

**KE11-E extended  
instruction set  
(EIS) option  
engineering drawings**

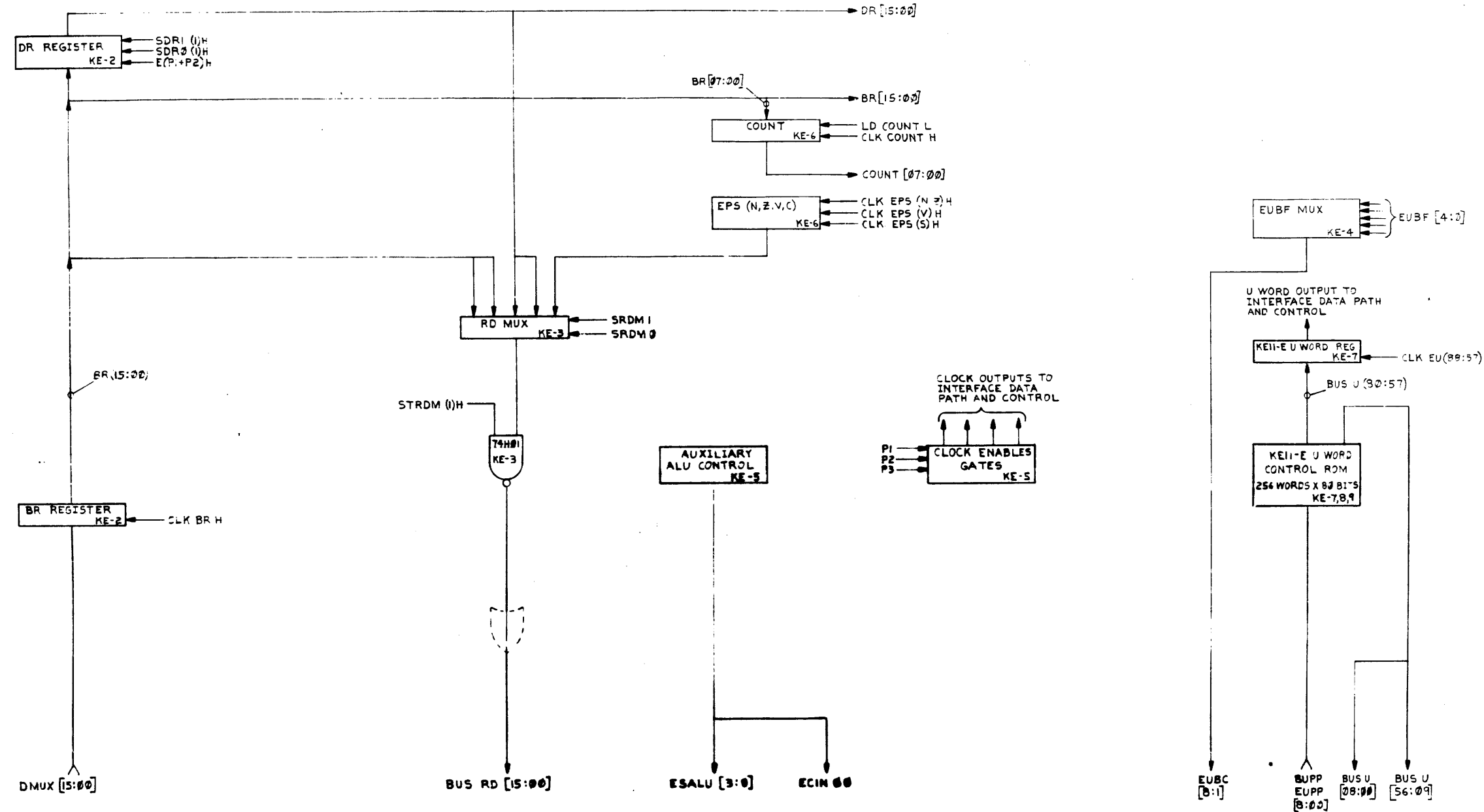






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NOTE: THIS DIAGRAM IS DRAWN SO THAT INTERFACE SIGNALS AT THE BOTTOM OF THIS SHEET LINE UP WITH THEIR RESPECTIVE SIGNALS AT THE TOP OF THE KD11-A BLOCK DIAGRAM (D-BD-KD11-A-BD)



|     |          |     |      |
|-----|----------|-----|------|
| REV | DATE     | BY  | CHKD |
| 1   | 11/22/72 | WJZ | WJZ  |
| 2   | 11/22/72 | WJZ | WJZ  |
| 3   | 11/22/72 | WJZ | WJZ  |
| 4   | 11/22/72 | WJZ | WJZ  |
| 5   | 11/22/72 | WJZ | WJZ  |
| 6   | 11/22/72 | WJZ | WJZ  |
| 7   | 11/22/72 | WJZ | WJZ  |
| 8   | 11/22/72 | WJZ | WJZ  |

| FIRST USED ON OPTION/MODEL   | QTY.                       | DESCRIPTION     | PART NO.  | ITEM NO.                 |
|--|----------------------------|-----------------|---|--------------------------|
| PDP 11   |                            |                 |   |                          |
| PARTS LIST   |                            |                 |   |                          |
| UNLESS OTHERWISE SPECIFIED<br>DIMENSION IN INCHES<br>TOLERANCES    | DRN<br><i>R. P. Smith</i>  | DATE<br>7-10-72 | <br><b>digital</b> EQUIPMENT CORPORATION<br>MAYNARD MASSACHUSETTS |                          |
| DECIMALS   | CHK'D<br><i>W. J. Z...</i> | DATE<br>7-21-72 |   |                          |
| ANGLES   | ENG.<br><i>W. J. Z...</i>  | DATE<br>7-21-72 |   |                          |
| REMOVE BURRS AND BREAK SHARP<br>CORNERS SURFACE QUALITY            | TRC<br><i>W. J. Z...</i>   | DATE<br>7-21-72 |   |                          |
| MATERIAL   |                            |                 |   |                          |
| FINISH   |                            |                 |   |                          |
| TITLE<br><b>KE11-E<br/>BLOCK DIAGRAM<br/>(U WORD &amp; TABLES)</b> |                            |                 | SIZE/COGE<br>B-DD-KE11-E  | NUMBER<br>D BD KE11-E-BD |
| SCALE NONE   |                            |                 | DIST.   | REV.<br>A                |
| SHEET 1 OF 2   |                            |                 |   |                          |

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EXPANSION U WORD

M7239 KEII-F U WORD [U(88:81)] → M7238 KEII-E U WORD [U(80:57)]

| CCN     |         | FCI     | FUB     | MHR     |         |         | FRD     | ERD     | SRD     |         | SDR     |         | CVM     |         |         | NZM     |         | CCC     |         |         | GPC     |         |         | CEE      | CNT     |         | FUB     |         |         |         | CBR     |
|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|----------|---------|---------|---------|---------|---------|---------|---------|
| CON1    | CON0    | FCI BUS | EUBF4   | SMSR    | SHSR1   | SHSR0   | STFRDH  | STRDM   | SRDMI   | SROD0   | SDR1    | SDR0    | SCVM2   | SCVM1   | SCVM0   | SNZM1   | SNZM0   | CLK N2  | CLK V   | CLK C   | GPC2    | GPC1    | GPC0    | CLK UPPB | LCNT    | ECNT    | EUBF3   | EUBF2   | EUBF1   | EUBF0   | CLK BR  |
| U88(1)H | U87(1)H | U86(1)H | U85(1)H | U84(1)H | U83(1)H | U82(1)H | U81(1)H | U80(1)H | U79(1)H | U78(1)H | U77(1)H | U76(1)H | U75(1)H | U74(1)H | U73(1)H | U72(1)H | U71(1)H | U70(1)H | U69(1)H | U68(1)H | U67(1)H | U66(1)H | U65(1)H | U64(1)H  | U63(1)H | U62(1)H | U61(1)H | U60(1)H | U59(1)H | U58(1)H | U57(1)H |

**EUBC (4:1) BUT CHART**

| FUB4 | FUB3 | FUB2 | FUB1 | FUB0 | BUT               |
|------|------|------|------|------|-------------------|
| L    | L    | L    | L    | L    | NOOP              |
| L    | L    | L    | L    | M    | D15               |
| L    | L    | L    | M    | L    | SDIVD             |
| L    | L    | L    | M    | M    | ER15              |
| L    | L    | M    | L    | L    | D=0               |
| L    | L    | M    | M    | L    | DR15              |
| L    | L    | M    | M    | M    | NOT USED          |
| L    | L    | M    | M    | M    | DIV QUIT          |
| L    | M    | L    | L    | L    | COUNT=0           |
| L    | M    | L    | L    | M    | OVFL+UNFL+STORE * |
| L    | M    | L    | M    | L    | DR00 # B15        |
| L    | M    | L    | M    | M    | BR (05:00)        |
| L    | M    | M    | L    | L    | ZB # EPS (2) *    |
| L    | M    | M    | L    | M    | EINSTR I *        |
| L    | M    | M    | M    | L    | EINSTR II         |
| L    | M    | M    | M    | M    | EINSTR I          |

**FUBC BUT CHART (KEII-F) EUBC (4:1)**

| STR   | SZ    | S1    | S0    | FN | BUT (FUBC)   |
|-------|-------|-------|-------|----|--------------|
| FUBF4 | EUBF2 | EUBF1 | EUBF0 |    |              |
| M     |       |       |       | L  |              |
| L     | L     | L     | L     | 00 | ARGA         |
| L     | L     | L     | M     | 01 | MSR01        |
| L     | L     | M     | L     | 02 | ZB # EPS (2) |
| L     | L     | M     | M     | 03 | COUNT > 30   |
| L     | M     | L     | L     | 04 | NORMALIZED   |
| L     | M     | L     | M     | 05 | MSR00        |
| L     | M     | M     | L     | 06 |              |
| L     | M     | M     | M     | 07 |              |

**CONSTANTS (KEII-F)**

| GPC=6 | CCN1 | CCN2 | CONSTANT (OCTAL) |
|-------|------|------|------------------|
| M     | L    | L    | 400              |
| M     | L    | M    | 244              |
| M     | M    | L    | 6                |
| M     | M    | M    | 30               |
| L     | L    | L    | 200              |

**GPC CHART**

| GPC2 | GPC1 | GPC0 | FUNCTION   |
|------|------|------|--|
| 0    | 0    | 0    | NOOP   |
| 0    | 0    | 1    | BUT (NORMALIZE) TFSTS DR00 - KEII-F  |
| 0    | 1    | 0    | ALLOWS ALU CONTROL AS A FUNCTION OF CERTAIN CONDITIONS RATHER THAN DIRECTLY BY THE CONTROL ROM |
| 0    | 1    | 1    | ENABLES DR15 TO PROVIDE THE CARRY-IN TO THE ALU  |
| 1    | 0    | 0    | ENABLES EPS(2) TO PROVIDE THE CARRY-IN TO THE ALU  |
| 1    | 0    | 1    | ENABLES MSR15 TO PROVIDE LSB SHIFT INPUT TO THE DR15   |
| 1    | 1    | 0    | USED IN KEII-F. FORMS CONSTANT 2000  |
| 1    | 1    | 1    | USED IN KEII-F. EXECUTES A MICROPROGRAM TEST FOR ONE RESULT                                    |

**KEII-E KEII-F ALU FUNCTIONS**

| ALU0 | ALU5 | ALU2 | ALU1 | ALU0 | ALU0 | ALU0 (FUNCTION)              |
|------|------|------|------|------|------|------------------------------|
| L    | L    | L    | L    | L    | L    | F=A                          |
| L    | L    | L    | M    | M    | M    | F=A MINUS 1 (2'S COMPLEMENT) |
| L    | L    | M    | M    | M    | M    | F=A MINUS B MINUS 1          |
| L    | M    | L    | L    | M    | M    | F=A PLUS B                   |
| L    | M    | M    | L    | L    | L    | F=A PLUS 0                   |
| M    | L    | L    | L    | L    | L    | F=B                          |
| M    | L    | L    | M    | M    | M    | F=LOGICAL 0                  |
| M    | M    | L    | M    | L    | L    | F=0                          |
| M    | M    | M    | M    | M    | L    | F=A0                         |

REV. 1  
CHG. 1  
NOV 1972

| FIRST USED ON OPTION/MODEL                            | QTY.              | DESCRIPTION                                  | PART NO. | ITEM NO. |
|---|-------------------|--|----------|----------|
| PDP 11  |                   |  |          |          |
| PARTS LIST  |                   |  |          |          |
| UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES        | DATE 9-8-72       | DIGITAL EQUIPMENT CORPORATION                |          |          |
| TOLERANCES  | DATE 9-21-72      | TITLE KEII-E BLOCK DIAGRAM (U WORD & TABLES) |          |          |
| DECIMALS  | DATE 9-21-72      | SIZE CODE D BD                               |          |          |
| ANGLES 20° 30'  | DATE 9-21-72      | NUMBER KEII-E-BD                             |          |          |
| REMOVES BURRS AND BREAK SHARP CORNERS SURFACE QUALITY | DATE 9-21-72      | REV. A                                       |          |          |
| MATERIAL  | NEXT HIGHER ASSY. | SCALE NONE                                   |          |          |
| FINISH  | B-DD-KEII-E       | SHEET 2 OF 2                                 |          |          |

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FLOW PAGE FROM WHICH THIS MICRO PROGRAM ENTRY WAS MADE → ((1) KD11-A FLOW) EXPANSION

U WORD ADDRESS → 500

DATA DISPLAY OF CONSOLE

GENERAL DESCRIPTION

ACTIONS EFFECTED BY U WORD

CYCLE LENGTH NOTED BY P1, P2, OR P3

U WORD BRANCH TEST (MNEMONIC AND EUB CODE)

NOTE 3

P1: BR=D

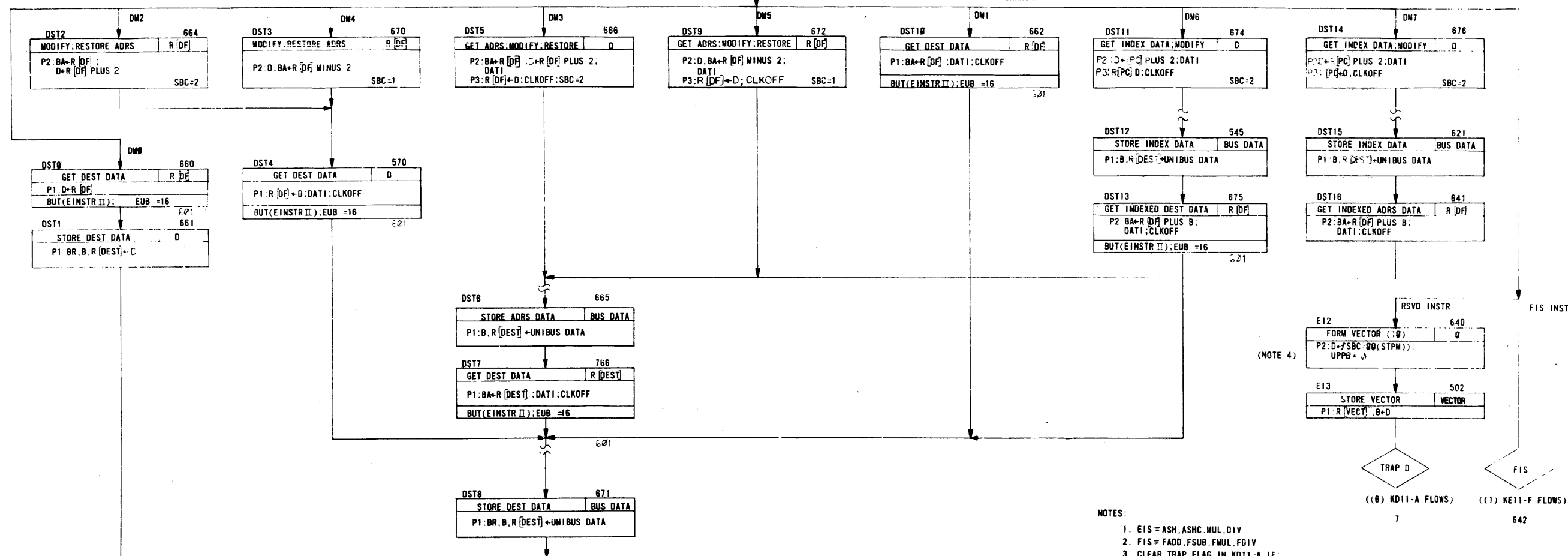
BUT(EINSTR I): EUB =17

E11

ZERO EIS STATUS

P1: EPS(N,Z,V,C)+BR

BASE U WORD ADDRESS FOR BRANCH



- NOTES:
- EIS = ASH, ASHC, MUL, DIV
  - FIS = FADD, FSUB, FMUL, FDIV
  - CLEAR TRAP FLAG IN KD11-A IF:
    - A) EIS OPTION AND EIS INSTRUCTION
    - B) FIS OPTION AND EIS OR FIS INSTRUCTION
  - STILL A RESERVED INSTRUCTION. GENERATE TRAP VECTOR 10, ENABLE KD11-A ROM AND TRAP.
  - R[DF] INDICATES THE DESTINATION REGISTER SELECTED BY THE IR.
  - D IN THE DISPLAY IS THE LAST DATA LOADED INTO THE D REGISTER AND MAY NOT BE PERTINENT.
  - SELECTION OF INTERNAL REGISTERS (R[SF], R[DR], ETC.) IS RELATED TO THE ACTUAL BIT POSITIONS IN THE IR AND NOT TO THE TERMINOLOGY USED IN THE EIS INSTRUCTION FORMAT.

FLOW EXIT INDICATOR → ASHC, ASH, DIV, MUL

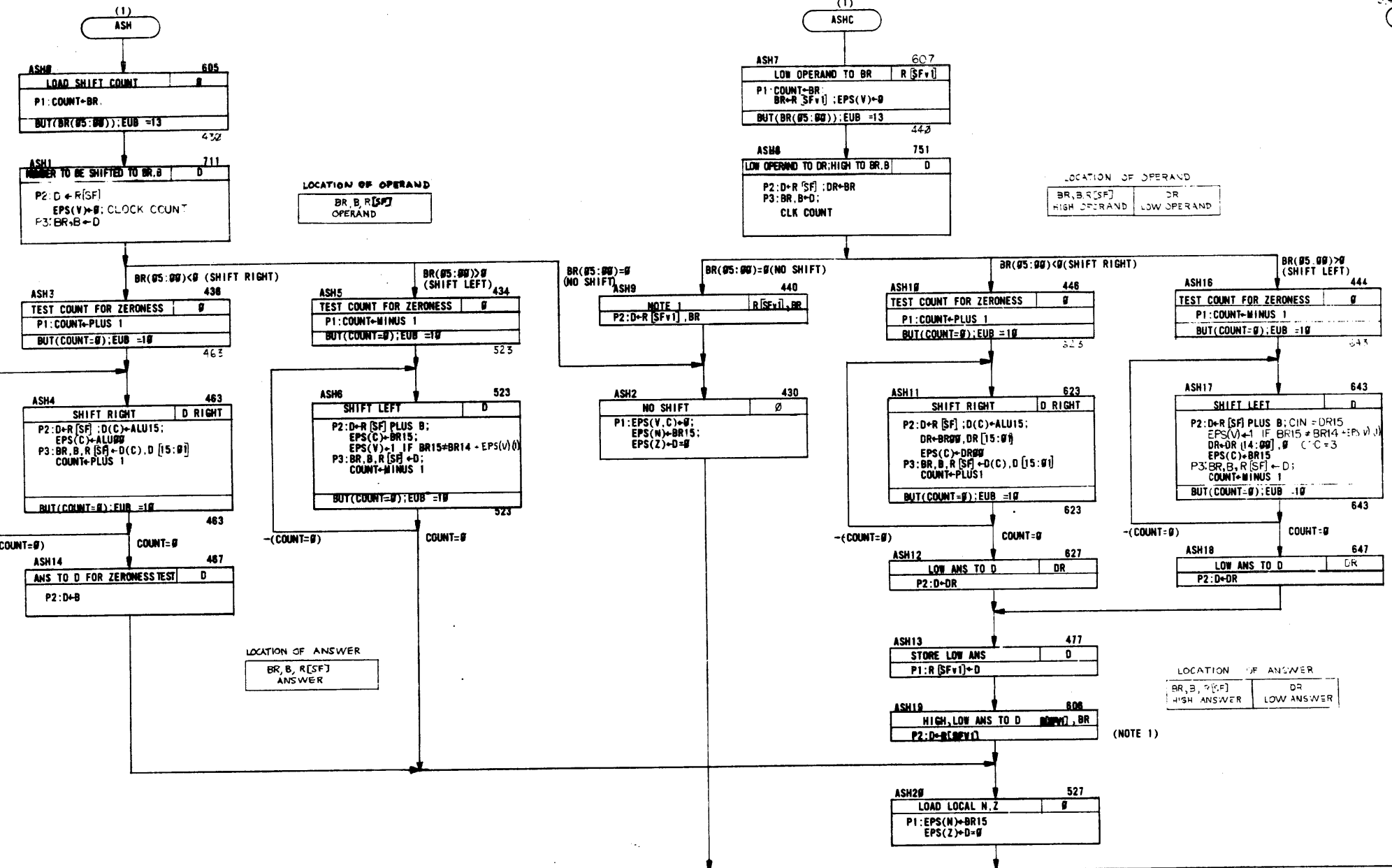
FLOW CONTINUATION PAGE → (2), (2), (5), (4)

