

KW11-L
line time clock
engineering drawings

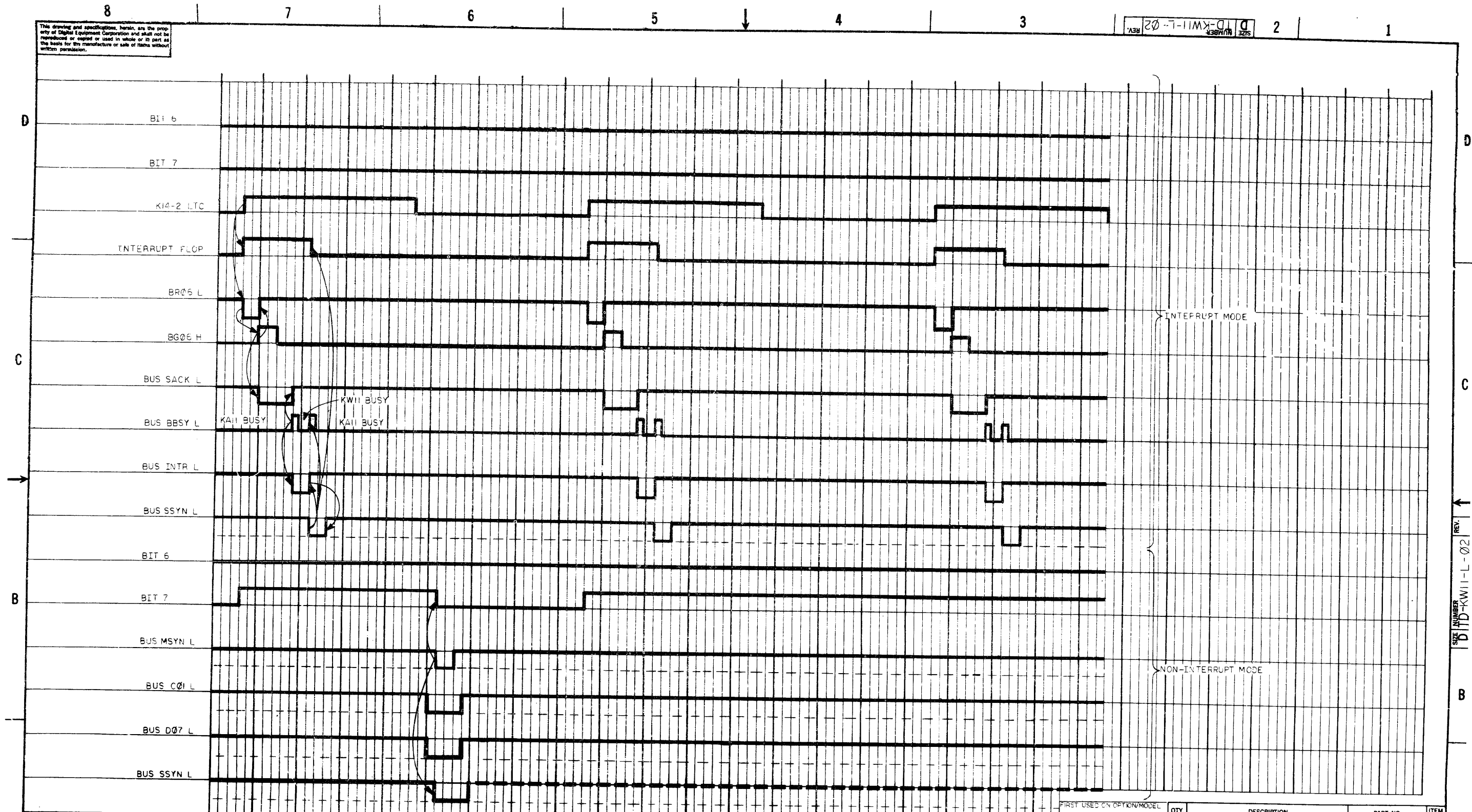
CUSTOMER PRINT SET					CUSTOMER PRINT SET									
KW11-L	DEPT SET	FIND NO.	DRAWING NO.	REV	NO OF SHT	DESCRIPTION	OPTION NO.	DEPT SET	FIND NO.	DRAWING NO.	REV	NO OF SHT	DESCRIPTION	OPTION NO.
X	X		D-BS-KW11-L-01	A	2	LINE FREQUENCY INTERNAL CLOCK								
X	X		A-SP-KW11-L-03	*	3	TEST PROCEDURE								
X	X		D-CS-M787-0-1	#	2	LINE CLOCK								
X	X		A-PL-KW11-L-0	*	1	LINE FREQUENCY CLOCK								
X	X		A SL KW11 L 28	*	1	SOFTWARE LIST								

