Digital Equipment Corporation
Maynard, Massachusetts

digital

PDP-12
Maintenance Manual

Volume III

SYSTEM DRAWINGS

Foreword

The *PDP-12 Maintenance Manual* published in four separate volumes, is a guide for Field Service Engineers or other personnel involved with the care and maintenance of the PDP-12 Computer. The Maintenance Manual is organized as follows:

VOLUME I PRINCIPLES OF OPERATION

This volume contains a description of PDP-12 logic. An overall view of the system is presented in seven chapters entitled Central Processor, Memory, Input/Output, Teletype, LINC Devices, Tape Processor, and Prewired I/O Bus Options. The text describes logical relationships among the various elements of the PDP-12.

VOLUME II INSTALLATION AND MAINTENANCE

The first chapters of this volume describe the unpacking, installation, and preliminary check-out procedures for the PDP-12. The remainder of the book comprises procedures used in the day-to-day maintenance, adjustment, and repair of the computer.

VOLUME III LOGIC SCHEMATICS

Volume III consists primarily of flow charts and block schematics that describe the PDP-12. The block schematics, lists, and flow charts in Volume III are reduced (11 in. x 17 in.) versions of the engineering drawings.

VOLUME IV MODULE SCHEMATICS

The circuit schematics in Volume IV describe all the module types used in the PDP-12, including both the regular production DEC modules and those designed especially for the PDP-12.

CONTENTS

ILLUSTRATIONS

ENGINEERING DRAWINGS

PDP-12 System Drawings

INTRODUCTION

This volume contains all block schematics and flow diagrams for the PDP-12A. The PDP-12A system configuration is the largest of three standard PDP-12 system configurations: PDP-12A, PDP-12B, and PDP-12C. Engineering Drawing D DI PDP-12-0-1 indicates the block schematics and flow diagrams that apply to each particular system configuration. Module circuit diagrams for the PDP-12 are located in Volume 4 of the PDP-12 Maintenance Manual (DEC-12-HR4A-D).

All drawings that appear in this volume are included in the set previously supplied with the equipment. Individual drawings in the original equipment set may differ from those printed in this manual because of changes and updating. In such cases, the original equipment drawings are to be used.

DRAWING NOMENCLATURE

Each DEC drawing is identified by a short descriptive title and a five-part alphanumeric code. An example of the code is given in Figure 1.

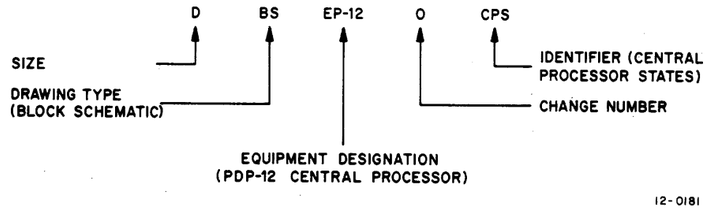


Figure 1 Drawing Identification Code

Size

The first letter indicates the size of the drawing: A, B, C, or D. Size A is the smallest.

Type

The next two letters identify the type of drawing, using the following code:

AD	Assembly Drawing
AR	Arrangement Drawing
BS	Block Schematic (logic and circuitry)
CD	Cable Diagram
CL	Cable List
CS	Circuit Schematic (electrical components)
DI	Drawing Index
FD	Flow Diagram
KS	Key Slot
ML	Master Drawing List
MU	Module Utilization (rack locations)
PL	Parts List
PW	Power Wiring
RS	Replacement Schematic
TD	Timing Diagram
UA	Unit Assembly
WD	Wiring Diagram
WL	Wiring List

Equipment

The third part of the drawing code specifies the device, component, or other discrete part of the PDP-12A to which the information on that drawing applies.

Examples:	VC12	CRT Display Control
	TU55	LINCtape Transport
	7005983	Fan Housing Assembly
	H951	Cabinet Assembly

Change Number

The next digit reflects major design changes in the equipment described on the drawing.

Drawing Identifier

The final portion of the alphanumeric code identifies the drawing itself, either by a three-letter abbreviation or a series number. The abbreviation usually suggests the full title of the drawing.

Examples:	MPG	MEM Page Extn Control
	IPC	Interprocessor Cables

SIGNAL NAMES

Every signal on a block schematic is given a name that identifies the origin, nature, and assertion level of the signal. When the signal originates from a flip-flop, the output side (1 or 0) is given in parentheses.

Examples: CYI ADD NDX H
The origin of the signal ADD NDX is found on drawing D-BS-EP12-0-CYI. The signal level is HIGH (H) for assertion. If the signal is a pulse, H would indicate that the signal is positive-going.

CPS EXECUTE (1) H
The signal originates from the EXECUTE flip-flop on drawing D-BS-EP12-0-CPS. It is taken from the 1 output and is asserted when that output is HIGH.

MODULE IDENTIFICATION

Inside each logic symbol on a block schematic is a name code. The name code identifies the type of module on which the element is found and the location of that module in the logic rack. The modules are arranged on the rack in two groups in vertical rows, upper (memory) and lower (processor). The rows are identified by capital letters from right to left on the wiring side of the logic rack. The upper rows are labeled, A, B, C, D, E, F; the lower rows are labeled H, J, K, L, M, N.

Each row contains 40 module slots, numbered 1 through 40 from top to bottom.

Example: M119 H26
This gate is on an M119 DEC module located in row H, slot 26.

Many flip-flops have a descriptive name in addition to a location code.

Example: CPS FETCH M216 K06; FLK LINK M216 J12.
The first part of a descriptive name identifies the drawing.

All DEC module connector blocks have 18 pin positions. The pin positions are identified by capital letters A through V (G, I, O, and Q are omitted), reading from right to left on the wiring side of the logic rack. All modules used in the PDP-12 are double-sided; thus, each pin position provides two pin terminals. There are a total of 36 connections to each module. On the block schematics, each pin is identified by a letter-number code outside the logic symbol, adjacent to its associated signal. The letter specifies the pin position. The number indicates which side of the module is used (side 1 is the component side).

Examples:	M2	Pin position M, side 2
	H1	Pin position H, side 1

Some of the modules used in the PDP-12 are double-width and occupy two slots in adjacent rows of the rack. An individual element on such a module is coded in a normal manner; the location number specifies only the row and slot to which the element is connected. On some drawings (such as those for the memory axis selectors), an entire circuit is identified collectively; in this case, both slot locations are identified.

Examples: G611 C06 D06
This double-width module is found at slot 06 in rows C and D.

LOGIC SYMBOLOGY

The logic symbols used in these drawings conform basically to MIL-STD-806B.

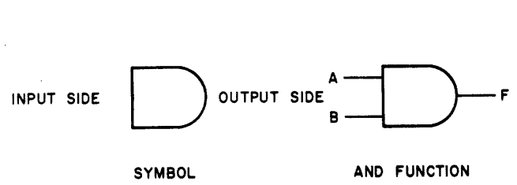
Assertion Levels

In the truth tables, H represents a HIGH (+3V) assertion level or a positive-going pulse, and L represents a LOW (0V) level or a negative-going pulse.

On the drawings, a small circle at the input to a function indicates that the signal must be LOW for assertion. If there is no circle, the assertion level is HIGH. Similarly, a small circle at the output of a function indicates that the output level is LOW when the function is TRUE. If there is no circle, the TRUE output is HIGH.

AND, NAND

Figure 2 shows the symbol for an AND gate and the general form of a pure AND function. The output of an AND function is HIGH only if all the inputs are HIGH.

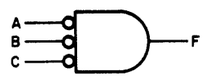


A	B	F
L	L	L
L	H	L
H	L	L
H	H	H

12-0182

Figure 2 AND Gate Symbol, AND Function, and Truth Table

Figure 3 shows a 3-input version of a NAND (Negated AND) function. The output is LOW only if all inputs are HIGH.



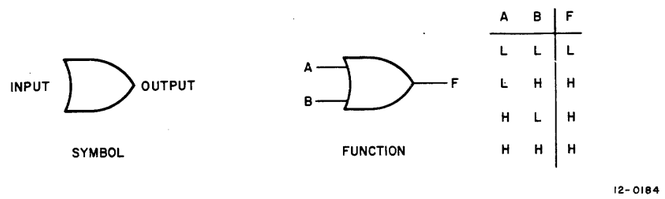
INPUT			OUTPUT
A	B	C	F
L	L	L	H
L	L	H	L
L	H	L	L
L	H	H	L
H	L	L	L
H	L	H	L
H	H	L	L
H	H	H	L

12-0183

Figure 3 NAND Gate

OR, NOR

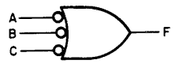
Figure 4 shows the symbol for an OR gate and the general form of a pure OR function. The output of an OR function is HIGH if any or all inputs are HIGH.



A	B	F
L	L	L
L	H	H
H	L	H
H	H	H

Figure 4 OR Gate Symbol, OR Function, and Truth Table

Figure 5 shows a 3-input version of the NOR (Negated OR) function. The output is HIGH when any or all inputs are LOW.



INPUT			OUTPUT
A	B	C	F
L	L	L	H
L	L	H	H
L	H	L	H
L	H	H	H
H	L	L	H
H	L	H	H
H	H	L	H
H	H	H	L

12-0185

Figure 5 NOR Gate

Note that the NOR truth tables are the same as those for NAND; however, the signal levels are reversed. Different gates are used for design convenience and circuit function simplification. A NOR gate is used to emphasize that any input or combination of inputs will activate the function (make it TRUE). A NAND gate is used to emphasize that all inputs must be asserted to activate the function. The NOR and NAND gates are schematic representations of DeMorgan's Law.

Flip-Flops

Figure 6 illustrates a flip-flop. A flip-flop has four inputs: SET (S), RESET (R), DATA (D), and CLOCK (C). Each flip-flop has two outputs, 1 and 0. The flip-flop is bistable; it remains in one of its two logic states (1 or 0) until an input condition causes it to change.

A flip-flop is set to the 1 state if either of the following conditions occurs:

a. A negative-going pulse appears at the SET input.
b. The DATA input is HIGH, and a positive-going pulse appears at the CLOCK input.

A flip-flop is set to the 0 state if either of the following conditions occurs:

a. A negative-going pulse appears at the RESET input.
b. The DATA input is LOW, and a positive-going pulse appears at the CLOCK input.

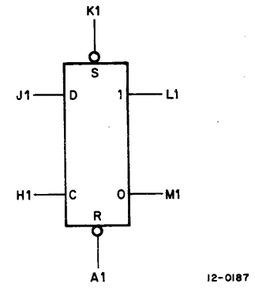


Figure 6 Flip-Flop

When a flip-flop is in the 1 state, the 1 output is HIGH and the 0 output is LOW. When a flip-flop is in the 0 state, the 0 output is HIGH and the 1 output is LOW.

Redefined Flip-Flops

Figure 7 illustrates a "redefined" flip-flop. The redefined flip-flop is physically identical to the flip-flopshown in Figure 6. The difference, however, is the manner in which the inputs: S (SET), R (RESET), and D (DATA) and the outputs: 1 and 0 are logically defined. In Figure 7, note that the pin numbering of the S and R inputs and the 1 and 0 outputs are opposite those shown in Figure 6; in addition, the D input is shown with a small circle to indicate that a low signal enables the change of state, thereby identifying the flip-flop as redefined.

Normally, the S and R inputs of a redefined flip-flop are high; a change from a high state to a low state at either of these inputs causes the flip-flop to SET or RESET respectively. If the D input is LOW and a pulse is applied to the C input, the redefined flip-flop goes to its logical 1 (SET) state and, conversely, to 0 (RESET) in the opposite case.

One-Shot Delay

The symbol for a one-shot delay function is shown in Figure 8. When the delay is not activated, it remains in the 0 state, and the output is LOW.

When any of the inputs goes from HIGH to LOW (level change or pulse), the output goes HIGH and remains HIGH until the specified delay time has elapsed. The delay-time range can be determined from the pin connections and the proper table in the DEC Logic Handbook (M302 module).

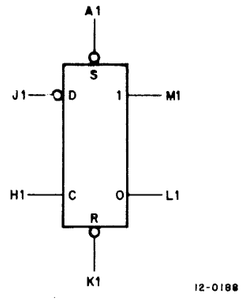


Figure 7 "Redefined" Flip-Flop

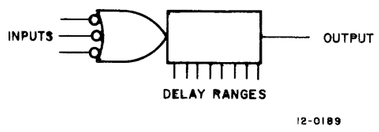


Figure 8 One-Shot Delay

Delay Lines

The symbol in Figure 9 represents a tapped delay line.

The outputs are arranged in two rows, from left to right: J2 to N2 on the top, and P2 to U2 on the bottom. The taps provide delays from 50 ns (J2) to 500 ns (U2) in 50 ns steps.

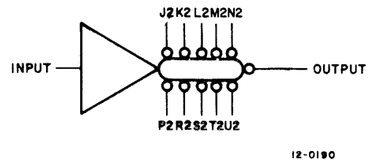


Figure 9 Delay Line

Schmitt Trigger

The symbol for a Schmitt Trigger function is shown in Figure 10.

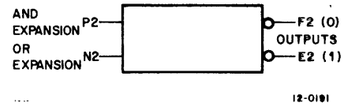


Figure 10 Schmitt Trigger

When the function is inactive, the 0 output is HIGH, and the 1 output is LOW. When the input level rises from below the lower voltage threshold to above the upper voltage threshold, the outputs reverse state. The outputs remain in this state until the input voltage falls below the lower voltage threshold again.

Amplifiers

The symbol in Figure 11 represents a current or voltage amplifier.

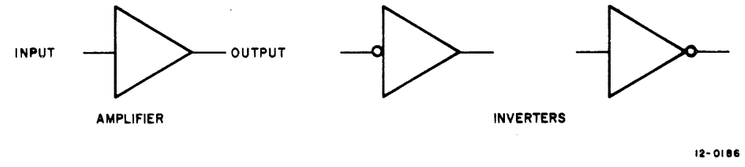


Figure 11 Amplifier and Inverters

If a small circle appears at either the input or output (but not both), the gate functions as a signal inverter.

Other Functions

A rectangle is used to represent many circuit functions (such as pulse amplifiers, inhibit drivers, clocks, etc.). Normally the circuit context or the element name clarifies the function intended. For specific uses, refer to the particular module schematic in Volume 4 of this manual, or to the DEC Logic Handbook.

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MASTER DRAWING LIST

DWG. NO.	REV. LET.	NO. OF SHEETS	TITLE
D-UA-PDP 12-0-0	J		PDP 12 SYSTEM
A-PL-PDP 12-0-0	J		PDP 12 SYSTEM (PARTS LIST)
D-DI-PDP 12-0-1	T	4	DRAWING INDEX
D-AR-PDP 12-0-2	D	5	PDP 12 CONFIGURATION
D-IC-PDP 12-0-3			POWER WIRING & SIGNAL CABLES
A-SP-PDP 12-0-4	////		SHIPPING & INSTALLATION SPEC
A-SP-PDP 12-0-5	////		ACCEPTANCE SPEC.
A-SP-PDP 12-0-6	///		SYSTEM SPECIFICATIONS
A-AL-PDP 12-0-7	///		HARDWARE KIT
A-SP-PDP 12-0-8	///		SPARE PARTS
A-SL-PDP 12-0-9	///		SOFTWARE KIT
D-FD-PDP 12-0-10	E	1	MANUAL TIMING FUNCTION PART 1
D-FD-PDP 12-0-11	B	1	MANUAL TIMING FUNCTION PART 2
D-FD-PDP 12-0-12	D	1	LINC FETCH 1A
D-FD-PDP 12-0-13	E	1	LINC FETCH 1B
D-FD-PDP 12-0-14	C	1	LINC FETCH 2
D-FD-PDP 12-0-15		1	LINC DEFER
D-FD-PDP 12-0-16	B	1	LINC EXECUTE
D-FD-PDP 12-0-17	B	1	LINC EXECUTE
D-FD-PDP 12-0-18	C	1	LINC EXECUTE
D-FD-PDP 12-0-19	A	1	LINC EXECUTE
D-FD-PDP 12-0-20	B	1	EXECUTE 2 & INTERRUPT
D-FD-PDP 12-0-21	B	1	PDP-8 MODE FETCH
D-FD-PDP 12-0-22	B	1	PDP-8 MODE DEFER & EXECUTE
D-FD-PDP 12-0-23	C	1	BREAK
A-ML-EP12-0		2	PDP 12 PROCESSOR
A-ML-EM12-0		1	BASIC 4K MEMORY
A-ML-MC12-0		1	MEMORY EXTENSION CONTROL
A-ML-TC12-0		2	LINC TAPE CONTROL
A-ML-VC12-0		1	LINC SCOPE CONTROL
A-ML-KE12-0		1	ARITHEMATIC OPERATION
A-ML-XY12-0		1	PLOTTER CONTROL
A-ML-KT12-0		1	PDP 12 TIME SHARING OPTION

REVISIONS			
REV.	DATE	CHG. NO.	APP'D.
U	1/70	12-50	L.G.
V	1/70	12-51	L.G.
W	2/70	EP12-20	L.G.
Y	2/70	12-57	L.G.
Z	2/70	12-60	L.G.
AA	2/70	EM12-30	L.G.
AB	2/70	12-64	R.B.
AC	3/70	EM12-35	L.G.
AD	4/70	H950-72	G.G.
AE	4/70	VR12-24	R.B.
AF	6/70	12-73	R.B.
AH	6/70	EP12-23	L.G.
AJ	6/70	12-76	L.G.
AK	8/70	12-79	L.G.
AL	8/70	12-83	G.B.
AM	9/70	12-85	L.G.

DRN. J.Aprea	3/10/69	
CHK'D. R.Hutnack	3/69	
ENG. L. Gale	3/10/69	
PROJ. ENG. L. Gale	3/10/69	
PROD. L. Gale	3/10/69	
FIRST USED ON: PDP-12		
SCALE		
SHEET 1 OF 2		

digital EQUIPMENT CORPORATION
MAYNARD, MASSACHUSETTS

TITLE: PDP-12 SYSTEM

SIZE	CODE	NUMBER	REV.
A	ML	PDP 12-0	AN

DIST.

DEC FORM NO. DRA 103

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MASTER DRAWING LIST

DWG. NO.	REV. LET.	NO. OF SHEETS	TITLE
A-ML-DP12-A			TTY DATA PHONE
A-ML-DP12-B	A		TTY DATA PHONE EIA LEVELS
A-ML-KP12-0		1	POWER FAIL/RESTART
A-ML-KW12-A		1	REAL TIME CLOCK
A-ML-KW12-B		1	SIMPLE CLOCK
A-ML-KW12-C		1	SIMPLE CLOCK
A-ML-TC12-F		1	8 TAPE CONTROL
A-ML-AD12-0		1	ANALOG TO DIGITAL CONVERTER
A-ML-AG12-0		1	ADDITIONAL PRE-AMPS
A-ML-AM12-0		1	MULTIPLEXER EXPANDER
D-CS-724-0-1	B	1	724 P/S SCHEMATIC
D-AD-7005983-0-0	C	2	FAN HSG ASS'Y
D-CS-5408112-0-1			SWITCH BD. CIRCUIT SCHEMATIC
D-CS-5408114-0-1			LIGHT BD. CIRCUIT SCHEMATIC
D-CS-5408124-0-1			RELAY BD. CIRCUIT SCHEMATIC
D-CS-7005963-0-1			RELAY PANEL CIRCUIT SCHEMATIC
C-CS-7005964-0-1	C		ANALOG PANEL CIRCUIT SCHEMATIC
D-CS-7006046-0-1			ANALOG EXT. PANEL CKT SCHEMATIC
A-TU55-0			TU55-0 60 HZ
A-TU55-A	///		TU55-0 50 HZ
A-ML-VR12-0			VR12 117 VAC 50/60 HZ
A-ML-VR12-A	///		VR12 220 VAC 50/60 HZ
A-ML-ASR-33-0	///		ASR-33 TTY
A-ML-AG12-A	REF		KNOB/PREAMPS
D-BS-AG12-A-03	REF		PREAMP/KNOB FOR A-D CHAN Ø-7
A-SP-724-0-4		3	SPECIFICATIONS-724 POWER SUPPLY

REVISIONS			
REV.	DATE	CHG. NO.	APP'D.
AN	11/70	12-00088	D.M.

DRN. J.Aprea	3/10/69	
CHK'D. R.Hutnick	3/69	
ENG. L.Gale	3/10/69	
PROJ. ENG. L.Gale	3/10/69	
PROD. L.Gale	3/10/69	
FIRST USED ON: PDP-12		
SCALE		
SHEET 2 OF 2		

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TITLE: PDP-12 SYSTEM

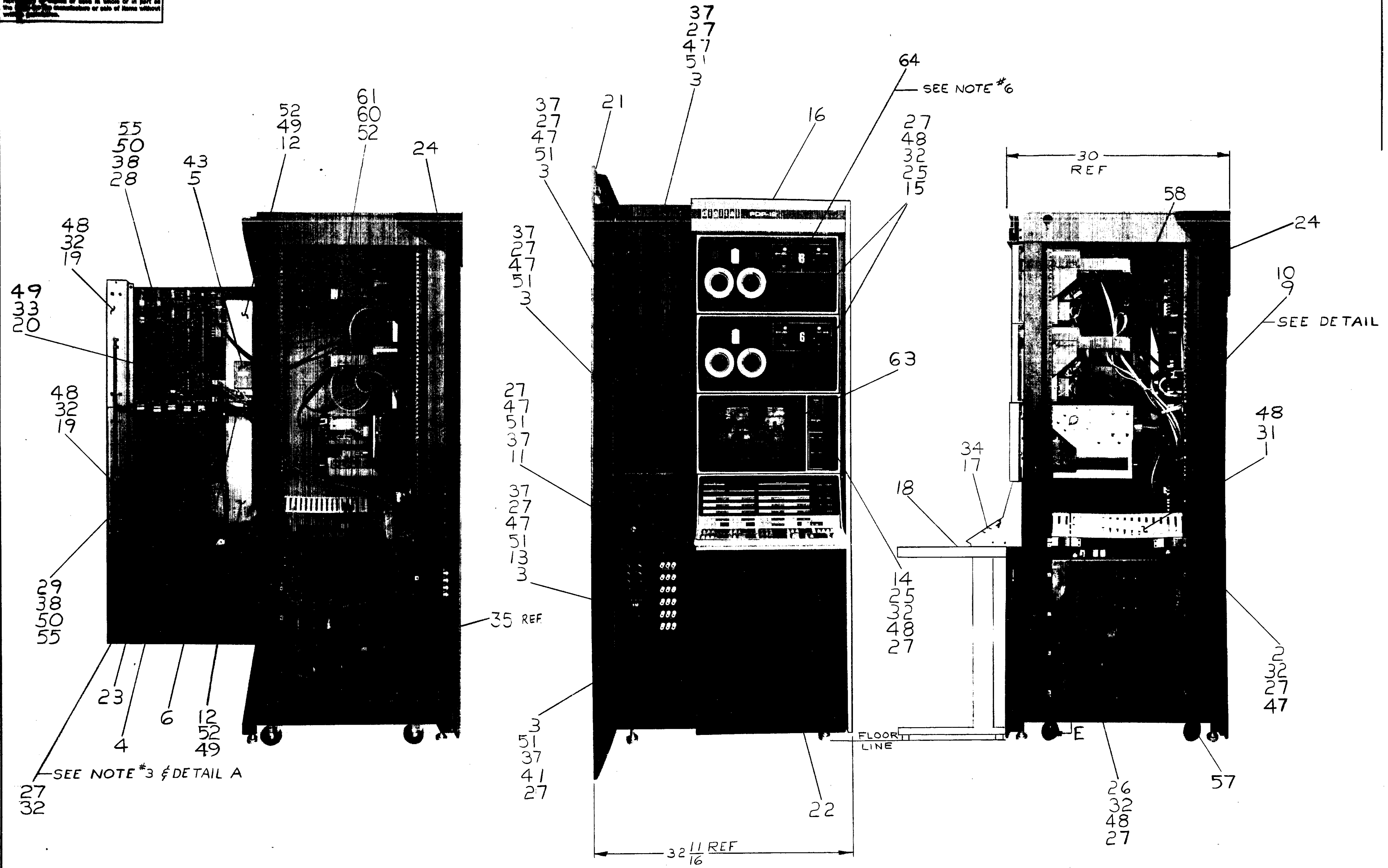
SIZE	CODE	NUMBER	REV.
A	ML	PDP-12-0	AN

DIST.

DEC FORM NO. DRA 103

NOTES:

1. FOR DRAWING INDEX LIS[T] DWG. NO. D-DI-PDP12-Ø-...
2. FOR OPTIONAL EQUIPMENT ... SEE DWG. NO. D-AR-...
3. ITEM #27 & #32 USED 3 PLACES ... PLENUM DOOR ARE FOR SHIPPING PU[RPOSES] ONLY.
4. FOR POWER WIRING & SIGNAL CABLE LOCATIONS SEE DWG. D-IC-PDP12-Ø-3
5. ITEM #35 TO BE USED FOR 240 V SYSTEM ONLY.
6. PLACE ITEM #64 (Ø LABEL) OVER NUMERAL "8" ON DEVICE SELECTOR ...