ADDRESS OF MICROPROGRAM CONTINUATION → 667, 665, 663, 661

|     |         |         |       |
|-----|---------|---------|-------|
| REV | DATE    | BY      | CHK'D |
| 1   | 1-18-72 | B. KING |       |
| 2   | 2-2-72  | B. KING |       |
| 3   | 2-2-72  | B. KING |       |
| 4   | 2-2-72  | B. KING |       |

| FIRST USED ON OPTION/MODEL                                | QTY.             | DESCRIPTION  | PART NO.                      | ITEM NO.  |
|---|------------------|--------------|-------------------------------|-----------|
| PARTS LIST  |                  |              |                               |           |
| UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES TOLERANCES | DRN              | DATE         | digital EQUIPMENT CORPORATION |           |
| DECIMALS ANGLES   | CHK'D            | DATE         | MAYNARD MASSACHUSETTS         |           |
| XXX - 006   | ENG              | DATE         | TITLE                         |           |
| XX - 02   | PROJ. ENG.       | DATE         | FLOW DIAGRAM                  |           |
| X - 1   | PROJ. ENGR.      | DATE         | (KE11-F-1)                    |           |
| MATERIAL  | NEXT HIGHER ASSY | SCALE        | SIZE CODE                     | NUMBER    |
| FINISH  | B-00-KD11-A      | SHEET 1 OF 5 | D FD                          | KE11-F-FD |
|   |                  |              | DIST                          | REV B     |

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- NOTES:
1. R (X) & BR ARE OR'ED TOGETHER ON BUS RD (15:00) TO DETERMINE ZERONESS OF THE 32 BIT ANSWER.
  2. BUT (COUNT=0) IS USED TO CLOCK THE MPR & BUS REQUEST FLAGS AND TO CLEAR THE BUSY FLAG IN THE KD11-A. THIS ALLOWS MPRS TO OCCUR WITHOUT DOING A BUS DATA CYCLE IN THE KD11-A.
  3. R(SF+1) INDICATES THAT THE SOURCE REGISTER ADDRESS SELECTED BY THE IR IS OR'ED WITH 1.

|                      |            |
|----------------------|------------|
| BRUNING 40-522 15840 | REV. 15-68 |
| CHK                  | CHG        |
| NO                   | NO         |

| FIRST USED ON OPTION/MODEL                                | QTY.              | DESCRIPTION  | PART NO.  | ITEM NO.     |
|---|-------------------|--------------|---|--------------|
| PDF11   |                   | PARTS LIST   |   |              |
| UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES TOLERANCES | DRN               | DATE 1-18-72 | <b>digital EQUIPMENT CORPORATION</b><br>MAYNARD MASSACHUSETTS<br>TITLE<br><b>FLOW DIAGRAM</b><br>(ASH, ASHC)<br>(2) |              |
| DECIMALS ANGLES   | CHK'D             | DATE         |   |              |
| .XXX - .005<br>.XX - .02<br>.X - .1                       | PROJ. ENG.        | DATE         |   |              |
| REMOVE BURRS AND BREAK SHARP CORNERS SURFACE QUALITY      | PROD.             | DATE         |   |              |
| MATERIAL  | NEXT HIGHER ASSY. |              | SIZE CODE   | NUMBER       |
| FINISH  | SCALE             |              | D   | FD KE11-E-FD |
|   | SHEET 2 OF 5      |              | DIST.   |              |

SERVICE C  
((10)) KD11-A FLOW  
17

REV. 15-68 DFD KE11-E-FD B

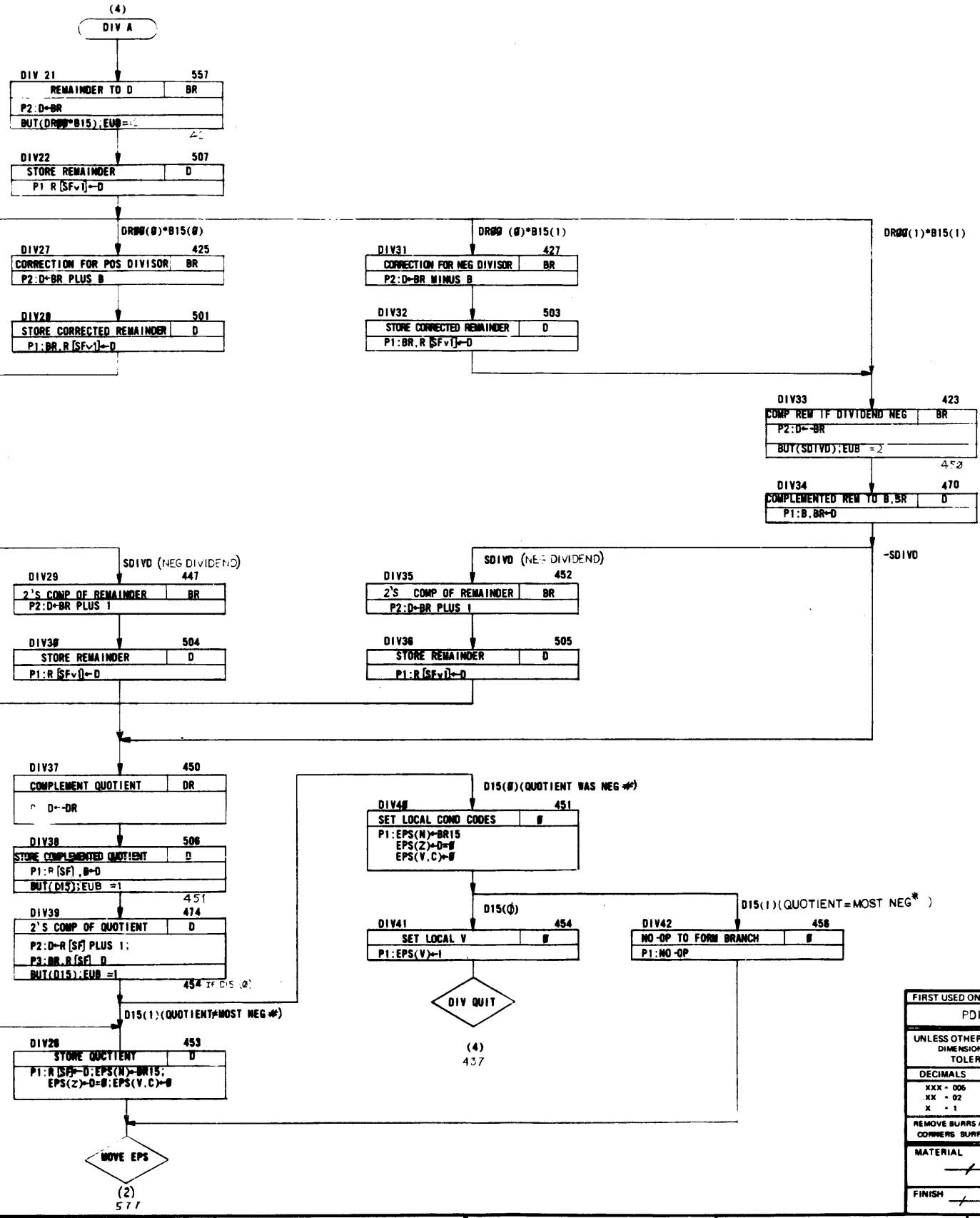


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D  
C  
B  
A

D  
C  
B  
A

SCALE CODE NUMBER  
D FD KEII-E-FD



| FIRST USED ON OPTION/MODEL                                | QTY.         | DESCRIPTION   | PART NO             | ITEM NO.  |
|---|--------------|---|---------------------|-----------|
| PDF-11  |              | PARTS LIST  |                     |           |
| UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES TOLERANCES | DATE 7-8-72  | digital EQUIPMENT CORPORATION<br>MAYNARD, MASSACHUSETTS |                     |           |
| DECIMALS .006   | DATE 7-2-72  | TITLE<br>FLOW DIAGRAM<br>(DIV CONT)                     |                     |           |
| ANGLES 10' 30"  | DATE 7-2-72  |   |                     |           |
| REMOVE BURRS AND BREAK SHARP CORNERS SURFACE QUALITY      | DATE 7-2-72  | NEXT HIGHER ASSY<br>B-DD-KCII-A                         |                     |           |
| MATERIAL  | DATE         |   |                     |           |
| FINISH  | SCALE        | SIZE CODE<br>D FD                                       | NUMBER<br>KEII-E-FD | REV.<br>B |
|   | SHEET 5 OF 5 | DIST.   |                     |           |

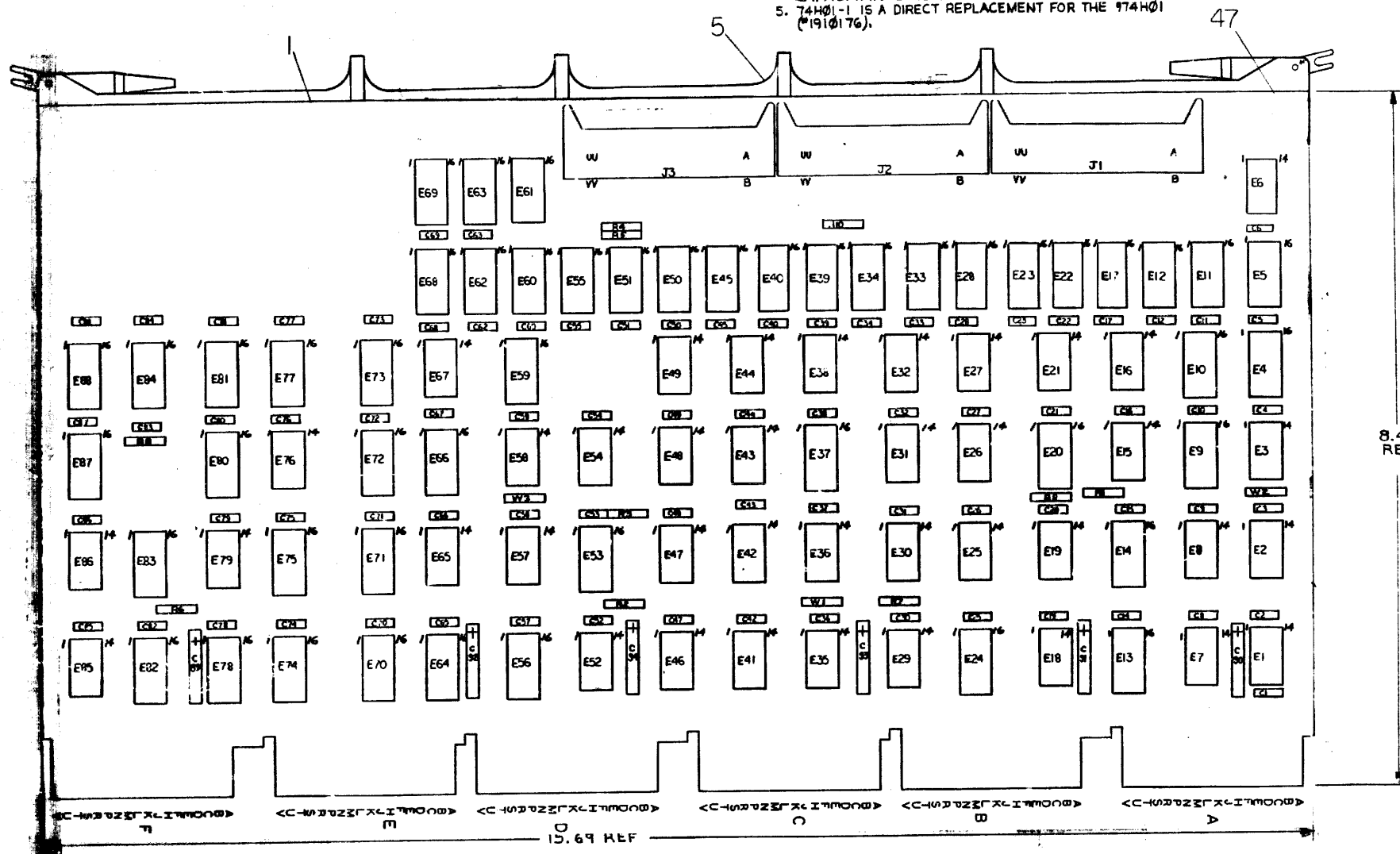
BRUNING 40 322 15640  
REF. SIGN. NO.  
L.H.K.  
DATE

**NOTES:**

- PIN NOTATION THROUGHOUT IS ORDERED UPON MODULE PLACEMENT IN THE KD11-A PROCESSOR. MODULE REFERENCE ALONE IS OBTAINED BY DELTING THE NUMBER (SLOT LOCATION) AFTER THE FIRST LETTER.
- ALL SIGNALS THAT HAVE MODULE PINS ARE SO NOTED. OUTPUT SIGNALS WITH MODULE PINS ARE BROUGHT TO THE RIGHT SIDE OF THE PRINT.
- PROCESSOR SIGNAL PREFIX NOTATION (KE11 FOR EXAMPLE) IDENTIFIES THE SIGNAL SOURCE (PRINT AND MODULE). THE FIRST NUMBER AFTER THE K INDICATES THE MODULE PRINT SET, WHILE THE SECOND INDICATES THE SHEET WITHIN THE SET. SIGNALS WITH A "BUS" PREFIX REPRESENT A "WIRED OR" SITUATION, AND MULTIPLE SOURCES FOR THE SIGNAL CAN EXIST.
- UNLESS OTHERWISE NOTED: RESISTANCE IS IN OHMS; CAPACITANCE IS IN PICOFARRADS.
- 74H01-1 IS A DIRECT REPLACEMENT FOR THE 74H01 (#1910176).

**INSTALLATION:**

- CUT W1 ON M7233 MODULE WHEN INSTALLING KE11-E
- CONNECT BC23R-21 CABLE (SHIELD TOWARD M7233 BOARD) FROM M7233 J1, J2, J3 TO M7232 J1, J2, J3 RESPECTIVELY.
- CUT W1, W2, W3 ON THIS MODULE (M7233) WHEN INSTALLING KE11-E



| QTY | REF DESIGNATION   | DESCRIPTION              | PART NO.   | ITEM NO. |
|-----|---|--------------------------|------------|----------|
| 3   | W1, W2, W3  | INSULATED JUMPER         | 9007185    | 1        |
| 12  |   | EYELET                   | 9006732    | 2        |
| 1   | E69   | I.C. DEC 23B37A2         | 23B37A2    | 3        |
| 1   | E68   | I.C. DEC 23B30A2         | 23B30A2    | 4        |
| 1   | E62   | I.C. DEC 23B29A2         | 23B29A2    | 5        |
| 1   | E12   | I.C. DEC 23B28A2         | 23B28A2    | 6        |
| 1   | E17   | I.C. DEC 23B34A2         | 23B34A2    | 7        |
| 1   | E11   | I.C. DEC 23B26A2         | 23B26A2    | 8        |
| 1   | E55   | I.C. DEC 23B44A2         | 23B44A2    | 9        |
| 1   | E50   | I.C. DEC 23B24A2         | 23B24A2    | 10       |
| 1   | E51   | I.C. DEC 23B23A2         | 23B23A2    | 11       |
| 1   | E45   | I.C. DEC 23B22A2         | 23B22A2    | 12       |
| 1   | E40   | I.C. DEC 23B21A2         | 23B21A2    | 13       |
| 1   | E34   | I.C. DEC 23B20A2         | 23B20A2    | 14       |
| 1   | E39   | I.C. DEC 23B43A2         | 23B43A2    | 15       |
| 1   | E33   | I.C. DEC 23B36A2         | 23B36A2    | 16       |
| 1   | E28   | I.C. DEC 23B17A2         | 23B17A2    | 17       |
| 1   | E22   | I.C. DEC 23B16A2         | 23B16A2    | 18       |
| 1   | E23   | I.C. DEC 23B15A2         | 23B15A2    | 19       |
| 7   | E5, E10, E63, E69, E70, E78, E82  | I.C. DEC 74174           | 1910652    | 20       |
| 4   | E71, E74, E75, E83  | I.C. DEC 74194           | 1910623    | 21       |
| 7   | E21, E49, E54, E76, E79, E85, E86   | I.C. DEC 74H01-1         | 1909349    | 22       |
| 2   | E56, E64  | I.C. DEC 74191           | 1910096    | 23       |
| 2   | E20, E53, E59, E66, E72, E73, E77, E80, E81, E84, E87, E88  | I.C. DEC 74153           | 1901137    | 24       |
| 3   | E14, E24, E37   | I.C. DEC 74151           | 1909136    | 25       |
| 5   | E8, E30, E31, E52, E57  | I.C. DEC 74H04           | 1909431    | 26       |
| 1   | E27   | I.C. DEC 7416            | 1909428    | 27       |
| 3   | E3, E7, E65   | I.C. DEC 8815            | 1909713    | 28       |
| 1   | E44   | I.C. DEC 74H74           | 1909667    | 29       |
| 2   | E9, E13   | I.C. DEC 9251            | 1909594    | 30       |
| 3   | E25, E48, E67   | I.C. DEC 74H11           | 1909267    | 31       |
| 2   | E1, 2   | I.C. DEC 74H53           | 1909062    | 32       |
| 1   | E3  | I.C. DEC 74H52           | 1909061    | 33       |
| 5   | E15, E29, E32, E42, E46   | I.C. DEC 74H50           | 1909060    | 34       |
| 1   | E38   | I.C. DEC 74H10           | 1909057    | 35       |
| 2   | E16, E47  | I.C. DEC 74H00           | 1909056    | 36       |
| 2   | E19, E43  | I.C. DEC 7402            | 1909004    | 37       |
| 1   | E41   | I.C. DEC 74H40           | 1905580    | 38       |
| 1   | E18   | I.C. DEC 7420            | 1905577    | 39       |
| 2   | E26, E35  | I.C. DEC 7400            | 1905575    | 40       |
| 2   | E6, E58   | I.C. DEC 7474            | 1905547    | 41       |
| 2   | E4, E61   | I.C. RES NETWORK         | 1311003-02 | 42       |
| 10  | RI THRU RIO   | RES 1K 1/4W 5%           | 1300365    | 43       |
| 1   |   | HANDLE MODULE            | 1210711-02 | 44       |
| 3   | J1, J2, J3  | CONN 40 PIN              | 209941     | 45       |
| 6   | C89 THRU C94  | CAP 6.8µF 35V 510% STANT | 005306     | 46       |
| 77  | C1 THRU C6, C8 THRU C12, C14 THRU C17, C19 THRU C23, C25 THRU C28, C30 THRU C34, C36 THRU C40, C42 THRU C45, C47 THRU C55, C57 THRU C60, C62, C63, C65 THRU C69, C62, C63, C65 THRU C69 | CAP .01µF 100V 5% DISC   | 1001610    | 47       |
| 1   |   | ETCHED CIRCUIT BOARD     | 501013     | 48       |

|            |             |              |              |              |              |              |              |              |              |       |       |              |
|------------|-------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|-------|-------|--------------|
| +5V        |             |              |              |              |              |              |              |              |              |       |       |              |
| C1 THRU C6 | C8 THRU C12 | C14 THRU C17 | C19 THRU C23 | C25 THRU C28 | C30 THRU C34 | C36 THRU C40 | C42 THRU C45 | C47 THRU C55 | C57 THRU C60 | C62   | C63   | C65 THRU C69 |
| .01µF      | .01µF       | .01µF        | .01µF        | .01µF        | .01µF        | .01µF        | .01µF        | .01µF        | .01µF        | .01µF | .01µF | .01µF        |
| GND        |             |              |              |              |              |              |              |              |              |       |       |              |

|            |     |     |
|------------|-----|-----|
| 1311003-02 | 8   | 16  |
| DEC 74194  | 8   | 16  |
| DEC 74191  | 8   | 16  |
| DEC 74174  | 8   | 16  |
| DEC 74153  | 8   | 16  |
| DEC 74151  | 8   | 16  |
| DEC 9251   | 8   | 16  |
| IC TYPE    | GRD | +5V |

|             |             |             |             |             |             |             |             |
|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|
| 3-18-73     | 3-24-78     | 1-15-72     | 9-28-72     | 9-28-72     | 9-28-72     | 9-28-72     | 9-28-72     |
| K. BANKER   | J. BUZYNSKI | J. BUZYNSKI | J. BUZYNSKI | J. BUZYNSKI | J. BUZYNSKI | J. BUZYNSKI | J. BUZYNSKI |
| M7238-00004 | M7238-00003 | M7238-00002 | M7238-00001 | M7238-00000 | M7238-00000 | M7238-00000 | M7238-00000 |

