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I D E N T I F I C A T I O N

PRODUCT CODE: AC-E724E-MC

PRODUCT NAME: CXGTAE0 GT-40 DEC/X11 MODULE

DATE: SEPTEMBER 1978

MAINTAINER: DEC/X11 SUPPORT GROUP

1. ABSTRACT

"GTA" IS AN "IOMODR" THAT EXERCISES ONE GT40A DECGRAPHIC-11 DISPLAY CONTROLLER AND ONE TWELVE INCH DISPLAY. IT DISPLAYS A SPECIAL TEST PATTERN BY EXECUTING ALL OF THE GT40A'S DISPLAY INSTRUCTIONS. IT ALSO INCLUDES A TEST OF THE LIGHT-PEN. IF A LIGHT-PEN FLAG IS DETECTED, THE MESSAGE "LIGHT-PEN HIT" IS DISPLAYED NEAR THE CENTER OF THE SCREEN.

2. REQUIREMENTS

HARDWARE: GT40 ALPHAGRAPHIC DISPLAY SYSTEM
STORAGE:: GTA REQUIRES:
1. DECIMAL WORDS: 937
2. OCTAL WORDS: 1651
3. OCTAL BYTES: 3522

3. PASS DEFINITION

ONE PASS OF GTA MODULE CONSISTS OF TEN ITERATIONS OF BASIC TEST SEQUENCE, WHICH RESULTS IN:

256 PROGRAM INTERRUPTS, 180,000 NON-PROCESSOR REQUESTS.

4. EXECUTION TIME

GTA RUNNING ALONE ON PDP-11/05 TAKES APPROXIMATELY ONE MINUTE.

5. CONFIGURATION REQUIREMENTS

DEFAULT PARAMETERS:

DEVADR: 172000, VECTOR: 320, BR1: 4, DEVCNT: 1

REQUIRED PARAMETERS:

NONE

6. DEVICE/OPTION SETUP

THE GT40A MUST HAVE THE POWER ON.

7. MODULE OPERATION

TEST PATTERN DESCRIPTION:

A. LINE TYPE TEST:

TO TEST THE ABILITY OF THE GT40A TO DISPLAY EACH OF THE FOUR POSSIBLE LINE TYPES, THE OUTER PERIMETER OF THE TEST PATTERN CONSISTS OF A LARGE RECTANGLE. EACH SIDE OF THE RECTANGLE IS DISPLAYED USING A DIFFERENT LINE TYPE IE: SOLID,DASH,DOT-DASH, AND DOT. (LONG VECTOR MODE)

B. CHARACTER GENERATOR TEST:

TO TEST THE ABILITY OF THE GT40A TO DISPLAY EACH MEMBER OF ITS CHARACTER SET, THREE PAIRS OF LINES ARE DISPLAYED NEAR THE TOP OF THE SCREEN. THE FIRST LINE IN EACH PAIR DISPLAYS THE CHARACTERS IN NORMAL FONT WHILE THE SECOND LINE DISPLAYS THE SAME CHARACTERS IN ITALIC FONT. THE FIRST PAIR OF LINES DISPLAYS THE 64 ASCII UPPERCASE CHARACTERS (OCTAL CODES 100-137 AND 40-77 DISPLAYED LEFT TO RIGHT). THE SECOND PAIR DISPLAYS THE 32 LOWER CASE ASCII CHARACTERS (OCTAL CODES 140-177 DISPLAYED LEFT TO RIGHT). THE THIRD PAIR DISPLAYS THE 31 SPECIAL CHARACTERS (OCTAL CODES 0-37 DISPLAYED LEFT TO RIGHT) THAT APPEAR AS APL - GREEK - SPECIAL CHARACTERS.

C. INTENSITY LEVEL TEST:

TO TEST THE ABILITY OF THE GT40A TO VARY THE INTENSITY LEVEL OF THE DISPLAY, EIGHT HORIZONTAL PARALLEL LINES ARE DISPLAYED TO THE LEFT OF CENTER OF THE TEST PATTERN. EACH LINE IS DISPLAYED WITH A DIFFERENT INTENSITY LEVEL STARTING WITH THE TOP LINE AT LEVEL 7 (THE BRIGHTEST) AND PROCEEDING DOWN TO THE BOTTOM LINE AT LEVEL 0 (THE DIMMEST). ALL LINES ARE DISPLAYED IN LONG VECTOR MODE.

D. VECTOR/RELATIVE POINT AND BLINK TEST:

TO TEST THE ABILITY OF THE GT40A TO DISPLAY VECTORS IN THE LONG, SHORT, AND RELATIVE POINT MODE AND TO BLINK A SELECTED PORTION OF THE DISPLAY, A SET OF SIX NESTED OCTAGONS IS DISPLAYED IN THE UPPER RIGHT QUADRANT OF THE SCREEN. THE TWO OUTERMOST OCTAGONS ARE DISPLAYED USING LONG VECTOR MODE, THE TWO MIDDLE ONES USING SHORT VECTOR MODE, AND THE INNERMOST TWO USING RELATIVE POINT MODE. THE USE OF RELATIVE POINT POINT MODE CAUSES THE TWO INNERMOST OCTAGONS TO BE DISPLAYED AS EIGHT INTENSIFIED POINTS FOR EACH ONE. ALTERNATE OCTAGONS STARTING WITH THE INNERMOST ONE ARE BLINKED TO TEST THE OPERATION OF THE BLINK MODE.

E. GRAPHPLOT DISPLAY TEST:

TO TEST THE ABILITY OF THE GT40A TO DISPLAY A GRAPHPLOT PATTERN, TWO EXPANDING SINE WAVE PATTERNS ARE DISPLAYED. THE FIRST SINE WAVE APPEARS SUPERIMPOSED ON A HORIZONTAL LINE ACROSS THE BOTTOM OF THE SCREEN AND EXPANDS FROM LEFT TO RIGHT. THE SECOND SINE WAVE APPEARS SUPERIMPOSED ON A VERTICAL LINE AT THE LEFT OF THE SCREEN AND EXPANDS FROM BOTTOM TO TOP. THE EXPANSION OF THE SINE WAVES IS A FUNCTION OF THE DISPLAY INTERRUPT RATE. NO SINE WAVE EXPANSION WOULD INDICATE THAT THE GT40A IS NOT INTERRUPTING THE CPU.

8. OPERATION OPTIONS

NONE

9. NON STANDARD PRINTOUTS

NONE. ALL PRINTOUTS HAVE STANDARD MEANINGS AS REPRESENTED IN DEC/X11 DOCUMENTATION.