REV.	CHANGE NO.		
A	12-00030	L. GALE	10-2-69
B	12-00040	T. Quill	11-21-69
C	12-00043	NEVALA / T. Quill	12-2-69
D	12-00044	NEVALA / T. Quill	12-30-69
E	12-00047	L. GALE	1/13/70
F	12-00057	GALE	2-26-70
H	12-00073	R. BERNIER	6-15-70
J	12-00076	L. GALE	6-29-70

FIRST USED ON OPTION/MODEL	QTY.	DESCRIPTION	PART NO.	ITEM NO.
PDP12		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. J. F. [signature] DATE 5-22-69
CHK'D [signature] DATE
ENG. L. Gale DATE 8/11/69
PROJ. ENG. L. Gale DATE 8/11/69
PROD. [signature] DATE

NEXT HIGHER ASSY
SCALE NONE
SHEET 1 OF 2

digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS

TITLE PDP12 ASSEMBLY

SIZE D CODE UA NUMBER PDP12 - Ø - Ø REV. J

DIST. G

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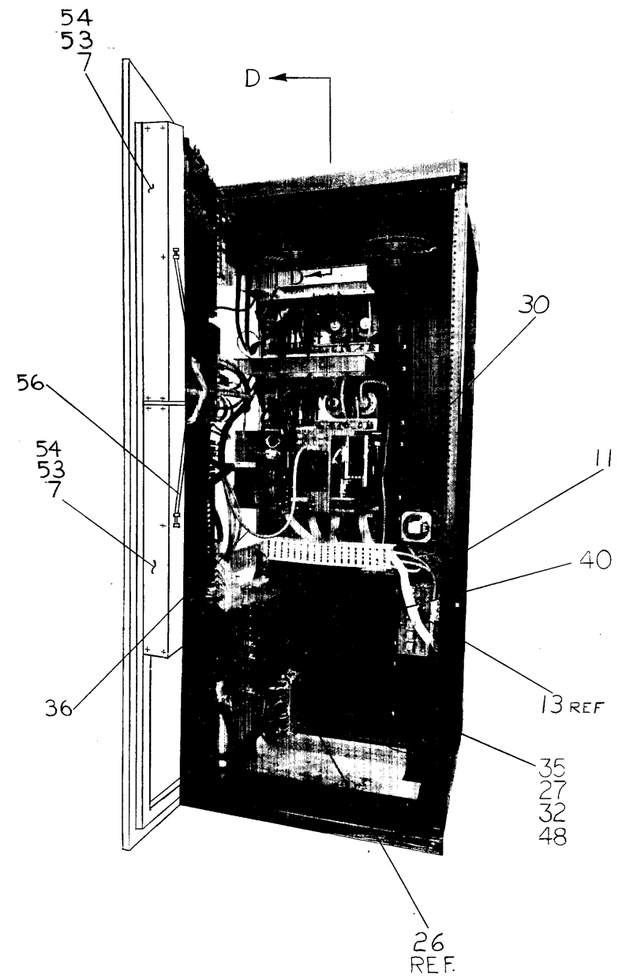
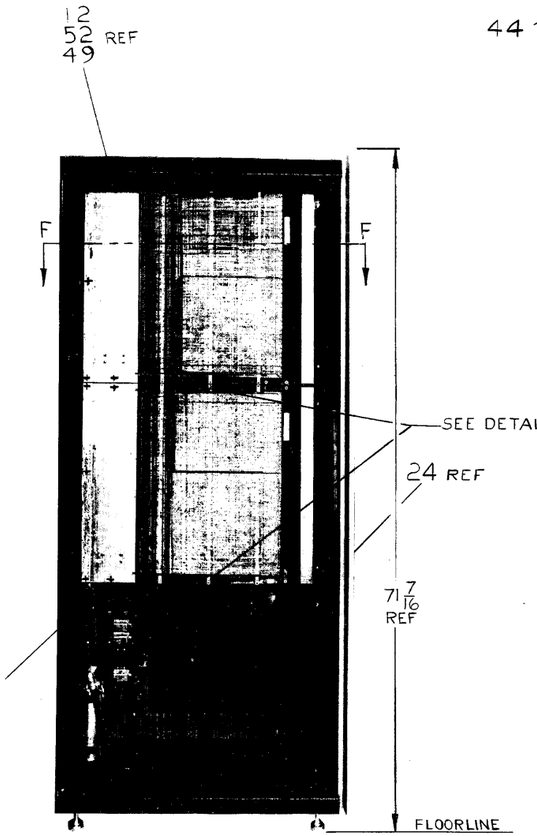
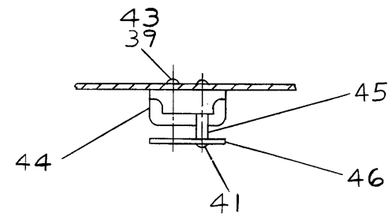


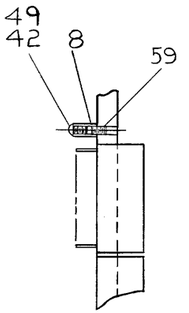
REAR VIEW - DOOR & PLENUM OPEN



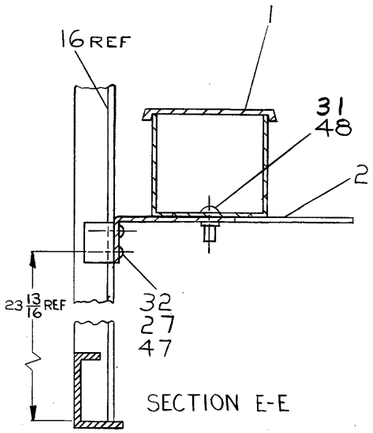
REAR VIEW - DOOR REMOVED



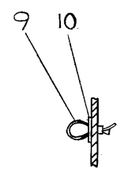
SECTION D-D



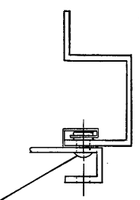
DETAIL C



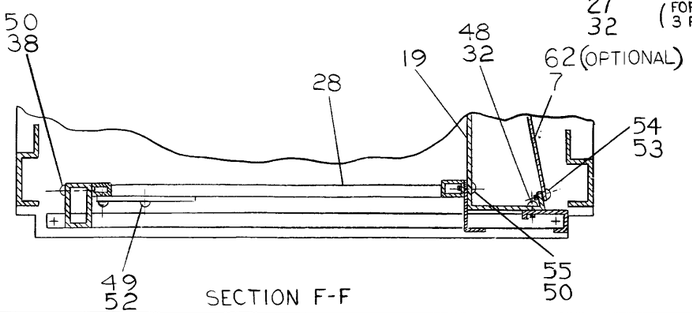
SECTION E-E



DETAIL B



DETAIL A
(FOR SHIPPING ONLY
(3 PLACES ON DOOR)



SECTION F-F

REVISIONS	
CHANGE NO.	REV.

FIRST USED ON OPTION/MODEL	QTY.	DESCRIPTION	PART NO.	ITEM NO.
PDP-12		PARTS LIST		

UNLESS OTHERWISE SPECIFIED

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.	J. Fleming	DATE 5-22-69
CHKD.	R. Russ	DATE 8/5/69
ENG.	Gale	DATE 8/6/69
PROJ. ENG.	Gale	DATE 8/6/69
PROD.	W Cook	DATE 9/10/69

FIRST USED ON

SCALE NONE

SHEET 2 OF 2

digital EQUIPMENT CORPORATION
MAYNARD, MASSACHUSETTS

TITLE
PDP12
ASSEMBLY

SIZE	CODE	NUMBER	REV.
D	UA	PDP12-Ø-Ø	J

DIST. G

DIGITAL EQUIPMENT CORPORATION
MAYNARD, MASSACHUSETTS

PARTS LIST

MADE BY J. FLEMING	CHECKED K. RUSS	SECTION
DATE 5/15/69	DATE 8/1/69	1
ENG L. Gale	PROD W Call	ISSUED SECT.
DATE 8/11/69	DATE 8/14/69	1

ITEM NO.	DWG NO./PART NO.	DESCRIPTION	QUANTITY/VARIATION PDP12-A	PDP12-B	PDP12-C
1	C-MD-7406898-0-0	DUCT CABLE	2	2	2
2	C-IA-7406900-0-0	BRACKET, DUCT	3	3	3
3	C-MD-7406844-0-0	PANEL BLANK (NARROW)	4	5	5
4	C-IA-7006111-0-0	PDP 12 LOGIC CABLES	1	1	1
5	1203185-2	PRECISION POWER SUPPLY ±15V	1	1	
6	D-IA-7006186-0-0	CABLE LOGIC POWER	2	2	2
7	D-IA-7407277-0-0	SCREEN, FAN	2	2	2
8	9008258	SPACER 1/4 AF X 1-3/8 LG #8-32	2	2	2
9	9007032	TIE WRAP SST-2-B (PANDUIT)	A/R	A/R	A/R
10	9006714	WASHER .250 X .500 X .062 THK	A/R	A/R	A/R
11	D-AD-7005964-0-0	ANALOG PANEL ASSY	1	1	1
12	C-IA-7406947-0-0	PANEL, CONN	2	2	2
13	D-AD-7005963-0-0	RELAY PANEL ASSY	1		
14	D-UA-VR12-Ø-Ø	VR12 DISPLAY	1	1	
15	D-UA-TU55-Ø-Ø	TAPE UNIT TU55 (60 HZ)	2	2	
15	D-UA-TU55-A-Ø	TAPE UNIT TU55 (50 HZ)	2	2	
16	E-AD-7005950-0-0	CAB FRAME ASSY	1	1	1
17	E-AD-7005955-0-0	CONSOLE ASSY	1	1	1
18	E-AD-7005958-0-0	TABLE ASSY	1	1	1
19	D-AD-7005983-0-0	FAN HOUSING ASSY	2	2	2
20	C-AD-7006045-0-0	POWER SUPPLY BRKT ASSY	1	1	
21	D-UA-H951-TB-Ø	NARROW DOOR	1	1	1

TITLE	ASSY NO.	SIZE	CODE	NUMBER	REV.	SEQ NO.
PDP 12 ASSEMBLY	D-UA-PDP12-Ø-Ø	A	PL	PDP12-Ø-Ø	J	12 00076
	SHEET 1 OF 3	DIST.				

DEC FORM NO.
DRA 110

DIGITAL EQUIPMENT CORPORATION
MAYNARD, MASSACHUSETTS

PARTS LIST

MADE BY J. FLEMING	CHECKED K. RUSS	SECTION
DATE 5/15/69	DATE 8/1/69	1
ENG L. Gale	PROD A D Call	ISSUED SECT.
DATE 8/11/69	DATE 8/18/69	1

ITEM NO.	DWG NO./PART NO.	DESCRIPTION	QUANTITY/VARIATION PDP12-A	PDP12-B	PDP12-C
22	D-UA-H95Ø-HB-Ø	SHORT DOOR ASSY	1	1	1
23	D-UA-H951-BA-Ø	30" FULL DOOR ASSY	1	1	1
24	D-UA-H952-A-Ø	END PANEL	2	2	2
25	D-UA-H952-Q-Ø	COVER PANEL 10 1/2"			3
26	D-UA-724-Ø-Ø	POWER SUPPLY 724	1	1	1
27	9007786	SPEED NUT #10-32 TINNERMANN	69	69	69
28	D-AD-7005979-0-0	MEMORY ASSY EM12	1	1	1
29	D-AD-7005976-0-0	PROCESSOR ASSY EP12	1	1	1
30	D-IA-7006231-0-0	LINC TAPE D.C PWR HARNESS	1	1	1
31	9006071-3	SCR PHL HD TRUSS #10-32 X 3/8 LG	4	4	4
32	9006074-3	SCR PHL HD TRUSS #10-32 X 5/8 LG	49	49	49
33	9006039-1	SCR PHL HD PAN #8-32 X 1/2 SST	4	4	
34	9006071-2	SCR PHL HD FLAT #10-32 X 3/8 LG	4	4	4
35	D-AD-7006060-0-0	ASSY XFMR MTG PANEL 50 CYCLE ONLY	1	1	
36	D-IA-7006238-0-0	INTERNAL SCOPE CABLE	1	1	
37	9006712	WASH .250 I.D X .375 OD X .032 THK	24	24	24
38	9006063-3	SCR PHL HD TRUSS 1/4-20 X 1 3/4 LG	6	6	6
39	9006026-1	SCR PHL HD PAN #6-32 X 3/4 LG	4	4	4
40	1201265	POWER CORD	2	2	
41	9006020-1	SCR PHL HD PAN #6-32 X 1/4 LG	2	2	2
42	9008208	SCR PHL HD PAN #8-32 X 1/2 LG NYLON	2	2	2
43	9006560	NUT KEPS #6-32 SST	8	8	4

TITLE PDP 12 ASSEMBLY	ASSY NO. D-UA-PDP12-Ø-Ø	SIZE A	CODE PL	NUMBER PDP12-Ø-Ø	REV J	ECO NO.
	SHEET 2 OF 3	DIST.				

DEC FORM NO.
DRA 110

DIGITAL EQUIPMENT CORPORATION
MAYNARD, MASSACHUSETTS

PARTS LIST

MADE BY J. FLEMING	CHECKED K. RUSS	SECTION
DATE 5/15/69	DATE 8/1/69	1
ENG I. Gale	PROD W Call	ISSUED SECT.
DATE 8/11/69	DATE 8/18/69	1

ITEM NO.	DWG NO./PART NO.	DESCRIPTION	QUANTITY/VARIATION PDP12-A	PDP12-B	PDP12-C
44	9006902	TERM STRIP #4-541 CINCH JONES	1	1	1
45	9006851	SPACER 1/4AF X 1/2 #6-32 AL	2	2	2
46	B-MD-7404721-0-0	PROTECTION COVER 541 (4 TERM)	1	1	1
47	9006635	WASH INT TOOTH #10	30	30	30
48	9007651	WASH EXT TOOTH #10	44	44	44
49	9006634	WASH INT TOOTH #8	11	11	11
50	9006724	WASH EXT TOOTH 1/4	12	12	12
51	9007630-3	SCE PHL HD TRUSS #10-32 X 3/4 BLK PASS	24	24	24
52	9006040-1	SCR PHL HD PAN #8-32 X 5/8 LG	9	9	9
53	9006022-1	SCR PHL HD PAN #6-32 X 3/8 LG	5	5	5
54	9006633	WASH INT TOOTH #6	5	5	5
55	9006058-3	SCR PHL HD TRUSS 1/4-20 X 3/4 LG	6	6	6
56	E-IA-7006037-0-0	MAIN FRAME HARNESS 120 VAC	1	1	1
57	E-IA-7006038-0-0	MAIN FRAME HARNESS DC	1	1	1
58	9107673-03	CORD #14/3 WIRE GRY	2	2	
59	9006305	SCR SET 8-32 x 5/8	2	2	2
60	C-MD-7407759-0-0	SHIPPING BRKT TU55	2	2	2
61	9006563	NUT KEPS #8-32	4	4	4
62	1205748	FILTER 5-1/2 X 19-1/2 (OPTIONAL)	2	2	2
63	C-UA-VF12-A-0	FILTER ASSY	1	1	
REF	D-IC-PDP12-Ø-3	POWER WIRING & SIGNAL CONN.			
64	1809804	LABEL, "0" WHITE, MYLAR	2	2	

TITLE	ASSY NO.	SIZE	CODE	NUMBER	REV	ECO NO.
PDP 12 ASSEMBLY	D-UA-PDP12-Ø-Ø	A	PL	PDP12-Ø-Ø	J	
	SHEET 3 OF 3	DIST.				

DEC FORM NO.
DRA 110

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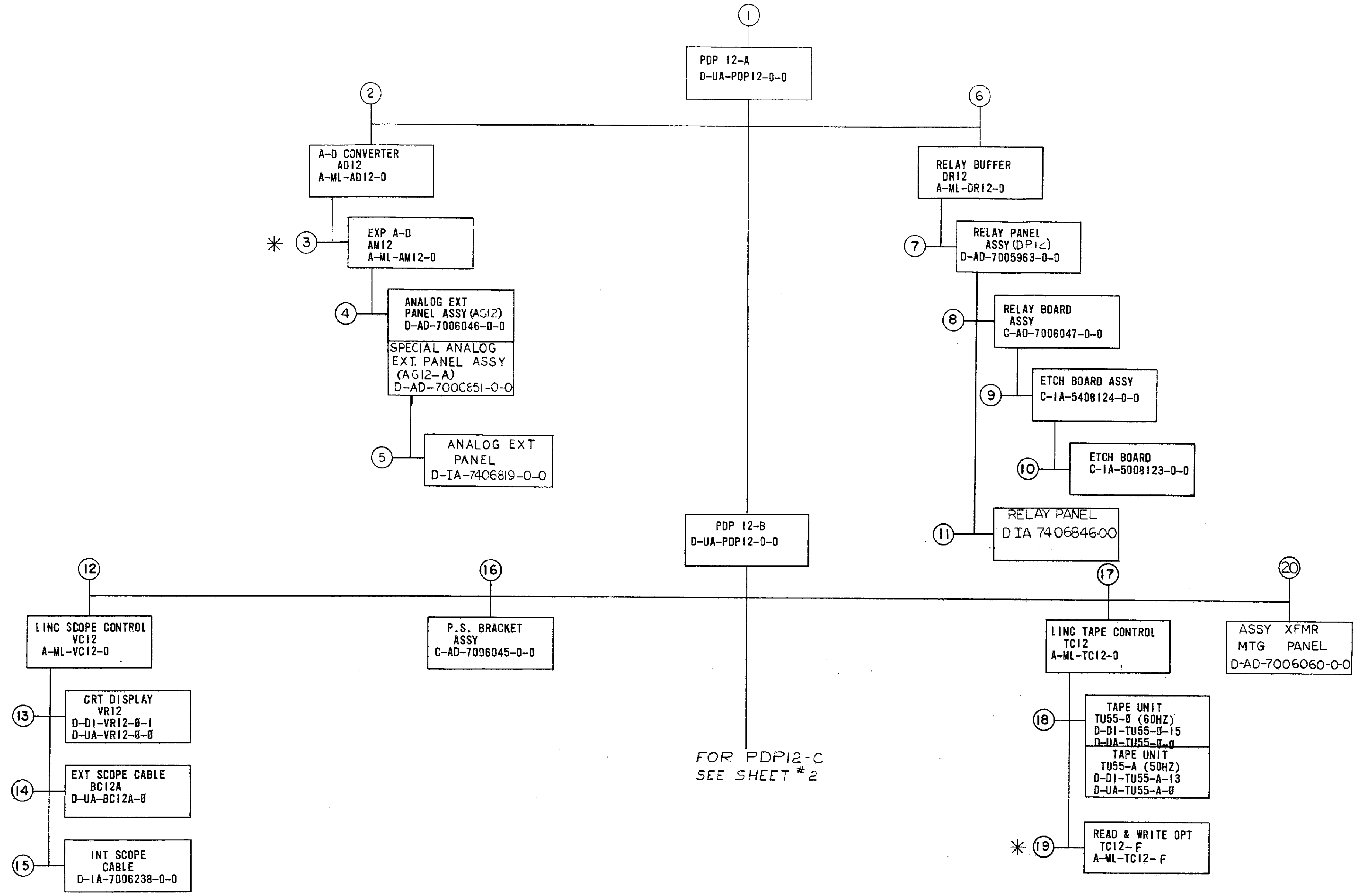
NOTES:
1. * ASTERISK INDICATES OPTIONS AVAILABLE.
2. LETTER DESIGNATION ABOVE BLOCK INDICATES THAT PART IS USED ONLY ON THAT SYSTEM WITH SAME LETTER DESIGNATION.



REVISIONS: CHANGE NO. 12-00031 (A), 12-00032 (B), 12-00034 (C), 12-00035 (D), 12-00040 (E), 12-00043 (F), 12-00044 (H), 12-00047 (J), 12-00050 (K), 12-00064 (M), EM12-00035 (N), H950-00001 (P), VR12-00024 (R), 12-00083 (S), 12-00088 (T)

QTY.	DESCRIPTION	PART NO.	ITEM NO.
	PARTS LIST		

FIRST USED ON OPTION/MODEL: PDP12

DO NOT SCALE DRAWING

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. J F Gray DATE 5-29-69
CHK'D. DATE
ENG. L. Gale DATE 8/11/69
PROJ. ENG. L. Gale DATE 8/11/69
PROD. DATE

NEXT HIGHER ASSY: A-ML-PDP12-Ø

digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS

TITLE: DRAWING INDEX LIST (PDP12)

SIZE D | CODE DI | NUMBER PDP12 - Ø - 1 | REV. T

SCALE —
SHEET 1 OF 4

DEC FORM NO DRD 100

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- (1) PDP 12-C D-UA-PDP12-0-0
  - (21) CAB FRAME ASSY E-AD-7005950-0-0
    - (23) H951-AA30" CAB E-UA-H951-AA-0 D-DI-H951-0-1
    - (24) H952-C FAN ASSY A-PL-H952-C-0 D-DI-H952-0-1
    - (25) H952-F LEVELER SET A-PL-H952-F-0 D-DI-H952-0-1
    - (26) H952-E CASTER SET A-PL-H952-E-0 D-DI-H952-0-1
    - (27) PANEL LOGO PDP12 C-1A-7406933-0-0
      - (28) INLAY PANEL C-1A-7406847-0-0
  - (29) CONSOLE ASSY E-AD-7005955-0-0
    - (30) SWITCH BOARD ASSY D-1A-7006009-0-0
      - (31) SWITCH BOARD (CONSOLE) D-AD-5408112-0-0
        - (32) ETCH BOARD SWITCH D-1A-5008111-0-0
    - (33) INDICATOR PANEL D-1A-7406815-0-0
    - (34) LIGHT BOARD ASSY D-AD-7006009-0-0
      - (35) LIGHT BOARD (CONSOLE) D-1A-5408114-0-0
        - (36) ETCH BOARD LIGHT (CONSOLE) E-1A-5008113-0-0
  - (37) TABLE ASSY E-AD-7005959-0-0
  - (38) FAN HOUSING ASSY D-AD-7005983-0-0
  - (39) H951-TB NARROW DOOR D-UA-H951-TB-0 D-DI-H951-0-1
  - (40) H950-HB SHORT DOOR ASSY A-PL-H950-HB-0 D-DI-H950-0-1
  - (41) H951-BA FULL LENGTH DOOR A-PL-H951-BA-0 D-DI-H951-0-1
  - (42) H952-A END PANEL A-PL-H952-A-0 D-DI-H951-0-1
  - (43) H950-Q COVER PANEL A-PL-H950-Q-0 D-DI-H950-0-1
  - (44) POWER SUPPLY 724 D-UA-724-0-0
    - (45) UPPER MTG PANEL ASSY D-AD-5408232-0-0
    - (46) HEAT SINK ASSY D-AD-5408298-0-0
      - (47) CONN ASSY HEAT SINK C-1A-5408291-0-0
        - (48) ETCH BOARD HEAT SINK C-1A-5008293-0-0
    - (49) CONN, FILTER CAP C-1A-5408292-0-0
      - (50) ETCH BOARD FILTER CAP C-1A-5008294-0-0
  - (51) LOGIC POWER CABLE D-1A-7006186-0-0
    - (52) POWER CONN G780 C-UA-G780-0-0
  - (53) ANALOG PANEL ASSY D-AD-7005964-0-0
    - (54) ANALOG PANEL D-1A-7406845-0-0
  - (55) BASIC 4K MEMORY EM12 A-ML-EM12-0
    - (56) LOGIC FRAME ASSY MEMORY (EM12) D-AD-7005979-0-0
      - (57) MTG BAR ASSY D-1A-7406100-00
  - (59) PDP12 PROCESSOR EP12 A-ML-EP12-0
    - (60) LOGIC FRAME ASSY (EP12) D-AD-7005976-0-0
      - (57) MTG BAR ASSY D-1A-7406100-0-0
  - (61) * PLOTTER CONTROL XY12 A-ML-XY12-0-0
  - (62) * REAL TIME CLOCK KW12A A-ML-KW12-A
    - (63) CLOCK CONTROL PANEL ASSY D-AD-7006335-0-0
      - (64) CLOCK CONTROL PANEL D-MD-7407414-0-0
  - (65) * EXT MEMORY CONTROL MC12 A-ML-MC12-0
    - (66) * ADD 4K MEMORY MM81-A A-ML-MM81-A-0
  - (67) * ARITHMATIC OPERATION KE12 A-ML-KE12-0
  - (68) * PWR/FAIL RESTART KP12 A-ML-KP12-0
  - (69) * TTY/DATA PHONE DP12-A A-ML-DP12-A
  - (70) * TTY/DATA PHONE DP12-B A-ML-DP12-B
  - (71) * TIME SHARING KT12 A-ML-KT12-0
  - (73) SIMPLE CLOCK KW12-B A-ML-KW12-B
  - (74) SIMPLE CLOCK KW12-C A-ML-KW12-C

QTY.	DESCRIPTION	PART NO.	ITEM NO.

