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	digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS
CHK'D. K. GULICK	DATE 7-26-71	
ENG.	DATE 8/18/71	
PROJ. ENG.	DATE 8/18/71	TITLE EXTENDED ARITH ELEMENT
PROD.	DATE 8/18/71	
FIRST USED ON PDP8-E		
SCALE NONE		SIZE A | CODE ML | NUMBER KE8-E | REV. C
SHEET 1 OF 2		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 A	CODE ML	NUMBER KE8-E	REV. C

DIGITAL EQUIPMENT CORPORATION
MAYNARD, MASSACHUSETTS

ACCESSORY LIST

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

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.				

DIGITAL EQUIPMENT CORPORATION
MAYNARD, MASSACHUSETTS

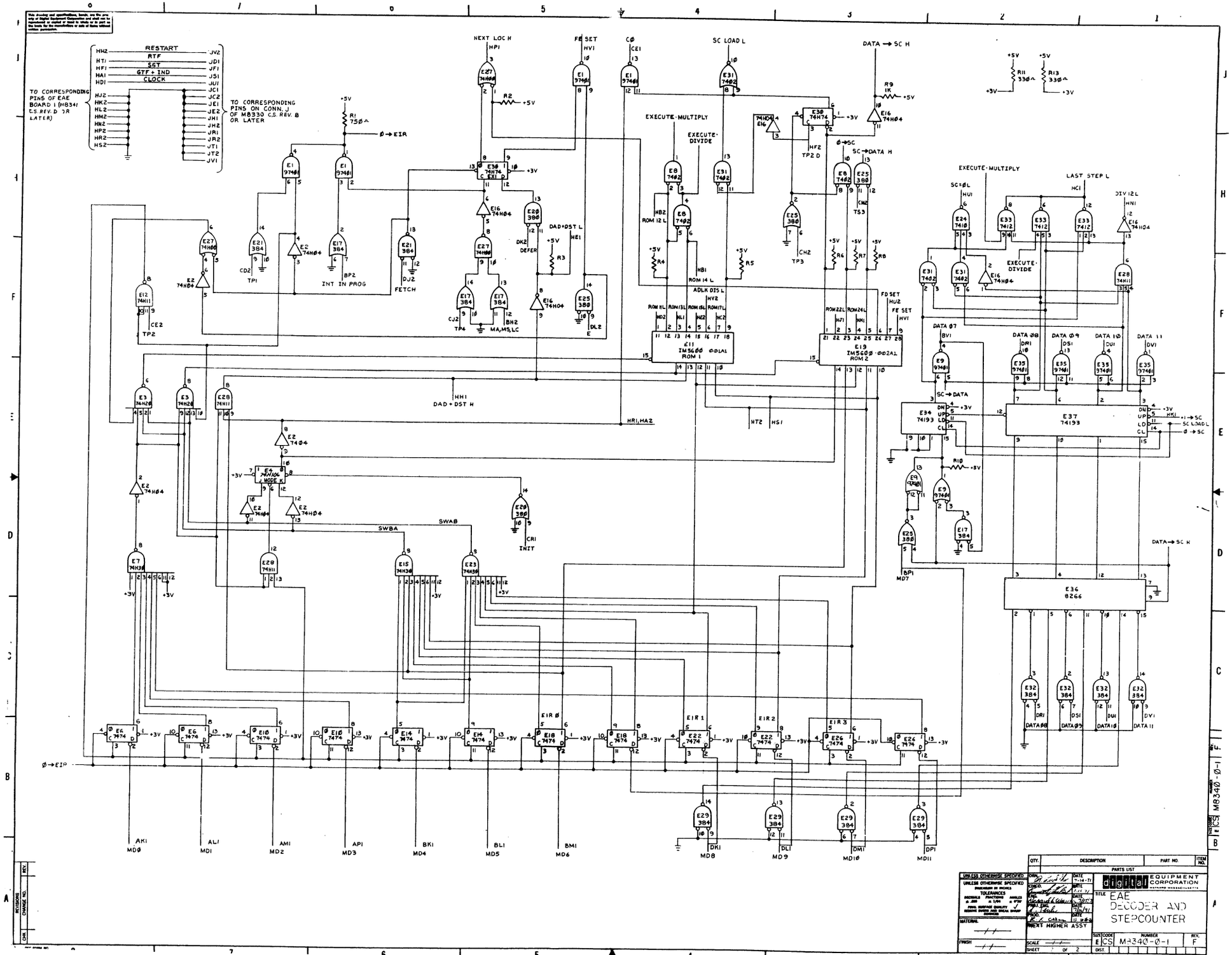
PARTS LIST

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 8/19/71	

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



QTY.	DESCRIPTION	PART NO.	ITEM NO.