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                                        .LIST   ME
                                        .NLIST  MD,MC,CND
                                        .TITLE  GTAE DEC/X11 SYSTEM EXERCISER MODULE
                                ;       DDXCOM  VERSION  6      23-MAY-79
                                        .LIST   BIN
                                ;*****************************************************************
000000'                         BEGIN:
000000' 052107  042501     040  MODNAM: .ASCII  /GTAE / ;MODULE NAME.
000005'     000                 XFLAG:  .BYTE   OPEN                    ;USED TO KEEP TRACK OF WBUFF USAGE
000006' 172000                  ADDR:   172000+0                        ;1ST DEVICE ADDR.
000010' 000320                  VECTOR: 320+0                           ;1ST DEVICE VECTOR.
000012'     200                 BR1:    .BYTE   PRTY4+0                 ;1ST BR LEVEL.
000013'     000                 BR2:    .BYTE   PRTY+0                  ;2ND BR LEVEL.
000014' 000001                  DVID1:  +1                              ;DEVICE INDICATOR 1.
000016' 000000                  SR1:    OPEN                            ;SWITCH REGISTER 1
000020' 000000                  SR2:    OPEN                            ;SWITCH REGISTER 2
000022' 000000                  SR3:    OPEN                            ;SWITCH REGISTER 3
000024' 000000                  SR4:    OPEN                            ;SWITCH REGISTER 4
                                ;*****************************************************************
000026' 152000                  STAT:   152000                          ;STATUS WORD.
000030' 000250'                 INIT:   START                           ;MODULE START ADDR.
000032' 000224'                 SPOINT: MODSP                           ;MODULE STACK POINTER.
000034' 000000                  PASCNT: 0                               ;PASS COUNTER.
000036' 000012                  ICONT:  10.                             ;# OF ITERATIONS PER PASS=10.
000040' 000000                  ICOUNT: 0                               ;LOC TO COUNT ITERATIONS
000042' 000000                  SOFCNT: 0                               ;LOC TO SAVE TOTAL SOFT ERRORS
000044' 000000                  HRDCNT: 0                               ;LOC TO SAVE TOTAL HARD ERRORS
000046' 000000                  SOFPAS: 0                               ;LOC TO SAVE SOFT ERRORS PER PASS
000050' 000000                  HRDPAS: 0                               ;LOC TO SAVE HARD ERRORS PER PASS
000052' 000000                  SYSCNT: 0                               ;# OF SYS ERRORS ACCUMULATED
000054' 000000                  RANNUM: 0                               ;HOLDS RANDOM # WHEN RAND MACRO IS CALLED
000056'                         CONFIG:                                 ;RESERVED FOR MONITOR USE
000056' 000000                  RES1:   0                               ;RESERVED FOR MONITOR USE
000060' 000000                  RES2:   0                               ;RESERVED FOR MONITOR USE
000062' 000000                  SVR0:   OPEN                            ;LOC TO SAVE R0.
000064' 000000                  SVR1:   OPEN                            ;LOC TO SAVE R1.
000066' 000000                  SVR2:   OPEN                            ;LOC TO SAVE R2.
000070' 000000                  SVR3:   OPEN                            ;LOC TO SAVE R3.
000072' 000000                  SVR4:   OPEN                            ;LOC TO SAVE R4.
000074' 000000                  SVR5:   OPEN                            ;LOC TO SAVE R5.
000076' 000000                  SVR6:   OPEN                            ;LOC TO SAVE R6.
000100' 000000                  CSRA:   OPEN                            ;ADDR OF CURRENT CSR.
000102'                         SBADR:                                  ;ADDR OF GOOD DATA, OR
000102' 000000                  ACSR:   OPEN                            ;CONTENTS OF CSR.
000104'                         WASADR:                                 ;ADDR OF BAD DATA, OR
000104' 000000                  ASTAT:  OPEN                            ;STATUS REG CONTENTS.
000106'                         ERRTYP:                                 ;TYPE OF ERROR
000106' 000000                  ASB:    OPEN                            ;EXPECTED DATA.
000110' 000000                  AWAS:   OPEN                            ;ACTUAL DATA.
000112' 000612'                 RSTRT:  RESTRT                          ;RESTART ADDRESS AFTER END OF PASS
000114' 000000                  WDTO:   OPEN                            ;WORDS TO MEMORY PER ITERATION
000116' 000000                  WDFR:   OPEN                            ;WORDS FROM MEMORY PER ITERATION
000120' 000000                  INTR:   OPEN                            ;# OF INTERRUPTS PER ITERATION
000122' 000045                  IDNUM:  45                              ;MODULE IDENTIFICATION NUMBER=45
000224'                         MODSP:
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                                ;*****************************************************************
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000224' 172000                    GTPC:    172000                    ;DISPLAY PC
000226' 172002                    GTSR:    172002                    ;DISPLAY STATUS REG.
000230' 172004                    GTXPOS:  172004                    ;DISPLAY X REGISTER
000232' 172006                    GTYPOS:  172006                    ;DISSPLAY Y REGISTER

000234' 000320                    GTDONE:  320                       ;DISPLAY DONE VECTOR
000236' 000322                    GTDNE1:  322

000240' 000324                    GTLPH:   324                       ;DISPLAY LIGHT-PEN VECTOR
000242' 000326                    GTLPH1:  326

000244' 000330                    GTSOTM:  330                       ;DISPLAY SHIFT-OUT/ TIME-OUT VECTOR
000246' 000332                    GTSOT1:  332