PARTS LIST

FIRST USED ON OPTION/MODEL: PDP12

DO NOT SCALE DRAWING

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: + +

NEXT HIGHER ASSY

		DATE
DRN.		-27
CHK'D.	[illegible]	12/1/67
ENG.	[illegible]	8/11/69
PROJ. ENG.	[illegible]	8/11/69
PROD.	[illegible]	8/11/69

SCALE: + —

SHEET 2 OF 4

digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS

TITLE: DRAWING INDEX LIST (PDP12)

SIZE D | CODE DI | NUMBER PDP12 - Ø - 1 | REV T

DIST.

REVISIONS: REV. | CHANGE NO. | CHK

DEC FORM NO. DPD 100

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FIND NO	MECHANICAL DESCRIPTION	DWG NUMBER	DEPT USAGE PROD	CUST	F/C
1	PDP12 SYSTEM	D-UA-PDP12-0-0			
	PDP12 (PL)	A-PL-PDP12-0-0			
	DUCT, CABLE	C-MD-7406899-0-0			
	BRACKET, DUCT	C-IA-7406900-0-0			
	PANEL BLANK (NARROW)	C-MD-7406844-0-0			
	PDP12 LOGIC CABLE	C-IA-7006111-0-0			
(A&B)	PRECISION POWER SUPPLY	1203185-0-0			
	SCREEN, FAN	D-IA-7407277-0-0			
	PANEL, CONN	C-IA-7406847-0-0			
(A&B)	HARNESS MAIN FRAME 120 VAC	E-IA-7006037-0-0			
(A&B)	HARNESS MAIN FRAME DC	E-IA-7006038-0-0			
(A&B)	HARNESS LINC TAPE DC PWR	D-IA-7006231-0-0			
	PROTECTION COVER 541 (ATERM)	B-MD-7404721-0-0			
	SHIPPING BRKT TU55	C-MD-7407759-0-0			
2	A-D CONVERTER (AD12)	A-ML-AD12-0			
* 3	EPANDED A-D (AM12)	A-ML-AM12-0			
* 4	ANALOG EXT PANEL ASSY (AG12)	D-AD-7006046-0-0			
	ANALOG EXT PANEL ASSY (PL)	A-PL-7006046-0-0			
	LOGIC DECALS	A-DC-7407143-0-0			
	SPECIAL ANALOG EXT. PANEL ASSY. (AG12-A)	D-AD-7006851-0-0			
	SPECIAL ANALOG EXT. PANEL ASSY (PL)	A-PL-7006851-0-0			
5	ANALOG EXT PANEL	D-IA-7406819-0-0			
	ANALOG EXT PANEL SILK SCREEN	C-SS-7406819-0-1			
	BRACKET, CABLE	B-MD-7406901-0-0			
6	RELAY BUFFER (DR12)	A-ML-DR12-0-0			
7	RELAY PANEL ASSY(DR12)	D-AD-7005963-0-0			
	RELAY PANEL ASSY (PL)	A-PL-7005963-0-0			
	BRACKET, CABLE	B-MD-7406901-0-0			
	CABLE ASSY (G793)	C-IA-7006028-1-0			
	LOGIC DECALS	A-DC-7407193-0-0			
	W/28 CABLE ASSY	D-IA-7007005-0-0			
8	RELAY BOARD ASSY	C-AD-7006047-0-0			
	RELAY BOARD ASSY	A-PL-7006047-0-0			
9	ETCH BOARD ASSY	C-IA-5408124-0-0			
10	ETCH BOARD, RELAY	C-IA-5008123-0-0			
	FLIP CHIP MODULE (BLANK)	D-MD-1402230-0-0			
	ASSY/DRILLING HOLE LAYOUT	C-AH-5408124-0-5			
	PRINTED CIRCUIT LAYOUT	PC-5009123			
11	RELAY PANEL	D-IA-7406846-0-0			
	RELAY PANEL, SILK SCREEN	C-SS-7406846-0-1			
12	LINC SCOPE CONTROL (VC12)	A-ML-VC12-0			
13	CRT DISPLAY	D-UA-VR12-0-0			
	CRT DISPLAY	A-PL-VR12-0-0			
	DRAWING INDEX LIST	D-DI-VR12-0-1			
14	EXT SCOPE CABLE (BC12A)	D-UA-BC12A-0-0			
15	INT SCOPE CABLE	D-IA-7006238-0-0			
	W/28 CABLE ASSY	D-IA-7007005-0-0			
16	P.S. BRACKET ASSY	C-AD-7006045-0-0			
	P/S BRACKET ASSY (PL)	A-PL-7006045-0-0			
	BRACIET, MTG	C-MD-7407059-0-0			
	PRECISION P.S. CABLE	C-IA-7006167-0-0			
	LOGIC DECALS	A-DC-7407193-0-0			
17	LINC TAPE CONTROL (TC12)	A-ML-TC12-0			

FIND NO	MECHANICAL DESCRIPTION	DWG NUMBER	DEPT USAGE PROD	CUST	F/C
18	TAPE UNIT (TU55)	D-UA-TU55-0-0			
	TAPE UNIT (TU55) (PL)	A-PL-TU55-0-0			
	DRAWING INDEX LIST	D-DI-TU55-0-15			
	TAPE UNIT (TU55-A)	D-UA-TU55-A-0			
	TAPE UNIT (TU55-A) (PL)	A-PL-TU55-A-0			
	DRAWING INDEX	D-DI-TU55-A-13			
* 19	READ& WRITE OPT TC12-F	A-ML-TC12-F			
20	XFMR MTG PANEL ASSY	D-AD-7006060-0-0			
	XFMR MTG PANEL ASSY (PL)	A-PL-7006060-0-0			
	PANEL XFMR MTG	D-IA-7407072-0-0			
	COVER PROTECTION (541) 6 TERM	B-MD-7405436-0-0			
21	PDP12 CABINET FRAME ASSY	E-AD-7005950-0-0			
	PDP12 CABINET FRAME ASSY (PL)	A-PL-7005950-0-0			
	POST 19"	D-IA-7406796-0-0			
	DOOR, PLENUM	E-IA-7407648-0-0			
	PIN, DOOR	B-MD-7406672-0-0			
	RETAINER, DOOR PIN	B-MD-7406670-0-0			
	BRACKET CONTROL PANEL R.H.	C-IA-7407093-2-0			
	BRACKET CONTROL PANEL L.H.	C-IA-7407092-1-0			
	PLENUM, SPACER	A-MD-7406278-0-0			
	COVER CONSOLE BOTTOM	C-MD-7407280-0-0			
23	H951-AA30" CABINET ASSY	E-UA-H951-AA-0			
	H951-AA 30" CABINET ASSY	A-PL-H951-AA-0			
	H951 DRAWING INDEX LIST	D-DI-H951-0-1			
24	H952-C FAN	A-PL-H952-C-0			
	H952 DRAWING INDEX LIST	D-DI-H952-0-1			
25	H952-F LEVELER SET	A-PL-H952-F-0			
	H952 DRAWING INDEX LIST	D-DI-H952-0-1			
26	H952-E CASTER SET	A-PL-H952-E-0			
	H952-E DRAWING INDEX LIST	D-DI-H952-0-1			
27	PANEL, LOGO PDP12	C-IA-7406933-0-0			
	PANEL FRAME H950-L	D-UA-H950-L-0			
	H950 DRAWING INDEX	D-DI-H950-0-1			
28	PANEL INLAY PDP12	C-IA-7406847-0-0			
	LOGO (BRITE CHARTREUSE)	C-SS-7406847-0-1			
	LOGO (LIME PEEL)	C-SS-7406847-0-2			
29	CONSOLE ASSY	E-AD-7005955-0-0			
	CONSOLE ASSY (PL)	A-PL-7005955-0-0			
	COVER, SWITCH	D-MD-7407173-0-0			
	BEZEL, CONSOLE	E-MD-7407125-0-0			
	SUPPORT, GLASS	D-IA-7407103-0-0			
30	SWITCH BOARD ASSY	D-IA-7006009-0-0			
	LOGIC DECALS	A-DC-7407193-0-0			
31	SWITCH BOARD (CONSOLE)	D-AD-5408112-0-0			
	SWITCH BOARD (CONSOLE) (PL)	A-PL-5408112-0-0			
	SPACER BAR, SWITCH BOARD	C-MD-7406823-0-0			
	(LIME PEEL) ROCKER SWITCH RS-9-3-FB-PC	C-AD-5404413-11-0			
	(CHARTREUSE) ROCKER SWITCH RS-9-3-FB-PC	C-AD-5404413-12-0			
	(LIME PEEL) ROCKER SW RS-5-0-FB-PC	C-AD-5404331-11-0			
	(CHARTREUSE) ROCKER SW RS-5-0-FB-PC	C-AD-5404331-12-0			
32	ETCH BOARD, SWITCH	D-IA-5008111-0-0			
	ASSY/DRILLING HOLE LAYOUT	C-AH-5408112-0-5			
	PRINTED CIRCUIT LAYOUT	PC5009111-0-0			
33	INDICATOR PANEL	D-IA-7406815-0-0			
	IND PNL SILK SCREEN STEP#1	C-SS-7406815-0-1			
	IND PNL SILK SCREEN STEP#2	C-SS-7406815-0-2			
	IND PNL SILK SCREEN STEP#3	C-SS-7406815-0-3			
	IND PNL SILK SCREEN STEP#4	C-SS-7406815-0-4			
	IND PNL SILK SCREEN STEP#5	C-SS-7406815-0-5			

FIND NO	MECHANICAL DESCRIPTION	DWG NUMBER	DEPT USAGE PROD	CUST	F/C
34	LIGHT BOARD ASSY	D-AD-7006008-0-0			
	LIGHT BOARD ASSY (PL)	A-PL-7006008-0-0			
	LOGIC DECALS	A-DC-7407193-0-0			
35	LIGHT BOARD (CONSOLE)	D-IA-5408114-0-0			
36	ETCH BOARD, LIGHT (CONSOLE)	E-IA-5008113-0-0			
	ASSY/DRILLING HOLE LAYOUT	C-AH-5408114-0-0			
	PRINTED CIRCUIT LAYOUT	PC-5008113-0-0			
37	TABLE ASSY	E-AD-7005958-0-0			
	TABLE ASSY (PL)	A-PL-7005958-0-0			
	TOP, TABLE	D-IA-7406836-0-0			
	FRAME, TABLE	E-IA-7406839-0-0			
38	FAN HOUSING ASSY	D-AD-7005983-0-0			
	FAN HOUSING ASSY (PL)	A-PL-7005983-0-0			
	CHASSIS, FAN HOUSING	E-IA-7407254-0-0			
	TERMINAL STRIP	C-IA-7405083-0-0			
	COVER, FAN HOUSING	D-MD-7406949-0-0			
	FAN DECALS	A-DC-7406899-0-0			
39	H951-TB NARROW DOOR	D-UA-H951-TB-0			
	H951-TB NARROW DOOR (PL)	A-PL-H951-TB-0			
	H951 DRAWING INDEX LIST	D-DI-H951-0-1			
40	H950-HB SHORT DOOR ASSY	D-UA-H950-HB-0			
	H950-HB SHORT DOOR ASSY (PL)	A-PL-H950-HB-0			
	H950 DRAWING INDEX LIST	D-DI-H950-0-1			
41	H951-BA- FULL LENGTH DOOR 30"	D-UA- H951-BA-0			
	H951-BA-FULL LENGTH DOOR 30" (PL)	A-PL-H951-BA-0			
	H951 DRAWING IND X LIST	D-DI-H951-0-1			
42	H952-A END PANEL	D-UA-H952-A-0			
	H952-A END PANEL (PL)	A-PL-H952-A-0			
	H952 DRAWING INDEX LIST	D-DI-H952-0-1			
43	H950-Q COVER PANEL (PL)	D-UA-H950-Q-0			
	H950-Q COVER PANEL (PL)	A-PL-H950-Q-0			
	H950 DRAWING INDEX LIST	D-DI-H950-0-1			
44	POWER SUPPLY 724	D-UA-724-0-0			
	POWER SUPPLY 724 (PL)	A-PL-724-0-0			
	724 POWER SUPPLY DECALS	B-DC-5309247-0-0			
	WIRE HARNESS 724 P.S.	E-IA-7006244-0-0			
	SCREEN, COVER	D-IA-5308206-0-0			
	CHASSIS, P.S.	E-IA-5308197-0-0			
	PLATE COVER TRANSFORMER	C-MD-5304562-0-0			
	COVER	B-MD-5304563-0-0			
	BRACKET HOLD DOWN	C-MD-5304561-0-0			
	CAUTION CHECK LABEL	A-DC-5306410-0-0			
	SPECS. 724 P.S.	A-SP-724-0-4			
45	UPPER MTG PANEL ASSY	D-AD-5408232-0-0			
	UPPER MTG PANEL ASSY (PL)	A-PL-5408232-0-0			
	UPPER MTG PANEL	E-IA-5308205-0-0			
46	HEAT SINK ASSY	D-AD-5408298-0-0			
	HEAT SINK ASSY (PL)	A-PL-5408298-0-0			
	INSULATOR, HEAT SINK	B-MD-5308300-0-0			
	HEAT SINK	C-SC-1209474-0-0			
47	CONN ASSY HEAT SINK	C-IA-5409291-0-0			
48	ETCH BOARD, HEAT SINK	C-IA-5008293-0-0			
	ASSY/DRILLING HOLE LAYOUT	C-AH-5408293-0-5			
	X-Y COORDINATE HOLE LOC	K-CO-5008294-0-4			

FIND NO	MECHANICAL DESCRIPTION	DWG NUMBER	DEPT USAGE PROD	CUST	F/C
49	CONN, FILTER CAP	C-IA-5408292-0-0			
50	ETCH BOARD, FILTER CAP	C-IA-5008294-0-0			
	ASSY DRILLING HOLE LAYOUT	C-AH-5408292-0-5			
	X-Y COORDINATE HOLE LAYOUT	K-CO-5008294-0-4			
51	CABLE LOGIC POWER	D-IA-7006186-0-0			
52	POWER CONN G780	C-UA-G780-0-0			
	TAB FASTON	A-MD-7407196-0-0			
	INTERLOCK, POWER CONN	B-MD-7406958-0-0			
	ETCH BOARD	D-IA-5008253-0-0			
53	ANALOG PANEL ASSY	D-AD-7005964-0-0			
	ANALOG PANEL ASSY (PL)	A-PL-7005964-0-0			
	INSULATOR MICROSWITCH	B-MD-7407049-0-0			
	SWITCH ROTARY	B-MD-7407195-0-0			
	LOGIC DECAL	A-DC-7407193-0-0			
	G793 CABLE ASSY	C-IA-7006028-1-0			
54	ANALOG PANEL	D-IA-7406845-0-0			
	ANALOG PANEL SILK SCREEN	C-SS-7406845-0-1			
55	BASIC 4K MEMORY (EM12)	A-ML-EM12-0			
56	LOGIC ASSY MEMORY(EM12)	D-AD-7005979-0-0			
	LOGIC ASSY MEMORY (PL)	A-PL-7005979-0-0			
	298 PIN CONN BLOCK	E-SC-1205348-0-0			
	LOGIC FRAME DECALS	A-DC-7406370-0-0			
	LOGIC FRAME	D-IA-7407207-0-0			
57	MTG BAR ASSY	D-IA-7406100-0-0			
	MTG BAR	C-MD-7405035-0-0			

FIRST USED ON OPTION/MODEL: PDP12

REVISIONS	REV	CHANGE NO.	CHK

DO NOT SCALE DRAWING
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

QTY.	DESCRIPTION	PART NO.	ITEM NO.

PARTS LIST

DRN. F Conroy	DATE 6-11-69	digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS
CHK'D. [illegible]	DATE 7/1/69	
ENG. L Gale	DATE 8/11/69	TITLE: DRAWING INDEX LIST (PDP12)
PROJ. ENG. L Gale	DATE 8/11/69	
PROD. [illegible]	DATE 8/11/69	
NEXT HIGHER ASSY		SIZE D CODE D1 NUMBER PDP12-0-1 REV T
SCALE NONE		
SHEET 2 OF 4		DIST.

DEC FORM NO. DRD 100

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MECHANICAL

FIND NO	DESCRIPTION	PART NO.	DEPT USAGE PROD	CUST	F C
59	PDP12 PROCESSOR (EP12)	A-ML-EP12-0			
60.	LOGIC ASSEMBLY (EP12)	D-AD-7005976-0-0			
	LOGIC ASSEMBLY (PL)	A-PL-7005976-0-0			
	248 PIN CONN BLOCK	E-SC-1205449-1-0			
	LOGIC FRAME DECALS	A-DC-7406370-0-0			
	LOGIC FRAME	D-IA-7407207-0-0			
*62.	REAL TIME CLOCK (KW12)	A-ML-KW12-0			
63.	CLOCK CONTROL PANEL(KW12)	D-AD-7006335-0-0			
	CLOCK CONTROL PANEL	A-PL-7006335-0-0			
	SWITCH ROTARY	B-MD-7407540-0-0			
64.	CLOCK CONTROL PANEL	D-IA-7407414-0-0			
	CLOCK CONTROL PANEL SCREEN	D-SS-7407414-0-1			

ELECTRICAL

FIND NO	DESCRIPTION	PART NO.	DEPT USAGE PROD	CUST	F C
1.	PDP 12	A-ML-PDP12-0			
	PDP12 CONFIGURATION	D-AR-PDP12-0-2			
	POWER WIRING	D-IC-PDP12-0-3			
	SHIPPING & INSTALLATION SPEC	A-SP-PDP12-0-4			
	ACCEPTANCE SPEC	A-SP-PDP12-0-5			
	SYSTEMS SPEC	A-SP-PDP12-0-6			
	HARDWARE KIT	A-AL-PDP12-0-7			
	SPARE PARTS	A-SP-PDP12-0-8			
	SOFTWARE KIT	A-SL-PDP12-0-9			
	MANUAL TIMING FUNCTION PT1	D-FD-PDP12-0-10			
	MANUAL TIMING FUNCTION PT2	D-FD-PDP12-0-11			
	LINC FETCH 1A	D-FD-PDP12-0-12			
	LINC FETCH 1B	D-FD-PDP12-0-13			
	LINC FETCH 2	D-FD-PDP12-0-14			
	LINC DEFER	D-FD-PDP12-0-15			
	LINC EXECUTE	D-FD-PDP12-0-16			
	LINC EXECUTE	D-FD-PDP12-0-17			
	LINC EXECUTE	D-FD-PDP12-0-18			
	LINC EXECUTE	D-FD-PDP12-0-19			
	EXECUTE 2 & INTERRUPT	D-FD-PDP12-0-20			
	PDP-8 MODE FETCH	D-FD-PDP12-0-21			
	PDP-8 MODE DEFER & EXECUTE	D-FD-PDP12-0-22			
	BREAK	D-FD-PDP12-0-23			
2	A-D CONVERTER	A-ML-AD12-0			
	A-D CONVERTER	D-BS-AD12-0-YAD			
	YADA CHAN 10-17	D-BS-AD12-0-YADA			
	YADB CHAN 20-37	D-BS-AD12-0-YADB			
	YADC A-D CONTROL	D-BS-AD12-0-YADC			
*3	EXPANDED A-D	A-ML-AM12-0			
4	ADDITIONAL PREAMPS	A-ML-AG12-0			
4	KNOB/PREAMPS	A-ML-AG12-A			
6	RELAY BUFFER	A-ML-DR12-0			
7	RELAY PANEL ASSY	D-AD-7005963-0-0			
	CIRCUIT SCHEMATIC	C-CS-7005963-0-1			
9	ETCH BOARD ASSY	C-IA-5408124-0-0			
	CIRCUIT SCHEMATIC	C-CS-5408124-0-1			
12	LINC SCOPE CONTROL	A-ML-VC12-0			
	LINC-8 SCOPE DISPLAY	D-FD-VC12-0-4			
	DIS INTENSITY REGULATOR	D-BS-VC12-0-DIS			
	DSC DISPLAY CONTROL	D-BS-VC12-0-DSC			
	DSX HORIZONTAL D-A	D-BS-VC12-0-DSX			
	DSY VERTICAL D-A	D-BS-VC12-0-DSY			
	DISPLAY INT REG	D-BS-VC12-0-DSI			
13	CRT DISPLAY	A-ML-VR12-0-0			
	CIRCUIT SCHEMATIC	D-CS-VR12-0-1			
17	LINC TAPE CONTROL	A-ML-TC12-0			
	TAPE PROCESSOR MJR. ST. FLOW	D-FD-TC12-0-10			
	TAPE INST SETUP TIMING	D-FD-TC12-0-11			
	SEARCH TIMING	D-FD-TC12-0-12			
	BLOCK MODE READING	D-FD-TC12-0-13			
	BLOCK MODE WRITE	D-FD-TC12-0-14			
	BLOCK MODE CHECKING	D-FD-TC12-0-15			
	MARK TIMING	D-FD-TC12-0-16			
	INTERPROCESSOR SIGNALS	D-BS-TC12-0-LIP			
	TAPE CONTROL STATES	D-BS-TC12-0-LCS			
	TAPE EXTENDED OPERATIONS	D-BS-TC12-0-LCX			
	TAPE EXTENDED FIELDS	D-BS-TC12-0-LCXF			
	TAPE GROUP COUNTER	D-BS-TC12-0-LGP			
	TAPE INSTRUCTION	D-BS-TC12-0-LIN			
	TAPE UNIT AND MOTION	D-BS-TC12-0-LMU			
	TAPE REG ENABLE CONTROL	D-BS-TC12-0-LRE			
	TAPE REG LOAD CONTROL	D-BS-TC12-0-LRL			
	TRANSPORT CONTROL	D-BS-TC12-0-LTC			
	TAPE DELAYS	D-BS-TC12-0-LTD			
	TAPE MAINT	D-BS-TC12-0-LTM			
	TAPE MAINT REG	D-BS-TC12-0-LTMR			
	TAPE READERS-WRITERS	D-BS-TC12-0-LTR			
	LTRA BITS 0 & 1	D-BS-TC12-0-LTRA			
	LTRB BITS 2 & 3	D-BS-TC12-0-LTRB			
	LTRC BITS 4 & 5	D-BS-TC12-0-LTRC			
	LTRD BITS 6 & 7	D-BS-TC12-0-LTRD			
	LTRE BITS 8 & 9	D-BS-TC12-0-LTRE			
	LTRF BITS 10 & 11	D-BS-TC12-0-LTRF			
	TAPE STATES	D-BS-TC12-0-LTS			
	TAPE TIME PULSES	D-BS-TC12-0-LTT			
	TAPE MARK WINDOW	D-BS-TC12-0-LMW			

