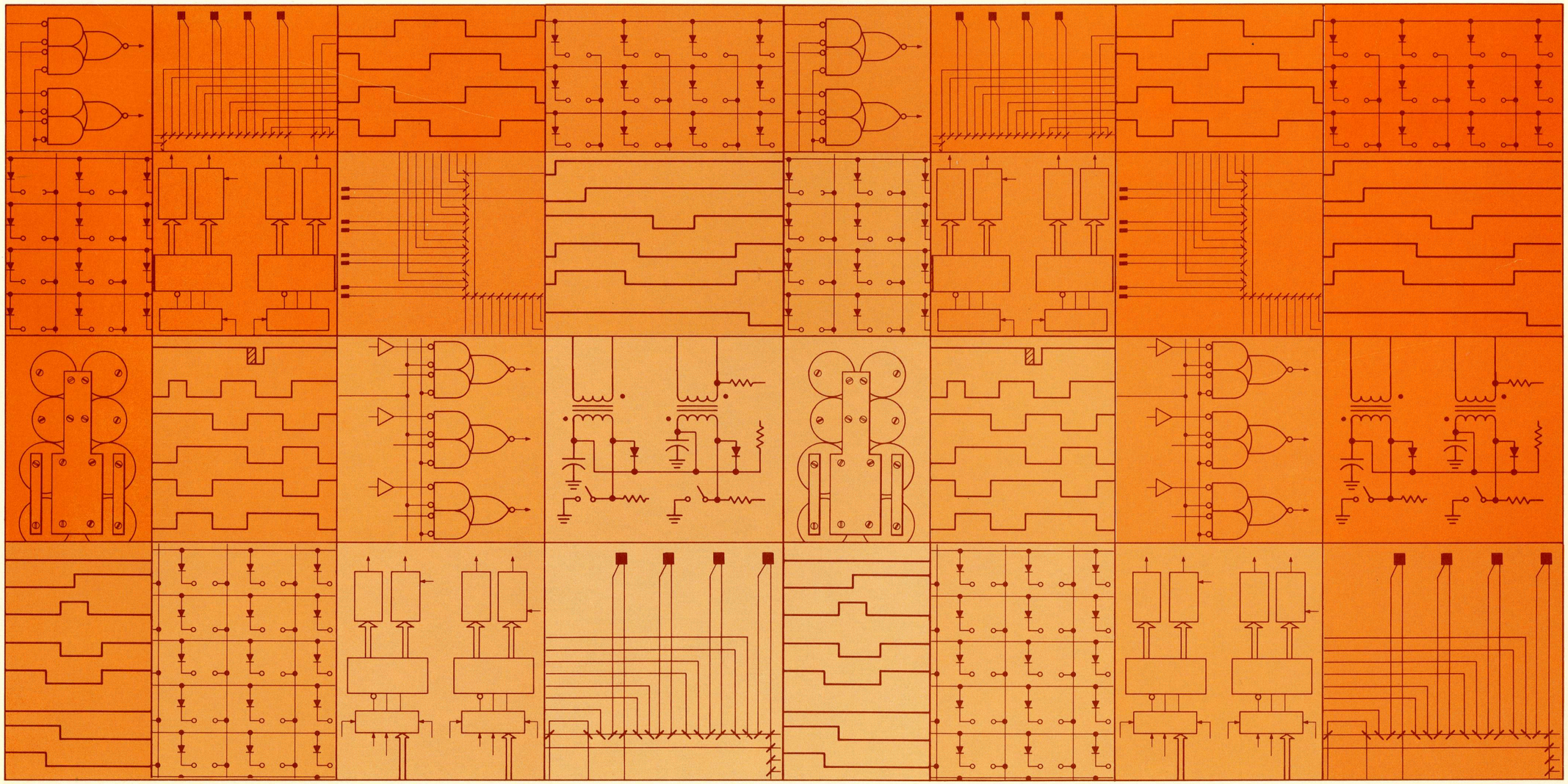
pdp8/e

pdp8/F & pdp8/m

KE8-E extended arithmetic element engineering drawings



digital

KE8-E extended arithmetic element engineering drawings

digital equipment corporation · maynard. massachusetts

MASTER DRAWING LIST

MAINTENANCE MANUALS NO.	TITLE	UNIT VARIATIONS KE8-E
KE8-E	EXT ARITH ELEM	X

USED ON OPTIONS							
PDP8-E							
PDP8-M							
PDP8-F							

REVISIONS REV.	DATE	CHG. NO.	APP'D.
A	2/72	KE8E-00001	
B	4/72	KE8E-00002	
C	4/72	00003	

DRN. K. GULICK DATE 7-26-71
CHK'D. K. GULICK DATE 7-26-71
ENG. DATE 8/13/71
PROJ. ENG. DATE 8/13/71
PROD. R Peterson DATE 8/16/71
FIRST USED ON PDP8-E
SCALE NONE
SHEET 1 OF 2

digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS

TITLE EXTENDED ARITH ELEMENT

SIZE	CODE	NUMBER	REV.
A	ML	KE8-E	C

DIST.

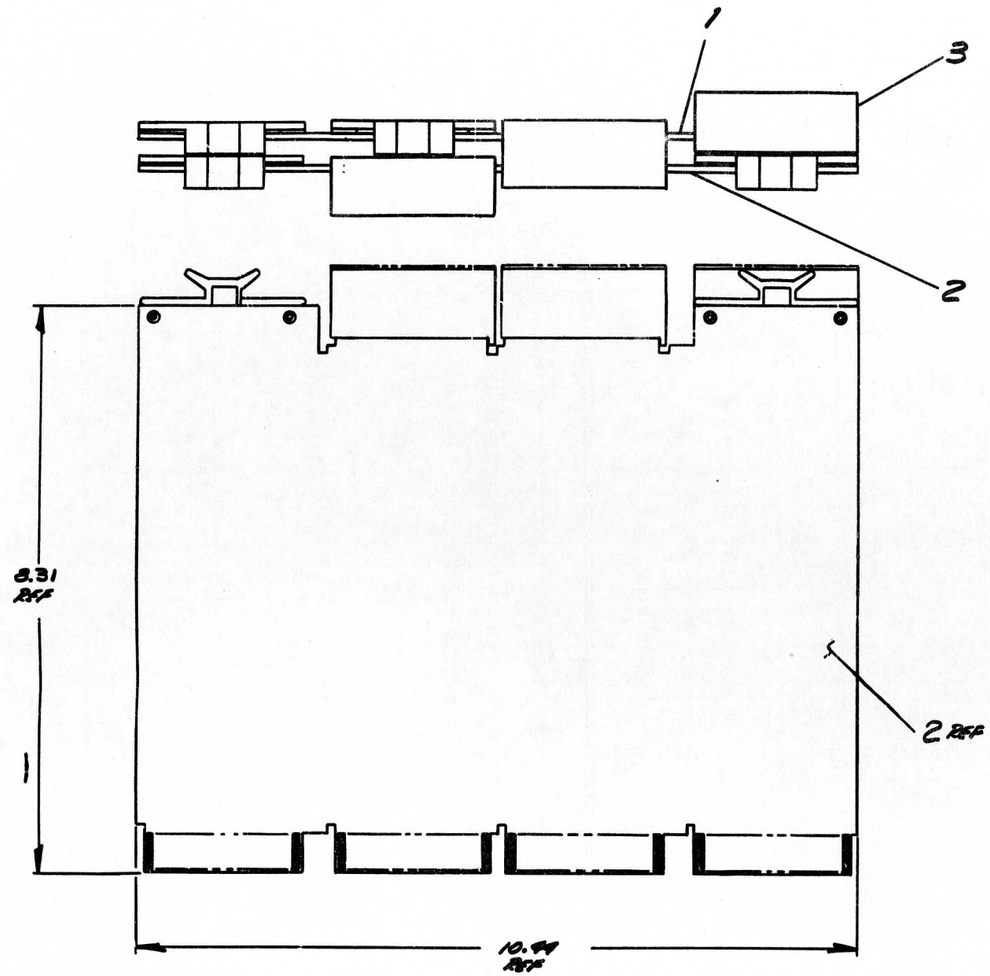
PRINT SET KE8-E	DWG. NO.	REV. LET.	NO. OF SHEETS	TITLE	OPTION NO.
X	D-UA-KE8-E-Ø		1	EXTENDED ARITH ELEMENT	
X	A-PL-KE8-E-Ø		1	EXTENDED ARITH ELEMENT (PL)	
X	E-CS-M834Ø-Ø-1	#	2	DECODER & STEP COUNTER EAE	
X	E-CS-M8341-Ø-1	#	3	MULTIPLEXER & TIMING GEN EAE	
X	B-UA-H851-Ø-Ø		1	H851 EDGE CONNECTOR	MM8-E
X	D-FD-KE8-E-1		1	EAE FLOW DIAGRAM	
X	D-FD-KE8-E-2	A	1	ROM ENCODING FOR EAE CONT	
-	DEC 8E DOLA-PB			KE8/E EAE INSTRUCTION TEST 1	
-	DEC 8E DOLA-D			KE8/E EAE INSTRUCTION TEST 1	
-	DEC 8E DOMA-PB			KE8/E EAE INSTRUCTION TEST 2	
-	DEC 8E DOMA-D			KE8/E EAE INSTRUCTION TEST 2	
-	A-SP-KE8-E-3		1	ENGINEERING SPECIFICATIONS	
X	A-SP-KE8-E-4		1	ACCEPTANCE PROCEDURE	
-	A-SP-KE8-E-5		1	CHECKOUT PROCEDURE	
X	A-AL-KE8-E-6		1	ACCESSORY LIST	