                                  ;INITILIZE GT-40 ADDRESSES AND VECTORS

000250' 012767 000740  177640     START:  MOV     #480.,WDFR         ;480. WDS FROM MEM
000256' 012767 000040  177634             MOV     #32.,INTR          ;32 INTERRUPTS
000264' 016767 177516  177732             MOV     ADDR,GTPC          ;LOAD DISPLAY P.C.
000272' 016767 177510  177726             MOV     ADDR,GTSR          ;LOAD DISPLAY STATUS
000300' 016767 177502  177722             MOV     ADDR,GTXPOS        ;LOAD DISPLAY X REG.
000306' 016767 177474  177716             MOV     ADDR,GTYPOS        ;LOAD DISPLAY Y REG.
000314' 062767 000002  177704             ADD     #2,GTSR            ;UPDATE SR VALUE
000322' 062767 000004  177700             ADD     #4,GTXPOS          ;UPDATE X VALUE
000330' 062767 000006  177674             ADD     #6,GTYPOS          ;UPDATE Y VALUE
000336' 016767 177446  177670             MOV     VECTOR,GTDONE      ;LOAD DONE VECTOR
000344' 016767 177440  177664             MOV     VECTOR,GTDNE1
000352' 016767 177432  177660             MOV     VECTOR,GTLPH       ;LOAD LIGHT-PEN VECTOR
000360' 016767 177424  177654             MOV     VECTOR,GTLPH1
000366' 016767 177416  177650             MOV     VECTOR,GTSOTM      ;LOAD SHIFT-OUT VECTOR
000374' 016767 177410  177644             MOV     VECTOR,GTSOT1
000402' 062767 000002  177626             ADD     #2,GTDNE1          ;UPDATE DONE VECTOR
000410' 062767 000004  177622             ADD     #4,GTLPH           ;UPDATE LIGHT-PEN VECTOR
000416' 062767 000006  177616             ADD     #6,GTLPH1
000424' 062767 000010  177612             ADD     #10,GTSOTM         ;UPDATE SHIFT-OUT VECTOR
000432' 062767 000012  177606             ADD     #12,GTSOT1
000440' 012777 000542' 177566             MOV     #GTSTOP,@GTDONE    ;LOAD DONE VECTOR
000446' 116777 177340  177562             MOVB    BR1,@GTDNE1
000454' 012777 000632' 177556             MOV     #GTLPEN,@GTLPH     ;LOAD LIGHT-PEN VECTOR
000462' 116777 177324  177552             MOVB    BR1,@GTLPH1
000470' 012777 000660' 177546             MOV     #GTSHIF,@GTSOTM    ;LOAD SHIFT-OUT VECTOR
000476' 116777 177310  177542             MOVB    BR1,@GTSOT1
000504' 012767 000040  000026             MOV     #40,GTDLY0
000512' 012767 003514' 002744             MOV     #FILEOC,FILEOA
000520' 012767 174104  000242             MOV     #STATSB!INCR+4,GRPINC
000526' 012777 000706' 177470             MOV     #FILEO,@GTPC       ;START THE DISPLAY
000534' 104400 000000'                    EXIT$,BEGIN                ;EXIT TO MONITOR. MODULE WAIT FOR INTERRUPT.

000540' 000010                    GTDLY0: 10
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000542'                           GTSTOP:
                                          ;-------------------------------------------------------------
000542' 000004 000000' 000550'            PIRQ$,BEGIN,1$           ; QUEUE UP TO CONTINUE AT 1$ AND RTI
                                          ;-------------------------------------------------------------
000550' 005367 177764             1$:     DEC     GTDLY0           ;DECREMENT DELAY
000554' 001016                            BNE     RESTRT           ;BRANCH IF NOT
000556' 012767 000040  177754             MOV     #40,GTDLY0       ;RESET DELAY
000564' 005267 000200                     INC     GRPINC           ;UPDATE GRAPH INCREMENT
000570' 022767 174110  000172             CMP     #STATSB!INCR+10,GRPINC  ;TEST FOR INCREMENT
000576' 001005                            BNE     RESTRT           ;BRANCH IF NOT
000600' 012767 174100  000162             MOV     #STATSB!INCR,GRPINC     ;RESET GRAPH INCREMENT
000606' 104413 000000'                    ENDIT$,BEGIN             ;SIGNAL END OF ITERATION.
                                                                   ;MONITOR SHALL TEST END OF PASS
000612' 012767 003514' 002644     RESTRT: MOV     #FILEOC,FILEOA
000620' 012777 000001  177376             MOV     #1,@GTPC         ;RESUME THE DISPLAY
000626' 104400 000000'                    EXIT$,BEGIN                  ;EXIT TO MONITOR. MODULE WAIT FOR INTERRUPT.


000632'                           GTLPEN:
                                          ;-------------------------------------------------------------
000632' 000004 000000' 000640'            PIRQ$,BEGIN,1$           ; QUEUE UP TO CONTINUE AT 1$ AND RTI
                                          ;-------------------------------------------------------------
000640' 012767 003466' 002616     1$:     MOV     #FILEOB,FILEOA
000646' 012777 000001  177350             MOV     #1,@GTPC         ;RESUME THE DISPLAY
000654' 104400 000000'                    EXIT$,BEGIN                  ;EXIT TO MONITOR. MODULE WAIT FOR INTERRUPT.

