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IDENTIFICATION  
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PRODUCT CODE: AC-E812R-MC  
PRODUCT NAME: CXBTAB0 BUS TESTER MODULE B  
PRODUCT DATE: SEPTEMBER 1978  
MAINTAINER: DEC/X11 SUPPORT GROUP

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1. ABSTRACT

THE STA MODULE IS AN IOMODR THAT EXERCISES THE FIRST TWO ADDRESSES AND FIRST TWO VECTORS OF THE BUS TESTER. BOTH CSR'S ARE TESTED AND STEPPED THROUGH FOUR BR LEVELS.

2. REQUIREMENTS

HARDWARE: ONE UNIRUS TESTER

STORAGE:: STA REQUIRES:  
1. DECIMAL WORDS: 279  
2. OCTAL WORDS: 0427  
3. OCTAL BYTES: 1056

3. PASS DEFINITION

ONE PASS CONSISTS OF CYCLING THROUGH THE CODE 100,000 TIMES WHICH CHECKS THE INTERRUPT ON FOUR BR LEVELS.

4. EXECUTION TIME

ONE PASS TAKES APPROXIMATELY 1 MINUTE.

5. CONFIGURATION REQUIREMENTS

DEFAULT PARAMETERS: DVA:170000 VCT:510 BR1:0 BR2:0 DVC:1 SR1:0  
REQUIRED PARAMETERS: NONE  
MAPPING OF SRI: NONE

6. DEVICE/OPTION SETUP

CONNECT THE BUS TESTER AND POWER UP.

7. MODULE OPERATION

SETS UP THE FIRST TWO CSR'S, ONE FOR A TRANSFER AND THE OTHER FOR AN INTERRUPT. WHEN THE OPERATION HAS COMPLETED ERROR CHECKING IS DONE AND THE BR LEVEL IS CHANGED, TESTING IS THEN CONTINUED.

8. OPERATION OPTIONS

NONE

9. NON-STANDARD PRINTOUTS

NONE

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000000-
000000-  MODULE 152000 BTAB > 170000 510, 100000, 131
          ; TITLE BTAB DEC/X11 SYSTEM EXERCISER MODULE
          ; DDXCEN VERSION 6 23-MAY-78
          ; *****LIST BIN*****
000000- ;BEGIN:
000000- 052102 041101 040 MODNAM: -ASCII /BTAB / ;MODULE NAME-
000005- 000000 XPLAG: -BYTE OPEN ;USED TO KEEP TRACK OF WBUFF USAGE
000006- 170000 ADDR: 170000+0 ;1ST DEVICE ADDR.
000010- 000510 VECTOR: 510+0 ;1ST DEVICE VECTOR.
000013- 000000 BR1: -BYTE PRTY+0 ;1ST BR LEVEL.
000014- 000001 BR2: -BYTE PRTY+0 ;2ND BR LEVEL.
000016- 000000 DWID1: +1 ;DEVICE INDICATOR 1.
000020- 000000 SR1: OPEN ;SWITCH REGISTER 1.
000022- 000000 SR2: OPEN ;SWITCH REGISTER 2.
000024- 000000 SR3: OPEN ;SWITCH REGISTER 3.
000026- 152000 SR4: OPEN ;SWITCH REGISTER 4.
000030- 002224- STAT: 152000 ;STATUS WORD.
000032- 000224- INIT: START ;MODULE START ADDR.
000034- 000000 SPOINT: WMDSP ;MODULE STACK POINTER.
000036- 100000 PASCNT: 0 ;PASS COUNT.
000040- 000000 ICONT: 100000 ;# OF ITERATIONS PER PASS=100000
000042- 000000 ICONF: 0 ;LOC TO COUNT ITERATIONS
000044- 000000 HRDCNT: 0 ;LOC TO SAVE TOTAL SOFT ERRORS
000046- 000000 SDPPAS: 0 ;LOC TO SAVE TOTAL HARD ERRORS
000050- 000000 HRDPAS: 0 ;LOC TO SAVE SOFT ERRORS PER PASS
000052- 000000 SYSCNT: 0 ;LOC TO SAVE HARD ERRORS PER PASS
000054- 000000 RANNUM: 0 ;# OF SYS ERRORS ACCUMULATED
000056- 000000 COMFIC: 0 ;HOLDS RANDOM # WHEN RAND MACRO IS CALLED
000060- 000000 RES1: 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 ;LOC TO SAVE R6.
000102- SBADR: OPEN ;ADDR OF CURRENT CSR.
000104- 000000 ACSR: OPEN ;ADDR OF GOOD DATA, OR
000106- 000000 WSBADR: OPEN ;CONTENTS OF CSR.
000108- 000000 ASTAT: OPEN ;ADDR OF BAD DATA, OR
000110- 000000 ERRTP: OPEN ;RESERVED FOR MONITOR USE
000112- 000000 ASB: OPEN ;TYPE OF ERROR
000114- 000000 AWAS: OPEN ;EXPECTED DATA.
000116- 000316- RSTRT: RSTRT ;ACTUAL DATA.
000118- 000000 WOTO: OPEN ;RSTART ADDRESS AFTER END OF PASS
000120- 000000 WDFR: OPEN ;WORDS TO MEMORY PER ITERATION
000122- 000131 INTR: OPEN ;WORDS FROM MEMORY PER ITERATION
000040- 000040 IONUM: 131 ;# OF INTERRUPTS PER ITERATION
          ; *****LIST BIN*****
          ;-REPT SPSIZ ;MODULE IDENTIFICATION NUMBR=131
          ;MODULE STACK STARTS HERE.

