

KW11-P
programmable
real-time clock
engineering drawings

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* SEE ALLOWABLE SUBSTITUTION LIST
PARTS REFERENCE NOTE 8.

ITEM NO	DRAWING REFERENCE	DESCRIPTION	PART NUMBER	QUANTITY
1	E19	I.C. SOCKET #216-AGID AUGAT	1209839	2
2		HOLDER AUGAT #8000-P81	9007076	2
3		PRIORITY JUMPER	5408780	REF
4	Q1	TRANSISTOR DEC 3009B	1503100	1
5	CR1	100 KHZ CRYSTAL	1305502	1
6	D2, D4	DIODE 1005	1100100	2
7	D1	DIODE 0664	1100114	1
8	C60, C61	CAP. 1000PF, 100V, 5% MICA	1300242	2
9	C59	CAP. 470 PF, 100V, 5% D.M.	1300224	1
10	C58	CAP. 560 PF, 100V, 5% D.M.	1300025	1
11	C55, C57	CAP. 347UF, 100V, 10% NYLAR	1300051	2
12	C1 THRU C50	CAP. .01UF, 100V, 20% DISC	1301610	51
13	C51 THRU C54	CAP. 6.8UF, 35V, 10% TANT	1005306	5
14	R21	RES. 100 1/4W, 5%	1300229	1
15	R24	RES. 220 1/4W, 5%	1300271	1
16	R19, R10	RES. 390 1/4W, 5%	1300309	2
17	R23, R25	RES. 470 1/4W, 5%	1300316	2
18	R1 THRU R15, R16, R22	RES. 1K 1/4W, 5%	1300365	15
19	R14, R15	RES. 10K 1/4W, 5%	1300479	2
20	R17, R20	RES. 180 1/4W, 5%	1301322	2
21	E22, E27, E37, E41	I.C. DEC 7474	1905547	4
22	E26, E27, E40, E42, E43, E51	I.C. DEC 7400	1905575	6
23	E33, E41	I.C. DEC 7402	1909004	2
24	E18	I.C. DEC 7437	1909051	1
25	E1, E5, E9, E14, E29, E34, E39, E43, E48	I.C. DEC 380	1909485 *	9
26	E21, E41, E9, E12, E17	I.C. DEC 8271	1909515	5
27	E31, E45	I.C. DEC 7434	1909686	2
28	E6, E11, E12, E22, E27, E28, E29, E35, E36	I.C. DEC 8381	1909705	3
29	E3, E33, E35	I.C. DEC 8242	1909712	3
30	E32, E35	I.C. DEC 8815	1909713	2
31	E28	I.C. DEC 74153	1909937	1
32	E23	I.C. DEC 7413	1909989	1
33	E3, E7, E11, E16	I.C. DEC 74193	1910018	4
34	J1 THRU J7	BUS WIRE 22 AWG	9107560-01	4/R
35	C62	CAP. .05UF, 25V, 20+80%	1001774	1
36	R26	RES. 750 1/4W, 5% C.C.	1001461	1
37	E13	I.C. DEC 380	1909485	1

ALLOWABLE SUBSTITUTION LIST			
ORIG. PART NO.	SUBSTITUTE DESCRIPTION	PART NO.	ITEM NO.
1909485	I.C. 11380	1911113	25

IC TYPE	GND	+5V
DEC 74153	PIN 8	PIN 16
DEC 74193	PIN 8	PIN 16
DEC 7490	PIN 10	PIN 5
DEC 8271	PIN 8	PIN 16
DEC 380	PIN 1	PIN 8
DEC	PIN	PIN

NOTES:

- PIN NOTATION THROUGHOUT IS ORDERED UPON MODULE PLACEMENT IN THE DDII. 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 NOTATION (KW-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" SITUATION, 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:

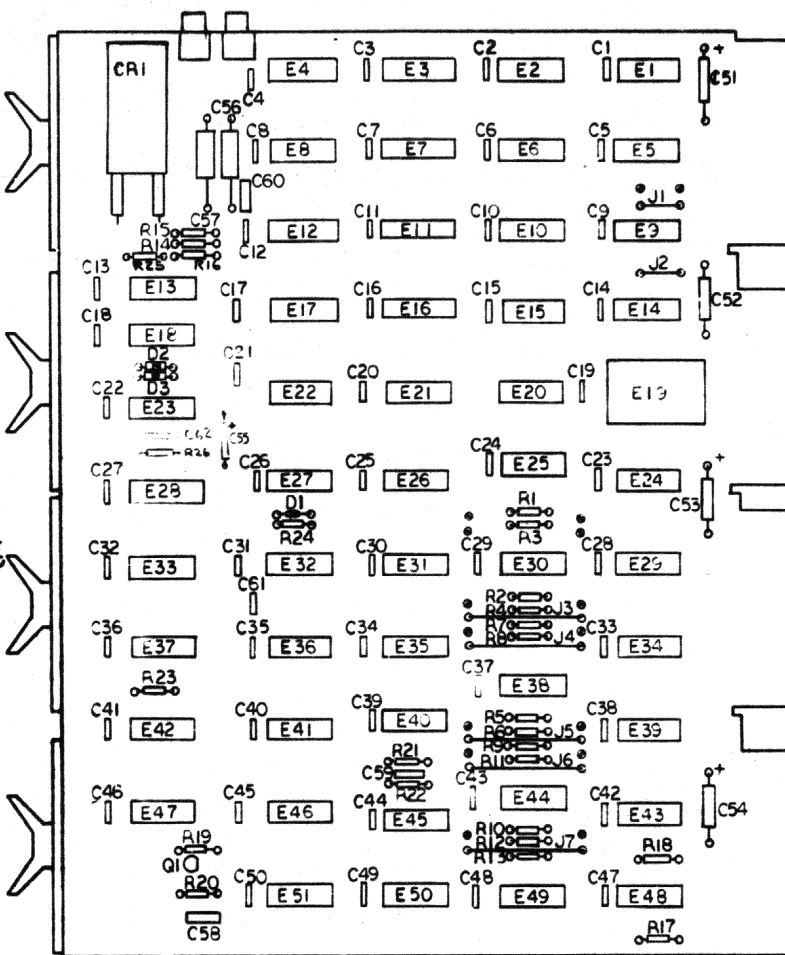
6. UNLESS OTHERWISE SPECIFIED: RESISTANCE IS IN OHMS CAPACITANCE IS IN PICOFARADS. CAPACITORS WITHOUT ANY NOTED VALUES ARE .01 UF

7. INSTALLATION PROCEDURE:

TO PROVIDE SIGNAL LTC L TO LINE FREQUENCY INPUT OF KW11-P, ADD A 30AWG WIRE FROM THE FOLLOWING PINS TO CE1 OF THE SLOT CHOSEN FOR INSTALLATION.
 IN DDII: PIN A Ø 3P2.
 IN K11: PIN A1 3P2.
 IN PDP11/05: PIN COIDI.
 IN PDP11/45: PIN COIRI.

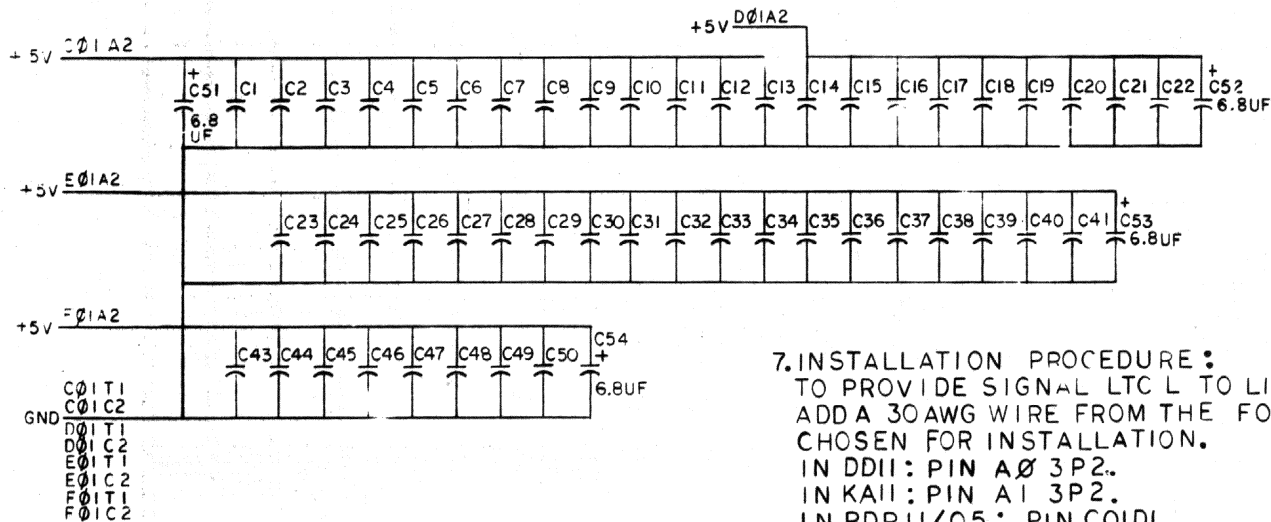
8. ON ITEM NO.25, ALL 9 CHIPS MUST BE EITHER DEC 380'S OR ITS' SUBSTITUTE 11380 IC'S. A DEC 380 AND 11380 MIXTURE OF THESE 9 CHIPS IS NOT ALLOWED. ON ITEM 37, E13 MUST BE A DEC 380.

