        .REM _

                        IDENTIFICATION

        PRODUCT CODE: AC-E959B-MC

        PRODUCT NAME: CXAABBO AA11-K MODULE

        PRODUCT DATE: SEPTEMBER 1978

        MAINTAINER: DEC/X11 SUPPORT GROUP

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1.   ABSTRACT:

            "AAB" IS A IOMOD THAT EXERCISES THE AA11-K
       SCOPE CONTROLLER. A CONFIDENCE LOGIC TEST IS
       EXECUTED ON THE CONTROL/STATUS, DAC0, DAC1,
       DAC2 AND DAC3 REGISTERS. ALL LOGIC ERRORS ARE
       REPORTED TO THE CONSOLE TELETYPE. THE MAJOR
       PORTION OF THIS MODULE IS DEFERRED TO LEVEL 0
       SERVICE. A SIX LETTER MESSAGE (AA11-K) WILL
       BE PLOTTED ON THE SCREEN DURING EXECUTION.
       IF A 611/613 SCOPE IS CONNECTED, ALTERNATING
       CHARACTERS MAY APPEAR TO HAVE ALTERNATING
       INTENSITY LEVELS. WHEN A VR14 SCOPE IS CONNECTED
       CHANGING THE CHANNEL SWITCH TO CHANNEL ONE ONLY
       WILL DISPLAY "A 1 - ". PLACING THE SWITCH TO
       CHANNEL TWO ONLY WILL DISPLAY " A 1 K".

2.   REQUIREMENTS:

       HARDWARE: AA11-K INTERFACE WITH A SCOPE DISPLAY INSTALLED

       STORAGE:: AAB REQUIRES:
                      1. DECIMAL WORDS: 453
                      2. OCTAL WORDS: 0705
                      3. OCTAL BYTES: 1612

3.   PASS DEFINITION:

       ONE PASS OF THE AAB MODULE CONSISTS OF DISPLAYING
       55,296 POINTS ON THE SCREEN.   THIS MEANS THAT
       55,296 DATA TRANSFERS OCCURED ON THE UNIBUS.

4.   EXECUTION TIME:

       VARIES WITH SCOPE DELAY BUT SHOULD TAKE AN AVERAGE OF SIXTY
       SECONDS TO COMPLETE ONE PASS. WHEN RUNNING ALONE ON AN 11/05.

5.   CONFIGURATION PARAMETERS:

          DEFAULT PARAMETERS:

          DVA: 170416,   VCT: 360,   BR1:   4

          REQUIRED PARAMETERS:

          NONE

6.   DEVICE OPTION SETUP:

          A. TURN ON SCOPE POWER.

          B. PLACE CHANNEL SW TO 1 & 2 (IF VR14)

7.   MODULE OPERATION:

7.1   TEST SEQUENCE:

          A. START: USING THE DEVICE ADDRESS, THIS
                             SECTION OF CODE, DETERMINES THE
                             CONTROL, X AND Y POSITION ADDR-
                             ESSES, AND VECTORS.

          B. TSTNRG: THIS SECTION OF CODE PREFORMS
                             A CONFIDENCE REGISTER TEST OF
                             THE CONTROL, DAC 0, DAC 1, DAC 2,
                             AND DAC 3 REGISTERS.

          C. PRIME: IN THIS SECTION, THE FOUR
                             DAC REGISTERS AND CONTROL REGISTERS
                             ARE LOADED. THE SCOPE IS
                             ENABLED AND AN "EXIT" RETURN
                             TO THE MONITOR.

          D. AA11K: UPON A SCOPE INTERRUPT, THE
                             PROGRAM WILL RETURN TO THIS
                             CODE. ENTER DEFERRED SERVICE
                             MODE AND TEST FOR A MODE
                             FLAG. IF NO MODE FLAG, REPORT
                             IT AS AN ERROR.

                    E. AA11XA: THRU CHAR13: THIS SECTION SELECTS
                                THE PROPER POINTS TO BE INTENSIFIED
                                ON THE SCREEN.

                    F. CHAR11:   IN THIS CODE, THE CHANNEL BIT ALTERNATED
                                TO DISPLAY EACH CHANNEL.
                                IF A 611/613 SCOPE IS CONNECTED
                                ALTERNATING CHARACTERS WILL HAVE
                                ALTERNATING INTENSITY LEVELS.

