | | | | TWISTED PAIR |
| 1A | | | | | | | |
| 2 | P1 | 3 | RED | —— | P2 | 3 | |
| 2A | | 4 | WHT | RED | | 4 | |
| 3 | | 5 | RED | —— | | 5 | |
| 3A | | 6 | WHT | GRN | | 6 | |
| 4 | | 7 | RED | —— | | 7 | |
| 4A | | 8 | WHT | ORN | | 8 | |
| 5 | | | | | | | |
| 5A | | | | | | | |
| 6 | | 11 | RED | —— | | 11 | |
| 6A | | 12 | WHT | YEL | | 12 | |
| 7 | | | | | | | |
| 7A | | | | | | | |
| 8 | | 15 | RED | —— | | 15 | |
| 8A | | 16 | WHT | BLK/RED | | 16 | |
| 9 | | | | | | | |
| 9A | | | | | | | |
| 10 | | 19 | RED | —— | | 19 | |
| 10A | | 20 | WHT | BLK/ORN | | 20 | |
| 11 | | 21 | RED | —— | | 21 | |
| 11A | | 22 | WHT | BLK/BLU | | 22 | |
| 12 | | | | | | | |
| 12A | | | | | | | |
| 13 | | 25 | RED | —— | | 25 | |
| 13A | | 26 | WHT | BLK/BRN | | 26 | |
| 14 | | | | | | | |
| 14A | | | | | | | |
| 15 | | 29 | RED | —— | | 29 | |
| 15A | | 30 | WHT | GRN/RED | | 30 | |
| 16 | | | | | | | |
| 16A | | | | | | | |
| 17 | | 33 | RED | —— | | 33 | |
| 17A | | 34 | WHT | GRN/BLU | | 34 | |
| 18 | | 35 | RED | —— | | 35 | |
| 18A | | 36 | WHT | GRN/YEL | | 36 | |
| 19 | | 37 | RED | —— | | 37 | TWISTED PAIR |
| 19A | | 38 | WHT | GRN/BRN | | 38 | |
| 20 | | 39 | YEL | —— | | 39 | |
| 20A | | | —— | WHT | | | CUT WIRE NO. 20A OFF AT JACKET (SEE NOTE 3) |
| 21 | P1 | SEE 21B | WHT | —— | P2 | SEE 21B | SHIELD DRAIN } JUMP SHIELD & CENTER DRAIN TOGETHER PER DETAIL-C- |
| 21A | | | | | | | CENTER DRAIN WIRE } & TERMINATE WHT WIRE (21B) IN PIN 40. |
| 21B | P1 | 40 | WHT | —— | P2 | 40 | GND WIRE |



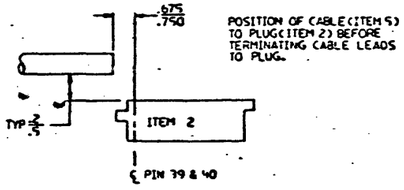




DETAIL A
SCALE: NONE




DETAIL B
SCALE: NONE




POSITION OF CABLE (ITEM 5) TO PLUG (ITEM 2) BEFORE TERMINATING CABLE LEADS TO PLUG.

DETAIL D
SCALE: NONE

| | | | | | |
|---|---|---|---|---|---|
| TITLE | I/O CABLE ASSEMBLY | | DOCUMENT NUMBER | | |
| | | | | BC212-0-0 | A |
| | | | SCALE: NONE | SHEET 2 OF 2 | |

AUTOMATED BY PRTLST.3P(44) — P A R T S  L I S T — SHEET A1 OF A1

| LINE | ITEM | DOCUMENT NUMBER | PART NUMBER | DESCRIPTION | QUANTITY PER VARIATION 06 | 08 | 10 | 12 | 20 | 25 | 30 | 40 | 50 | 60 | 75 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 1 | | 1211591-52 | CONN,ZIF 40PIN PLUG/STRAIN REL | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| 2 | 2 | | 1211591-07 | CONN,ZIF 40PIN PLUG | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| 3 | 3 | | 1211591-11 | CONN,ZIF COVER,CONTACT DISPLATI | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 |
| 4 | 4 | | 9107252-00 | TUBING,SHRINK 1/8 DIA.EXP UL | A/R | A/R | A/R | A/R | A/R | A/R | A/R | A/R | A/R | A/R | A/R |
| 5 | 5 | | 1700051-03 | CABLE, 26 COND. 28AWG,TWP,SHIELD | A/R | A/R | A/R | A/R | A/R | A/R | A/R | A/R | A/R | A/R | A/R |
| 6 | 6 | | 9905012-04 | ENVELOPE,MAILITE,SHIPPING | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| 7 | 7 | | 3616073-00 | LABEL,CABLE IDENTIFICATION | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 8 | 8 | | 1219082-01 | CONN,GROUNDING SHEATH,INNER RING | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| 9 | 9 | | 1219145-01 | CONN,GROUNDING SHEATH/STRAIN REL | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |

10 NOTE: - LEGEND — LEGEND
11 NOTE: - PART NUMBER VARIATION — PART NUMBER VARIATION
12 NOTE: - BC21Z-06 I/O CABLE ASSY,6FT ! BC21Z-30 I/O CABLE ASSY,30FT
13 NOTE: - BC21Z-08 I/O CABLE ASSY,8FT ! BC21Z-40 I/O CABLE ASSY,40FT
14 NOTE: - BC21Z-10 I/O CABLE ASSY,10FT ! BC21Z-50 I/O CABLE ASSY,50FT
15 NOTE: - BC21Z-12 I/O CABLE ASSY,12FT ! BC21Z-60 I/O CABLE ASSY,60FT
16 NOTE: - BC21Z-20 I/O CABLE ASSY,20FT ! BC21Z-75 I/O CABLE ASSY,75FT
17 NOTE: - BC21Z-25 I/O CABLE ASSY,25FT

| REVISION HISTORY | | | BASIC PART NO: BC21Z | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ENG | ECO NUMBER | REV | SECTION A OF A | DRN: K. DAVIS | DATE: 12-OCT-81 | | D | I | G | I | T | A | L |
| | INITIAL | A | SECTION. VARIATION INDEX | CHK'D: B. MILLER | DATE: 13-OCT-81 | TITLE | PARTS LIST | | | | | | |
| | | | [A] 06,08,10,12,20,25, 30,40,50,60,75 | | | I/O CABLE ASSEMBLY | | | | | | | |
| | | | [B] | DES.ENG.: S. MANDARICH | DATE: 13-OCT-81 | | | | | | | | |
| | | | [C] | RESP.ENG.: W. HARDER | DATE: 13-OCT-81 | DOCUMENT NUMBER | | | | | | | |
| | | | [D] | | | SIZE | CODE | NUMBER | | | REV | | |
| | | | [E] | MFG.ENG.: R. PAYETTE | DATE: 13-OCT-81 | K | PL | BC21Z-0-DBP | | | A | | |
| | | | [F] | ASSEMBLY NUMBER: E-UA-BC21Z-0-0 | TOP DOCUMENT NUMBER: 8B-DD-RL01-0 | FILE NAME: Z2929A.PLS | | | | | EDIT #: 8 | | |