TITLE	SIZE	CODE	NUMBER	REV
LINE FREQUENCY CLOCK (KW11-L)	B	DD	KW11-L-0	*

SHEET 2 OF 2

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SIZE NUMBER
D TD-KWII-L-02
REV.



FIRST USED ON OPTION/MODEL KWII-L		QTY.	DESCRIPTION	PART NO.	ITEM NO.
PARTS LIST					
digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS					
TITLE TIMING DIAGRAM (KWII-L)					
SIZE CODE D TD KWII-L-02					
NUMBER 1					
REV.					
SHEET 1 OF 1					
ahp					

REVISIONS
CHANGE NO.
REV.

CHK

8

7

6

5

4

3

2

1

SIZE NUMBER
D TD-KWII-L-02
REV.

B

A

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PARTS REFERENCE

ITEM NO	DRAWING REFERENCE	DESCRIPTION	PART NUMBER	QUANTITY
1	R1, R3	390 Ω 1/4 W 5% CC	1300309	2
2	R2, R6 - R11	1K 1/4 W 5% CC	1300365	7
3	R4, R5	180 Ω 1/4W 5% CC	1301322	2
4	R12	2.4K 1/4W 5% CC	1303177	1
5	C1 - C15, C18, C19	01 MFD 100V 20% DISC	1001610	17
6	C16, C17	580 MMF 100V 5% D.M.	1000025	2
7	Q1, Q2	TRANSISTOR DEC 3009 B.S.	1503100	2
8	E1, E5, E8, E9, E10	I.C. DEC 380	1909485	5
9	E2	I.C. DEC 7430	1905578	1
10	E3	I.C. DEC 8815	1908713	1
11	E4	I.C. DEC 7400	1905575	1
12	E6, E7, E13	I.C. DEC 7474	1905547	3
13	E11	I.C. DEC 7404	1909686	1
14	E12, E14, E15	I.C. DEC 8881	1909705	3