PARTS LIST

UNLESS OTHERWISE SPECIFIED

MATERIAL

FINISH

NEXT HIGHER ASSY

digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS

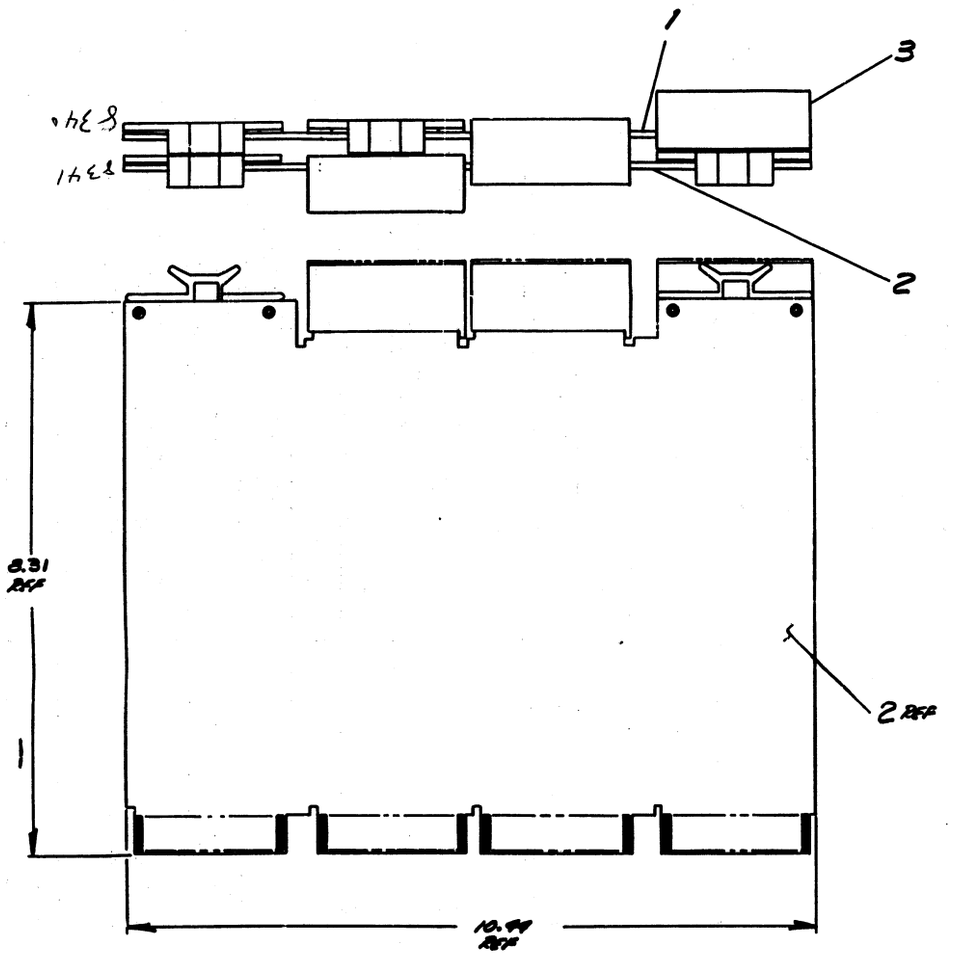
TITLE: EAE DECODER AND STEPCOUNTER

SIZE: E | CODE: CS | NUMBER: M8340-0-1 | REV: F

SCALE | SHEET 1 OF 2 | DST.

REVISIONS: REV. | DESCRIPTION | CHANGE NO.

CS M8340-0-1 REV F



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.		DATE 2-27-71
CHK'D.		DATE 2/28/71
ENG.		DATE 3/18/71
PROJ. ENG.		DATE 3/18/71
PROD.	R Peterson	DATE 3/18/71