NOTES:

1. FOR CABLE CONFIGURATION REFER TO A-PS-1700313-0-0.

## LEGEND

| NUMBER | VARIATION | DIM "X" | DIM "Y" REF |
|---|---|---|---|
| BC22D-1Ø | 1700313-01 | 10 FT. | |
| BC22D-25 | 1700313-02 | 25 FT. | |
| BC22D-35 | 1700313-03 | 35 FT. | |
| BC22D-5Ø | 1700313-04 | 50 FT. | |
| BC22D-75 | 1700313-05 | 75 FT. | |
| BC22D-AØ | 1700313-06 | 100 FT. | |
| BC22D-A5 | 1700313-07 | 150 FT. | |
| BC22D-BØ | 1700313-08 | 200 FT. | |
| BC22D-B5 | 1700313-09 | 250 FT | |

## WIRE TABLE

| ITEM NO. | PAIR NO. | DESCRIPTION AWG | DESCRIPTION COLOR | TO CONN | TO WITH | FROM CONN | FROM WITH | REMARKS |
|---|---|---|---|---|---|---|---|---|
| 2 THRU 10 | | | BLK | P1-1 | | P2-1 | | |
| | | | BRN | P1-2 | | P2-3 | | |
| | | | RED | P1-3 | | P2-2 | | |
| | | | ORN | P1-6 | | P2-20 | | |
| | | | YEL | P1-7 | | P2-7 | | |
| | | | GRN | P1-20 | | P2-6 | | |
| | | | — | P1 - SHELL | | P2 - SHELL | | SHIELD & DRAIN WIRE |

| REVISIONS | | |
|---|---|---|
| REV. | CHANGE NO. | CHK |
| A | ORIGINATED | |

| DESCRIPTION | DWG./PART NO. | ITEM NO. |
|---|---|---|

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES

| ANGLES ±0° 30' | CLASS OF ACCURACY (CHECK ONE) | NOMINAL DIMENSION RANGE INCHES | | | | | |
|---|---|---|---|---|---|---|---|
| SURFACE QUALITY IN MICROINCHES | | 0 TO 3 | OVER 3 TO 12 | OVER 12 TO 30 | OVER 30 TO 120 | OVER 120 TO 315 | OVER 315 TO 1000 |
| | MEDIUM ☐ | ±.004 | ±.008 | ±.012 | ±.016 | ±.024 | ±.04 |
| | PREFERRED ☐ | ±.012 | ±.016 | ±.025 | ±.04 | ±.063 | ±0.1 |

QUANTITY & VARIATION

THIRD ANGLE PROJECTION

REMOVE BURRS AND BREAK SHARP CORNERS

DO NOT SCALE DWG

MATERIAL

FINISH

DRN. [illegible] 11 Nov 82

CHK'D [illegible] 13 Dec 82

ENG. [illegible] 11 Nov 82

PROJ. ENG. [illegible] 13 DEC 82

PROD.

NEXT HIGHER ASSY. B-DD-BC22D-Ø

SCALE NONE

SHEET OF

FIRST USED ON

digital

TITLE

CABLE, NULL MODEM

| SIZE | CODE | NUMBER | REV. |
|---|---|---|---|
| B | UA | BC22D-Ø-Ø | A |

DIST.

DRB 100A

MK

# DIGITAL EQUIPMENT CORPORATION
# PARTS LIST

| | | |
|---|---|---|
| MADE BY S. ZYLAK | CHECKED J. Falkowski | SECTION 1 |
| DATE 14-MAR-82 | DATE 13 APR 82 | |
| ENG R. Harrington | PROD | ISSUED SECTION 1 |
| DATE 13 APR 82 | DATE | |

| ITEM NO. | DRAWING NO. | PART NO. | DESCRIPTION | QUANTITY / VARIATION | | | | | | | | | | | | NOTES: |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | BC22D-10 | BC22D-25 | BC22D-35 | BC22D-50 | BC22D-75 | BC22D-ØA | BC22D-A5 | BC22D-BØ | BC22D-B5 | | | | REF DESIGNATION |
| 1 | A-PS-1700313-Ø-Ø | 1700313-00 | CABLE, NULL MODEM | - | - | - | - | - | - | - | - | - | | | | |
| 2 | A-PS-1700313-Ø-Ø | 1700313-01 | CABLE, NULL MODEM | 1 | - | - | - | - | - | - | - | - | | | | |
| 3 | A-PS-1700313-Ø-Ø | 1700313-02 | CABLE, NULL MODEM | - | 1 | - | - | - | - | - | - | - | | | | |
| 4 | A-PS-1700313-Ø-Ø | 1700313-03 | CABLE, NULL MODEM | - | - | 1 | - | - | - | - | - | - | | | | |
| 5 | A-PS-1700313-Ø-Ø | 1700313-04 | CABLE, NULL MODEM | - | - | - | 1 | - | - | - | - | - | | | | |
| 6 | A-PS-1700313-Ø-Ø | 1700313-05 | CABLE,NULL MODEM | - | - | - | - | 1 | - | - | - | - | | | | |
| 7 | A-PS-1700313-Ø-Ø | 1700313-06 | CABLE, NULL MODEM | - | - | - | - | - | 1 | - | - | - | | | | |
| 8 | A-PS-1700313-Ø-Ø | 1700313-07 | CABLE, NULL MODEM | - | - | - | - | - | - | 1 | - | - | | | | |
| 9 | A-PS-1700313-Ø-Ø | 1700313-08 | CABLE, NULL MODEM | - | - | - | - | - | - | - | 1 | - | | | | |
| 10 | A-PS-1700313-Ø-Ø | 1700313-09 | CABLE, NULL MODEM | - | - | - | - | - | - | - | - | 1 | | | | |

E.C.O. NO.



| TITLE | ASSY NO. | SIZE | CODE | NUMBER | REV. |
|---|---|---|---|---|---|
| CABLE, NULL MODEM | B-UA-BC22D-Ø-Ø | B | PL | BC22D-Ø-Ø | A |
| | SHEET 1 OF 1 | INSERTION PARTS LIST DATA BASE REV | | | |