COMPONENT PLACEMENT



PIN NOMENCLATURE

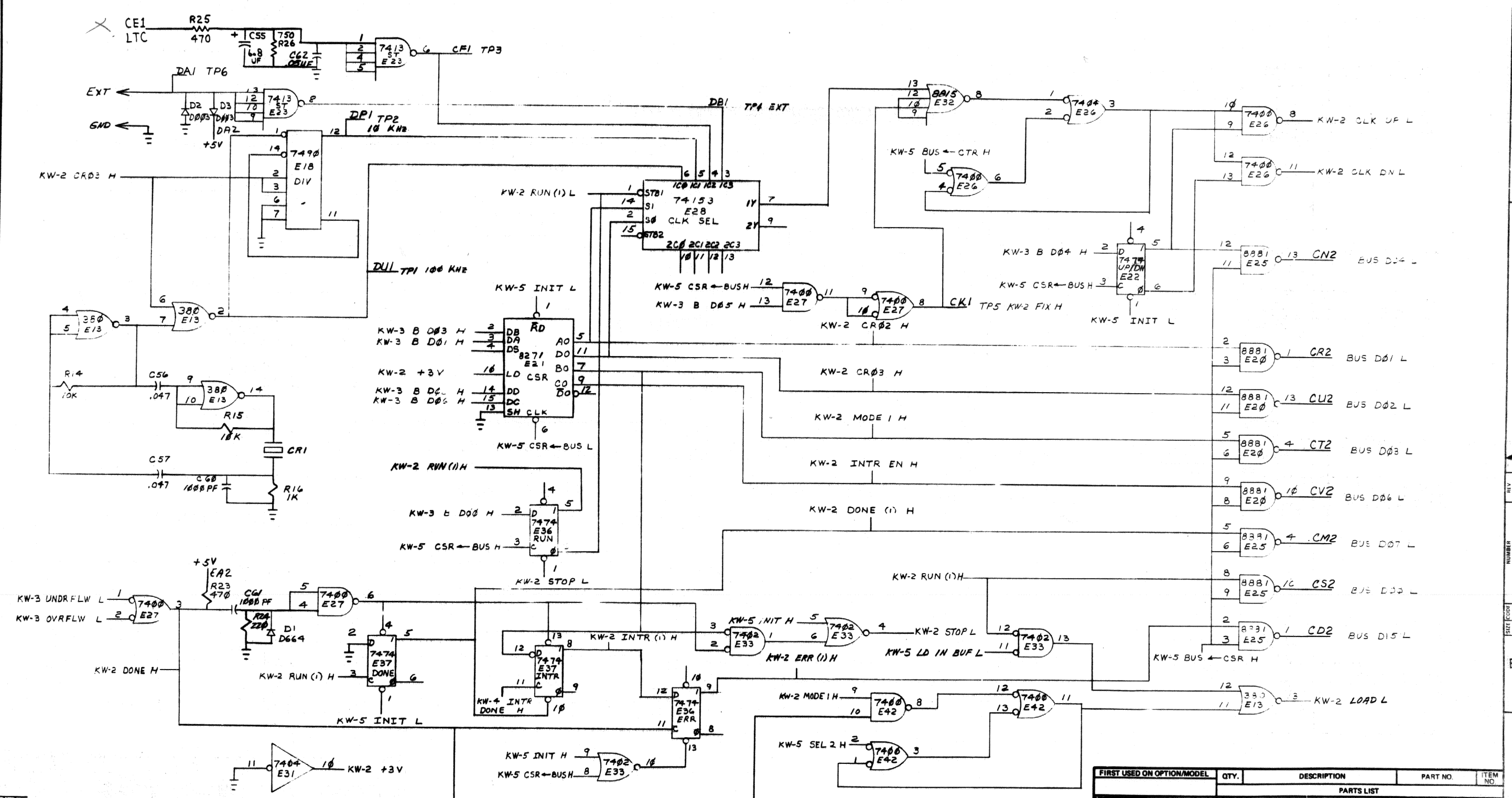
MODULE	PROCESSOR
A	C
B	D
C	E
D	F



REV	CHG	NO	DATE	BY
1				
2				
3				
4				
5				
6				
7				
8				

ETCH REV E		QTY.	DESCRIPTION	PART NO.	ITEM NO.
FIRST USED ON OPT/MOD					
PDP11/20					
UNLESS OTHERWISE SPECIFIED		PARTS LIST			
DIMENSIONS IN INCHES		EQUIPMENT CORPORATION			