NEXT HIGHER ASSY. —

SCALE NONE

SHEET 1 OF 1

digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS

TITLE: EXTENDED ARITH ELEMENT

SIZE	CODE	NUMBER	REV.
D	UA	KE8-E-Ø	

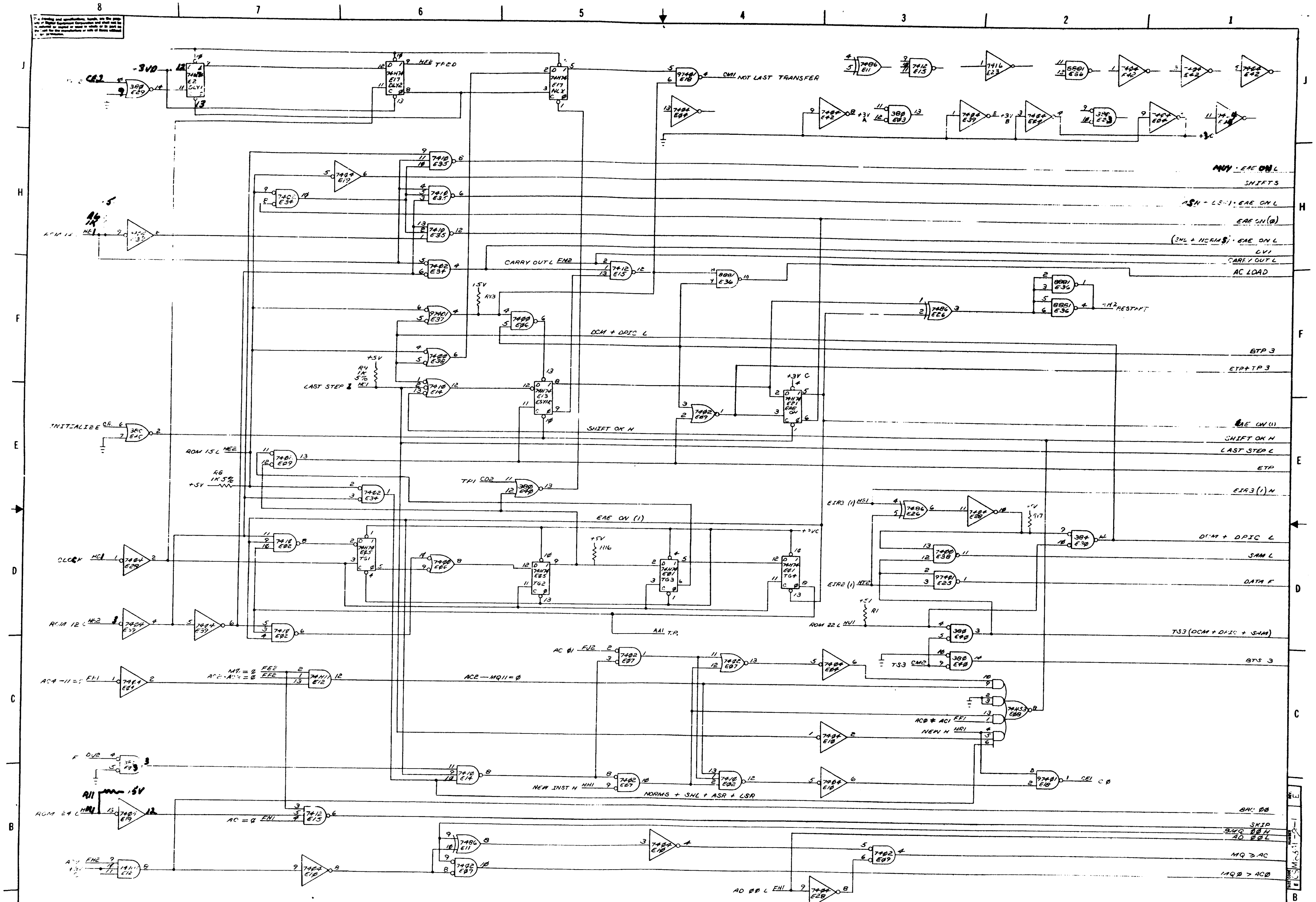
DIST. G

REVISIONS

REV.	CHANGE NO.	CHK

DFC FORM NO DRD 100-A

SIZE D | CODE UA | NUMBER KE8-E-Ø | REV



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

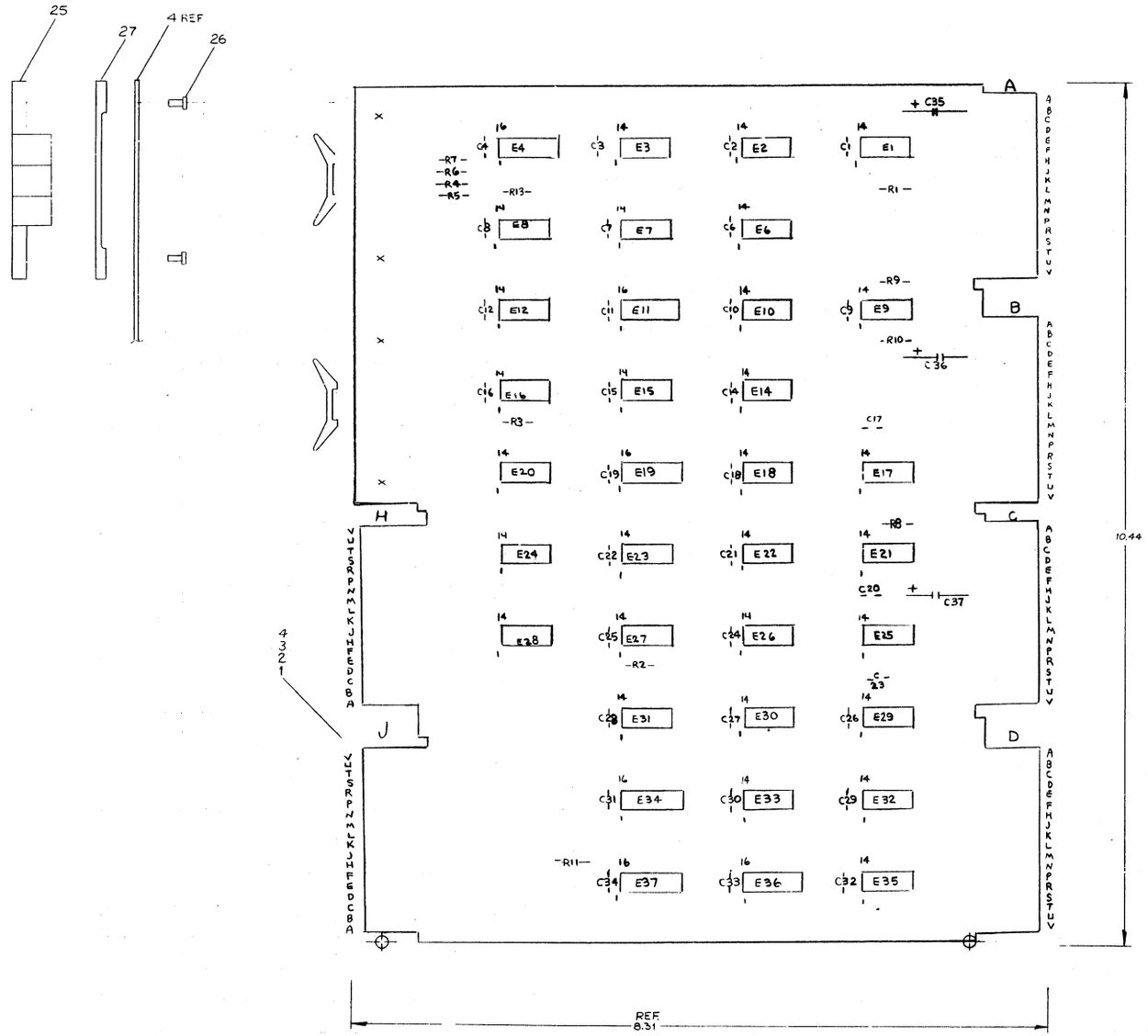
MATERIAL
FINISH

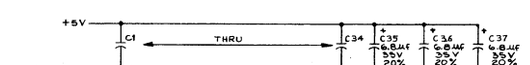
DRN. M. Pr... DATE
CHK'D. DATE
ENG. DATE 7/20/71
PROJ. ENG. DATE 7-29-71
PROD. DATE
NEXT HIGHER ASSY
SCALE NONE
SHEET 2 OF 3

digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS

TITLE: MULTIPLEXERS & TIMING GEN EAE

SIZE	CODE	NUMBER	REV.
E	CS	M8341-Ø-1	E





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.
		PARTS LIST		
	ETCH BOARD REV E			
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
1/A		GRIPLET	1210299-0	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	1905574	23
1	E33	IC DEC 7412	1909955	22