000660'                           GTSHIF:
                                          ;-------------------------------------------------------------
000660' 000004 000000' 000666'            PIRQ$,BEGIN,1$           ; QUEUE UP TO CONTINUE AT 1$ AND RTI
                                          ;-------------------------------------------------------------
000666' 012767 000024  177212     1$:     MOV     #24,ERRTYP       ;TIME OUT SHIFT OUT ERROR
                                          ;*************************************************************
000674' 104405 000000' 000000             HRDER$,BEGIN,NULL        ;GT-40 SHIFT-OUT/TIME-OUT ERROR
                                          ;*************************************************************
000702' 104410 000000'                    END$,BEGIN               ;
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335
336
337
338  000706' 114140                  FILE0:  POINT!LPON
339  000710' 000000                          0
340  000712' 001377                          MAXY
341  000714' 174300                          STATSB!LFLITE
342  000716' 113004                          LONGV!INT4!LINE0
343  000720' 041777                          INTX!MAXX
344  000722' 000000                          0
345  000724' 110005                          LONGV!LINE1             ;RIGHT LINE
346  000726' 040000                          INTX
347  000730' 021377                          MINUSX!MAXY
348  000732' 110006                          LONGV!LINE2             ;BOTTOM LINE
349  000734' 061777                          INTX!MINUSX!MAXX
350  000736' 000000                          0
351  000740' 110007                          LONGV!LINE3             ;LEFT LINE
352  000742' 040000                          INTX
353  000744' 001377                          MAXY
354
355  000746' 114004                          POINT!LINE0
356  000750' 000400                          400
357  000752' 000200                          200
358  000754' 110000                          LONGV
359  000756' 041200                          INTX+1200
360  000760' 000000                          0
361  000762' 114000                          POINT
362  000764' 000440                          440
363  000766' 000200                          200
364  000770' 174104                  GRPINC: STATSB!INCR+4
365  000772' 124000                          GRAPHY
366  000774' 000200                           0200
367  000776' 000205                           0205
368  001000' 000212                           0212
369  001002' 000217                           0217
370  001004' 000224                           0224
371  001006' 000231                           0231
372  001010' 000236                           0236
373  001012' 000243                           0243
374  001014' 000247                           0247
375  001016' 000253                           0253
376  001020' 000257                           0257
377  001022' 000262                           0262
378  001024' 000265                           0265
379  001026' 000270                           0270
380  001030' 000272                           0272
381  001032' 000274                           0274
382  001034' 000276                           0276
383  001036' 000277                           0277
384  001040' 000277                           0277
385  001042' 000277                           0277
386  001044' 000277                           0277
387  001046' 000276                           0276
388  001050' 000275                           0275
389  001052' 000274                           0274
390  001054' 000272                           0272
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391  001056' 000267                           0267
392  001060' 000264                           0264
393  001062' 000261                           0261
394  001064' 000256                           0256
395  001066' 000252                           0252
396  001070' 000246                           0246
397  001072' 000241                           0241
398  001074' 000235                           0235
399  001076' 000230                           0230
400  001100' 000223                           0223
401  001102' 000216                           0216
402  001104' 000211                           0211
403  001106' 000203                           0203
404  001110' 000176                           0176
405  001112' 000171                           0171
406  001114' 000163                           0163
407  001116' 000156                           0156
408  001120' 000151                           0151
409  001122' 000144                           0144
410  001124' 000137                           0137
411  001126' 000133                           0133
412  001130' 000127                           0127
413  001132' 000123                           0123
414  001134' 000117                           0117
415  001136' 000114                           0114
416  001140' 000111                           0111
417  001142' 000106                           0106
418  001144' 000104                           0104
419  001146' 000102                           0102
420  001150' 000101                           0101
421  001152' 000100                           0100
422  001154' 000100                           0100
423  001156' 000100                           0100
424  001160' 000100                           0100
425  001162' 000101                           0101
426  001164' 000102                           0102
427  001166' 000104                           0104
428  001170' 000106                           0106
429  001172' 000111                           0111
430  001174' 000113                           0113
431  001176' 000117                           0117
432  001200' 000122                           0122
433  001202' 000126                           0126
434  001204' 000132                           0132
435  001206' 000137                           0137
436  001210' 000144                           0144
437  001212' 000151                           0151
438  001214' 000156                           0156
439  001216' 000163                           0163
440  001220' 000170                           0170
441  001222' 000175                           0175
442  001224' 000203                           0203
443  001226' 000210                           0210
444  001230' 000215                           0215
445  001232' 000222                           0222
446  001234' 000227                           0227
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  447  001236' 000234                          0234
  448  001240' 000241                          0241
  449  001242' 000245                          0245
  450  001244' 000252                          0252
  451  001246' 000255                          0255
  452  001250' 000261                          0261
  453  001252' 000264                          0264
  454  001254' 000267                          0267
  455  001256' 000271                          0271
  456  001260' 000274                          0274
  457  001262' 000275                          0275
  458  001264' 000276                          0276
  459  001266' 000277                          0277
  460  001270' 000277                          0277
  461  001272' 000277                          0277
  462  001274' 000277                          0277
  463  001276' 000276                          0276
  464  001300' 000274                          0274
  465  001302' 000273                          0273
  466  001304' 000270                          0270
  467  001306' 000266                          0266
  468  001310' 000263                          0263
  469  001312' 000257                          0257
  470  001314' 000254                          0254
  471  001316' 000247                          0247
  472  001320' 000243                          0243
  473  001322' 000237                          0237
  474  001324' 000232                          0232
  475  001326' 000225                          0225
  476  001330' 000220                          0220
  477  001332' 000213                          0213
  478  001334' 000205                          0205
  479  001336' 000200                          0200
  480  001340' 000173                          0173
  481  001342' 000165                          0165
  482  001344' 000160                          0160
  483  001346' 000153                          0153
  484  001350' 000146                          0146
  485  001352' 000141                          0141
  486  001354' 000135                          0135
  487  001356' 000130                          0130
  488  001360' 000124                          0124
  489  001362' 000120                          0120
  490  001364' 000115                          0115
  491  001366' 000112                          0112
  492  001370' 000107                          0107
  493  001372' 000105                          0105
  494  001374' 000103                          0103
  495  001376' 000101                          0101
  496  001400' 000100                          0100
  497  001402' 000100                          0100
  498  001404' 000100                          0100
  499  001406' 000100                          0100
  500  001410' 000100                          0100
  501  001412' 000102                          0102
  502  001414' 000103                          0103
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  503  001416' 000105                          0105
  504  001420' 000107                          0107
  505  001422' 000112                          0112
  506  001424' 000115                          0115
  507  001426' 000121                          0121
  508  001430' 000125                          0125
  509  001432' 000131                          0131
  510  001434' 000135                          0135
  511  001436' 000142                          0142
  512  001440' 000147                          0147
  513  001442' 000154                          0154
  514  001444' 000161                          0161
  515  001446' 000166                          0166
  516  001450' 000173                          0173
  517
  518  001452' 114000                          POINT
  519  001454' 000200                          200
  520  001456' 000040                          40
