

.DEM -

IDENTIFICATION

PRODUCT CODE: AC-F8630-MC
PRODUCT NAME: CXUDADC UDC11 MODULE
PRODUCT DATE: SEPTEMBER 1978
MAINTAINER: DEC/X11 SUPPORT GROUP

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1. ABSTRACT

UDA IS AN IOMOD THAT EXERCISES THE UDC11 IN MAINTENANCE MODE. INTERRUPTS ARE GENERATED IN IMMEDIATE ADD DEFERRED SCAN MODES BY SETTING THE MAINTENANCE BIT.

2. REQUIREMENTS

HARDWARE: ONE UDC11 CONTROL UNIT

STORAGE:: UDA REQUIRES:

- 1: DECIMAL WORDS: 177
- 2: OCTAL WORDS: 0261
- 3: OCTAL BYTES: 542

3. PASS DEFINITION

CNE PASS OF THE UDA MODULE CONSISTS OF 1000. ITERATIONS OF THE BASIC TEST SEQUENCE WHICH CONSISTS OF GENERATING TWO INTERRUPTS, ONE IMMEDIATE, ONE DEFERRED.

4. EXECUTION TIME

THE UDA MODULE RUNNING ALONE ON A PDP11/05 PROCESSOR TAKES APPROXIMATELY --- MINUTES

5. CONFIGURATION REQUIREMENTS

DEFAULT PARAMETERS:

DEVADR: 171774, VECTOR: 234, BR1: 6, BR2: 4, DEVCNT: 1

REQUIRED PARAMETERS:

NONE

6. DEVICE OPTION SET-UP

NONE

7. MODULE/OPERATION

TEST SEQUENCE:

- A: INITIALIZE UDC VECTOR
- B: GENERATE AN IMMEDIATE INTERRUPT AND WAIT IN BRANCH LOOP

UDAD DEC/X11 SYSTEM EXERCISER MODULE
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C. INTERRUPT SERVICE SETTING SOFTWARE FLAG CAUSES BRANCH LOOP
TO OPEN

SEQ 0003

D: TEST FOR ERRORS AND REPORT
E: GENERATE A DEFERRED INTERRUPT AND WAIT IN BRANCH LOOP
C: INTERRUPT SERVICE SETTING SOFTWARE FLAG CAUSES BRANCH LOOP
TO OPEN
F: TEST FOR ERRORS AND REPORT
G: IF NOT 100 TIMES REPEAT R THRU E
REPORT END PASS AND RESTART AT B

R. OPERATION OPTIONS

MCNE

3. NON STANDARD PRINTOUTS

MCNE: ALL PRINTOUTS HAVE THE STANDARD FORMATS DESCRIBED IN
THE DEC/X11 DOCUMENT.

