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IDENTIFICATION

PRODUCT CODE: AC-E733I-MC

PRODUCT NAME: CXDRCI0 DR11-C MODULE

PRODUCT DATE: SEPTEMBER 1978

MAINTAINER: DEC/X11 SUPPORT GROUP

1. ABSTRACT

DRC IS A IOMOD THAT EXERCISES UP TO SIXTEEN DR11-C'S. THE MODULE USES THE MAINTENANCE MODE TO CHECK DATA TRANSFERS TO AND FROM THE DR11-C. IT TRANSMITS AND RECEIVES 64 WORST-CASE 16 BIT WORDS AND ALSO TESTS THE ABILITY OF THE DR11C TO GENERATE BOTH A-REQUEST AND B-REQUEST INTERRUPTS.
IT WILL DROP ITSELF IF RUN IN AN XXDP CHAIN WHEN THE MANUEL INTERVENTION BIT IS NOT SET.(BIT 0 IN LOC.52

2. REQUIREMENTS

HARDWARE: ONE DR11-C WITH A MAINTENANCE CABLE

STORAGE:: DRC REQUIRES:
1. DECIMAL WORDS: 308
2. OCTAL WORDS: 0464
3. OCTAL BYTES: 1150

3. PASS DEFINITION

ONE PASS OF THE DRC MODULE CONSISTS OF TRANSMITTING AND RECEIVING 64 WORDS AND GENERATING ONE A-REQUEST AND ONE B-REQUEST INTERRUPT.

4. EXECUTION TIME

ONE PASS OF DRC RUNNING ALONE ON A PDP11/03 PROCESSOR TAKES APPROXIMATELY THIRTY SECONDS

5. CONFIGURATION REQUIREMENTS

DEFAULT PARAMETERS:

DEVADR: 167770, VECTOR: 1, BR1: 5, DEVCNT: 1

REQUIRED PARAMETERS:

AT CONFIGURATION TIME USER MUST SUPPLY THE LOWEST VECTOR OF THE DR11-C'S.

6. DEVICE/OPTION SET-UP

CONNECT THE MAINTENANCE CABLE TO TIE OUTPUT BACK TO INPUT

7. MODULE OPERATION

TEST SEQUENCE:

A. SET UP VECTORS AND ADDRESS POINTER
B. OUTPUT TEST DATA TO OUTPUT BUFFER
C. COMPARE OUTPUT BUFFER WITH TEST DATA-REPORT ANY DATA ERROR
D. COMPARE INPUT BUFFER WITH TEST DATA-REPORT ANY DATA ERROR
E. IF NOT 64 TRANSFERS, BUBBLE TEST DATA2 AND REPEAT B-D
F. IF 64 TRANSFERS GENERATED AND TEST A/B
INTERRUPTS
G. IF NO INTERRUPT-DO NOT REPORT END PASS
H. IF INTERRUPT-REPORT END PASS RESTART AT A

IF DEVICE FAILS TO GENERATE INTERRUPT A MESSAGE WILL BE PRINTED.

8. OPERATION OPTIONS

NONE

9. NON-STANDARD PRINTOUTS

"DEVICE FAILED TO INTERRUPT" MESSAGE IF INTERFACE FAILS TO INTERRUPT ON EITHER REQUEST BIT.