ELECTRICAL

FIND NO	DESCRIPTION	PART NO	DEPT USAGE PROD	CUST	F C
18.	TAPE UNIT 60 HZ	A-ML-TU55-0			
	TAPE UNIT 50 HZ	A-ML-TU55-1			
*19.	READ & WRITE OPTION	A-ML-TC12-F			
31.	SWITCH BOARD ASSY	D-AD-5408112-0-0			
	CIRCUIT SCHEMATIC	D-CS-5408112-0-1			
35.	LIGHT BOARD ASSY	D-IA-5408114-0-0			
	CIRCUIT SCHEMATIC	D-CS-5408114-0-1			
38.	FAN HOUSING ASSY	D-AD-7005983-0-0			
44	724 POWER SUPPLY	D-UA-724-0-0			
	CIRCUIT SCHEMATIC	D-CS-724-0-1			
52	POWER CONN G780	C-UA-G780-0-0			
	CIRCUIT SCHEMATIC	B-CS-G780-0-1			
53	ANALOG PANEL ASSY	D-AD-7005964-0-0			
	CIRCUIT SCHEMATIC	C-CS-7005964-0-1			
55	BASIC 4K MEMORY	A-ML-EM12-0			
	MODULE UTILIZATION RACK A-D	D-MU-EM12-0-1			
	MODULE UTILIZATION (PL)	A-PL-EM12-0-1			
	MODULE UTILIZATION RACK E-F	D-MU-EM12-0-2			
	MODULE UTILIZATION (PL)	A-PL-EM12-0-2			
	WIRE LIST	K-WL-EM12-0-3			
	POWER WIRE LIST	A-WL-EM12-0-4			
	MCS SENSE AMPS & INHIBIT DRIVERS	D-BS-EM12-0-MCS			
	X-AXIS SELECTION	D-BS-EM12-0-MCX			
	Y-AXIS SELECTION	D-BS-EM12-0-MCY			
	MEMORY CONTROL	D-BS-EM12-0-MCT			
	INTER PROC CABLES	D-BS-EM12-0-IPCM			
56	WIRED ASSY(EM12)	D-AD-7005978-0-0			
	WIRED ASSY PL	A-PL-7005979-0-0			
59.	PDP12 PROCESSOR	A-ML-EP12-0			
	MODULE UTILIZATION RACK H-L	D-MU-EP12-0-1			
	MODULE UTILIZATION (PL)	A-PL-EP12-0-1			
	MODULE UTILIZATION RACK M-N	D-MU-EP12-0-2			
	MODULE UTILIZATION (PL)	A-PL-EP12-0-2			
	CONSOLE STARTS	D-BS-EP12-0-CST			
	CONSOLE INDICATORS	D-BS-EP12-0-CIN			
	CENTRAL PROCESSOR RUN	D-BS-EP12-0-CPR			
	CENTRAL PROCESSOR STATES	D-BS-EP12-0-CPS			
	CP TIME STATES	D-BS-EP12-0-CPT			
	CENTRAL PROCESSOR TIME PULSES	D-BS-EP12-0-CPTP			
	CONSOLE SWITCH INPUTS	D-BS-EP12-0-CSI			
	CARRY INSERTS	D-BS-EP12-0-CYI			
	FLOW & END SHIFT	D-BS-EP12-0-FLE			
	LINK LOGIC	D-BS-EP12-0-FLK			
	IO & EXT MEM CABLES	D-BS-EP12-0-ICB			
	INSTRUCTION REGISTER	D-BS-EP12-0-INR			
	INSTRUCTIONS	D-BS-EP12-0-INS			
	INPUT TO PART A I/O	D-BS-EP12-0-IOA			
	INPUT TO PART B I/O	D-BS-EP12-0-IOB			
	IO CONTROL & TIMING	D-BS-EP12-0-IOC			
	IOC OUTPUT BUFFERS	D-BS-EP12-0-IOD			
	RELAY BUFFER	D-BS-EP12-0-IOR			
	INTER PROC CABLES	D-BS-EP12-0-IPC			
	MEM EXTN AC INPUTS	D-BS-EP12-0-MEA			
	MEM PAGE EXTN CONTROLS	D-BS-EP12-0-MPG			
	PROCESSOR MISC A	D-BS-EP12-0-PMA			
	PROCESSOR MISC B	D-BS-EP12-0-PMB			
	PRA PROCESSOR BITS 0 & 1	D-BS-EP12-0-PRA			
	PRB PROCESSOR BITS 2 & 3	D-BS-EP12-0-PRB			
	PRC PROCESSOR BITS 4 & 5	D-BS-EP12-0-PRC			
	PRD PROCESSOR BITS 6 & 7	D-BS-EP12-0-PRD			
	PRE PROCESSOR BITS 8 & 9	D-BS-EP12-0-PRE			
	PRF PROCESSOR BITS 10 & 11	D-BS-EP12-0-PRF			
	REGISTER CONTROL A	D-BS-EP12-0-RCA			
	REG IN ENABLE 2	D-BS-EP12-0-RCB			
	REGISTER CONTROL C	D-BS-EP12-0-RCC			
	REG ENABLE 4	D-BS-EP12-0-RCD			
	REG SHIFT & MQ INPUTS	D-BS-EP12-0-RCS			
	PROCESSOR REGISTER LOAD CONTROL	D-BS-EP12-0-RCL			
	SKIP FF & H BITS	D-BS-EP12-0-SKH			
	EP12 BITS	D-BS-EP12-0-SKL			
	MULQUOTIENT	D-BS-EP12-0-MQR			

ELECTRICAL

FIND NO	DESCRIPTION	PART NO.	DEPT USAGE PROD	CUST	F C
58 (CONT)	SPECIAL LEVELS 1	D-BS-EP12-0-SLA			
	TTI TELETYPE RECEIVER	D-BS-EP12-0-TTI			
	TTO TELETYPE TRANSMITTER	D-BS-EP12-0-TTO			
	WIRE LIST	K-WL-EP12-0-3			
	D.C. POWER PROCESSOR LOGIC	A-WL-EP12-0-4			
60 *	WIRED ASSY(EP12)	D-AD-7005976-0-0			
	WIRED ASSY(PL)	A-PL-7005976-0-0			
61.	PLOTTER CONTROL (XY12)	A-ML-XY12-0			
*62	CLOCK CONTROL(KW12-A)	A-ML-KW12-A			
*63.	CLOCK CONTROL CIRCUIT SCHEMATIC	D-CS-7006335-0-1			
*65.	EXT MEMORY CONTROL (MC12)	A-ML-MC12-0			
*66.	ADDITIONAL 4K MEMORY (MM8I-A)	A-ML-MM8I-A-0			
*67.	ARITHMETIC OPERATION (KE12)	A-ML-KE12-0			
*68.	PWR FAIL RESTART (KP12)	A-ML-KP12-0			
*69.	TTY DATAPHONE (DP12-A)	A-ML-DP12-A			
*70	TTY DATAPHONE (DP12-B)	A-ML-DP12-B			
*71.	TIME SHARING (KT12)	A-ML-KT12-0			
73	SIMPLE CLOCK (KW12-B)	A-ML-KW12-B			
74	SIMPLE CLOCK (KW12-C)	A-ML-KW12-C			

FIRST USED ON OPTION MODEL	QTY.	DESCRIPTION	PART NO.	ITEM NO.
PDP12		PARTS LIST		

UNLESS OTHERWISE SPECIFIED

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.	J. Fleming	DATE 1-13-69
CHK'D.		DATE 2/2/69
ENG.		DATE 8/11/69
PROJ. ENG.		DATE 8/11/69
PROD.		DATE 8/18/69

NEXT HIGHER ASSY.

SCALE NONE

SHEET 4 OF 4

digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS

TITLE

DRAWING INDEX
LIST (PDP 12)

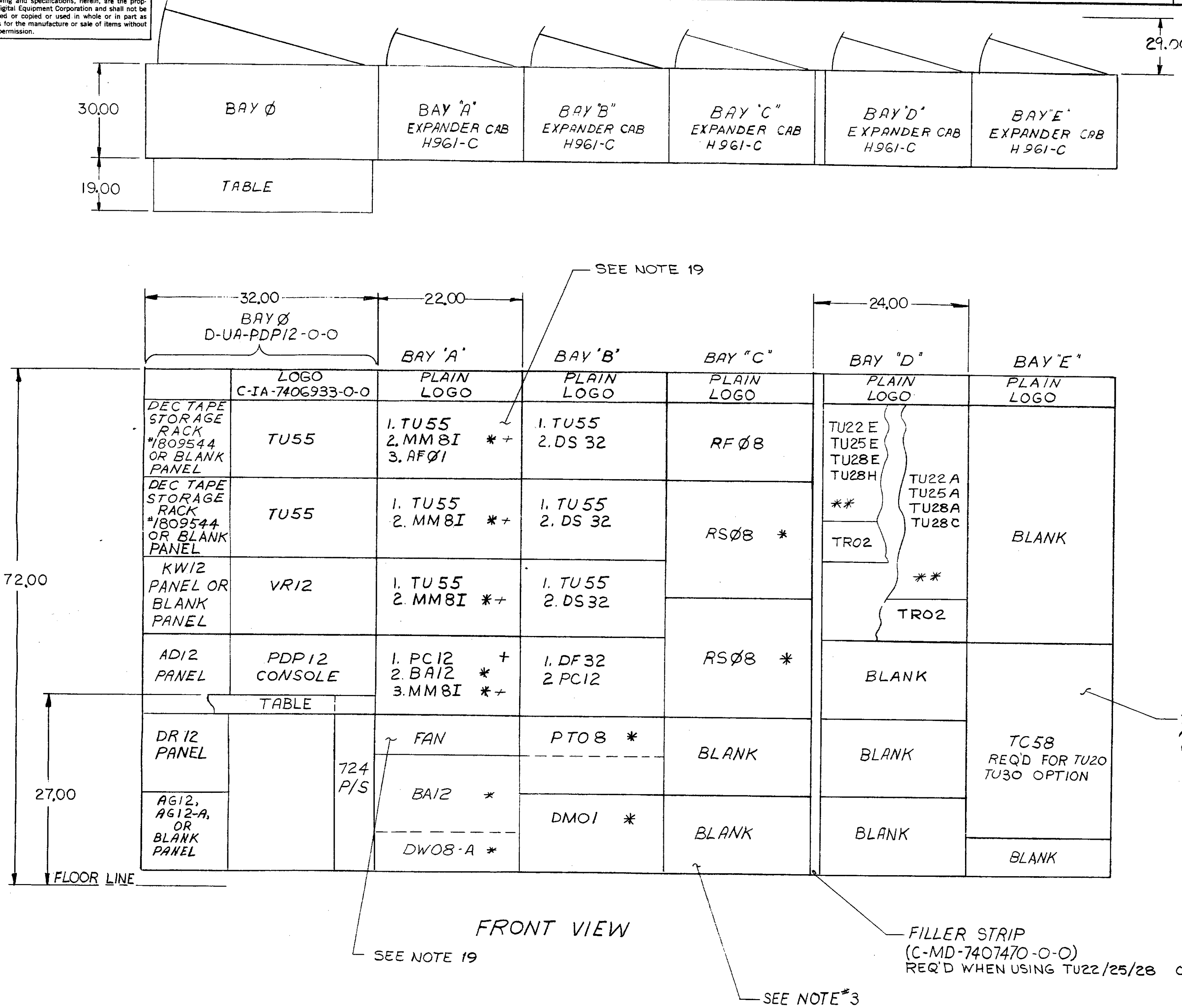
SIZE	CODE	NUMBER	REV
D	DI	PDP12-0-1	T

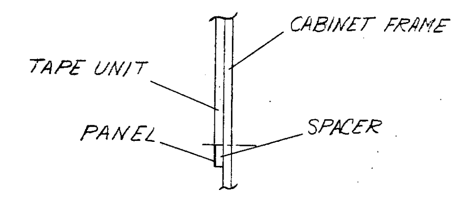
DIST.

REVISIONS

REV.	CHANGE NO.	CHK

DEC FORM NO. DRD 100





DETAIL A

FOR TU22E, TU25E, TU28E, OR TU28H, USE #7402015 3-7/16" PANEL AND 2 EACH #7406676-2-0 3-7/16" STANDOFF (SPACER)

FOR TU22A, TU25A, TU28A, OR TU28C, USE #7402025 1-11/32" PANEL AND 2 EACH #7406676-1-0 1-11/32" STANDOFF (SPACER)

NOTES:

COVER PANELS AND DOORS

1. IF OPTION IS NOT REQUIRED IN PRIORITY AREA OR BLANK IS LISTED FOR CAB "A" THRU "D" USE PANEL H950-QA.
2. * ASTERISK DESIGNATES OPTIONS THAT REQUIRE H950-QA COVER PANEL
3. A MAXIMUM OF (2) RS08 OPTIONS AND (1) RF08 OPTION CAN BE USED PER CABINET.
4. TC58 OR DF/DS 32 OPTIONS IN ANY EXPANDER BAY REQUIRE #7006555-0-0 DOOR

CABLING AND OPTION PLACEMENT CONSIDERATIONS:

5. I/O CABLES TO MM8I OPTION TO BE KEPT AS SHORT AS POSSIBLE.
6. I/O CABLES SHOULD NOT CROSS OVER EACH OTHER. FOR CABLE LENGTHS AVAILABLE AND PREFERRED ROUTING SEE SHEET #3 DETAIL 'A'.
7. PC12 OPTION SHOULD ALWAYS BE IMMEDIATELY ABOVE BA12 OPTION, ALSO CONVENIENT FOR THE OPERATOR.
8. DS32 SHOULD ALWAYS BE ABOVE DF32
9. TU55'S SHOULD ALWAYS BE MTD NEAR TOP OF OPTION BAYS FOR OPERATOR'S CONVENIENCE
10. SHOULD A CONFLICT OCCUR FOR A GIVEN OPTION LOCATION RELOCATE LOWER PRIORITY OPTION DIRECTLY ACROSS IN BAY 'B'

PWR CONTROL AND POWER SUPPLY PLACEMENT AND REQUIREMENT CONSIDERATIONS

11. PWR SUPPLIES ALWAYS MOUNT ON THE REAR PLENUM DOOR BUT MUST NOT BE ADJACENT TO DF/DS32 DISC OPTIONS.
12. A 734B VARIABLE PWR SUPPLY IS REQUIRED TO MARGIN THE DF/DS32 DISC OPTION.
13. A 783 P/S MUST BE DEDICATED TO THE DS/DF32 DISC SECTION.
14. ONE OR MORE 783 P/S WILL BE USED TO HANDLE OTHER OPTIONS IN BAY 'A'
15. AN 834 PWR CONTROL SEPARATE 20 AMP SERVICE (ON SAME PHASE AS COMPUTER) IS USED FOR THE FIRST OPTION CAB AND WILL HANDLE AS WELL OTHER BAYS
16. THE RS/RF08 AND MAG TAPE CABS WHICH ARE COMPLETELY DEFINED IN OTHER PRINT SETS USE THEIR OWN POWER CONTROL AND WILL REQUIRE SEPARATE 20 AMP SERVICES.

OTHER CONSIDERATIONS

17. A FULL LENGTH DOOR MAY BE USED ON THE FRONT OF AN OPTION CABINET WHICH IS COMPLETELY FILLED WITH LOGIC AND WITHOUT OPERATOR CONTROLS.
18. ALWAYS USE COVER PANELS FOR OPTION CABINETS WHICH MAY HAVE LOGIC ADDED AT A LATER TIME.
19. USE 7006115-1 OR 7005530-1 FAN ASSEMBLY FOR OPTION DESIGNATED BY SYSTEM LAYOUT.
20. USE (1) 5-1/4" #7005909 AC SERVICE RECEPTACLE ASSEMBLY FOR SYSTEMS HAVING MORE THAN 2 TTY'S.
21. ** DENOTES UNITS REQUIRING FILLER STRIPS. (SEE DETAIL A)

REVISIONS

REV.	CHANGE NO.	CHK
A	12-00051 GALE	
B	12-00069 D. MACKLIN	FV
C	12-00079 GALE	
D	12-00088 D. MACKLIN	FV

QTY.	DESCRIPTION	PART NO.	ITEM NO.

PARTS LIST

FIRST USED ON OPTION/MODEL: PDP12

DO NOT SCALE DRAWING
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

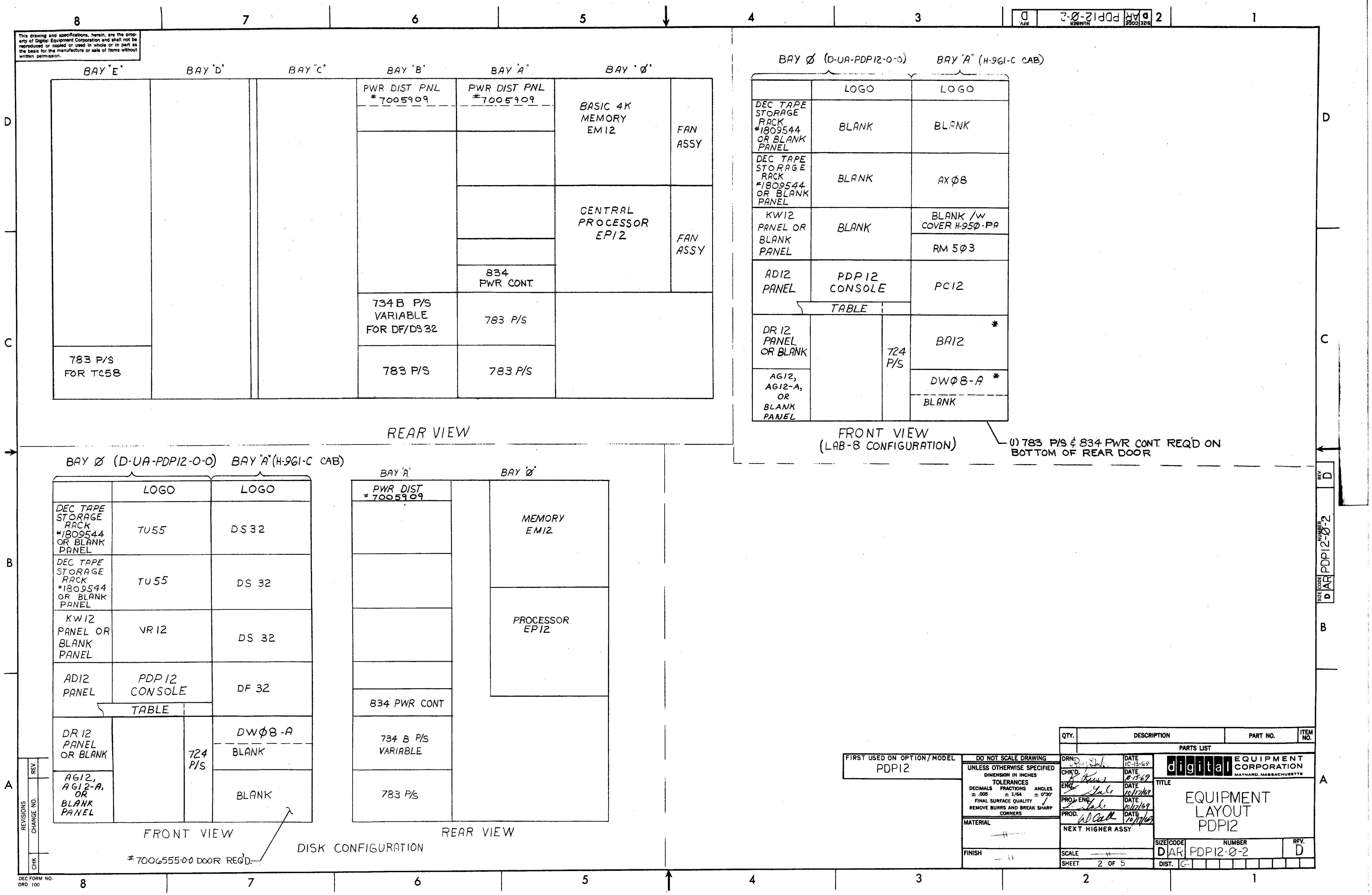
DRN. DATE 10-9-69
CHK'D. DATE 10-15-69
ENG. DATE 10-17-69
PROJ. ENG. DATE 10-17-69
PROD. DATE
NEXT HIGHER ASSY

digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS

TITLE: EQUIPMENT LAYOUT (PDP 12)

SIZE D CODE AR NUMBER PDP12-Ø-2 REV. D
SCALE
SHEET 1 OF 5
DIST.

DEC FORM NO. DRD 100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BAY "E"
BAY "D"
BAY "C"
BAY "B"
BAY "A"
BAY "Ø"
PWR DIST PNL #7005909
PWR DIST PNL #7005909
BASIC 4K MEMORY EM12
FAN ASSY
CENTRAL PROCESSOR EP12
FAN ASSY
834 PWR CONT.
734 B P/S VARIABLE FOR DF/DS32
783 P/S
783 P/S FOR TC58
783 P/S
783 P/S
REAR VIEW
BAY Ø (D-UA-PDP12-0-0)
BAY "A" (H-961-C CAB)
LOGO
LOGO
DEC TAPE STORAGE RACK #1809544 OR BLANK PANEL
BLANK
BLANK
DEC TAPE STORAGE RACK #1809544 OR BLANK PANEL
BLANK
AXØ8
KW12 PANEL OR BLANK PANEL
BLANK
BLANK /W COVER H-95Ø-PA
RM 5Ø3
AD12 PANEL
PDP12 CONSOLE
TABLE
PC12
DR 12 PANEL OR BLANK
724 P/S
BA12 *
AG12, AG12-A, OR BLANK PANEL
DWØ8-A *
BLANK
FRONT VIEW (LAB-8 CONFIGURATION)
(1) 783 P/S & 834 PWR CONT. REQ'D ON BOTTOM OF REAR DOOR
BAY Ø (D-UA-PDP12-0-0)
BAY "A" (H-961-C CAB)
LOGO
LOGO
DEC TAPE STORAGE RACK #1809544 OR BLANK PANEL
TU55
DS32
DEC TAPE STORAGE RACK #1809544 OR BLANK PANEL
TU55
DS 32
KW12 PANEL OR BLANK PANEL
VR12
DS 32
AD12 PANEL
PDP12 CONSOLE
TABLE
DF 32
DR 12 PANEL OR BLANK
724 P/S
DWØ8-A
BLANK
AG12, AG12-A, OR BLANK PANEL
BLANK
FRONT VIEW
#7006555-0-0 DOOR REQ'D.
BAY "A"
BAY "Ø"
PWR DIST #7005909
MEMORY EM12
PROCESSOR EP12
834 PWR CONT
734 B P/S VARIABLE
783 P/S
REAR VIEW
DISK CONFIGURATION
FIRST USED ON OPTION/MODEL PDP12
DO NOT SCALE DRAWING
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
QTY. DESCRIPTION PART NO. ITEM NO.
PARTS LIST
DRN. DATE 10-13-69
CHK'D. DATE 10-15-69
ENG. DATE 10/17/69
PROJ. ENG. DATE 10/17/69
PROD. DATE 10/17/69
NEXT HIGHER ASSY
digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS
TITLE
EQUIPMENT LAYOUT PDP12
SIZE D CODE AR NUMBER PDP12-Ø-2 REV. D
SCALE
SHEET 2 OF 5
DIST.
REVISIONS REV. CHANGE NO. CHK
DEC FORM NO. DRD 100

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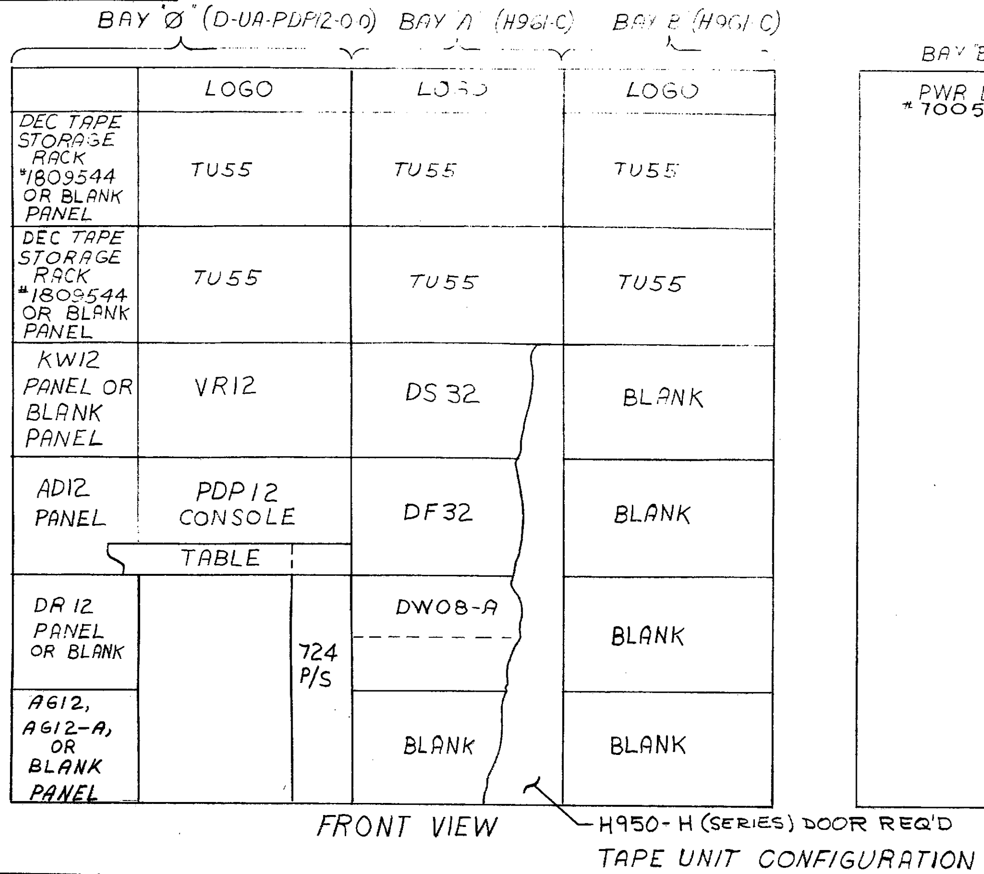

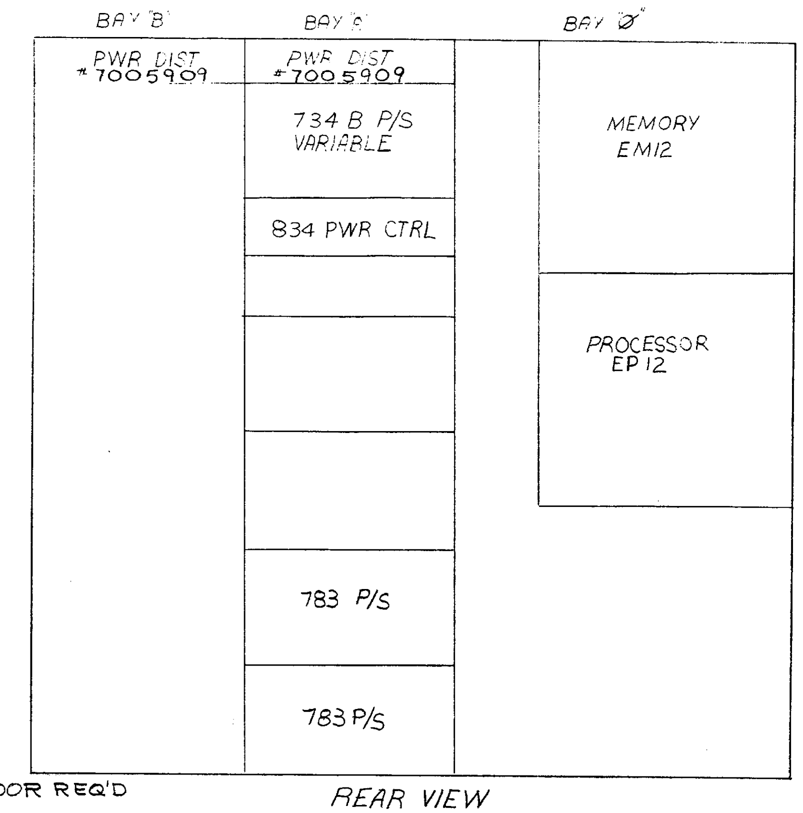

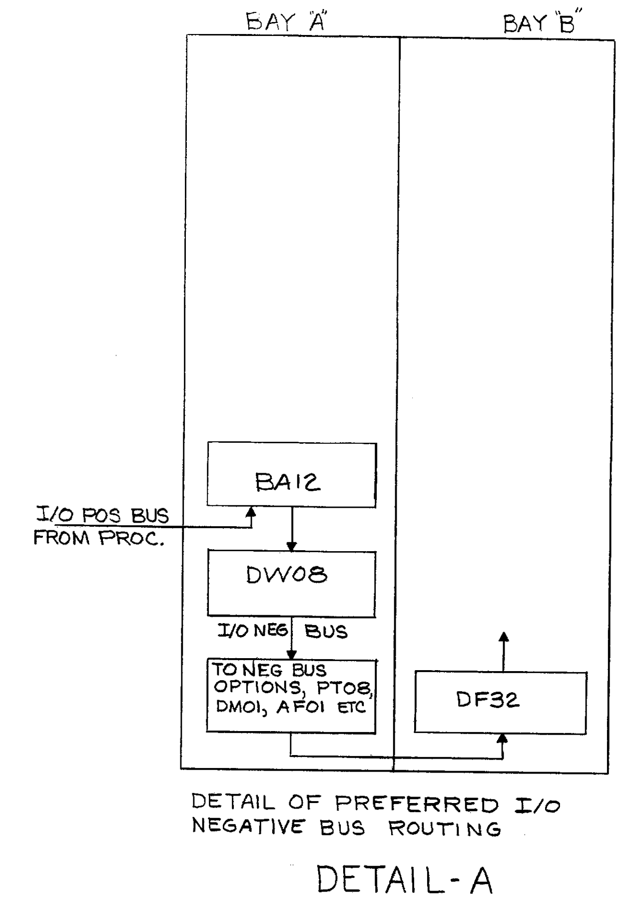

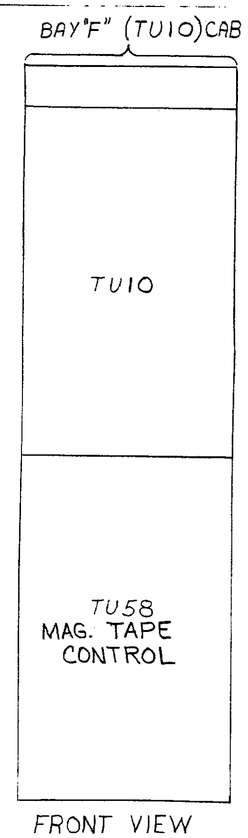

QTY.	DESCRIPTION	PART NO.	ITEM NO.