  521  001460' 110000                          LONGV
  522  001462' 040000                          INTX
  523  001464' 001200                          1200
  524  001466' 114000                          POINT
  525  001470' 000200                          200
  526  001472' 000100                          100
  527  001474' 120000                          GRAPHX
  528  001476' 000200                          0200
  529  001500' 000205                          0205
  530  001502' 000212                          0212
  531  001504' 000217                          0217
  532  001506' 000224                          0224
  533  001510' 000231                          0231
  534  001512' 000236                          0236
  535  001514' 000243                          0243
  536  001516' 000247                          0247
  537  001520' 000253                          0253
  538  001522' 000257                          0257
  539  001524' 000262                          0262
  540  001526' 000265                          0265
  541  001530' 000270                          0270
  542  001532' 000272                          0272
  543  001534' 000274                          0274
  544  001536' 000276                          0276
  545  001540' 000277                          0277
  546  001542' 000277                          0277
  547  001544' 000277                          0277
  548  001546' 000277                          0277
  549  001550' 000276                          0276
  550  001552' 000275                          0275
  551  001554' 000274                          0274
  552  001556' 000272                          0272
  553  001560' 000267                          0267
  554  001562' 000264                          0264
  555  001564' 000261                          0261
  556  001566' 000256                          0256
  557  001570' 000252                          0252
  558  001572' 000246                          0246
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  559  001574' 000241                    0241
  560  001576' 000235                    0235
  561  001600' 000230                    0230
  562  001602' 000223                    0223
  563  001604' 000216                    0216
  564  001606' 000211                    0211
  565  001610' 000203                    0203
  566  001612' 000176                    0176
  567  001614' 000171                    0171
  568  001616' 000163                    0163
  569  001620' 000156                    0156
  570  001622' 000151                    0151
  571  001624' 000144                    0144
  572  001626' 000137                    0137
  573  001630' 000133                    0133
  574  001632' 000127                    0127
  575  001634' 000123                    0123
  576  001636' 000117                    0117
  577  001640' 000114                    0114
  578  001642' 000111                    0111
  579  001644' 000106                    0106
  580  001646' 000104                    0104
  581  001650' 000102                    0102
  582  001652' 000101                    0101
  583  001654' 000100                    0100
  584  001656' 000100                    0100
  585  001660' 000100                    0100
  586  001662' 000100                    0100
  587  001664' 000101                    0101
  588  001666' 000102                    0102
  589  001670' 000104                    0104
  590  001672' 000106                    0106
  591  001674' 000111                    0111
  592  001676' 000113                    0113
  593  001700' 000117                    0117
  594  001702' 000122                    0122
  595  001704' 000126                    0126
  596  001706' 000132                    0132
  597  001710' 000137                    0137
  598  001712' 000144                    0144
  599  001714' 000151                    0151
  600  001716' 000156                    0156
  601  001720' 000163                    0163
  602  001722' 000170                    0170
  603  001724' 000175                    0175
  604  001726' 000203                    0203
  605  001730' 000210                    0210
  606  001732' 000215                    0215
  607  001734' 000222                    0222
  608  001736' 000227                    0227
  609  001740' 000234                    0234
  610  001742' 000241                    0241
  611  001744' 000245                    0245
  612  001746' 000252                    0252
  613  001750' 000255                    0255
  614  001752' 000261                    0261
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  615  001754' 000264                    0264
  616  001756' 000267                    0267
  617  001760' 000271                    0271
  618  001762' 000274                    0274
  619  001764' 000275                    0275
  620  001766' 000276                    0276
  621  001770' 000277                    0277
  622  001772' 000277                    0277
  623  001774' 000277                    0277
  624  001776' 000277                    0277
  625  002000' 000276                    0276
  626  002002' 000274                    0274
  627  002004' 000273                    0273
  628  002006' 000270                    0270
  629  002010' 000266                    0266
  630  002012' 000263                    0263
  631  002014' 000257                    0257
  632  002016' 000254                    0254
  633  002020' 000247                    0247
  634  002022' 000243                    0243
  635  002024' 000237                    0237
  636  002026' 000232                    0232
  637  002030' 000225                    0225
  638  002032' 000220                    0220
  639  002034' 000213                    0213
  640  002036' 000205                    0205
  641  002040' 000200                    0200
  642  002042' 000173                    0173
  643  002044' 000165                    0165
  644  002046' 000160                    0160
  645  002050' 000153                    0153
  646  002052' 000146                    0146
  647  002054' 000141                    0141
  648  002056' 000135                    0135
  649  002060' 000130                    0130
  650  002062' 000124                    0124
  651  002064' 000120                    0120
  652  002066' 000115                    0115
  653  002070' 000112                    0112
  654  002072' 000107                    0107
  655  002074' 000105                    0105
  656  002076' 000103                    0103
  657  002100' 000101                    0101
  658  002102' 000100                    0100
  659  002104' 000100                    0100
  660  002106' 000100                    0100
  661  002110' 000100                    0100
  662  002112' 000100                    0100
  663  002114' 000102                    0102
  664  002116' 000103                    0103
  665  002120' 000105                    0105
  666  002122' 000107                    0107
  667  002124' 000112                    0112
  668  002126' 000115                    0115
  669  002130' 000121                    0121
  670  002132' 000125                    0125
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   671  002134' 000131                          0131
   672  002136' 000135                          0135
   673  002140' 000142                          0142
   674  002142' 000147                          0147
   675  002144' 000154                          0154
   676  002146' 000161                          0161
   677  002150' 000166                          0166
   678  002152' 000173                          0173
   679
   680  002154' 114000                          POINT
   681  002156' 001434                          1434
   682  002160' 000724                          724
   683  002162' 130030                          RELATV!BLKON
   684  002164' 041600                          INTX+1600
   685  002166' 041607                          INTX+1600+7
   686  002170' 040007                          INTX+7
   687  002172' 061607                          INTX!MINUSX+1600+7
   688  002174' 061600                          INTX!MINUSX+1600
   689  002176' 061707                          INTX!MINUSX+1600+MINSUY+7
   690  002200' 040107                          INTX+MINSUY+7
   691  002202' 041707                          INTX+1600+MINSUY+7
   692  002204' 114000                          POINT
   693  002206' 001430                          1430
   694  002210' 000710                          710
   695  002212' 130020                          RELATV!BLKOFF
   696  002214' 043600                          INTX+3600
   697  002216' 043617                          INTX+3600+17
   698  002220' 040017                          INTX+17
   699  002222' 063617                          INTX!MINUSX+3600+17
   700  002224' 063600                          INTX!MINUSX+3600
   701  002226' 063717                          INTX!MINUSX+3600+MINSUY+17
   702  002230' 040117                          INTX+MINSUY+17
   703  002232' 043717                          INTX+3600+MINSUY+17
   704  002234' 114000                          POINT
   705  002236' 001420                          1420
   706  002240' 000660                          660
   707  002242' 104030                          SHORTV!BLKON
   708  002244' 047600                          INTX+7600
   709  002246' 047637                          INTX+7600+37
   710  002250' 040037                          INTX+37
   711  002252' 067637                          INTX!MINUSX+7600+37
   712  002254' 067600                          INTX!MINUSX+7600
   713  002256' 067737                          INTX!MINUSX+7600+MINSUY+37
   714  002260' 040137                          INTX+MINSUY+37
   715  002262' 047737                          INTX+7600+MINSUY+37
   716  002264' 114000                          POINT
   717  002266' 001400                          1400
   718  002270' 000600                          600
   719  002272' 104020                          SHORTV!BLKOFF
   720  002274' 057600                          INTX+17600
   721  002276' 057677                          INTX+17600+77
   722  002300' 040077                          INTX+77
   723  002302' 077677                          INTX!MINUSX+17600+77
   724  002304' 077600                          INTX!MINUSX+17600
   725  002306' 077777                          INTX!MINUSX+17600+MINSUY+77