TITLE EXTENDED ARITH ELEMENT

SHEET 2 OF 2

SIZE	CODE	NUMBER	REV.
A	ML	KE8-E	C

DRA 132



REVISIONS		
CHK	CHANGE NO.	REV.

FIRST USED ON OPTION/MODEL	QTY.	DESCRIPTION	PART NO.	ITEM NO.
PDP8-E		PARTS LIST		

UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES. TOLERANCES

DECIMALS	ANGLES
.XXX = .005 .XX = .02 .X = .1	±0° 30'

REMOVE BURRS AND BREAK SHARP CORNERS SURFACE QUALITY ✓

MATERIAL —

FINISH —

DRN. Richard	DATE 7-28-71	digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS
CHK'D.	DATE 7/29/71	
ENG.	DATE 7/29/71	
PROJ. ENG.	DATE 8/18/71	TITLE EXTENDED ARITH ELEMENT
PROD.	DATE 9/8/71	
NEXT HIGHER ASSY.		SIZE D CODE UA NUMBER KE8-E-Ø REV.
SCALE NONE		
SHEET 1 OF 1		DIST.

DEC FORM NO. DRD 100-A

SIZE D CODE UA NUMBER KE8-E-Ø REV.

DIGITAL EQUIPMENT CORPORATION
MAYNARD, MASSACHUSETTS

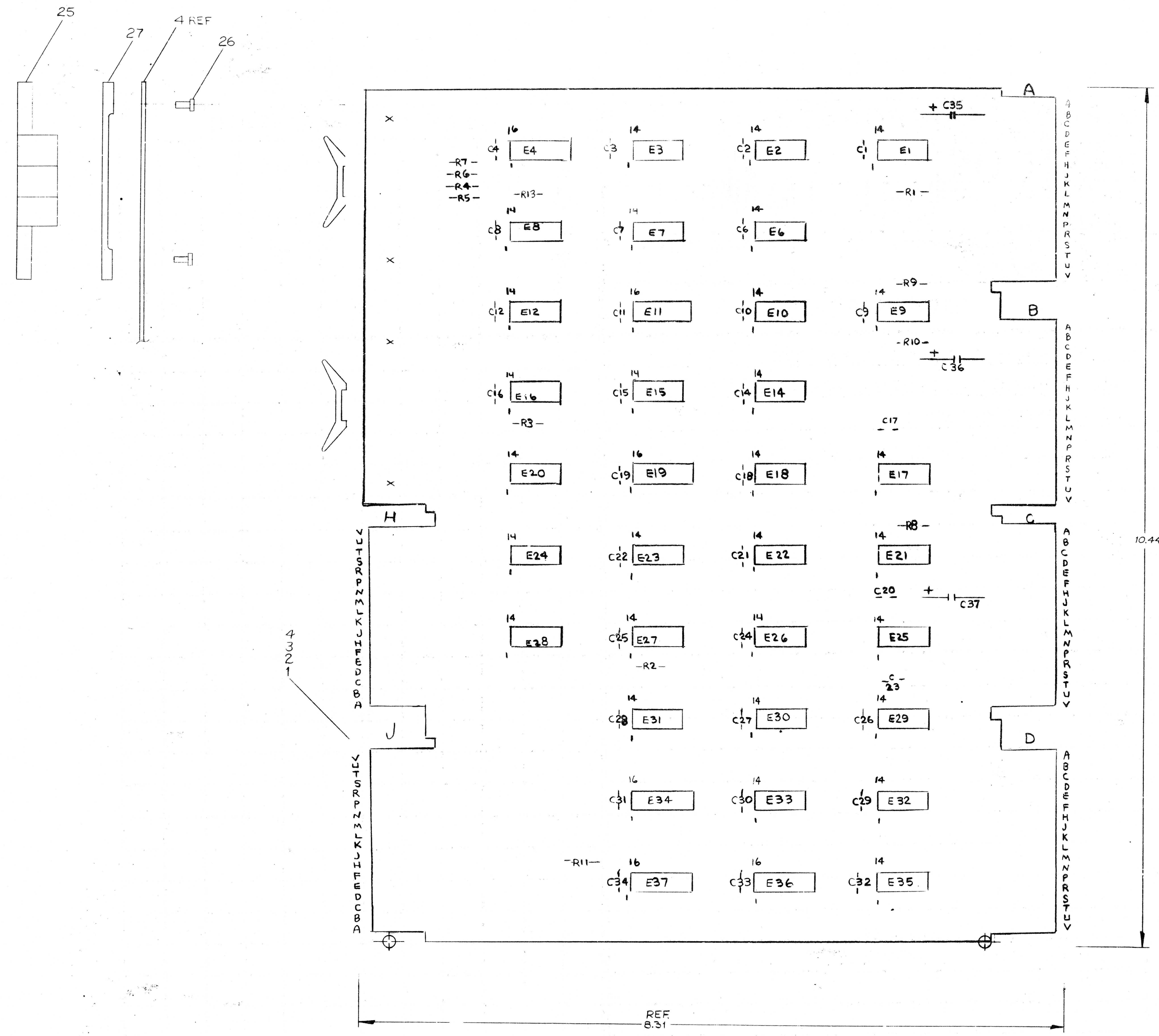
PARTS LIST

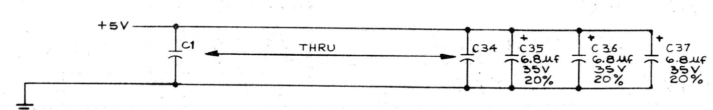
MADE BY KEN GULICK	CHECKED KEN GULICK	SECTION 1
DATE 7/29/71	DATE 7/29/71	
ENG Richard W. Thieme	PROD R Peters	ISSUED SECT. 1
DATE 8/18/71	DATE 8/18/71	

ITEM NO.	DWG NO. / PART NO.	DESCRIPTION	QUANTITY / VARIATION KE8-E
1	E-CS-M834Ø-Ø-1	DECODER & STEP COUNTER EAE	1
2	E-CS-M8341-Ø-1	MULTIPLEXER & TIMING GEN. EAE	1
3	B-UA-H851-Ø-Ø	H851 EDGE CONNECTOR	3