PARTS LIST

FIRST USED ON OPTION/MODEL: PDP12

DO NOT SCALE DRAWING
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 —

		DATE
DRN.	[signature]	10-14-69
CHK'D	[signature]	10-15-69
ENG.	[signature]	10/17/69
PROJ. ENG.	[signature]	10/17/69
PROD.	[signature]	10/17/69

NEXT HIGHER ASSY

digital EQUIPMENT CORPORATION, MAYNARD, MASSACHUSETTS

TITLE: EQUIPMENT LAYOUT PDP12

SIZE D | CODE AR | NUMBER PDP12-Ø-2 | REV. D

SCALE — | SHEET 3 OF 5 | DIST. C

REVISIONS | REV. | CHANGE NO. | CHK

DEC FORM NO. DRD 100

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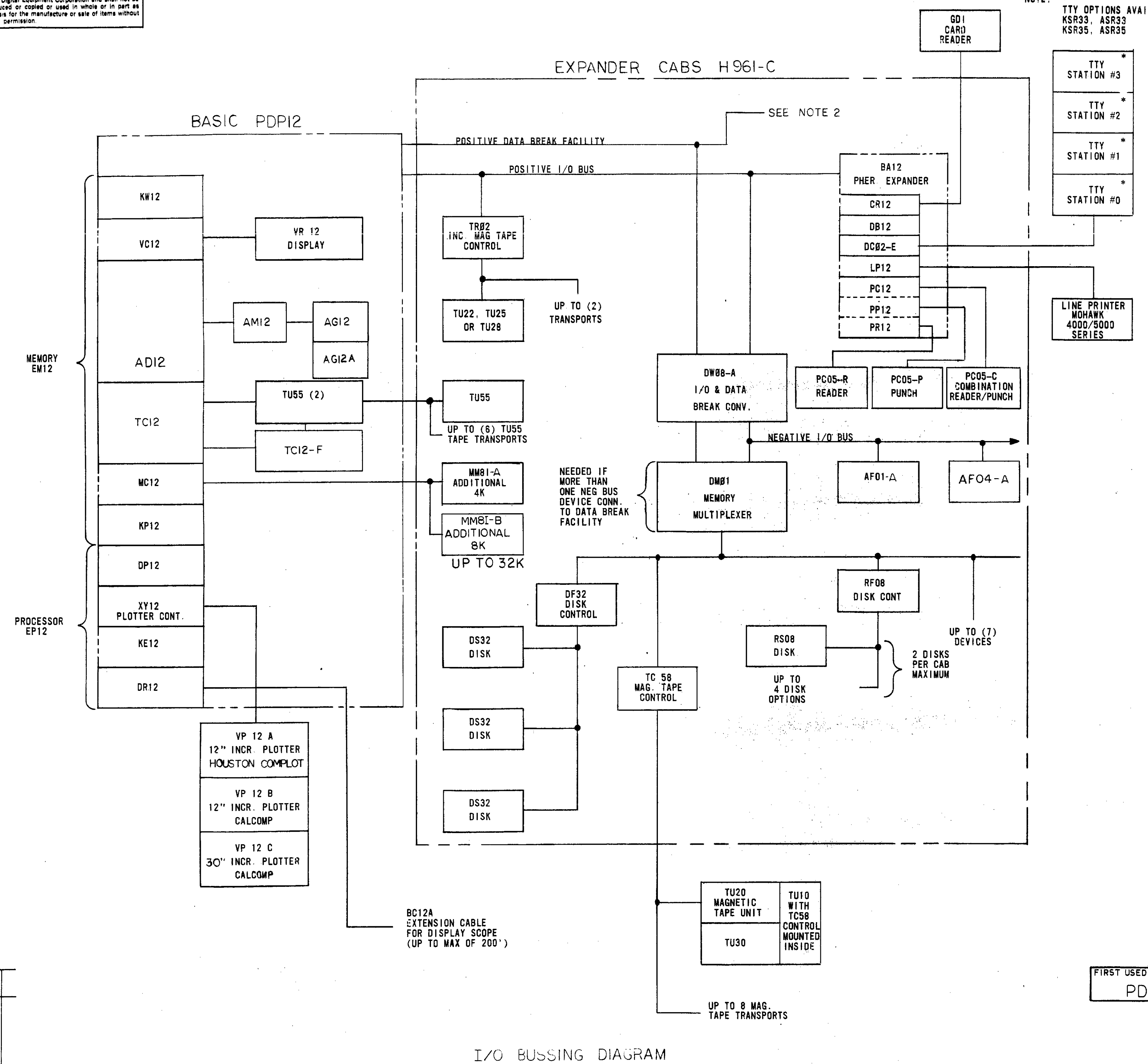

I/O BUSSING DIAGRAM

I/O BUS CABLES

MODEL #	LENGTH	MODULE TYPE FROM	MODULE TYPE TO	CABLE TYPE
BC08A-1	1 FT	M9Ø3	M9Ø3	19 COND MYLAR
-2	2			
-3	3			
-4	4			
-5	5			
-6	6			
-7	7			
-8	8			
-9	9			
-10	10			
-15	15			
BC08A-25	25 FT	M9Ø3	M9Ø3	19 COND MYLAR
BC08B-1	1 FT	M9Ø4	M9Ø4	FLAT COAXIAL 9 COND
-2	2			
-3	3			
-4	4			
-5	5			
-6	6			
-7	7			
-8	8			
-9	9			
-10	10			
-15	15			
BC08B-25	25 FT	M9Ø4	M9Ø4	FLAT COAXIAL 9 COND
BC08C-1	1 FT	M9Ø3	WØ31(2)	19 COND MYLAR
-2	2			
-4	4			
-6	6			
-8	8			
-9	9			
-15	15			
BCØ8C-25	25 FT	M9Ø3	WØ31(2)	19 COND MYLAR
BC08D-1	1 FT	M9Ø4	WØ11(2)	FLAT COAXIAL 9 COND
2	2			
4	4			
6	6			
8	8			
9	9			
15	15			
BCØ8D-25	25 FT	M9Ø4	WØ11(2)	FLAT COAXIAL 9 COND

NOTES:

1. ABOVE CABLE LENGTHS ARE STOCK LENGTHS NON-STOCK LENGTHS ARE AVAILABLE IF SPECIFIED
2. TOTAL BUS CABLE LENGTH SHOULD NOT EXCEDE 50' (WHEN DW08A BUS CONVERTER IS USED LENGTH SHOULD NOT EXCEDE 35').

QTY.	DESCRIPTION	PART NO.	ITEM NO.
	PARTS LIST		

FIRST USED ON OPTION/MODEL: PDP 12

DO NOT SCALE DRAWING. 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. DATE 10-10-69; CHK'D DATE 10-15-69; ENG. DATE 10/17/69; PROJ. ENG. DATE 10/17/69; PROD. DATE 11/17/69

NEXT HIGHER ASSY

digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS

TITLE: EQUIPMENT LAYOUT (PDP12)

SIZE D CODE AR NUMBER PDP12-Ø- 2 REV. D

SCALE

SHEET 4 OF 5

DIST.

REVISIONS: REV. / CHANGE NO. / CHK

DEC FORM NO. DRD 100

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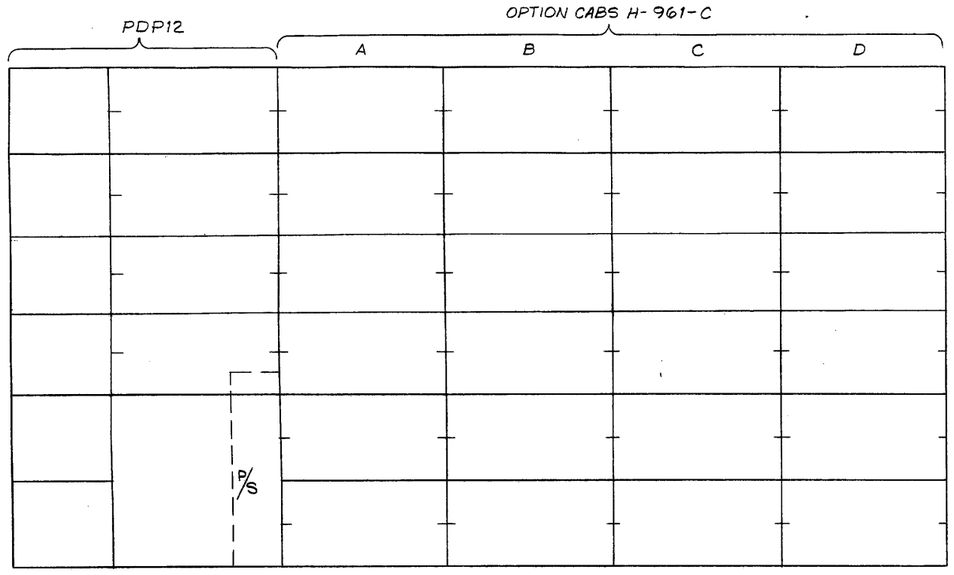
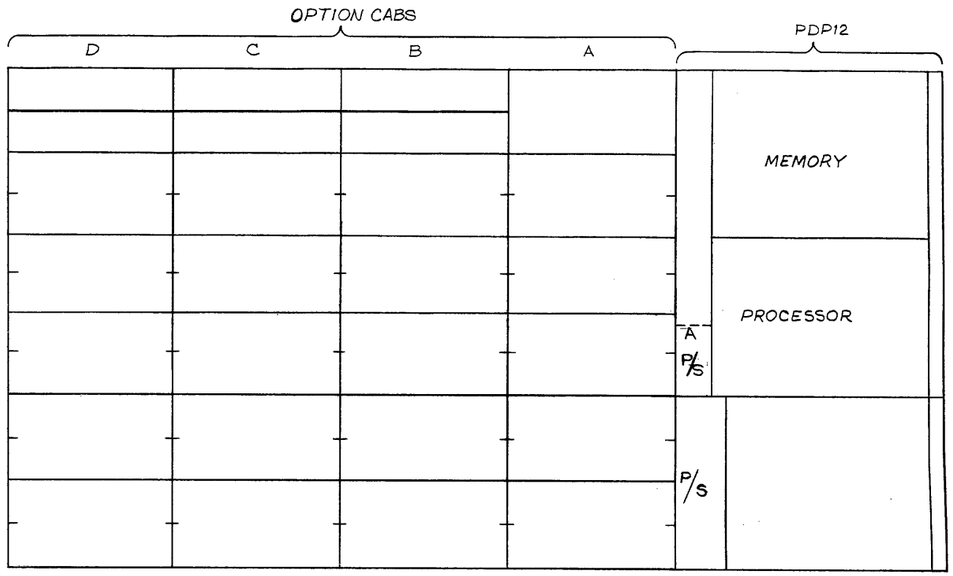


FRONT VIEW



REAR VIEW

REVISIONS	REV.	CHANGE NO.	CHK

FIRST USED ON OPTION/MODEL	DO NOT SCALE DRAWING	DRN. R. GRIFFIN	DATE 10-13-69
PDP12	UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES TOLERANCES DECIMALS ± .005 FRACTIONS ± 1/64 ANGLES ± 0°30' FINAL SURFACE QUALITY ✓ REMOVE BURRS AND BREAK SHARP CORNERS	CHK'D. K. RUSS	DATE 10-15-69
		ENG. L. GALE	DATE 10-17-69
		PROJ. ENG. L. GALE	DATE 10-17-69
		PROD. D. CALL	DATE 10-17-69
	MATERIAL — / —	NEXT HIGHER ASSY — / —	
	FINISH — / —	SCALE — / —	
		SHEET 5 OF 5	

QTY. | DESCRIPTION | PART NO. | ITEM NO.

PARTS LIST

digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS

TITLE: EQUIPMENT LAYOUT PDP12

SIZE	CODE	NUMBER	REV.
D	AR	PDP12-Ø-2	D

DIST.

DEC FORM NO. DRD 100

SIZE D | CODE AR | NUMBER PDP12-Ø-2 | REV D

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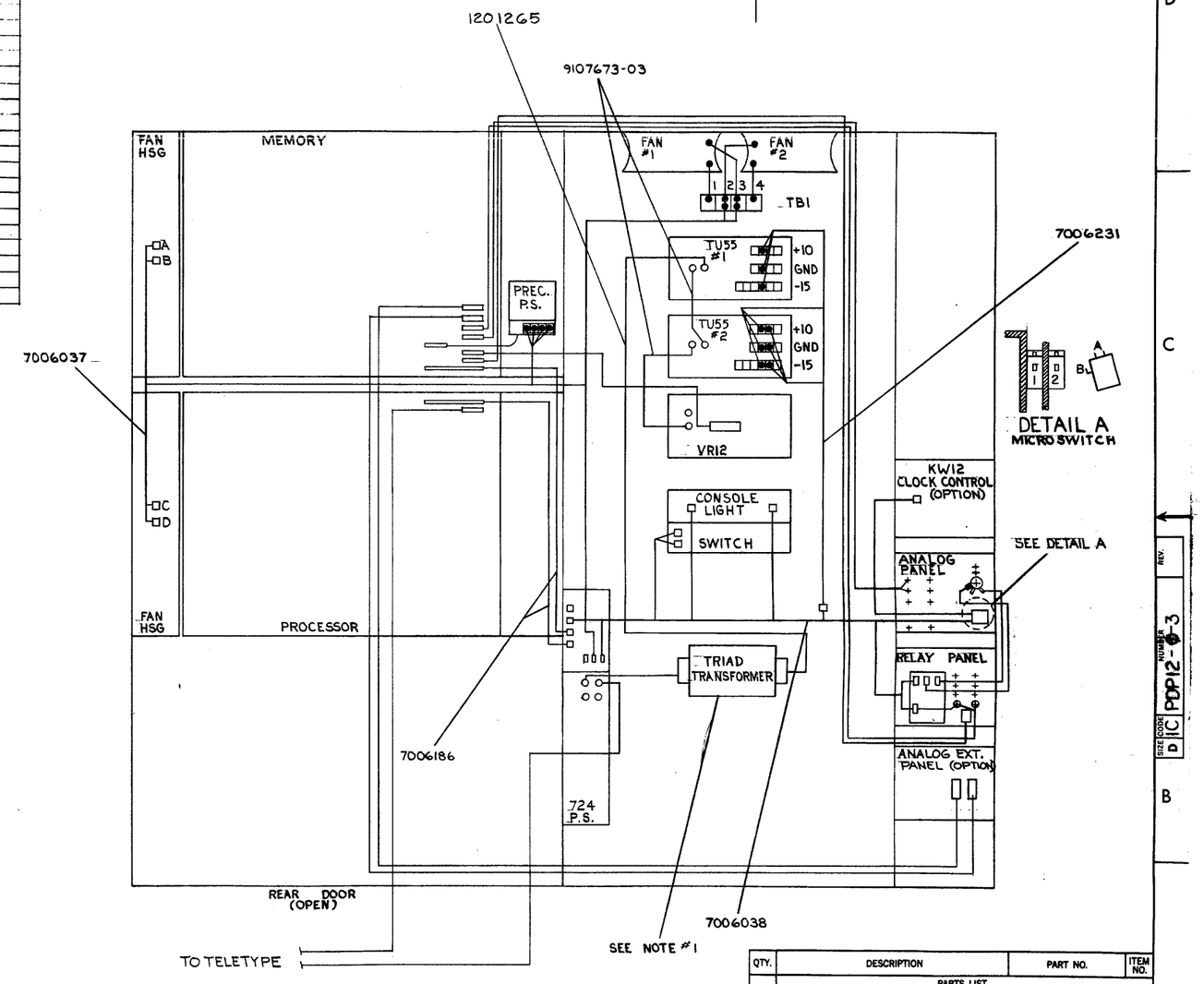
POWER WIRING & CABLES

PART NO.	COLOR	FROM/HARNESS LEAD NO.	TO SYS. LOC.	REMARKS
7006038	—	P1	724 P/S CONSOLE CONN	POWER CABLE D.C.
	—	P2	724 P/S CONSOLE SWITCH	
	BLU	8	SW BD-15V TAB	
	BLU	9	SW BD-15V PANEL LO	
	BLK	10	LIGHT BD GND TAB	
	BLK	11	" " GND TAB	
	ORN	12	" " +15V TAB	
	ORN	13	" " +15V TAB	
	ORN	14	RELAY BD +15V TAB	
	BLK	15	RELAY BD GND TAB	
	WHT	16	MICRO SW. 2B(COM)	
	RED	17	" " 2A(N.C.)	
	BLU	18	" " 1A(N.O.)	
	BLU	19	" " 1B(COM)	
7006038	—	P3	LINC TAPE D.C.	POWER CABLE D.C.
			CABLE 7006231-P1	
7006231		P1	PWR CABLE D.C.	LINC TAPE D.C.
			7006038-P3	
	BLK	1	TU55 (2) GND	
	GRN	2	" +10	
	BLU	3	" -15	
	GRN	7	TU55 (1) +10	
	BLU	8	" -15	
	BLK	9	" GND	
	BLU	10	TU55 (2) -15	
	GRN	11	" +10	
7006231	BLK	12	" GND	LINC TAPE D.C.
7006037	—	P1	FAN HSG CONN B	MAIN FRAME 120 VAC
	—	P2	" " " A	
	—	P3	724 P/S 115 VAC AU.TA.	
	WHT	7	TB1 - 2	
	RED	8	TB1 - 3	
	WHT	9	PREC. P/S - WHT	
	RED	10	" " RED	
	WHT	11	" " WHT	
	RED	12	" " RED	
	—	P4	FAN HSG CONN D	
7006037	—	P5	" " " C	MAIN FRAME 120 VAC
7006186	—	724 P/S MEMORY	LOGIC EF 48	LOGIC PWR CABLE
7006186	—	724 P/S PROCESSOR	LOGIC MN 01	LOGIC PWR CABLE
REF	GRN	RELAY PANEL JAX	RELAY BD GND TAB	PANEL LEAD WIRE
REF	ORN	ANALOG PNL R10-1	RELAY BD SPKR #1	PANEL LEAD WIRE
REF	VIO	" R10-3	" " SPKR #3	PANEL LEAD WIRE
REF	—	PRECISION P/S	LOGIC E 35	LOGIC PWR CABLE
REF	BLK	FAN #1	TB1 - 1	
REF	BLK	FAN #1	TB1 - 3	
REF	BLK	FAN #2	TB1 - 2	
REF	BLK	FAN #2	TB1 - 4	
REF	—	TRIAD XMFR INPUT	724 P/S SERV. RECP.	240 VAC SYS. ONLY } SEE NOTE #1
1201265	—	TRIAD XMFR OUTPUT	TU55 (1) AC INPUT	240 VAC SYS. ONLY }
9107673-03	GRY	TU55 (1) AC OUTPUT	TU55 (2) AC INPUT	
9107673-03	GRY	TU55(2) AC OUTPUT	VR12 AC INPUT	
1201265	—	724 P/S SERV RECP	TU55(1) AC INPUT	115 VAC SYS. ONLY } SEE NOTE #1
REF	RED	KW12 CLOCK PNL	MICRO SW 2A (N.O.)	PANEL LEAD WIRE
REF		TELETYPE	724/PS SERV RECP	POWER CORD

SIGNAL CABLE CONNS.

PART	FROM	TO	REMARKS
7006238	VR12 AMP CONN	LOGIC F 38	INTERNAL SCOPE CABLE
ANALOG PNL	ANALOG PANEL CHAN 8-7	LOGIC F 33	
RELAY PNL	RELAY PNL CHAN 15-17	LOGIC F 32	
RELAY PNL	RELAY PNL SCP CBL	LOGIC F 39	
REF	TU55(#1) - AB02	TU55(#2) AB02	INFO CONN
REF	TU55(#1) AB03	LOGIC EF06	" "
REF	TU55(#1) AB05	TU55(#2) AB05	COMMAND CONN
REF	TU55(#1) AB06	LOGIC E05	" "
CONSOLE	CONSOLE SWITCHES	LOGIC N 33	
		N 34	
		N 35	
	CONSOLE SWITCHES	N 36	
	CONSOLE LIGHT BD	N 29	
		N 30	
		N 31	
CONSOLE	CONSOLE LIGHT BD	LOGIC N 32	
RELAY PNL	RELAY BOARD	LOGIC N 28	
REF	TELETYPE	LOGIC N02	
ANALOG EXT	ANALOG EXT CHAN 28-27	LOGIC F 31	OPTION
ANALOG EXT	ANALOG EXT CHAN 36-37	LOGIC F 30	OPTION

NOTES:
1. WHEN USING TRIAD TRANSFORMER FOR 240V SYSTEM CONNECT POWER CORDS AS SHOWN. FOR 120V SYSTEM CONNECT POWER CORD FROM 724 P/S SERVICE RECP. TO TU55(1) 115V INPUT.



QTY.	DESCRIPTION	PART NO.	ITEM NO.