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                        ;DR11-C DEC/X11 EXERCISER MODULE
                        IOMOD   <DRCI >,167770,1,5,,5000,57
                        MODULE  140000,DRCI ,167770,1,5,,5000,57
                        .TITLE  DRCI DEC/X11 SYSTEM EXERCISER MODULE
                ;       DDXCOM  VERSION  6      23-MAY-78
                                .LIST   BIN
                                ;*****************************************************************************
000000'                         BEGIN:
000000' 051104  044503    040   MODNAM: .ASCII  /DRCI / ;MODULE NAME.
000005'     000                 XFLAG:  .BYTE   0PEN            ;USED TO KEEP TRACK OF WBUFF USAGE
000006' 167770                  ADDR:   167770+0                ;1ST DEVICE ADDR.
000010' 000001                  VECTOR: 1+0                     ;1ST DEVICE VECTOR.
000012'     240                 BR1:    .BYTE   PRTY5+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' 140000                  STAT:   140000                  ;STATUS WORD.
000030' 000240'                 INIT:   START                   ;MODULE START ADDR.
000032' 000224'                 SPOINT: MODSP                   ;MODULE STACK POINTER.
000034' 000000                  PASCNT: 0                       ;PASS COUNTER.
000036' 005000                  ICONT:  5000                    ;# OF ITERATIONS PER PASS=5000
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' 000312'                 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' 000057                  IDNUM:  57                      ;MODULE IDENTIFICATION NUMBER=57
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                000040                  .REPT   SPSIZ           ;MODULE STACK STARTS HERE.
                                        .NLIST
                                        .WORD   0
                                        .LIST
                                        .ENDR
000224'                                 MODSP:
                                ;*****************************************************************************
    192                         ;LOCAL VARIABLE STORAGE
    193 000224' 000000          FLAG:   OPEN
    194 000226' 000000          SELECT: OPEN
    195 000230' 177777          ALLON:  -1
    196 000232' 000000          ALLOFF: 0
    197 000234' 177776          BUBBLE: 177776
    198 000236' 177777          CBIT:   -1
    199                         ;
    200                         ;
    201                         ;
    202                         ;THIS MODULE TESTS THE DR11-C GENERAL DEVICE INTERFACE
    203                         ;MAINTENANCE CABLE MUST BE INSTALLED FOR THIS TEST
    204                         ;
    205                         ;
    206                         ;
    207                         ;
    208                         ;
    209                         ;
    210                         ;INITIALIZATION FOR GENERAL DEVICE INTERFACE
    211
    212
    213 000240' 012767  000100  177646  START:  MOV     #64.,WDTO       ;64. WORDS TO MEM/ITERATION
    214 000246' 012767  000100  177642          MOV     #64.,WDFR       ;64. WORDS FROM MEM/ITERATION
    215 000254' 012767  000002  177636          MOV     #2,INTR         ;2 INTERRUPTS/ITERATION
    216 000262' 005737  000042                  TST     @#42            ;IS THIS XXDP CHAIN
    217 000266' 001411                          BEQ     RESTRT          ;BR IF NO
    218 000270' 032737  000001  000052          BIT     #1,@#52         ;MAN. INTER. ALLOWED?
    219 000276' 001005                          BNE     RESTRT          ;BR IF YES
    220 000300' 104403  000000' 000750'         MSG$,BEGIN,CHAIN        ;ASCII MESSAGE CALL WITH COMMON HEADER
    221 000306' 104410  000000'                 END$,BEGIN              ;
    222 000312' 016767  177476  177706  RESTRT: MOV     DVID1,SELECT            ;COPY THE DEVICE SELECTION PARAMETER
    223 000320' 001002                          BNE     REST                    ;ARE ANY SELECTED? IF YES GO RUN THEM
    224 000322'                         DROP:
    225 000322' 104410  000000'                 END$,BEGIN              ;IF NO, DROP THE MODULE.
    226
    227 000326' 016700  177674          REST:   MOV     SELECT,R0               ;COPY THE DEVICE SELECTION PARAMETER
    228 000332' 001773                          BEQ     DROP                    ;ARE ANY SELECTED? IF NO, DROP THE MODULE
    229 000334' 012767  177701  177540          MOV     #177701,SPADR           ;LOAD FUSS ADDRESS OF R1 AS SHOULD BE ADDRESS
    230 000342' 016705  177440                  MOV     ADDR,R5                 ;GET DEVICE ADDRESS