TITLE	ASSY NO.	SIZE	CODE	NUMBER	REV.	ECO NO.
EXTENDED ARITH ELEMENT	D-UA-KE8-E-Ø	A	PL	KE8-E-Ø		
	SHEET 1 OF 1	DIST.	G			

DEC FORM DEC 16-(325)-1031-N870
DRA 110





BC1, CC1, DC1,
AC2, BC2, CC2, DC2,
AF1, BF1, CF1, DF1,
AF2, BF2, CF2, DF2,
AN1, BN1, CN1, DN1
AN2, BN2, CN2, DN2,
AT1 BT1, CT1, DT1,
AT2, BT2, CT2, DT2,

QTY.	REF DESIGNATION	DESCRIPTION	PART NO.	ITEM NO.
1	E11	IC IM5600	23-001A1	33
6	E6,E10,E14,E18,E22,E26	IC DEC 7474	1905547	32
2	E2, E16	IC DEC 74H04	1909931	31
1	E27	IC DEC 74H00	1909056	30
1	R1	RESISTOR 750 1/4W 5%	1301401	29
A/R		GRIPLET	1210244-0	28
2		SPACER (CABLE CLAMP)	1202704	27
4		EYELET GS4-11 STIMPSON	9006750	26
2		HANDLE FLIP CHIP MAGENTA	9008337-06	25
1	E4	IC DEC 74H106	1910408	24
1	E24	IC DEC 7410	1905576	23
1	E33	IC DEC 7412	1909955	22
2	E34, E37	IC DEC 74193	19010018	21
1	E36	IC DEC 8266	1909934	20
2	E28, E12	IC DEC 74H11	1909267	19
1	E3	IC DEC 74H20	1905635	18
				17
4	E17, E21, E29, E32	IC DEC 384	1909486	16
2	E8, E31	IC DEC 7402	1909004	15
1	E30	IC DEC 74H74	1909667	14
3	E7, E15, E23	IC DEC 74H30	1909059	13
3	E1, E9, E35	IC DEC 97401	1909973	12
2	E20, E25	IC DEC 380	1909485	11
1	E19	IC IM 5600	23-002A1	10
2	R11, R13	RESISTOR 330 1/4W 5%	1300295	9
1	R9	RESISTOR 1K 1/4W 5%	1300365	8
8	R2-R8, R10	RESISTOR 470 1/4W 10%	1300317	7
3	C35, C36, C37	CAP 6.8 µf 35V 20% S. TANT	1000067	6
32	C1-C4, C6-C12, C14-C39	CAP .01 µf 100V 20% DISC	1001610	5
1		ETCHED BOARD	5009603	4
REF		MODULE ECO HISTORY	B-MH-M8340-0-6	3
REF		ASSY/DRILLING HOLE LAYOUT	D-AH-M8340-0-5	2
REF		X-Y COORDINATE HOLE LOCATION	K-CO-M8340-0-4	1

PARTS LIST

ETCH BOARD REV E

IC PIN LOCATIONS

IC TYPE	GND	+5V
DEC 74193	8	16
DEC 8271	8	16
DEC 384	1	8
DEC 380	1	8
DEC 7476	5	13

GND AND 5V ARE USUALLY PIN 7 AND 14 RESPECTFULLY EXCEPTIONS ARE STATED ABOVE

JUMPER LIST

ITEM NO	AWG	FROM PT	TO PT

DEC FORM NO. DHE 100

SEMICONDUCTOR CONVERSION CHART

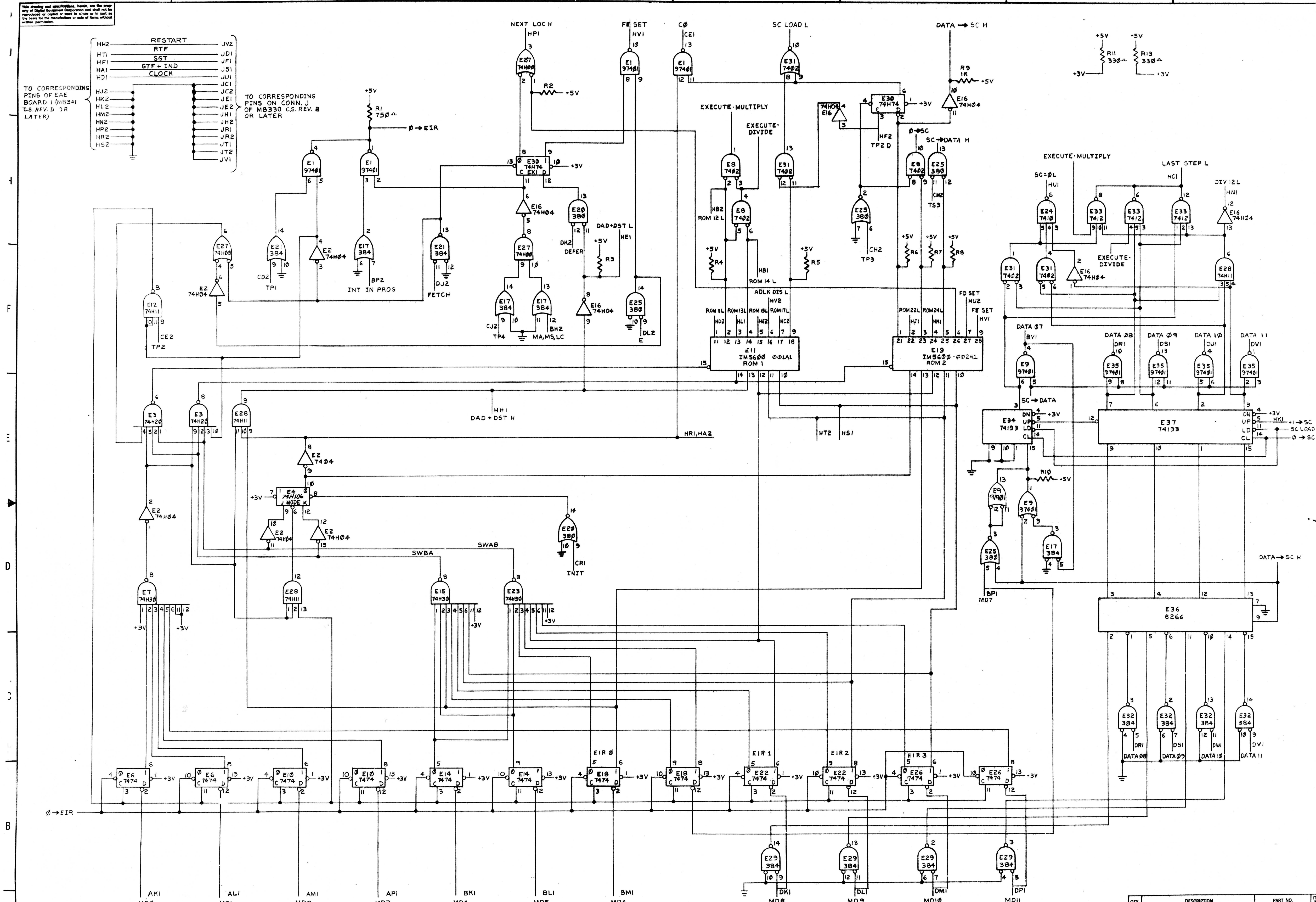
DEC NO.	EIA NO.	DEC NO.	EIA NO.