TOLERANCES		MAYNARD MASSACHUSETTS			
DECIMALS	FRACTIONS	ANGLES	TITLE		
± .008	± 1/64	± 0°30'	KW11-P		
FINAL SURFACE QUALITY		REMOVE BURRS AND BREAK SHARP CORNERS			
MATERIAL		NEXT HIGHER ASSY			
FINISH		A-ML-KW11-P			
SCALE NONE		REV. E			
SHEET 1 OF 5		DCS M7228-0-1			

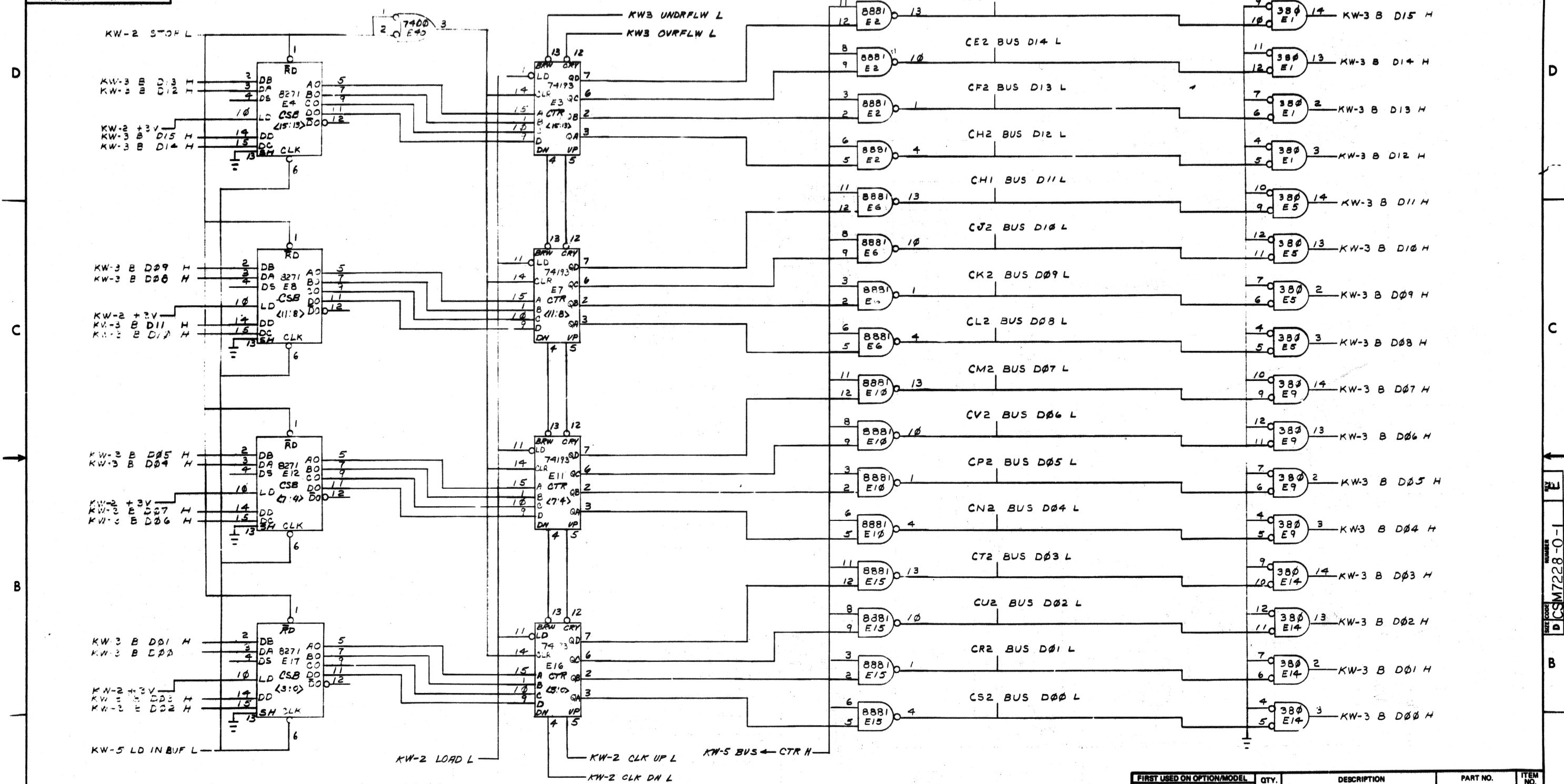
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REV	CHANGE NO.