    231 000346' 016702  177436                  MOV     VECTOR,R2               ;LOAD DEVICE VECTOR
    232 000352' 006200                  1$:     ASR     R0                      ;ISOLATE A SELECTION FLAG
    233 000354' 103406                          BCS     3$                      ;IF SELECTED, GO SET UP VECTORS
    234 000356' 001416                          BEQ     SETUP1                  ;IF NO MORE SELECTED,GO DO DATA SETUP
    235 000360' 062702  000010                  ADD     #10,R2                  ;POINT TO NEXT VECTOR
    236 000364' 162705  000010          2$:     SUB     #10,R5                  ;POINT TO NEXT ADDRESS
    237 000370' 000770                          BR      1$                      ;GO PROCESS NEXT DEVICE
    238 000372' 012722  000760'         3$:     MOV     #DRACTA,(R2)+           ;SET A VECTOR TO SERVICE ROUTINE
    239 000376' 016722  177410                  MOV     BR1,(R2)+               ;SET A PRIORTY
    240 000402' 012722  000774'                 MOV     #DRACTB,(R2)+           ;SET B VECTOR TO SERVICE ROUTINE
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000406' 016722  177400              MOV     BR1,(R2)+               ;SET B PRICRITY
000412' 000764                      BR      2$                      ;GO ADJUST ADDRESS POINTER
000414' 016700  177606      SETUP1: MOV     SELECT,R0               ;COPY SELECTION PARAMETER
000420' 016705  177362              MOV     ADDR,R5                 ;RESET POINTER TO FIRST ADDRESS
000424' 005725                      TST     (R5)+                   ;POINT TO DATA BUFFER WORD
000426' 012767  177777  177602  NEXT: MOV     #-1,CBIT        ;FIRST ROTATE WANTS '1' INTO LSB
000434' 005004                      CLR     R4              ;FLAG REGISTER (DENOTES SWITCH FROM ALLON PATTERN TO ALL
000436' 016701  177566              MOV     ALLON,R1        ;SET UP INITIAL DATA PATTERN
000442' 016703  177566              MOV     BUBBLE,R3       ;SET UP ALTERNATE DATA PATTERN
000446' 006200                      ASR     R0                      ;ISOLATE A SELECTION FLAG
000450' 103404                      BCS     DRACT1                  ;IF SELECTED GO CHECK DATA
000452' 001532                      BEQ     ENPS                    ;IF NO MORE SELECTED, CALL FOR END OF PASS
000454' 162705  000010      SETUP2: SUB     #10,R5                  ;POINT TO THE NEXT DEVICE'S BUFFER WORD
000460' 000762                      BR      NEXT                    ; GO PROCESS NEXT DEVICE
                            ;**********
                            ;CHECK DR11-C DATA TRANSFER CAPABILITY
                            ;       SEND, VERIFY, AND CHECK (THROUGH MAINTAINANCE CABLE) ALTERNATING WORDS
                            ;       OF 177777 AND 0-BUBBLING-THROUGH-1'S, THEN ALTERNATING 0 AND 0-
                            ;       BUBBLING-THROUGH-1'S.  TOTAL OF 64 BIT-PATTERNS SENT AND TESTED IN
                            ;       EACH PASS.
000462' 010115              DRACT1: MOV     R1,(R5)                 ;MOVE DATA TO OUTPUT BUFFER
000464' 020115                      CMP     R1,(R5)                 ;CHECK DATA
000466' 001411                      BEQ     2$                      ;BRANCH IF DATA GOOD
000470' 010567  177410              MOV     R5,WASADR               ;BAD DATA ADDRESS
000474' 010167  177406              MOV     R1,ASB                  ;MOVE 'SHOULD BE'
000500' 011567  177404              MOV     (R5),AWAS               ;MOVE 'WAS'
                                    ;*****************************************************************
000504' 104404  000000'             DATER$,BEGIN            ;DATA ERROR!!!
                                    ;*****************************************************************
000510' 000417                      BR      2$                      ;NEXT DATA
000512' 020165  000002      1$:     CMP     R1,2(R5)                ;CHECK RECEIVED DATA
000516' 001414                      BEQ     2$                      ;BRANCH IF DATA GOOD
000520' 010567  177360              MOV     R5,WASADR               ;BAD DATA ADDRESS
000524' 062767  000002  177352      ADD     #2,WASADR               ;MAKE IT THE CORRECT ADDRESS
000532' 010167  177350              MOV     R1,ASB                  ;MOVE 'SHOULD BE'
000536' 016567  000002  177344      MOV     2(R5),AWAS              ;MOVE 'WAS'
                                    ;*****************************************************************
000544' 104404  000000'             DATER$,BEGIN            ;DATA ERROR!!!
                                    ;*****************************************************************