DRN. T. Quillin	DATE 5-26-71
CHK'D.	DATE 6/1/71
ENG. Richard J. Wiesner	DATE 7/15/71
PROJ. ENG.	DATE 7/15/71
PROD. R.F.	DATE 5-25-72
FIRST USED ON	
SCALE 2-1	
SHEET 1 OF 2	

digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS

TITLE EAE DECODER & STEP COUNTER

SIZE	CODE	NUMBER	REV.
E	CS	M8340-0-1	F


This drawing and specifications, herein, are the property of Digital Equipment Corporation and shall not be reproduced or copied or used in whole or in part as the basis for the manufacture or sale of items without written permission.
RESTART
RTF
SGT
GTF + IND
CLOCK
TO CORRESPONDING PINS OF EAE BOARD 1 (M8341 C.S. REV. D OR LATER)
TO CORRESPONDING PINS ON CONN. J OF M8330 C.S. REV. B OR LATER
NEXT LOC H
FE SET
CØ
SC LOAD L
DATA → SC H
Ø → EIR
EXECUTE · MULTIPLY
EXECUTE · DIVIDE
Ø→SC
SC→DATA H
DAD+DST L
INT IN PROG
FETCH
DEFER
ROM 12 L
ROM 14 L
ADLK DIS L
FD SET
FE SET
E11 IM5600 ØØ1A1 ROM 1
E19 IM5600 ØØ2A1 ROM 2
LAST STEP L
SC=ØL
DIV 12L
DATA Ø7
DATA Ø8
DATA Ø9
DATA 1Ø
DATA 11
SC→DATA
E34 74193
E37 74193
+1→SC
SC LOADL
Ø→SC
DAD + DST H
HR1, HA2
E4 74H106 J MODE K
SWBA
SWAB
INIT
E36 8266
DATA→SC H
EIR Ø
EIR 1
EIR 2
EIR 3
MDØ
MD1
MD2
MD3
MD4
MD5
MD6
MD7
MD8
MD9
MD1Ø
MD11

QTY.	DESCRIPTION	PART NO.	ITEM NO.

PARTS LIST

UNLESS OTHERWISE SPECIFIED
DIMENSIONS IN INCHES
TOLERANCES
DECIMALS ±.005 FRACTIONS ±1/64 ANGLES ±1/2°
FINAL SURFACE QUALITY
REMOVE BURRS AND BREAK SHARP CORNERS

MATERIAL —/—
FINISH —/—

DRN. / CHKD. / ENG. / PROJ. ENG. / PROD. — DATE 7-14-71

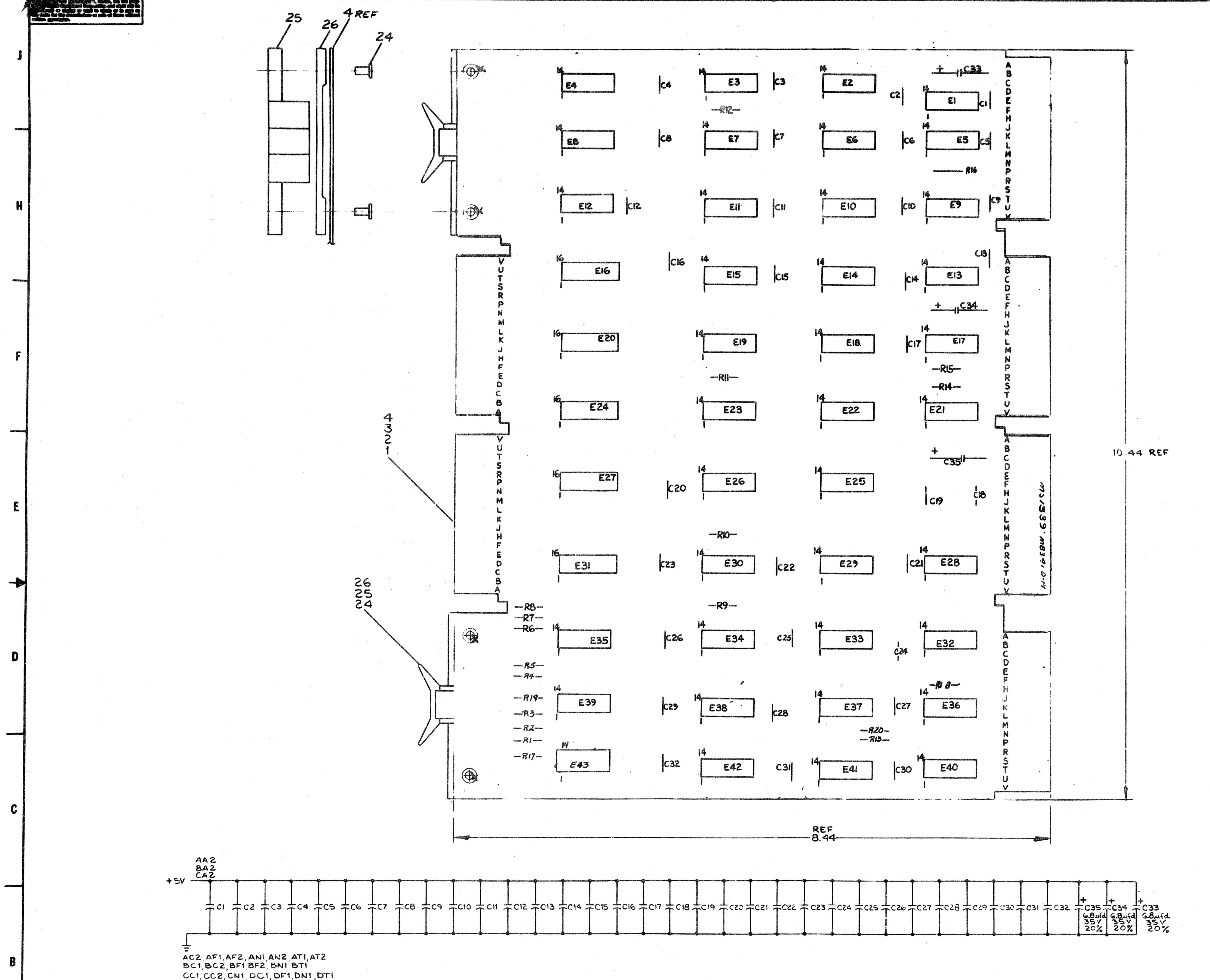
NEXT HIGHER ASSY

DIGITAL EQUIPMENT CORPORATION, MAYNARD, MASSACHUSETTS

TITLE: EAE DECODER AND STEPCOUNTER

SIZE E CODE CS NUMBER M8340-Ø-1 REV. F

SCALE —/— SHEET 2 OF 2



QTY.	REF DESIGNATION	DESCRIPTION	PART NO.	ITEM NO.
1	E43	IC DEC 8093	1410837	28
A/R		GRIPLET	1210244-C	27
2		SPACER (CABLE CLAMP)	1202704	26
2		HANDLE, FLIP CHIP-MAGENTA	9008337-06	25
4		EYELET GS4-11 STIMPSON	9006750	24
1	E15	IC DEC 7412	1909955	23
1	E23	IC DEC 7416	1909928	22
3	E32, E36, E22	IC DEC 8881	1909705	21
1	E12	IC DEC 74H11	1909267	20
3	E7, E9, E34	IC DEC 7402	1909004	19
6	E4, E10, E19, E28, E39, E42	IC DEC 7404	1907686	18
4	E2, E14, E33, E35	IC DEC 7410	1905576	17
1	E8	IC DEC 74H53	1909062	16
2	E11, E26	IC DEC 7486	1910011	15
3	E18, E25, E37	IC DEC 97401	1909973	14
3	E3, E29, E40	IC DEC 380	1909485	13
5	E16, E20, E24, E27, E31	IC DEC 8235	1909935	12
6	E1, E5, E13, E17, E21, E41	IC DEC 74H74	1909667	11
1	E30	IC DEC 384	1909486	10
2	E6, E38	IC DEC 7400	1905575	9
4	R6, R8, R9, R15	RES 1K 1/4W 5%	1300365	8
16	R1, R2, R3, R4, R5, R7, R10, R11, R12, R20, R13, R14, R16, R17, R18, R19	RES 470 1/4W 10%	1300317	7
3	C33, C34, C35	CAP 6.8 ufd 35V 20% TANT	1000067	6
32	C1 THRU C32	CAP .01 ufd 100V 20% DISC	1001610	5
1		ETCHED CIRCUIT BOARD	5009604	4
REF		MODULE ECO HISTORY	B-MH-M8341-0-6	3
REF		ASSY/DRILLING HOLE LAYOUT	D-AH-M8341-0-0	2
REF		X-Y COORDINATE HOLE LOCATION	K-CO-M8341-0-4	1