                    G. CHAR20:   IN THIS SECTION, THE PASS COUNT
                                IS DECREMENTED AND TESTED.
                                IF IT DID NOT BECOME ZERO, THEN
                                SELECT ANOTHER CLOCK RATE
                                AND RESUME COUNTING. UPON
                                A ZERO PASS COUNT THE CONTROL
                                AND PRESET REGISTER, ARE
                                CLEARED AND 'ENDPAS' IS
                                REPORTED.

        8.   OPERATOR OPTIONS:

                A. LOCATION (VCPASS) CAN BE MODIFIED TO VARY THE NO.
                    LOOPS THRU TEST BEFORE END OF PASS IS REPORTED.

        9.   NON-STANDARD PRINTOUTS:

                NONE: ALL PRINTOUTS HAVE THE STANDARD FORMATS DESCRIBED
                       IN THE DEC/X11 DOCUMENT

177   -   .LIST   SEQ,BIN

```
178
179                                           ;AA11-K   DEC/X11 EXERCISER MODULE
180
181   000000'                                         IDMOD    <AABB >,170416,360,4,,,3000,123
182   000000'                                         MODULE   140000,AABB,170416,360,4,,,3000,123
183                                                   .TITLE   AABB DEC/X11 SYSTEM EXERCISER MODULE
184                                           ;        DDXCOM   VERSION  6      23-MAY-78
185                                                   .LIST    BIN
186                                           ;********************************************************************
187   000000'                                 BEGIN:
188   000000'  040501   041102   040          MODNAM: .ASCII   /AABB /  ;MODULE NAME.
189   000005'     000                          XFLAG:  .BYTE    OPEN             ;USED TO KEEP TRACK OF WBUFF USAGE
190   000006'  170416                          ADDR:   170416+0                  ;1ST DEVICE ADDR.
191   000010'  000360                          VECTOR: 360+0                     ;1ST DEVICE VECTOR.
192   000012'     200                          BR1:    .BYTE    PRTY4+0          ;1ST BR LEVEL.
193   000013'     000                          BR2:    .BYTE    PRTY+0           ;2ND BR LEVEL.
194   000014'  000001                          DVID1:  +1                        ;DEVICE INDICATOR 1.
195   000016'  000000                          SR1:    OPEN                      ;SWITCH REGISTER 1
196   000020'  000000                          SR2:    OPEN                      ;SWITCH REGISTER 2
197   000022'  000000                          SR3:    OPEN                      ;SWITCH REGISTER 3
198   000024'  000000                          SR4:    OPEN                      ;SWITCH REGISTER 4
199                                           ;********************************************************************
200   000026'  140000                          STAT:   140000                    ;STATUS WORD.
201   000030'  000244'                          INIT:   START                     ;MODULE START ADDR.
202   000032'  000224'                          SPOINT: MODSP                     ;MODULE STACK POINTER.
203   000034'  000000                          PASCNT: 0                          ;PASS COUNTER.
204   000036'  003000                          ICOUNT: 3000                       ;# OF ITERATIONS PER PASS=3000
205   000040'  000000                          ICOUNT: 0                          ;LOC TO COUNT ITERATIONS
206   000042'  000000                          SOFCNT: 0                          ;LOC TO SAVE TOTAL SOFT ERRORS
207   000044'  000000                          HRDCNT: 0                          ;LOC TO SAVE TOTAL HARD ERRORS
208   000046'  000000                          SOFPAS: 0                          ;LOC TO SAVE SOFT ERRORS PER PASS
209   000050'  000000                          HRDPAS: 0                          ;LOC TO SAVE HARD ERRORS PER PASS
210   000052'  000000                          SYSCNT: 0                          ;# OF SYS ERRORS ACCUMULATED
211   000054'  000000                          RANNUM: 0                          ;HOLDS RANDOM # WHEN RAND MACRO IS CALLED
212   000056'                                  CONFIG:                            ;RESERVED FOR MONITOR USE
213   000056'  000000                          RES1:   0                          ;RESERVED FOR MONITOR USE
214   000060'  000000                          RES2:   0                          ;RESERVED FOR MONITOR USE
215   000062'  000000                          SVR0:   OPEN                       ;LOC TO SAVE R0.
216   000064'  000000                          SVR1:   OPEN                       ;LOC TO SAVE R1.
217   000066'  000000                          SVR2:   OPEN                       ;LOC TO SAVE R2.