**SEMICONDUCTOR CONVERSION CHART**

DRN: R. Smith DATE: 2-11-72  
 CHNGD: DATE: 2-12-72  
 DATE: 2-13-72  
 DATE: 2-17-72  
 DATE: 2-17-72

digital EQUIPMENT CORPORATION  
 MAYNARD, MASSACHUSETTS

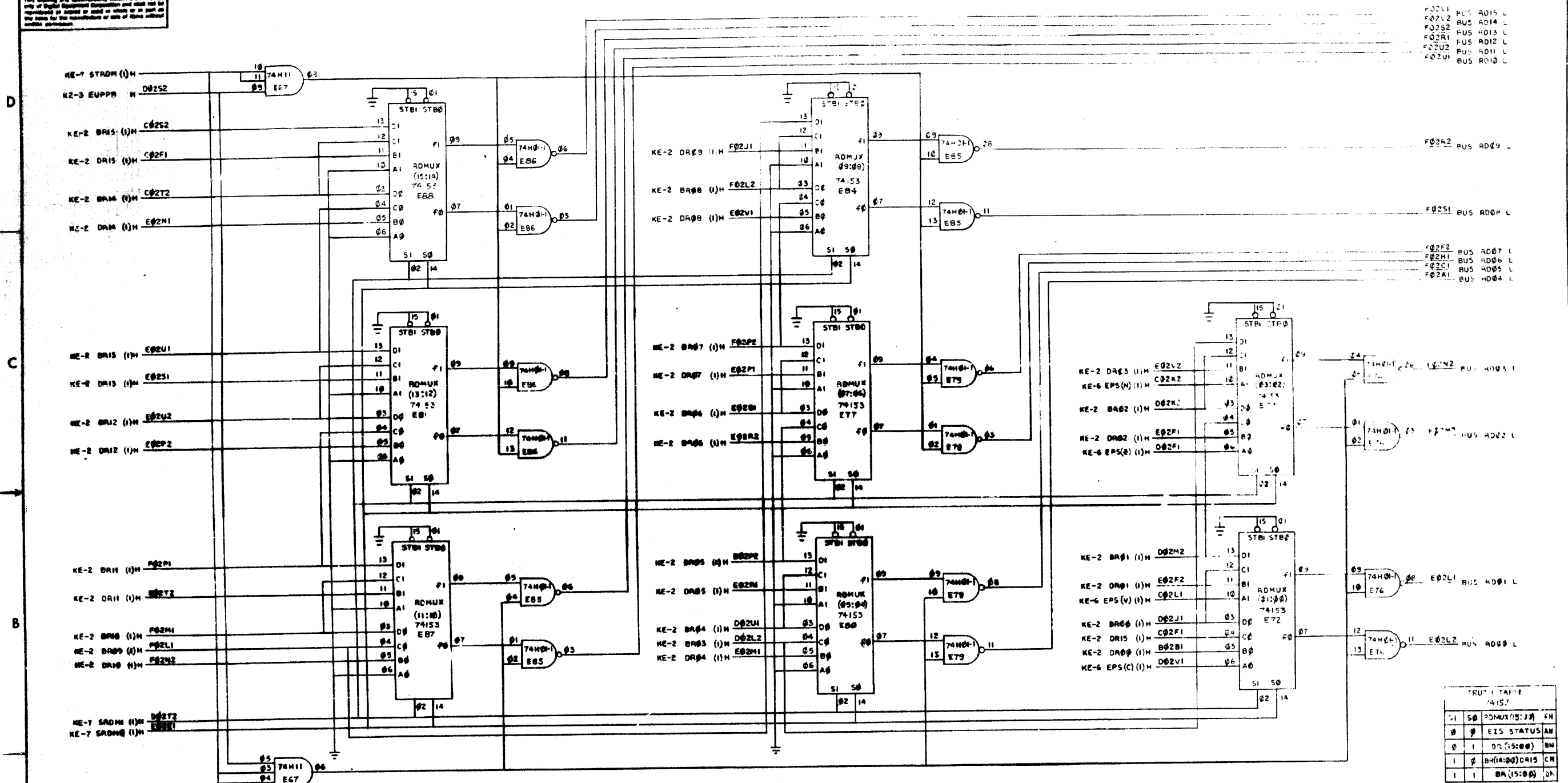
**EIS BOARD**

SIZE CODE: D 13 NUMBER: M7238-0- REV. E



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F02V1 BUS RD15 L  
 F02V2 BUS RD14 L  
 F02S2 BUS RD13 L  
 F02R1 BUS RD12 L  
 F02U2 BUS RD11 L  
 F02U1 BUS RD10 L



TRUTH TABLE  
74153

|    |    |               |    |
|----|----|---------------|----|
| S1 | S0 | PDMUX(15:10)  | FN |
| 0  | 0  | EIS STATUS    | AN |
| 0  | 1  | DR(15:00)     | BN |
| 1  | 0  | BR(14:00)DRIS | CR |
| 1  | 1  | BR(15:00)     | DR |

| FIRST USED ON OPTION/MODEL                                      | QTY.                | DESCRIPTION | PART NO.              | ITEM NO.  |
|---|---------------------|-------------|-----------------------|-----------|
| KD11-A  |                     | PARTS LIST  |                       |           |
| UNLESS OTHERWISE SPECIFIED<br>DIMENSION IN INCHES<br>TOLERANCES | DRN<br>2-16-72      | DATE        | EQUIPMENT CORPORATION |           |
| DECIMALS  | CHK'D<br>2-22-72    | DATE        | TITLE                 |           |
| ANGLES  | DESIGNED<br>2-7-72  | DATE        | EIS BOARD             |           |
| XXX - 000<br>XX - 00<br>X - 1                                   | APPROVED<br>2-22-72 | DATE        | ADMUX                 |           |
| REMOVE BURRS AND BREAK SHARP<br>CORNERS SURFACE QUALITY         | PROJECT<br>2-22-72  | DATE        | K6-3                  |           |
| MATERIAL  | NEXT HIGHER ASSY.   | SIZE CODE   | NUMBER                | REV       |
| FINISH  | K611-E              | D           | CS                    | 47256-6-1 |
|   | SCALE               | DIST.       |                       |           |
|   | SHEET 3 OF 17       |             |                       |           |

REV  
 CHG  
 NO  
 DATE

REV  
 NO  
 DATE

REV  
 NO  
 DATE

REV  
 NO  
 DATE





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| TRUTH TABLE |      |      |        |      |
|-------------|------|------|--------|------|
| C/MUX       |      |      |        |      |
| DATA        | DATA | DATA | DATA   | DATA |
| L           | L    | L    | BR00   | BR01 |
| L           | L    | H    | I      | I    |
| L           | H    | L    | DA00   | 0    |
| L           | H    | H    | BR15   | BR15 |
| H           | L    | L    | COUT15 | 0    |
| H           | L    | H    | 0      | 0    |
| H           | H    | L    | 0      | 0    |
| H           | H    | H    | ALUP0  | 0    |

| TRUTH TABLE |      |      |      |      |
|-------------|------|------|------|------|
| NEMUX       |      |      |      |      |
| DATA        | DATA | DATA | DATA | DATA |
| -           | -    | BR03 | BR02 |      |
| -           | -    | BR15 | DEC  |      |
| -           | -    | BR15 | 0    |      |

| TRUTH TABLE |      |      |        |      |
|-------------|------|------|--------|------|
| C/MUX       |      |      |        |      |
| DATA        | DATA | DATA | DATA   | DATA |
| L           | L    | L    | BR00   | BR01 |
| L           | L    | H    | I      | I    |
| L           | H    | L    | DA00   | 0    |
| L           | H    | H    | BR15   | BR15 |
| H           | L    | L    | COUT15 | 0    |
| H           | L    | H    | 0      | 0    |
| H           | H    | L    | 0      | 0    |
| H           | H    | H    | ALUP0  | 0    |

| TRUTH TABLE |      |      |      |      |
|-------------|------|------|------|------|
| M133        |      |      |      |      |
| DATA        | DATA | DATA | DATA | DATA |
| H           | -    | -    | L    |      |
| L           | L    | L    | AN   |      |
| L           | L    | H    | ON   |      |
| L           | H    | L    | ON   |      |
| L           | H    | H    | ON   |      |

|       |                  |
|-------|------------------|
| E0201 | KE-6 COUNT 1 IH  |
| E0202 | KE-6 COUNT 2 IH  |
| E0203 | KE-6 COUNT 3 IH  |
| E0204 | KE-6 COUNT 4 IH  |
| E0205 | KE-6 COUNT 5 IH  |
| E0206 | KE-6 COUNT 6 IH  |
| E0207 | KE-6 COUNT 7 IH  |
| E0208 | KE-6 COUNT 8 IH  |
| E0209 | KE-6 COUNT 9 IH  |
| E0210 | KE-6 COUNT 10 IH |

| TRUTH TABLE |      |      |        |      |
|-------------|------|------|--------|------|
| C/MUX       |      |      |        |      |
| DATA        | DATA | DATA | DATA   | DATA |
| L           | L    | L    | BR00   | BR01 |
| L           | L    | H    | I      | I    |
| L           | H    | L    | DA00   | 0    |
| L           | H    | H    | BR15   | BR15 |
| H           | L    | L    | COUT15 | 0    |
| H           | L    | H    | 0      | 0    |
| H           | H    | L    | 0      | 0    |
| H           | H    | H    | ALUP0  | 0    |

| FIRST USED ON OPTION/MODEL                                      | QTY              | DESCRIPTION | PART NO.              | ITEM NO. |
|---|------------------|-------------|-----------------------|----------|
| K011-A  |                  |             |                       |          |
| UNLESS OTHERWISE SPECIFIED<br>DIMENSION IN INCHES<br>TOLERANCES |                  |             |                       |          |
| DECIMALS  | ANGLES           | DATE        | PARTS LIST            |          |
| XXX - 000   | 10' 30"          | 2-28-70     | EQUIPMENT CORPORATION |          |
| XX - 00   |                  | 2-12-70     | TITLE                 |          |
| X - 0   |                  | DATE        | EP - COUNT            |          |
| REMOVE BURRS AND BREAK SHARP EDGES TO SURFACE QUALITY           |                  |             |                       |          |
| MATERIAL  | NEXT HIGHER ASSY | DATE        | REV                   | NO.      |
| FINISH  | SCALE            | DATE        | D 05                  | NUMBER   |
|   | SHEET 6 OF 17    | DIST        |                       | M723-0-1 |

REV. 1  
REV. 2  
REV. 3  
REV. 4  
REV. 5  
REV. 6  
REV. 7  
REV. 8  
REV. 9  
REV. 10

REV. 11  
REV. 12  
REV. 13  
REV. 14  
REV. 15  
REV. 16  
REV. 17  
REV. 18  
REV. 19  
REV. 20

REV. 21  
REV. 22  
REV. 23  
REV. 24  
REV. 25  
REV. 26  
REV. 27  
REV. 28  
REV. 29  
REV. 30

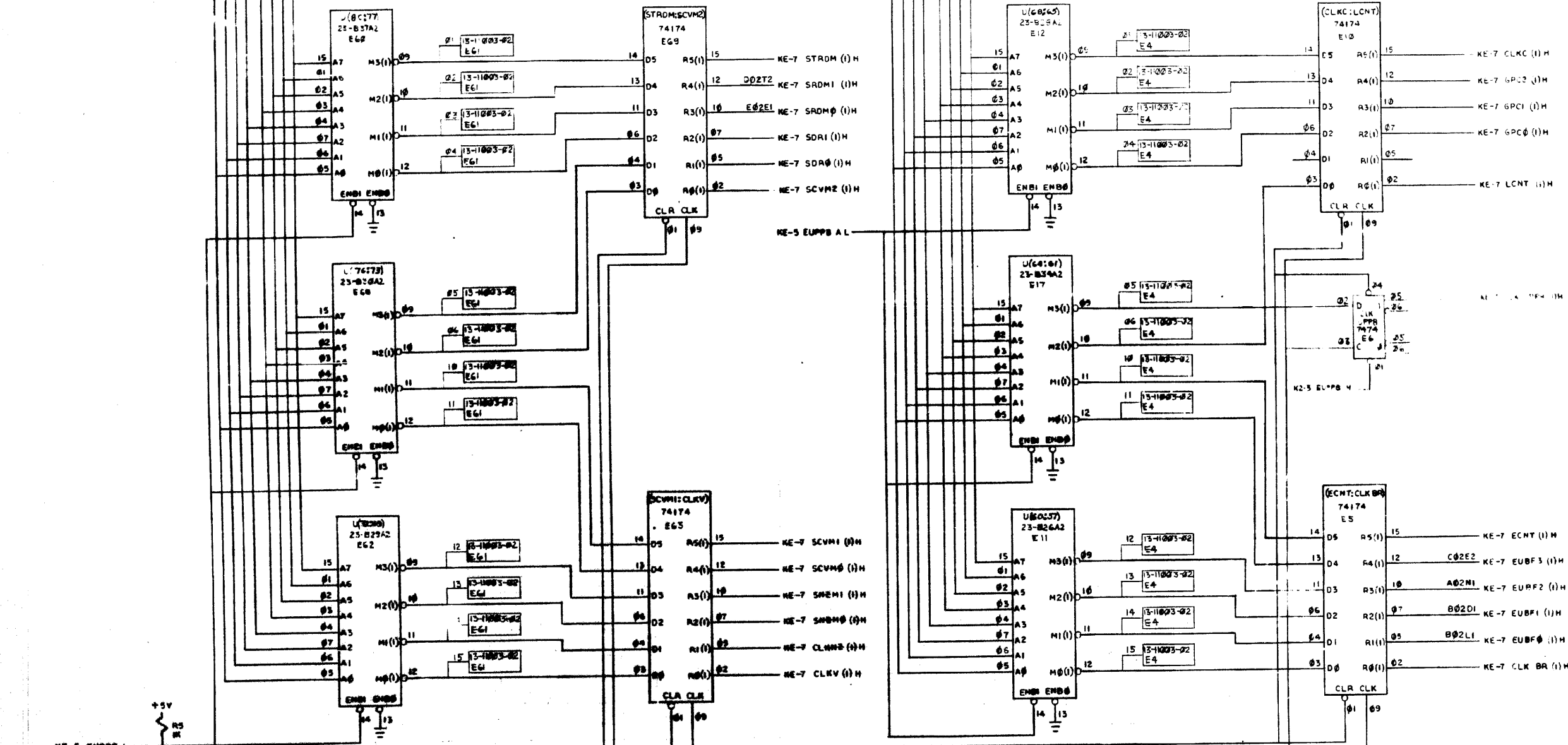
REV. 31  
REV. 32  
REV. 33  
REV. 34  
REV. 35  
REV. 36  
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REV. 38  
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REV. 40

REV. 41  
REV. 42  
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REV. 44  
REV. 45  
REV. 46  
REV. 47  
REV. 48  
REV. 49  
REV. 50

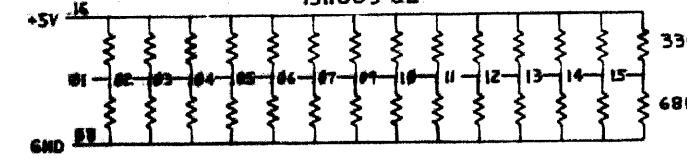
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- K2-5 EUPP7 H B02D
- K2-3 EUPP6 H F02Y2
- K2-5 EUPP5 H F02E2
- K2-5 EUPP4 H B02K1
- K2-2 EUPP3 H B02M1
- K2-2 EUPP2 H B02S1
- K2-2 EUPP1 H C02L1
- K2-2 EUPP0 H F02L1

- K2-3 EUPP7 H
- K2-3 EUPP6 H
- K2-3 EUPP5 H
- K2-3 EUPP4 H
- K2-2 EUPP3 H
- K2-2 EUPP2 H
- K2-2 EUPP1 H
- K2-2 EUPP0 H



DEVICE TRUTH TABLE  
1311003-Q2



| FIRST USED ON OPTION/MODEL                                | QTY.    | DESCRIPTION       | PART NO.  | ITEM NO.  |
|---|---------|-------------------|-----------|-----------|
| KD11-A  |         |                   |           |           |
| UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES TOLERANCES |         |                   |           |           |
| DECIMALS  | ANGLES  | TITLE             |           |           |
| XXX - .00   | 10° 30' | EIS BOARD         |           |           |
| .XX - .02   |         | KE ROM WORD       |           |           |
| .X - .1   |         | KE-7              |           |           |
| REMOVE BURRS AND BREAK SHARP CORNERS SURFACE QUALITY      |         |                   |           |           |
| MATERIAL  |         | NEXT HIGHER ASSY. |           | REV.      |
|   |         | KE11-E            |           | E         |
| FINISH  |         | SCALE             | SIZE CODE | NUMBER    |
|   |         | 7 OF 17           | D CS      | M7238-0-1 |
|   |         | SHEET             | DIST.     |           |

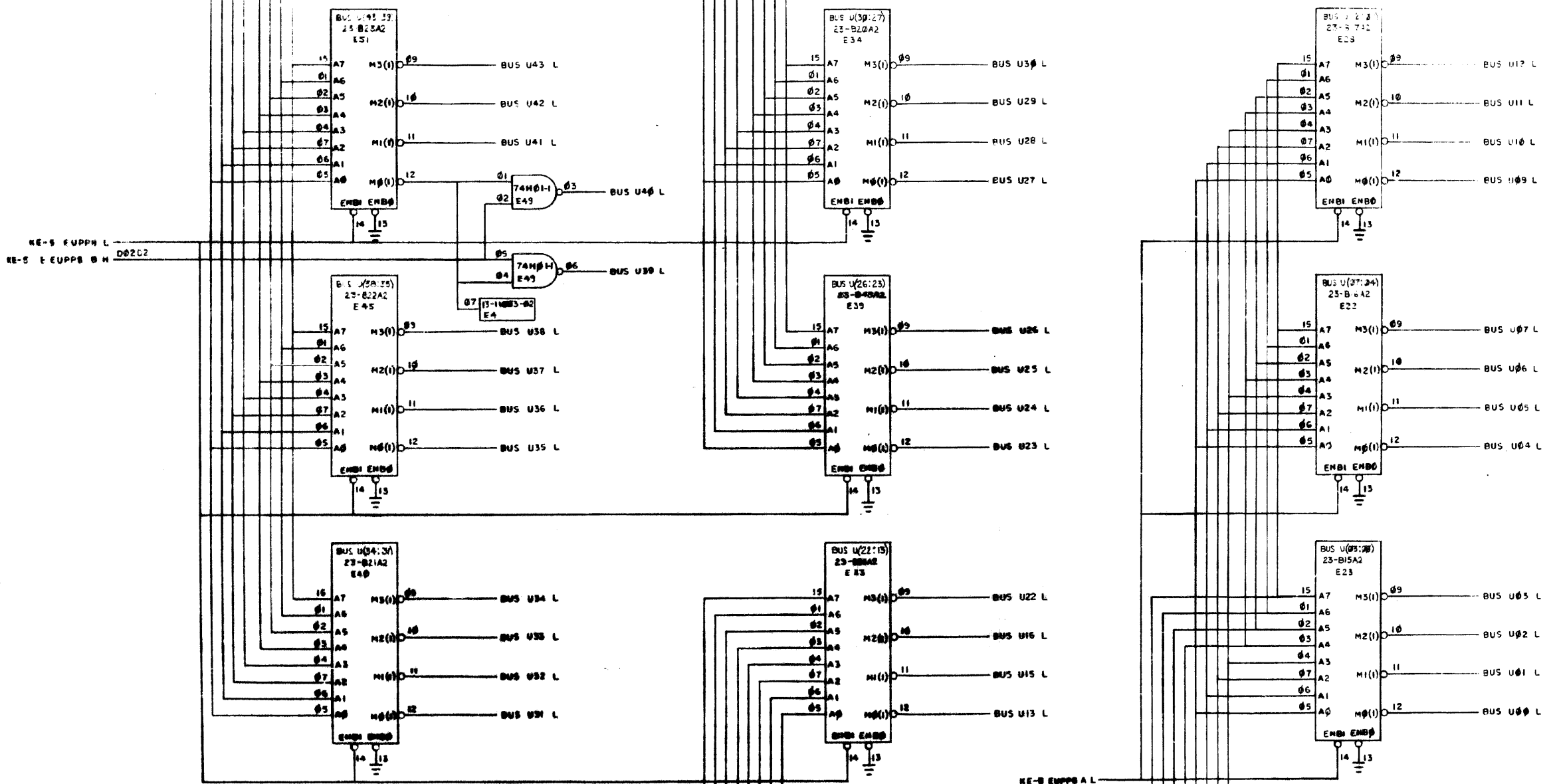
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BY: [Signature]  
CHECKED: [Signature]  
APPROVED: [Signature]

REV. 1  
DATE: 2-23-72  
BY: [Signature]  
CHECKED: [Signature]  
APPROVED: [Signature]



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- K2-3 BUYP7 H E0202
- K2-5 BUYP6 H E0212
- K2-3 BUYP5 H E02E2
- K2-3 BUYP4 H E02K1
- K2-2 BUYP3 H D02H1
- K2-2 BUYP7 H B0251
- K2-2 BUYP1 H C02E1
- K2-7 BUYP6 H C02M1