FIRST USED ON OPTION/MODEL	QTY.	DESCRIPTION	PART NO.	ITEM NO.
PARTS LIST				
UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES TOLERANCES	DBN <i>E. Wilson</i>	DATE 7-26-71	digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS	
DECIMALS .XXX = .005 .XX = .02 .X = .1	CHK'D <i>A. P. ...</i>	DATE 8-27-71		
REMOVE BURRS AND BREAK SHARP CORNERS SURFACE QUALITY	ENG. <i>M. ...</i>	DATE 8-27-71	TITLE KW11-P REAL TIME CLOCK (KW-2)	
MATERIAL	PROD.	DATE		
FINISH	NEXT HIGHER ASSY.	SCALE NONE	SIZE CODE DCS M 7228-0-1	NUMBER 2 OF 5
		SHEET	DIST.	REV E

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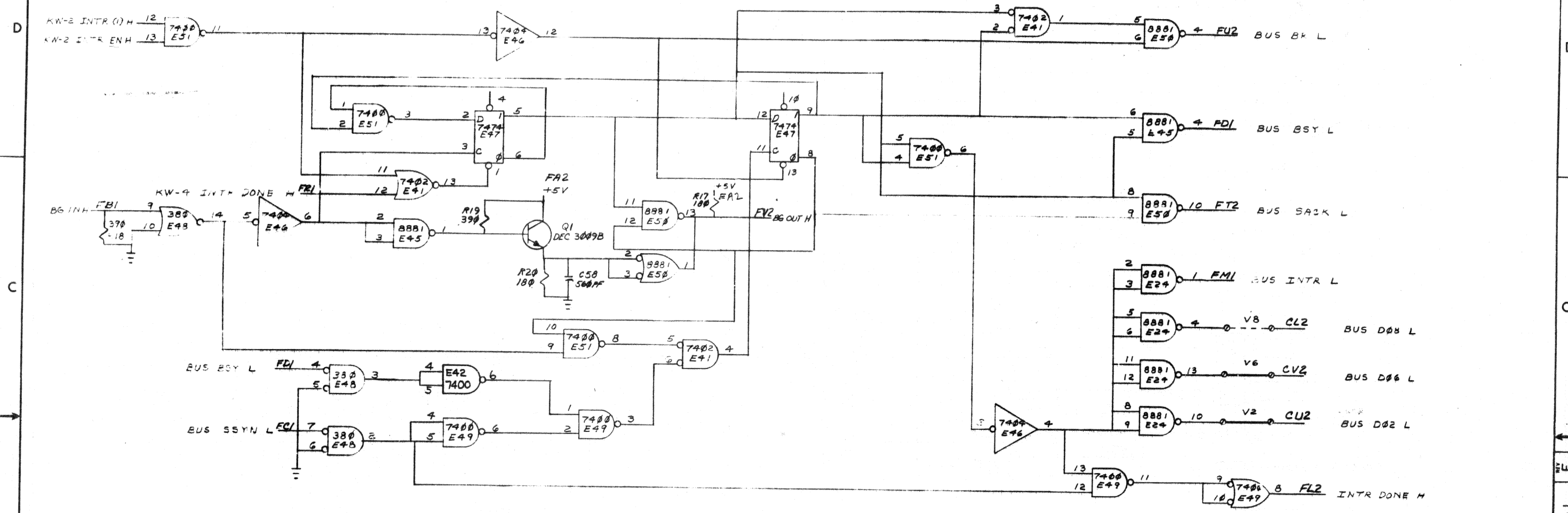