218   000070'  000000                          SVR3:   OPEN                       ;LOC TO SAVE R3.
219   000072'  000000                          SVR4:   OPEN                       ;LOC TO SAVE R4.
220   000074'  000000                          SVR5:   OPEN                       ;LOC TO SAVE R5.
221   000076'  000000                          SVR6:   OPEN                       ;LOC TO SAVE R6.
222   000100'  000000                          CSRA:   OPEN                       ;ADDR OF CURRENT CSR.
223   000102'                                  SBADR:                             ;ADDR OF GOOD DATA, OR
224   000102'  000000                          ACSR:   OPEN                       ;CONTENTS OF CSR.
225   000104'                                  WASADR:                            ;ADDR OF BAD DATA, OR
226   000104'  000000                          ASTAT:  OPEN                       ;STATUS REG CONTENTS.
227   000106'                                  ERRTYP:                            ;TYPE OF ERROR
228   000106'  000000                          ASB:    OPEN                       ;EXPECTED DATA.
229   000110'  000000                          AWAS:   OPEN                       ;ACTUAL DATA.
230   000112'  000416'                          RSTRT:  RESTRT                     ;RESTART ADDRESS AFTER END OF PASS
231   000114'  000000                          WDTO:   OPEN                       ;WORDS TO MEMORY PER ITERATION
232   000116'  000000                          WDFR:   OPEN                       ;WORDS FROM MEMORY PER ITERATION
233   000120'  000000                          INTR:   OPEN                       ;# OF INTERRUPTS PER ITERATION
```

```
234   000122'  000123                          IDNUM:  123                        ;MODULE IDENTIFICATION NUMBER=123
235            000040                                  .REPT    SPSIZ             ;MODULE STACK STARTS HERE.
236                                                    .NLIST
237                                                    .WORD    0
238                                                    .LIST
239                                                    .ENDR
240   000224'                                  MODSP:
241                                           ;********************************************************************
242
```

```
243
244                                      ;AA11-K OPERATOR CHANGEABLE LOCATIONS
245
246   000224'  000000                    VCPAS:  0
247
248                                      ; COMMON AA11-K DEVICE ADDRESSES
249
250
251   000226'  170416                    VCSTAT: 170416           ;SCOPE STATUS REGISTER
252   000230'  170420                    VCXREG: 170420           ;SCOPE X AXIS REGISTER
253   000232'  170422                    VCYREG: 170422           ;SCOPE Y AXIS REGISTER
254   000234'  170424                    VCDAC2: 170424           ;DAC #2 ADDRESS
255   000236'  170426                    VCDAC3: 170426           ;DAC #3 ADDRESS
256
257                                      ;COMMON AA11-K DEVICE VECTOR
258
259   000240'  000360                    VCIV:   360              ;SCOPE INTERRUPT VECTOR
260   000242'  000362                    VCIVS:  362
261
262                                      ;NOW SET UP THE ADDRESS AND VECTOR DISPATCH LOC.
263
264   000244'  016767  177566  177752    START:  MOV     ICONT,VCPAS     ;SAVE ICONT
265   000252'  005367  177746                    DEC     VCPAS           ;MUST BE ONE LESS
266   000256'  012767  000365  177634            MOV     #245.,INTR      ;245. INTERRUPTS/ITERATION
267   000264'  012767  000365  177622            MOV     #245.,WNTO      ;245. WORDS TO MEM/ITERATION
268   000272'  012767  000365  177616            MOV     #245.,WNFR      ;245 WORDS FROM MEM/ITERATION
269   000300'  016767  177502  177720            MOV     ADDR,VCSTAT
270   000306'  016767  177474  177714            MOV     ADDR,VCXREG
271   000314'  062767  000002  177706            ADD     #2,VCXREG
272   000322'  016767  177460  177702            MOV     ADDR,VCYREG
273   000330'  062767  000004  177674            ADD     #4,VCYREG
274   000336'  016767  177444  177670            MOV     ADDR,VCDAC2
275   000344'  062767  000006  177662            ADD     #6,VCDAC2
276   000352'  016767  177430  177656            MOV     ADDR,VCDAC3
277   000360'  062767  000010  177650            ADD     #10,VCDAC3
278   000366'  016767  177416  177644            MOV     VECTOR,VCIV
279   000374'  016767  177410  177640            MOV     VECTOR,VCIVS
280   000402'  062767  000002  177632            ADD     #2,VCIVS
281   000410'  016767  177612  177462            MOV     VCSTAT,CSRA     ;LOAD DEVICE ADDRESS
282
```