                            ;THIS SECTION FINDS AND LOADS INTO R1 THE NEXT PATTERN IN THE WORST-CASE
                            ;BUS TEST SEQUENCE, AND DECIDES WHEN TO END THE TEST.
                            ;
000550' 020167  177454      2$:     CMP     R1,ALLON                ;SWITCH TO BUBBLE PATTERN
000554' 001413                      BEQ     4$                      ;  IF STRAIGHT 1/0 PATTERN
000556' 020167  177450              CMP     R1,ALLOFF               ;    IS NOW
000562' 001410                      BEQ     4$                      ;      IN USE
000564' 005704                      TST     R4                      ;SWITCH TO STRAIGHT 1/0: DECIDE WHICH
000566' 001403                      BEQ     3$                      ;FLAG RESET, SO IT'S ALL-ON PATTERN
000570' 016701  177436              MOV     ALLOFF,R1               ;FLAG SET, IT'S ALL-OFF PATTERN
000574' 000732                      BR      DRACT1                  ;REPEAT TEST WITH NEW WORD
000576' 016701  177426      3$:     MOV     ALLON,R1                ;ALL-ON PATTERN
000602' 000727                      BR      DRACT1                  ;REPEAT TEST SEQUENCE
000604' 010301              4$:     MOV     R3,R1                   ;PUT IN DATA BUFFER
000606' 006167  177424              ROL     CBIT                    ;LOAD C WITH MSB OF CBIT (LAST MSB OF R3)
000612' 006103                      ROL     R3                      ;SHIFT 0 THROUGH WORD, TO LEFT
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000614' 103403                      BCS     5$                      ;DO WE SET OR RESET NEXT CBIT?
000616' 005067  177414              CLR     CBIT                    ;C WAS 0, SO CBIT RESET
000622' 000403                      BR      6$                      ;CONTINUE
000624' 012767  177777  177404  5$: MOV     #-1,CBIT                ;C WAS 1, SO CBIT SET
000632' 026701  177376      6$:     CMP     BUBBLE,R1               ;IS 0 BACK TO LSB WHERE IT STARTED?
000636' 001311                      BNE     DRACT1                  ;IF NOT, CONTINUE
000640' 005704                      TST     R4                      ;0 HAS BUBBLED ALL AROUND.  ARE WE FINISHED?
000642' 100404                      BMI     INTEST                  ;YES (FLAG SET); TEST INTERRUPTS
000644' 005304                      DEC     R4                      ;NO.  SET FLAG.
000646' 016701  177360              MOV     ALLOFF,R1               ;REPEAT WHOLE THING, WITH ALL-OFF PATTERN INSTEA
000652' 000703                      BR      DRACT1                  ;RETURN TO TEST LOOP


