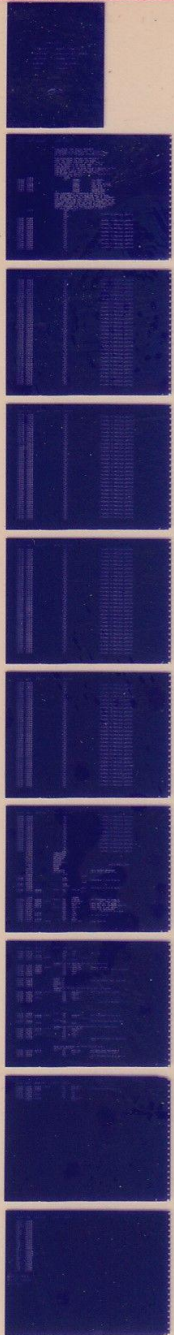


DR11A

MASTER
MD-11-DZDRD-A
(DUAL DR11A INTERFACE)

EP-DZDRD-A-DL
COPYRIGHT 1972
FICHE 1 OF 1

MAY 1978
digital
MADE IN USA



IDENTIFICATION

PRODUCT CODE: MAINDEC-11-DZDRD-A-D
PRODUCT NAME: MASTER (DUAL DR11A INTERFACE)
DATE CREATED: DECEMBER 19, 1972
MAINTAINER: IPG CUSTOM SYSTEMS
AUTHOR: R. BALDWIN

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DIGITAL EQUIPMENT CORPORATION

| | | | |
|--------|--------|------|-------------------------------|
| 001560 | 000000 | HALT | ITRAPPED TO PREVIOUS LOCATION |
| 001562 | 001564 | ,+2 | |
| 001564 | 000000 | HALT | ITRAPPED TO PREVIOUS LOCATION |
| 001566 | 001570 | ,+2 | |
| 001570 | 000000 | HALT | ITRAPPED TO PREVIOUS LOCATION |
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| 001642 | 001644 | ,+2 | |
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| 002030 | 000000 | HALT | ITRAPPED TO PREVIOUS LOCATION |
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| 002034 | 000000 | HALT | ITRAPPED TO PREVIOUS LOCATION |
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| 002040 | 000000 | HALT | ITRAPPED TO PREVIOUS LOCATION |
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| 002050 | 000000 | HALT | ITRAPPED TO PREVIOUS LOCATION |
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| 002054 | 000000 | HALT | ITRAPPED TO PREVIOUS LOCATION |
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| 002060 | 000000 | HALT | ITRAPPED TO PREVIOUS LOCATION |
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| 002106 | 002110 | ,+2 | |
| 002110 | 000000 | HALT | ITRAPPED TO PREVIOUS LOCATION |
| 002112 | 002114 | ,+2 | |