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283
284                                      ;AA11-K LOGIC TEST
285   000416'  005077  177604            RESTRT: CLR     @VCSTAT         ;CLEAR STATUS
286   000422'  005077  177602                    CLR     @VCXREG         ;CLEAR X
287   000426'  005077  177600                    CLR     @VCYREG         ;CLEAR Y
288   000432'  005077  177576                    CLR     @VCDAC2         ;CLEAR DAC #2
289   000436'  005077  177574                    CLR     @VCDAC3         ;CLEAR DAC #3
290   000442'  005067  001114                    CLR     FATAL           ;CLEAR FATAL ERROR FLAG
291
292                                      ;NOW TEST DAC#0 REGISTER BITS
293
294   000446'  016767  177556  177424    TSTXRG: MOV     VCXREG,CSRA     ;LOAD BUS ADDRESS
295   000454'  012767  010000  177422            MOV     #BIT12,ASTAT    ;LOAD EXPECTED BIT
296   000462'  006267  177416            1S:     ASR     ASTAT           ;CHANGE THE DATA
297   000466'  001422                            BEQ     2S              ;BR IF DONE
298   000470'  016777  177410  177532            MOV     ASTAT,@VCXREG   ;LOAD DAC # 0
299   000476'  017767  177526  177376            MOV     @VCXREG,ACSR    ;READ DAC
300   000504'  026767  177374  177370            CMP     ASTAT,ACSR      ;COMPARE RESULT
301   000512'  001763                            BEQ     1S              ;BR IF CORRECT
302   000514'  012767  000025  177364            MOV     #25,ERRTYP      ;BIT STUCK
303                                              ;****************************************************
304   000522'  104405  000000' 000000            HRDERS,BEGIN,NULL       ;DAC # 0 IN ERROR
305                                              ;****************************************************
306   000530'  005267  001026            2S:     INC     FATAL           ;SET FATAL ERROR FLAG
307   000534'  000240                            NOP
308
309                                      ;NOW TEST DAC #1 REGISTER BITS
310
311   000536'  016767  177470  177334    TSTYRG: MOV     VCYREG,CSRA     ;LOAD BUS ADDRESS
312   000544'  012767  010000  177332            MOV     #BIT12,ASTAT    ;LOAD EXPECTED BIT
313   000552'  006267  177326            1S:     ASR     ASTAT           ;CHANGE THE DATA
314   000556'  001422                            BEQ     2S              ;BR IF DONE
315   000560'  016777  177320  177444            MOV     ASTAT,@VCYREG   ;LOAD DAC # 1
316   000566'  017767  177440  177306            MOV     @VCYREG,ACSR    ;READ DAC #
317   000574'  026767  177304  177300            CMP     ASTAT,ACSR      ;COMPARE RESULT
318   000602'  001763                            BEQ     1S              ;BR IF CORRECT
319   000604'  012767  000025  177274            MOV     #25,ERRTYP      ;BIT STUCK
320                                              ;****************************************************
321   000612'  104405  000000' 000000            HRDERS,BEGIN,NULL       ;DAC # 1 IN ERROR
322                                              ;****************************************************
323   000620'  005267  000736            2S:     INC     FATAL           ;SET FATAL ERROR FLAG
324   000624'  000240                            NOP
```