DRB 125

MK

## WIRE TABLE

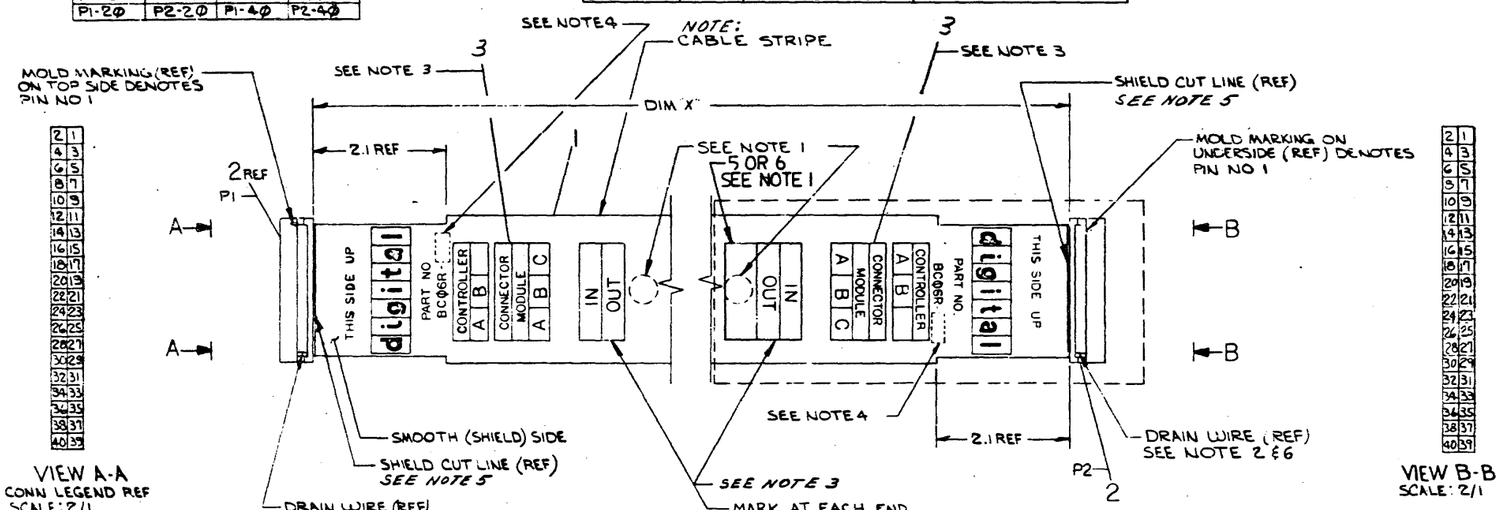
| FROM | TO | FROM | TO |
|---|---|---|---|
| P1-1 | P2-1 | P1-21 | P2-21 |
| P1-2 | P2-2 | P1-22 | P2-22 |
| P1-3 | P2-3 | P1-23 | P2-23 |
| P1-4 | P2-4 | P1-24 | P2-24 |
| P1-5 | P2-5 | P1-25 | P2-25 |
| P1-6 | P2-6 | P1-26 | P2-26 |
| P1-7 | P2-7 | P1-27 | P2-27 |
| P1-8 | P2-8 | P1-28 | P2-28 |
| P1-9 | P2-9 | P1-29 | P2-29 |
| P1-10 | P2-10 | P1-30 | P2-30 |
| P1-11 | P2-11 | P1-31 | P2-31 |
| P1-12 | P2-12 | P1-32 | P2-32 |
| P1-13 | P2-13 | P1-33 | P2-33 |
| P1-14 | P2-14 | P1-34 | P2-34 |
| P1-15 | P2-15 | P1-35 | P2-35 |
| P1-16 | P2-16 | P1-36 | P2-36 |
| P1-17 | P2-17 | P1-37 | P2-37 |
| P1-18 | P2-18 | P1-38 | P2-38 |
| P1-19 | P2-19 | P1-39 | P2-39 |
| P1-20 | P2-20 | P1-40 | P2-40 |

## LEGEND

| NUMBER | DIM 'X' | PRECUT LENGTH | REMARKS |
|---|---|---|---|
| BC06R-01 | 1FT | 1FT 1.5IN ± 1IN | SEE PRE-CUT VIEW C-C |
| BC06R-02 | 2FT | 2FT 1.5IN ± 1IN | |
| BC06R-03 | 3FT | 3FT 1.5IN ± 1IN | |
| BC06R-04 | 4FT | 4FT 1.5IN ± 1 IN | |
| * BC06R-05 | 4FT6IN | 4FT 7.5IN ± 1.5IN | SEE NOTE 7 * |
| BC06R-06 | 6FT | 6 FT 1.5IN ± 2IN | |
| BC06R-08 | 8 FT | 8 FT 1.5IN ± 2IN | |
| BC06R-10 | 10FT | 10FT 1.5IN ± 2IN | |
| BC06R-12 | 12FT | 12 FT 1.5IN ± 3IN | |
| BC06R-20 | 20FT | 20 FT 1.5IN ± 3IN | |
| BC06R-25 | 25FT | 25 FT 1.5IN ± 3IN | |
| BC06R-30 | 30FT | 30 FT 1.5IN ± 6IN | |
| BC06R-50 | 50FT | 50FT 1.5IN ± 1.0 FT | |
| BC06R-60 | 60FT | 60FT 1.5IN ± 1.2FT | |
| BC06R-75 | 75 FT | 75 FT 1.5IN ± 1.5 FT | |
| BC06R-A0 | 100FT | 100FT 1.5IN ± 2 FT | |
| BC06R-07 | 7 FT | 7FT 1.5 IN ± 2IN. | |
| BC06R-8F | 8FT6IN | 8FT 7.5IN ± 1 IN | SEE PRE-CUT VIEW C-C |
| BC06R-15 | 15FT | 15FT 1.5 IN ± 3 IN | |

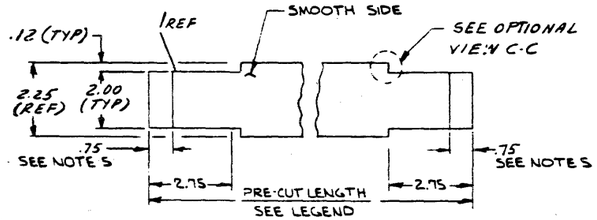
## NOTES:

1. LABEL (ITEMS 5 OR 6 CAN BE USED) TO CONTAIN:
   PART NO.
   REV.
   DATE (OF BUILD)
   MFG(STAMP) TEST(STAMP)
   INSP(STAMP)
   AFFIX LABEL AROUND CABLE IN APPROX CENTER.
2. DRAIN WIRE CONNECTS TO PIN NO 40.
3. RUBBER STAMP INFORMATION SHOWN USING INK (ITEM 3) & ARTWORK DEC NO A-DC-7411699-0-0.
4. STAMP APPLICABLE OPTION DASH NO. ACCORDING TO LENGTH.
5. REMOVE SHIELD .75 FROM END OF PRECUT CABLE (SEE VIEW C-C).
6. COVER EXPOSED DRAIN WIRE WITH ITEM 4 PRIOR TO ASSY (BOTH ENDS).
7. * FOR RP04, RP05, RP06 USE WRAP AROUND VINYL LABEL. SEE VARIATIONS ON DRAWING NUMBER A-PS-3615389-0-0 ALSO SEF NEXT HIGHER ASSEMBLY E-IA-7 307-0-0 AND E-IA-7009808-0-0.