KE-5 BUYPH L  
KE-5 BUYPH H D02C2

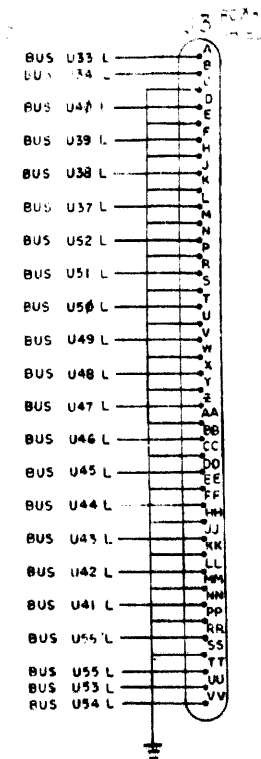
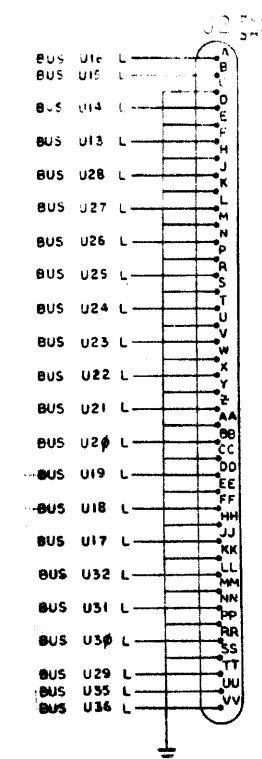
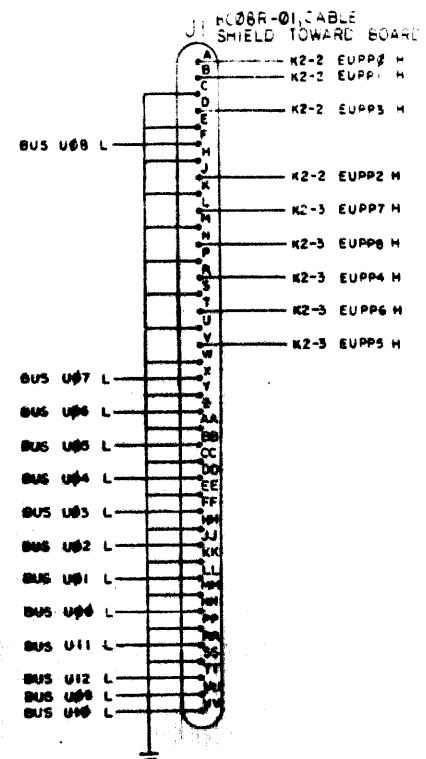
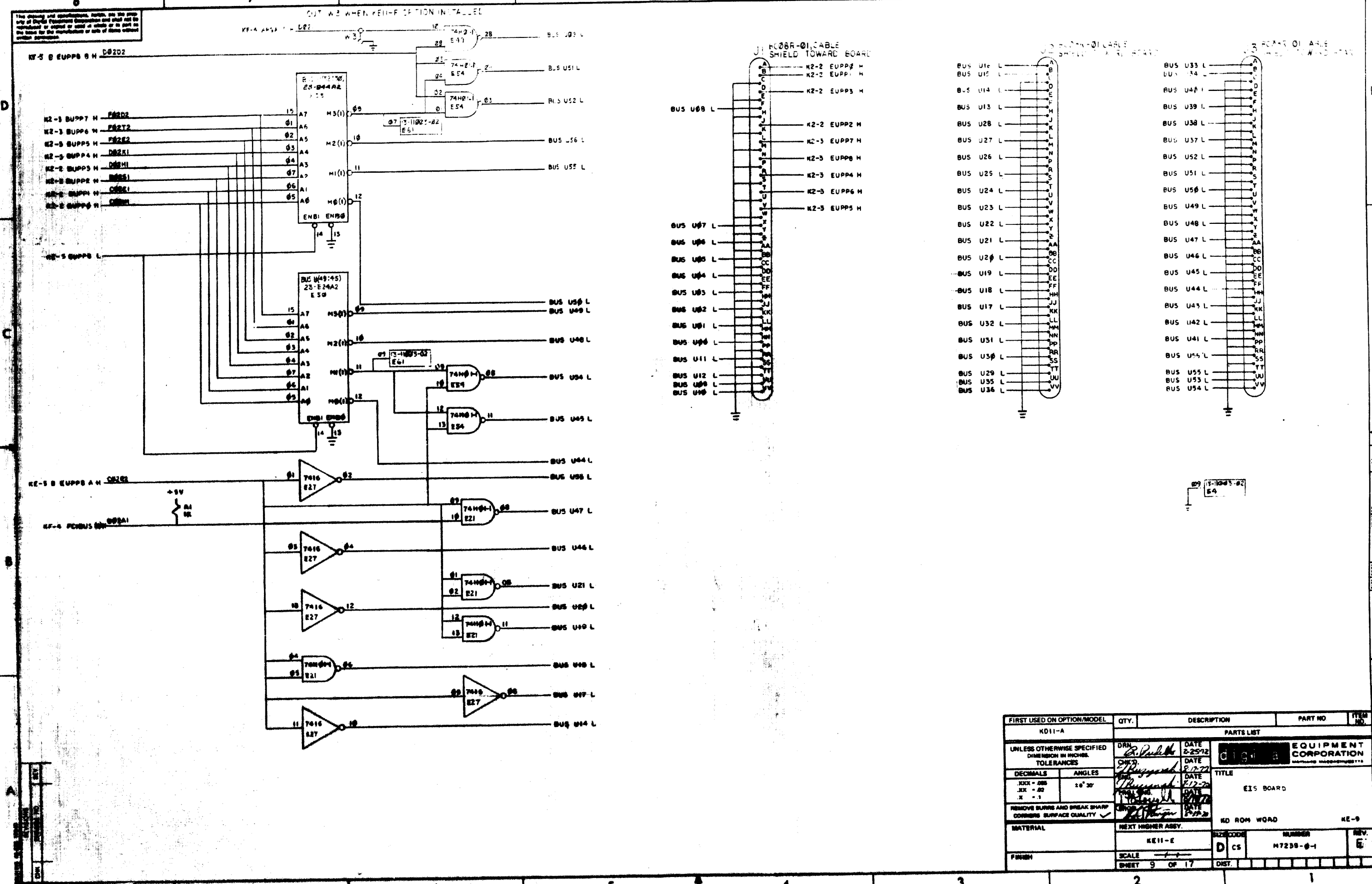
KE-8 BUYPH A L

- KE-8 BUYPH H
- KE-8 BUYPH H
- KE-8 BUYPH H
- KE-8 BUYPH H
- KE-8 BUYPH H
- KE-8 BUYPH H
- KE-8 BUYPH H

| FIRST USED ON OPTION/MODEL                                 | QTY.              | DESCRIPTION                               | PART NO.              | ITEM NO. |
|--|-------------------|---|-----------------------|----------|
| KD11-A   |                   | PARTS LIST                                |                       |          |
| UNLESS OTHERWISE SPECIFIED DIMENSIONS IN INCHES TOLERANCES |                   | DRN. <i>[Signature]</i> DATE 2-24-72      | EQUIPMENT CORPORATION |          |
| DECIMALS   | ANGLES            | CHK'D. <i>[Signature]</i> DATE 7-17-72    | TITLE                 |          |
| XXX - .006   | 10' 30"           | APPROVED. <i>[Signature]</i> DATE 7-17-72 | EIS BOARD             |          |
| REMOVE BURRS AND BREAK SHARP CORNERS SURFACE QUALITY       |                   | DATE 8-17-72                              | NO ROM WORD           |          |
| MATERIAL   | NEXT HIGHER ASSY. | KE11-E                                    | NUMBER                | REV.     |
| FINISH   | SCALE             | D CS                                      | M7238-0-1             | E        |
| SHEET 8 OF 17  |                   | DIST                                      |                       |          |

REV. 1  
REV. 2  
REV. 3  
REV. 4  
REV. 5  
REV. 6  
REV. 7  
REV. 8  
REV. 9  
REV. 10

SIZE CODE NUMBER  
D CS M7238-0-1



| FIRST USED ON OPTION/MODEL                              | QTY.                            | DESCRIPTION     | PART NO.   | ITEM NO.            |
|---|---------------------------------|-----------------|--|---------------------|
| KD11-A  |                                 |                 |  |                     |
| PARTS LIST  |                                 |                 |  |                     |
| UNLESS OTHERWISE SPECIFIED<br>DIMENSION IN INCHES.      | DRN<br><i>R. P. [Signature]</i> | DATE<br>2-25-72 | EQUIPMENT CORPORATION<br>MILITARY ELECTRONICS DIVISION |                     |
| TOLERANCES  | CHKD<br><i>[Signature]</i>      | DATE<br>2-27-72 |  |                     |
| DECIMALS  |                                 | DATE<br>2-27-72 |  |                     |
| ANGLES  |                                 |                 | TITLE<br>EIS BOARD                                     |                     |
| KICK - 200<br>JIG - 22<br>X - 3                         |                                 |                 | NO ROM WORD KE-9                                       |                     |
| REMOVE BURRS AND BREAK SHARP<br>CORNERS SURFACE QUALITY |                                 |                 | NEXT HIGHER ASSY.                                      |                     |
| MATERIAL  |                                 |                 | SIZE CODE<br>D CS                                      | NUMBER<br>N7238-0-1 |
| FINISH  |                                 |                 | SCALE<br>1:1   | REV.<br>6           |
|   |                                 |                 | SHEET 9 OF 17  | DIST.               |

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| PLD'S STATE | ADR | CLK | CIR | WR | CB | CD | CBA | BUS | DAD | SPS | ALU | SBC | SBM | SDM | SBA | UPF | SRX | RIF | UPF |     |
|-------------|-----|-----|-----|----|----|----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| E3 MUL7     | 000 | 2   | 0   | 0  | 0  | 0  | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 204 |
| E3 MUL19    | 001 | 2   | 0   | 0  | 0  | 0  | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 133 |
| E3 MUL2     | 002 | 2   | 0   | 0  | 0  | 0  | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 015 |
| E3 MUL4     | 003 | 2   | 0   | 0  | 0  | 0  | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 075 |
| F3 FDV1     | 004 | 2   | 0   | 0  | 1  | 0  | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 006 |
| E3 MUL16    | 005 | 4   | 0   | 0  | 0  | 1  | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 011 |
| F3 FDV2     | 006 | 4   | 0   | 0  | 1  | 1  | 0   | 0   | 1   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 190 |
| F3 MUL12    | 007 | 4   | 0   | 0  | 0  | 1  | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 016 |
| E3 MUL15    | 010 | 2   | 0   | 0  | 0  | 0  | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 177 |
| E3 MUL18    | 011 | 2   | 0   | 3  | 0  | 0  | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 177 |
| E3 MUL14    | 012 | 2   | 0   | 0  | 0  | 0  | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 177 |
| E3 MUL17    | 013 | 2   | 0   | 3  | 0  | 0  | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 177 |
| E3 MUL1     | 014 | 4   | 0   | 0  | 0  | 1  | 0   | 0   | 1   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 000 |
| E3 MUL3     | 015 | 4   | 0   | 0  | 0  | 1  | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 001 |
| E3 MUL13    | 016 | 2   | 0   | 3  | 0  | 0  | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 010 |
| F3 ADD23    | 017 | 6   | 0   | 3  | 0  | 1  | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 361 |
| E4 DIV20    | 020 | 2   | 0   | 0  | 1  | 0  | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 076 |
| E3 DIV23    | 021 | 4   | 0   | 0  | 0  | 1  | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 071 |
| E4 DIV4     | 022 | 2   | 0   | 0  | 0  | 0  | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 177 |
| E3 DIV33    | 023 | 4   | 0   | 0  | 0  | 1  | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 070 |
| E4 DIV13    | 024 | 2   | 0   | 0  | 0  | 0  | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 147 |
| E3 DIV27    | 025 | 4   | 0   | 0  | 0  | 1  | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 101 |
| E4 DIV7     | 026 | 2   | 0   | 0  | 1  | 0  | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 057 |
| E3 DIV31    | 027 | 4   | 0   | 0  | 0  | 1  | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 103 |
| E2 ASH2     | 030 | 2   | 0   | 0  | 0  | 0  | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 177 |
| E4 DIV16    | 031 | 6   | 0   | 0  | 0  | 1  | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 065 |
| F3 FDV21    | 032 | 2   | 0   | 0  | 1  | 0  | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 372 |
| E4 DIV11    | 033 | 2   | 0   | 0  | 0  | 0  | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 037 |
| E2 ASH5     | 034 | 2   | 0   | 0  | 0  | 0  | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 123 |
| E4 DIV19    | 035 | 6   | 0   | 0  | 0  | 1  | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 153 |
| E2 ASH3     | 036 | 2   | 0   | 0  | 0  | 0  | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 063 |
| E4 DIV12    | 037 | 2   | 0   | 0  | 0  | 0  | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 177 |

NOTE:  
THE COMPLEMENT OF THE ACTUAL ROM OUTPUT FOR THE UPF, WR, SPS (HIGH 2 BITS), BUS (LOW BIT), AND CLK (LOW BIT) FIELD IS LISTED FOR CLARITY.

| PLD'S STATE | ADR | CON | FC1 | FUB | MHR | FRD | ERD | SRD | SDR | CVH | NZH | CCC | GPC | CEE | CNT | EUB | CBR |
|-------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| E3 MUL7     | 000 | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 1   |
| E3 MUL19    | 001 | 0   | 0   | 0   | 0   | 0   | 0   | 3   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 1   |
| E3 MUL2     | 002 | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 1   |
| E3 MUL4     | 003 | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 1   |
| F3 FDV1     | 004 | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 2   | 4   | 0   | 0   | 0   | 14  | 0   |
| E3 MUL16    | 005 | 0   | 0   | 0   | 0   | 0   | 1   | 1   | 0   | 1   | 0   | 0   | 0   | 0   | 0   | 0   | 0   |
| F3 FDV2     | 006 | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   |
| F3 MUL12    | 007 | 0   | 0   | 0   | 0   | 0   | 1   | 1   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 04  | 0   |
| E3 MUL15    | 010 | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 1   | 0   | 1   | 0   | 0   | 0   | 0   | 0   |
| F3 MUL18    | 011 | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 3   | 4   | 0   | 0   | 0   | 0   | 0   |
| E3 MUL14    | 012 | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 5   | 0   | 1   | 0   | 0   | 0   | 0   | 0   |
| E3 MUL17    | 013 | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 5   | 2   | 5   | 0   | 0   | 0   | 0   | 0   |
| E3 MUL1     | 014 | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 5   | 0   | 1   | 0   | 0   | 2   | 0   | 0   |
| E3 MUL3     | 015 | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 3   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   |
| E3 MUL13    | 016 | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 2   | 3   | 6   | 0   | 0   | 0   | 0   | 0   |
| F3 ADD23    | 017 | 0   | 0   | 0   | 0   | 0   | 0   | 2   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   |
| E4 DIV20    | 020 | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 3   | 4   | 0   | 0   | 0   | 03  | 0   |
| E3 DIV23    | 021 | 0   | 0   | 0   | 0   | 0   | 1   | 3   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 02  | 0   |
| E4 DIV4     | 022 | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 1   | 1   | 7   | 0   | 0   | 0   | 0   | 0   |
| E3 DIV33    | 023 | 0   | 0   | 0   | 0   | 0   | 1   | 3   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 02  | 0   |
| E4 DIV13    | 024 | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 1   |
| E3 DIV27    | 025 | 0   | 0   | 0   | 0   | 0   | 1   | 3   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   |
| E4 DIV7     | 026 | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   |
| E3 DIV31    | 027 | 0   | 0   | 0   | 0   | 0   | 1   | 3   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   |
| E2 ASH2     | 030 | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 5   | 2   | 7   | 0   | 0   | 0   | 0   | 0   |
| E4 DIV16    | 031 | 0   | 0   | 0   | 0   | 0   | 1   | 2   | 2   | 0   | 0   | 0   | 0   | 0   | 1   | 0   | 1   |
| F3 FDV21    | 032 | 0   | 0   | 0   | 0   | 0   | 0   | 1   | 0   | 0   | 0   | 0   | 0   | 0   | 1   | 0   | 0   |
| E4 DIV11    | 033 | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   |
| E2 ASH5     | 034 | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 1   | 10  | 0   |
| E4 DIV19    | 035 | 0   | 0   | 0   | 0   | 0   | 1   | 2   | 2   | 0   | 0   | 0   | 0   | 0   | 1   | 0   | 1   |
| E2 ASH3     | 036 | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 1   | 10  | 0   |
| E4 DIV12    | 037 | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 1   | 0   | 2   | 0   | 0   | 0   | 0   | 0   |

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| REVISIONS | REV |
| CHANGE NO |     |
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|  |                     |
|--|---------------------|
| digital EQUIPMENT CORPORATION<br>MAYNARD MASSACHUSETTS |                     |
| TITLE<br>EIS BOARD<br>(ADRS 000-037)                   |                     |
| DRN<br><i>R. P. ...</i>                                | DATE<br>5-16-72     |
| CHK'D.<br><i>A. ...</i>                                | DATE<br>8-12-72     |
| ENG.<br><i>A. ...</i>                                  | DATE<br>8-12-72     |
| PROJ. ENG.<br><i>A. ...</i>                            | DATE<br>8-17-72     |
| MOD.<br><i>A. ...</i>                                  | DATE<br>8-18-72     |
| SHEET 10 OF 17   | DIST.               |
| SIZE CODE<br>C CS                                      | NUMBER<br>M7238-0-1 |
| REV.<br>E  |                     |

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| FL046 STATE | ADR | CLK | CIR | WR | CB | CD | CBA | BUS | DAD | SPS | ALU | SBC | SBM | SDM | SSA | USP | SRX | RIF | UPF |
|-------------|-----|-----|-----|----|----|----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| E2 ASH9     | 040 | 4   | 0   | 0  | 0  | 1  | 0   | 0   | 00  | 0   | 00  | 00  | 00  | 0   | 0   | 00  | 11  | 01  | 030 |
| F2 FML4     | 041 | 2   | 0   | 0  | 1  | 0  | 0   | 0   | 00  | 0   | 00  | 00  | 00  | 0   | 0   | 00  | 00  | 00  | 150 |
| F3 FDV23    | 042 | 2   | 0   | 0  | 1  | 0  | 0   | 0   | 00  | 0   | 00  | 00  | 00  | 0   | 0   | 00  | 01  | 13  | 211 |
| F4 FML3     | 043 | 6   | 0   | 3  | 1  | 1  | 0   | 0   | 00  | 0   | 23  | 00  | 00  | 2   | 0   | 00  | 01  | 15  | 176 |
| E2 ASH16    | 044 | 2   | 0   | 0  | 0  | 0  | 0   | 0   | 00  | 0   | 00  | 00  | 00  | 0   | 0   | 00  | 00  | 00  | 243 |
| E5 DIV25    | 045 | 6   | 0   | 0  | 0  | 1  | 0   | 0   | 00  | 0   | 00  | 00  | 00  | 0   | 0   | 00  | 00  | 00  | 053 |
| E2 ASH10    | 046 | 2   | 0   | 0  | 0  | 0  | 0   | 0   | 00  | 0   | 00  | 00  | 00  | 0   | 0   | 00  | 00  | 00  | 223 |
| E5 DIV29    | 047 | 4   | 0   | 0  | 0  | 1  | 0   | 0   | 00  | 0   | 11  | 01  | 17  | 0   | 0   | 00  | 00  | 00  | 104 |
| E5 DIV37    | 050 | 4   | 0   | 0  | 0  | 1  | 0   | 0   | 00  | 0   | 20  | 00  | 00  | 0   | 0   | 00  | 00  | 00  | 106 |
| E5 DIV40    | 051 | 2   | 0   | 0  | 0  | 0  | 0   | 0   | 00  | 0   | 00  | 00  | 00  | 0   | 0   | 00  | 00  | 00  | 054 |
| E5 DIV35    | 052 | 4   | 0   | 0  | 0  | 1  | 0   | 0   | 00  | 0   | 11  | 01  | 17  | 0   | 0   | 00  | 00  | 00  | 105 |
| E5 DIV26    | 053 | 2   | 0   | 3  | 0  | 0  | 0   | 0   | 00  | 0   | 00  | 00  | 00  | 2   | 0   | 00  | 10  | 00  | 177 |
| E5 DIV41    | 054 | 2   | 0   | 0  | 0  | 0  | 0   | 0   | 00  | 0   | 00  | 00  | 00  | 0   | 0   | 00  | 00  | 00  | 037 |
| E4 DIV2     | 055 | 2   | 0   | 0  | 0  | 0  | 0   | 0   | 00  | 0   | 00  | 00  | 00  | 0   | 0   | 00  | 10  | 00  | 231 |
| E5 DIV42    | 056 | 2   | 0   | 0  | 0  | 0  | 0   | 0   | 00  | 0   | 00  | 00  | 00  | 0   | 0   | 00  | 00  | 00  | 177 |
| E4 DIV8     | 057 | 6   | 0   | 0  | 0  | 1  | 0   | 0   | 00  | 0   | 06  | 00  | 00  | 2   | 0   | 00  | 00  | 00  | 060 |
| E4 DIV9     | 060 | 2   | 0   | 0  | 0  | 0  | 0   | 0   | 00  | 0   | 00  | 00  | 00  | 0   | 0   | 00  | 00  | 00  | 061 |
| E4 DIV10    | 061 | 2   | 0   | 0  | 1  | 0  | 0   | 0   | 00  | 0   | 00  | 00  | 00  | 0   | 0   | 00  | 01  | 12  | 031 |
| E4 DIV15    | 062 | 2   | 0   | 0  | 1  | 0  | 0   | 0   | 00  | 0   | 00  | 00  | 00  | 0   | 0   | 00  | 01  | 12  | 031 |
| E2 ASH4     | 063 | 6   | 0   | 3  | 1  | 1  | 0   | 0   | 00  | 0   | 00  | 00  | 00  | 3   | 0   | 00  | 10  | 00  | 063 |
| F2 ADD3     | 064 | 6   | 0   | 0  | 0  | 1  | 0   | 0   | 10  | 0   | 06  | 00  | 00  | 2   | 0   | 00  | 00  | 00  | 320 |
| E4 DIV17    | 065 | 2   | 0   | 0  | 0  | 0  | 0   | 0   | 00  | 0   | 00  | 00  | 00  | 0   | 0   | 00  | 00  | 00  | 066 |
| E4 DIV18    | 066 | 2   | 0   | 0  | 0  | 0  | 0   | 0   | 00  | 0   | 00  | 00  | 00  | 0   | 0   | 00  | 00  | 00  | 035 |
| E2 ASH14    | 067 | 4   | 0   | 0  | 0  | 1  | 0   | 0   | 00  | 0   | 32  | 00  | 00  | 0   | 0   | 00  | 00  | 00  | 127 |
| E5 DIV34    | 070 | 2   | 0   | 0  | 1  | 0  | 0   | 0   | 00  | 0   | 00  | 00  | 00  | 2   | 0   | 00  | 00  | 00  | 050 |
| E5 DIV24    | 071 | 2   | 0   | 0  | 1  | 0  | 0   | 0   | 00  | 0   | 00  | 00  | 00  | 2   | 0   | 00  | 00  | 00  | 045 |
| F2 ADD17    | 072 | 4   | 0   | 0  | 0  | 1  | 0   | 0   | 00  | 0   | 00  | 00  | 00  | 0   | 0   | 00  | 00  | 00  | 301 |
|             | 073 | 0   | 0   | 0  | 0  | 0  | 0   | 0   | 00  | 0   | 00  | 00  | 00  | 0   | 0   | 00  | 00  | 00  | 000 |
| E5 DIV39    | 074 | 6   | 0   | 3  | 0  | 1  | 0   | 0   | 00  | 0   | 11  | 01  | 17  | 2   | 0   | 00  | 10  | 00  | 051 |
| E3 MUL5     | 075 | 2   | 0   | 0  | 0  | 0  | 0   | 0   | 00  | 0   | 00  | 00  | 00  | 0   | 0   | 00  | 00  | 00  | 110 |
| E4 DIV6     | 076 | 6   | 0   | 0  | 0  | 1  | 0   | 0   | 10  | 0   | 06  | 00  | 00  | 2   | 0   | 00  | 00  | 00  | 024 |
| E2 ASH13    | 077 | 2   | 0   | 3  | 0  | 0  | 0   | 0   | 00  | 0   | 00  | 00  | 00  | 2   | 0   | 00  | 11  | 01  | 206 |

NOTE:  
THE COMPLEMENT OF THE ACTUAL ROM OUTPUT FOR THE UPF, WR, SPS (HIGH 2 BITS), BUS (LOW BIT), AND CLK (LOW BIT) FIELD IS LISTED FOR CLARITY.