PARTS LIST

FIRST USED ON OPTION/MODEL: PDP12

DO NOT SCALE DRAWING

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

		DATE
DRN	L. Kasha	6/27/69
CHK'D	R. Russ	7/8/69
ENG	L. Hale	8/11/69
PROJ. ENG	L. Hale	8/11/69
PROD.	W. Hall	8/11/69

NEXT HIGHER ASSY: D-UA-PDP12-0-0

SCALE: NONE

SHEET OF

digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS

TITLE: POWER WIRING & SIGNAL CABLES

SIZE	CODE	NUMBER	REV
D	IC	PDP12-0-3	

DIST. G

REVISIONS | REV. | CHANGE NO. | CHK

DEC FORM NO. DRD 100

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MANUAL TIME PULSE FUNCTIONS

MANUAL FUNCTION TIMING CHAIN IS STARTED IF RUN = 0 "AND" ONE OF THESE KEYS ARE DEPRESSED OR RUN = 1 "AND" INTERNAL PAUSE = 1 "AND" IN PROGRES = 1 "AND" KEY I/O PRESET

MFT Ø

- IO PRESET: Ø → SKIP; Ø → STATES; Ø → H
- FILL + EXAM: Ø → SKIP; Ø → STATES; Ø → H
- FILL STEP: Ø → SKIP; Ø → STATES; Ø → H
- STEP EXAM: Ø → SKIP; Ø → STATES; Ø → H
- START 2Ø: Ø → SKIP; Ø → STATES; Ø → H
- START 4ØØ: Ø → SKIP; Ø → STATES; Ø → H
- START LSW: Ø → SKIP; Ø → STATES; Ø → H
- CONT
- DØ: Ø → SKIP; Ø → STATES; Ø → H

MFT 1

- I/O PRESET PULSE Ø → THE WORLD INCLUDING AC, LINK, FLOW, AUTO, ETC.
  KEY LINC → SET LINC MODE
  -KEY LINC → SET 8 MODE
- 1 → A ENABLE
- 1 → AUTO FF IF AUTO SW ON
- 1 → FILL STEP
- 1 → STEP EXAM FF
- 1 → A ENABLE
- 1 → AUTO FF IF AUTO SW ON
- 2Ø → PC
- 4ØØ → PC
- LSW → PC
  LSW Ø,1 → IB-IF Ø3,Ø4
  IFSWØ-2 → IB ; IFØ-2
- 1 → A ENABLE
  1 → AUTO FF
  IF AUTO SW ON
  1 → DØ FF
  Ø → EN MEM

MFT 2

- 1 → IBØ3, IFØ3
  DFØ3, DFØ4
- 1 → RUN
- 1 → RUN
- 1 → RUN
- □ PC → MA
- 1 → RUN
- 1 → RUN

WAIT FURTHER CONSOLE ACTIONS

T1 FLOW 11

T1 FLOW 11

T1 FLOW 11

LINC MODE

LINC MODE FETCH FLOW 12

8 MODE

8 MODE FETCH FLOW 21

T1 FLOW 11

□ LINC MODE { PC 2-11 → MA 2-11; IF 3-4 → MA Ø-1

8 MODE PC Ø-11 → MA Ø-11

REVISIONS					
CHK	CHANGE NO.	REV.			
	EP12-00003	A	T. Quillin	5-30-69	
			L. GALE		
	EP12-00004	B		6/20/69	
			L. GALE		
	EP12-00006	C	T. Quillin	7-28-69	
			GALE		
	EP12-00015	D		8-13-69	
			L. GALE	10-16-69	
FV	12-00085	E	T. Quillin	9-23-70	
			GALE	9/28/70	

DEC FORM NO. DRD 102A

QTY.	DESCRIPTION	PART NO.	ITEM NO.
	PARTS LIST		

UNLESS OTHERWISE SPECIFIED

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	Joe Ogna	DATE 9-24-68
CHK'D	L. Scala	DATE 2/18/69
ENG	[illegible]	DATE 2/17/69
PROJ. ENG.	[illegible]	DATE 2/19/69
PROD.	W. Hall	DATE 2/19/69

FIRST USED ON: PDP-12

SCALE

SHEET 1 OF 1

digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS

TITLE: MANUAL TIMING FUNCTIONS PART 1

SIZE	CODE	NUMBER	REV.
D	FD	PDP12-Ø-10	E

DIST.

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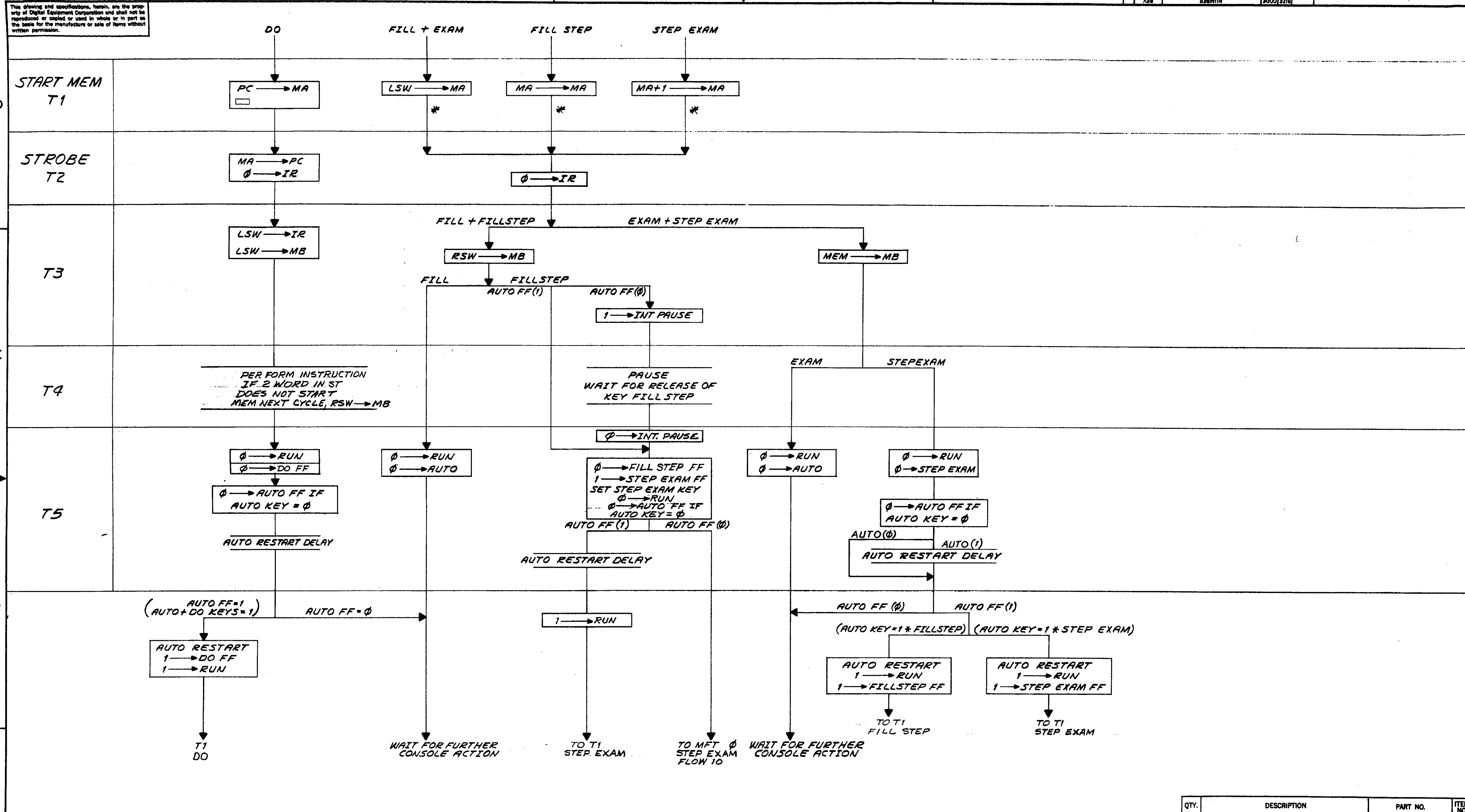

DO
FILL + EXAM
FILL STEP
STEP EXAM
START MEM T1
PC → MA
LSW → MA
MA → MA
MA+1 → MA
STROBE T2
MA → PC
Ø → IR
Ø → IR
T3
LSW → IR
LSW → MB
FILL + FILLSTEP
EXAM + STEP EXAM
RSW → MB
MEM → MB
FILL
FILLSTEP
AUTO FF(1)
AUTO FF(Ø)
1 → INT PAUSE
T4
PERFORM INSTRUCTION
IF 2 WORD IN ST
DOES NOT START
MEM NEXT CYCLE, RSW → MB
PAUSE
WAIT FOR RELEASE OF
KEY FILL STEP
EXAM
STEPEXAM
Ø → INT. PAUSE
T5
Ø → RUN
Ø → DO FF
Ø → AUTO FF IF
AUTO KEY = Ø
AUTO RESTART DELAY
Ø → RUN
Ø → AUTO
Ø → FILL STEP FF
1 → STEP EXAM FF
SET STEP EXAM KEY
Ø → RUN
Ø → AUTO FF IF
AUTO KEY = Ø
AUTO FF (1)
AUTO FF (Ø)
AUTO RESTART DELAY
Ø → RUN
Ø → AUTO
Ø → RUN
Ø → STEP EXAM
Ø → AUTO FF IF
AUTO KEY = Ø
AUTO(Ø)
AUTO (1)
AUTO RESTART DELAY
AUTO FF=1
(AUTO + DO KEYS = 1)
AUTO FF = Ø
1 → RUN
AUTO FF (Ø)
AUTO FF (1)
(AUTO KEY = 1 * FILLSTEP)
(AUTO KEY = 1 * STEP EXAM)
AUTO RESTART
1 → DO FF
1 → RUN
AUTO RESTART
1 → RUN
1 → FILLSTEP FF
AUTO RESTART
1 → RUN
1 → STEP EXAM FF
TO T1
FILL STEP
TO T1
STEP EXAM
T1
DO
WAIT FOR FURTHER
CONSOLE ACTION
TO T1
STEP EXAM
TO MFT Ø
STEP EXAM
FLOW 10
WAIT FOR FURTHER
CONSOLE ACTION

▭ LINC MODE { PC 2-11 → MA 2-11 ; IF 3-4 → MA Ø-1 }

8 MODE PC Ø-11 → MA Ø-11

✱ GNI IS DISABLED THEREFORE NO MAJOR STATE

REV.	CHANGE NO.	CHK
A	EP12-00015	10-16-69
	L. GALE	10-17-69
B	FV 12-000085	9-23-70
	GALE	9-28-70

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. DATE 9-26-68
CHK'D. DATE 2/19/69
ENG. DATE 2/19/69
PROJ. ENG. DATE 2/19/69
PROD. DATE 2/19/69

FIRST USED ON PDP-12

SCALE

SHEET 1 OF 1

QTY. | DESCRIPTION | PART NO. | ITEM NO.

PARTS LIST

digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS

TITLE MANUAL TIMING FUNCTIONS PART 2

SIZE D CODE FD NUMBER PDP12-Ø-11 REV. B

DIST.

DEC FORM NO. DRD 102A

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ENTER HERE FROM END OF PREVIOUS INSTRUCTION (GNI TRUE)

EVENT TIME

START MEM T 1

NOT BRK OR INT / BRK OR INT

DO FF=Ø: PC+SKIP → MA 2-11; IF 3-4 → MA Ø-1; 1 → FETCH

DO FF=1: PC 2-11 → MA 2-11; IF 3-4 → MA Ø-1; 1 → FETCH

PROG: 1 → INTERRUPT

DATA: 3 CYCLE: 1 → WC

NOT 3 CYCLE: NOT TAPE: 1 → BREAK

TAPE: 1 → TAPE BREAK

STROBE T 2

MA+1 → PC ▲; Ø → IR

MA → PC; Ø → IR

T 3

MEM → MB; MEM → IR; Ø → SKIP; Ø → H

LSW → MB; LSW → IR

T 4

CONT

MSC

N=Ø-4 / N=4-11 / N=12-17 / LIF / LDF

T 5

N=Ø: Ø → RUN

N=1: I=Ø AC → TAPE EXT REG; I=1 TAPE EXT REG → AC

N=2: SELECT PDP-8 MODE

N=3: I=Ø TAC → AC; I=1 TAC → TMA SETUP

N=4 I=Ø:

AC BIT	
	AC BIT=1 SET FF
	AC BIT=Ø CLEAR FF
2	TRAP FLIP-FLOP
3	TAPE TRAP
4	HALF SIZE CHARACTER
5	FAST SAMPLE
6	DISABLE TELETYPE INTERRUPT
7	GENERATE IO PWR CLEAR

N=4 I=1: CONTROL FLIP-FLOPS TO AC

N=5: MQ,N → AC,N+1

N=6: Ø → PC SAVE

N=7:

N=10:

N=11: CLEAR → AC; CLEAR → LINK; CLEAR → MQ

N=12:

N=13:

N=14: AC 6-11 → R Ø-5

N=15: R Ø-5 → AC 6-11

N=16: NO OPERATION

N=17: $\overline{AC}$ → AC

LIF: MB Ø7-11 → IB ØØ-Ø4; Ø → INHIBIT SYNC; 1 → INT INHIBIT; LOAD SAVE FIELD

LDF: MB Ø7-11 → DF ØØ-Ø4

NEXT INSTRUCTION

▲ INDICATES 1Ø BIT ADDITION (BITS 2-11)

REVISIONS				
CHK	CHANGE NO.	REV.		
[illegible]	EP12-00002	A	J. SCANLON	
[illegible]	EP12-00003	B	L. GALE	10-17-69
[illegible]	EP12-00015	C	[illegible]	10-17-69
FV	12-00085	D	GALE	9-23-70

DEC FORM NO. DRD 102A

UNLESS OTHERWISE SPECIFIED

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.	[illegible]	DATE	10/9/68
CHK'D	J. Scanlon	DATE	2/19/69
ENGR	[illegible]	DATE	2/19/69
PROG ENG.	[illegible]	DATE	2/19/69
PROD.	[illegible]	DATE	2/19/69

FIRST USED ON: PDP-12

SCALE

SHEET 1 OF 1

QTY. | DESCRIPTION | PART NO. | ITEM NO.

PARTS LIST

digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS

TITLE: LINC FETCH 1A

SIZE	CODE	NUMBER	REV.
D	FD	PDP12-Ø-12	D

DIST.

REV D

SIZE D CODE FD NUMBER PDP12-Ø-12

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EVENT TIME

START MEM T1

STROBE T2

T3

JMP • X ≠ Ø
JMP • X=Ø • SAVE PC (Ø)

T4

FROM 1A

ROR
SCR
ROL

N=Ø | N≠Ø

1 → RECYCLE SYNC
1 → T5 RECYCLE *

SKL
SNS
SKP

JMP
X=Ø
SAVE PC (1)

ADD, STC
DIS,
XSK

IBØ-4 → IFØ-4

Ø → INT INHIBIT
IF INHIBIT SYNC=1

T5

I=Ø + COND MET
I=1 + NOT COND MET

1 → SKIP

Ø → PCØ-11

N=Ø | N≠Ø

ROR | SCR | ROL

Ø → RECYCLE SYNC
ONE MORE T5
Ø → T5 RECYCLE

$AC_N \rightarrow AC_{N-1}$
$MQ \rightarrow MQ_{N-1}$
$AC11 \rightarrow MQØ$

$AC_N \rightarrow AC_{N-1}$
$MQ \rightarrow MQ_{N-1}$
$AC11 \rightarrow MQØ$
$ACØ \rightarrow ACØ$

$AC_N \rightarrow AC_{N+1}$

INCLUDE LINK IN SHIFT PATH IF IR7=1

(N-1) → N

NEXT INSTRUCTION

1 → EXECUTE

* OCCURS AT OFF PAUSE

REVISIONS	CHK	CHANGE NO.	REV.
		EP12-00002	A
		EP12-00003	B
		EP12-00016	C
		EM12-00030	D
		12-00085	E

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

QTY.	DESCRIPTION	PART NO.	ITEM NO.

PARTS LIST

		DATE
DRN	Joe Ogren	10/4/68
CHK'D	D Scanlon	2/19/69
ENG	T Gale	2/19/69
PROD ENG	T Gale	2/19/69
PROD.	M Wall	2/19/69

digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS

TITLE: LINC FETCH 18

FIRST USED ON: PDP-12

SCALE

SHEET 1 OF 1

SIZE	CODE	NUMBER	REV.
D	FD	PDP12-Ø-13	E

DIST.

DEC FORM NO. DRD 102A

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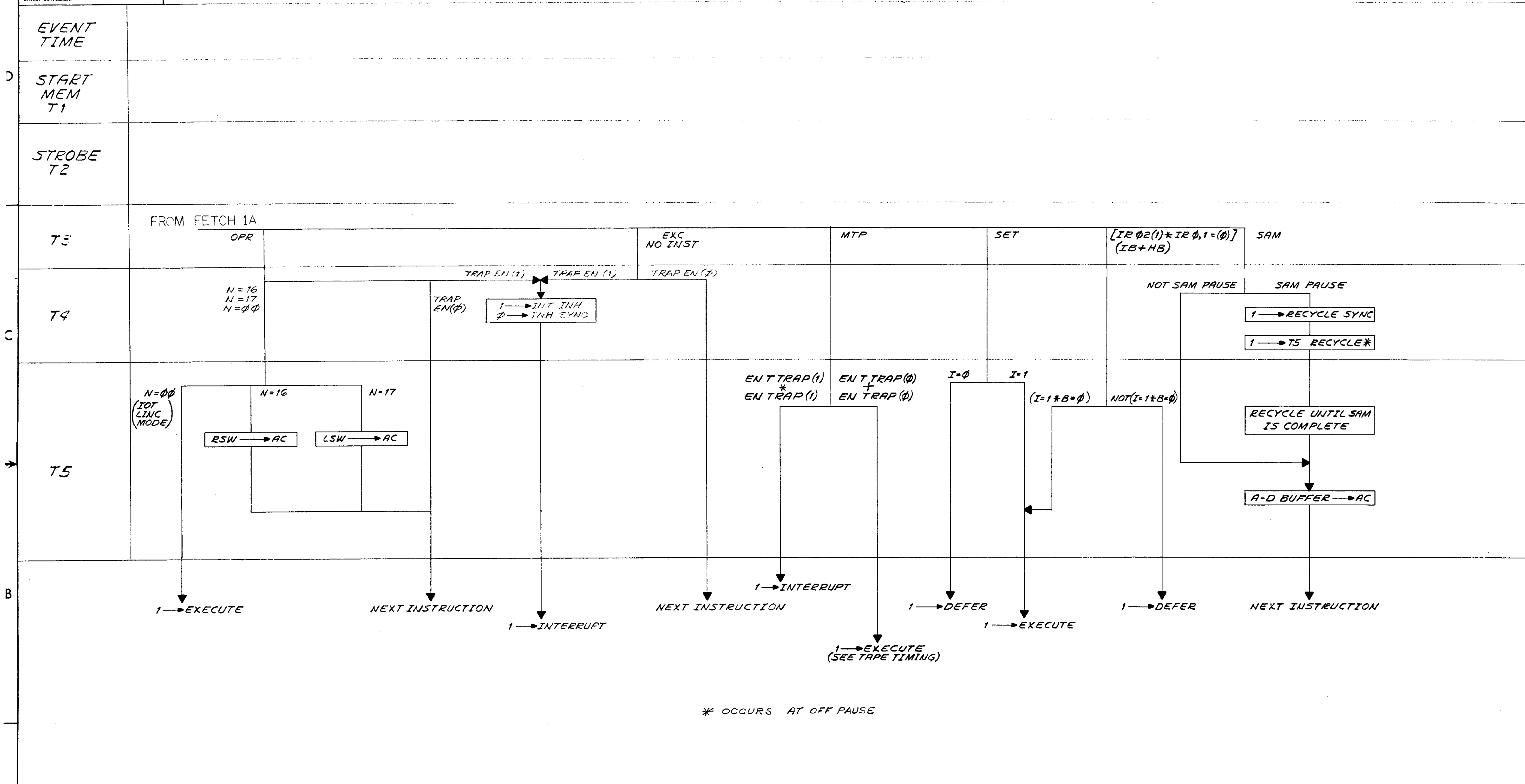

QTY.	DESCRIPTION	PART NO.	ITEM NO.

PARTS LIST

REVISIONS			
REV.	CHANGE NO.		CHK
A	EP12-00003	GALE	
B	EP12-00015	L. GALE	
C	12-00085	GALE	FV

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. DATE 1Ø-5-68
CHK'D DATE
ENG. DATE
PROJ. ENG. DATE
PROD. DATE
FIRST USED ON PDP-12
SCALE
SHEET 1 OF 1

digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS

TITLE LINC FETCH 2

SIZE D CODE FD NUMBER PDP12-Ø-14 REV. C

DIST.

DEC FORM NO. DRD 102A

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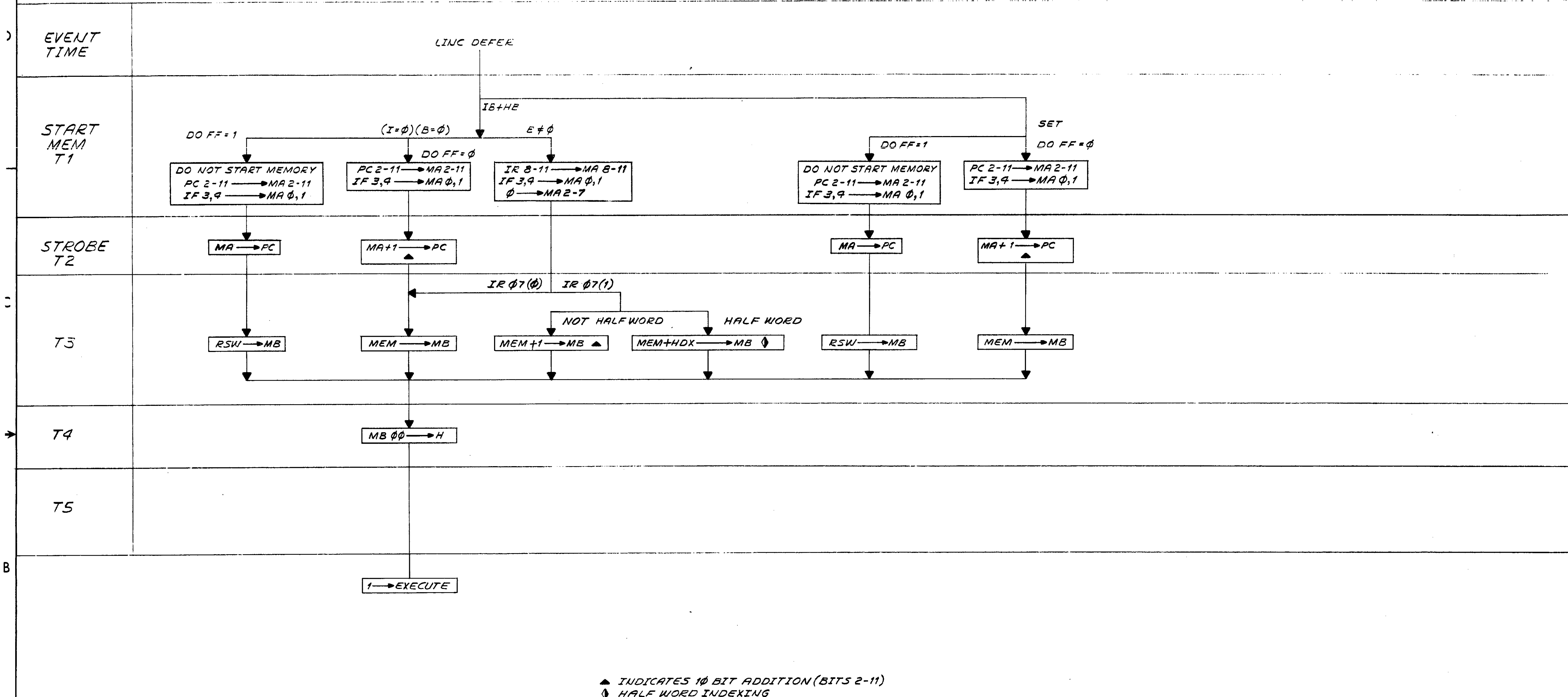

QTY.	DESCRIPTION	PART NO.	ITEM NO.

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. DATE 24 AUG 68

CHK'D DATE

ENG. DATE

PROJ. ENG. DATE

PROD. DATE

FIRST USED ON PDP-12

SCALE

SHEET OF

DIGITAL EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS

TITLE LINC DEFER

SIZE D CODE FD NUMBER PDP12-Ø-15 REV.

DIST.