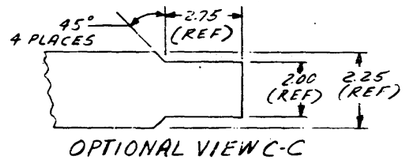



VIEW A-A
CONN LEGEND REF
SCALE: 2/1

VIEW B-B
SCALE: 2/1




VIEW C-C
PRE-CUT VIEW
SCALE: NONE




OPTIONAL VIEW C-C
PRE-CUT VIEW
SCALE: NONE

| | | | |
|---|---|---|---|
| (CX ONLY) SEE NOTE 1 | 1 | LABEL I.D. | 3616989-0-0 | 6 |
| SEE NOTE 1 | 1 | LABEL I.D. | 3616073-0-0 | 5 |
| | A/R | PLASTIC TAPE | 3612511-0 | 4 |
| | A/R | INK | 4901150 | 3 |
| | 2 | CONNECTOR .40 SOCKET | 1211206 | 2 |
| | A/R | CABLE .40 COND FLAT W/SHIELD | 17-00034 | 1 |
| | QTY | DESCRIPTION | PART NO | ITEM NO |

PARTS LIST

FIRST USED ON OPTION/MODEL: RP04

UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES
TOLERANCES
DECIMALS: XXX - .005, XX - .02, X - 1
ANGLES: ±0° 30'
REMOVE BURRS AND BREAK SHARP CORNERS SURFACE QUALITY

MATERIAL: SEE PARTS LIST

FINISH

| | | |
|---|---|---|
| DRN | C. Dunigan | DATE 2-22-78 |
| CHK | J. Mallett | DATE 3-6-78 |
| ENG MFG | D. Fuhr | DATE 3-6-78 |
| PROJ ENG | C. Ligas | DATE 4/17/78 |
| | | DATE 4/21/78 |

NEXT HIGHER ASSY.
E-IA-7009807-0-0
E-IA-7009808-0-0

SCALE: NONE
SHEET 1 OF 1

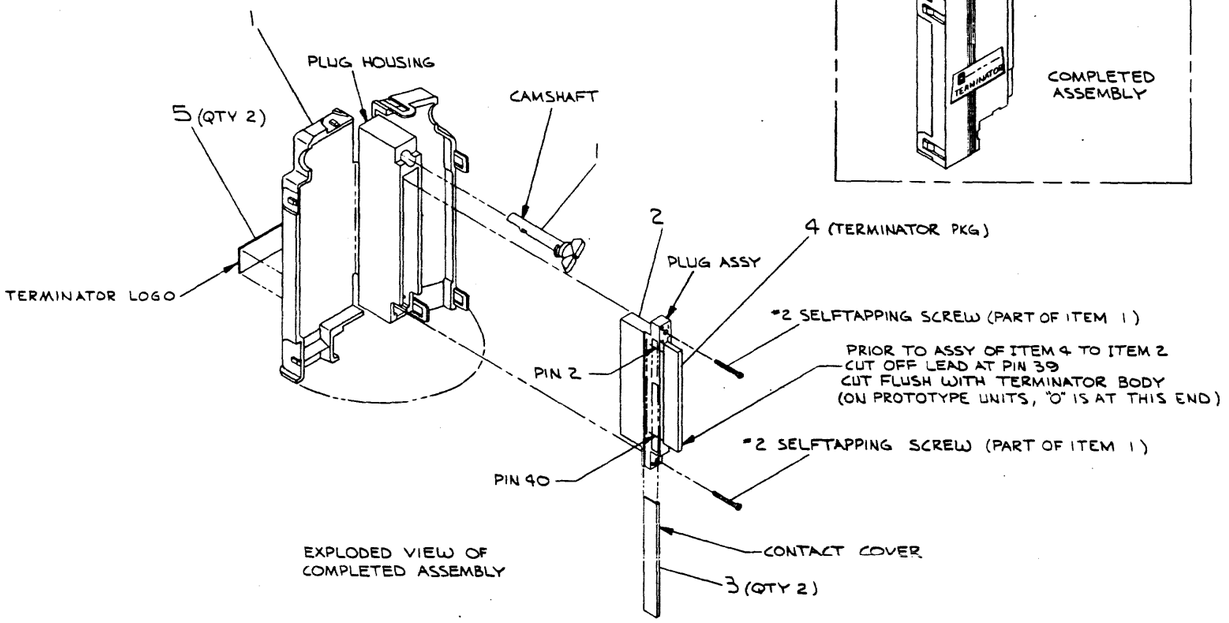
digital EQUIPMENT CORPORATION

TITLE: BC06R I/O CABLE

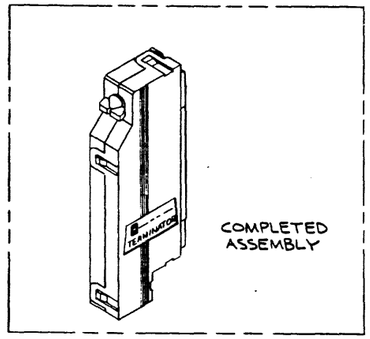
| SIZE | CODE | NUMBER | REV |
|---|---|---|---|
| D | UA | BC06R-0-0 | F |

| REV | CHANGE NO | |
|---|---|---|
| A | ENGINEERING RELEASE | |
| B | BC06R-0000X | |
| C | BC06R-0000X | |
| D | BCXR-00004 | |
| E | | |
| F | BC06R-CX006 C DUNIGAN | |

BRUNING 60 107 1968
REVISIONS




EXPLODED VIEW OF
COMPLETED ASSEMBLY




COMPLETED
ASSEMBLY

| | | | |
|---|---|---|---|
| 2 | LOGO, TERMINATOR | A-DC-7416678-0-0 | 5 |
| 1 | TERMINATOR PKG | 1313242-00 | 4 |
| 2 | COVER, CONTACT | 1211591-11 | 3 |
| 1 | PLUG ASSY | 1211591-07 | 2 |
| 1 | CONN PLUG HSG & CAMSHAFT KIT | 1211591-34 | 1 |

| DESCRIPTION | DWG./PART NO. | ITEM NO. |
|---|---|---|

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES

| ANGLES ±0° 30' | CLASS OF ACCURACY (CHECK ONE) | NOMINAL DIMENSION RANGE INCHES OVER 0 TO 0.5 | OVER 0.5 TO 1.2 | OVER 1.2 TO 4.0 | OVER 4.0 TO 12.0 | OVER 12.0 TO 40.0 | OVER 40.0 TO 80.0 |
|---|---|---|---|---|---|---|---|
| SURFACE QUALITY IN MICROINCHES | MEDIUM ☐ | ±.004 | ±.008 | ±.012 | ±.016 | ±.024 | ±.04 |
| | PREFERRED ☐ | ±.012 | ±.016 | ±.020 | ±.04 | ±.063 | ±0.1 |

QUANTITY & VARIATION

THIRD ANGLE PROJECTION

REMOVE BURRS AND BREAK SHARP CORNERS

DO NOT SCALE DWG

MATERIAL: SEE PARTS LIST

FINISH

DRN: [illegible] 7-JAN-76
CHK'D: [illegible] 7-JAN-76
ENG: [illegible] 7-JAN-76
PROJ. ENG: [illegible] 7-JAN-76
PROD. [illegible] 6/1/76
NEXT HIGHER ASSY.
E.UA.RK611-0-0
SCALE: NONE
SHEET 1 OF 1

FIRST USED ON: RK06

digital

TITLE: TERMINATOR ASSY

SIZE: D | CODE: 1A | NUMBER: 7012293-0-0 | REV.: A | DIST.