| FL045 STATE | ADR | CON | FC1 | FUB | MHR | FRD | ERD | SRD | SDR | CVM | NZM | CCC | GPC | CEE | CNT | EUB | CHR |   |
|-------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|---|
| E2 ASH9     | 040 | 0   | 0   | 0   | 0   | 0   | 1   | 3   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 00  | 0   |   |
| F4 FML4     | 041 | 0   | 0   | 0   | 0   | 0   | 1   | 0   | 3   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 10  | 0 |
| F5 FDV23    | 042 | 0   | 0   | 0   | 0   | 0   | 0   | 1   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 00  | 0   |   |
| F4 FML3     | 043 | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 00  | 1   |   |
| E2 ASH16    | 044 | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 1   | 10  | 0   |   |
| E5 DIV25    | 045 | 0   | 0   | 0   | 0   | 0   | 1   | 1   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 00  | 1   |   |
| E2 ASH10    | 046 | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 1   | 10  | 0   |   |
| E5 DIV29    | 047 | 0   | 0   | 0   | 0   | 0   | 1   | 3   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 00  | 0   |   |
| E5 DIV37    | 050 | 0   | 0   | 0   | 0   | 0   | 1   | 1   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 00  | 0   |   |
| E5 DIV40    | 051 | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 5   | 2   | 7   | 0   | 0   | 0   | 0   | 00  | 0   |   |
| E5 DIV35    | 052 | 0   | 0   | 0   | 0   | 0   | 1   | 3   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 00  | 0   |   |
| E5 DIV26    | 053 | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 5   | 2   | 7   | 0   | 0   | 0   | 0   | 00  | 0   |   |
| E5 DIV41    | 054 | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 1   | 0   | 2   | 0   | 0   | 0   | 0   | 00  | 0   |   |
| E4 DIV2     | 055 | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 2   | 04  | 1   |   |
| E5 DIV42    | 056 | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 00  | 0   |   |
| E4 DIV8     | 057 | 0   | 0   | 0   | 0   | 0   | 0   | 3   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 00  | 1   |   |
| E4 DIV9     | 060 | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 1   | 1   | 7   | 0   | 0   | 0   | 0   | 03  | 0   |   |
| E4 DIV10    | 061 | 0   | 0   | 0   | 0   | 0   | 0   | 2   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 00  | 0   |   |
| E4 DIV15    | 062 | 0   | 0   | 0   | 0   | 0   | 0   | 2   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 00  | 0   |   |
| F2 ASH4     | 063 | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 7   | 0   | 1   | 0   | 0   | 0   | 1   | 10  | 1   |   |
| F2 ADD3     | 064 | 0   | 0   | 0   | 3   | 0   | 0   | 0   | 4   | 0   | 1   | 0   | 0   | 0   | 0   | 10  | 1   |   |
| E4 DIV17    | 065 | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 07  | 0   |   |
| E4 DIV18    | 066 | 0   | 0   | 0   | 0   | 0   | 0   | 2   | 0   | 5   | 0   | 1   | 0   | 0   | 1   | 00  | 0   |   |
| E2 ASH14    | 067 | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 00  | 0   |   |
| E5 DIV34    | 070 | 0   | 0   | 0   | 0   | 0   | 0   | 3   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 00  | 1   |   |
| E5 DIV24    | 071 | 0   | 0   | 0   | 0   | 0   | 0   | 3   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 00  | 1   |   |
| F2 ADD17    | 072 | 0   | 0   | 0   | 3   | 0   | 1   | 1   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 00  | 0   |   |
|             | 073 | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 00  | 0   |   |
| E5 DIV39    | 074 | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 01  | 1   |   |
| E3 MUL5     | 075 | 0   | 0   | 0   | 0   | 0   | 0   | 3   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 00  | 1   |   |
| E4 DIV6     | 076 | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 4   | 0   | 1   | 0   | 0   | 0   | 0   | 10  | 1   |   |
| E2 ASH13    | 077 | 0   | 0   | 0   | 0   | 0   | 0   | 3   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 00  | 0   |   |

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|            |                 |      |         |
|------------|-----------------|------|---------|
| DRN        | <i>R. Smith</i> | DATE | 8-16-72 |
| CHK'D      | <i>R. Smith</i> | DATE | 8-17-72 |
| ENG.       | <i>R. Smith</i> | DATE | 8-17-72 |
| PROD. ENG. | <i>R. Smith</i> | DATE | 8-17-72 |
| PROD.      | <i>R. Smith</i> | DATE | 8-18-72 |

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|---|----------|
| digital EQUIPMENT CORPORATION<br>MAYNARD, MASSACHUSETTS |          |
| TITLE   |          |
| EIS BOARD   |          |
| (ADRS 040-077)  |          |
| SIZE CODE   | NUMBER   |
| C CS  | M723-7-1 |
| REV.  | F        |
| SHEET 11 OF 17  | DIST.    |

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| FLOW# | STATE | ADR | CLK | CIR | WR | CB | CD | CHA | BUS | DAD | SPS | ALU | SBC | SBM | SDM | SBA | UBF | SRX | RIF | UPF |     |
|-------|-------|-----|-----|-----|----|----|----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| E1    | E10   | 100 | 2   | 0   | 0  | 0  | 0  | 0   | 0   | 00  | 0   | 00  | 00  | 00  | 0   | 0   | 00  | 00  | 00  | 00  | 177 |
| E5    | DIV28 | 101 | 2   | 0   | 3  | 0  | 0  | 0   | 0   | 00  | 0   | 00  | 00  | 00  | 2   | 0   | 00  | 11  | 01  | 021 |     |
| E1    | E13   | 102 | 2   | 0   | 3  | 1  | 0  | 0   | 0   | 00  | 0   | 00  | 00  | 00  | 2   | 0   | 00  | 01  | 14  | 007 |     |
| E5    | DIV32 | 103 | 2   | 0   | 3  | 0  | 0  | 0   | 0   | 00  | 0   | 00  | 00  | 00  | 2   | 0   | 00  | 11  | 01  | 023 |     |
| E5    | DIV30 | 104 | 2   | 0   | 3  | 0  | 0  | 0   | 0   | 00  | 0   | 00  | 00  | 00  | 2   | 0   | 00  | 11  | 01  | 050 |     |
| E5    | DIV36 | 105 | 2   | 0   | 3  | 0  | 0  | 0   | 0   | 00  | 0   | 00  | 00  | 00  | 2   | 0   | 00  | 11  | 01  | 045 |     |
| E5    | DIV38 | 106 | 2   | 0   | 3  | 1  | 0  | 0   | 0   | 00  | 0   | 00  | 00  | 00  | 2   | 0   | 00  | 10  | 00  | 074 |     |
| E5    | DIV22 | 107 | 2   | 0   | 3  | 0  | 0  | 0   | 0   | 00  | 0   | 00  | 00  | 00  | 2   | 0   | 00  | 11  | 01  | 021 |     |
| E3    | MUL6  | 110 | 2   | 0   | 0  | 1  | 0  | 0   | 0   | 00  | 0   | 00  | 00  | 00  | 0   | 0   | 00  | 10  | 00  | 133 |     |
| E3    | MUL22 | 111 | 4   | 0   | 0  | 1  | 0  | 0   | 0   | 00  | 0   | 23  | 00  | 00  | 0   | 0   | 00  | 00  | 00  | 113 |     |
| E3    | MUL21 | 112 | 4   | 0   | 0  | 1  | 0  | 0   | 10  | 0   | 06  | 00  | 00  | 00  | 0   | 0   | 00  | 10  | 00  | 111 |     |
| E3    | MUL23 | 113 | 2   | 0   | 3  | 0  | 0  | 0   | 0   | 00  | 0   | 00  | 00  | 00  | 2   | 0   | 00  | 11  | 01  | 114 |     |
| E3    | MUL27 | 114 | 2   | 0   | 0  | 1  | 0  | 0   | 0   | 00  | 0   | 00  | 00  | 00  | 0   | 0   | 00  | 10  | 00  | 133 |     |
| E3    | MUL25 | 115 | 4   | 0   | 0  | 1  | 0  | 0   | 0   | 00  | 0   | 00  | 00  | 00  | 0   | 0   | 00  | 00  | 00  | 141 |     |
| E3    | MUL24 | 116 | 2   | 0   | 0  | 0  | 0  | 0   | 0   | 00  | 0   | 00  | 00  | 00  | 0   | 0   | 00  | 00  | 00  | 115 |     |
|       |       | 117 | 0   | 0   | 0  | 0  | 0  | 0   | 0   | 00  | 0   | 00  | 00  | 00  | 0   | 0   | 00  | 00  | 00  | 000 |     |
| F2    | ADD0  | 120 | 2   | 0   | 0  | 1  | 0  | 0   | 0   | 00  | 0   | 00  | 00  | 00  | 0   | 0   | 00  | 01  | 15  | 251 |     |
| F1    | FP1   | 121 | 2   | 0   | 3  | 1  | 0  | 0   | 0   | 00  | 0   | 00  | 00  | 00  | 1   | 0   | 00  | 01  | 11  | 125 |     |
| F2    | SUB0  | 122 | 6   | 0   | 0  | 1  | 0  | 0   | 0   | 00  | 0   | 20  | 00  | 00  | 2   | 0   | 00  | 00  | 00  | 120 |     |
| E2    | ASH6  | 123 | 6   | 0   | 3  | 1  | 1  | 0   | 0   | 00  | 0   | 11  | 00  | 00  | 2   | 0   | 00  | 10  | 00  | 123 |     |
| F0    | FML0  | 124 | 6   | 0   | 0  | 0  | 0  | 0   | 0   | 00  | 0   | 00  | 00  | 00  | 2   | 0   | 00  | 00  | 00  | 130 |     |
| F1    | FP2   | 125 | 7   | 0   | 3  | 0  | 1  | 1   | 1   | 00  | 0   | 11  | 02  | 17  | 2   | 0   | 00  | 04  | 00  | 131 |     |
| F3    | FDV0  | 126 | 2   | 0   | 0  | 0  | 0  | 0   | 0   | 00  | 0   | 00  | 00  | 00  | 2   | 0   | 00  | 00  | 00  | 004 |     |
| E2    | ASH20 | 127 | 2   | 0   | 0  | 0  | 0  | 0   | 0   | 00  | 0   | 00  | 00  | 00  | 0   | 0   | 00  | 00  | 00  | 177 |     |
| F4    | FML1  | 130 | 2   | 0   | 0  | 1  | 0  | 0   | 0   | 00  | 0   | 00  | 00  | 00  | 0   | 0   | 00  | 01  | 14  | 132 |     |
| F1    | FP3   | 131 | 2   | 0   | 3  | 1  | 0  | 0   | 0   | 00  | 0   | 00  | 00  | 00  | 1   | 0   | 00  | 01  | 13  | 151 |     |
| F4    | FML2  | 132 | 6   | 0   | 3  | 0  | 1  | 0   | 0   | 00  | 0   | 11  | 00  | 00  | 2   | 0   | 00  | 01  | 15  | 041 |     |
| E3    | MUL9  | 133 | 6   | 0   | 0  | 0  | 1  | 0   | 0   | 14  | 0   | 00  | 00  | 00  | 3   | 0   | 00  | 00  | 00  | 133 |     |
| F3    | FDV20 | 134 | 2   | 0   | 0  | 1  | 0  | 0   | 0   | 00  | 0   | 00  | 00  | 00  | 0   | 0   | 00  | 00  | 00  | 154 |     |
| F1    | FP5   | 135 | 2   | 0   | 0  | 1  | 0  | 0   | 0   | 00  | 0   | 00  | 00  | 00  | 0   | 0   | 00  | 01  | 11  | 155 |     |
| F0    | NDH6  | 136 | 2   | 0   | 3  | 0  | 0  | 0   | 0   | 00  | 0   | 00  | 00  | 00  | 2   | 0   | 00  | 01  | 15  | 305 |     |
| E3    | MUL10 | 137 | 4   | 0   | 0  | 0  | 1  | 0   | 0   | 00  | 0   | 00  | 00  | 00  | 0   | 0   | 00  | 00  | 00  | 167 |     |

NOTE:  
THE COMPLEMENT OF THE ACTUAL ROM OUTPUT FOR THE UPF, WR, SPS (HIGH 2 BITS), BUS (LOW BIT), AND CLK (LOW BIT) FIELD IS LISTED FOR CLARITY.

| FLOW# | STATE | ADR | CON | FC1 | FUB | MHR | FRD | ERD | SRD | SDR | CVM | NZM | CCC | GPC | CEE | CNT | EUB | CBR |  |
|-------|-------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|
| E1    | E10   | 100 | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 17  | 1   |  |
| E5    | DIV28 | 101 | 0   | 0   | 0   | 0   | 0   | 0   | 3   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 00  | 1   |  |
| E1    | E13   | 102 | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 00  | 0   |  |
| E5    | DIV32 | 103 | 0   | 0   | 0   | 0   | 0   | 0   | 3   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 00  | 1   |  |
| E5    | DIV30 | 104 | 0   | 0   | 0   | 0   | 0   | 0   | 1   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 00  | 0   |  |
| E5    | DIV36 | 105 | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 00  | 0   |  |
| E5    | DIV38 | 106 | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 01  | 0   |  |
| E5    | DIV22 | 107 | 0   | 0   | 0   | 0   | 0   | 0   | 3   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 00  | 0   |  |
| E3    | MUL6  | 110 | 0   | 0   | 0   | 0   | 0   | 0   | 3   | 0   | 0   | 0   | 0   | 0   | 0   | 1   | 00  | 0   |  |
| E3    | MUL22 | 111 | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 04  | 0   |  |
| E3    | MUL21 | 112 | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 10  | 0   |  |
| E3    | MUL23 | 113 | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 00  | 0   |  |
| E3    | MUL27 | 114 | 0   | 0   | 0   | 0   | 0   | 0   | 3   | 0   | 0   | 0   | 0   | 0   | 0   | 1   | 00  | 0   |  |
| E3    | MUL25 | 115 | 0   | 0   | 0   | 0   | 0   | 1   | 1   | 0   | 2   | 0   | 0   | 0   | 0   | 0   | 00  | 0   |  |
| E3    | MUL24 | 116 | 0   | 0   | 0   | 0   | 0   | 0   | 1   | 1   | 0   | 0   | 0   | 0   | 0   | 0   | 00  | 0   |  |
|       |       | 117 | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 00  | 0   |  |
| F2    | ADD0  | 120 | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 03  | 0   |  |
| F1    | FP1   | 121 | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 00  | 1   |  |
| F2    | SUB0  | 122 | 0   | 0   | 0   | 0   | 1   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 00  | 1   |  |
| E2    | ASH6  | 123 | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 3   | 0   | 3   | 0   | 0   | 1   | 10  | 1   |  |
| F4    | FML0  | 124 | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 00  | 1   |  |
| F1    | FP2   | 125 | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 3   | 0   | 0   | 0   | 0   | 0   | 0   | 00  | 0   |  |
| F3    | FDV0  | 126 | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 00  | 1   |  |
| E2    | ASH20 | 127 | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 2   | 4   | 0   | 0   | 0   | 0   | 00  | 0   |  |
| F4    | FML1  | 130 | 0   | 0   | 1   | 0   | 0   | 0   | 0   | 0   | 2   | 4   | 0   | 0   | 0   | 0   | 02  | 0   |  |
| F1    | FP3   | 131 | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 00  | 0   |  |
| F4    | FML2  | 132 | 0   | 0   | 0   | 0   | 0   | 0   | 3   | 0   | 0   | 0   | 0   | 6   | 0   | 0   | 00  | 0   |  |
| E3    | MUL9  | 133 | 0   | 0   | 0   | 0   | 0   | 1   | 3   | 1   | 2   | 0   | 1   | 2   | 0   | 1   | 10  | 1   |  |
| F3    | FDV20 | 134 | 0   | 0   | 0   | 3   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 00  | 1   |  |
| F1    | FP5   | 135 | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 00  | 0   |  |
| F0    | NDH6  | 136 | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 10  | 0   |  |
| E3    | MUL10 | 137 | 0   | 0   | 0   | 0   | 1   | 3   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 00  | 0   |  |

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|--|-----------|
| <b>digital</b> EQUIPMENT CORPORATION<br>MAYNARD, MASSACHUSETTS |           |
| TITLE  |           |
| EIS BOARD  |           |
| (ADRS 100-137)   |           |
| SIZE CODE  | NUMBER    |
| C CS   | M7239-7-- |
| REV.   | E         |
| SHEET 12 OF 17   |           |
| DIST.  |           |

|                               |              |
|-------------------------------|--------------|
| DRN. <i>R. Smith</i>          | DATE 8-16-72 |
| CHK'D. <i>J. Williams</i>     | DATE 8-17-72 |
| ENG. <i>J. Williams</i>       | DATE 8-17-72 |
| PROJ. ENG. <i>J. Williams</i> | DATE 8-18-72 |
| PROD. <i>J. Williams</i>      | DATE 8-18-72 |

| FLWS STATE | ADH | CLK | CIR | WR | CB | CD | CBA | BUS | DAD | SPS | ALU | SBC | SBM | SDM | SBA | UBF | SRX | RIF | UPF |
|------------|-----|-----|-----|----|----|----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| F6 N014    | 140 | 6   | 0   | 3  | 1  | 1  | 0   | 0   | 00  | 0   | 11  | 01  | 17  | 2   | 0   | 00  | 01  | 15  | 142 |
| E3 MUL26   | 141 | 2   | 0   | 3  | 0  | 0  | 0   | 0   | 00  | 0   | 00  | 00  | 00  | 2   | 0   | 00  | 10  | 00  | 177 |
| F6 EX10    | 142 | 2   | 0   | 0  | 0  | 0  | 0   | 0   | 00  | 0   | 00  | 00  | 00  | 0   | 0   | 00  | 00  | 00  | 332 |
| E3 MUL11   | 143 | 4   | 0   | 0  | 0  | 1  | 0   | 0   | 00  | 0   | 20  | 00  | 00  | 0   | 0   | 00  | 00  | 00  | 005 |
| F1 FP12    | 144 | 2   | 0   | 3  | 0  | 1  | 0   | 0   | 00  | 0   | 00  | 00  | 00  | 2   | 0   | 00  | 01  | 11  | 244 |
| E1 DST12   | 145 | 2   | 0   | 3  | 1  | 0  | 0   | 0   | 00  | 0   | 00  | 00  | 00  | 1   | 0   | 00  | 01  | 12  | 275 |
| F1 FP10    | 146 | 6   | 0   | 3  | 1  | 1  | 0   | 0   | 00  | 0   | 23  | 00  | 00  | 2   | 0   | 00  | 01  | 13  | 252 |
| E4 DIV14   | 147 | 2   | 0   | 0  | 0  | 0  | 0   | 0   | 00  | 0   | 00  | 00  | 00  | 0   | 0   | 00  | 10  | 00  | 062 |
| F4 FML5    | 150 | 6   | 0   | 3  | 0  | 1  | 0   | 0   | 00  | 0   | 06  | 00  | 00  | 2   | 0   | 00  | 01  | 15  | 365 |
| F1 FP4     | 151 | 2   | 0   | 3  | 0  | 1  | 0   | 0   | 00  | 0   | 11  | 00  | 00  | 2   | 0   | 00  | 01  | 13  | 135 |
| F1 FP4     | 152 | 0   | 0   | 0  | 0  | 0  | 0   | 0   | 00  | 0   | 00  | 00  | 00  | 0   | 0   | 00  | 00  | 00  | 000 |
| E4 DIV20   | 153 | 6   | 0   | 0  | 0  | 1  | 0   | 0   | 14  | 0   | 00  | 00  | 00  | 2   | 0   | 00  | 00  | 00  | 153 |
| F6 N041    | 154 | 6   | 0   | 3  | 0  | 1  | 0   | 0   | 00  | 0   | 11  | 01  | 17  | 2   | 0   | 00  | 01  | 15  | 324 |
| F1 FP6     | 155 | 6   | 0   | 3  | 1  | 1  | 0   | 0   | 00  | 0   | 11  | 00  | 00  | 2   | 0   | 00  | 01  | 11  | 175 |
| F6 N044    | 156 | 6   | 0   | 0  | 0  | 1  | 0   | 0   | 00  | 0   | 11  | 01  | 17  | 2   | 0   | 00  | 00  | 00  | 174 |
| E5 DIV21   | 157 | 4   | 0   | 0  | 0  | 1  | 0   | 0   | 00  | 0   | 00  | 00  | 00  | 0   | 0   | 00  | 00  | 00  | 107 |
| F5 F0V6    | 160 | 4   | 0   | 0  | 0  | 1  | 0   | 0   | 00  | 0   | 11  | 00  | 00  | 0   | 0   | 00  | 00  | 00  | 344 |
| F6 EX14    | 161 | 6   | 0   | 0  | 1  | 0  | 0   | 0   | 00  | 0   | 00  | 00  | 00  | 0   | 0   | 00  | 00  | 00  | 256 |
| F5 F0V5    | 162 | 6   | 0   | 3  | 1  | 1  | 0   | 0   | 00  | 0   | 23  | 00  | 00  | 2   | 0   | 00  | 01  | 15  | 176 |
| F2 ADD13   | 163 | 4   | 0   | 0  | 0  | 1  | 0   | 0   | 10  | 0   | 06  | 00  | 00  | 0   | 0   | 00  | 00  | 00  | 340 |
| F2 ADD5    | 164 | 2   | 0   | 0  | 1  | 0  | 0   | 0   | 00  | 0   | 00  | 00  | 00  | 0   | 0   | 00  | 01  | 11  | 165 |
| F2 ADD6    | 165 | 4   | 0   | 0  | 0  | 1  | 0   | 0   | 00  | 0   | 06  | 00  | 00  | 0   | 0   | 00  | 00  | 00  | 202 |
| F5 F0V3    | 166 | 4   | 0   | 0  | 0  | 1  | 0   | 0   | 00  | 0   | 00  | 00  | 00  | 0   | 0   | 00  | 00  | 00  | 350 |
| E3 MUL20   | 167 | 2   | 0   | 3  | 0  | 0  | 0   | 0   | 00  | 0   | 00  | 00  | 00  | 2   | 0   | 00  | 10  | 00  | 143 |
| E1 DST4    | 170 | 3   | 0   | 3  | 0  | 0  | 0   | 1   | 00  | 0   | 00  | 00  | 00  | 2   | 0   | 00  | 04  | 00  | 271 |
| F5 F0V11   | 171 | 2   | 0   | 0  | 0  | 0  | 0   | 0   | 00  | 0   | 00  | 00  | 00  | 0   | 0   | 00  | 01  | 10  | 042 |
| F4 FML4    | 172 | 2   | 0   | 0  | 0  | 0  | 0   | 1   | 00  | 0   | 00  | 00  | 00  | 0   | 0   | 00  | 01  | 10  | 210 |
| F5 F0V13   | 173 | 6   | 0   | 0  | 0  | 1  | 0   | 0   | 14  | 0   | 00  | 00  | 00  | 2   | 0   | 00  | 00  | 00  | 331 |
| F6 N049    | 174 | 2   | 0   | 0  | 0  | 0  | 0   | 0   | 00  | 0   | 00  | 00  | 00  | 0   | 0   | 00  | 00  | 00  | 273 |
| F1 FP7     | 175 | 4   | 0   | 0  | 0  | 1  | 0   | 0   | 00  | 0   | 32  | 00  | 16  | 0   | 0   | 00  | 00  | 00  | 367 |
| F6 N043    | 176 | 2   | 0   | 0  | 0  | 0  | 1   | 0   | 06  | 0   | 00  | 00  | 00  | 1   | 0   | 00  | 04  | 00  | 220 |
| F2 ASH15   | 177 | 6   | 0   | 0  | 0  | 0  | 0   | 0   | 00  | 7   | 00  | 00  | 00  | 0   | 0   | 00  | 00  | 00  | 323 |