REVISIONS REV. CHANGE NO. CHK

DEC FORM NO. DPD 102A

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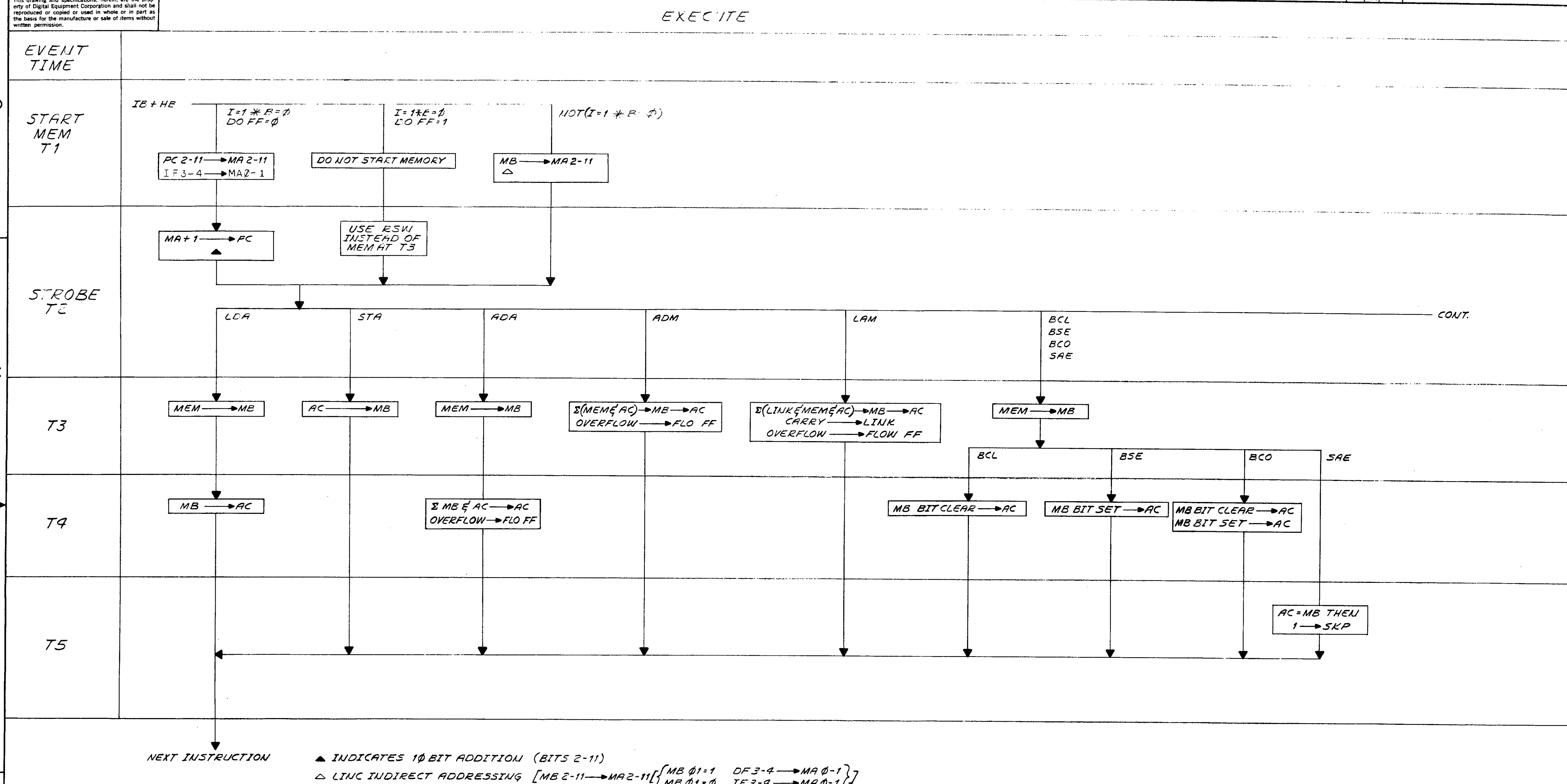

REV.	CHANGE NO.		CHK
A	EP12-00003	T. Quillin 1-29-69 GALE	
B	12-00085	GALE	

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

QTY.	DESCRIPTION	PART NO.	ITEM NO.

PARTS LIST

DRN. Joe Agua — DATE 9-SEPT-68
CHK'D Scarlin
ENG.
PROJ. ENG.
PROD.
FIRST USED ON PDP-12
SCALE
SHEET 1 OF 1

digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS

TITLE: LINC EXECUTE

SIZE D CODE FD NUMBER PDP12-Ø-16 REV. B

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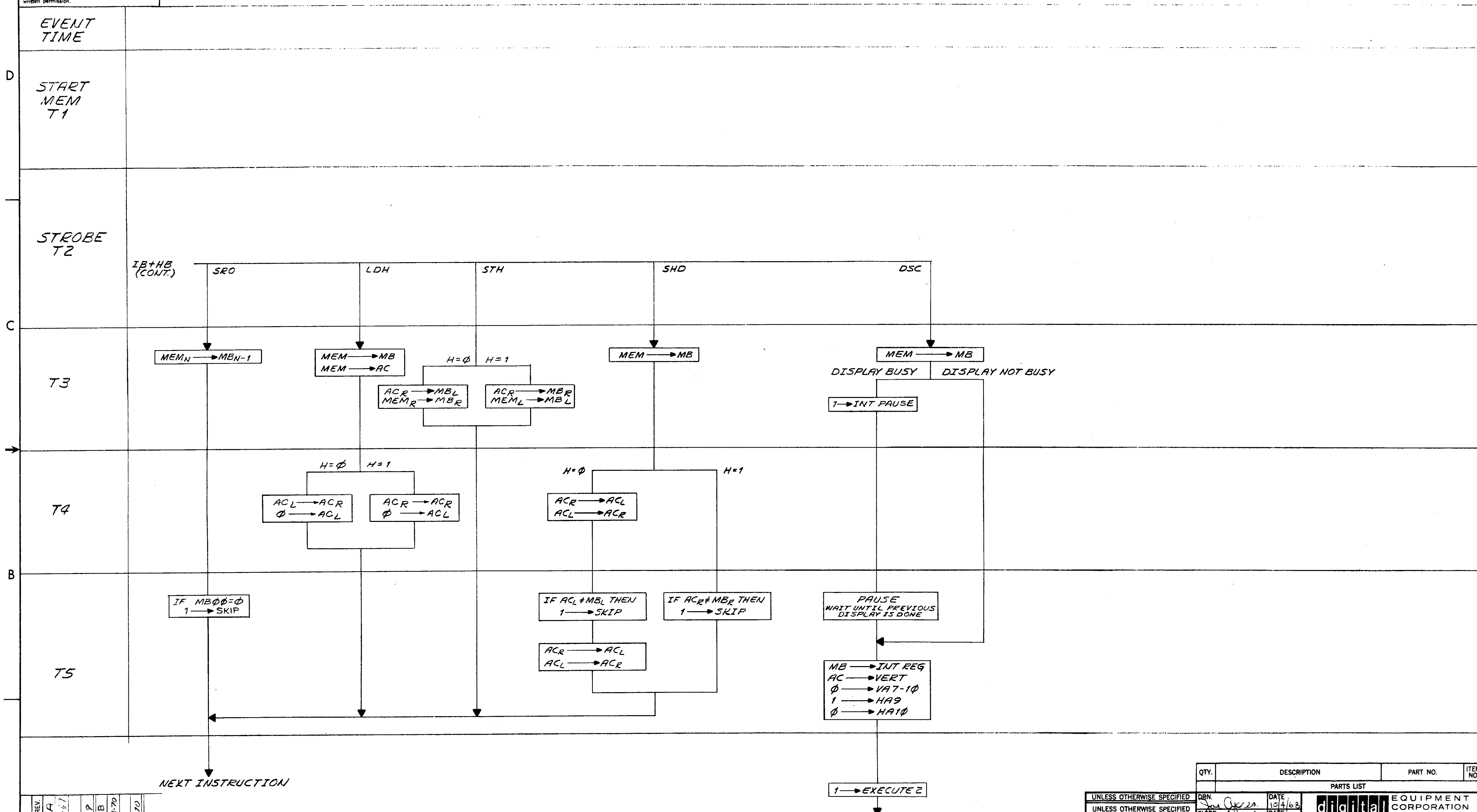
EXECUTE (CONT.)



REVISIONS			
CHK	CHANGE NO.		REV.
	EP12-00003	GALE	A
FV	12-00085	GALE	B

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	DRN. DATE 10/4/68
MATERIAL	FIRST USED ON PDP-12
FINISH	SCALE / SHEET 1 OF 1

digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS

TITLE: LINC EXECUTE

SIZE D CODE FD NUMBER PDP12-Ø-17 REV. B

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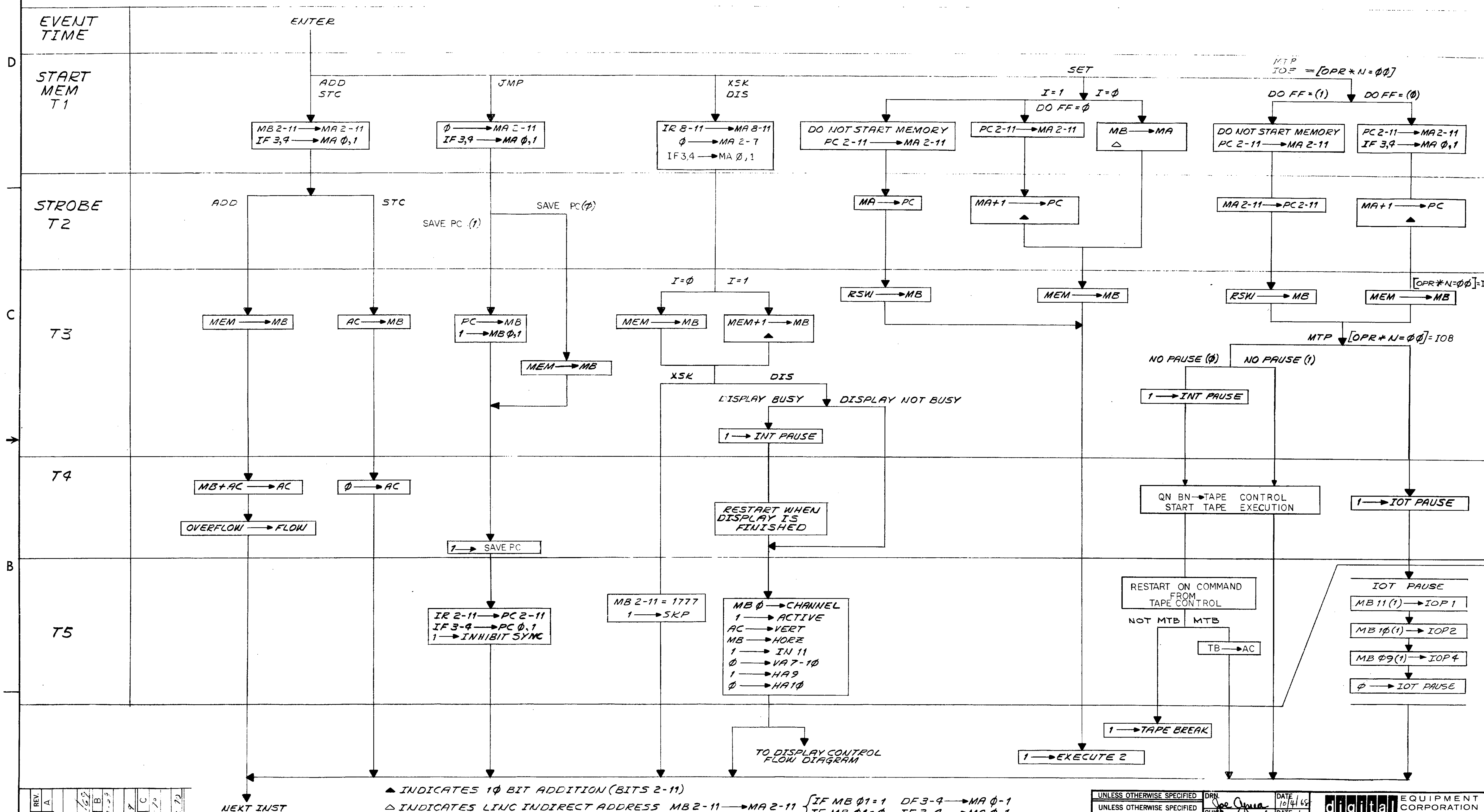
EXECUTE



EVENT TIME
START MEM T1
STROBE T2
T3
T4
T5
ENTER
ADD STC
JMP
XSK DIS
MB 2-11 → MA 2-11
IF 3,9 → MA Ø,1
Ø → MA 2-11
IF 3,9 → MA Ø,1
IR 8-11 → MA 8-11
Ø → MA 2-7
IF 3,4 → MA Ø,1
ADD
STC
SAVE PC (1)
SAVE PC (Ø)
MEM → MB
AC → MB
PC → MB
1 → MB Ø,1
MEM → MB
I=Ø
I=1
MEM → MB
MEM+1 → MB
XSK
DIS
DISPLAY BUSY
DISPLAY NOT BUSY
1 → INT PAUSE
RESTART WHEN DISPLAY IS FINISHED
MB+AC → AC
Ø → AC
OVERFLOW → FLOW
1 → SAVE PC
IR 2-11 → PC 2-11
IF 3-4 → PC Ø,1
1 → INHIBIT SYNC
MB 2-11 = 1777
1 → SKP
MB Ø → CHANNEL
1 → ACTIVE
AC → VERT
MB → HORZ
1 → IN 11
Ø → VA 7-1Ø
1 → HA 9
Ø → HA 1Ø
TO DISPLAY CONTROL FLOW DIAGRAM
SET
I=1
I=Ø
DO FF=Ø
DO NOT START MEMORY
PC 2-11 → MA 2-11
PC 2-11 → MA 2-11
MB → MA
MA → PC
MA+1 → PC
RSW → MB
MEM → MB
1 → EXECUTE 2
MTP
IOF = [OPR*N=ØØ]
DO FF=(1)
DO FF=(Ø)
DO NOT START MEMORY
PC 2-11 → MA 2-11
PC 2-11 → MA 2-11
IF 3,9 → MA Ø,1
MA 2-11 → PC 2-11
MA+1 → PC
[OPR*N=ØØ]=IOB
RSW → MB
MEM → MB
MTP
[OPR*N=ØØ]=IOB
NO PAUSE (Ø)
NO PAUSE (1)
1 → INT PAUSE
QN BN → TAPE CONTROL
START TAPE EXECUTION
1 → IOT PAUSE
RESTART ON COMMAND FROM TAPE CONTROL
NOT MTB
MTB
TB → AC
1 → TAPE BREAK
IOT PAUSE
MB 11 (1) → IOP 1
MB 1Ø(1) → IOP2
MB Ø9(1) → IOP4
Ø → IOT PAUSE
NEXT INST

▲ INDICATES 1Ø BIT ADDITION (BITS 2-11)

△ INDICATES LINC INDIRECT ADDRESS MB 2-11 → MA 2-11 {IF MB Ø1=1 DF 3-4 → MA Ø-1; IF MB Ø1=Ø IF 3-4 → MA Ø-1}

REVISIONS			
CHK	CHANGE NO.		REV.
	EPI2-0000	J. SCANLON	A
	EPI2-00003	GALE	B
FV	12-00085	GALE	C

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. DATE 10/4/68
CHKD. DATE 2/18/69
ENG. DATE
PROJ. ENG. DATE
PROD. DATE

FIRST USED ON PDP 12

SCALE

SHEET 1 OF 1

digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS

TITLE LINC EXECUTE

SIZE D CODE FD NUMBER PDP12-Ø-18 REV. C

DIST.

DEC FORM NO. DRD 102A

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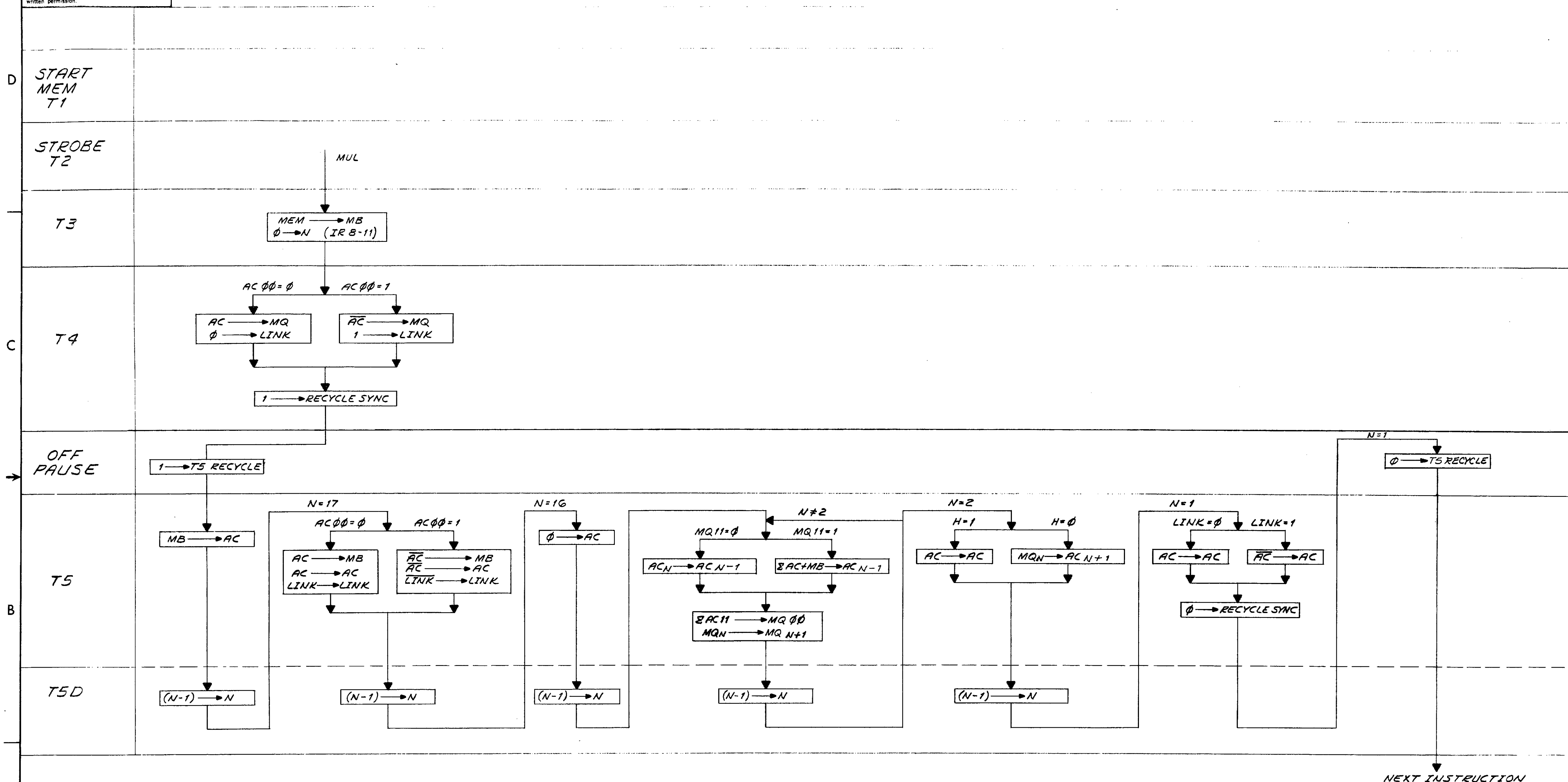


QTY.	DESCRIPTION	PART NO.	ITEM NO.

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. / CHKD. / ENG. / PROJ. ENG. / PROD. (signatures) — DATES: 2/18/69, 2/18/69, 2/19/69, 2/19/69, 2/19/69

FIRST USED ON: PDP-12

SCALE

SHEET 1 OF 1

digital EQUIPMENT CORPORATION, MAYNARD, MASSACHUSETTS

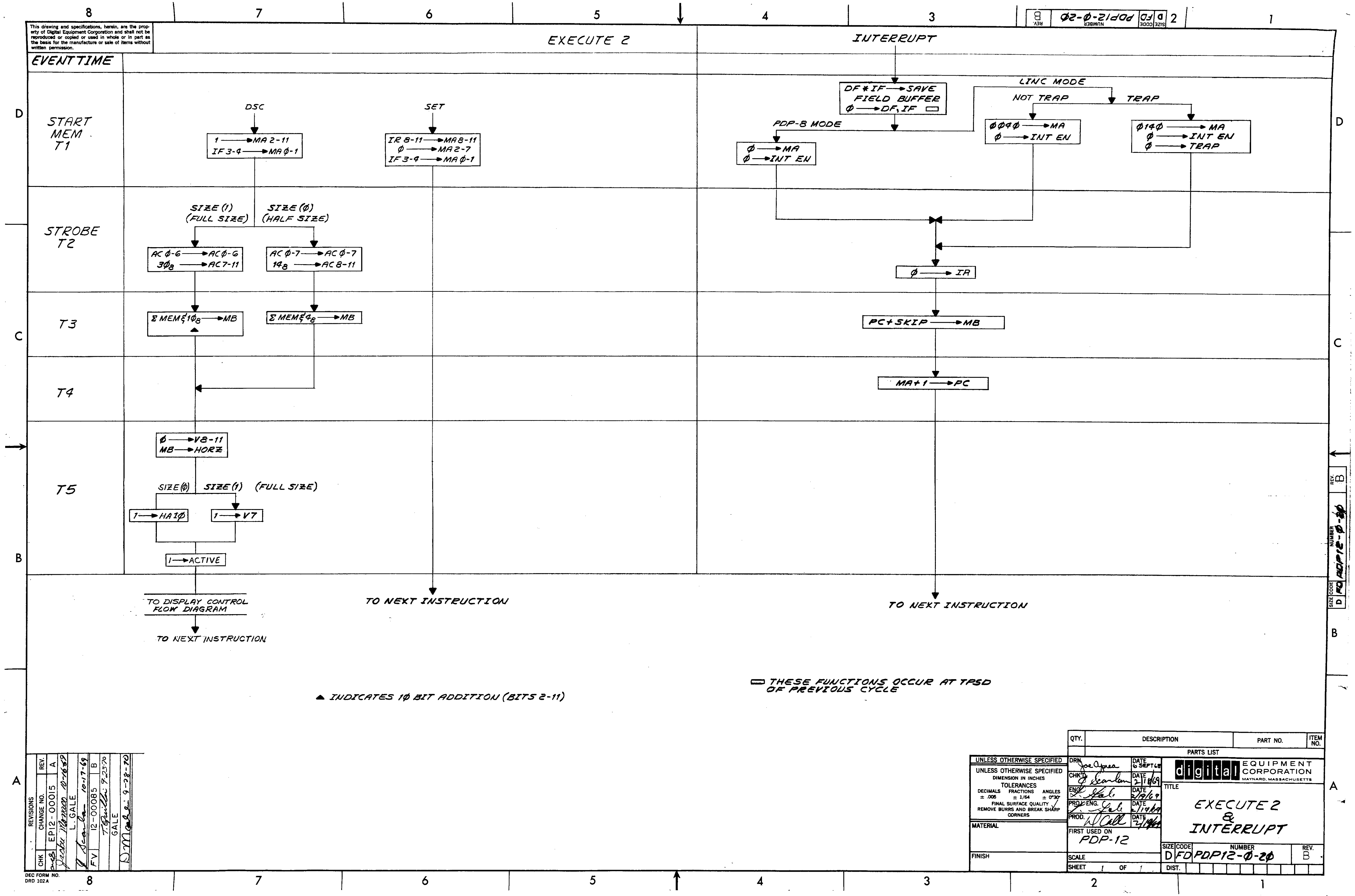
TITLE: LINC EXECUTE

SIZE D | CODE FD | NUMBER PDP12-ϕ-19 | REV. A

DIST.