                                    ;CHECK INTERRUPTS ON  DR11-C


000654' 005015              INTEST: CLR     (R5)                    ;CLEAR OUTPUT & INPUT(VIA CABLE) BUFFERS
000656' 012704  000002              MOV     #2,R4                   ;BREAK LOOP COUNTER
000662' 005067  177336              CLR     FLAG                    ;FLAG: BOTH INTERRUPTS IN
000666' 005045                      CLR     -(R5)                   ;CLEAR CONTROL REGISTER
000670' 012715  000003              MOV     #3,(R5)                 ;SET MAINTENANCE BITS
000674' 010567  177174              MOV     R5,SVR5                 ;SAVE R5 BEFORE INTERRUPT COMES
000700' 052715  000040              BIS     #40,(R5)                ;ENABLE 'A' INTERRUPT
000704'                     TIMER:
000704' 104407  000000'             BREAK$,BEGIN            ;TEMPORARY RETURN TO MONITOR....
000710' 104407  000000'             BREAK$,BEGIN            ;THEN CONTINUE AT NEXT INSTRUCTION.
000714' 005767  177304              TST     FLAG                    ;IF FLAG IS CLEAR, NO INTERRUPT YET
000720' 001005                      BNE     RESET                   ;IF FLAG SET, GO START NEXT DEVICE
000722' 005304                      DEC     R4                      ;REDUCE COUNT. IF NOT EXCEEDED, BREAK AGAIN
000724' 001367                      BNE     TIMER                   ;WAIT A LITTLE LONGER
000726' 104403  000000' 000754'     MSG$,BEGIN,HUNG         ;ASCII MESSAGE CALL WITH COMMON HEADER
000734' 005725              RESET:  TST     (R5)+                   ;RESTORE R5 VALUE
000736' 000646                      BR      SETUP2                  ;GO PROCESS NEXT DEVICE
000740'                     ENPS:
000740' 104413  000000'             ENDIT$,BEGIN            ;SIGNAL END OF ITERATION.
                                                            ;MONITOR SHALL TEST END OF PASS
000744' 000167  177342              JMP     RESTRT


000750' 001012'             CHAIN:  CHAINM
000752' 177777                      177777
000754' 001114'             HUNG:   FAIL
000756' 177777                      177777


                                    ;INPUT/OUTPUT SERVICE ROUTINES


000760' 042777  000100  177106  DRACTA: BIC     #100,@SVR5      ;DISABLE A INTERRUPT IMMEDIATELY, THROUGH SAVED R5
000766' 005267  177232              INC     FLAG
000772' 000002                      RTI                     ;RETURN TO BREAK LOOP
000774' 042777  000040  177072  DRACTB: BIC     #40,@SVR5       ;DISABLE B INTERRUPT IMMEDIATELY, THROUGH SAVED R5
001002' 052777  000100  177064          BIS     #100,@SVR5      ;ENABLE A INTERRUPT NOW
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  353  001010' 000002                          RTI                     ;RETURN
  354
  355
  356  001012' 051104  020103  040503  CHAINM: .ASCIZ  'DRC CANNOT BE RUN IN THIS CHAIN, MANUAL INTERVENTION NOT ALLOWED.'
  357  001020' 047116  052117  041040
  358  001026' 020105  052522  020116
  359  001034' 047111  052040  044510
  360  001042' 020123  044103  044501
  361  001050' 026116  046440  047101
  362  001056' 040525  020114  047111
  363  001064' 042524  053122  047105
  364  001072' 044524  047117  047040
  365  001100' 052117  040440  046114
  366  001106' 053517  042105  000056
  367  001114' 042504  044526  042503  FAIL:   .ASCIZ  'DEVICE FAILED TO INTERRUPT'
  368  001122' 043040  044501  042514
  369  001130' 020104  047524  044440
  370  001136' 052116  051105  052522
  371  001144' 052120    000
  372          001150'                        .EVEN
  373          000001                         .END
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```
ACSR      000102R          174#
ADDR      000006R          140#    230     244
ADDR22=   001000           192#
ALLOFF    000232R          196#    286     290     306
ALLON     000230R          195#    248     284     292
ASB       000106R          178#    265*    275*
ASTAT     000104R          176#
AWAS      000110R          179#    266*    276*
BEGIN     000000R          137#    220     221     225     268     278     323     324     329     333
BIT0  =   000001           192#
BIT1  =   000002           192#
BIT10 =   002000           192#
BIT11 =   004000           192#
BIT12 =   010000           192#
BIT13 =   020000           192#
BIT14 =   040000           192#
BIT15 =   100000           192#
BIT2  =   000004           192#
BIT3  =   000010           192#
BIT4  =   000020           192#
BIT5  =   000040           192#
BIT6  =   000100           192#
BIT7  =   000200           192#
BIT8  =   000400           192#
BIT9  =   001000           192#
BREAK$=   104407           192#    323     324
BR1       000012R          142#    239     241
BR2       000013R          143#
BTOD$ =   104421           192#
BUBBLE    000234R          197#    249     301
CBIT      000236R          198#    246*    295*    298*    300*
CDATA$=   104412           192#
CHAIN     000750R          220     338#
CHAINM    001012R          338     356#
CONFIG    000056R          162#
CSRA      000100R          172#
DATCK$=   104411           192#
DATER$=   104404           192#    268     278
DRACTA    000760R          238     348#
DRACTB    000774R          240     351#
DRACT1    000462R          251     261#    291     293     302     307
DROP      000322R          224#    228
DVID1     000014R          144#    232
ENDIT$=   104413           192#    333
END$  =   104410           192#    221     225
ENP$      000740R          252     332#
ERRTYP    000106R          177#
EXIT$ =   104400           192#
FAIL      001114R          340     367#
FLAG      000224R          193#    317*    325     349*
GETPA$=   104415           192#
GWBUF$=   104414           192#
HRDCNT    000044R          157#
HRDER$=   104405           192#
HRDPAS    000050R          159#
HUNG      000754R          329     340#
```