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NOTE:  
THE COMPLEMENT OF THE ACTUAL ROM OUTPUT FOR THE UPF, WR, SPS (HIGH 2 BITS), BUS (LOW BIT) AND CLK (LOW BIT) FIELD IS LISTED FOR CLARITY.

| FLWS STATE | ADR | CON | FC1 | F0B | MHR | FRD | ERD | SRD | SDR | CVH | NZM | CCC | GPC | CEE | CNT | EUB | CBN |
|------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| F6 N0414   | 140 | 0   | 0   | 0   | 1   | 0   | 0   | 0   | 1   | 0   | 0   | 0   | 0   | 0   | 0   | 00  | 1   |
| E3 MUL26   | 141 | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 1   | 3   | 5   | 0   | 0   | 0   | 00  | 0   |
| F6 EX10    | 142 | 0   | 0   | 0   | 0   | 1   | 0   | 2   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 00  | 1   |
| E3 MUL11   | 143 | 0   | 0   | 0   | 0   | 0   | 1   | 3   | 0   | 2   | 0   | 2   | 0   | 0   | 0   | 04  | 0   |
| F1 FP12    | 144 | 0   | 0   | 0   | 0   | 0   | 0   | 1   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 00  | 0   |
| E1 DST12   | 145 | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 00  | 0   |
| F1 FP10    | 146 | 0   | 0   | 1   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 00  | 1   |
| E4 DIV14   | 147 | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 3   | 0   | 0   | 0   | 0   | 0   | 0   | 00  | 1   |
| F4 FML5    | 150 | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 00  | 0   |
| F1 FP4     | 151 | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 4   | 0   | 1   | 0   | 0   | 0   | 00  | 0   |
| F1 FP4     | 152 | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 00  | 0   |
| E4 DIV20   | 153 | 0   | 0   | 0   | 0   | 0   | 1   | 2   | 2   | 0   | 0   | 0   | 2   | 0   | 1   | 10  | 1   |
| F6 N041    | 154 | 0   | 0   | 1   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 1   | 0   | 0   | 04  | 0   |
| F1 FP6     | 155 | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 4   | 0   | 0   | 10  | 0   |
| F6 N044    | 156 | 0   | 0   | 0   | 0   | 1   | 0   | 1   | 0   | 4   | 0   | 1   | 0   | 0   | 0   | 00  | 1   |
| F5 DIV21   | 157 | 0   | 0   | 0   | 0   | 0   | 1   | 3   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 12  | 0   |
| F5 F0V6    | 160 | 0   | 0   | 0   | 0   | 1   | 0   | 3   | 0   | 0   | 0   | 0   | 6   | 0   | 0   | 00  | 0   |
| F6 EX14    | 161 | 2   | 0   | 0   | 0   | 1   | 0   | 3   | 0   | 1   | 3   | 6   | 0   | 0   | 0   | 00  | 0   |
| F5 F0V5    | 162 | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 00  | 1   |
| F2 ADD13   | 163 | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 2   | 4   | 0   | 0   | 0   | 2   | 00  | 0   |
| F2 ADD5    | 164 | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 00  | 0   |
| F2 ADD6    | 165 | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 4   | 0   | 0   | 00  | 0   |
| F5 F0V3    | 166 | 1   | 0   | 0   | 0   | 1   | 0   | 3   | 0   | 1   | 0   | 1   | 0   | 0   | 0   | 00  | 0   |
| F5 MUL20   | 167 | 0   | 0   | 0   | 0   | 0   | 0   | 3   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 05  | 0   |
| E1 DST4    | 170 | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 16  | 0   |
| F5 F0V11   | 171 | 0   | 0   | 0   | 7   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 00  | 1   |
| F4 FML4    | 172 | 0   | 0   | 0   | 7   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 00  | 1   |
| F5 F0V13   | 173 | 0   | 0   | 1   | 0   | 0   | 1   | 3   | 4   | 0   | 1   | 2   | 0   | 0   | 0   | 05  | 1   |
| F6 N049    | 174 | 0   | 0   | 0   | 3   | 0   | 0   | 1   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 00  | 0   |
| F1 FP7     | 175 | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 10  | 0   |
| F6 N043    | 176 | 3   | 1   | 0   | 3   | 0   | 0   | 1   | 3   | 0   | 2   | 4   | 0   | 0   | 0   | 00  | 0   |
| F2 ASH15   | 177 | 0   | 0   | 0   | 0   | 0   | 1   | 0   | 0   | 0   | 0   | 0   | 0   | 1   | 0   | 00  | 0   |

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|---|---------------------|
| digital EQUIPMENT CORPORATION<br>MAYNARD, MASSACHUSETTS |                     |
| TITLE<br>EIS BOARD                                      |                     |
| (ADRS 140-177)  |                     |
| DRN<br><i>R. Smith</i>                                  | DATE<br>8-16-72     |
| CHK'D.<br><i>J. ...</i>                                 | DATE<br>8-17-72     |
| ENG.<br><i>J. ...</i>                                   | DATE<br>8-17-72     |
| PROJ. ENG.<br><i>J. ...</i>                             | DATE<br>8-18-72     |
| PROD.<br><i>J. ...</i>                                  | DATE<br>8-19-72     |
| SHEET 13 OF 17  | DIST.               |
| SIZE CODE<br>C 75                                       | NUMBER<br>M7233-1-1 |
| REV.<br>E   |                     |

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| FLONG STATE | ADR | CLK | CIR | WR | CH | CD | CBA | BUS | DAD | SPS | ALU | SBC | SBM | SDM | SBA | USF | SRX | RIF | UPF |
|-------------|-----|-----|-----|----|----|----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| F2 ADD39    | 200 | 2   | 0   | 3  | 0  | 0  | 0   | 0   | 00  | 0   | 00  | 00  | 00  | 2   | 0   | 00  | 01  | 15  | 072 |
| E3 MUL0     | 201 | 0   | 0   | 0  | 0  | 1  | 0   | 0   | 00  | 0   | 32  | 12  | 17  | 2   | 0   | 00  | 00  | 00  | 014 |
| F2 ADD7     | 202 | 0   | 0   | 3  | 0  | 0  | 0   | 0   | 00  | 0   | 00  | 00  | 00  | 2   | 0   | 00  | 01  | 11  | 300 |
| E4 JIV0     | 203 | 0   | 0   | 0  | 0  | 1  | 0   | 0   | 00  | 0   | 32  | 12  | 17  | 2   | 0   | 00  | 00  | 00  | 303 |
| E3 MUL8     | 204 | 2   | 0   | 0  | 0  | 0  | 0   | 0   | 00  | 0   | 00  | 00  | 00  | 0   | 0   | 00  | 00  | 00  | 001 |
| E2 ABM0     | 205 | 2   | 0   | 0  | 0  | 0  | 0   | 0   | 00  | 0   | 00  | 00  | 00  | 0   | 0   | 00  | 00  | 00  | 311 |
| E2 ABM19    | 206 | 4   | 0   | 0  | 0  | 1  | 0   | 0   | 00  | 0   | 00  | 00  | 00  | 0   | 0   | 00  | 11  | 01  | 127 |
| E2 ABM7     | 207 | 2   | 0   | 0  | 0  | 0  | 0   | 0   | 00  | 0   | 00  | 00  | 00  | 0   | 0   | 00  | 11  | 01  | 351 |
| F4 FML9     | 210 | 2   | 0   | 0  | 0  | 0  | 0   | 0   | 00  | 0   | 00  | 00  | 00  | 0   | 0   | 00  | 00  | 00  | 212 |
| F5 PDV24    | 211 | 0   | 0   | 0  | 0  | 1  | 0   | 0   | 10  | 0   | 06  | 00  | 00  | 2   | 0   | 00  | 00  | 00  | 032 |
| F4 FML10    | 212 | 2   | 0   | 0  | 1  | 0  | 0   | 0   | 00  | 0   | 00  | 00  | 00  | 0   | 0   | 00  | 01  | 15  | 213 |
| F4 FML11    | 213 | 4   | 0   | 0  | 0  | 1  | 0   | 0   | 00  | 0   | 00  | 00  | 00  | 0   | 0   | 00  | 00  | 00  | 232 |
| F6 NOM11    | 214 | 2   | 0   | 0  | 0  | 0  | 0   | 0   | 00  | 0   | 00  | 00  | 00  | 0   | 0   | 00  | 00  | 00  | 216 |
| F2 ADD16    | 215 | 2   | 0   | 0  | 0  | 0  | 0   | 0   | 00  | 0   | 00  | 00  | 00  | 0   | 0   | 00  | 01  | 15  | 200 |
| F6 NOM12    | 216 | 2   | 0   | 0  | 0  | 0  | 0   | 0   | 00  | 0   | 00  | 00  | 00  | 0   | 0   | 00  | 00  | 00  | 234 |
| F4 FML18    | 217 | 0   | 0   | 0  | 0  | 1  | 0   | 0   | 00  | 0   | 00  | 00  | 00  | 2   | 0   | 00  | 00  | 00  | 330 |
| F6 LXI7     | 220 | 5   | 0   | 0  | 0  | 1  | 0   | 3   | 00  | 0   | 00  | 00  | 00  | 0   | 0   | 00  | 00  | 00  | 336 |
| E1 JBT15    | 221 | 2   | 0   | 3  | 1  | 0  | 0   | 0   | 00  | 0   | 00  | 00  | 00  | 1   | 0   | 00  | 01  | 12  | 241 |
| F6 LXI3     | 222 | 0   | 0   | 0  | 0  | 1  | 0   | 2   | 00  | 0   | 03  | 00  | 00  | 2   | 0   | 00  | 00  | 00  | 224 |
| E2 ABM11    | 223 | 0   | 0   | 3  | 1  | 1  | 0   | 0   | 00  | 0   | 00  | 00  | 00  | 3   | 0   | 00  | 10  | 00  | 223 |
| F6 LXI12    | 224 | 2   | 0   | 0  | 0  | 0  | 0   | 2   | 00  | 0   | 00  | 00  | 00  | 2   | 0   | 00  | 00  | 00  | 161 |
| F2 ADD10    | 225 | 0   | 0   | 0  | 0  | 1  | 0   | 0   | 00  | 0   | 06  | 00  | 00  | 2   | 0   | 00  | 00  | 00  | 245 |
| F2 ADD15    | 226 | 4   | 0   | 0  | 0  | 1  | 0   | 0   | 00  | 0   | 00  | 00  | 00  | 0   | 0   | 00  | 00  | 00  | 215 |
| E2 ABM12    | 227 | 4   | 0   | 0  | 0  | 1  | 0   | 0   | 00  | 0   | 00  | 00  | 00  | 0   | 0   | 00  | 00  | 00  | 077 |
| F4 FML16    | 230 | 2   | 0   | 0  | 1  | 0  | 0   | 0   | 00  | 0   | 00  | 00  | 00  | 0   | 0   | 00  | 01  | 11  | 250 |
| E4 JIV3     | 231 | 2   | 0   | 0  | 0  | 0  | 0   | 0   | 00  | 0   | 00  | 00  | 00  | 0   | 0   | 00  | 00  | 00  | 020 |
| F4 FML12    | 232 | 2   | 0   | 0  | 0  | 0  | 0   | 0   | 00  | 0   | 00  | 00  | 00  | 3   | 0   | 00  | 00  | 00  | 304 |
| F3 ADD35    | 233 | 0   | 0   | 0  | 1  | 1  | 0   | 0   | 00  | 0   | 36  | 00  | 00  | 0   | 0   | 00  | 00  | 00  | 360 |
| F6 NOM13    | 234 | 0   | 0   | 0  | 1  | 1  | 0   | 0   | 00  | 0   | 00  | 00  | 00  | 0   | 0   | 00  | 01  | 15  | 140 |
| F1 JPC      | 235 | 0   | 0   | 0  | 0  | 1  | 0   | 0   | 00  | 0   | 11  | 00  | 14  | 0   | 0   | 00  | 00  | 00  | 144 |
| F6 LXI1     | 236 | 4   | 0   | 0  | 0  | 1  | 0   | 0   | 00  | 0   | 00  | 00  | 00  | 0   | 0   | 00  | 00  | 00  | 254 |
| F3 ADD25    | 237 | 2   | 0   | 0  | 0  | 0  | 0   | 0   | 00  | 0   | 00  | 00  | 00  | 2   | 0   | 00  | 00  | 00  | 341 |

NOTE:  
THE COMPLEMENT OF THE ACTUAL ROM OUTPUT FOR THE UPF, WR, SPS (HIGH 2 BITS), BUS (LOW BIT), AND CLK (LOW BIT) FIELD IS LISTED FOR CLARITY.

| FLONG STATE | ADR | CLK | FC1 | FUB | MHR | FRD | ERD | SRD | SDR | CVM | NZH | CCC | GPC | CEE | CNT | EUB | CBR |
|-------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| F2 ADD39    | 200 | 0   | 0   | 0   | 0   | 0   | 0   | 1   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 00  | 0   |
| E3 MUL0     | 201 | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 03  | 1   |
| F2 ADD7     | 202 | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 00  | 0   |
| E4 JIV0     | 203 | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 00  | 1   |
| E3 MUL8     | 204 | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 3   | 0   | 0   | 0   | 0   | 0   | 0   | 00  | 1   |
| E2 ABM0     | 205 | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 2   | 13  | 0   |
| E2 ABM19    | 206 | 0   | 0   | 0   | 0   | 0   | 1   | 3   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 00  | 0   |
| E2 ABM7     | 207 | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 2   | 0   | 2   | 0   | 0   | 0   | 2   | 13  | 1   |
| F4 FML9     | 210 | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 00  | 1   |
| F5 PDV24    | 211 | 0   | 0   | 0   | 0   | 0   | 1   | 1   | 3   | 4   | 0   | 1   | 0   | 0   | 0   | 00  | 1   |
| F4 FML10    | 212 | 2   | 0   | 0   | 0   | 0   | 0   | 3   | 3   | 0   | 0   | 0   | 0   | 0   | 0   | 00  | 0   |
| F4 FML11    | 213 | 0   | 0   | 1   | 0   | 0   | 1   | 3   | 0   | 0   | 0   | 0   | 0   | 0   | 1   | 01  | 0   |
| F6 NOM11    | 214 | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 3   | 0   | 0   | 0   | 0   | 0   | 0   | 00  | 0   |
| F2 ADD16    | 215 | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 00  | 1   |
| F6 NOM12    | 216 | 0   | 0   | 1   | 1   | 0   | 0   | 0   | 1   | 0   | 0   | 0   | 1   | 0   | 0   | 04  | 1   |
| F4 FML18    | 217 | 0   | 0   | 0   | 0   | 0   | 1   | 1   | 3   | 0   | 0   | 0   | 0   | 0   | 0   | 00  | 1   |
| F6 LXI7     | 220 | 0   | 0   | 0   | 0   | 1   | 0   | 1   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 00  | 0   |
| E1 JBT15    | 221 | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 00  | 0   |
| F6 LXI3     | 222 | 2   | 0   | 0   | 0   | 0   | 0   | 3   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 00  | 1   |
| E2 ABM11    | 223 | 0   | 0   | 0   | 0   | 0   | 0   | 1   | 1   | 2   | 0   | 1   | 0   | 0   | 1   | 10  | 1   |
| F6 LXI12    | 224 | 2   | 0   | 0   | 0   | 0   | 0   | 3   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 00  | 1   |
| F2 ADD10    | 225 | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 4   | 0   | 0   | 00  | 1   |
| F2 ADD15    | 226 | 0   | 0   | 0   | 0   | 1   | 0   | 1   | 0   | 0   | 0   | 0   | 0   | 0   | 2   | 00  | 0   |
| E2 ABM12    | 227 | 0   | 0   | 0   | 0   | 0   | 1   | 1   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 00  | 0   |
| F4 FML16    | 230 | 0   | 0   | 0   | 0   | 0   | 0   | 1   | 0   | 0   | 0   | 0   | 7   | 0   | 0   | 10  | 0   |
| E4 JIV3     | 231 | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 00  | 0   |
| F4 FML12    | 232 | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 1   | 0   | 0   | 0   | 7   | 0   | 0   | 10  | 1   |
| F3 ADD35    | 233 | 0   | 0   | 0   | 0   | 0   | 1   | 1   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 00  | 0   |
| F6 NOM13    | 234 | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 00  | 1   |
| F1 JPC      | 235 | 0   | 0   | 1   | 0   | 1   | 0   | 3   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 00  | 0   |
| F6 LXI1     | 236 | 1   | 0   | 0   | 0   | 1   | 0   | 3   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 11  | 0   |
| F3 ADD25    | 237 | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 7   | 0   | 1   | 10  | 0   |

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| REVISIONS  | REV |
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| DRN.             | DATE    |
| <i>D. J. ...</i> | 8-16-72 |
| CHK'D.           | DATE    |
| <i>H. ...</i>    | 8-17-72 |
| ENG.             | DATE    |
| <i>H. ...</i>    | 8-17-72 |
| PROJ. ENG.       | DATE    |
| <i>H. ...</i>    | 8-18-72 |
| PROD.            | DATE    |
| <i>H. ...</i>    | 8-18-72 |
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| digital EQUIPMENT CORPORATION<br>MAYNARD MASSACHUSETTS |           |
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| EIS BOARD  |           |
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| SIZE CODE  | NUMBER    |
| C CS   | M723--0-1 |
| REV.   | E         |
| DIST.  |           |