UDAD DEC/X11 SYSTEM EXERCISER MODULE

000000: IONOD <UDAD > 171774,234,6,4,1000,52
000000: MODULE 140000,UDAD 171774,234,6,4,1000,52
; .TITLE UDAD DEC/X11 SYSTEM EXERCISER MODULE
DDXCOM VERSION 6 23-MAV-78

```
*****LIST*****  
BEGIN: *****  
000000: 042125 042101 040 MODNAM: ASCII /UDAD / ;MODULE NAME  
000000: 000000 XFLAG: OPEN ;USED TO KEEP TRACK OF WBUF USAGE  
000000: 171774 ADDR: 171774+0 ;SET DEVICE ADDR.  
000010: 000234 VECTCR: 234+0 ;1ST DEVICE VECTOR.  
000010: 000000 BR1: -BYTE PRTV6+0 ;1ST BR LEVEL.  
000010: 000000 BR2: -BYTE PRTV4+0 ;2ND BR LEVEL.  
000010: 000001 DVID1: +1 ;DEVICE INDICATOR 1.  
000016: 000000 SR1: OPEN ;SWITCH REGISTER 1.  
000020: 000000 SR2: OPEN ;SWITCH REGISTER 2.  
000020: 000000 SR3: OPEN ;SWITCH REGISTER 3.  
000024: 000000 SR4: OPEN ;SWITCH REGISTER 4.  
*****  
000026: 140000 STAT: 140000 ;STATUS WORD.  
000030: 000234 MODNAM: ASCII /UDAD / ;MODULE START ADDR.  
000030: 000234 SPOINT: MODSP ;MODULE STACK POINTER.  
000034: 000000 PASCNT: 0 ;PASS COUNTER.  
000036: 000000 ICONF: 000. ;# OF ITERATIONS PER PASS=1000.  
000042: 000000 ITCOUNT: 0 ;LOC TO COUNT ITERATIONS  
000044: 000000 HRDCNT: 0 ;LOC TO SAVE TOTAL HARD ERRORS  
000046: 000000 SDPPASS: 0 ;LOC TO SAVE TOTAL HARD ERRORS  
000050: 000000 SYSCNT: 0 ;LOC TO SAVE SOFT ERRORS PER PASS  
000054: 000000 RANNUM: 0 ;# OF SYS ERRORS ACCUMULATED  
000056: 000000 CONPIC: ;HOLDS RANDOM # WHEN RAND MACRO IS CALLED  
000060: 000000 RESR: 0 ;RESERVED FOR MONITOR USE  
000062: 000000 SVRO: OPEN ;RESERVED FOR MONITOR USE  
000064: 000000 SVR1: OPEN ;LOC TO SAVE R0  
000066: 000000 SVR2: OPEN ;LOC TO SAVE R1.  
000070: 000000 SVR3: OPEN ;LOC TO SAVE R2.  
000072: 000000 SVR4: OPEN ;LOC TO SAVE R3.  
000074: 000000 SVR5: OPEN ;LOC TO SAVE R4.  
000076: 000000 SVR6: OPEN ;LOC TO SAVE R5.  
001000: 000000 CSRA: OPEN ;LOC TO SAVE R6.  
001002: 000000 SBADR: ;ADDR OF CURRENT CSR.  
001004: 000000 ACSR: OPEN ;ADDR OF GOOD DATA, OR  
001006: 000000 WADR: ;ADDR OF BAD DATA OR  
001008: 000000 ERRVFP: OPEN ;CONTENTS OF CSR.  
001010: 000000 ASB: OPEN ;TYPE OF ERROR  
001012: 000000 ANAS: OPEN ;EXPECTED DATA.  
001014: 000000 ACTD: OPEN ;ACTUAL DATA.  
001016: 000000 WDFR: OPEN ;REPORT ADDRESS AFTER END OF PASS  
001020: 000000 INTR: OPEN ;WORDS FROM MEMORY PER ITERATION  
 ;# OF INTERRUPTS PER ITERATION
```