```
325
326                                            ;NOW TEST DAC #2 REGISTER BITS
327
328    000626'  016767  177402  177244   TST2RG: MOV      VCDAC2,CSRA        ;LOAD BUS ADDRESS
329    000634'  012767  010000  177242          MOV      #BIT12,ASTAT       ;LOAD EXPECTED BIT
330    000642'  006267  177236           1S:    ASR      ASTAT              ;CHANGE THE DATA
331    000646'  001422                           BEQ      2S                 ;BR IF DONE
332    000650'  016777  177230  177356          MOV      ASTAT,@VCDAC2      ;LOAD DAC # 2
333    000656'  017767  177352  177216          MOV      @VCDAC2,ACSR       ;READ DAC #
334    000664'  026767  177214  177210          CMP      ASTAT,ACSR         ;COMPARE RESULT
335    000672'  001763                           BEQ      1S                 ;BR IF CORRECT
336    000674'  012767  000025  177204          MOV      #25,ERRTYP         ;BIT STUCK
337                                            ;************************************************************
338    000702'  104405  000000' 000000          HRDERS$,BEGIN,NULL          ;DAC # 2 IN ERROR
339                                            ;************************************************************
340    000710'  005267  000646                   INC      FATAL              ;SET FATAL ERROR FLAG
341    000714'  000240                    2S:    NOP
342
343                                            ;NOW TEST DAC #3 REGISTER BITS
344
345    000716'  016767  177314  177154   TST3RG: MOV      VCDAC3,CSRA        ;LOAD BUS ADDRESS
346    000724'  012767  010000  177152          MOV      #BIT12,ASTAT       ;LOAD EXPECTED BIT
347    000732'  006267  177146           1S:    ASR      ASTAT              ;CHANGE THE DATA
348    000736'  001422                           BEQ      2S                 ;BR IF DONE
349    000740'  016777  177140  177270          MOV      ASTAT,@VCDAC3      ;LOAD DAC # 3
350    000746'  017767  177264  177126          MOV      @VCDAC3,ACSR       ;READ DAC #
351    000754'  026767  177124  177120          CMP      ASTAT,ACSR         ;COMPARE RESULT
352    000762'  001763                           BEQ      1S                 ;BR IF CORRECT
353    000764'  012767  000025  177114          MOV      #25,ERRTYP         ;BIT STUCK
354                                            ;************************************************************
355    000772'  104405  000000' 000000          HRDERS$,BEGIN,NULL          ;DAC # 3 IN ERROR
356                                            ;************************************************************
357    001000'  005267  000556                   INC      FATAL              ;SET FATAL ERROR FLAG
358    001006'  000240                    2S:    NOP
359
360    001006'  005767  000550                   TST      FATAL              ;TEST IF ANY FATAL LOGIC ERRORS
361    001012'  001402                           BEQ      PRIME
362    001014'  104410  000000'                  ENDS$,BEGIN                 ;DROP MODULE DUE TO DAC REGISTER ERROR
363
364    001020'  005077  177202           PRIME:  CLR      @VCSTAT            ;ENSURE CLEAR STATUS
365    001024'  012777  001052' 177206          MOV      #AA11K,@VCIV       ;SET UP LPSVC VECTOR
366    001032'  116777  176754  177202          MOVB     BR1,@VCIVS         ;SET UP
367    001040'  012777  000101  177160          MOV      #101,@VCSTAT       ;START DISPLAY AND INTERRUPT ENABLE
368
369    001046'  104400  000000'                  EXIT$,BEGIN                 ;EXIT TO MONITOR. MODULE WAIT FOR INTERRUPT.
370
```