PARTS LIST

ETCH BOARD REV D

IC TYPE	GND	+5V
DEC 8093	7	14
DEC 380	1	8
DEC 8235	8	16
DEC 384	1	8

GND AND 5V ARE USUALLY PIN 7 AND 14 RESPECTIVELY EXCEPTIONS ARE STATED ABOVE

IC PIN LOCATIONS

ITEM NO	AWG	FROM PT	TO PT

JUMPER LIST

SEMICONDUCTOR CONVERSION CHART

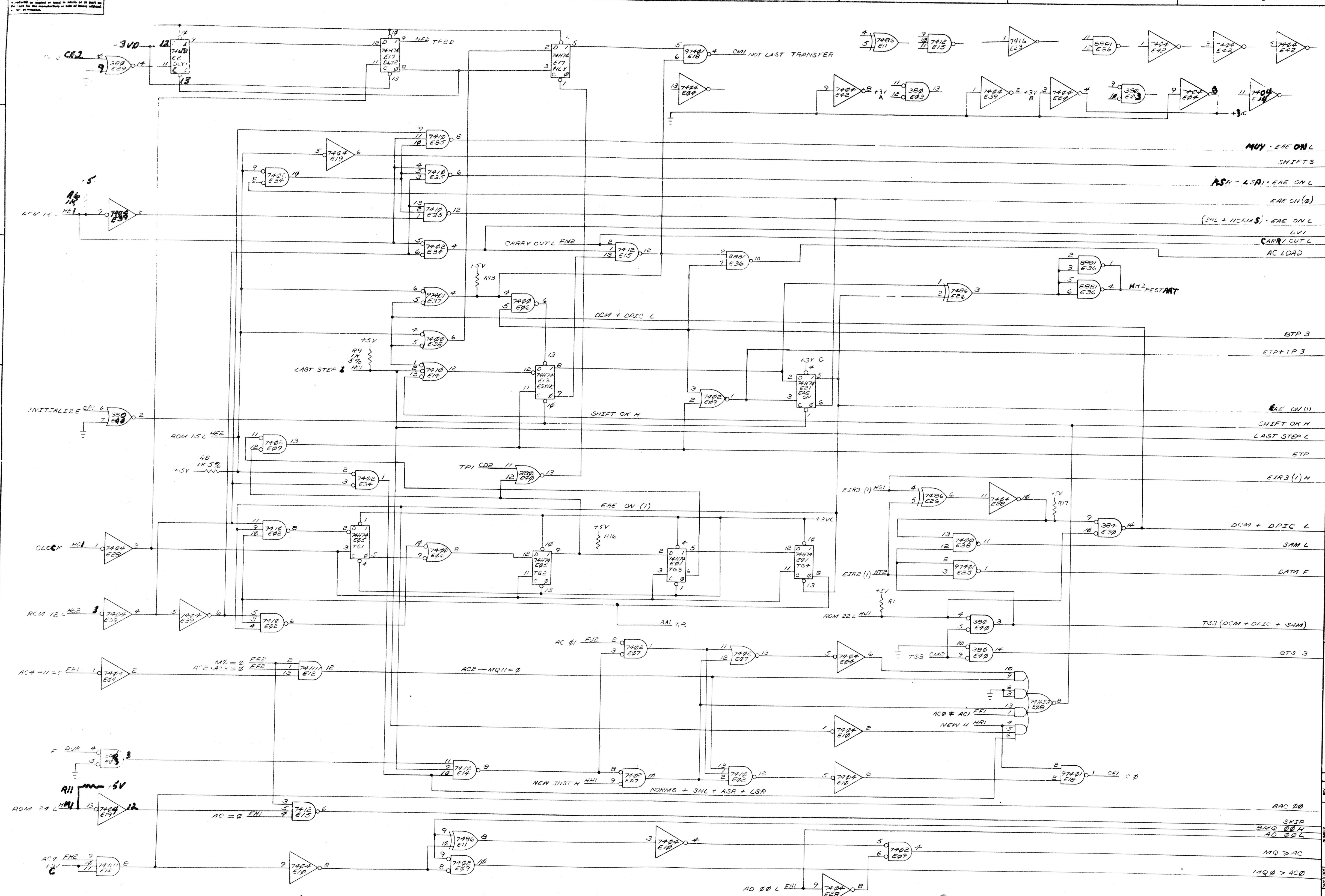
DEC NO.	EIA NO.	DEC NO.	EIA NO.

EQUIPMENT CORPORATION

TITLE: MULTIPLEXERS & TIMING GEN EAE

E CS M8341-0-1 E

SCALE 2/1 SHEET 1 OF 3



FIRST USED ON OPTION/MOD	QTY.	DESCRIPTION	PART NO.	ITEM NO.
		PARTS LIST		

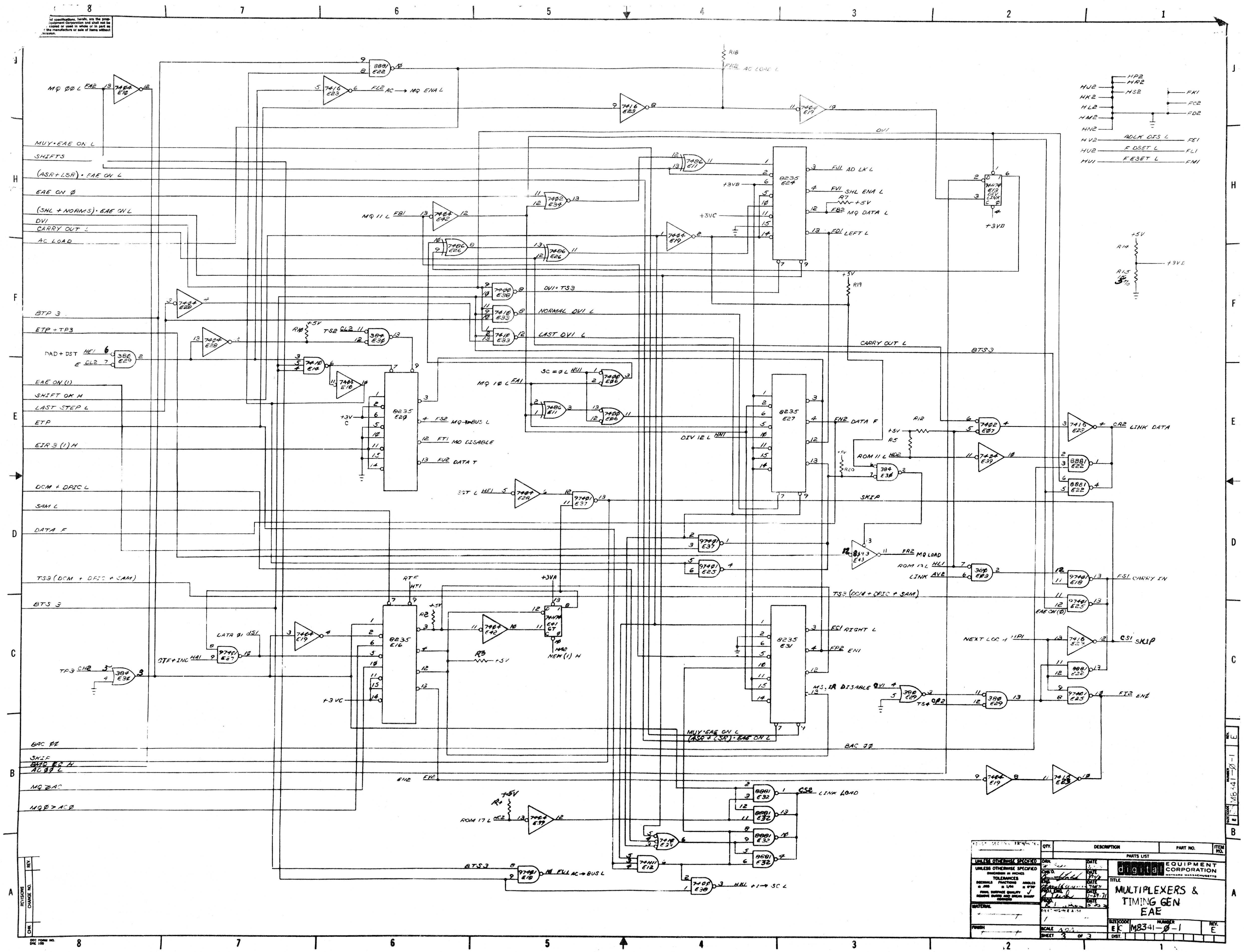
UNLESS OTHERWISE SPECIFIED
DIMENSION IN INCHES
TOLERANCES
DECIMALS ± .005 FRACTIONS ± 1/64 ANGLES ± 0°30'
FINAL SURFACE QUALITY ✓
REMOVE BURRS AND BREAK SHARP CORNERS
MATERIAL
FINISH