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|--------|--------|------|-------------------------------|
| 002114 | 000000 | HALT | ITRAPPED TO PREVIOUS LOCATION |
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| 002120 | 000000 | HALT | ITRAPPED TO PREVIOUS LOCATION |
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| 002124 | 000000 | HALT | ITRAPPED TO PREVIOUS LOCATION |
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| 002130 | 000000 | HALT | ITRAPPED TO PREVIOUS LOCATION |
| 002132 | 002134 | ,+2 | |
| 002134 | 000000 | HALT | ITRAPPED TO PREVIOUS LOCATION |
| 002136 | 002140 | ,+2 | |
| 002140 | 000000 | HALT | ITRAPPED TO PREVIOUS LOCATION |
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| 002144 | 000000 | HALT | ITRAPPED TO PREVIOUS LOCATION |
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| 002150 | 000000 | HALT | ITRAPPED TO PREVIOUS LOCATION |
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| 002154 | 000000 | HALT | ITRAPPED TO PREVIOUS LOCATION |
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| 002160 | 000000 | HALT | ITRAPPED TO PREVIOUS LOCATION |
| 002162 | 002164 | ,+2 | |
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| 002170 | 000000 | HALT | ITRAPPED TO PREVIOUS LOCATION |
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| 002176 | 002200 | ,+2 | |
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| 002204 | 000000 | HALT | ITRAPPED TO PREVIOUS LOCATION |
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| 002212 | 002214 | ,+2 | |
| 002214 | 000000 | HALT | ITRAPPED TO PREVIOUS LOCATION |
| 002216 | 002220 | ,+2 | |
| 002220 | 000000 | HALT | ITRAPPED TO PREVIOUS LOCATION |
| 002222 | 002224 | ,+2 | |
| 002224 | 000000 | HALT | ITRAPPED TO PREVIOUS LOCATION |
| 002226 | 002230 | ,+2 | |
| 002230 | 000000 | HALT | ITRAPPED TO PREVIOUS LOCATION |
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| 002234 | 000000 | HALT | ITRAPPED TO PREVIOUS LOCATION |
| 002236 | 002240 | ,+2 | |
| 002240 | 000000 | HALT | ITRAPPED TO PREVIOUS LOCATION |
| 002242 | 002244 | ,+2 | |
| 002244 | 000000 | HALT | ITRAPPED TO PREVIOUS LOCATION |
| 002246 | 002250 | ,+2 | |
| 002250 | 000000 | HALT | ITRAPPED TO PREVIOUS LOCATION |
| 002252 | 002254 | ,+2 | |
| 002254 | 000000 | HALT | ITRAPPED TO PREVIOUS LOCATION |
| 002256 | 002260 | ,+2 | |
| 002260 | 000000 | HALT | ITRAPPED TO PREVIOUS LOCATION |
| 002262 | 002264 | ,+2 | |
| 002264 | 000000 | HALT | ITRAPPED TO PREVIOUS LOCATION |
| 002266 | 002270 | ,+2 | |
| 002270 | 000000 | HALT | ITRAPPED TO PREVIOUS LOCATION |

| | | | |
|--------|--------|------|-------------------------------|
| 002272 | 002274 | ,+2 | |
| 002274 | 000000 | HALT | ITRAPPED TO PREVIOUS LOCATION |
| 002276 | 002300 | ,+2 | |
| 002300 | 000000 | HALT | ITRAPPED TO PREVIOUS LOCATION |
| 002302 | 002304 | ,+2 | |
| 002304 | 000000 | HALT | ITRAPPED TO PREVIOUS LOCATION |
| 002306 | 002310 | ,+2 | |
| 002310 | 000000 | HALT | ITRAPPED TO PREVIOUS LOCATION |
| 002312 | 002314 | ,+2 | |
| 002314 | 000000 | HALT | ITRAPPED TO PREVIOUS LOCATION |
| 002316 | 002320 | ,+2 | |
| 002320 | 000000 | HALT | ITRAPPED TO PREVIOUS LOCATION |
| 002322 | 002324 | ,+2 | |
| 002324 | 000000 | HALT | ITRAPPED TO PREVIOUS LOCATION |
| 002326 | 002330 | ,+2 | |
| 002330 | 000000 | HALT | ITRAPPED TO PREVIOUS LOCATION |
| 002332 | 002334 | ,+2 | |
| 002334 | 000000 | HALT | ITRAPPED TO PREVIOUS LOCATION |
| 002336 | 002340 | ,+2 | |
| 002340 | 000000 | HALT | ITRAPPED TO PREVIOUS LOCATION |
| 002342 | 002344 | ,+2 | |
| 002344 | 000000 | HALT | ITRAPPED TO PREVIOUS LOCATION |
| 002346 | 002350 | ,+2 | |
| 002350 | 000000 | HALT | ITRAPPED TO PREVIOUS LOCATION |
| 002352 | 002354 | ,+2 | |
| 002354 | 000000 | HALT | ITRAPPED TO PREVIOUS LOCATION |
| 002356 | 002360 | ,+2 | |
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| 002362 | 002364 | ,+2 | |
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| 002372 | 002374 | ,+2 | |
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| 002376 | 002400 | ,+2 | |
| 002400 | 000000 | HALT | ITRAPPED TO PREVIOUS LOCATION |
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| 002404 | 000000 | HALT | ITRAPPED TO PREVIOUS LOCATION |
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| 002412 | 002414 | ,+2 | |
| 002414 | 000000 | HALT | ITRAPPED TO PREVIOUS LOCATION |
| 002416 | 002420 | ,+2 | |
| 002420 | 000000 | HALT | ITRAPPED TO PREVIOUS LOCATION |
| 002422 | 002424 | ,+2 | |
| 002424 | 000000 | HALT | ITRAPPED TO PREVIOUS LOCATION |
| 002426 | 002430 | ,+2 | |
| 002430 | 000000 | HALT | ITRAPPED TO PREVIOUS LOCATION |
| 002432 | 002434 | ,+2 | |
| 002434 | 000000 | HALT | ITRAPPED TO PREVIOUS LOCATION |
| 002436 | 002440 | ,+2 | |
| 002440 | 000000 | HALT | ITRAPPED TO PREVIOUS LOCATION |
| 002442 | 002444 | ,+2 | |
| 002444 | 000000 | HALT | ITRAPPED TO PREVIOUS LOCATION |
| 002446 | 002450 | ,+2 | |

```

002450 000000 HALT ;TRAPPED TO PREVIOUS LOCATION
002452 002454 ,+2
002454 000000 HALT ;TRAPPED TO PREVIOUS LOCATION
002456 002460 ,+2
002460 000000 HALT ;TRAPPED TO PREVIOUS LOCATION
002462 002464 ,+2
002464 000000 HALT ;TRAPPED TO PREVIOUS LOCATION
002466 002470 ,+2
002470 000000 HALT ;TRAPPED TO PREVIOUS LOCATION
002472 002474 ,+2
002474 000000 HALT ;TRAPPED TO PREVIOUS LOCATION
002476 002500 ,+2
002500 000000 HALT ;TRAPPED TO PREVIOUS LOCATION
002502 002504 ,+2
002504 000000 HALT ;TRAPPED TO PREVIOUS LOCATION
002506 002510 ,+2
002510 000000 HALT ;TRAPPED TO PREVIOUS LOCATION
002512 002514 ,+2
002514 000000 HALT ;TRAPPED TO PREVIOUS LOCATION