   726  002310' 040177                          INTX+MINSUY+77
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   727  002312' 057777                          INTX+17600+MINSUY+77
   728  002314' 114030                          POINT!BLKON
   729  002316' 001360                          1360
   730  002320' 000520                          520
   731  002322' 110000                          LONGV                           ;OCTOGON BY LENGTH OF 137
   732  002324' 040137                          INTX+137
   733  002326' 000000                          0
   734  002330' 040137                          INTX+137
   735  002332' 000137                          137
   736  002334' 040000                          INTX
   737  002336' 000137                          137
   738  002340' 060137                          INTX!MINUSX+137
   739  002342' 000137                          137
   740  002344' 060137                          INTX!MINUSX+137
   741  002346' 000000                          0
   742  002350' 060137                          INTX!MINUSX+137
   743  002352' 020137                          MINUSX+137
   744  002354' 040000                          INTX
   745  002356' 020137                          MINUSX+137
   746  002360' 040137                          INTX+137
   747  002362' 020137                          MINUSX+137
   748  002364' 114120                          POINT!BLKOFF!LPOFF
   749  002366' 001340                          1340
   750  002370' 000440                          440
   751  002372' 110000                          LONGV                           ;OCTOGON BY LENGTH OF 177
   752  002374' 040177                          INTX+177
   753  002376' 000000                          0
   754  002400' 040177                          INTX+177
   755  002402' 000177                          177
   756  002404' 040000                          INTX
   757  002406' 000177                          177
   758  002410' 060177                          INTX!MINUSX+177
   759  002412' 000177                          177
   760  002414' 060177                          INTX!MINUSX+177
   761  002416' 000000                          0
   762  002420' 060177                          INTX!MINUSX+177
   763  002422' 020177                          MINUSX+177
   764  002424' 040000                          INTX
   765  002426' 020177                          MINUSX+177
   766  002430' 040177                          INTX+177
   767  002432' 020177                          MINUSX+177
   768
   769  002434' 114140                          POINT!LPON
   770  002436' 000100                          100
   771  002440' 001277                          MAXV-100
   772  002442' 164000                          DNOP
   773  002444' 170040                          STATSA!ITAL0
   774  002446' 100000                          CHAR
   775
   776  002450' 040500  041502  042504          .ASCII  /@ABCDEFGHIJKLMNOPQRSTUVWXYZ[\]^_/
   777  002456' 043506  044510  045512
   778  002464' 046514  047516  050520
   779  002472' 051522  052524  053526
   780  002500' 054530  055532  056534
   781  002506' 057536
   782  002510' 020440  021442  022444          .ASCII  / !"#$%&'()*+,-./0123456789:;<=>?/
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   793  002516' 023446  024450  025452
   794  002524' 026454  027456  030460
   795  002532' 031462  032464  033466
   796  002540' 034470  025472  036474
   797  002546' 037476
   798
   799  002550' 164000                          .EVEN
   800  002552' 170060                          UNDF
   801  002554' 114000                          STATSAIITAL1
   802  002556' 000100                          POINT
   803  002560' 001247                          100
   804  002562' 100000                          MAXV-130
   805                                          CHAR
   806
   807  002564' 040500  041502  042504          .ASCII  ' !"#$%&'()*+,-./0123456789:;<=>?@
   808  002572' 043506  044510  045512
   809  002600' 046514  047516  050520
   810  002606' 051522  052524  053526
   811  002614' 054530  055532  056534
   812  002622' 057536
   813  002624' 020440  021442  022444          .ASCII  ' !"#$%&'()*+,-./0123456789:;<=>?@
   814  002632' 023446  024450  025452
   815  002640' 026454  027456  030460
   816  002646' 031462  032464  033466
   817  002654' 034470  025472  036474
   818  002662' 037476
   819                                          .EVEN
   820  002664' 170040                          STATSAIITALO
   821  002666' 114000                          POINT
   822  002670' 000220                          220
   823  002672' 001177                          MAXV-200
   824  002674' 100000                          CHAR
   825
   826  002676'     140     141     142          .BYTE   140,141,142,143,144,145,146,147
   827  002701'     143     144     145
   828  002704'     146     147
   829  002706'     150     151     152          .BYTE   150,151,152,153,154,155,156,157
   830  002711'     153     154     155
   831  002714'     156     157
   832  002716'     160     161     162          .BYTE   160,161,162,163,164,165,166,167
   833  002721'     163     164     165
   834  002724'     166     167
   835  002726'     170     171     172          .BYTE   170,171,172,173,174,175,176,177
   836  002731'     173     174     175
   837  002734'     176     177
   838                                          .EVEN
   839  002736' 170060                          STATSAIITAL1
   840  002740' 114000                          POINT
   841  002742' 000220                          220
   842  002744' 001147                          MAXV-230
   843  002746' 100000                          CHAR
   844
   845  002750'     140     141     142          .BYTE   140,141,142,143,144,145,146,147
   846  002753'     143     144     145
   847  002756'     146     147
   848  002760'     150     151     152          .BYTE   150,151,152,153,154,155,156,157
   849  002763'     153     154     155
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   850  002766'     156     157
   851  002770'     160     161     162          .BYTE   160,161,162,163,164,165,166,167
   852  002773'     163     164     165
   853  002776'     166     167
   854  003000'     170     171     172          .BYTE   170,171,172,173,174,175,176,177
   855  003003'     173     174     175
   856  003006'     176     177
   857                                          .EVEN
   858  003010' 170040                          STATSAIITALO
   859  003012' 114000                          POINT
   860  003014' 000220                          220
   861  003016' 001077                          MAXV-300
   862  003020' 100000                          CHAR
   863
   864  003022'     016     000     001          .BYTE   16,0,1,2,3,4,5,6,7,10,11,12,13,14,15,16
   865  003025'     002     003     004
   866  003030'     005     006     007
   867  003033'     010     011     012
   868  003036'     013     014     015
   869  003041'     016
   870  003042'     020     021     022          .BYTE   20,21,22,23,24,25,26,27,30,31,32,33,34,35,36,37,17,0
   871  003045'     023     024     025
   872  003050'     026     027     030
   873  003053'     031     032     033
   874  003056'     034     035     036
   875  003061'     037     017     000
   876                                          .EVEN
   877  003064' 170060                          STATSAIITAL1
   878  003066' 114000                          POINT
   879  003070' 000220                          220
   880  003072' 001047                          MAXV-330
   881  003074' 100000                          CHAR
   882
   883  003076'     016     000     001          .BYTE   16,0,1,2,3,4,5,6,7,10,11,12,13,14,15,16
   884  003101'     002     003     004
   885  003104'     005     006     007
   886  003107'     010     011     012
   887  003112'     013     014     015
   888  003115'     016
   889  003116'     020     021     022          .BYTE   20,21,22,23,24,25,26,27,30,31,32,33,34,35,36,37,17,0
   890  003121'     023     024     025
   891  003124'     026     027     030
   892  003127'     031     032     033
   893  003132'     034     035     036
   894  003135'     037     017     000
   895                                          .EVEN
   896  003140' 114000                          POINT
   897  003142' 000600                          600
   898  003144' 000320                          320
   899  003146' 100000                          CHAR
   900  003150' 042504  027503  030530          .ASCIZ  'DEC/X11 PDP-11 SYSTEM EXERCISER'
   901  003156' 020061  042120  026520
   902  003164' 030461  051440  051531
   903  003172' 042524  020115  054105
   904  003200' 051105  044503  042523
   905  003206' 000122
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  895  003210' 114000                          POINT
  896  003212' 000400                          400
  897  003214' 000020                          20
  898  003216' 100000                          CHAR
  899  003220' 042504  043503  040522          .ASCIZ  "DECGRAPHIC-11 GT-40 ALPHANUMERIC DISPLAY SUBSYSTEM"
  900  003226' 044120  041511  030455
  901  003234' 020061  052107  032055
  902  003242' 020060  046101  044120
  903  003250' 043501  040522  044120
  904  003256' 041511  042040  051511
  905  003264' 046120  054501  052040
  906  003272' 051105  044515  040516
  907  003300' 000114
  908  003302' 170040                          STATSA!!TAL0
  909  003304' 114000                          POINT
  910  003306' 000340                          340
  911  003310' 001000                          1000
  912  003312' 113604                          LONGV!!INT7!LIN60
  913  003314' 040400                          INTX+400
  914  003316' 000000                          0
  915  003320' 114000                          POINT
  916  003322' 000340                          340
  917  003324' 000740                          740
  918  003326' 113400                          LONGV!!INT6
  919  003330' 040400                          INTX+400
  920  003332' 000000                          0
  921  003334' 114000                          POINT
  922  003336' 000340                          340
  923  003340' 000700                          700
  924  003342' 113200                          LONGV!!INT5
  925  003344' 040400                          INTX+400
  926  003346' 000000                          0