2	E34, E37	IC DEC 74193	1901001B	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 3B4	1909986	16
2	E8, E31	IC DEC 7402	1909004	15
1	E30	IC DEC 74H74	1909647	14
3	E7,E15,E23	IC DEC 74H30	1909059	13
3	E1,E9,E35	IC DEC 97401	1909973	12
2	E20,E25	IC DEC 3B0	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 MF 35V 20% S. TANT	1000067	6
32	C1-C4, C6-C12, C14-C33	CAP .01 MF 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

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 RESPECTIVELY. EXCEPTIONS ARE STATED ABOVE

IC PIN LOCATIONS

ITEM NO	AWG	FROM PT	TO PT

JUMPER LIST

DEC NO.	EIA NO	DEC NO.	EIA NO

SEMICONDUCTOR CONVERSION CHART

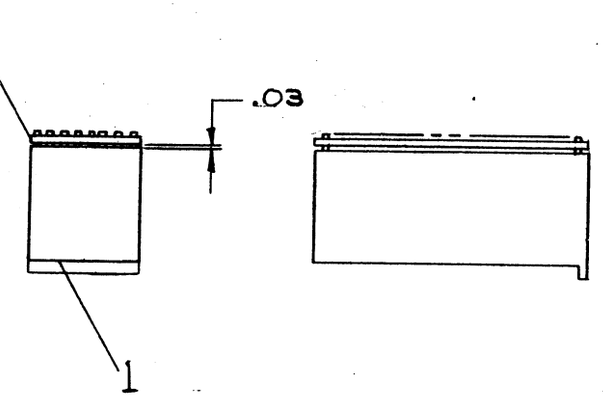
digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS

TITLE: EAE DECODER & STEP COUNTER

SIZE CODE: E CS | NUMBER: M8340-0-1 | REV: F

SCALE 2-1 | SHEET 1 OF 2 | DIST.

M8340-0-1 F



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	210152	1
QTY.	DESCRIPTION	PART NO.	ITEM NO.