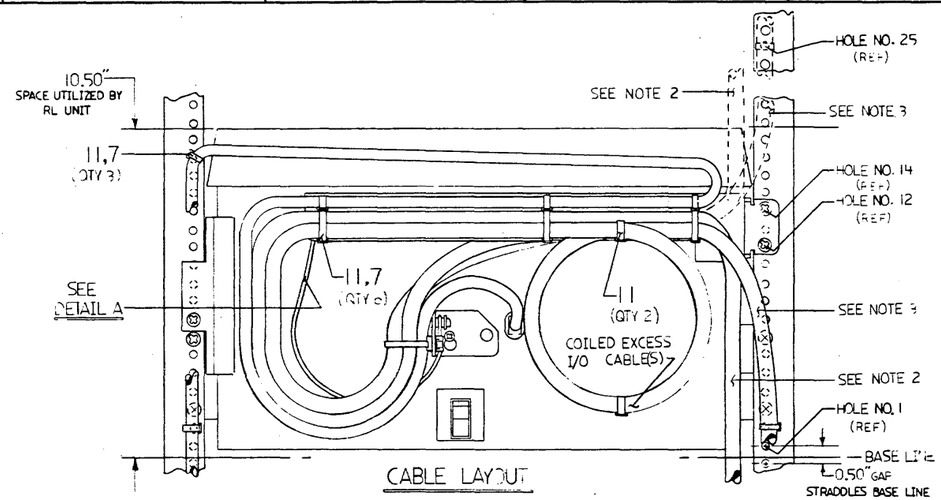
| REVISIONS | | | |
|---|---|---|---|
| CHK | CHANGE NO. | REV. | |
| JC | 7012293-00001 | A | 9/29/76 |

W. DUNHAM

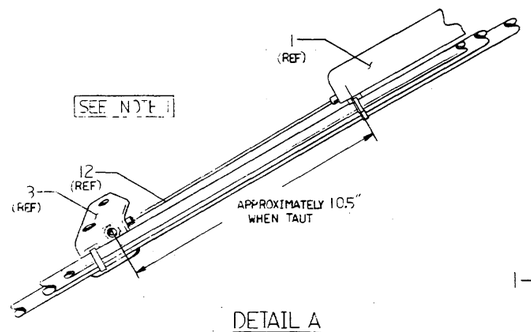
SIZE D | CODE 1A | NUMBER 7012293-0-0 | REV. A

CZ

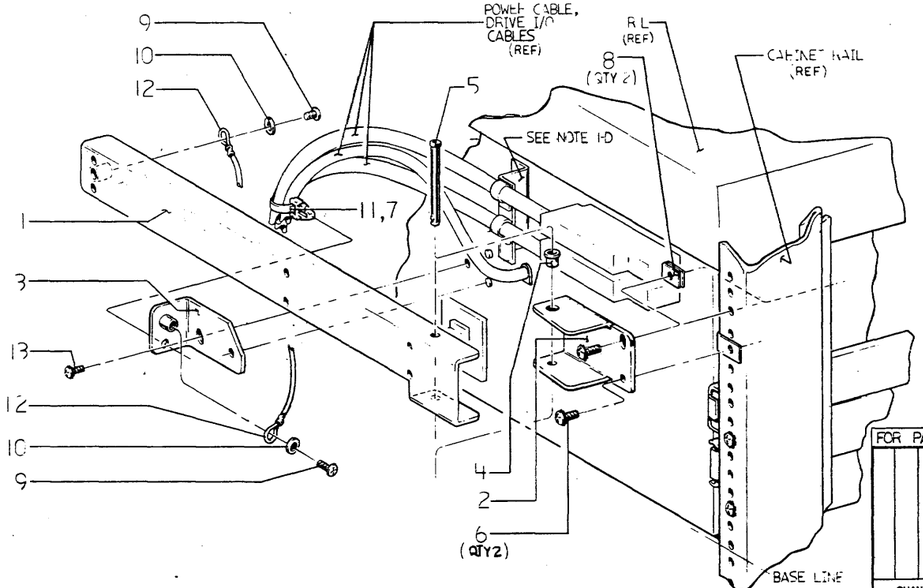
SIZE D | CODE UA | NUMBER H826-0-0 | REV A




CABLE LAYOUT




DETAIL A
SCALE - 1:2




NOTES:

1. INSTALATION PROCEDURE:
   - A. MOUNT RETRACTOR MOUNTING BRACKET (ITEM 2) TO RAIL AS SHOWN.
   - B. INSTALL TETHER CABLE (ITEM 12) BETWEEN TETHER RELEASE (ITEM 3) AND RETRACTOR ARM (ITEM 1) AS SHOWN. POSITION PIECES AS SHOWN IN DETAIL A.
   - C. ATTACH RETRACTOR ARM (ITEM 1) TO MOUNTING BRACKET (ITEM 2) AS SHOWN. DON'T ATTACH TETHER RELEASE (ITEM 3) AT THIS TIME.
   - D. ATTACH I/O CABLE(S) TO REAR OF DRIVE MAKING SURE THE DRIVE'S CABLE CLAMPING BRACKET IS POSITIONED AS SHOWN.
   - E. SLIDE DRIVE OUT TO SERVICE POSITION. IF CABINET HAS STABILIZER(S), PLACE IN SERVICE POSITION.
   - F. PULL DRIVE CABLES (I/O AND POWER) GENTLY BACK TO RETRACTOR ARM (ITEM 1) AND CLAMP TO END HOLES AS SHOWN USING ITEMS 7, 11.
   - G. ATTACH TETHER RELEASE (ITEM 3) TO CABLES AS SHOWN IN "DETAIL A". MAKE SURE TETHER IS TAUT AND CABLES ARE SLIGHTLY SLACK BEFORE SECURING TO THE RELEASE BRACKET.
   - H. RETURN DRIVE TO THE CUSTOMER LOADING POSITION AND ATTACH RELEASE BRACKET (ITEM 3) TO DRIVE AS SHOWN.
   - I. RETURN DRIVE TO NORMAL OPERATING POSITION.
   - J. ROUTE CABLES TO THEIR DESTINATIONS, COIL ANY EXCESS I/O CABLE AND THEN INSTALL THE REMAINING CABLE TIES (ITEM 11) AND PUSHMOUNTS (ITEM 7) AS SHOWN IN CABLE LAYOUT.
2. I/O CABLE ROUTING TO DRIVE DIRECTLY ABOVE OR BELOW.
3. I/O CABLE ROUTING TO TRANSITION BRACKET OR ADDITIONAL DRIVE NOT MOUNTED DIRECTLY ABOVE OR BELOW. NOTE THE MINIMUM 8 RAIL HOLES BETWEEN THE RETRACTOR MOUNTING SCREW AND THE FIRST RAIL MOUNTED CABLE TIE.
4. THERE ARE THREE SPARE CABLE TIES AND PUSH MOUNTS (ITEMS 7, 11).

