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IDENTIFICATION

PRODUCT CODE: AC-E836E-MC

PRODUCT NAME: CXCBBE0 CB11 DISTRIBUTE MOD

PRODUCT DATE: SEPTEMBER 1978

MAINTAINER: DEC/X11 SUPPORT GROUP

1. ABSTRACT

CBB IS A BKMOD THAT EXERCISES UP TO "N" CB11 DISTRIBUTOR MODULES HAVING CONTIGUOUS UNIBUS ADDRESSES. THE MAXIMUM VALUE IF "N" IS THE SAME AS THE MAXIMUM NO. OF DISTRIBUTORS MODULES ALLOWED FOR A SINGLE CB11. NON-CONTIGUOUS GROUPS OF DISTRIBUTOR MODULES MAY BE EXERCISED BY CONFIGURATING THE CBB MODULE FOR EACH GROUP. THE MODULE SIMPLY TESTS THE ABILITY TO SET AND CLEAR ALL BITS IN ALL AVAILABLE DISTRIBUTE REGISTERS SELECTED FOR TEST. IF ANY BIT FAILS TO SET OR CLEAR PROPERLY THE ERROR IS REPORTED ON THE CONSOLE TTY.

2. REQUIREMENTS:

HARDWARE: A CB11 INTERFACE WITH AT LEAST ONE DISTRIBUTE MODULE.

STORAGE:: CBB REQUIRES:
1. DECIMAL WORDS: 126
2. OCTAL WORDS: 0176
3. OCTAL BYTES: 374

3. PASS DEFINITION

ONE PASS OF THE CBB MODULE RESULTS IN 100. ITERATIONS OF THE BASIC TEST SEQUENCE WHICH CLEARS AND SETS ALL DISTRIBUTOR REGISTERS SELECTED FOR TEST

4. EXECUTION TIME

CBB RUNNING ALONE ON A PDP 11/05 SYSTEM WITH ONE DISTRIBUTE MODULE SELECTED TAKES APPROXIMATELY 10 SECONDS.

5. CONFIGURATION PARAMETERS

DEFAULT PARAMETERS:

DVADR: 0,VECTOR:0,BR1:0,BR2:0,DVECNT:1,SR1:0

REQUIRED PARAMETERS:

FOR EACH COPY OF CBB CONFIGURED THE
USER MUST SPECIFY THE FOLLOWING PARAMETERS:

DEVADR:	EQUAL TO THE FIRST ADDRESS IN A CONTIGUOUS GROUP
SR1:	NUMBER OF MODULES (SEE "OPERATION OPTIONS")

6. DEVICE OPTION SETUP:

NONE REQUIRED

7. MODULE OPERATION

TEST SEQUENCE.

A. SET UP THE PASS COUNTER FOR 100. ITERATIONS
B. GET THE CONTENTS OF SR1 TO FIND OUT HOW
   MANY REGISTERS TO TEST
C. CLEAR A DISTRIBUTE REGISTER
D. COUNT IT
E. REPORT ANY ERROR
F. GENERATE NEXT ADDRESS
G. REPEAT B-F UNTIL ALL REGISTERS TESTED
   FOR ALL ZEROES
H. REPEAT B-G BUT SET ALL REGISTERS TO
   ALL ONES AND TEST
I. COUNT ONE ITERATION
J. IF NOT 100. REPEAT B-I
K. REPEAT END PAS,RESTART AT A.

8. OPERATION OPTIONS

A. USER CAN MODIFY "ADDR" AND "SR1" TO
   SELECT ANY GROUP OF DISTRIBUTE MODULES

SR1: THE NUMBER (OCTAL) OF DISTRIBUTE MODULES TO BE TESTED
(MUST BE CONTIGUOUS). THIS NUMBER MUST BE A STRAIGHT OCTAL NUMBER,
NOT A BIT MAP AS IS NORMALLY USED IN DEVCNT.
DEVCNT WAS NOT USED BECAUSE IT CAN HOLD A MAXIMUN
OF 16 DEVICES AND CBB CAN RUN UP TO 256 DEVICES.
IF SR1 IS LEFT AT ZERO OR OTHERWISE IMPROPERLY SET
UP, THE SYSTEM WILL EVENTUALLY CRASH.

9. NON-STANDARD PRINTOUTS

NONE-ALL PRINTOUTS HAVE THE STANDARD
DEC/X11 FORMATS.