REV.	CHANGE NO.

FIRST USED ON OPTION/MODEL	QTY.	DESCRIPTION	PART NO.	ITEM NO.
PARTS LIST				
UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES. TOLERANCES	DRN <i>Wilson</i>	DATE 7-23-71	 DIGITAL EQUIPMENT CORPORATION <small>MAYNARD, MASSACHUSETTS</small>	
DECIMALS .XXX ± .005 .XX ± .02 .X ± .1	CHK'D <i>Wilson</i>	DATE 7-13-71		
ANGLES 20° 30'	APPROVED <i>Wilson</i>	DATE 7-13-71	TITLE KW11-P REAL TIME CLOCK (KW-3)	
REMOVE BURRS AND BREAK SHARP CORNERS SURFACE QUALITY ✓	PROD.	DATE		
MATERIAL	NEXT HIGHER ASSY.	SIZE CODE	NUMBER	REV.
FINISH	SCALE NONE	DCSM 7228-0-1	E	E
	SHEET 3 OF 5	DIST.		

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3 1-0-8228-0-1 2



DM2	BUS	BG6	INH	9	8	BUS	BG6	OUTH	DN2
DL2	BUS	BG7	OUTH	10	7	BUS	BG5	INH	DP2
DK2	BUS	BG7	INH	11	6	BUS	BG5	OUTH	DR2
DJ2	BUS	REQ	L	12	5	BUS	BG4	INH	DT2
DM2	BUS	BR4	L	13	4	BUS	ES4	OUTH	DU2
DF2	BUS	BR5	L	14	3	BUS	OUTH	DV2	
DE2	BUS	BR6	L	15	2	BUS	INH	DW2	
DL2	BUS	BR7	L	16	1	BUS			