```
ICONT   000036R          154#
ICOUNT  000040R          155#
IDNUM   000122R          184#
INIT    000030R          151#
INTEST  000654R          304     315#
INTR    000120R          183#    215#
MAP22$= 104416           192#
MODNAM  000000R          138#
MODSP   000224R          152     190#
MSGN$ = 104403           192#    220     329
MSGS$ = 104402           192#
MSG$  = 104401           192#
NEXT    000426R          246#    254
NULL  = 000000           192#
OPEN  = 000000           139     145     146     147     148     165     166     167     168     169     170     171     172
                         174     176     178     179     181     182     183     192#    193     194
OTOA$ = 104420           192#
PASCNT  000034R          153#
PIRQ$ = 000004           192#
POPSP = 005726           192#
POPSP2= 022626           192#
PRTY  = 000000           143     192#
PRTY0 = 000000           192#
PRTY1 = 000040           192#
PRTY2 = 000100           192#
PRTY3 = 000140           192#
PRTY4 = 000200           192#
PRTY5 = 000240           142     192#
PRTY6 = 000300           192#
PRTY7 = 000340           192#
PS    = 177776           192#
PSW   = 177776           192#
PUSH  = 005746           192#
PUSH2 = 024646           192#
RAND$ = 104417           192#
RANNUM  000054R          161#
RESET   000734R          326     330#
REST    000326R          223     227#
RESTRT  000312R          180     217     219     222#    335
RES1    000056R          163#
RES2    000060R          164#
RSTRT   000112R          180#
SBADR   000102R          173#    229*
SELECT  000226R          194#    222*    227     243
SETUP1  000414R          234     243#
SETUP2  000454R          253#    331
SOFCNT  000042R          156#
SOFERS= 104406           192#
SOPAS   000046R          158#
SPDINT  000032R          152#
SPSIZ = 000040             1#    185
SR1     000016R          145#
SR2     000020R          146#
SR3     000022R          147#
SR4     000024R          148#
START   000240R          151     213#
```



```
STAT    000026R          150#
SVR0    000062R          165#
SVR1    000064R          166#
SVR2    000066R          167#
SVR3    000070R          168#
SVR4    000072R          169#
SVR5    000074R          170#    320*    348*    351*    352*
SVR6    000076R          171#
SYSCNT  000052R          160#
TIMER   000704R          322#    328
TRPDFD= 000022           192#
VECTOR  000010R          141#    231
WASADR  000104R          175#    264*    273*    274*
WDFR    000116R          182#    214*
WDTO    000114R          181#    213*
XFLAG   000005R          139#
.     = 001150R          372#

. ABS.  000000      000
        001150      001

 ERRORS DETECTED:  0
 DEFAULT GLOBALS GENERATED:  0

 XDRCIO,XDRCIO/SQL/CRF:SYM=DDXCOM,XDRCIO
 RUN-TIME: 1 1 .2 SECONDS
 RUN-TIME RATIO: 11/2=4.1
 CORE USED:  7K  (13 PAGES)
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