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          ;-LIST 0
          ;-WORD 0
          ;-LIST
          ;-ENDR
000224- MODSP: *****
162 000224- 012767 000010 177666 START: MOV #8, INTR ;8 INTERRUPTS/ITERATION
163 000232- 012767 000002 177654 MOV #2, WOTO ;2 WORDS TO MEM/ITERATION
164 000240- 012767 000002 177650 MOV #2, WDFR ;2 WORDS FROM MEM/ITERATION
165 000248- 005067 000356 CLR TOP
166 000252- 005067 000350 CLR TT
167 000256- 004567 000172 JSR R5, ADSUP ;SET UP ADDRESSES.
168 000262- 004567 000252 JSR R5, VEC ;SET UP VECTORS
169 000266- 005067 000332 CLR EXPIA ;CLEAR OUT EXPECTED DATA
170 000272- 005067 000324 CLR RECI ;CLEAR TEST LOCATION.
171 000276- 005067 000316 CLR SENDIA ;CLEAR PATTERN TO BE TRANSMITTED
172 000302- 012767 045411 000542 MOV #45411, PUNC ;SET FIRST FUNCTION
173 000310- 012767 000033 000536 MOV #33, BPUNC ;SET SECOND FUNCTION
174 000316- 012777 000622- 000510 RSTRT: MOV #33, BARCA ;SET UP ADDRESS OF DATA
175 000324- 012777 000002 000504 MOV #2, BARVC ;SET WORD COUNT
176 000332- 016777 000514 000500 MOV PUNC, BARCSR ;FIRE OFF BUSS TESTER.
177 000340- 016777 000510 000502 MOV BPUNC, @BARCSR ;SET SECTION 2 OFF.
178 000346- 104400 000000- EXITS, BEGIN ;EXIT TO MONITOR. MODULE WAIT FOR INTERRUPT.
179 ;INTERRUPT SERVICE ROUTINES.
180
181
182 000352- BUST1:
183 -----
184 000352- 000004 000000- 000360- ;FIROS, BEGIN, IS ; QUEUE UP TO CONTINUE AT IS AND RTI
185 -----
186 000360- 005777 000454 1S: STI @BARCSR ;TEST FOR BUSY SET
187 000364- 100004 000446 RPL S ;OR
188 000366- 016700 000446 MOV @BARCSR, R0
189 000372- 004567 000436 JSR R5, ERR1
190 000376- 005077 000432 CLR @BARCSR
191 000402- 005077 000432 CLR @BARCSP
192 000406- 026767 000210 000210 CMP RECI, EXPIA ;TRANSFER DONT CORRRECTLY?
193 000414- 01404 000210 BEQ S ;YES
194 000416- 016700 000416 MOV @BARCSR, R0
195 000422- 004567 000356 JSR R5, ERR2
196 000426- 004567 000204 3S: JSR R5, BRA ;CHANGE BR LEVEL
197 000432- 104413 000000- ENDTIS, REGIM ;SIGNAL END OF ITERATION.
198 ;MONITOR SHALL TEST END OF PASS
199 000436- 000167 177654 JMP RSTRT
200
201
202 000442- 005077 000402 BUST2: CLR @BARCSR
203 000446- 005077 000376 CLR @BARCSP
204 000452- 000002 RTI ;RETURN.
205
206
207 000454- 016700 177326 ADSUP: MOV ADDR, R0 ;GET FIRST ADDRESS
208 000460- 010067 000346 MOV R0, @DBR ;SET DATA BUFFER OF SECTION 1
209 000464- 005020 CLR (R0)+
210 000466- 005020 000342 MOV R0, @BCA ;SET ADDRESS REG FOR SECTION 1
211 000472- 005020 CLR (R0)+