FOR PARTS LIST SEE K-PL-H826-0-DBP.

| ITEM NO. | DESCRIPTION | DRAWING NO. | PART NO. |
|---|---|---|---|

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES AND THE FOLLOWING TOLERANCES APPLY (PER DEC STD 114)

| INCHES TOLERANCES | ANGLES ±0°30' | APPLICABLE DIMENSION RANGE (CHECK ONE) | DIMENSION RANGE IN INCHES: OVER 0 TO 0.2 | OVER 0.2 TO 1.2 | OVER 1.2 TO 4.0 | OVER 4.0 TO 12.0 | OVER 12.0 TO 40.0 | OVER 40.0 TO 60.0 |
|---|---|---|---|---|---|---|---|---|
| X = ± .1 | SURFACE QUALITY | ☐ | | ± .02 | | ± .03 | ± .05 | ± .10 |
| XX = ± .02 | | ☐ | | | | | | |
| XXX = ± .005 | MICROINCHES | ☐ | | ± .004 | ± .008 | ± .012 | ± .016 | .024 ± .04 |

QUANTITY & VARIATION

THIRD ANGLE PROJECTION

DO NOT SCALE DRAWING

REMOVE BURRS AND BREAK SHARP CORNERS

MATERIAL: SEE PARTS LIST

FINISH

| | | |
|---|---|---|
| DRN | S Cooper | DATE 12-19-80 |
| CH'K'D | Nelson | DATE 1-9-81 |
| DES. ENG. | Nelson | DATE 1-9-81 |
| RESP. ENG. | R A Nelson | DATE 1-9-81 |
| MFG. ENG. | Walter Richards | DATE 4-30-81 |
| NEXT HIGHER DOC. | B-DD-H826-0 | |

TITLE: RL CABLE RETRACTOR ASSY.

DOCUMENT NUMBER: SIZE D | CODE UA | NUMBER H826-0-0 | REV A

SCALE 1/2 | SHEET 1 OF 1

REVISION HISTORY

| REV. | ECO NUMBER | DATE | INIT. |
|---|---|---|---|
| A | | | |

DRD 1000

TW 1

AUTOMATED BY PRTLST.3N(42) | P A R T S  L I S T | SHEET A1 OF A1

| LINE | ITEM | DOCUMENT NUMBER | PART NUMBER | DESCRIPTION | QUANTITY PER VARIATION 00 |
|---|---|---|---|---|---|
| 1 | 1 | D-IA-7424557-0-0 | 7424557-00 | ARM CABLE CARRIER | 1 |
| 2 | 2 | C-MD-7424556-0-0 | 7424556-00 | BRKT MTG CABLE CARRIER | 1 |
| 3 | 3 | B-IA-7424555-0-0 | 7424555-00 | BRKT CABLE TEATHER REL. | 1 |
| 4 | 4 | | 9008111-00 | BUSHING,SNAP,NYLON 3/8 MGTHOLE | 1 |
| 5 | 5 | A-PS-1217870-0-0 | 1217870-00 | PIN,CLEVIS 2.50 X .25 | 1 |
| 6 | 6 | | 9009700-00 | SCREW,TRUS,PHIL,SEMS10-32X 1/2 | 2 |
| 7 | 7 | | 9007867-00 | MOUNT, PUSH,CABLE TIE | 11 |
| 8 | 8 | | 9007786-00 | RETAINER, U-NUT, 10-32 | 2 |
| 9 | 9 | | 9009642-00 | SCREW,PAN,PHIL,SEMS 8-32X 1/4 | 2 |
| 10 | 10 | | 9006662-00 | WASHER, FLAT, .500 O.D. X .187 I | 2 |
| 11 | 11 | | 9007032-00 | TIE,CABLE BUNDL.DIA 0-1-3/4"=101 | 13 |
| 12 | 12 | | 1215700-04 | CABLE ASSY,NYLON,11"LG | 1 |
| 13 | 13 | | 9009984-00 | SCREW, SEMS, PHILLIPS PAN HD. 6- | 1 |

| REVISION HISTORY | | | BASIC PART NO: 0H026 | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ENG | ECO NUMBER | REV | SECTION A OF A | DRN: A.J.ROCHA | DATE: 09-OCT-80 | D | I | G | I | T | A | L |
| | INIT | A | SECTION. VARIATION INDEX [A] 00 | CHK'D: R.A.NELSON | DATE: 01-JAN-81 | TITLE PARTS LIST<br>RL RETRACTOR ASSY | | | | | | |
| | | | [B] | DES.ENG.: R.A.NELSON | DATE: 01-JAN-81 | | | | | | | |
| | | | [C] | RESP.ENG.: R.A.NELSON | DATE: 01-JAN-81 | DOCUMENT NUMBER | | | | | | |
| | | | [D] | | | SIZE | CODE | NUMBER | REV |
| | | | [E] | MFG.ENG.: J.HESS | DATE: 01-JAN-81 | K | PL | H026-0-DBP | A |
| | | | [F] | ASSEMBLY NUMBER: D-UA-H026-0-00-0 | TOP DOCUMENT NUMBER: B-DD-H026-0-0 | | | FILE NAME: Z0701.PLS | EDIT #: 11 |



TW

## WIRE TABLE

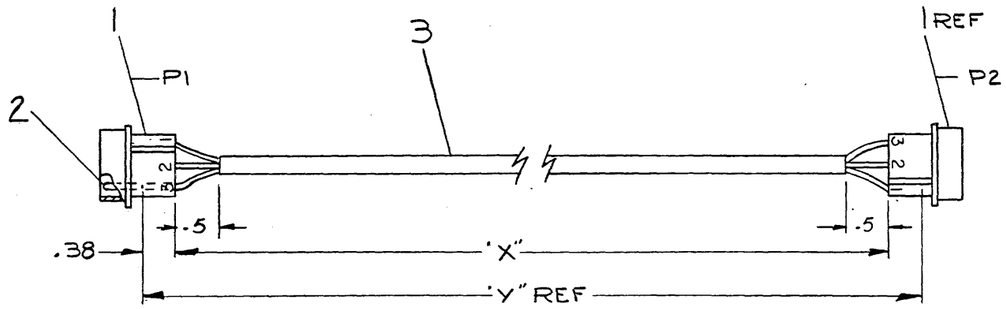
| ITEM NO | DESCRIPTION AWG | COLOR | FROM CONNECTION | FROM WITH | TO CONNECTION | TO WITH |
|---|---|---|---|---|---|---|
| 3 | 22 | RED | P1-1 | 2 | P2-1 | 2 |
| 3 | 22 | BLK | P1-2 | 2 | P2-2 | 2 |
| 3 | 22 | GRN | P1-3 | 2 | P2-3 | 2 |