DRN. M. Pierce DATE 7/..
CHK'D. DATE 7/20/71
ENG. Richard ... DATE 7/20/71
PROJ. ENG. ... DATE 7-29-71
PROD. ... DATE 5 25 72
NEXT HIGHER ASSY
SCALE NONE
SHEET 2 OF 3

digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS

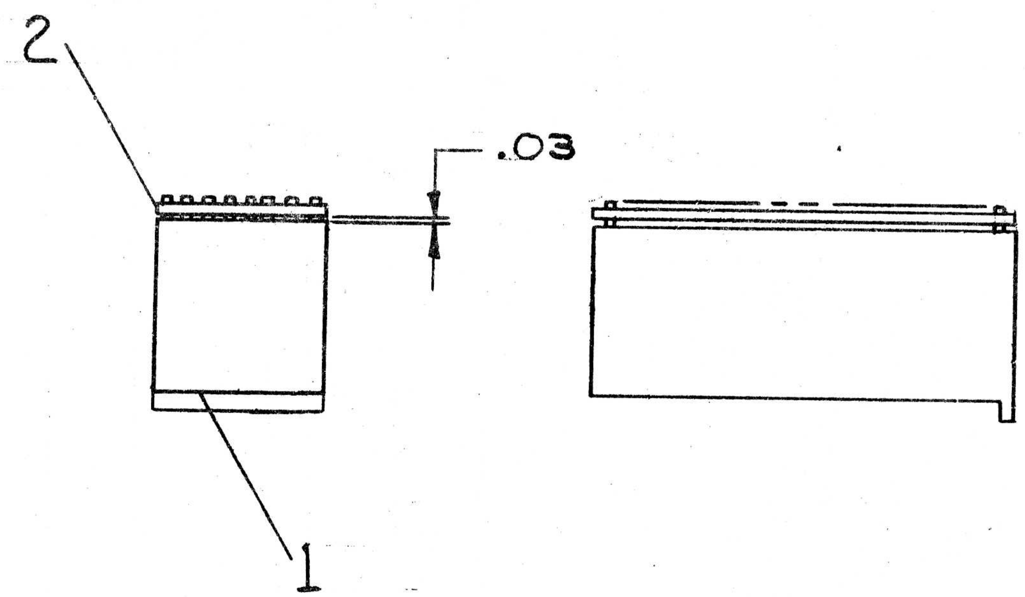
TITLE MULTIPLEXERS & TIMING GEN EAE

SIZE E CODE CS NUMBER M8341-0-1 REV. E
DIST.


MQ 00 L
MUY + EAE ON L
SHIFTS
(ASR + LSR) • EAE ON L
EAE ON 0
(SHL + NORMS) • EAE ON L
DVI
CARRY OUT L
AC LOAD
BTP 3
ETP + TP3
EAE ON (1)
SHIFT OK H
LAST STEP L
ETP
EIR 3 (1) H
DCM + DPIC L
SAM L
DATA F
TS3 (DCM + DPIC + SAM)
BTS 3
FL1 AD LK L
FV1 SHL ENA L
FB2 MQ DATA L
FD1 LEFT L
DV1 • TS3
NORMAL DV1 L
LAST DV1 L
CARRY OUT L
BTS3
EN2 DATA F
CR2 LINK DATA
SKIP
FR2 MQ LOAD
FS1 CARRY IN
CS1 SKIP
FT2 EN2
EC1 RIGHT L
FP2 EN1
CS2 LINK LOAD
HN1 +1 → SC L
FU1 AC → BUS L
FS2 MQ → BUS L
FT1 MQ DISABLE
FU2 DATA T
FE2 AC → MQ ENA L
NEXT LOC H
ROM 11 L
ROM 13 L
ROM 17 L
LINK
MQ 11 L
MQ 10 L
DIV 12 L
SC = 0 L
MUY • EAE ON L
(ASR + LSR) • EAE ON L
BAC 27
MQ ZAC
MQ0 > AC0

QTY. | DESCRIPTION | PART NO. | ITEM NO.
PARTS LIST
UNLESS OTHERWISE SPECIFIED
DIMENSIONS IN INCHES
TOLERANCES
DECIMALS ± .005 FRACTIONS ± 1/64 ANGLES ± 0°30'
digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS
TITLE
MULTIPLEXERS & TIMING GEN EAE
SIZE E CODE C NUMBER M8341-0-1 REV. E
SCALE
SHEET 3 OF 3
DIST.

SIZE B | CODE UA | NUMBER H851-Ø-Ø | REV. B



PARTS LIST

QTY.	DESCRIPTION	PART NO.	ITEM NO.
REF	MODULE ECO HISTORY	B-MH-H851-0-6	5
REF	ASSY HOLE LAYOUT	C-AH-H851-0-5	4
REF	CIRCUIT SCHEMATIC	B-CS-H851-0-1	3
1	ETCH BOARD	D-IA-5008903-0-0	2
1	CONN BLOCK, 72 PIN	1210152	1

FIRST USED ON OPTION/MODEL: H851

TOLERANCES DECIMALS

.XXX = ± .005
.XX = ± .02
.X = ± .1

UNLESS OTHERWISE SPECIFIED

UNLESS OTHERWISE SPECIFIED
DIMENSION IN INCHES
TOLERANCES
~~DECIMALS FRACTIONS~~
~~± .005 ± 1/64~~
ANGLES ± 0°30'
FINAL SURFACE QUALITY
REMOVE BURRS AND BREAK SHARP CORNERS

MATERIAL: —//—

FINISH: —//—

		DATE
DRN.	A. Flanders	7/28/70
CHK'D.	R. Russ	8/13/70
ENG.	Jack Greene	8-13-70
PROJ. ENG.	Jack Greene	8-13-70
PROD.	W. Miller	8-13-70