```
371                                            ;DISPLAY     "AA11-K" ON THE SCOPE
372
373    001052'                            AA11K:
374                                            ;------------------------------------------------
375    001052'  000004  000000' 001060'          PIRQ$,BEGIN,1S             ; QUEUE UP TO CONTINUE AT 1S AND RTI
376                                            ;------------------------------------------------
377    001060'  105777  177142           1S:    TSTB     @VCSTAT
378    001064'  100415                           BMI      AA11KA
379    001066'  017767  177134  177006          MOV      @VCSTAT,ACSR       ;LOAD VALUE
380    001074'  005077  177126                   CLR      @VCSTAT
381    001100'  012767  000011  177000          MOV      #11,ERRTYP         ;ILLEGAL INTERRUPT
382                                            ;************************************************************
383    001106'  104405  000000' 000000          HRDERS$,BEGIN,NULL         ; NO DISPLAY READY FLAG
384                                            ;************************************************************
385    001114'  104410  000000'                  ENDS$,BEGIN
386
387    001120'  012767  002000  000436   AA11KA: MOV      #2000,XPOS         ;LOAD X AXIS
388    001126'  012767  005000  000432          MOV      #5000,YPOS         ;LOAD Y AXIS
389    001134'  012767  000006  000426          MOV      #6,CNTR            ;SET UP FOR 6 CHARACTERS
390    001142'  012767  001514' 000422          MOV      #TEXT,PNTR         ;TEXT AA11-K
391    001150'  012777  001276' 177062   TXT1:   MOV      #CHAR3,@VCIV       ;LOAD INTERRUPT VECTOR
392    001156'  017767  000410  000416          MOV      @PNTR,AAR2         ;LOAD
393
394                                            ;PLOT CHARACTER
395
396    001164'  016767  000376  000402   CHAR:   MOV      YPOS,YPT           ;INIT POINT
397    001172'  042777  000016  177026          BIC      #16,@VCSTAT
398    001200'  016777  000360  177022          MOV      XPOS,@VCXREG
399    001206'  016777  000354  177016          MOV      YPOS,@VCYREG
400    001214'  057777  000010  177004   CHAR5:  BIS      #10,@VCSTAT        ;LOAD STATUS
401    001222'  012767  177773  000346          MOV      #-5,AAR0           ;MATRIX COUNT <ROW>
402    001230'  012767  177771  000342   CHAR1:  MOV      #-7,AAR1           ;MATRIX COUNT <COLUMN>
403    001236'  117767  000340  000340          MOVB     @AAR2,AAR3         ;GET CHARACTER
404    001244'  005267  000332                   INC      AAR2
405    001250'  106167  000330           CHAR2:  ROLB     AAR3
406    001254'  100033                           BPL      CHAR13
407    001256'  016777  000302  176744          MOV      XPOS,@VCXREG       ;LOAD X
408    001264'  016777  000276  176740          MOV      YPOS,@VCYREG
409    001272'  104400  000000'                  EXIT$,BEGIN                 ;EXIT TO MONITOR. MODULE WAIT FOR INTERRUPT.
410    001276'                            CHAR3:
411                                            ;------------------------------------------------
412    001276'  000004  000000' 001304'          PIRQ$,BEGIN,1S             ; QUEUE UP TO CONTINUE AT 1S AND RTI
413                                            ;------------------------------------------------
414    001304'  105777  176716           1S:    TSTB     @VCSTAT
415    001310'  100415                           BMI      CHAR13
416    001312'  017767  176710  176562          MOV      @VCSTAT,ACSR       ;LOAD VALUE
417    001320'  005077  176702                   CLR      @VCSTAT
418    001324'  012767  000011  176554          MOV      #11,ERRTYP         ;ILLEGAL INTERRUPT
419                                            ;************************************************************
420    001332'  104405  000000' 000000          HRDERS$,BEGIN,NULL         ;NO DISPLAY READY
421                                            ;************************************************************
422    001340'  104410  000000'                  ENDS$,BEGIN                 ;
```

```
423  001344' 062767 000070 000214  CHAR13: ADD   #70,YPOS        ;NEXT POINT
424  001352' 005267 000222                  INC   AAR1           ;ALL POINTS IN THE COLUMN
425  001356' 001334                          BNE   CHAR2
426  001360' 016767 000210 000200            MOV   YPT,YPOS       ;LOAD NEXT COLUMN
427  001366' 062767 000070 000170            ADD   #70,XPOS       ;ADD SCALCE
428  001374' 005267 000176                   INC   AAR0           ;DONE ALL COLUMN
429  001400' 001313                          BNE   CHAR1
430  001402' 062767 000070 000154            ADD   #70,XPOS       ;YES, NEXT CHARACTER
431  001410' 062767 000002 000154            ADD   #2,PNTR
432  001416' 032777 001000 176602  CHAR11: BIT   #BIT9,@VCSTAT    ;TEST CHANNEL
433  001424' 001004                          BNE   1S
434  001426' 052777 001000 176572            BIS   #BIT9,@VCSTAT  ;SET CHANNEL
435  001434' 000403                          BR    CHAR20
436  001436' 042777 030000 176562  1S:     BIC   #BIT,@VCSTAT     ;CLEAR CHANNEL
437
438  001444' 005367 000120          CHAR20: DEC   CNTR
439  001450' 001017                          BNE   2S
440  001452' 042777 000002 176546            BIC   #2,@VCSTAT
441  001460' 026767 176540 176352            CMP   VCPAS,ICOUNT   ;TIME FOR FINAL ITERATION ?
442  001466' 001404                          BEQ   1S             ;YES BRANCH
443  001470' 104413 000000'                  ENDITS,BEGIN         ;SIGNAL END OF ITERATION.
                                                                  ;MONITOR SHALL TEST END OF PASS
444
445  001474' 000167 177420                  JMP   AA11KA
446  001500' 005077 176522          1S:     CLR   @VCSTAT
447  001504' 104413 000000'                  ENDITS,BEGIN         ;SIGNAL END OF ITERATION.
                                                                  ;MONITOR SHALL TEST END OF PASS
448
449
450  001510' 000167 177434          2S:     JMP   TXT1
```