PARTS LIST

FIRST USED ON OPTION/MODEL
H851

UNLESS OTHERWISE SPECIFIED

TOLERANCES
DECIMALS
.XXX = ± .005
.XX = ± .02
.X = ± .1

UNLESS OTHERWISE SPECIFIED
DIMENSION IN INCHES
TOLERANCES
DECIMALS ANGLES ± 0°30'
FINAL SURFACE QUALITY
REMOVE BURRS AND BREAK SHARP CORNERS

MATERIAL =

FINISH =

DRN. H Flanders	DATE 7/28/70	
CHK'D. R. Rines	DATE 8/13/70	
ENG. Jack Briere	DATE 8-13-70	
PROJ. ENG. Jack Briere	DATE 8-13-70	
PROD. D Wheeler	DATE 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	H851-0-0	B

DIST. G

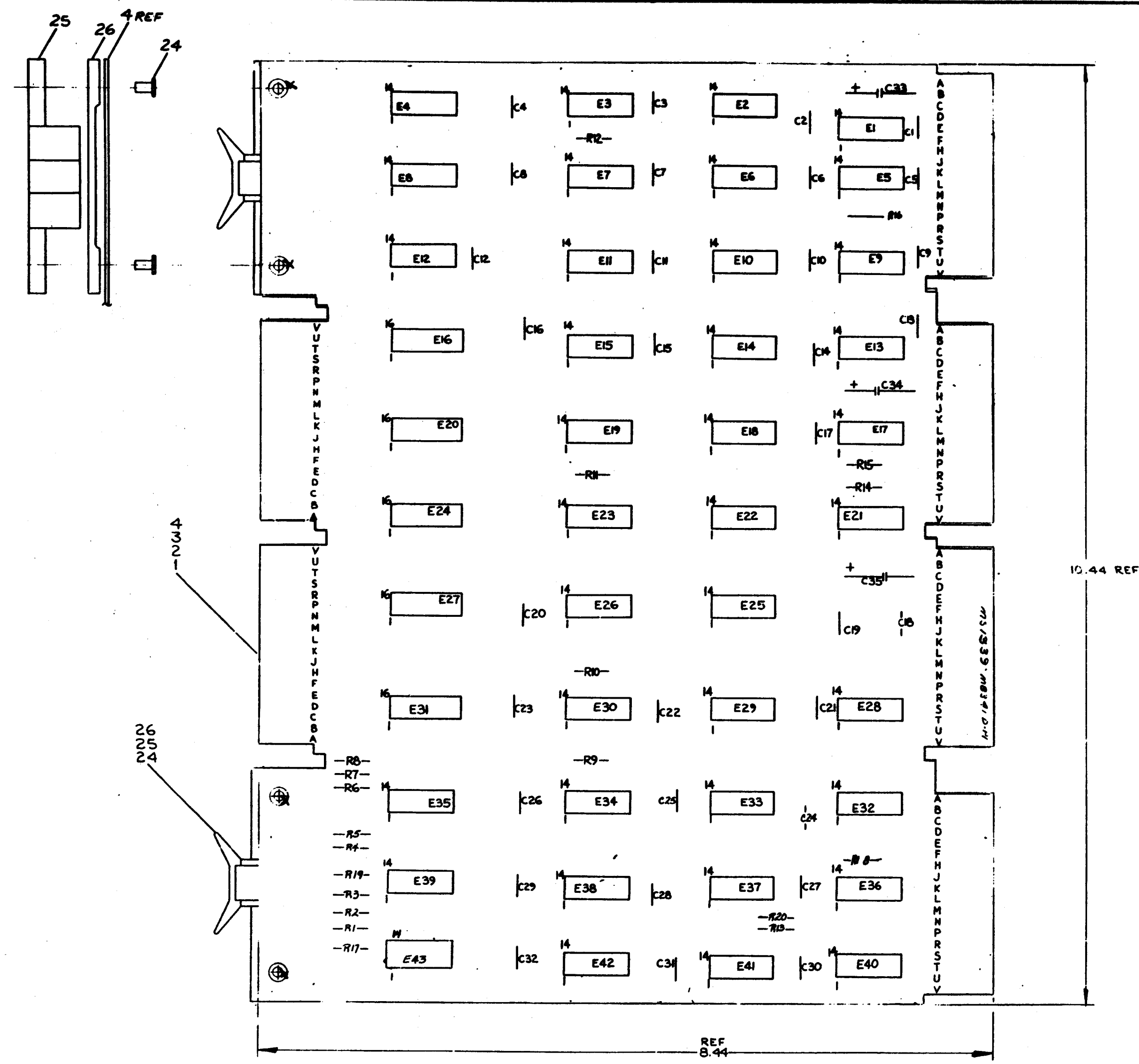
REVISIONS			
REV.	CHANGE NO.	CHK.	
A	H851-00001		P. GARDNER 12-10-70
B	H851-00002	B. Hale	P. GARDNER 8-3-72