```

```

177564 TYSR=177564
177566 TYDB=177566
167770 CSR=167770
177570 SR=177570
000240 NOP=240
177776 PSTAT=177776
000240 DRL=240
000004 R4=X4
000005 R5=X5
167772 DBR=167772
167774 DIT=167774

```

```

; DR11-A BREAK LEVEL
; DATA BUFFER REGISTER
; DATA INPUT TRANSMITTER

```

```

000006 R6=X6
000300 ,=300
000302 001204 INTA ;PROCESSOR STATUS OF SEVEN
000304 000200 000304 ,=304
000306 001170 INTB ;PROCESSOR STATUS OF SEVEN
000200 000200 ,=200
000204 012706 000000 STARTI MOV #000,X6 BEGIN
000204 000167 000570 JMP

```

```

;
001000 001000 ,=1000
001004 012704 001500 BEGINI MOV #TAB,X4 ;SET PROCESSOR TO LEVEL 4
001004 012767 000200 176764 MOV #200,PSTAT ;SET TABLE LOCATOR
001012 004567 000064 JSR X5,DATA0 ;SEND DATA OUT TO SLAVE
001016 000167 000122 JMP WAIT ;WAIT FOR DATA TRANSFER COMPLETE
001022 004567 000164 CYCLEI JSR X5,DATA1 ;READ DATA IN AND VERIFY
001026 005714 TST (X4) ;CHECK FOR TERMINATOR
001030 001402 BEQ ,+6 ;TERMINATOR IS A ZERO
001032 000167 177754 JMP ,=20
001036 005267 000070 INC COUNT ;UP DATE COUNTER
001042 001402 BEQ ,+6
001044 000167 177730 JMP BEGIN
001050 012767 000207 176510 MOV #207,TYDB ;LOAD TELETYPE