```
451                                          ;TEXT FOR THE AA11-K SCOPE OPTION
452                                          ;TEXT =        "AA11-K"
453
454  001514' 001530'               TEXT:   A
455  001516' 001530'                        A
456  001520' 001554'                        N1
457  001522' 001554'                        N1
458  001524' 001547'                        DASH
459  001526' 001535'                        K
460
461  001530' 176 021  021          A:      .BYTE  176,21,21,21,176
462  001533' 021 176
463  001535' 177 010  024          K:      .BYTE  177,10,24,42,101
464  001540' 042 101
465  001542' 046 111  111          S:      .BYTE  46,111,111,111,62
466  001545' 111 062
467  001547' 010 010  010          DASH:   .BYTE  0,10,10,10,0
468  001552' 010 000
469  001554' 000 102  177          N1:     .BYTE  0,102,177,100,0
470  001557' 100 000
471
472         001562'                        .EVEN
473
474  001562' 000000               FATAL:  0
475  001564' 000000               XPOS:   0
476  001566' 000000               YPOS:   0
477  001570' 000000               CNTR:   0
478  001572' 000000               PNTR:   0
479  001574' 000000               YPT:    0
480  001576' 000000               AAR0:   0
481  001600' 000000               AAR1:   0
482  001602' 000000               AAR1:   0
483  001604' 000000               AAR3:   0
484  001606' 000000               TEMP1:  0
485  001610' 000000               TEMP2:  0
486
487         000001                        .END
```

```
A         001530R    454    455    461#
AAR0      001576R    401*   428*   480#
AAR1      001600R    402*   424*   481#
AAR2      001602R    392*   403    404*   482#
AAR3      001604R    403*   405*   483#
AA11K     001052R    365    373#
AA11KA    001120R    378    387#   445
ACSR      000102R    224#   299*   300    316*   317    333*   334    350*   351    379*   416*
ADDR      000006R    190#   269    270    272    274    276
ADDR22=   001000
ASB       000100R    229#
ASTAT     000104R    226#   295*   296*   298    300    312*   313*   315    317    329*   330*   332    334
                     346#   347*   349    351
AWAS      000110R    229#
BEGIN     000000R    187#   304    321    338    355    362    369    375    383    385    409    412    420
                     422    443    447
BIT0  = 000001       242#   244#
BIT1  = 000002       242#   244#
BIT10 = 002000       242#   244#
BIT11 = 004000       242#   244#
BIT12 = 010000       242#   244#   295    312    329    346
BIT13 = 020000       242#   244#
BIT14 = 040000       242#   244#
BIT15 = 100000       242#   244#
BIT2  = 000004       242#   244#
BIT3  = 000010       242#   244#
BIT4  = 000020       242#   244#
BIT5  = 000040       242#   244#
BIT6  = 000100       242#   244#
BIT7  = 000200       242#   244#
BIT8  = 000400       242#   244#
BIT9  = 001000       242#   244#   432    434
BREAKS= 104407       242#
BR1       000012R    192#   366
BR2       000013R    193#
BTOD$ = 104421       242#
CDATA$= 104412       242#
CHAR      001164R    396#
CHAR1     001230R    402#   429
CHAR11    001316R    432#
CHAR13    001344R    406    415    423#
CHAR2     001250R    405#   425
CHAR20    001444R    435    438#
CHAR3     001276R    391#   410#
CHAR5     001214R    400#
CNTR      001570R    389*   438*   477#
CONFIG    000056R    212#
CSRA      000100R    225#   281*   294*   311*   328*   345*
DASH      001547R    456    467#
DATCK$= 104411       242#
DATER$= 104404       242#
DVID1     000014R    194#
ENDITS= 104413       242#   443    447
END$  = 104410       362    385    422
ERRTYP    000106R    227#   302*   319*   336*   353*   381*   418*
EXITS = 104400       242#   369    409
```