  927  003350' 114000                          POINT
  928  003352' 000340                          340
  929  003354' 000640                          640
  930  003356' 113000                          LONGV!!INT4
  931  003360' 040400                          INTX+400
  932  003362' 000000                          0
  933  003364' 114000                          POINT
  934  003366' 000340                          340
  935  003370' 000600                          600
  936  003372' 112600                          LONGV!!INT3
  937  003374' 040400                          INTX+400
  938  003376' 000000                          0
  939  003400' 114000                          POINT
  940  003402' 000340                          340
  941  003404' 000540                          540
  942  003406' 112400                          LONGV!!INT2
  943  003410' 040400                          INTX+400
  944  003412' 000000                          0
  945  003414' 114000                          POINT
  946  003416' 000340                          340
  947  003420' 000500                          500
  948  003422' 112200                          LONGV!!INT1
  949  003424' 040400                          INTX+400
  950  003426' 000000                          0
```



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  951  003430' 114000                          POINT
  952  003432' 000340                          340
  953  003434' 000440                          440
  954  003436' 112000                          LONGV!!INT0
  955  003440' 040400                          INTX+400
  956  003442' 000000                          0
  957  003444' 164000                          DNOP
  958  003446' 164000                          DNOP
  959  003450' 164000                          DNOP
  960  003452' 164000                          DNOP
  961  003454' 164000                          DNOP
  962  003456' 164000                          DNOP
  963  003460' 164000                          DNOP
  964  003462' 160000                          DJMP
  965  003464' 003514'             FILE0A:     FILE0C
  966  003466' 117000              FILE0B:     POINT!INT4
  967  003470' 001000                          1000
  968  003472' 000440                          440
  969  003474' 100000                          CHAR
  970  003476' 044514  044107  026524          .ASCIZ  /LIGHT-PEN HIT/
  971  003504' 042520  020116  044510
  972  003512' 000124
  973                                          .EVEN
  974  003514' 173400              FILE0C:     DSTOP
  975  003516' 160000                          DJMP
  976  003520' 000706'                         FILE0
  977          000001                          .END
```

```
ACSR     000102R          234#
ADDR     000006P          200#     267      268      269      270
ADDR22=  001000           247#
ASR      000106P          238#
ASTAT    000104R          236#
AWAS     000110R          239#
BEGIN    000000R          197#     295      300      309      313      318      322      326      330      332
BIT0   = 000001           247#
BIT1   = 000002           247#
BIT10  = 002000           247#
BIT11  = 004000           247#
BIT12  = 010000           247#
BIT13  = 020000           247#
BIT14  = 040000           247#
BIT15  = 100000           247#
BIT2   = 000004           247#
BIT3   = 000010           247#
BIT4   = 000020           247#
BIT5   = 000040           247#
BIT6   = 000100           247#
BIT7   = 000200           247#
BIT8   = 000400           247#
BIT9   = 001000           247#
BLKOFF=  000020           193#     695      719      748
BLKON  = 000030           193#     683      707      728
BREAK$=  104407           247#
BR1      000012R          202#     286      289      290
BR2      000013R          203#
BTOD$  = 104421           247#
CDATA$=  104412           247#
CHAR   = 100000           193#     774      794      813      832      851      870      888      898      969
CONFIG   000056R          222#
CSRA     000100R          232#
DATCK$=  104411           247#
DATER$=  104404           247#
DJMP   = 160000           193#     964      975
DNOP   = 164000           193#     772      789      957      958      959      960      961      962      963
DSTOP  = 173400           193#     974
DVID1    000014R          204#
ENDIT$=  104413           247#     309
END$   = 104410           247#     332
ERRTYP   000106P          237#     328*
EXIT$  = 104400           247#     295      313      322
FILE0    000706R          294      318#     976
FILE0A   003464R          292*     311*     320*     965#
FILE0B   003466R          320      966#
FILE0C   003514R          292      311      965      974#
GETPA$=  104415           247#
GRAPHX=  120000           193#     527
GRAPHY=  124000           193#     365
GRPINC   000770R          293*     305*     306      308*     364#
GTDLY0   000540R          291*     297#     302*     304*
GTDNE1   000236R          295#     275*     280*     296*
GTDONE   000234R          254#     274*     285*
GTLPEN   000632R          287      316#
GTLPH    000240R          257#     276*     281*     287*
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GTLPH1   000242R          258#     277*     282*     288*
GTPC     000224R          249#     267*     294*     312*     321*
GTSHIF   000660R          289      324#
GTSOTM   000244R          260#     278*     283*     286*
GTSOT1   000246R          261#     279*     284*     290*
GTSR     000226R          250#     268*     271*
GTSTOP   000542R          285      298#
GTXPOS   000230R          251#     269*     272*
GTYPOS   000232R          252#     270*     273*
GWBUF$=  104414           247#
HRDCNT   000044R          217#
HRDER$=  104405           247#     330
HRDPA$   000050R          219#
ICONT    000036R          214#
ICOUNT   000040R          215#
IDNUM    000122R          244#
INCR   = 000100           193#     293      306      308      364
INIT     000030R          211#
INTR     000120R          243#     266*
INTX   = 040000           193#     343      346      349      352      359      522      684      685      686      687      688      689
                          690      691      696      697      698      699      700      701      702      703      708      709      710
                          711      712      713      714      715      720      721      722      723      724      725      726      727
                          732      734      736      738      740      742      744      746      752      754      756      758      760
                          762      764      766      913      919      925      931      937      943      949      955
INT0   = 002000           193#     954
INT1   = 002200           193#     948
INT2   = 002400           193#     942
INT3   = 002600           193#     936
INT4   = 003000           193#     342      930      966
INT5   = 003200           193#     924
INT6   = 003400           193#     918
INT7   = 003600           193#     912
ITAL0  = 000040           193#     773      809      847      908
ITAL1  = 000060           193#     790      828      866
LINE0  = 000004           193#     342      355      912
LINE1  = 000005           193#     345
LINE2  = 000006           193#     348
LINE3  = 000007           193#     351
LONGV  = 110000           193#     342      345      348      351      358      521      731      751      912      918      924      930
                          936      942      948      954
LPDARK=  000200           193#
LPLITE=  000300           193#     341
LPOFF  = 000100           193#     748
LPON   = 000140           193#     339      769
MAP22$=  104416           247#
MAXSX  = 017600           193#
MAXSY  = 000077           193#
MAXX   = 001777           193#     343      349
MAXY   = 001377           193#     340      347      353      771      793      812      831      850      869
MINSUY=  000100           193#     689      690      691      701      702      703      713      714      715      725      726      727
MINUSX=  020000           193#     347      349      697      698      699      700      701      711      712      713      723
                          724      725      738      740      742      743      745      747      758      760      762      763      765
                          767
MINUSY=  020000           193#
MODNAM   000000R          198#
MODSP    000224R          212      245#
```

```
MSGN$ = 104403       247#
MSGS$ = 104402       247#
MSG$  = 104401       247#
NULL  = 000000       247#    330
OPEN  = 000000       199     205     206     207     208     225     226     227     228     229     230     231     232
                     234     236     238     239     241     242     243     247*
OTOA$ = 104420       247#
PASCNT  000034R      213#
PIRQ$ = 000004       247#    300     318     326
POINT = 114000       193#    338     355     361     519     524     [illegible] [illegible] 704     716     [illegible] [illegible] [illegible]
                     791     810     829     848     867     885     [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible]
                     945     951     966
POPSP = 005726       247#
POPSP2= 022626       247#
PRTY  = 000000       203     247#
PRTY0 = 000000       247#
PRTY1 = 000040       247#
PRTY2 = 000100       247#
PRTY3 = 000140       247#
PRTY4 = 000200       202     247#
PRTY5 = 000240       247#
PRTY6 = 000300       247#
PRTY7 = 000340       247#
PS    = 177776       247#
PSW   = 177776       247#
PUSH  = 005746       247#
PUSH2 = 024646       247#
RAND$ = 104417       247#
RANNUM  000054R      221#
RELATV= 130000       193#    683     695
RESTRT  000612R      240     303     307     311#
RES1    000056R      223#
RES2    000060R      224#
RSTRT   000112R      240#
SBADR   000102R      233#
SHORTV= 104000       193#    707     719
SOFCNT  000042R      216#
SOFER$= 104406       247#
SOFPAS  000046R      218#
SPOINT  000032R      212#
SPSIZ = 000040         1#    245
SR1     000016R      205#
SR2     000020R      206#
SR3     000022R      207#
SR4     000024R      208#
START   000250R      211     265#
STAT    000026R      210#
STATSA= 170000       193#    773     790     809     828     847     866     908
STATSB= 174000       193#    293     306     308     341     364
SVR0    000062R      225#
SVR1    000064R      226#
SVR2    000066R      227#
SVR3    000070R      228#
SVR4    000072R      229#
SVR5    000074R      230#
SVR6    000076R      231#
```