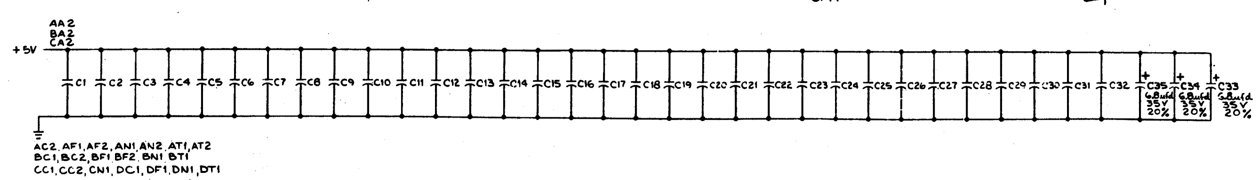
Jack Briere for P.G 8-9-72

DEC FORM NO.
DRB 100

REV. B
NUMBER H851-0-0
CODE UA
SIZE B

NOTES:





QTY.	REF DESIGNATION	DESCRIPTION	PART NO.	ITEM NO.
1	E43	IC DEC 8093	1910837	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	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

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

SEMICONDUCTOR CONVERSION CHART

M8341-00005 E L. KLOTZ 12-5-71
M8341-00003 D L. KLOTZ 12-11-71
M8341-00002 C R. WEBER 2-16-71
M8341-00001 S. TEICHER
ORIGINATED

T. Quillin 6-9-71
8-8-71
7-24-71
X. 5-25-71

EQUIPMENT CORPORATION

TITLE
MULTIPLEXERS & TIMING GEN EAE

SCALE 2/1
SHEET 1 OF 3

E CS M8341-0-1 E

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.

E D C B A

Address
Ø0, Ø1, Ø2, Ø3
Ø4, Ø5, Ø6, Ø7
1Ø, 11, 12, 13
14, 15, 16, 17
2Ø, 21, 22, 23
24, 25, 26, 27
3Ø, 31, 32, 33
34, 35, 36, 37

ROM 1

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

FUNCTION	Y1	Y2	Y3	Y4	Y5	Y6	Y7	Y8	OCTAL
F · NOP	1	1	1	1	1	1	1	1	377
F · (ACS + SCL)	1	1	1	1	1	1	1	1	377
F · MUY	1	1	1	1	1	0	0	1	371
F · DVI	1	1	1	1	1	1	1	1	377
F · NMI	0	1	1	0	0	0	1	1	143
F · SHL	1	1	1	1	1	1	1	1	377
F · ASR	0	1	1	1	1	0	0	1	171
F · LSR	1	1	1	1	1	0	0	1	371
F · SCA	1	1	1	1	1	1	1	1	377
F · DAD	1	1	1	1	1	0	0	1	371
F · DST	1	1	1	1	1	1	1	1	377
NOP	1	1	1	1	1	1	1	1	377
F · DPSZ	1	1	1	1	1	1	1	1	377
F · DPIC	1	0	0	1	1	0	0	1	231
F · DCM	1	0	0	1	1	0	0	1	231
F · SAM	1	1	0	1	1	0	0	1	331
E · NOP	1	1	1	1	1	1	1	1	377
E · SCL	1	1	1	1	1	1	1	0	376
E · MUY	1	0	1	1	0	1	1	1	267
E · DVI	1	0	1	0	0	0	0	1	241
NOT USED									X
E · SHL	0	1	1	0	0	0	1	0	142
E · ASR	1	1	1	1	0	1	1	0	366
E · LSR	1	1	1	1	0	1	1	0	366
NOT USED									X
E · DAD	1	1	0	1	1	0	0	1	331
E · DST	1	1	1	1	1	1	1	1	377
NOT USED									X
NOT USED									X
NOT USED									X
NOT USED									X
NOT USED									X

- Y1: Ø INDICATES ACØ ← LINK DATA AT TS3
- Y2: Ø INDICATES TG SLOW—ADD (NOT MERELY SHIFT)
- Y3: Ø INDICATES CARRY COUPLE AT TS3 (L ← CARRY IN, CARRY OUT → L DATA)
- Y4: Ø INDICATES LEFT SHIFT
- Y5: Ø INDICATES A SHIFT OPERATION
- Y6: Ø DISABLES CPU ADDER LINK GATING
- Y7: Ø INDICATES LINK LOAD AT TP3
- Y8: 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

- Y1: Ø INDICATES ACS
- Y2: Ø INDICATES DCM+SAM+DPIC
- Y3: Ø INDICATES Ø → SC AT F · TP3
- Y4: Ø INDICATES DPSZ
- Y5: Ø INDICATES SCA
- Y6: Ø INDICATES MA+1 → MA, 1 → SKIP
- Y7: Ø INDICATES DSET
- Y8: Ø INDICATES ESET