NEXT HIGHER ASSY: —//—

SCALE: —//—

SHEET 1 OF 1

digital EQUIPMENT CORPORATION
MAYNARD, MASSACHUSETTS

TITLE: H851 EDGE CONNECTOR

SIZE	CODE	NUMBER	REV.
B	UA	H851-Ø-Ø	B

DIST. G

REVISIONS

CHK	CHANGE NO.	REV.
	H851-00001 12-10-70 P. GARDNER 12-14-70	A
	H851-00002 8-3-72 P. GARDNER	B

DEC FORM NO. DRB 100

MAJ STATE	TIME STATE	CP EVENTS	NEW ONLY: ACS EIR = 1	NEW OR OLD: MUY 2	DVI 3	NMI 4	SHL	ASR 6	LSR 7	SCA NEW; IO OLD; IX	DAD 11	DST 12	NEW ONLY: SWAB OR SWBA	DPIC 14	DPSZ 15	DCM 16	SAM 17	OLD ONLY: SCL 1	COMMON EAE EVENTS
F	TS1	PC UPDATE																	0 → EIR
	TS2	MDB-2 → IR																	IF EAE INST. MD6.8.9.!Ø → EIR
	TS3	AC LOAD AT TP3 DATA T L MQ LOAD AT TP3 IF MD7 = 1	SET SCLD AT TP2 L DATA BUS → SC CØL	O → SC LINK LOAD (Ø → L) ADLK DIS L	0 → SC	0 → SC START EAE TO AT TP3 ACØ → L DATA IF EAE ON, SHIFT LEFT UNTIL ACØ ≠ AC1, OR AC1-MQ11 = Ø, +1 → SC RESTART CP IF ''NEW'' AND AC, MQ = 40000000, CØL ADLK DIS L		ACØ → LINK DATA ADLK DIS L LINK LOAD (ACØ → LINK)	ADLK DIS L LINK LOAD (Ø → LINK)	SCV DATA → DATA	ADLK DIS L LINK LOAD (Ø → L)		IF MODE = A AND SWAB, SET MODE B IF MODE = B AND SWBA SET MODE A	AC → MQ, MQ → AC BECAUSE OF INSTR. ADLK DIS L CARRY IN CARRY OUT → LINK DATA [MQ LOAD, AC LOAD] LINK LOAD START EAE TC, ONE CYCLE ONLY L → CARRY IN CARRY OUT → LINK DATA AC LOAD, MQ LOAD LINK LOAD	IF AC, MQ = Ø. 1 → SKIP	AC → MQ, MQ → AC BECAUSE OF INSTR. ADLK DIS L CARRY IN CARRY OUT → L; NK DATA DATA F [MQ LOAD, AC LOAD] LINK LOAD START EAE TC, ONE CYCLE L → CARRY IN CARRY OUT → LINK DATA DATA F AC LOAD, MQ LOAD LINK LOAD	ADLK DIS L DATA F CARRY IN ENØ L]MQ → EN 2 L ADDERS CARRY OUT → LINK DATA [AC LOAD] LINK LOAD GT GATING ENA GT LOAD		
	TS4		1 → F	1 → SKIP ENØ CARRY IN {MA+1 → MA) NEW; 1 → D OLD; 1 → E	1 → SKIP ENØ CARRY IN {(MA+ 1 → MA) NEW; 1 → D OLD; 1 → E	1 → F	1 → SKIP ENØ CARRY IN {(MA+1 → MA) 1 → E	1 → SKIP ENØ CARRY IN {MA+ 1 → MA) 1 → E	1 → F	1 → SKIP ENØ CARRY IN {(MA+1 → MA) 1 → D	1 → SKIP ENØ CARRY IN {(MA+1 → MA) 1 → D	1 → F	1 → F	1 → F	1 → F	1 → SKIP ENØ CARRY IN (MA+1 → MA) 1 → E	
D	ALL	OBTAIN OPERAND ADDRESS									1 → EX1	1 → EX1							
E1	TS2											MQ → BUS DATA T } MQ → MB MD DIS AC → MQ ENA L							
	TS3	DATA T L									L → CARRY IN EN1 (MD) MQ → BUS AC → MQ ENA L CARRY OUT → LINK DATA AC LOAD MQ LOAD LINK LOAD ADLK DIS L	MQ → BUS AC → MQ ENA L AC LOAD (SWAP AC, MQ LOAD MQ)						
	TS4										ENØ CARRY IN 1 → E	ENØ CARRY IN 1 → E							
E	TS2											SAME AS E1							
	TS3	DATA T L		AC → BUS L START EAE TC AT TP3 IF EAE ON; RIGHT L IF MQ11 = 1, EN 1 L AC LOAD, MQ LOAD REPEAT 12 TIMES RESTART CP WHEN SC = 13_8 ADLK DIS MUST BE HIGH	ADLK DIS L: AC → BUS L 1 → LINK DATA: LINK LOAD START EAE TC AT TP3 IF CARRY OUT L IF SC = Ø, DATA F L IF MQ10 ≠ MQ11 AND SC ≠ 13, DATA F L IF EAE OFF, MQØ → ADLK L, IF EAE ON, MQØ XOR MQ11 → ADLK L ADØ → DIV LNK IF MQ1Ø = 1 OR SC = Ø, DIV LNK XOR CARRY OUT → MQ DATA L SHL+LD ENA L. EN1 L LEFT L SC = 13; LEFT H. IF MQ11 = 1, DATA F IF DIV LNK (Ø), EN1 L MQ LOAD, AC LOAD L LOAD (Ø → LINK)	MD → ← SC START EAE TC AT TP3. IF EAE ON; LEFT L SHL + LD EN L ACØ → LINK DATA MQ LOAD, LINK LOAD AC LOAD ADLK DIS L MQØ → ADLK L	MD → SC START EAE TC AT TP3. IF EAE ON; RIGHT L MQ11 → GT DATA MQ LOAD, GT LOAD AC LOAD ADLK DIS MUST BE HIGH RESTART CP WHEN SC = 37 IF ''NEW'' AND SC = 37, DISABLE SHIFT PATHS, NO MQ, LINK OR GT LOAD.			SAME AS E1					MD → SC	FOR EACH EAE TIME PULSE, +1 → SC UNLESS RESTART WITH NO SHIFT ENABLES.
	TS4		1 → F	1 → F	1 → F	1 → F					1 → F	1 → F						1 → F	

FIRST USED ON OPTION/MODEL	QTY.	DESCRIPTION	PART NO.	ITEM NO.
KE8-E		PARTS LIST		

UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES. TOLERANCES
DECIMALS: .XXX ± .005, .XX ± .02, .X ± .1; ANGLES: ± 0° 30'
REMOVE BURRS AND BREAK SHARP CORNERS SURFACE QUALITY ✓
MATERIAL
FINISH

DRN.	Norm Crepeau	DATE 22 Jan 71
CHK'D.	W. MAJOR	DATE 8/17/71
ENG.	Robert Williams	DATE 8/18/71
PROJ. ENG.	S. Leshe	DATE 8/18/71
PROD.	K. Peters	DATE 8/18/71

digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS

TITLE: EAE FLOW DIAGRAM

NEXT HIGHER ASSY.: A-ML-KE8-E
SCALE NONE
SHEET 1 OF 1

SIZE	CODE	NUMBER	REV.
D	FD	KE8-E-C1	

DIST.

REVISIONS: REV. | CHANGE NO. | CHK

DEC FORM NO DRD 100-A

SIZE D FORM FDKE8-E-01 REV NUMBER

NOTES:

1. IF ANY CHANGES ARE TO BE MADE TO THIS PRINT FIRST CHECK WITH PURCHASE SPEC'S A-PS-23-001A1 AND A-SP-23 002A1.

ROM 1

ENABLE IF MAJOR STATE = F OR E
EIR 3 → A
EIR 2 → B
EIR 1 → C
EIR Ø · NEW → D
EXECUTE → E

ADDRESS (E D C B A)	FUNCTION	Y1	Y2	Y3	Y4	Y5	Y6	Y7	Y8	OCTAL
ØØ	F · NOP	1	1	1	1	1	1	1	1	377
Ø1	F · (ACS + SCL)	1	1	1	1	1	1	1	1	377
Ø2	F · MUY	1	1	1	1	1	0	0	1	371
Ø3	F · DVI	1	1	1	1	1	1	1	1	377
Ø4	F · NMI	0	1	1	0	0	0	1	1	143
Ø5	F · SHL	1	[illegible]	1	1	1	1	1	1	377
Ø6	F · ASR	0	1	1	1	1	0	0	1	171
Ø7	F · LSR	[illegible]	1	1	1	1	0	0	1	371
1Ø	F · SCA	1	1	1	1	1	1	1	1	377
11	F · DAD	1	1	1	1	1	0	0	1	371
12	F · DST	1	1	1	1	1	1	1	1	377
13	NOP	1	1	1	1	1	1	1	1	377
14	F · DPSZ	1	1	1	1	1	1	1	1	377
15	F · DPIC	1	0	0	1	1	0	0	1	231
16	F · DCM	1	0	0	1	1	0	0	1	231
17	F · SAM	1	1	0	1	1	0	0	1	331
2Ø	E · NOP	1	1	1	1	1	1	1	1	377
21	E · SCL	1	1	1	1	1	1	1	0	376
22	E · MUY	1	0	1	1	0	1	1	1	267
23	E · DVI	1	0	1	0	0	0	0	1	241
24	NOT USED									X
25	E · SHL	0	1	1	0	0	0	1	0	142
26	E · ASR	1	1	1	1	0	1	1	0	366
27	E · LSR	1	1	1	1	0	1	1	0	366
3Ø	NOT USED									X
31	E · DAD	1	1	0	1	1	0	0	1	331
32	E · DST	1	1	1	1	1	1	1	1	377
33	NOT USED									X
34	NOT USED									X
35	NOT USED									X
36	NOT USED									X
37	NOT USED									X