000122: 000052
000046

IDNUM: 52 ;MODULE IDENTIFICATION NUMBER=52
;MODULE STACK STARTS HERE.
;REPT SPSIZ
;WORD 0
;LIST
;ENDP

000224:
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MODSP: *****  
;SOME MODULE DEFINITIONS  
UDSR: OPEN ;CONTAINS THE ADDRESS OF THE SCAN REG.  
UDCSR: OPEN ;CONTAINS THE ADDRESS OF THE CSR REG.  
UDFLAG: .WORD 0 ;INTERRUPT OCCURRED FLAG  
;MODULE INITIALIZATION  
START: MOV #1,WDFR ;1 WD FR MEM PER ITERATION  
MOV #2,INTR ;2 INTERRUPTS PER ITERATION  
RESTR: MOV ADDR,R5 ;GET THE FIRST ADDRESS  
MOV RS,UDSR ;SET UP SCAN REG. ADDRESS  
MOV RS,UDCSR ;SET UP THE CSR ADDRESS  
MOV VECTCR,R0 ;GET THE VECTOR ADDRESS  
MOV SPOINT,(R0)+ ;POINT ALL INTR TO UDINT  
MOV BR1,R0 ;SET UP THE 1ST PRIORITY LEVEL  
CLR UDFLAG ;CLEAR THE SCAN REG.  
CLR UDCSR ;INITIALIZE INTERRUPT OCCURRED FLAG  
CLR WDFR ;CLEAR THE CONTROL REG.  
MOV #0,UDCSR ;GENERATE RIF  
RST ;WAIT FOR CLEAR DONE  
BIS #25,UDCSR ;ENAB, INTR ENAB, IMMED. SCAN  
;SET MAINT. MODE  
1S: BIS #400,UDCSR ;SET DEFERRED INTR ENAB, SCAN ENAB  
;SET MAINT. MODE  
BREAKS, BEGIN ;TEMPORARY RETURN TO MONITOR  
BREAKS, BEGIN ;THEN CONTINUE AT NEXT INSTRUCTION.  
RPL UDFLAG ;INTERRUPT YET?  
CLR UDFLAG ;BR AND WAIT  
IMMI: MOV BR2,(R0) ;CLEAR THE INTERRUPT INDICATOR  
MOV #100,UDCSR ;SET UP THE 2ND PRIORITY LEVEL  
RST ;CHECK FOR ERRORS  
RST ;RPT FC ERRORS  
NERP: JSR PC,ERROR ;GO REPORT THE ERROR  
RST ;GENERATE RIF  
MOV #13,UDCSR ;SET DEFERRED INTR ENAB, SCAN ENAB  
BIS #400,UDCSR ;SET MAINT. MODE  
1S: BREAKS, BEGIN ;TEMPORARY RETURN TO MONITOR  
BREAKS, BEGIN ;THEN CONTINUE AT NEXT INSTRUCTION.  
RPL UDFLAG ;INTERRUPT YET?  
CLR UDFLAG ;BR AND WAIT  
DEFI: MOV #100,UDCSR ;CLEAR THE INTERRUPT INDICATOR  
RST ;CHECK FOR ERRORS
```

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238 000452 001402          REQ 1S          ;RR IF NO ERRORS
239 000454 004767 000006          JSR PC,ERROR    ;GO REPORT ERROR
240 000460 104413 000000          1S:            ;SIGNAL END OF ITERATION
241 000460 104413 000000          ENDIRS,REGIN    ;MONITOR SHALL TEST END OF PASS
242 000460 104413 000000          BR ST
243 000464 000705
244 000466 016767 177534 177464 ERROR:          MOV UDCS,CSRA    ;SAVE THE CSR ADDRESS
245 000474 017767 177536 177400          MOV UDCS,ACSR    ;SAVE THE CONTENTS OF THE CSR
246 000502 017767 177516 177374          MOV RUDSR,ASTAT  ;SAVE THE CONTENTS OF THE SCAN REG.
247 000510 104405 000000 000000          *****
248 000510 104405 000000 000000          HRDRS,REGIN,NULL ;*****
249 000510 104405 000000 000000          RTS PC          ;RETURN
250 000516 000207
251 000520 042777 000036 177500 UDINT:          BIC #36,UDCS    ;DISABLE THE CONTROL
252 000526 042777 000036 177472          BIC #400,UDCS   ;TURN OFF THE INTR.
253 000534 005167 177470          CVM UDFLAG      ;SET THE INTERRUPT OCCURRED FLAG
254 000534 005167 177470          RTI             ;RETURN FROM INTERRUPT
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259          000001          .END
    
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CROSS REFERENCE TABLE -- USER SYMBOLS
ACSR 0001C2R 172# 246*
ADDR 000006R 138# 202
ADDR22= 001000 180#
ASR 000106R 176#
ASTAT 000104R 174# 247*
AWAS 000110R 177#
BEGIN 000000R 175#
BIT0 = 000001 180#
BIT1 = 000002 190#
BIT10 = 002000 190#
BIT11 = 001000 180#