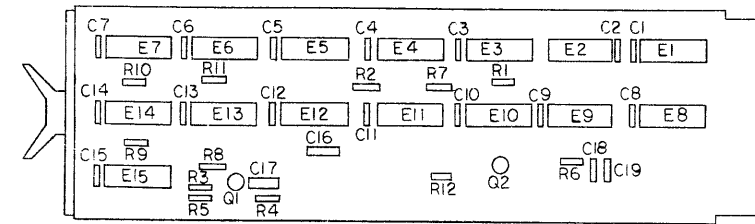
NOTES

- PIN NOTATION THROUGHOUT IS ORDERED UPON MODULE PLACEMENT IN THE K111 PROCESSOR. MODULE REFERENCE ALONE IS OBTAINED BY DELETING THE NUMBER (SLOT LOCATION) AFTER THE FIRST LETTER, AND CONVERTING THE FIRST LETTER ACCORDING TO THE PIN NOMENCLATURE CHART AT RIGHT.
- ALL SIGNALS THAT HAVE MODULE PINS ARE SO NOTED. MULTIPLE NOTATIONS OF THE SAME SIGNALS WITHIN A MODULE HAVE THE PIN NOTED ON EACH. AN INPUT SIGNAL IS NOTED ONLY ONCE PER SHEET UNLESS SEPARATE PINS ARE USED. MULTIPLE INPUTS ARE CONNECTED. MODULE OUTPUT SIGNALS ARE BROUGHT TO THE EXTREME RIGHT OF EACH SHEET.
- PROCESSOR SIGNAL SOURCE NOTATION (K10-2, 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. IF ON A PRINT, THE FIRST NUMBER OF THE K PREFIXES COINCIDE FOR A SIGNAL NAME AND THE PRINT (SEE TITLE BLOCK). THE SIGNAL IS GENERATED ON THE MODULE. A DIFFERENCE IN THE FIRST NUMBER OF THE K PREFIXES INDICATES A SIGNAL GENERATED OFF THE MODULE. SIGNALS WITH A "BUS" PREFIX REPRESENT A "WIRED OR" SITUATIONS AND MULTIPLE SOURCES FOR THE SIGNAL CAN EXIST.
- DETAILS ON COMPONENTS ARE NOTED IN THE PARTS REFERENCE. PLACEMENT IS NOTED IN THE COMPONENT PLACEMENT DIAGRAM.
- GND AND +5V ARE USUALLY PIN 7 AND PIN 14, RESPECTIVELY. EXCEPTIONS ARE:

IC TYPE	GND	+5V
DEC 7481	PIN 10	PIN 4
DEC 7482	PIN 11	PIN 4
DEC 8251	PIN 8	PIN 16
DEC 8271	PIN 8	PIN 16
DEC 380	PIN 1	PIN 8
DEC 384	PIN 1	PIN 8

- UNLESS OTHERWISE NOTED - RESISTANCE IS IN OHMS; CAPACITANCE IS IN MICRO MICRO FARADS, CAPACITORS WITHOUT ANY NOTED VALUES ARE .01MFD.

COMPONENT PLACEMENT



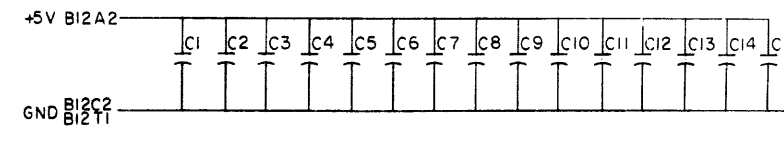
PIN NOMENCLATURE

MODULE PROCESSOR

A B

INSTALLATION PROCEDURE

- REMOVE JUMPER FROM B12V2 TO B12R2
- INSTALL M787 LINE FREQUENCY CLOCK MODULE IN K111 SLOT B12
- RUN MAINDEC DEC-11-D20A LINE FREQUENCY CLOCK TEST