Ø INDICATES ACØ → LINK DATA AT TS3
Ø INDICATES TG SLOW → ADD (NOT MERELY SHIFT)
Ø INDICATES CARRY COUPLE AT TS3 (L → CARRY IN, CARRY OUT → L DATA)
Ø INDICATES LEFT SHIFT
Ø INDICATES A SHIFT OPERATION
Ø DISABLES CPU ADDER LINK GATING
Ø INDICATES LINK LOAD AT TP3
Ø INDICATES LOAD SC AT TP2

ROM 2

ENABLE IF MAJOR STATE = F
EIR 3 → A
EIR 2 → B
EIR 1 → C
EIR Ø → D
OLD → E

FUNCTION	Y1	Y2	Y3	Y4	Y5	Y6	Y7	Y8	OCTAL
NOP	1	1	1	1	1	1	1	1	377
ACS	0	1	1	1	1	1	1	1	177
NEW MUY	1	1	0	1	1	0	0	1	331
NEW DVI	1	1	0	1	1	0	0	1	331
NMI	1	1	0	1	1	1	1	1	337
SHL	1	1	1	1	1	0	1	0	372
ASR	1	1	1	1	1	0	1	0	372
LSR	1	1	1	1	1	0	1	0	372
SCA	1	1	1	1	0	1	1	1	367
DAD	1	1	1	1	1	0	0	1	371
DST	1	1	1	1	1	0	0	1	371
NOP	1	1	1	1	1	1	1	1	377
DPSZ	1	1	1	0	1	1	1	1	357
DPIC	1	0	1	1	1	1	1	1	277
DCM	1	0	1	1	1	1	1	1	277
SAM	1	0	1	1	1	1	1	1	277
NOP	1	1	1	1	1	1	1	1	377
SCL	1	1	1	1	1	0	1	0	372
OLD MUY	1	1	0	1	1	0	1	0	332
OLD DVI	1	1	0	1	1	0	1	0	332
NMI	1	1	0	1	1	1	1	1	337
SHL	1	1	1	1	1	0	1	0	372
ASR	1	1	1	1	1	0	1	0	372
LSR	1	1	1	1	1	0	1	0	372
SCA	1	1	1	1	0	1	1	1	367
SCA · SCL	1	1	1	1	0	0	1	0	362
SCA · OLD MUY	1	1	0	1	0	0	1	0	322
SCA · OLD DVI	1	1	0	1	0	0	1	0	322
SCA · NMI	1	1	0	1	0	1	1	1	327
SCA · SHL	1	1	1	1	0	0	1	0	362
SCA · ASR	1	1	1	1	0	0	1	0	362
SCA · LSR	1	1	1	1	0	0	1	0	362

Ø INDICATES ACS
Ø INDICATES DCM+SAM+DPIC
Ø INDICATES Ø → SC AT F · TP3
Ø INDICATES DPSZ
Ø INDICATES SCA
Ø INDICATES MA+1 → MA, 1 → SKIP
Ø INDICATES DSET
Ø INDICATES ESET

REVISIONS: REV A — CHANGE NO KE8E-00003 — E.S.SER

FIRST USED ON OPTION/MODEL	QTY.	DESCRIPTION	PART NO.	ITEM NO.
KE8-E		PARTS LIST		

UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES. TOLERANCES
DECIMALS: .XXX = .005, .XX = .02, .X = .1 — ANGLES: ±0° 30'
REMOVE BURRS AND BREAK SHARP CORNERS SURFACE QUALITY ✓
MATERIAL: — FINISH: —

DRN. Norm Cuyman — DATE 21 Jan '71
CHK'D. — DATE
ENG. — DATE
PROJ. ENG. — DATE
PROD. — DATE

NEXT HIGHER ASSY: A-ML-KE8-E
SCALE NONE — SHEET 1 OF 1

digital EQUIPMENT CORPORATION, MAYNARD, MASSACHUSETTS

TITLE: ROM ENCODING

SIZE D — CODE FD — NUMBER KE8-E-Ø2 — REV A

DEC FORM NO DRD 100-A

DIGITAL EQUIPMENT CORPORATION
MAYNARD, MASSACHUSETTS

ENGINEERING SPECIFICATION

DATE 2/15/72

TITLE KE8E ACCEPTANCE PROCEDURE

REVISIONS

REV	DESCRIPTION	CHG NO	ORIG	DATE	APPD BY	DATE

ENG	APPD	SIZE	CODE	NUMBER	REV
Louis K	John McCarthy	A	SP	KE8-E-0-4	

DEC 16-(327)-1071-N971
DRA 107

ENGINEERING SPECIFICATION

digital CONTINUATION SHEET

TITLE KE8E ACCEPTANCE PROCEDURE

1.Ø Equipment Required
- A. PDP-8E or PDP-8M
- B. M8340
- C. M8341
- D. 3-H851's
- E. Teletype
- F. Maindec-8E-DØLB-D-PB KE8E Instruction Test 1
- G. Maindec-8E-DØMB-D-PB KE8E Instruction Test 2
- H. Maindec-8E-DØRA-D-PB KE8E Extended Memory Exerciser

2.Ø Check that the M8340 and M8341 have:
- A. Proper circuit revision.
- B. Day code.

3.Ø Load and run the following diagnostics, consulting the Diagnostic Document for proper operating procedure.
- A. Maindec-8E-DØLB for two complete program passes which will be indicated by "KE8L" being typed out twice.
- B. Maindec-8E-DØMB for two complete program passes which will be indicated by "KE8E" being typed out twice.
- C. Maindec-8E-DØRA for five complete program passes which will be indicated by "KE8EME" being typed out five times. At the beginning of the program, be sure to type the correct value defining the maximum amount of memory.

4.Ø Shipping Hardware
- A. M8340
- B. M8341
- C. 3-H8351's

5.Ø Shipping Software
- A. Libkit-8E-KE8E
- B. KE8E Print Set
- C. KE8E Maintenance Manual

	SIZE	CODE	NUMBER	REV
	A	SP	KE8-E-0-4	

DEC FORM NO DEC 16-(381)-1022-N370
DRA 108

DIGITAL EQUIPMENT CORPORATION
MAYNARD, MASSACHUSETTS

ACCESSORY LIST

MADE BY J. McCluskey DATE 4/19/72	CHECKED [signature] DATE 4/19/72	SECTION
ENG C. KLOTZ DATE 4/19/72	PROD [signature] DATE 4/19/72	ISSUED SECT.

LEGEND

D DOCUMENT
DN DOCUMENT CHANGE NOTICE
PA PAPER TAPE ASCII
PB PAPER TAPE BINARY
PM PAPER TAPE READ-IN-MODE

ITEM NO.	DWG NO. / PART NO.	DESCRIPTION	QUANTITY / VARIATION KE8-E
1	M8340	EAE Decoder and Stepcounter module	1
2	M8341	EAE Multiplexer and Timing Generator Module	1
3	H851	Edge Connectors	3
4	LIBKIT-8E-KE8-E	Program Library Kit For KE8-E	1
5	KE8-E	KE8-E Maintenance Manual	1
		Note: It item 5 is temporarilly waivered ship the following.	
	A-SP-KE8-E-3	KE8-E Engineering Specifications	1
	A-SP-KE8-E-4	KE8-E Acceptance Procedure	1

KIT CHECK BY _____ DATE _____

INSTALLATION CHECK BY _____ DATE _____

TITLE	ASSY. NO.	SIZE	CODE	NUMBER	REV.	ECO NO
Accessory List. [	SHEET OF	A	AL	KE8-E-6		
		DIST.				

DEC 16-(325)-1075-N172 DRA 121

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