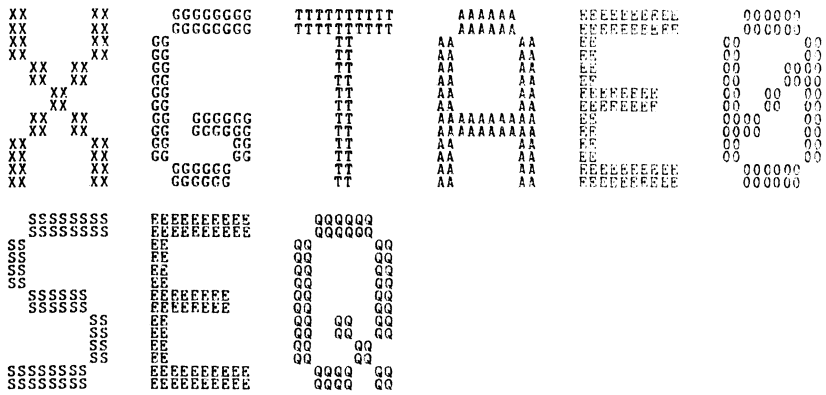


```
SYNOFF= 000010       193#
SYNON = 000014       193#
SYSCNT  000052R      220#
TRPDFD= 000022       247#
VECTOR  000010R      201#    274     275     276     277     278     279
WASADR  000104R      235#
WDFR    000116R      242#    265*
WDTO    000114R      241#
XFLAG   000005R      199#

. ABS.  000000       000
        003522       001

 ERRORS DETECTED:  0
 DEFAULT GLOBALS GENERATED:  0

 XGTAE0,XGTAE0/SOL/CRF:SYM=DDXCOM,XGTAE0
 RUN-TIME: 1 2 .4 SECONDS
 RUN-TIME RATIO: 17/4=3.5
 CORE USED:  7K  (13 PAGES)
```



```
**************************************************************************
* FOR REMOTE SITE PROBLEMS CONTACT THE I.P.C. NETWORK TEAM AT EX 5955....*
**************************************************************************
  *   *   *   *   L I S T I N G   P R O B L E M S ?   *   *   *   *   *
* If you have problems/questions with this listing, please               *
*  A. Check the applicable items.                                        *
*       ___ Do not need this listing, please discontinue                 *
*       ___ Interested in receiving listing on microfiche                *
*       ___ Interested in receiving listing on 8 1/2 X 11 Xerox paper    *
*       ___ Address is wrong or incomplete (Enter correctly below)       *
*       ___ Have other problem/question; not sure whom to contact        *
*  B. Identify yourself and the listing.          Phone:                 *
*     Name:                          Location (mail stop):              *
*                                                                       *
*     CC #:       Listing name:                 Listing #:              *
*                                                                       *
*  C. Mail entire page to: Corporate Information Services  PK3-2/F34    *
  *   *   *   *   *   *   *   *   *   *   *   *   *   *   *   *   *   *

LPTSPL version 102(2263)/3(61) running on LPT061
 *START* User BEAUSOLEIL, [400,2043] Job  XGTAE0 Seq. 7409 Date 23-Oct-78 17:37:37 Monitor IPC-F 6(3 [6P93 *START*
/TO:ML21-4:BEAUSO -- Distribution to ML21-4, slot 137
File: CUFF:XGTAE0.SEQ<057>[400,2043] Created: 19-Oct-78 10:05:00 Printed: 23-Oct-78 17:39:19
QUEUE Switches:  /PRINT:ARROW /FILE:ASCII /COPIES:2 /SPACING:1 /LIMIT:204 /FORMS:UNRDK
```