BIT12 = 001000 180#
BIT13 = 020000 190#
BIT14 = 000000 190#
BIT15 = 100000 180#
BIT2 = 000003 190#
BIT3 = 000010 190#
BIT4 = 000020 190#
BIT5 = 000040 190#
BIT6 = 000100 190#
BIT7 = 000200 190#
BIT8 = 000400 190#
BIT9 = 001000 190#
BREAKS = 104407 190# 218 219 232 233
BR1 000012R 140# 218 219 232 233
BR2 000013R 141# 208
CADS = 104412 190# 223
CONFIC 000556R 160#
CSRA 000100R 170# 245*
DATCS = 104411 190#
DATES = 104404 190#
DEPI 000444R 237#
DIVID = 000140R 142#
ENDIRS = 104410 190# 241
ERROR 000466R 226# 239 245#
ERRTYP 000106R 175#
EXIT = 104400 190#
GETPAS = 104415 190#
HRDRS = 104414 190#
HRDCNT = 000044R 155#
HRDRS = 104405 190# 249
HRDPAS = 000050R 167#
ICOUNT 000036R 153#
IDNUM 000122R 152#
INIT 000360R 149#
INTR 000170P 181# 200*
MAP22S = 104416 190#
MODNAM = 000000P 136#
MODSP = 000224R 150# 188#
MSGNS = 104403 190#
MSGSS = 104402 190#
MSGSS = 104401 190#
    
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MEPP	= 00046CP	225#	227#																
NULL	= 000000	137#	143#																
OPEN	= 000000	172#	174#	144	145	146	163	164	165	166	167	168	169	170					
OTAS	= 104420	151#																	
PASCNT	= 000334R	190#																	
PIRGS	= 000004	190#																	
PIPS	= 005726	190#																	
POPS2	= 000000	190#																	
PRTV	= 000000	190#																	
PRTV0	= 000000	190#																	
PRTV1	= 000040	190#																	
PRTV2	= 000100	190#																	
PRTV3	= 000140	190#																	
PRTV4	= 000200	141#	190#																
PRTV5	= 000300	190#																	
PRTV6	= 000300	140#	190#																
PRTV7	= 000340	190#																	
PS	= 177776	190#																	
PUSH	= 005776	190#																	
PUSH2	= 024646	190#																	
RANDS	= 104417	190#																	
RANUM	= 00034R	159#																	
RESTRT	= 00036R	161#	202#																
RES1	= 000056R	162#																	
RES2	= 000060R	178#																	
RESRT	= 000100R	171#																	
SUPCNT	= 000042R	154#																	
SUPERS	= 104406	190#																	
SUPFA	= 000046R	126#																	
SUPIN	= 000040	1#	183																
SPSTZ	= 000016R	143#																	
SR1	= 000022R	144#																	
SR2	= 000022R	144#																	
SR3	= 000024R	146#																	
SR4	= 000024R	209#	243																
START	= 000232R	149#	199#																
STAT	= 000232R	148#																	
SVR0	= 000062R	163#																	
SVR1	= 000064R	164#																	
SVR2	= 000066R	165#																	
SVR3	= 000066R	166#																	
SVR4	= 000072R	167#																	
SVR5	= 000074R	168#																	
SVR6	= 000076R	169#																	
SYSCNT	= 000052R	158#																	
TRPDFD	= 000022R	194#																	
UDCS	= 000226R	184#	205*	211*	214*	216*	224	229*	230*	237	245	246	253*	254*					
UDFLAG	= 000100R	184#	220	222*	234	236*	265*												
UDINT	= 000520R	207#																	
UDSR	= 000224R	193#	209*	212	227	247													
VECTDR	= 000100R	138#	206																
WASADR	= 000104R	173#																	

WDFR	= 000116R	180#	199*																
WDTO	= 000114R	179#																	
XFLAG	= 000005R	137#																	

. ABS. 000000 000
 000542 001

ERRORS DETECTED: 0
 DEFAULT GLOBALS GENERATED: 0

XUDADO, XUDADO/SOL/CRP:SYM=DDXCCM, XUDADO
 RUN-TIME: 1 SECONDS
 RUN-TIME PATT: 177253
 CORE USED: 7K (13 PAGES)