PR 4

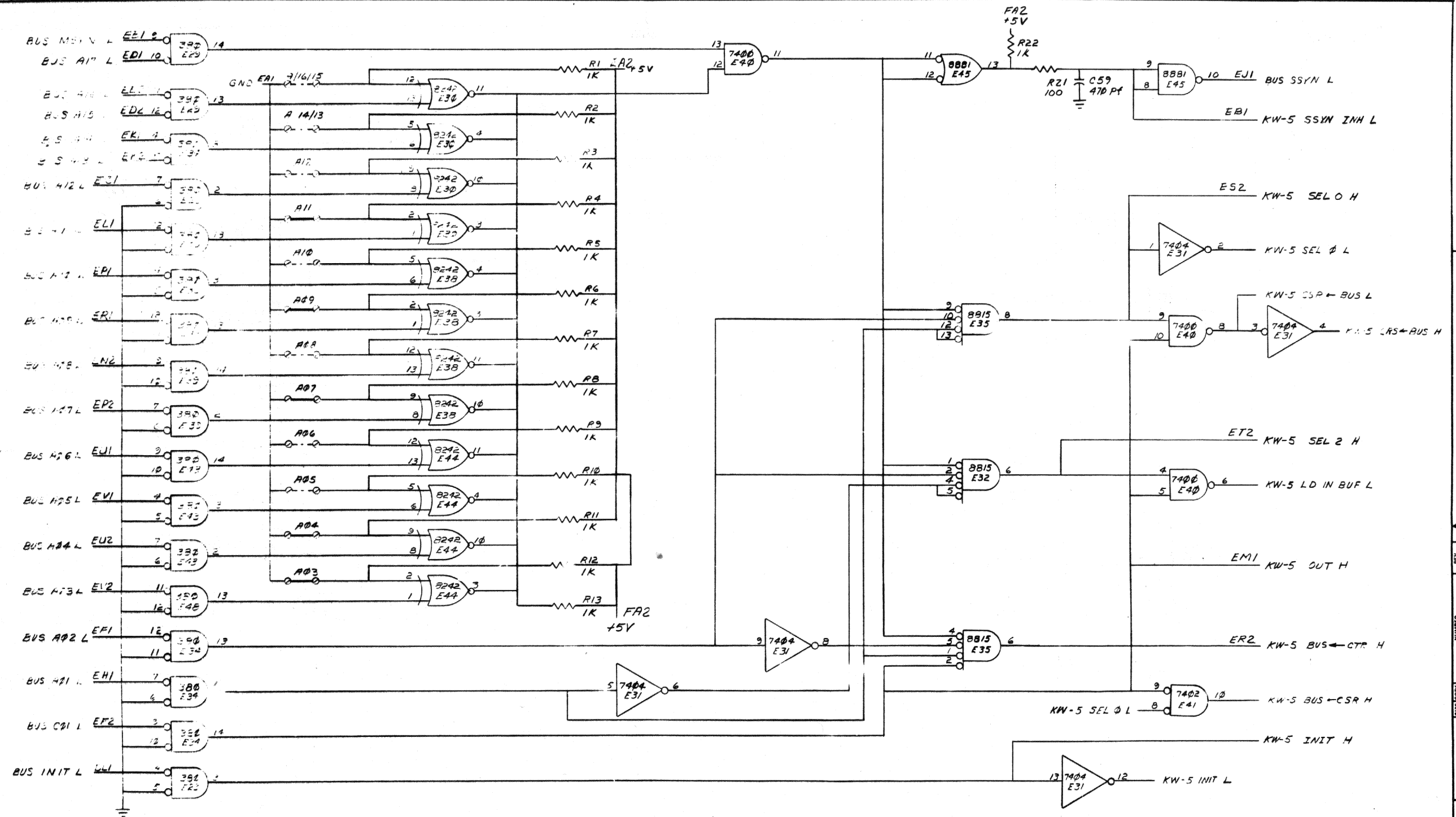
FA1
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REV	
CHANGE NO.	
CHK	

FIRST USED ON OPTION/MODEL	QTY.	DESCRIPTION	PART NO.	ITEM NO.
PARTS LIST				
UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES TOLERANCES	DRN E. Wilson	DATE 7-28-71	digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS TITLE KW11-P REAL TIME CLOCK (KW-4)	
DECIMALS	CHK'D B. H. White	DATE 8-17-71		
ANGLES	ENG. B. H. White	DATE 8-21-71		
.XXX = .005 .XX = .02 .X = .1	PROL ENG. R. Stronger	DATE 8-21-71		
REMOVE BURRS AND BREAK SHARP CORNERS SURFACE QUALITY	PROD.	DATE	NEXT HIGHER ASSY. SCALE NONE SHEET 4 OF 5	
MATERIAL			SIZE CODE	NUMBER
FINISH			DCSM7228-0-1	REV. E

DCSM7228-0-1

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REV	
CHANGE NO	
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FIRST USED ON OPTION/MODEL	QTY.	DESCRIPTION	PART NO.	ITEM NO.
PARTS LIST				
UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES TOLERANCES	DRN. <i>L. Towne</i>	DATE 7-23-71	digital EQUIPMENT CORPORATION <small>MAYNARD MASSACHUSETTS</small> TITLE KW11-P REAL TIME CLOCK (KW-5)	
DECIMALS	CHK'D. <i>A. Rubin</i>	DATE 8-13-71		
ANGLES	ENG. <i>A. Rubin</i>	DATE 8-31-71		
.XXX - .006 .XX - .02 .X - .1	PROF. ENG. <i>H. Starnes</i>	DATE 12-31-71		
REMOVE BURRS AND BREAK SHARP CORNERS SURFACE QUALITY	PROD.	DATE		
MATERIAL	NEXT HIGHER ASSY.			
FINISH	A-M-L	SCALE NONE	SIZE CODE	NUMBER
		SHEET 5 OF 5	DCS	M7228-0-1
			DIST.	REV. E

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