REVISIONS		
REV	CHANGE NO.	CHK
A	KE8E-00003	

ESSER

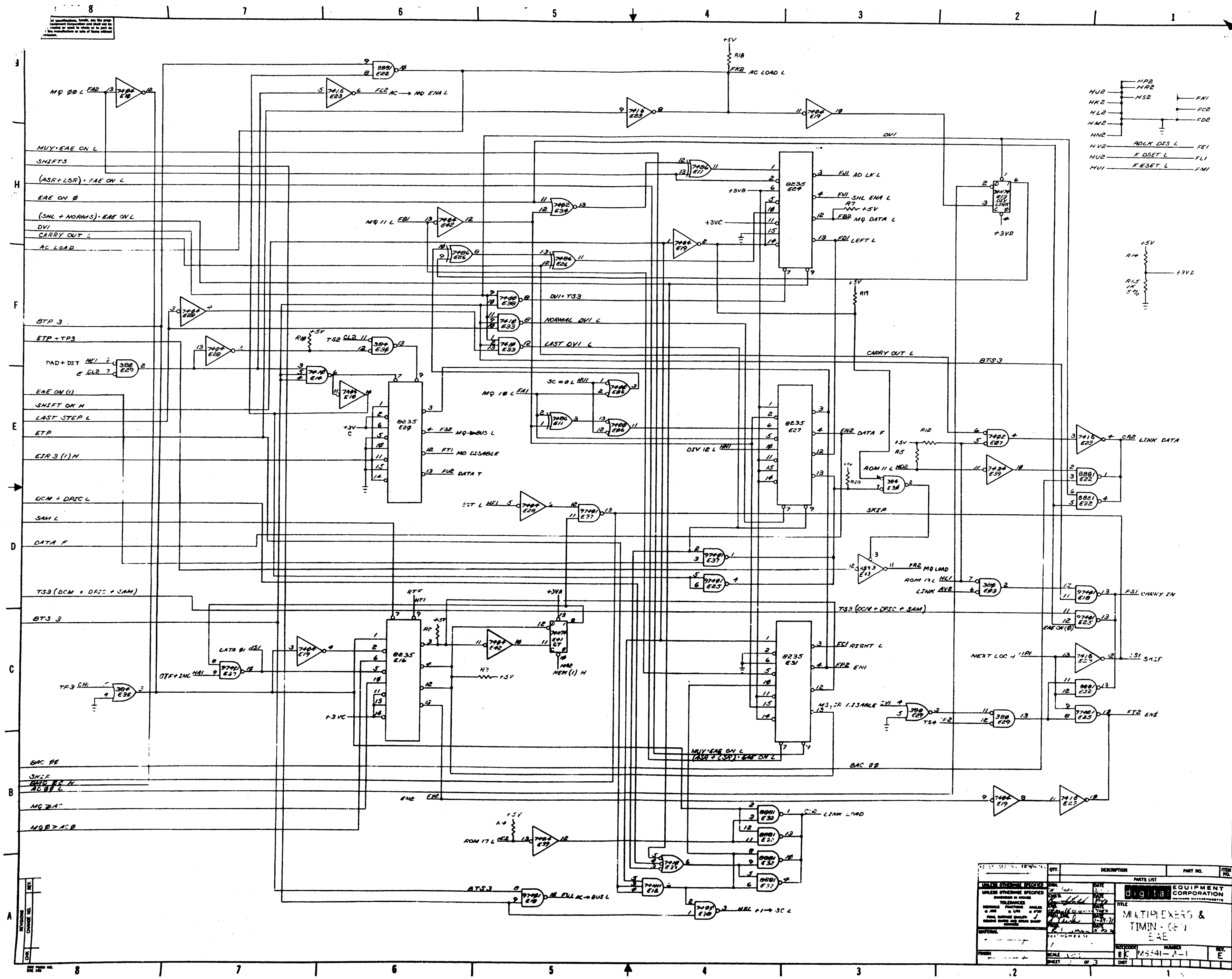
FIRST USED ON OPTION/MODEL	KE8-E
UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES. TOLERANCES	DECIMALS: .XXX = .005, .XX = .02, .X = .1; ANGLES: ±0° 30'
REMOVE BURRS AND BREAK SHARP CORNERS SURFACE QUALITY	✓
MATERIAL	
FINISH	
DRN.	Norm Cuyiner — DATE 21 Jun 71
CHK'D.	W. Mayo — DATE
ENG.	— DATE
PROJ. ENG.	— DATE
PROD.	— DATE
NEXT HIGHER ASSY.	A-ML-KE8-E
SCALE	NONE
SHEET	1 OF 1
QTY. / DESCRIPTION / PART NO. / ITEM NO.	PARTS LIST

digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS

TITLE: ROM ENCODING

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

DEC FORM NO DRI 100-A



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
DCM + DPIC L
SAM L
DATA F
TS3 (DCM + DPIC + SAM)
BTS 3
BAC 00
SHIF
AC 00 L
MQ 00 > AC 0
AC LOAD L
MQ ENA L
DVI • TS3
NORMAL DVI L
LAST DVI L
AD LK L
SHL ENA L
MQ DATA L
LEFT L
CARRY OUT L
DATA F
MQ->BUS L
MQ DISABLE
DATA T
LINK DATA
MQ LOAD
CARRY IN
SKIP
RIGHT L
LINK LOAD
FULL AC->BUS L
ADLK DIS L
F DSET L
F ESET L
MQ 11 L
MQ 10 L
DIV 12 L
ROM 11 L
ROM 17 L
NEXT LOC H
NEW (1) H
EAE ON (0)
MUY • EAE ON L
digital EQUIPMENT CORPORATION
MULTIPLEXERS & TIMING GEN EAE
M8341-0-1