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                ;CB11 DISTRIBUTE MODULE - DEC/X11 EXERCISER MODULE

                        BKMOD   <CBBE >,,,,100.,,34
                        MODULE  40020,CBBE ,,,,,100.,,34
                        .TITLE  CBBE DEC/X11 SYSTEM EXERCISER MODULE
                ;       DDXCOM  VERSION  6      23-MAY-78
                                .LIST   BIN
                        ;*****************************************************************************
000000-                 BEGIN:
000000- 041103  042502      040 MODNAM: .ASCII  /CBBE / ;MODULE NAME.
000005-     000         XFLAG:  .BYTE   OPEN        ;USED TO KEEP TRACK OF WBUFF USAGE
000006- 000000          ADDR:   +0              ;1ST DEVICE ADDR.
000010- 000000          VECTOR: +0              ;1ST DEVICE VECTOR.
000012-     000         BR1:    .BYTE   PRTY+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- 040020          STAT:   40020           ;STATUS WORD.
000030- 000224-         INIT:   START           ;MODULE START ADDR.
000032- 000224-         SPOINT: MODSP           ;MODULE STACK POINTER.
000034- 000000          PASCNT: 0               ;PASS COUNTER.
000036- 000144          ICONT:  100.            ;# OF ITERATIONS PER PASS=100.
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- 000232-         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
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000122- 000034          IDNUM:  34              ;MODULE IDENTIFICATION NUMBER=34
        000040                  .REPT   SPSIZ       ;MODULE STACK STARTS HERE.
                                .NLIST
                                .WORD   0
                                .LIST
                                .ENDR
000224-                 MODSP:
                        ;*****************************************************************************
  223
  224 000224- 012767  000002  177664 START:  MOV     #2,WDFR             ;2 WORDS FROM MEM/ITERATION
  225 000232- 016700  177550         RESTRT: MOV     ADDR,R0             ;GET THE 1ST REG. ADDRESS
  226 000236- 016702  177554                 MOV     SR1,R2              ;GET THE DISTR. MODULE COUNT
  227 000242- 006302                         ASL     R2                  ;MAKE IT A REG. COUNT
  228 000244- 005010                 1$:     CLR     (R0)                ;CLEAR THE REGISTER
  229 000246- 001024                         BNE     5$                  ;BR IF IT DIDN'T CLEAR ALL BITS
  230 000250- 005302                 4$:     DEC     R2                  ;COUNT ONE REG.
  231 000252- 001402                         BEQ     3$                  ;BR IF ALL REGS CLEARED
  232 000254- 005720                         TST     (R0)+               ;GENERATE NXT ADDRESS
  233 000256- 000772                         BR      1$                  ;GO CLEAR THE NEXT ONE
  234 000260- 016700  177522         3$:     MOV     ADDR,R0             ;GET THE 1ST REG. ADDRESS
  235 000264- 016702  177526                 MOV     SR1,R2              ;GET THE DISTR. MODULE COUNT
  236 000270- 006302                         ASL     R2                  ;MAKE IT A REG. COUNT
  237 000272- 005110                 8$:     COM     (R0)                ;SET ALL ONES
  238 000274- 022710  177777                 CMP     #177777,(R0)        ;DID ALL BITS SET ?
  239 000300- 001022                         BNE     6$                  ;BR IF NOT
  240 000302- 005302                 7$:     DEC     R2                  ;COUNT ONE REG.
  241 000304- 001402                         BEQ     2$                  ;BR IF ALL REGS SET
  242 000306- 005720                         TST     (R0)+               ;GENERATE THE NXT ADDRESS
  243 000310- 000770                         BR      8$                  ;GO DO ANOTHER ONE
  244 000312-                        2$:
  245 000312- 104413  000000-                ENDITS,BEGIN                ;SIGNAL END OF ITERATION.
  246                                                                    ;MONITOR SHALL TEST END OF PASS
  247 000316- 000745                         BR      RESTRT              ;BR TIL 100. TIMES THROUGH
  248 000320- 010067  177554         5$:     MOV     R0,CSRA             ;SAVE THE ADDRESS OF THE REG.
  249 000324- 011067  177552                 MOV     (R0),ACSR           ;SAVE THE CONTENTS
  250 000330- 012767  000025  177550         MOV     #25,ERRTYP          ;BIT STUCK IN REG.
  251                                        ;*****************************************************************
  252 000336- 104405  000000- 000000         HRDERS,BEGIN,NULL           ;FAILED TO CLEAR ALL BITS
  253                                        ;*****************************************************************