## LEGEND

| NUMBER | DIM"X" VARIATION | DIM"Y" (PRECUT) REF |
|---|---|---|
| 7008288-3F | 3FT. 6IN ± 1 IN. | 3FT.6.8 IN±1 IN. |
| 7008288-8F | 8FT. 6IN ± 2 IN | 8FT. 6.8 IN. ± 2 IN. |
| 7008288-06 | 6FT. ± 2 IN. | 6FT. 0.8IN±2IN. |
| 7008288-12 | 12FT. ± 3IN. | 12FT. 0.8IN±3IN. |
| 7008288-05 | 5FT. ± 1 IN. | 5FT. 0.8IN ±2IN. |
| 7008288-10 | 10FT. ± 2IN. | 10FT.0.8IN± 3IN. |
| 7008288-15 | 15FT. ± 3IN. | 15FT.0.8IN±3IN. |
| 7008288-08 | 8FT. ± 2IN. | 8FT.0.8IN±2IN. |
| 7008288-30 | 30FT. ±7IN. | 30FT.0.8IN±7IN. |
| 7008288-40 | 40FT. ± 10 IN. | 40FT.0.8IN±10IN |
| 7008288-25 | 25FT. ± 10IN | 25FT.0.8IN±10IN |

## NOTES

1. ~~THE REMAINING BLK WIRE IS TO BE CUT FLUSH AT JACKET (BOTH ENDS.)~~




| REVISIONS | CHK | CHANGE NO. | REV. |
|---|---|---|---|
| K. Tomek 10-16-72 | KT | 7008288-00001 | A |
| R. BURTON 10-25-72 | RB | 7008288-00002 | B |
| D. LEWIS 7-1-74 | DL | 7008288-00003 | C |
| B. MINOR 3-28-75 | BM | 7008288-00004 | D |
| J. PROVIDENT 6-10-75 | JP | 7008288-00005 | E |
| F. DOLL 5-MAR-76 | FD | 7008288-00006 | F |
| J.MCINTYRE 23-APR-76 | JM | 7012401-00003 | H |
| I.MORRIS 24 MAY 77 | IM | 7008288-ML0007 | J |
| CASTELLANOS 5/2/80 | PC | | |

| A/R | DESCRIPTION | PART NO. | ITEM NO. |
|---|---|---|---|
| | WIRE, 3 COND #22 AWG | 9107756 | 3 |
| 6 | PIN MALE #60620-1 | 1209378-03 | 2 |
| 2 | PIN HOUSING #1-480305-0 | 1209351-03 | 1 |

PARTS LIST

FIRST USED ON OPTION/MODEL: PDP/11

UNLESS OTHERWISE SPECIFIED

UNLESS OTHERWISE SPECIFIED
DIMENSION IN INCHES
TOLERANCES
~~DECIMALS~~ ~~FRACTIONS~~ ANGLES
~~± .005~~ ~~± 1/64~~ ± 0°30'
FINAL SURFACE QUALITY ✓
REMOVE BURRS AND BREAK SHARP CORNERS

MATERIAL: SEE PARTS LIST

FINISH

| | | |
|---|---|---|
| DRN. S Flanders | DATE 3/20/71 | |
| CHK'D. J T | DATE 3-31-71 | |
| ENG. C R B Jr. | DATE 4-3-71 | |
| PROJ. ENG. C R B Jr. | DATE 4-7-71 | |
| PROD. | DATE 4-24-71 | |

NEXT HIGHER ASSY: D-UA-RK02-0-0

SCALE —

SHEET 1 OF 1

digital EQUIPMENT CORPORATION
MAYNARD, MASSACHUSETTS

TITLE: CABLE ASSY

| SIZE | CODE | NUMBER | REV. |
|---|---|---|---|
| C | IA | 7008288-0-0 | J |

DIST. C

SIZE C CODE IA NUMBER 7008288-0-0 REV. J

DEC FORM NO. DRC 100

ML

# DRAWING DIRECTORY



## UNIT VARIATIONS

| VAR | TITLE |
|---|---|
| H9544-HA | KIT WITH STABILIZER LEG & LEVELER FEET |
| H9544-HB | KIT WITH LEVELER FEET ONLY |
| H9544-HC | KIT WITH STABILIZER LEG ONLY |

REVISIONS
REV.
CHANGE NO.
CHK

USED ON OPTION/MODEL

SHEET 1 OF 2

| | | |
|---|---|---|
| DRN. S. ROBERTS | DATE 29MAR79 | |
| CHK'D. S. Roberts | DATE 2-Jul-79 | |
| PROJ. ENG. P. Dubé | DATE 5 JUL 79 | |
| PROD. J. Souza | DATE 5/7/79 | |

TITLE
digital
CABINET ACCESSORY KIT

| SIZE | CODE | NUMBER | REV |
|---|---|---|---|
| B | DD | H9544-H | |

DIST.

DRB 106A

MP-H9544-H0

| FIND NO. | DRAWING NO. | DESCRIPTION | TYPE |
|---|---|---|---|
| 1 | E-UA-H9544-H-Ø | CABINET ACCESSORY KIT | M |
| | K-PL-H9544-H-DBP | CABINET ACCESSORY KIT | M |
| | C-MD-7422204-0-0 | FOOT, STABILIZER | M |