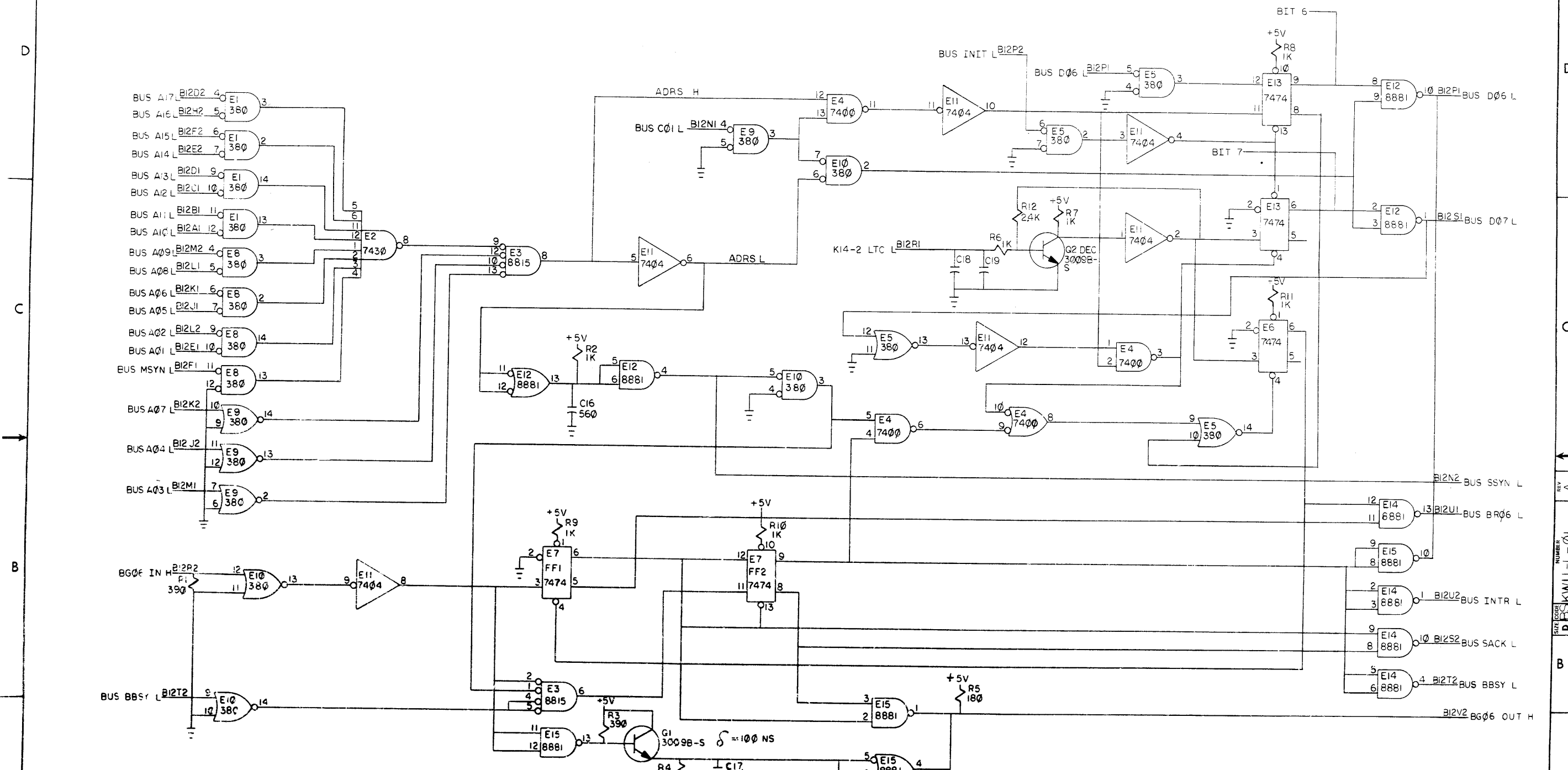
QTY.	DESCRIPTION	PART NO.	ITEM NO.																														
PARTS LIST																																	
FIRST USED ON OPTION/MODEL KW11-L		<table border="1"> <tr> <td>DRN</td> <td>DATE</td> <td rowspan="2">digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS</td> </tr> <tr> <td>CHKD</td> <td>DATE</td> </tr> <tr> <td colspan="2">DO NOT SCALE DRAWING</td> <td rowspan="2">TITLE LINE FREQUENCY INTERVAL CLOCK</td> </tr> <tr> <td colspan="2">UNLESS OTHERWISE SPECIFIED</td> </tr> <tr> <td colspan="2">TOLERANCES</td> <td rowspan="2">SIZE CODE NUMBER DBSKW11-L-01</td> </tr> <tr> <td colspan="2">DIMENSIONS IN INCHES</td> </tr> <tr> <td colspan="2">DECIMALS FRACTIONS ANGLES</td> <td rowspan="2">REV. A</td> </tr> <tr> <td colspan="2">± .005 ± 1/64 ± 0°30'</td> </tr> <tr> <td colspan="2">FINISH</td> <td rowspan="2">SCALE</td> </tr> <tr> <td colspan="2">REMOVE BURRS AND BREAK SHARP CORNERS</td> </tr> <tr> <td colspan="2">MATERIAL</td> <td rowspan="2">SHEET 1 OF 2</td> </tr> <tr> <td colspan="2">NEXT HIGHER ASSY A-ML-KW11-L</td> </tr> </table>		DRN	DATE	digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS	CHKD	DATE	DO NOT SCALE DRAWING		TITLE LINE FREQUENCY INTERVAL CLOCK	UNLESS OTHERWISE SPECIFIED		TOLERANCES		SIZE CODE NUMBER DBSKW11-L-01	DIMENSIONS IN INCHES		DECIMALS FRACTIONS ANGLES		REV. A	± .005 ± 1/64 ± 0°30'		FINISH		SCALE	REMOVE BURRS AND BREAK SHARP CORNERS		MATERIAL		SHEET 1 OF 2	NEXT HIGHER ASSY A-ML-KW11-L	
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REMOVE BURRS AND BREAK SHARP CORNERS																																	
MATERIAL		SHEET 1 OF 2																															
NEXT HIGHER ASSY A-ML-KW11-L																																	