  254 000344- 000741                         BR      4$                  ;GO TRY THE NEXT GUY
  255 000346- 010067  177526         6$:     MOV     R0,CSRA             ;SAVE THE ADDRESS OF THE REG
  256 000352- 011067  177524                 MOV     (R0),ACSR           ;SAVE THE CONTENTS
  257 000356- 012767  000025  177522         MOV     #25,ERRTYP          ;BIT STUCK IN REG.
  258                                        ;*****************************************************************
  259 000364- 104405  000000- 000000         HRDERS,BEGIN,NULL           ;FAILED TO SET ALL BITS
  260                                        ;*****************************************************************
  261 000372- 000743                         BR      7$                  ;GO TRY THE NEXT GUY
  262
  263
  264         000001                 .END
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ACSR    000102R          205#    249*    256*
ADDR    000006R          171#    225     234
ADDR22= 001000           223#
ASB     000106R          209#
ASTAT   000104R          207#
AWAS    000110R          210#
BEGIN   000000R          168#    245     252     259
BIT0    =  000001        223#
BIT1    =  000002        223#
BIT10   =  002000        223#
BIT11   =  004000        223#
BIT12   =  010000        223#
BIT13   =  020000        223#
BIT14   =  040000        223#
BIT15   =  100000        223#
BIT2    =  000004        223#
BIT3    =  000010        223#
BIT4    =  000020        223#
BIT5    =  000040        223#
BIT6    =  000100        223#
BIT7    =  000200        223#
BIT8    =  000400        223#
BIT9    =  001000        223#
BREAK$= 104407           223#
BR1     000012R          173#
BR2     000013R          174#
BTOD$ = 104421           223#
CDATA$= 104412           223#
CONFIG  000056R          193#
CSRA    000100R          203#    248*    255*
DATCK$= 104411           223#
DATER$= 104404           223#
DVIDI   000014R          175#
ENDIT$= 104413           223#    245
END$  = 104410           223#
ERRTYP  000106R          208#    250*    257*
EXIT$ = 104400           223#
GETPA$= 104415           223#
GWBUF$= 104414           223#
HRDCNT  000044R          188#
HRDER$= 104405           223#    252     259
HRDPAS  000050R          190#
ICONT   000036R          185#
ICOUNT  000040R          186#
IDNUM   000122R          215#
INIT    000030R          182#
INTB    000120R          214#
MAP22$= 104416           223#
MODNAM  000000R          169#
MODSP   000224R          183     221#
MSGH$ = 104403           223#
MSGS$ = 104402           223#
MSG$  = 104401           223#
NULL    000000           223#    252     259
OPEN    =  000000        170     176     177     178     179     196     197     198     199     200     201     202     203
                         205     207     209     210     212     213     214     223#
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OTOA$ = 104420           223#
PASCNT  000034R          184#
PIRQ$ = 000004           223#
POPSP   005726           223#
POPSP2= 022626           223#
PRTY    =  000000        173     174     223#
PRTY0   =  000000        223#
PRTY1   =  000040        223#
PRTY2   =  000100        223#
PRTY3   =  000140        223#
PRTY4   =  000200        223#
PRTY5   =  000240        223#
PRTY6   =  000300        223#
PRTY7   =  000340        223#
PS      =  177776        223#
PSW     =  177776        223#
PUSH    =  005746        223#
PUSH2 = 024646           223#
RAND$ = 104417           223#
RANNUM  000054R          192#
RESTRT  000232R          211     225#    247
RES1    000056R          194#
RES2    000060R          195#
RSTRT   000112R          211#
SBADR   000102R          204#
SOFCNT  000042R          187#
SOFER$= 104406           223#
SOFPAS  000046R          189#
SPOINT  000032R          183#
SPSIZ =  000040          18      216
SR1     000016R          176#    226     235
SR2     000020R          177#
SR3     000022R          178#
SR4     000024R          179#
START   000224R          182     224#
STAT    000026R          181#
SVR0    000062R          196#
SVR1    000064R          197#
SVR2    000066R          198#
SVR3    000070R          199#
SVR4    000072R          200#
SVR5    000074R          201#
SVR6    000076R          202#
SVSCNT  000052R          191#
TRPDFD= 000022           223#
VECTOR  000010R          172#
WASADR  000104R          206#
WDFR    000116R          213#    224*
WDTO    000114R          212#
XFLAG   000005R          170#

. ABS.  000000     000
        000374     001
```

```
 ERRORS DETECTED:  0
 DEFAULT GLOBALS GENERATED:  0

 XCBBE0,XCBBE0/SQL/CRF:SYM=DDXCOM,XCBBE0
 RUN-TIME:  1  1  .2 SECONDS
 RUN-TIME RATIO: 8/2=3.3
 CORE USED:  7K  (13 PAGES)
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