```

```

301056 105707 176502      TSTB   TYSR
301062 100422      BMI    ,+6           ;WAIT FOR A DONE
301064 000167 177766      JMP    ,+6
301070 012767 177776 000034  MOV    #-2,COUNT
301076 000167 177076      JMP    START

;
;SUBROUTINE FOR SENDING DATA OUT TO SLAVE PDP-11
DATA01  MOV    (%4),HOLD
301106 012767 000140 166654  MOV    #140,CSR      ;ENABLE INT A+B
301114 012467 166652      MOV    (%4)+,DBR     ;SEND DATA OUT TO DR11A ON MASTER
301120 005167 000010      COM    HOLD
301124 005267 000004      INC    HOLD
301130 000205      RTS    %5

;
COUNT1 -2
HOLD: 0           ;SAVE RECIPROCAL TEST DATA HERE
COUNT1: 2
COUNT2: 0
ROT: 2
;SUBROUTINE TO WAIT FOR DATA BEING READ INTO SLAVE
;PDP-11
301144 012767 177776 177764  WAIT:  MOV    #-2,COUNT1  ;SET TIME OUT FOR A LOOPS
301152 005267 177762      INC    COUNT2
301156 001375      BNE    ,+4
301160 005267 177752      INC    COUNT1
301164 001372      BNE    ,+12
301166 000000      HALT           ;NO INT B RETURNED

;
;
;
;
INTB:  NOP
301170 000240
301172 012767 000200 176576  MOV    #200,PSTAT  ;SET PROCESSOR STATUS TO 5
301200 000167 177616      JMP    CYCLE

;
INTA:  NOP
301204 000240
301206 000167 000024      JMP    READ        ;GO TO READ ROUTINE FROM HERE

;
;SUBROUTINE TO WAIT FOR DATA RETURNED TO THE MASTER DR11-A
DATA11  MOV    #-3,COUNT1
301212 012767 177775 177716  INC    COUNT2
301220 005267 177714      BNE    ,+4
301224 001375      INC    COUNT1
301226 005267 177704      BNE    ,+12
301232 001372      HALT           ;DATA NOT RETURNED IN SPECIFIED
301234 000000      ;TIME

;
;
;READ DATA RETURNED AND VERIFY AGAINST DATA
;IN HOLD POSITION
301236 013703 167774  READ:  MOV    @0DIT,%3  ;PUT DATA INTO REGISTER 3
301242 006703 177666      ADD    HOLD,%3     ;ADD RECIPROCAL OF NUMBER
301246 001401      BEQ    ,+4
301250 000000      HALT           ;DATA RETURNED NOT SAME AS SENT

```

| | | | | | | |
|--------|--------|--------|--------|-----|------------|----------------------------|
| 001252 | 012767 | 000200 | 176516 | MOV | #200,PSTAT | |
| 001260 | 012706 | 000600 | | MOV | #000,X6 | 1SET PROCESSOR STATUS TO 4 |
| 001264 | 005267 | 177652 | | INC | R0T | |
| 001270 | 001375 | | | BNE | ,=4 | |
| 001272 | 005267 | 177644 | | INC | R0T | |
| 001276 | 001375 | | | BNE | ,=4 | |
| 001300 | 000137 | 001020 | | JMP | @CYCLE+4 | |
| | 000001 | | | | .END | |

| | |
|--------|---------|
| BEGIN | 001000 |
| COUNT | 001132 |
| COUNT1 | 001136 |
| COUNT2 | 001140 |
| CSR | 167770 |
| CYCLE | 001022 |
| DATAI | 001212 |
| DATAD | 001102 |
| DSR | 167772 |
| DIT | 167774 |
| DRL | 000240 |
| HOLD | 001134 |
| INTA | 001204 |
| INTB | 001170 |
| NOP | 000240 |
| PSTAT | 177776 |
| R4 | 000004R |
| R5 | 000005R |
| R6 | 000006R |
| READ | 001236 |
| ROT | 001142 |
| SR | 177570 |
| START | 000200 |
| TAB | 001500 |
| TYDB | 177566 |
| TYSR | 177564 |
| WAIT | 001144 |

ERRORS DETECTED: 0

RUN-TIME: 2 SECONDS

4K CORE USED