REV	CHANGE NO.	DATE
A	0-0001	8/11/70
B	0-0002	8/11/70
C	0-0003	8/11/70
D	0-0004	8/11/70

REV A
NUMBER
DBSKW11-L-01
SIZE CODE

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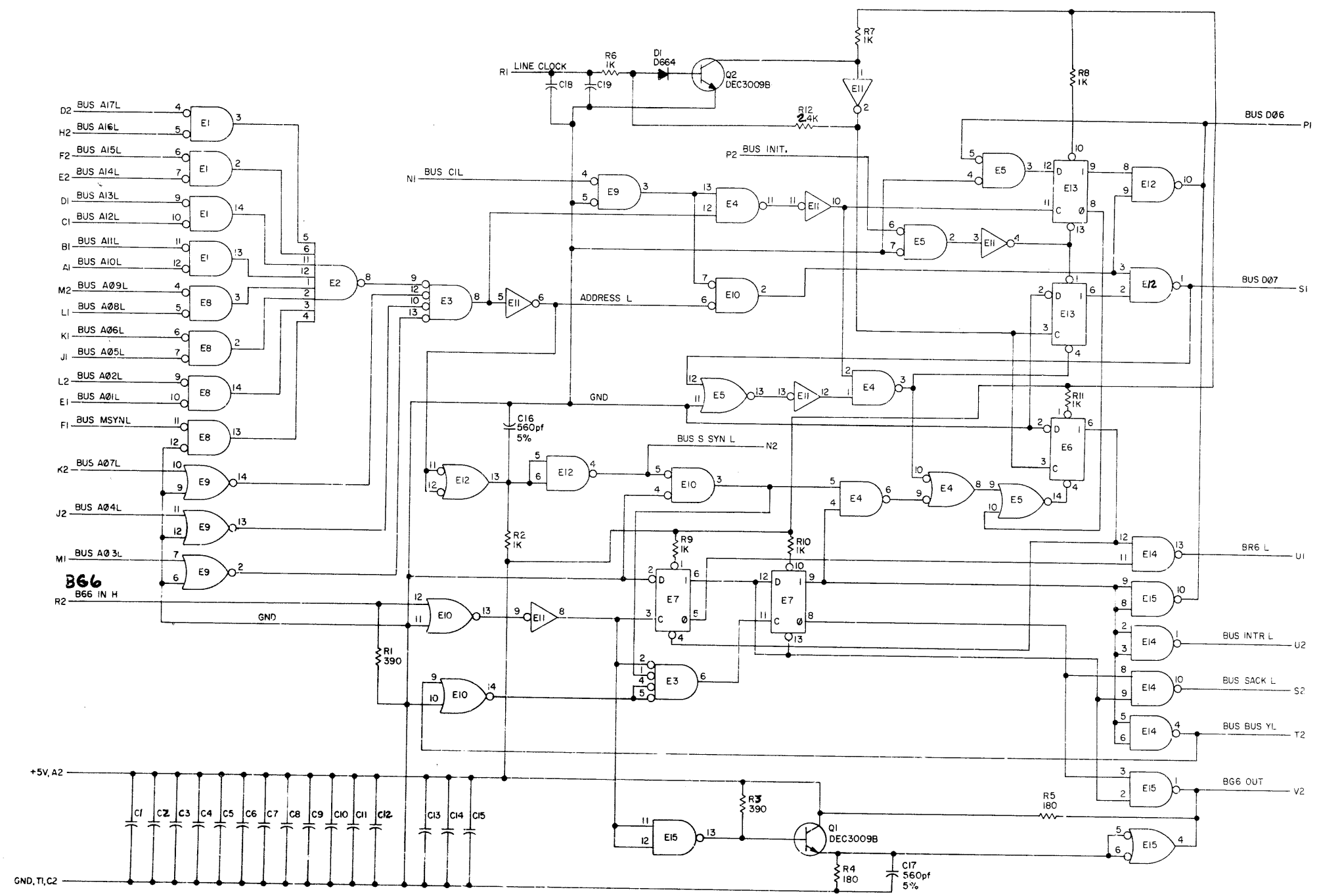
10-7-11MK8B 2
A38
K38W0N
3000 2715