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212 000474 010067 000336      MOV R0,ABWC      ;SET WORD COUNT FOR SECTION 1
213 000500 005020              CLR (R0)+
214 000502 010067 000332      MOV R0,ARCSR    ;SET CSR FOR SECTION 1
215 000506 005020              CLR (R0)+
216 000510 010067 000326      MOV R0,BDBR     ;SET DATA BUFFER IN SECTION 2
217 000514 005020              CLR (R0)+
218 000516 010067 000322      MOV R0,BBCA     ;SET ADDRESS REG IN SECTION 2
219 000522 005020              CLR (R0)+
220 000524 010067 000316      MOV R0,ABWC     ;SET WORD COUNT IN SECTION 2
221 000530 005020              CLR (R0)+
222 000532 010067 000312      MOV R0,BBCSR    ;SET CSR IN SECTION 2
223 000536 000205              RTS R5
224
225 000540 016700 177244      VEC:  MOV VECTOR,R0 ;POINT TO FIRST VECTOR
226 000544 012720 000352      MOV #RUST1,(R0)+ ;POINT TO FIRST INTERRUPT
227 000550 010067 000056      MOV R0,SAVA     ;SET BR LOCATION
228 000554 042777 000340 000050  BIT #340,ASAVA  ;CLEAR BR BITS
229 000558 052777 000200 000042  BIC #200,ASAVA  ;SET BR LEVEL OF 4
230 000570 005720              TST (R0)+
231 000572 012720 000442      MOV #RUST2,(R0)+ ;POINT TO SECOND INTERRUPT
232 000576 010067 000032      MOV R0,SAVB     ;SAVE BR LOCATION
233 000602 042777 000024 000024  BIT #340,ASAVB  ;CLEAR BR BITS
234 000610 052777 000200 000016  BIC #200,ASAVB  ;SET BR LEVEL OF 4
235 000616 000205              RTS R5
236
237
238
239
240 000620 000000      SENDIA: 0 ;SENT
241 000622 000000      RCLINA: 0 ;RECLINED
242 000624 000000      EXPIA: 0 ;EXPECTED
243 000626 000000      TOT: 0
244 000628 000000      TOTR: 0
245 000632 000000      SAVA: 0
246 000634 000000      SAVR: 0
247
248 000636 022767 000003 177762  BRA:  CMP #3,TOT ;CHECK ALL BR LEVELS.
249 000644 001411              BFC #30,FUNC ;ALL BR'S DONE
250 000646 062767 000040 000176  ADD #40,FUNC ;CHANGE BR LEVEL
251 000654 062767 000040 000172  ADD #40,BFUNC
252 000658 062777 000040 177742  ADD #40,ASAVA ;STEP BR LEVEL
253 000670 062777 000040 177736  ADD #40,ASAVB
254 000676 005267 177724      INC TOT
255 000704 000205              RTS R5
256 000704 012767 045411 000140  IS:  MOV #45411,FUNC ;SET 1ST BR LEVEL
257 000712 012767 000033 000134  MOV #33,BFUNC
258 000720 042777 000340 177704  BIC #340,ASAVA ;CLFAR BR BITS
259 000726 042777 000340 177700  BIC #40,ASAVB
260 000734 000000 000000 177670  BIC #200,ASAVA ;SET BR TO 4
261 000742 052777 000000 177664  BIC #200,ASAVB
262 000750 005067 177652      CLR TOT ;CLFAR COUNTER.
263 000754 000205              RTS R5
264
265
266
267 000756 010067 177116      ERR1: MOV R0,CSRA ;LOAD CSR ADDRESS

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268 000762 011067 177114      MOV (R0),ACSR   ;LOAD CONTENTS OF CSR
269 000766 012787 000011 177112  MOV #11,ERRTYP ;ILLEGAL INTERRUPT
270
271 000774 104405 000000 000000  ;*****
272 000776 000000 000000 000000  ;*****
273 001002 000205              ERR1: MOV R5
274
275
276 001004 010067 177070      ERR2: MOV R0,CSRA ;LOAD CSR ADDRESS
277 001010 011067 177066      MOV (R0),ACSR  ;LOAD CONTENTS OF CSR
278 001014 012767 000001 177064  MOV #1,ERRTYP ;DATA ERROR
279
280 001022 104405 000000 000000  ;*****
281 001024 000000 000000 000000  ;*****
282 001030 000205              RTS R5
283
284
285 ;SECTION 1 REGISTERS
286 001032 000000      ABRN: 0
287 001034 000000      ARCA: 0
288 001036 000000      ABWC: 0
289 001040 000000      ARCSR: 0
290
291 ;SECTION 2 REGISTERS
292
293 001042 000000      BRDR: 0
294 001044 000000      BRCA: 0
295 001046 000000      BRWC: 0
296 001050 000000      BRCSR: 0
297
298 001052 000000      FUNC: 0
299 001054 000000      BFUNC: 0
300
301
302 000001      .END

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STAT	000026R	120#			
SVRO	000062#	135#			
SVR1	000064#	136#			
SVR2	000066#	137#			
SVR3	000070R	138#			
SVR4	000072R	139#			
SVR5	000074R	140#			
SVR6	000076R	141#			
SYSCNT	000052R	130#			
TOT	000626R	166#	243#	24#	254*
TOTR	000630R	165#	244#		262*
TOPDFD-	000027	162#			
VCC	000540R	168	225#		
VECTUP	000010R	111#	225		
WASADR	000104R	145#			
WDFR	000116R	152#	164*		
WOTO	000114R	151#	163*		
XFLAG	000005R	109#			

- ARS. 000000 000  
001058 001

ERRORS DETECTED: 0  
DEFAULT GLOBALS GENERATED: 0  
XRTABO, XRTABO/SUL/CRP: SYM=DUXCON, XRTABO  
RUN-TIME: 11.3 SECONDS  
RUN-TIME RATIO: 9/7=1.4  
CORE USED: 7K (13 PAGES)