DIGITAL EQUIPMENT CORPORATION
MAYNARD, MASSACHUSETTS

ACCESSORY LIST

MADE BY J. McCluskey DATE 4/19/72	CHECKED [illegible] DATE 2/9/72	SECTION
ENG L. KLOTZ DATE 4/19/72	PROD [illegible] 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: If 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

MAJ STATE	TIME STATE	CP EVENTS	NEW ONLY: ACS EIR=1	MUY 2	DVI 3	NMI 4	SHL	ASR 8	LSR 7	SCA NEW:10 OLD:1X	DAD 14	DST 12	SWAB OR SWBA	DPIC 14	DPSZ 15	DCM 16	SAM 17	OLD ONLY: SCL 1	COMMON EAE EVENTS
F	TS1	PC UPDATE																	
	TS2	MDB-2→IR																	0→EIR
	TS3	AC LOAD AT TP3 DATA T L MQ LOAD AT TP3 IF MD7 = 1	SET SCLD AT TP2 L DATA BUS →SC CBL	0→SC LINK LOAD (B→L) ADLK DIS L 1→SKIP	0→SC 1→SKIP	0→SC START EAE TO AT TP3 ACB→L DATA IF EAE ON, SHIFT LEFT UNTIL ACB ≠ ACI, OR ACI-MQII = Ø, +1 →SC RESTART CP IF "NEW" AND AC, MQ = 40000000, CBL ADLK DIS L	1→SKIP	ACB→ LINK DATA ADLK DIS L LINK LOAD (ACB→LINK)	ADLK DIS L LINK LOAD (B→LINK) 1→SKIP	SCV DATA →DATA	ADLK DIS L LINK LOAD (B→L) 1→SKIP	1→SKIP	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 ENB L MQ→ EN 2 L ADDERS CARRY OUT→LINK DATA [AC LOAD] LINK LOAD GT GATING ENA GT LOAD	1→SKIP	IF EAE INST. MD6,8,9,Ø→EIR
	TS4		1→F	ENB CARRY IN (MA+1→MA) NEW; 1→D OLD; 1→E	ENB CARRY IN (MA+1→MA) NEW; 1→D OLD; 1→E	1→F	ENB CARRY IN (MA+1→MA) 1→E	ENB CARRY IN (MA+1→MA) 1→E	1→F	ENB CARRY IN (MA+1→MA) 1→D	ENB CARRY IN (MA+1→MA) 1→D	1→F	1→F	1→F	1→F	1→F	ENB CARRY IN (MA+1→MA) 1→E	
D	ALL	OBTAIN OPERAND ADDRESS									1→EX1	1→EX1							
E1	TS2											MQ→BUS DATA T MD DIS →MQ 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										ENB CARRY IN 1→E	ENB CARRY IN 1→E							
E	TS2					MD→SC	MD→SC					SAME AS E1						MD→SC	
	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, MQB→ADLK L IF EAE ON, MQB XOR MQ11 →ADLK L ADØ→DIVLNK 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 (B→LINK)	IF START EAE TC AT TP3. IF EAE ON; LEFT L SHL+LD EN L ACB→LINK DATA MQ LOAD, LINK LOAD AC LOAD ADLK DIS L MQB→ADLK L	START EAE TC AT TP3. IF EAE ON; RIGHT L MQ11→GT DATA MQ LOAD, GT LOAD AC LOAD ADLK DIS MUST BE HIGH	SAME AS E1	SAME AS E1				FOR EACH EAE TIME PULSE, +1→SC UNLESS RESTART WITH NO SHIFT ENABLES.
	TS4			1→F	1→F		RESTART CP WHEN SC = 37 IF "NEW" AND SC = 37, DISABLE SHIFT PATHS, NO MQ, LINK OR GT LOAD.				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 —/—

		DATE
DRN.	Norm Cyr	22 Jan 71
CHK'D.	W. MAJOR	8/10/71
ENG.	[signature]	8/10/71
PROJ. ENG.	S. Neale	8/10/71
PROD.	R. Peterson	8/10/71

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

digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS

TITLE: EAE FLOW DIAGRAM

SIZE	CODE	NUMBER	REV.
D	FD	KE8-E-01	

DIST.

REVISIONS: REV. | CHANGE NO | CHK

DEC FORM NO DRD 100-A

KE8-E-01 D FD

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	for TMC	A	SP	KE8-E-0-4	

ENGINEERING SPECIFICATION [redacted] 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 "KE8I" 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	

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