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| FLW# | STATE | ADR | CLK | CIR | WR | CB | CU | CSA | BUS | DAD | SPS | ALU | SHC | SBM | SDM | SSA | UMF | SRX | RIF | UPF |
|------|-------|-----|-----|-----|----|----|----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| E1   | EI2   | 240 | 4   | 0   | 0  | 0  | 1  | 0   | 0   | 00  | 0   | 32  | 00  | 17  | 0   | 0   | 00  | 00  | 00  | 102 |
| E1   | DST16 | 241 | 5   | 0   | 0  | 0  | 0  | 1   | 1   | 00  | 0   | 11  | 00  | 00  | 0   | 0   | 00  | 04  | 00  | 265 |
| F1   | FPO   | 242 | 3   | 0   | 0  | 0  | 0  | 1   | 1   | 00  | 0   | 00  | 00  | 00  | 2   | 1   | 00  | 04  | 00  | 121 |
| E2   | ASH17 | 243 | 6   | 0   | 3  | 1  | 1  | 0   | 0   | 00  | 0   | 11  | 00  | 00  | 2   | 0   | 00  | 10  | 00  | 243 |
| F1   | FP13  | 244 | 7   | 0   | 3  | 0  | 1  | 1   | 1   | 00  | 0   | 11  | 02  | 17  | 2   | 0   | 00  | 04  | 00  | 121 |
| F2   | ADD11 | 245 | 2   | 0   | 0  | 1  | 0  | 0   | 0   | 00  | 0   | 00  | 00  | 00  | 0   | 0   | 00  | 01  | 14  | 375 |
| F1   | FP14  | 246 | 2   | 0   | 0  | 1  | 0  | 0   | 0   | 00  | 0   | 00  | 00  | 00  | 0   | 0   | 00  | 00  | 00  | 255 |
| F2   | ASH18 | 247 | 4   | 0   | 0  | 0  | 1  | 0   | 0   | 00  | 0   | 00  | 00  | 00  | 0   | 0   | 00  | 00  | 00  | 077 |
| F4   | FML17 | 250 | 6   | 0   | 0  | 0  | 1  | 0   | 0   | 00  | 0   | 11  | 00  | 00  | 2   | 0   | 00  | 00  | 00  | 213 |
| F2   | ADD1  | 251 | 4   | 0   | 0  | 0  | 1  | 0   | 0   | 10  | 0   | 06  | 00  | 00  | 0   | 0   | 00  | 00  | 00  | 300 |
| F1   | FP11  | 252 | 2   | 0   | 3  | 0  | 1  | 0   | 0   | 00  | 0   | 00  | 00  | 00  | 2   | 0   | 00  | 01  | 11  | 244 |
| F4   | HRQ2  | 253 | 6   | 0   | 0  | 1  | 0  | 0   | 0   | 00  | 0   | 00  | 00  | 00  | 0   | 0   | 00  | 00  | 00  | 355 |
| F6   | EXI2  | 254 | 2   | 0   | 3  | 0  | 0  | 0   | 0   | 00  | 0   | 00  | 00  | 00  | 2   | 0   | 00  | 01  | 14  | 220 |
| F1   | FP15  | 255 | 6   | 0   | 0  | 0  | 1  | 0   | 0   | 00  | 0   | 26  | 00  | 00  | 0   | 0   | 00  | 00  | 00  | 120 |
| F6   | EXI5  | 256 | 6   | 0   | 0  | 0  | 0  | 0   | 0   | 00  | 7   | 00  | 00  | 00  | 0   | 0   | 00  | 00  | 00  | 354 |
| F4   | HRQ3  | 257 | 6   | 0   | 0  | 1  | 0  | 0   | 0   | 00  | 0   | 00  | 00  | 00  | 0   | 0   | 00  | 00  | 00  | 355 |
| E1   | DST0  | 260 | 4   | 0   | 0  | 0  | 1  | 0   | 0   | 00  | 0   | 00  | 00  | 00  | 0   | 0   | 00  | 04  | 00  | 261 |
| E1   | DST1  | 261 | 2   | 0   | 3  | 1  | 0  | 0   | 0   | 00  | 0   | 00  | 00  | 00  | 2   | 0   | 00  | 01  | 12  | 201 |
| E1   | DST10 | 262 | 3   | 0   | 0  | 0  | 0  | 1   | 1   | 00  | 0   | 00  | 00  | 00  | 0   | 1   | 00  | 04  | 00  | 271 |
| F4   | FML7  | 263 | 2   | 0   | 0  | 0  | 0  | 0   | 0   | 00  | 0   | 00  | 00  | 00  | 0   | 0   | 00  | 01  | 12  | 172 |
| E1   | DST2  | 264 | 4   | 0   | 0  | 0  | 1  | 1   | 0   | 00  | 0   | 11  | 02  | 17  | 0   | 1   | 00  | 04  | 00  | 170 |
| E1   | DST6  | 265 | 2   | 0   | 3  | 1  | 0  | 0   | 0   | 00  | 0   | 00  | 00  | 00  | 1   | 0   | 00  | 01  | 12  | 366 |
| E1   | DST5  | 266 | 7   | 0   | 3  | 0  | 1  | 1   | 1   | 00  | 0   | 11  | 02  | 17  | 2   | 1   | 00  | 04  | 00  | 265 |
| F5   | FDV10 | 267 | 2   | 0   | 0  | 0  | 0  | 0   | 0   | 00  | 0   | 00  | 00  | 00  | 0   | 0   | 00  | 00  | 00  | 171 |
| E1   | DST3  | 270 | 4   | 0   | 0  | 0  | 1  | 1   | 0   | 00  | 0   | 06  | 01  | 17  | 0   | 0   | 00  | 04  | 00  | 170 |
| E1   | DST8  | 271 | 2   | 0   | 3  | 1  | 0  | 0   | 0   | 00  | 0   | 00  | 00  | 00  | 1   | 0   | 00  | 01  | 12  | 201 |
| E1   | DST9  | 272 | 7   | 0   | 3  | 0  | 1  | 1   | 1   | 00  | 0   | 06  | 01  | 17  | 2   | 0   | 00  | 04  | 00  | 265 |
| F6   | NOM10 | 273 | 6   | 0   | 0  | 0  | 1  | 0   | 0   | 00  | 0   | 11  | 00  | 00  | 2   | 0   | 00  | 00  | 00  | 214 |
| E1   | DST11 | 274 | 7   | 0   | 3  | 0  | 1  | 0   | 1   | 00  | 0   | 11  | 02  | 17  | 2   | 0   | 00  | 01  | 07  | 145 |
| E1   | DST13 | 275 | 5   | 0   | 0  | 0  | 0  | 1   | 1   | 00  | 0   | 11  | 00  | 00  | 0   | 0   | 00  | 04  | 00  | 271 |
| E1   | DST14 | 276 | 7   | 0   | 3  | 0  | 1  | 0   | 1   | 00  | 0   | 11  | 02  | 17  | 2   | 0   | 00  | 01  | 07  | 221 |
| F4   | FML15 | 277 | 6   | 0   | 0  | 0  | 1  | 0   | 0   | 00  | 0   | 11  | 00  | 00  | 2   | 0   | 00  | 00  | 00  | 230 |

NOTE:  
THE COMPLEMENT OF THE ACTUAL ROM OUTPUT FOR THE UPF, WR, SPS (HIGH 2 BITS), BUS (LOW BIT), AND CLK (LOW BIT) FIELD IS LISTED FOR CLARITY.

| FLW# | STATE | ADR | CU | FC1 | FUB | HMR | FRD | ERD | BRD | SDR | CVH | NZH | CCC | GPC | CEE | CNT | EUB | CBR |
|------|-------|-----|----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| E1   | EI2   | 240 | 0  | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 1   | 0   | 00  | 0   |
| E1   | DST16 | 241 | 0  | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 00  | 0   |
| F1   | FPO   | 242 | 0  | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 00  | 0   |
| E2   | ASH17 | 243 | 0  | 0   | 0   | 0   | 0   | 0   | 1   | 2   | 3   | 0   | 3   | 3   | 0   | 1   | 10  | 1   |
| F1   | FP13  | 244 | 0  | 0   | 0   | 7   | 0   | 0   | 0   | 0   | 0   | 2   | 4   | 0   | 0   | 0   | 00  | 0   |
| F2   | ADD11 | 245 | 0  | 0   | 0   | 0   | 0   | 0   | 0   | 3   | 0   | 3   | 4   | 0   | 0   | 0   | 00  | 0   |
| F1   | FP14  | 246 | 0  | 0   | 0   | 0   | 0   | 1   | 1   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 15  | 0   |
| F2   | ASH18 | 247 | 0  | 0   | 0   | 0   | 0   | 1   | 1   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 00  | 0   |
| F4   | FML17 | 250 | 2  | 0   | 0   | 0   | 0   | 1   | 1   | 3   | 0   | 0   | 4   | 0   | 0   | 0   | 00  | 1   |
| F2   | ADD1  | 251 | 0  | 0   | 0   | 0   | 0   | 0   | 0   | 4   | 0   | 1   | 0   | 0   | 0   | 0   | 00  | 0   |
| F1   | FP11  | 252 | 0  | 0   | 0   | 0   | 0   | 0   | 1   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 00  | 0   |
| F4   | HRQ2  | 253 | 2  | 0   | 0   | 0   | 1   | 0   | 3   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 00  | 0   |
| F6   | EXI2  | 254 | 0  | 1   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 00  | 0   |
| F1   | FP15  | 255 | 0  | 0   | 0   | 0   | 1   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 00  | 1   |
| F6   | EXI5  | 256 | 0  | 0   | 0   | 0   | 0   | 1   | 0   | 0   | 0   | 0   | 0   | 0   | 1   | 0   | 00  | 0   |
| F4   | HRQ3  | 257 | 2  | 0   | 0   | 0   | 1   | 0   | 3   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 00  | 0   |
| E1   | DST0  | 260 | 0  | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 16  | 0   |
| E1   | DST1  | 261 | 0  | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 00  | 1   |
| E1   | DST10 | 262 | 0  | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 16  | 0   |
| F4   | FML7  | 263 | 0  | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 2   | 00  | 1   |
| E1   | DST2  | 264 | 0  | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 00  | 0   |
| E1   | DST6  | 265 | 0  | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 00  | 0   |
| E1   | DST5  | 266 | 0  | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 00  | 0   |
| F5   | FDV10 | 267 | 0  | 0   | 0   | 0   | 0   | 0   | 0   | 3   | 0   | 0   | 0   | 0   | 0   | 0   | 00  | 1   |
| E1   | DST3  | 270 | 0  | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 00  | 0   |
| E1   | DST8  | 271 | 0  | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 00  | 1   |
| E1   | DST9  | 272 | 0  | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 00  | 0   |
| F6   | NOM10 | 273 | 0  | 0   | 0   | 0   | 1   | 1   | 0   | 0   | 0   | 4   | 0   | 0   | 0   | 0   | 10  | 1   |
| E1   | DST11 | 274 | 0  | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 00  | 0   |
| E1   | DST13 | 275 | 0  | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 16  | 0   |
| E1   | DST14 | 276 | 0  | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 00  | 0   |
| F4   | FML15 | 277 | 0  | 0   | 0   | 0   | 1   | 1   | 3   | 4   | 0   | 1   | 0   | 0   | 0   | 0   | 00  | 1   |

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| ENG.           | DATE |
| PROJ. ENG.     | DATE |
| MOD.           | DATE |
| SHEET 15 OF 17 |      |

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| digital EQUIPMENT CORPORATION<br>MAYNARD MASSACHUSETTS |           |
| TITLE  |           |
| EIS BOARD  |           |
| (ADRS 240-277)   |           |
| SIZE CODE  | NUMBER    |
| C CS   | M7235-0-1 |
| DIST.  | REV.      |
|  | E         |



| FLW# | STATE | ADR | CLK | CIN | WR | CB | CO | CBA | BUS | DAD | SPS | ALU | SBC | SBM | SDM | SBA | UBF | SRX | RIF | UPF |     |
|------|-------|-----|-----|-----|----|----|----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| F2   | ADD2  | 300 | 2   | 0   | 0  | 1  | 0  | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 12  | 004 |
| F2   | ADD18 | 301 | 2   | 0   | 0  | 0  | 0  | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 11  | 321 |
| F2   | ADD4  | 302 | 4   | 0   | 3  | 0  | 0  | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 2   | 0   | 0   | 0   | 13  | 104 |
| E4   | QIV1  | 303 | 4   | 0   | 0  | 0  | 1  | 0   | 0   | 0   | 0   | 32  | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 055 |
| F4   | FML13 | 304 | 2   | 0   | 0  | 1  | 0  | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 13  | 213 |
| F6   | NM7   | 305 | 2   | 0   | 0  | 0  | 0  | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 156 |
| F4   | FML14 | 306 | 2   | 0   | 0  | 1  | 0  | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 13  | 277 |
| F6   | NM8   | 307 | 4   | 0   | 0  | 0  | 1  | 0   | 0   | 0   | 0   | 06  | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 15  | 136 |
| F2   | ADD21 | 310 | 2   | 0   | 3  | 0  | 0  | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 2   | 0   | 0   | 0   | 0   | 15  | 340 |
| E2   | AM1   | 311 | 0   | 0   | 0  | 1  | 1  | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 2   | 0   | 0   | 0   | 10  | 0   | 030 |
| F5   | FDV19 | 312 | 2   | 0   | 0  | 0  | 0  | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 134 |
| F3   | ADD27 | 313 | 6   | 0   | 0  | 0  | 0  | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 313 |
| F3   | ADD33 | 314 | 2   | 0   | 0  | 1  | 0  | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 334 |
| F3   | ADD32 | 315 | 6   | 0   | 0  | 0  | 1  | 0   | 0   | 0   | 0   | 11  | 0   | 0   | 2   | 0   | 0   | 0   | 0   | 0   | 314 |
| F5   | FDV16 | 316 | 6   | 0   | 0  | 0  | 1  | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 2   | 0   | 0   | 0   | 0   | 0   | 333 |
| F3   | ADD30 | 317 | 6   | 0   | 0  | 0  | 1  | 0   | 0   | 0   | 0   | 11  | 0   | 0   | 2   | 0   | 0   | 0   | 0   | 0   | 347 |
| F2   | ADD8  | 320 | 2   | 0   | 0  | 0  | 0  | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 10  | 245 |
| F2   | ADD19 | 321 | 2   | 0   | 3  | 0  | 0  | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 2   | 0   | 0   | 0   | 0   | 11  | 325 |
| F2   | ADD9  | 322 | 2   | 0   | 0  | 1  | 0  | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 10  | 225 |
| E2   | AM21  | 323 | 2   | 0   | 0  | 0  | 0  | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 017 |
| F6   | NM4   | 324 | 2   | 0   | 0  | 0  | 0  | 1   | 0   | 0   | 06  | 0   | 0   | 0   | 1   | 0   | 0   | 0   | 0   | 0   | 305 |
| F2   | ADD20 | 325 | 4   | 0   | 0  | 0  | 1  | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 14  | 310 |
| F6   | NM2   | 326 | 6   | 0   | 3  | 1  | 1  | 0   | 0   | 0   | 0   | 23  | 0   | 0   | 2   | 0   | 0   | 0   | 0   | 15  | 170 |
| F6   | NM0   | 327 | 2   | 0   | 0  | 1  | 0  | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 154 |
| F4   | FML19 | 330 | 2   | 0   | 0  | 1  | 0  | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 154 |
| F5   | FDV14 | 331 | 2   | 0   | 0  | 1  | 0  | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 11  | 370 |
| F6   | EX114 | 332 | 4   | 0   | 0  | 0  | 1  | 0   | 0   | 0   | 0   | 32  | 0   | 16  | 0   | 0   | 0   | 0   | 0   | 0   | 236 |
| F5   | FDV12 | 333 | 2   | 0   | 0  | 1  | 0  | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 13  | 173 |
| F3   | ADD34 | 334 | 6   | 0   | 0  | 0  | 1  | 0   | 0   | 10  | 0   | 06  | 0   | 0   | 2   | 0   | 0   | 0   | 0   | 0   | 233 |
| F3   | ADD37 | 335 | 2   | 0   | 0  | 1  | 0  | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 334 |
| F6   | EX18  | 336 | 2   | 0   | 0  | 1  | 0  | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 356 |
| F5   | FDV17 | 337 | 2   | 0   | 0  | 0  | 0  | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 352 |

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NOTE:  
THE COMPLEMENT OF THE ACTUAL ROM OUTPUT FOR THE UPF, WR, SPS (HIGH 2 BITS), BUS (LOW BIT) AND CLK (LOW BIT) FIELD IS LISTED FOR CLARITY.

| FLW# | STATE | ADR | CON | FC1 | FUB | MHR | FRD | ERD | SRD | SDR | CVM | NZM | CCC | GPC | CEE | CNT | EUB | CBR |
|------|-------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| F2   | ADD2  | 300 | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 05  | 1   |
| F2   | ADD18 | 301 | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 10  | 1   |
| F2   | ADD4  | 302 | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   |
| E4   | QIV1  | 303 | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   |
| F4   | FML13 | 304 | 2   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   |
| F6   | NM7   | 305 | 0   | 0   | 0   | 1   | 0   | 0   | 1   | 1   | 0   | 0   | 0   | 0   | 0   | 0   | 10  | 0   |
| F4   | FML14 | 306 | 0   | 0   | 0   | 0   | 0   | 0   | 1   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   |
| F6   | NM8   | 307 | 0   | 0   | 1   | 2   | 0   | 0   | 0   | 2   | 0   | 0   | 0   | 5   | 0   | 0   | 04  | 0   |
| F2   | ADD21 | 310 | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   |
| E2   | AM1   | 311 | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 2   | 0   | 1   | 0   | 0   | 0   | 1   | 0   | 1   |
| F5   | FDV19 | 312 | 0   | 0   | 0   | 0   | 1   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 1   |
| F3   | ADD27 | 313 | 2   | 0   | 0   | 1   | 0   | 0   | 1   | 1   | 0   | 0   | 0   | 7   | 0   | 1   | 10  | 0   |
| F3   | ADD33 | 314 | 0   | 0   | 0   | 0   | 1   | 0   | 1   | 3   | 0   | 2   | 4   | 0   | 0   | 0   | 0   | 0   |
| F3   | ADD32 | 315 | 0   | 0   | 0   | 0   | 0   | 1   | 1   | 0   | 0   | 0   | 4   | 0   | 0   | 0   | 10  | 1   |
| F5   | FDV16 | 316 | 0   | 0   | 0   | 6   | 0   | 1   | 2   | 2   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 1   |
| F3   | ADD30 | 317 | 0   | 0   | 0   | 0   | 1   | 0   | 1   | 0   | 4   | 0   | 1   | 0   | 0   | 0   | 0   | 1   |
| F2   | ADD8  | 320 | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 1   |
| F2   | ADD19 | 321 | 0   | 0   | 0   | 0   | 0   | 0   | 3   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   |
| F2   | ADD9  | 322 | 0   | 0   | 0   | 3   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   |
| E2   | AM21  | 323 | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   |
| F6   | NM4   | 324 | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   |
| F2   | ADD20 | 325 | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   |
| F6   | NM2   | 326 | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 1   |
| F6   | NM0   | 327 | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 04  | 1   |
| F4   | FML19 | 330 | 0   | 0   | 0   | 3   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 1   |
| F5   | FDV14 | 331 | 0   | 0   | 0   | 0   | 0   | 0   | 1   | 0   | 0   | 0   | 0   | 0   | 0   | 1   | 10  | 0   |
| F6   | EX114 | 332 | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 5   | 2   | 5   | 0   | 0   | 0   | 0   | 0   | 0   |
| F5   | FDV12 | 333 | 0   | 0   | 0   | 0   | 0   | 0   | 1   | 0   | 0   | 0   | 0   | 7   | 0   | 0   | 0   | 0   |
| F3   | ADD34 | 334 | 0   | 0   | 0   | 0   | 0   | 1   | 0   | 4   | 0   | 1   | 0   | 0   | 0   | 0   | 0   | 1   |
| F3   | ADD37 | 335 | 0   | 0   | 0   | 0   | 1   | 0   | 1   | 3   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   |
| F6   | EX18  | 336 | 0   | 0   | 0   | 0   | 0   | 1   | 3   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   |
| F5   | FDV17 | 337 | 0   | 0   | 0   | 0   | 1   | 0   | 1   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 1   |

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| CHANGE INC |  |
| CHK        |  |

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| DRN        | <i>A. P. ...</i> | DATE | 8-16-72 |
| CHK'D      | <i>A. P. ...</i> | DATE | 8-17-72 |
| ENG        | <i>A. P. ...</i> | DATE | 8-17-72 |
| PROJ. ENG. | <i>A. P. ...</i> | DATE | 8-17-72 |
| PROD. MGR. | <i>A. P. ...</i> | DATE | 8-17-72 |

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| digital EQUIPMENT CORPORATION<br>MAYNARD MASSACHUSETTS |       |
| TITLE  |       |
| FIS BOARD  |       |
| (ADRS 341-337)   |       |
| SIZE   | CODE  |
| C  | CS    |
| NUMBER   | REV.  |
| M7234 Q-1  | E     |
| SHEET 16   | OF 17 |
| DIST.  |       |

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| FLD# | STATE | ADR | CLK | CIR | NR | CB | CD | CBA | BUS | DAD | SPS | ALU | SBC | SBM | SDM | SBA | USP | SRX | RIF | UPF |
|------|-------|-----|-----|-----|----|----|----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| F3   | ADD22 | 340 | 6   | 0   | 0  | 1  | 1  | 0   | 0   | 00  | 0   | 14  | 00  | 00  | 2   | 0   | 00  | 01  | 13  | 017 |
| F3   | ADD26 | 341 | 2   | 0   | 0  | 0  | 0  | 0   | 0   | 00  | 0   | 00  | 00  | 00  | 0   | 0   | 00  | 00  | 00  | 314 |
| F2   | ADD14 | 342 | 2   | 0   | 0  | 0  | 0  | 0   | 0   | 00  | 0   | 00  | 00  | 00  | 2   | 0   | 00  | 00  | 00  | 226 |
| F3   | ADD28 | 343 | 2   | 0   | 0  | 0  | 0  | 0   | 0   | 00  | 0   | 00  | 00  | 00  | 0   | 0   | 00  | 00  | 00  | 317 |
| F5   | FDV7  | 344 | 2   | 0   | 3  | 0  | 0  | 0   | 0   | 00  | 0   | 00  | 00  | 00  | 2   | 0   | 00  | 01  | 15  | 344 |
|      |       | 345 | 0   | 0   | 0  | 0  | 0  | 0   | 0   | 00  | 0   | 00  | 00  | 00  | 0   | 0   | 00  | 00  | 00  | 000 |
| F5   | FDV8  | 346 | 6   | 0   | 0  | 0  | 1  | 0   | 0   | 00  | 0   | 11  | 02  | 17  | 2   | 0   | 00  | 00  | 00  | 344 |
| F3   | ADD31 | 347 | 2   | 0   | 0  | 1  | 0  | 0   | 0   | 00  | 0   | 00  | 00  | 00  | 0   | 0   | 00  | 01  | 11  | 315 |
| F5   | FDV4  | 350 | 2   | 0   | 3  | 0  | 0  | 0   | 0   | 00  | 0   | 00  | 00  | 00  | 2   | 0   | 00  | 01  | 14  | 222 |
| E2   | ARM8  | 351 | 6   | 0   | 0  | 1  | 1  | 0   | 0   | 00  | 0   | 00  | 00  | 00  | 2   | 0   | 00  | 10  | 00  | 040 |
| F5   | FDV18 | 352 | 2   | 0   | 0  | 0  | 0  | 0   | 0   | 00  | 0   | 00  | 00  | 00  | 0   | 0   | 00  | 00  | 00  | 312 |
| F3   | BRQ0  | 353 | 2   | 0   | 0  | 1  | 0  | 0   | 0   | 00  | 0   | 00  | 00  | 00  | 0   | 0   | 00  | 00  | 00  | 355 |
| F6   | EX16  | 354 | 6   | 0   | 3  | 0  | 1  | 0   | 0   | 10  | 0   | 06  | 00  | 00  | 2   | 0   | 00  | 04  | 00  | 007 |
| F4   | BRQ4  | 355 | 6   | 0   | 3  | 0  | 1  | 0   | 0   | 10  | 0   | 06  | 00  | 00  | 2   | 0   | 00  | 04  | 00  | 375 |
| F6   | EX19  | 356 | 6   | 0   | 3  | 0  | 1  | 1   | 0   | 06  | 0   | 06  | 01  | 17  | 2   | 0   | 00  | 04  | 00  | 374 |
| F3   | BRQ1  | 357 | 2   | 0   | 0  | 1  | 0  | 0   | 0   | 00  | 0   | 00  | 00  | 00  | 0   | 0   | 00  | 00  | 00  | 355 |
| F3   | ADD38 | 360 | 2   | 0   | 0  | 0  | 0  | 0   | 0   | 00  | 0   | 00  | 00  | 00  | 0   | 0   | 00  | 00  | 00  | 327 |
| F3   | ADD24 | 361 | 2   | 0   | 0  | 0  | 0  | 0   | 0   | 00  | 0   | 00  | 00  | 00  | 0   | 0   | 00  | 00  | 00  | 237 |
| F3   | ADD36 | 362 | 6   | 0   | 0  | 1  | 1  | 0   | 0   | 00  | 0   | 06  | 00  | 00  | 2   | 0   | 00  | 00  | 00  | 335 |
| F3   | ADD29 | 363 | 2   | 0   | 0  | 0  | 0  | 0   | 0   | 00  | 0   | 00  | 00  | 00  | 2   | 0   | 00  | 00  | 00  | 314 |
| F5   | FDV9  | 364 | 2   | 0   | 0  | 0  | 0  | 0   | 0   | 00  | 0   | 00  | 00  | 00  | 0   | 0   | 00  | 01  | 12  | 267 |
| F4   | FML6  | 365 | 6   | 0   | 0  | 0  | 0  | 0   | 0   | 00  | 0   | 00  | 00  | 00  | 0   | 0   | 00  | 00  | 00  | 263 |
| E1   | DST7  | 366 | 3   | 0   | 0  | 0  | 0  | 1   | 1   | 00  | 0   | 00  | 00  | 00  | 0   | 1   | 00  | 01  | 12  | 271 |
| F1   | FP8   | 367 | 2   | 0   | 3  | 0  | 0  | 0   | 0   | 00  | 0   | 00  | 00  | 00  | 2   | 0   | 00  | 01  | 15  | 235 |
| F5   | FDV15 | 370 | 6   | 0   | 0  | 0  | 1  | 0   | 0   | 00  | 0   | 11  | 00  | 00  | 2   | 0   | 00  | 00  | 00  | 316 |
| F5   | BRQ6  | 371 | 6   | 0   | 0  | 1  | 0  | 0   | 0   | 00  | 0   | 00  | 00  | 00  | 0   | 0   | 00  | 00  | 00  | 355 |
| F5   | FDV22 | 372 | 6   | 0   | 0  | 0  | 1  | 0   | 0   | 00  | 0   | 06  | 00  | 00  | 2   | 0   | 00  | 00  | 00  | 314 |
| F2   | ADD12 | 373 | 6   | 0   | 0  | 1  | 1  | 0   | 0   | 10  | 0   | 06  | 00  | 00  | 2   | 0   | 00  | 01  | 15  | 165 |
| F6   | EX110 | 374 | 5   | 0   | 0  | 0  | 1  | 0   | 1   | 00  | 0   | 32  | 00  | 00  | 0   | 0   | 00  | 00  | 00  | 376 |
| F6   | BRQ5  | 375 | 6   | 0   | 3  | 0  | 1  | 0   | 0   | 00  | 0   | 06  | 01  | 17  | 2   | 0   | 00  | 01  | 07  | 017 |
| F6   | EX111 | 376 | 2   | 0   | 0  | 0  | 0  | 0   | 0   | 00  | 0   | 00  | 00  | 00  | 0   | 0   | 00  | 00  | 00  | 177 |
| E1   | E11   | 377 | 2   | 0   | 0  | 0  | 0  | 0   | 0   | 00  | 0   | 00  | 00  | 00  | 0   | 0   | 00  | 00  | 00  | 240 |