| FIND NO. | DRAWING NO. | DESCRIPTION | TYPE |
|---|---|---|---|

TYPE E ELECTRICAL
M MECHANICAL
E/M ELECTRO/MECHANICAL

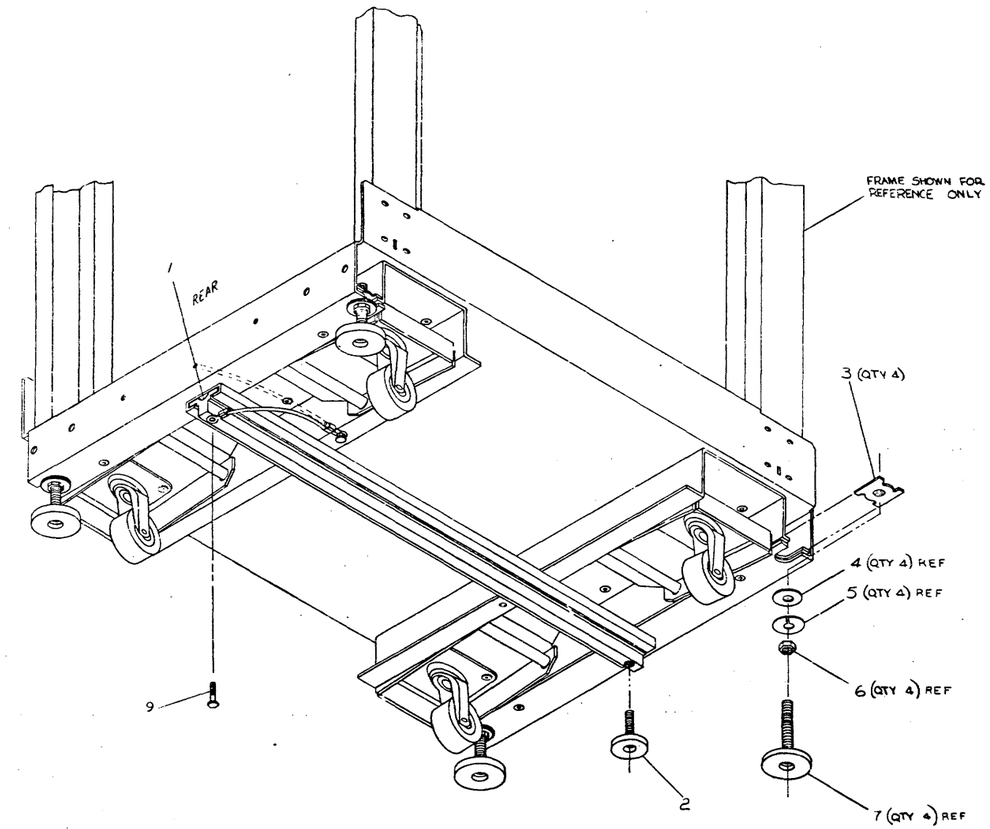
digital

| TITLE | SHEET | SIZE | CODE | NUMBER | REV |
|---|---|---|---|---|---|
| CABINET ACCESSORY KIT | 2 OF 2 | B | DD | H9544-H | |

DRB 108A

| LEGEND | |
|---|---|
| NUMBER | VARIATION |
| H9544-HA | H9544-HB KIT AND H9544-HC KIT |
| H9544-HB | KIT WITH LEVELER FEET PARTS ITEMS 3 THRU 7 |
| H9544-HC | KIT WITH STABILIZER (ITEM 1), LEVELER (ITEM 2) & SCREW (ITEM 9) |

NOTES:
1. ITEMS 3 THRU 7 ARE PART OF H9544-H (ITEM 8) HARDWARE KIT AND ARE SHOWN FOR REFERENCE ONLY.




OFF SHEETS PARTS LIST
REFER TO K-PL-H9544-H-D8P

| ITEM NO. | DESCRIPTION | DWG. PART NO. |
|---|---|---|
| 1 | H9544-H(QTY 1) | |
| 2 | 3" Caster Assy | |
| 3 | 5/16-18 x 1" Hex Head Bolt | |
| 4 | 5/16" Lock Washer | |
| 5 | 5/16" Flat Washer | |
| 6 | 5/16-18 x 2" Hex Head Bolt | |
| 7 | 5/16-18 Hex Nut | |

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES

| QUANTITY & VARIATION | ANGLES ± 30' | CLASS OF ASSURANCE | DECIMALS | 2 PLACE ± .01 | 3 PLACE ± .005 | 4 PLACE ± .0025 | 5 PLACE ± .001 |
|---|---|---|---|---|---|---|---|
| | FRACTIONS ± 1/64 Surf. 125 | MINIMUM | | ± .005 | ± .010 | ± .005 | ± .001 |
| | MACHINED | PREFERRED | | ± .010 | ± .005 | ± .001 | ± .0005 |

THIRD ANGLE PROJECTION

DO NOT SCALE DRAWING

MATERIAL: SEE PARTS LIST

FINISH: —

DRAWN: Ed Chrisman 3/84

CHK'D: Rich Bird 3/84

ENG APPR: [illegible] 3/84

PROJ. ENG. APPR.: [illegible] 3/84

NEXT HIGHER ASSY: 3-00-H9544-H

SCALE: 1/2

SHEET: 1 OF 1

FIRST USED ON: H9642-A

TITLE: CABINET ACCESSORY KIT

SIZE: B | CODE: UA | NUMBER: H9544-H-G | REV: B

DIST:

AUTOMATED BY FRTLST.3J(25) P A R T S L I S T SHEET A1 OF A1

| LINE | ITEM | DOCUMENT NUMBER | PART NUMBER | DESCRIPTION | QUANTITY PER VARIATION HA | HB | HC |
|---|---|---|---|---|---|---|---|
| 1 | 1 | C-MD-7422204-0-0 | 7422204-00 | EXT FOOT (METAL) | - | - | 1 |
| 2 | 2 | | 1216373-02 | FOOT,LEVELER 1-3/8 BASE DIA 5/16 | - | - | 1 |
| 3 | 3 | | 9008878-00 | NUT,TEE,IRR.BASE 1/2-13 S/ZIN | - | 4 | - |
| 4 | 4 | | 9009026-00 | WASHER, FLAT, .875 O.D. X .515 I | - | 4 | - |
| 5 | 5 | | 9009895-00 | WASHER, LOCK, SPLIT, .518 ID X . | - | 4 | - |
| 6 | 6 | | 9006596-00 | NUT,HEX , 1/2-13X3/4 AF X 7/ | - | 4 | - |
| 7 | 7 | | 9007601-01 | FOOT, LEVELER, CUSHION, 1/2-13, | - | 4 | - |
| 8 | 8 | | 2200022-00 | HARDWARE KIT FOR H9544-H | - | REF | - |
| 9 | 9 | B-MD-7424417-0-0 | 7424417-00 | SCREW, HEX HEAD | - | - | 1 |
| 10 | 10 | | H9544-HB | KIT OF 4 LEVELERS | 1 | - | - |
| 11 | 11 | | H9544-HC | KIT OF 1 STABILIZER LEG WITH LEV | 1 | - | - |

12 NOTE: ITEMS 3 THRU 7 ARE PART OF H9544-H HARDWARE KIT AND ARE
13 NOTE: LISTED FOR REFERENCE ONLY

| REVISION HISTORY | | | BASIC PART NO: H9544 | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ENG | ECO NUMBER | REV | SECTION A OF A | DRN: LISE GRAHAM | DATE: 02-MAR-79 | | D | I | G | I | T | A | L |
| | INITIAL | * | SECTION, VARIATION INDEX | CHK'D: S. ROBERTS | DATE: 02-MAR-79 | TITLE PARTS LIST CABINET ACCESSORY KIT | | | | | | | |
| DS | H9544-H-ML001 | A | [A] HA,HB,HC | | | | | | | | | | |
| WR | H9544-H-ML002 | B | | DES.ENG.: W.F. MC CARTHY | DATE: 02-MAR-79 | | | | | | | | |
| | | | [B] | | | DOCUMENT NUMBER | | | | | | | |
| | | | [C] | RESP.ENG.: P. DUBE | DATE: 02-MAR-79 | SIZE | CODE | NUMBER | | | | REV | |
| | | | [D] | | | | | | | | | | |
| | | | [E] | MFG.ENG.: R. CARRIER | DATE: 02-MAR-79 | K | PL | H9544-H-DBP | | | | B | |
| | | | [F] | ASSEMBLY NUMBER: E-UA-H9544-H-0 | TOP DOCUMENT NUMBER: | FILE NAME: Z0241B.PLS | | | | | | EDIT # 10 | |