```
FATAL     001562R    290*   306*   323*   340*   357*   360    474#
GETPAS= 104415       242#
GWBUPS= 104414       242#
HRDCNT    000044R    207#
HRDERS= 104405       242#   304    321    338    355    383    420
HRDPAS    000050R    209#
ICONT     000036R    204#   264
ICOUNT    000040R    205#   441
IONUM     000122R    234#
INIT      000030R    201#
INTR      000120R    233#   266*
K         001535R    459    463#
MAP22$= 104416       242#
MODNAM    000000R    188#
MODSP     000224R    202    240#
MSGN$ = 104403       242#
MSGS$ = 104402       242#
MSG$  = 104401       242#   304    321    338    355    383    420
NULL  = 000000       242#   304    321    338    355    383    420
N1        001554R    456    469#
OPEN  = 000000       189    195    196    197    198    215    216    217    218    219    220    221    222
                     224    226    228    229    231    232    233    242#
OTOA$ = 104420       242#
PASCNT    000034R    203#
PIRQ$ = 000004       242#   375    412*
PNTR      001572R    390*   392    431*   478#
POPSP = 005726       242#
POPSP2= 022626       242#
PRIME     001020R    361    364#
PRTV  = 000000       193    242#
PRTV0 = 000000       242#
PRTV1 = 000040       242#
PRTV2 = 000100       242#
PRTV3 = 000140       242#
PRTV4 = 000200       192    242#
PRTV5 = 000240       242#
PRTV6 = 000300       242#
PRTV7 = 000340       242#
PS    = 177776       242#
PSW   = 177776       242#
PUSH  = 005746       242#
PUSH2 = 024646       242#
RAND$ = 104417       242#
RANNUM    000054R    211#
RESTRT    000416R    230    285#
RES1      000056R    213#
RES2      000060R    214#
RSTPT     000112R    230#
S         001542R    465#
SBADR     000102R    223#
SOFCNT    000042R    206#
SOFER$= 104406       242#
SOFPAS    000046R    208#
SPOINT    000032R    202#
SPSIZ = 000040         1#   235
SR1       000016R    195#
```

AABB DEC/X11 SYSTEM EXERCISER MODULE   MACV11 30A(1052) 12-OCT-78 16:15 PAGE 17
XAARBO.P11   12-OCT-78 11:40   CROSS REFERENCE TABLE -- USER SYMBOLS

SEQ 0015

```
SR2      000020R       196#
SR3      000022R       197#
SR4      000024R       198#
START    000244R       201      264#
STAT     000026R       200#
SVR0     000062R       215#
SVR1     000064R       216#
SVR2     000066R       217#
SVR3     000070R       218#
SVR4     000072R       219#
SVR5     000074R       220#
SVR6     000076R       220#
SVSCNT   000052R       210#
TEMP1    001606R       484#
TEMP2    001610R       485#
TEXT     001514R       390      454#
TRPDFD=  000022        242#
TSTXRG   000446R       294#
TSTYRG   000536R       311#
TST2RG   000626R       328#
TST3RG   000716R       345#
TXT1     001150R       391#     450
VCDAC2   000234R       254#     274*    275*    288*    328     332*    333
VCDAC3   000236R       255#     276*    277*    289*    345     349*    350
VCTV     000240R       256#     278*    365*    391*
VCIVS    000242R       260#     279*    280*    366*
VCPAS    000224R       246#     264#    265*    441
VCSTAT   000226R       251#     269*    281     295*    364*    367*    377    379    380*    397*    400*    414    416
                       417#     432     434*    436*    440*    446*
VCXREG   000230R       252#     270*    271*    286*    294     298*    299    398*    407*
VCYREG   000232R       253#     272*    273*    287*    311     315*    316    399*    408*
VECTOR   000010R       191#     278     279
WASIDR   000104R       229#
WDFR     000116R       232#     268*
WDTO     000114R       231#     267*
XFLAG    000005R       189#
XPOS     001564R       387*     398     407     427*    430*    475#
YPOS     001566R       388*     396     399     408     423*    426*    476#
YPT      001574R       396*     426     479#
.      = 001612R       472#


. ABS.   000000        000
         001612        001
```

ERRORS DETECTED: 0
DEFAULT GLOBALS GENERATED: 0

XAARBO,XAARBO/SOL/CRF:SYM=DDXCOM,XAARBO
RUN-TIME: 1 1 .3 SECONDS
RUN-TIME RATIO: 11/3=3.1
CORE USED: 7K (13 PAGES)