NOTE:  
THE COMPLEMENT OF THE ACTUAL ROM OUTPUT FOR THE UPF, WR, SPS (HIGH 2 BITS), BUS (LOW BIT), AND CLK (LOW BIT) FIELD IS LISTED FOR CLARITY.

| FLD# | STATE | ADR | CON | FC1 | FUB | MHR | FRD | ERD | BRD | SDR | CVM | NZH | CCC | GPC | CEE | CNT | EUB | CBR |
|------|-------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| F3   | ADD22 | 340 | 0   | 0   | 1   | 0   | 0   | 0   | 0   | 0   | 4   | 0   | 1   | 0   | 0   | 1   | 05  | 1   |
| F3   | ADD26 | 341 | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 1   | 10  | 0   |
| F2   | ADD14 | 342 | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 10  | 1   |
| F3   | ADD28 | 343 | 0   | 0   | 0   | 2   | 0   | 0   | 1   | 2   | 0   | 0   | 0   | 5   | 0   | 0   | 00  | 0   |
| F5   | FDV7  | 344 | 3   | 0   | 0   | 0   | 0   | 0   | 3   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 10  | 0   |
|      |       | 345 | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 00  | 0   |
| F5   | FDV8  | 346 | 3   | 0   | 0   | 0   | 1   | 0   | 3   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 00  | 1   |
| F3   | ADD31 | 347 | 0   | 0   | 0   | 3   | 0   | 0   | 1   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 00  | 0   |
| F5   | FDV4  | 350 | 0   | 0   | 0   | 0   | 0   | 0   | 1   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 00  | 0   |
| E2   | ARM8  | 351 | 0   | 0   | 0   | 0   | 0   | 0   | 3   | 3   | 0   | 0   | 0   | 0   | 0   | 1   | 00  | 1   |
| F5   | FDV18 | 352 | 0   | 0   | 0   | 0   | 0   | 0   | 3   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 00  | 0   |
| F3   | BRQ0  | 353 | 2   | 0   | 0   | 0   | 1   | 0   | 3   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 00  | 0   |
| F6   | EX16  | 354 | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 00  | 0   |
| F4   | BRQ4  | 355 | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 1   | 0   | 00  | 0   |
| F6   | EX19  | 356 | 0   | 1   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 00  | 0   |
| F3   | BRQ1  | 357 | 2   | 0   | 0   | 0   | 1   | 0   | 3   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 00  | 0   |
| F3   | ADD38 | 360 | 0   | 0   | 0   | 1   | 0   | 0   | 0   | 1   | 0   | 0   | 0   | 0   | 0   | 0   | 00  | 0   |
| F3   | ADD24 | 361 | 0   | 0   | 1   | 0   | 0   | 1   | 2   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 02  | 1   |
| F3   | ADD36 | 362 | 0   | 0   | 0   | 3   | 0   | 0   | 1   | 0   | 0   | 0   | 0   | 4   | 0   | 0   | 00  | 1   |
| F3   | ADD29 | 363 | 0   | 0   | 0   | 3   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 10  | 1   |
| F5   | FDV9  | 364 | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 2   | 00  | 1   |
| F4   | FML6  | 365 | 3   | 0   | 0   | 0   | 1   | 0   | 3   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 00  | 1   |
| E1   | DST7  | 366 | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 16  | 0   |
| F1   | FP8   | 367 | 0   | 0   | 0   | 0   | 0   | 0   | 3   | 0   | 0   | 2   | 4   | 0   | 0   | 0   | 04  | 0   |
| F5   | FDV15 | 370 | 0   | 0   | 0   | 0   | 0   | 1   | 1   | 3   | 4   | 0   | 1   | 4   | 0   | 0   | 10  | 1   |
| F5   | BRQ6  | 371 | 2   | 0   | 0   | 0   | 1   | 0   | 3   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 00  | 0   |
| F5   | FDV22 | 372 | 0   | 0   | 0   | 0   | 0   | 1   | 1   | 3   | 4   | 0   | 1   | 4   | 0   | 0   | 10  | 1   |
| F2   | ADD12 | 373 | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 01  | 1   |
| F6   | EX110 | 374 | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 00  | 0   |
| F6   | BRQ5  | 375 | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 00  | 0   |
| F6   | EX111 | 376 | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 5   | 2   | 7   | 0   | 0   | 0   | 00  | 0   |
| E1   | E11   | 377 | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 7   | 0   | 0   | 0   | 00  | 0   |

|            |  |
|------------|--|
| REV        |  |
| CHANGE NO. |  |
| CHK        |  |

|  |           |
|--|-----------|
| digital EQUIPMENT CORPORATION<br>MAYNARD MASSACHUSETTS |           |
| TITLE  |           |
| EIS BOARD  |           |
| (ADRS 340-377)   |           |
| SIZE CODE  | NUMBER    |
| C CS   | M7235 0-1 |
| REV.   | E         |
| SHEET 17 OF 17   |           |
| DIST.  |           |

|                    |         |
|--------------------|---------|
| DRN                | DATE    |
| <i>R. Smith</i>    | 2-16-72 |
| CHKD.              | DATE    |
| <i>[Signature]</i> | 5-11-72 |
| ENG.               | DATE    |
| <i>[Signature]</i> | 7-17-72 |
| PROJ. ENG.         | DATE    |
| <i>[Signature]</i> | 8-18-72 |
| PROD.              | DATE    |
| <i>[Signature]</i> | 8-18-72 |



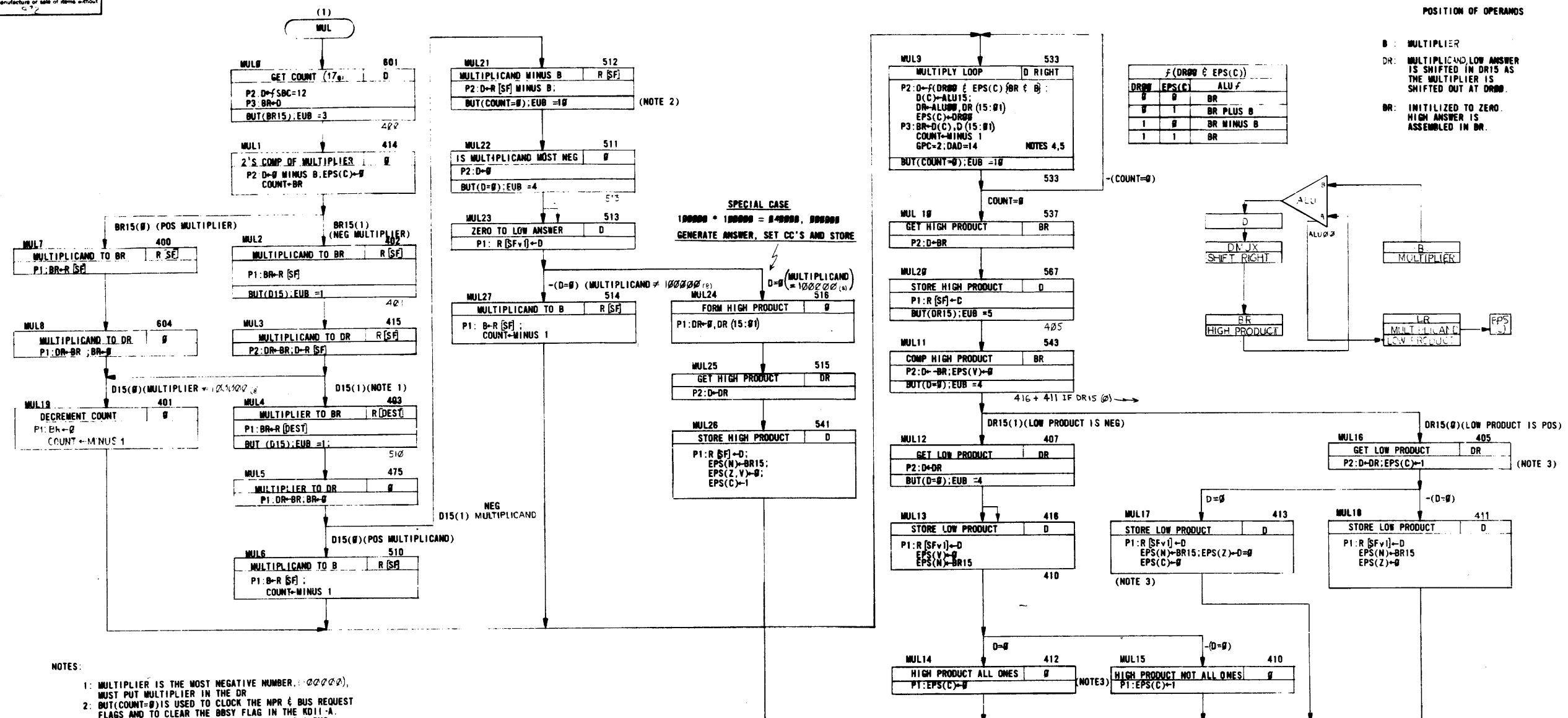
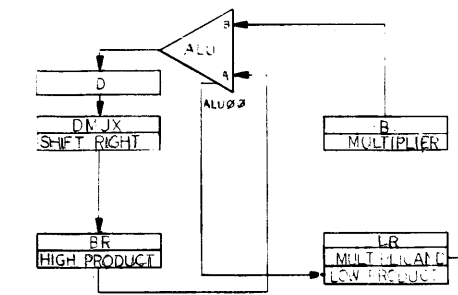


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POSITION OF OPERANDS

B : MULTIPLIER  
 DR: MULTIPLICAND LOW ANSWER IS SHIFTED IN DR15 AS THE MULTIPLIER IS SHIFTED OUT AT DR00.  
 BR: INITIALIZED TO ZERO. HIGH ANSWER IS ASSEMBLED IN BR.

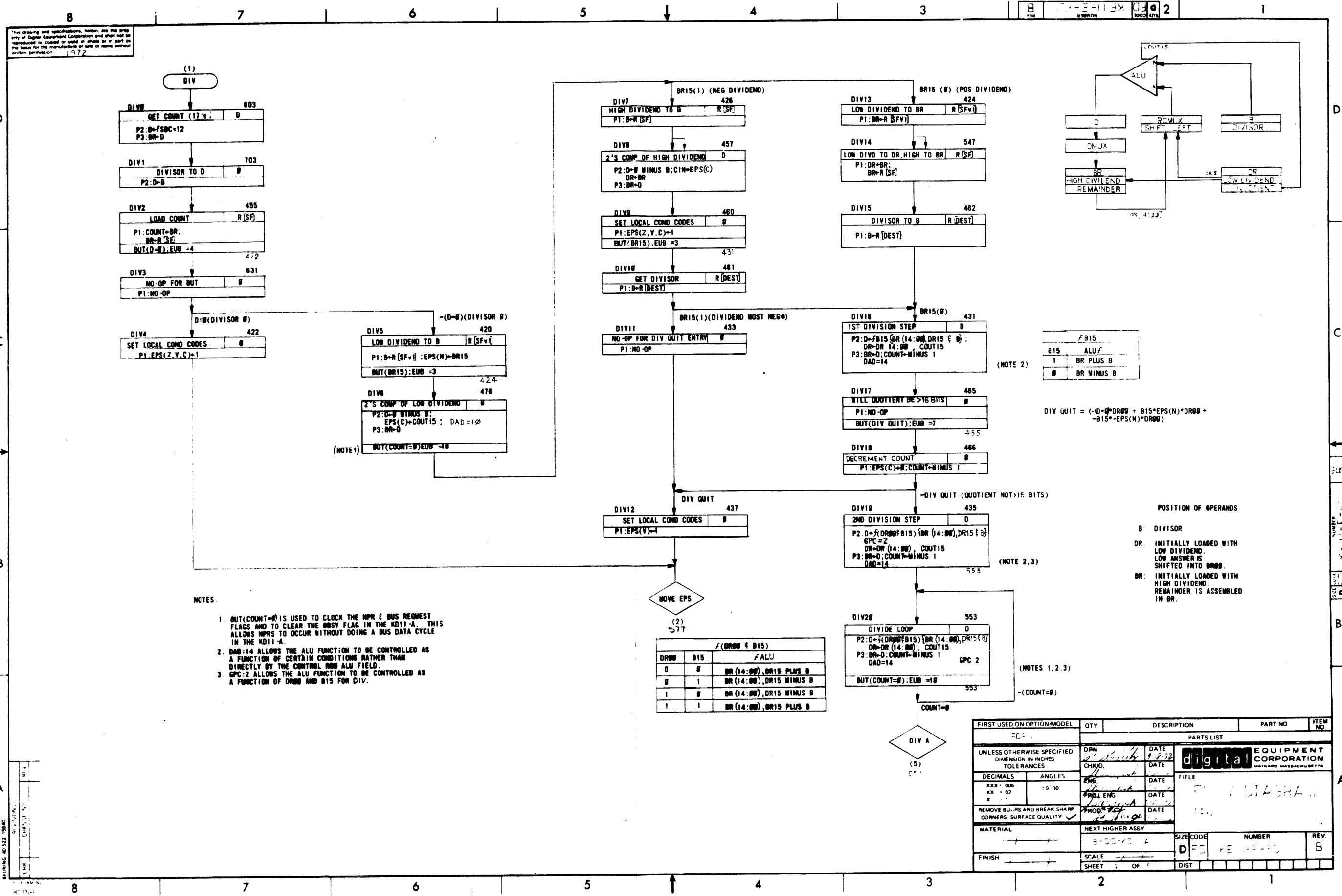
| DR00 | EPS(C) | ALU F      |
|------|--------|------------|
| 0    | 0      | BR         |
| 0    | 1      | BR PLUS B  |
| 1    | 0      | BR MINUS B |
| 1    | 1      | BR         |



- NOTES:
- MULTIPLIER IS THE MOST NEGATIVE NUMBER (00000). MUST PUT MULTIPLIER IN THE DR.
  - BUT(COUNT=0) IS USED TO CLOCK THE NPR & BUS REQUEST FLAGS AND TO CLEAR THE BBSY FLAG IN THE KD11-A. THIS ALLOWS NPRS TO OCCUR WITHOUT DOING A BUS DATA CYCLE IN THE KD11-A.
  - EPS(C) > 0 IF: (DR15\*BR(15:00))=ALL 1'S + -DR15\*BR(15:00)=0
- EPS(C) (0) INDICATES ANSWER MAY BE REPRESENTED BY ONE WORD I.E. HIGH 16 BITS OF ANSWER ARE AN EXTENSION OF MSB OF LOW 16 BITS OF THE ANSWER.
- DR0-14 ALLOWS THE ALU FUNCTION TO BE CONTROLLED AS A FUNCTION OF CERTAIN CONDITIONS RATHER THAN DIRECTLY BY THE CONTROL IND ALU FIELD.
  - GPC-2 ALLOWS THE ALU FUNCTION TO BE CONTROLLED AS A FUNCTION OF DR00 AND EPS (C) FOR MUL.

| FIRST USED ON OPTION/MODEL                                | QTY.             | DESCRIPTION | PART NO.                      | ITEM NO. |
|---|------------------|-------------|-------------------------------|----------|
| PDP-1   |                  | PARTS LIST  |                               |          |
| UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES TOLERANCES | DR01             | DATE        | digital EQUIPMENT CORPORATION |          |
| DECIMALS ANGLES   | CHK'D            | DATE        | MAYNARD MASSACHUSETTS         |          |
| XXX - 005 .XX - 02 X - 1                                  | ENG              | DATE        | TITLE                         |          |
| REMOVE BURRS AND BREAK SHARP CORNERS SURFACE QUALITY      | PROJ. ENG        | DATE        | FLOW DIAGRAM                  |          |
| MATERIAL  | PROG             | DATE        | (MUL)                         |          |
| FINISH  | NEXT HIGHER ASSY |             | (3)                           |          |
|   | E-DD-KD11-A      | SIZE CODE   | NUMBER                        | REV.     |
|   | SCALE            | D FD        | KE11-E-FD                     | B        |
|   | SHEET 3 OF 5     | DIST        |                               |          |

WORKING 40 122 1584  
 REV. NO. 1  
 CHK. E. NO. 1  
 DATE 11-11-68



- NOTES.
1. BUT(COUNT=#) IS USED TO CLOCK THE MPR & BUS REQUEST FLAGS AND TO CLEAR THE BUSY FLAG IN THE KD11-A. THIS ALLOWS MPRS TO OCCUR WITHOUT DOING A BUS DATA CYCLE IN THE KD11-A.
  2. DAD=14 ALLOWS THE ALU FUNCTION TO BE CONTROLLED AS A FUNCTION OF CERTAIN CONDITIONS RATHER THAN DIRECTLY BY THE CONTROL AND ALU FIELD.
  3. GPC=2 ALLOWS THE ALU FUNCTION TO BE CONTROLLED AS A FUNCTION OF DR00 AND B15 FOR DIV.

(2) 577

| DR00 | B15 | f(DR00 & B15)            |
|------|-----|--------------------------|
| 0    | #   | BR (14:00), DR15 PLUS B  |
| 0    | 1   | BR (14:00), DR15 MINUS B |
| 1    | #   | BR (14:00), DR15 MINUS B |
| 1    | 1   | BR (14:00), DR15 PLUS B  |

(NOTE 2)

|     | F B15      |
|-----|------------|
| B15 | ALU f      |
| 1   | BR PLUS B  |
| 0   | BR MINUS B |

DIV QUIT =  $(-D) \cdot DR00 + B15 \cdot EPS(N) \cdot DR00 - B15 \cdot EPS(N) \cdot DR00$

POSITION OF OPERANDS

B: DIVISOR

DR: INITIALLY LOADED WITH LOW DIVIDEND. LOW ANSWER IS SHIFTED INTO DR00.

BR: INITIALLY LOADED WITH HIGH DIVIDEND. REMAINDER IS ASSEMBLED IN BR.

| FIRST USED ON OPTION/MODEL                                | QTY              | DESCRIPTION                   | PART NO   | ITEM NO |
|---|------------------|-------------------------------|-----------|---------|
| PARTS LIST  |                  |                               |           |         |
| UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES TOLERANCES |                  |                               |           |         |
| DRN   | DATE             | digital EQUIPMENT CORPORATION |           |         |
| CHKD  | DATE             | MAYARD MASSACHUSETTS          |           |         |
| DECIMALS  | ANGLES           | TITLE                         |           |         |
| XXX - 006   | 10 30            | DIVISION DIAGRAM              |           |         |
| XX - 02   |                  | REV                           |           |         |
| X - 1   |                  | REV B                         |           |         |
| REMOVE BURRS AND BREAK SHARP CORNERS SURFACE QUALITY      |                  |                               |           |         |
| MATERIAL  | NEXT HIGHER ASSY | SIZE CODE                     | NUMBER    | REV.    |
|   | B-00-K0-A        | D F D                         | RE 14-100 | B       |
| FINISH  | SCALE            | SHEET                         | OF        |         |
|   |                  |                               |           |         |

DRAWING 40-322 15840