REV	
CHG	
NO	
NO	

QTY.	DESCRIPTION	PART NO.	ITEM NO.
FIRST USED IN OPTION/MODULE			
KW11-L			
UNLESS OTHERWISE SPECIFIED			
DRN	DATE	PARTS LIST	
CH'D	DATE	digital EQUIPMENT CORPORATION	
ENG	DATE	MAYNARD, MASSACHUSETTS	
PROJ. ENG.	DATE	TITLE	
CHKD	DATE	LINE FREQUENCY	
APPROV	DATE	INTERVAL CLOCK	
MATERIAL			
FINISH			
SCALE			
SHEET 2 OF 2			
SIZE CODE		NUMBER	REV
D8SKW11-L-01			A
DIST.			

THIS SCHEMATIC IS FURNISHED ONLY FOR TEST AND MAINTENANCE PURPOSES. THE CIRCUITS ARE PROPRIETARY IN NATURE AND SHOULD BE TREATED ACCORDINGLY. COPYRIGHT 1970 BY DIGITAL EQUIPMENT CORPORATION



UNLESS OTHERWISE INDICATED:
 RESISTORS ARE 1/4W, 5%
 CAPACITORS ARE .01uF, 100V, 20%
 DEC380 = E1, E5, E8, E10, E9
 DEC7430 = E2
 DEC8815 = E3
 DEC7400 = E4
 DEC7404 = E11
 DEC8881 = E15, E12, E14
 DEC7474 = E6, E7, E13
 PIN 1 = GND
 PIN 8 = +5V ON E1, E8, E9, E10, E5
 PIN 7 = GND ON E2, E3, E4, E11, E12, E14, E13, E7, E15, E6
 PIN 14 = +5V

REV C
 NUMBER M787-0-1
 FILE NUMBER D CS

REV. NO. 1 DATE 1/15/71 BY BUTLER CHECKED DATE 1/23/71 DATE 2/1/71 DATE 2/1/71	TRANSISTOR & DIODE CONVERSION CHART DEC EIA DEC3009E 2N3009B D664 IN360E				TITLE LINE TIME CLOCK INTERRUPT M787 EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS PRINTED CIRCUIT REV C
	SIZE D CODE CS NUMBER M787-0-1 REV C				

DIGITAL EQUIPMENT CORPORATION
MAYNARD, MASSACHUSETTS

SOFTWARE LIST

LEGEND

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

QUANTITY/VARIATION

KIT CHECK				INSTALLATION CHECK			
BY	DATE	BY	DATE	BY	DATE	BY	DATE

MADE BY M. Buczynski DATE 6-15-72	CHECKED <i>[Signature]</i> DATE <i>[Date]</i>	SECTION
ENG M. Buczynski DATE 6-15-72	PROD <i>[Signature]</i> DATE 6/15/72	ISSUED SECT.

ITEM NO.	DWG NO. / PART NO.	DESCRIPTION
1	MAINDEC 11-DZDA-PB	LINE FREQUENCY CLOCK TEST
2	MAINDEC 11-D2DA-D	LINE FREQUENCY CLOCK TEST

TITLE LINE FREQUENCY CLOCK (KW11-L)	ASSY. NO.	SIZE CODE A SL	NUMBER KW11-L-28	REV. *	ECO NO
	SHEET 1 OF 1	DIST.			

DEC FORM NO. DEC 16 (327)-1049-N471
DRA 120