REVISIONS			
REV.	CHANGE NO.		CHK
A	12-00085		FV

DEC FORM NO. DRD 102A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EXECUTE 2
INTERRUPT
EVENT TIME
START MEM T1
STROBE T2
T3
T4
T5
DSC
1 → MA 2-11
IF 3-4 → MA ϕ-1
SET
IR 8-11 → MA 8-11
ϕ → MA 2-7
IF 3-4 → MA ϕ-1
SIZE (1) (FULL SIZE)
SIZE (ϕ) (HALF SIZE)
AC ϕ-6 → AC ϕ-6
3ϕ8 → AC 7-11
AC ϕ-7 → AC ϕ-7
14 8 → AC 8-11
Σ MEM & 1ϕ8 → MB
Σ MEM & 4 8 → MB
ϕ → V8-11
MB → HORZ
SIZE (ϕ)
SIZE (1) (FULL SIZE)
1 → HA 1ϕ
1 → V7
1 → ACTIVE
TO DISPLAY CONTROL FLOW DIAGRAM
TO NEXT INSTRUCTION
TO NEXT INSTRUCTION
DF * IF → SAVE FIELD BUFFER
ϕ → DF, IF
LINC MODE
NOT TRAP
TRAP
PDP-8 MODE
ϕ → MA
ϕ → INT EN
ϕϕ4ϕ → MA
ϕ → INT EN
ϕ14ϕ → MA
ϕ → INT EN
ϕ → TRAP
ϕ → IR
PC+SKIP → MB
MA+1 → PC
TO NEXT INSTRUCTION
▲ INDICATES 1ϕ BIT ADDITION (BITS 2-11)
▭ THESE FUNCTIONS OCCUR AT TP5D OF PREVIOUS CYCLE
REVISIONS
CHK | CHANGE NO. | REV.
EP12-00015 | A
L. GALE
12-00085 | B
GALE
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
QTY. DESCRIPTION PART NO. ITEM NO.
PARTS LIST
DRN
CHK'D
ENG.
PROJ. ENG.
PROD.
DATE
FIRST USED ON PDP-12
SCALE
SHEET 1 OF 1
digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS
TITLE EXECUTE 2 & INTERRUPT
SIZE D CODE FD NUMBER PDP12-ϕ-2ϕ REV. B
DIST.
DEC FORM NO. DRD 102A

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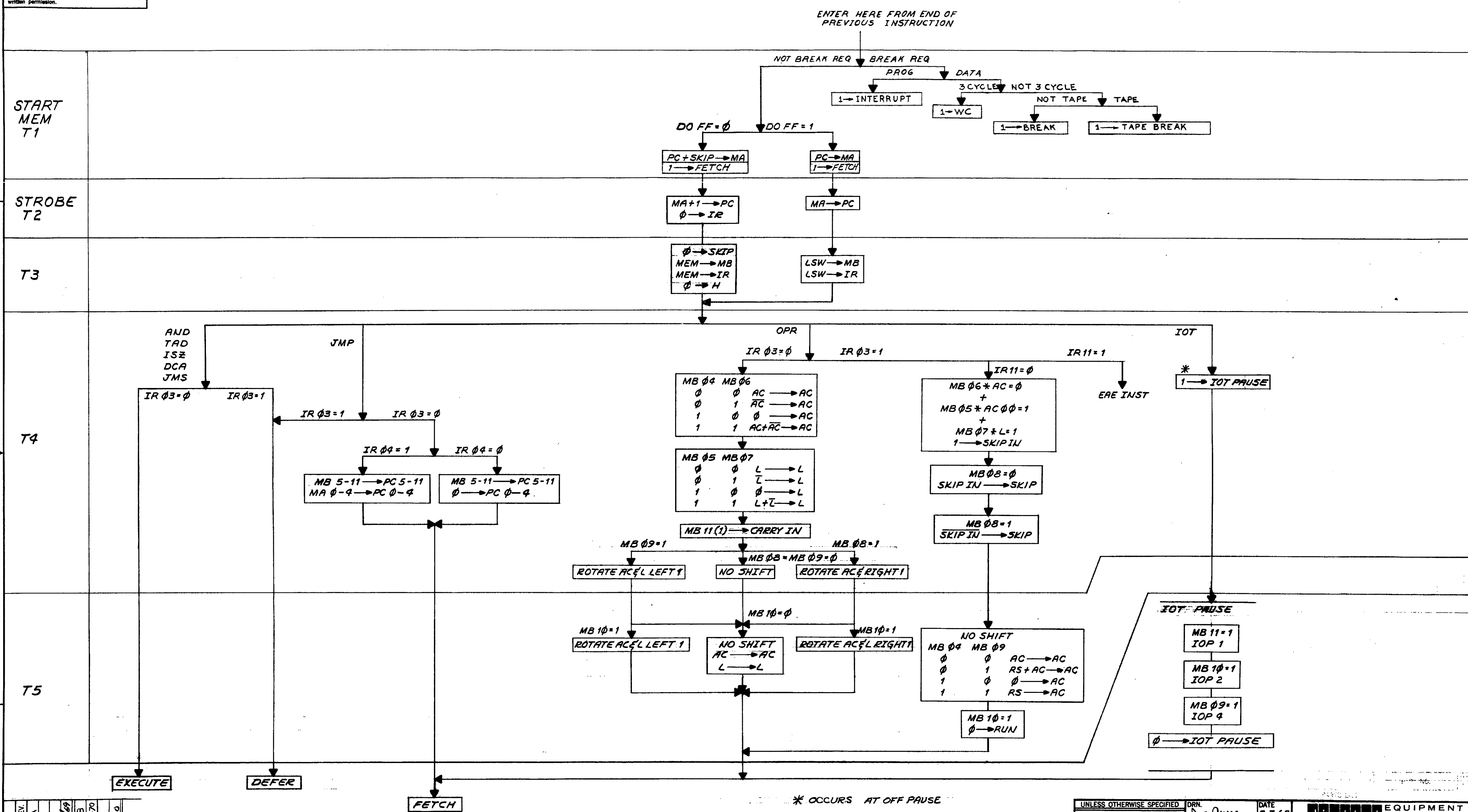

ENTER HERE FROM END OF PREVIOUS INSTRUCTION
START MEM T1
STROBE T2
T3
T4
T5
NOT BREAK REQ
BREAK REQ
PROG
DATA
3 CYCLE
NOT 3 CYCLE
1→INTERRUPT
1→WC
NOT TAPE
TAPE
1→BREAK
1→TAPE BREAK
DO FF = Ø
DO FF = 1
PC+SKIP→MA
1→FETCH
PC→MA
1→FETCH
MA+1→PC
Ø→IR
MA→PC
Ø→SKIP
MEM→MB
MEM→IR
Ø→H
LSW→MB
LSW→IR
AND
TAD
ISZ
DCA
JMS
JMP
OPR
IOT
IR Ø3=Ø
IR Ø3=1
IR Ø4=1
IR Ø4=Ø
MB 5-11→PC 5-11
MA Ø-4→PC Ø-4
Ø→PC Ø-4
MB Ø4 MB Ø6
Ø Ø AC→AC
Ø 1 AC̄→AC
1 Ø Ø→AC
1 1 AC+AC̄→AC
MB Ø5 MB Ø7
Ø Ø L→L
Ø 1 L̄→L
1 Ø Ø→L
1 1 L+L̄→L
MB 11 (1)→CARRY IN
MB Ø9=1
MB Ø8=1
MB Ø8=MB Ø9=Ø
ROTATE AC & L LEFT 1
NO SHIFT
ROTATE AC & L RIGHT 1
MB 1Ø=Ø
MB 1Ø=1
NO SHIFT
AC→AC
L→L
IR 11=Ø
IR 11=1
ERE INST
MB Ø6 * AC=Ø
+
MB Ø5 * ACØØ=1
+
MB Ø7 * L=1
1→SKIP IN
MB Ø8=Ø
SKIP IN→SKIP
MB Ø8=1
SKIP IN→SKIP
NO SHIFT
MB Ø4 MB Ø9
Ø Ø AC→AC
Ø 1 RS+AC→AC
1 Ø Ø→AC
1 1 RS→AC
MB 1Ø=1
Ø→RUN
1→IOT PAUSE
IOT PAUSE
MB 11=1
IOP 1
MB 1Ø=1
IOP 2
MB Ø9=1
IOP 4
Ø→IOT PAUSE
EXECUTE
DEFER
FETCH
* OCCURS AT OFF PAUSE

REV.	CHANGE NO.			CHK
A	EP12-00002	J. SCANLON 3/24/69		
B	12-00085	GALE 9-24-70		FV

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. — DATE 8-7-68
CHK'D — DATE 2/19/69
ENG — DATE 2/19/69
PROJ. ENG — DATE 2/19/69
PROD. — DATE 2/19/69
FIRST USED ON PDP-12
SCALE
SHEET 1 OF 1

digital EQUIPMENT CORPORATION, MAYNARD, MASSACHUSETTS

TITLE: PDP-8 MODE FETCH

SIZE D CODE FD NUMBER PDP12-Ø-21 REV. B

DEC FORM NO. DRD 102A

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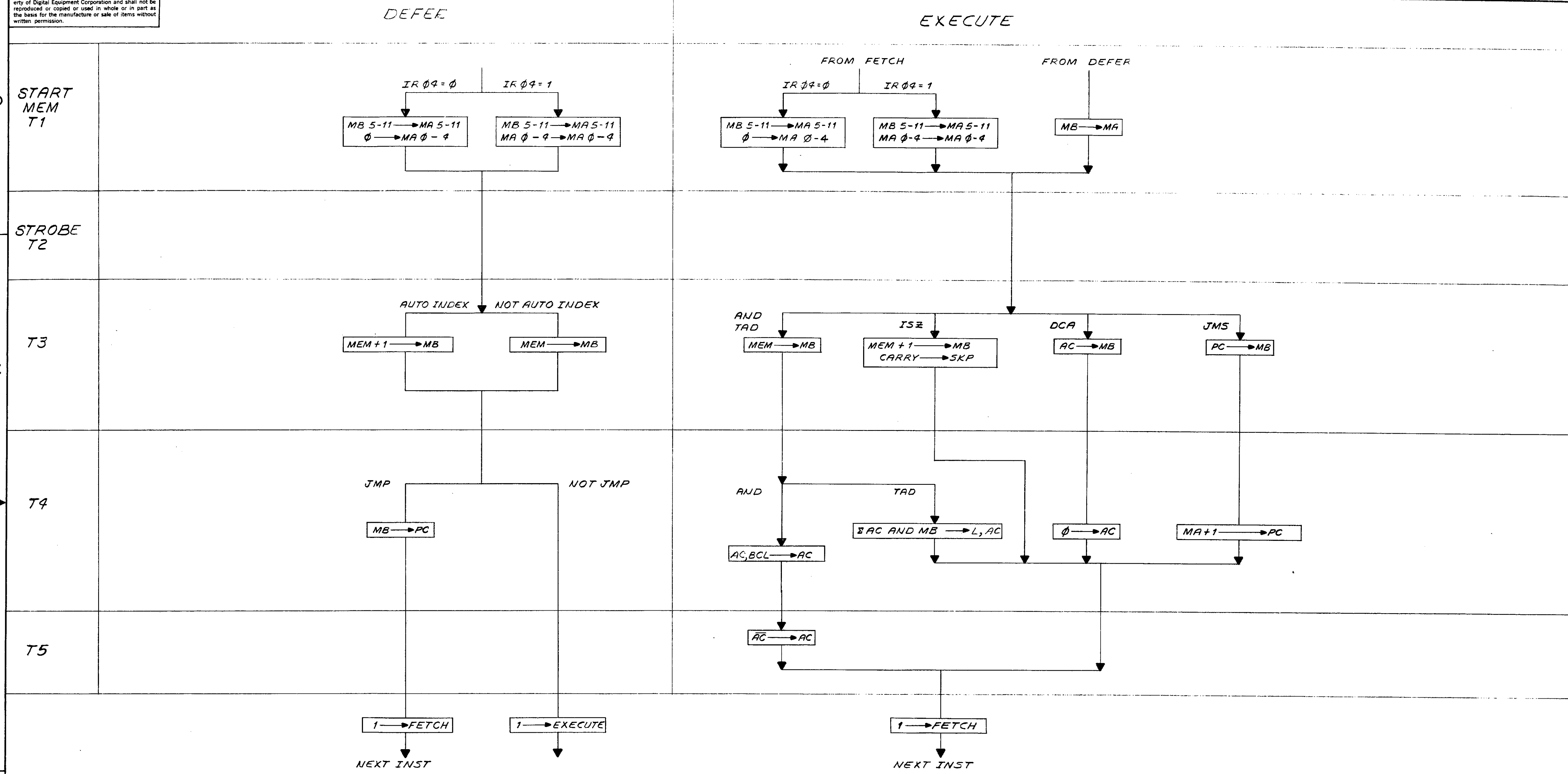

REVISIONS		
CHK	CHANGE NO.	REV.
	EP12-00002 J. SCANLON	A
FV	12-00085 GALE	B

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. Joe Agnea DATE 23 AUG 68
CHKD. J. Scanlon
ENG.
PROJ. ENG.
PROD.
FIRST USED ON PDP-12
SCALE
SHEET 1 OF 1

digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS

TITLE PDP 8 MODE DEFER & EXECUTE

SIZE D CODE FD NUMBER PDP12-Ø-22 REV B

DIST.

DEC FORM NO. DRD 102A

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	WORD COUNT	CURRENT ADDRESS	BREAK	TAPE BREAK INTERRUPT
START MEM T1	DATA ADD → MA EXT-DA Ø-2 → BF Ø-2	MA+1 → MA	ENTER FROM CA: MB → MA ENTER SINGLE CYCLE BRK: DATA ADD → MA, EXT DA Ø-2 → BF Ø 2	TAPE ADD → MA
STROBE T2	Ø → IR	Ø → IR	Ø → IR	Ø → TAPE BREAK RQST Ø → IR IN MEM / OUT MEM TMA+1 → TMA
T3	MEM+1 → MB CARRY → WC OVERFLOW	INCREMENT CA: MEM+1 → MB NOT INCREMENT CA: MEM → MB	DATA OUT: MEM → MB DATA IN: DATA IN → MB INCR. MEM: MEM+1 → MB, CARRY → WCO	TAPE BUF → MB MEM → MB NO PAUSE (Ø) NO PAUSE (1) 1 → INT PAUSE
T4				NOT LAST WORD LAST WORD
T5	1 → CA	1 → BREAK	NEXT INST	PAUSE WAIT FOR TAPE WORD ✱Ø → INT PAUSE CHECKSUM → AC TAPE BREAK NEXT INST

✱ OCCURS AT OFF PAUSE

REVISIONS

CHK	CHANGE NO.	REV.
Dres	EP12-00009	A
Dres	EP12-00015	B
FV	12-00085	C

PARTS LIST

QTY.	DESCRIPTION	PART NO.	ITEM NO.

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.		DATE 23AUG68
CHK'D		DATE 2/12/69
ENG.		DATE 2/10/69
PROJ. ENG.		DATE 2/10/69
PROD.		DATE

FIRST USED ON: PDP-12

SCALE

SHEET 1 OF 1

digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS

TITLE: BREAK

SIZE	CODE	NUMBER	REV
D	FD	PDP12-Ø-23	C

DIST.

DEC FORM NO. DRD 102A

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MASTER DRAWING LIST

DWG. NO.	PAGE	REV. LET.	NO. OF SHEETS	TITLE
A-ML-PDP12-0	37	REF.		PDP-12 SYSTEM
D-BS-EP12-0-CIN	38	D	1	CONSOLE INDICATORS
D-BS-EP12-0-CPR	39	E	1	CENTRAL PROCESSOR RUN
D-BS-EP12-0-CPS	40	L	1	CENTRAL PROCESSOR STATES
D-BS-EP12-0-CPT	41	E	1	CP TIME STATES
D-BS-EP12-0-CPTP	42	F	1	CENTRAL PROCESSOR TIME PULSES
D-BS-EP12-0-CSI	43	C	1	CONSOLE SWITCH INPUTS
D-BS-EP12-0-CST	44	J	1	CONSOLE STARTS
D-BS-EP12-0-CYI	45	A	1	CARRY INSERTS
D-BS-EP12-0-FLE	46	B	1	FLOW & END SHIFT
D-BS-EP12-0-FLK	47	C	1	LINK LOGIC
D-BS-EP12-0-ICB	48	F	1	IO & EXT MEM CABLES
D-BS-EP12-0-INR	49	C	1	INSTRUCTION REGISTER
D-BS-EP12-0-INS	50	E	1	INSTRUCTIONS
D-BS-EP12-0-IOA	51	A	1	IO INPUT PART A
D-BS-EP12-0-IOB	52	D	1	IO INPUT PART A
D-BS-EP12-0-IOC	53	F	1	IO CONTROL & TIMING
D-BS-EP12-0-IOO	54	A	1	IO OUTPUT BUFFERS
D-BS-EP12-0-IOR	55	B	1	RELAY BUFFER
D-BS-EP12-0-IPC	56	J	1	INTER PROC CABLES
D-BS-EP12-0-MEA	57	H	1	MEM EXTN AC INPUTS
D-BS-EP12-0-MPG	58	J	1	MEM PAGE EXTN CONTROLS
D-BS-EP12-0-MQR	59	B	1	MUL QUOTIENT
D-BS-EP12-0-PMA	60	B	1	PROCESSOR MISCELLANEOUS A
D-BS-EP12-0-PMB	61	A	1	PROCESSOR MISCELLANEOUS B
D-BS-EP12-0-PRA	62	D	1	PRA PROCESSOR BITS 0 & 1
D-BS-EP12-0-PRB	63	C	1	PRB PROCESSOR BITS 2 & 3
D-BS-EP12-0-PRC	64	C	1	PRC PROCESSOR BITS 4 & 5
D-BS-EP12-0-PRD	65	C	L	PRD PROCESSOR BITS 6 & 7
D-BS-EP12-0-PRE	66	C	1	PRE PROCESSOR BITS 8 & 9
D-BS-EP12-0-PRF	67	C	1	PRF PROCESSOR BITS 10 & 11

REVISIONS			
REV.	DATE	CHG. NO.	APP'D.
A	3/69	00001	J.S.
B	4/69	00002	J.S.
C	5/69	00003	L.G.
D	6/69	00004	L.G.
E	6/69	00006	L.G.
F	7/69	00007	L.G.
H	7/69	00008	L.G.
J	7/69	00009	L.G.
K	8/69	00010	L.G.
L	8/69	00011	L.G.
M	9/10/69	00012	L.G.
N	9/69	00013	L.G.
P	9/69	00014	L.G.
R	10/69	00015	L.G.
S	10/69	00016	L.G.

DRN. J.Aprea	DATE 3/7/69	digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS	
CHK'D. R.Hutnak	DATE 3/7/69		
ENG. L.Gale	DATE 3/10/69	TITLE PDP-12 PROCESSOR	
PROJ. ENG. L.Gale	DATE 3/10/69		
PROD. D. Call	DATE 3/10/69		
FIRST USED ON PDP-12		SIZE A / CODE ML / NUMBER EP12-0 / REV. AF	
SCALE			
SHEET 1 OF 2		DIST.	

DEC FORM NO. DRA 103

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MASTER DRAWING LIST

DWG. NO.	PAGE	REV. LET.	NO. OF SHEETS	TITLE
D-BS-EP12-0-RCA	68		1	REGISTER CONTROL A
D-BS-EP12-0-RCB	69	C	1	REGISTER CONTROL B
D-BS-EP12-0-RCC	70	A	1	REGISTER CONTROL C
D-BS-EP12-0-RCD	71	C	1	REGISTER CONTROL D
D-BS-EP12-0-RCL	72	F	1	PROCESSOR REGISTER LOAD CONTROL
D-BS-EP12-0-RCS	73		1	REG SHIFT & MQ INPUTS
D-BS-EP12-0-SKH	74	C	1	SKIP FF & H BITS
D-BS-EP12-0-SKL	75	C	1	EP12 SKIPS
D-BS-EP12-0-SLA	76	A	1	SPECIAL LEVELS 1
D-BS-EP12-0-TTI	77	B	1	TTI TELETYPE RECEIVER
D-BS-EP12-0-TTO	78		1	TTO TELETYPE TRANSMITTER
A-WL-EP12-0-4	79	A	2	DC POWER PROCESSOR LOGIC
K-WL-EP12-0-3	80	U	2	WIRE LIST
D-MU-EP12-0-1	81	H	1	MODULE UTILIZATION PROC
D-MU-EP12-0-2	82,83	K	1	MODULE UTILIZATION PROC
A-PL-EP12-0-1	84	H	1	MODULE UTILIZATION PROC (PARTS LIST)
A-PL-EP12-0-2		K	1	MODULE UTILIZATION PROC (PARTS LIST)
D-AD-7005976-0-0	85	J	1	WIRED ASSY CP & IO (EP12)
A-PL-7005976-0-0	86	J	1	WIRED ASSY PL CP & IO (EP12)

REVISIONS			
REV.	DATE	CHG. NO.	APP'D.
T	11/69	EP12-17	L.G.
U	11/69	EP12-18	L.G.
V	2/70	00020	L.G.
W	5/70	00022	D.C.
Y	5/70	00021	L.G.
Z	6/70	00023	L.G.
AA	7/70	00026	L.G.
AB	8/70	00027	L.G.
AC	10/70	00030	L.G.
AD	12/70	00032	R.P.
AE	1/71	00033	L.G.
AF	1/71	00034	L.G.

DRN. J.Aprea	DATE 3/7/69	digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS	
CHK'D. R.Hutnak	DATE 3/7/69		
ENG. L.Gale	DATE 3/10/69	TITLE PDP-12 PROCESSOR	
PROJ. ENG. L.Gale	DATE 3/10/69		
PROD. D.Call	DATE 3/10/69		
FIRST USED ON PDP-12		SIZE A / CODE ML / NUMBER EP12-0 / REV. AF	
SCALE			
SHEET 2 OF 2		DIST.	

DEC FORM NO. DRA 103

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M900
N29

A1	MPG DF Ø4 (1)L
B1	PRB MA Ø3 (1)L
C1	IOR R Ø0 (1)L
D1	PRC PC Ø4 (1)L
E1	INR IR Ø4 (1)L
F1	IOR R Ø2 (1)L
H1	PRB PC Ø3 (1)L
J1	MPG DF Ø3 (1)L
K1	INR IR Ø7 (1)L
L1	IOR R Ø1 (1)L
M1	INR IR Ø8 (1)L
N1	INR IR Ø3 (1)L
P1	PRB MA Ø2 (1)L
R1	MXR IF Ø1 (1)L
S1	INR IR Ø1 (1)L
T1	
U1	
V1	

M900
N30

A1	PRF PC 1Ø (1)L
B1	PRE MA Ø9 (1)L
C1	LCS SEARCH (1)L
D1	PRF PC 11 (1)L
E1	PRF MA 1Ø (1)L
F1	CPS FETCH (1)L
H1	PRE PC Ø9 (1)L
J1	MQR MQ Ø0 (1)L
K1	CPS EXECUTE (1)L
L1	LCS IDLE (1)L
M1	CPS DEFER (1)L
N1	PRE MA Ø8 (1)L
P1	PRC PC Ø5 (1)L
R1	IOR R Ø4 (1)L
S1	PRD PC Ø6 (1)L
T1	
U1	
V1	

M900
N31

A1	PRC AC Ø5 (1)L
B1	PRC MB Ø4 (1)L
C1	LCX EX ADD FORMAT (1)L
D1	PRD AC Ø6 (1)L
E1	PRC MB Ø5 (1)L
F1	CPS BREAK (1)L
H1	PRC AC Ø4 (1)L
J1	MQR MQ Ø5 (1)L
K1	MQR MQ Ø7 (1)L
L1	MQR MQ Ø6 (1)L
M1	LCX NO PAUSE (1)L
N1	PRB MB Ø3 (1)L
P1	PRA MB Ø0 (1)L
R1	LCS CHK RRD (1)L
S1	FLK LINK (1)L
T1	
U1	
V1	

M900
N32

A1	IOC INT EN (1)L
B1	CPS EN TRAP (1)L
C1	LIN TINR 11 (1)L
D1	CPT INT PAUSE (1)L
E1	CPT IOT PAUSE (1)L
F1	CPR 8 MODE H
H1	PRF MB 11 (1)L
J1	MQR MQ 1Ø (1)L
K1	CST AUTO (1)L
L1	CPR RUN (1)L
M1	CPR L MODE H
N1	PRF AC 11 (1)L
P1	PRD MB Ø7 (1)L
R1	CPS T BREAK (1)L
S1	PRE MB Ø8 (1)L
T1	
U1	
V1	

M900
N29

A2	
B2	
C2	
D2	INR IR Ø0 (1)L
E2	PRB PC Ø2 (1)L
F2	MPG IF Ø3 (1)L
H2	PRA PC Ø0 (1)L
J2	MXR IF Ø2 (1)L
K2	MPG IF Ø4 (1)L
L2	PRA MA Ø0 (1)L
M2	PRA PC Ø1 (1)L
N2	INR IR Ø6 (1)L
P2	MXR DF Ø0 (1)L
R2	INR IR Ø2 (1)L
S2	MXR IF Ø0 (1)L
T2	PRA MA Ø1 (1)L
U2	MXR DF Ø2 (1)L
V2	MXR DF Ø1 (1)L

M900
N30

A2	
B2	
C2	
D2	PRD MA Ø7 (1)L
E2	PRE PC Ø8 (1)L
F2	MQR MQ Ø1 (1)L
H2	PRD PC Ø7 (1)L
J2	IOR R Ø3 (1)L
K2	MQR MQ Ø2 (1)L
L2	PRD MA Ø6 (1)L
M2	PRC MA Ø4 (1)L
N2	LCS BLOCK (1)L
P2	INR IR 11 (1)L
R2	PRC MA Ø5 (1)L
S2	IOR R Ø5 (1)L
T2	INR IR Ø5 (1)L
U2	INR IR Ø9 (1)L
V2	INR IR 1Ø (1)L

M900
N31

A2	
B2	
C2	
D2	PRB AC Ø2 (1)L
E2	PRB AC Ø3 (1)L
F2	LIP PROGRESS (1)L
H2	PRA AC Ø1 (1)L
J2	CPS INTER (1)L
K2	CPS WC (1)L
L2	PRF MA 11 (1)L
M2	PRA MB Ø1 (1)L
N2	CPS CA (1)L
P2	MQR MQ Ø4 (1)L
R2	PRA AC Ø0 (1)L
S2	LCS TURN ARND (1)L
T2	PRB MB Ø2 (1)L
U2	MQR MQ Ø3 (1)L
V2	CPS EXC 2 (1)L

M900
N32

A2	
B2	
C2	
D2	PRF AC 1Ø (1)L
E2	PRF MB 1Ø (1)L
F2	LIN TINR 1Ø (1)L
H2	PRE MB Ø9 (1)L
J2	MQR MQ Ø8 (1)L
K2	FLE FLOW (1)L
L2	PRE AC Ø9 (1)L
M2	PRD MB Ø6 (1)L
N2	MQR MQ 11 (1)L
P2	MQR MQ Ø9 (1)L
R2	PRE AC Ø8 (1)L
S2	LIN TINR Ø9 (1)L
T2	PRD AC Ø7 (1)L
U2	LCX MARK (1)L
V2	SKH SKIP (1)L

REVISIONS		
CHK	CHANGE NO.	REV.
JB	EP12-00001	A
	ADS	
	J SCANLAN 3/13/69	
NR	EP12-00015	B
	K COTE 10/14/69	
	J SCANLAN 10/17/69	
MR	EP12-00016	C
	K Cote 11/12/69	
	J Scanlan 11/14/69	

DRN. D SHEPARD	DATE 2/20/69	digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS	
CHK'D. J BISONETE	DATE 2/20/69		
ENG. L GALE	DATE 2/20/69	TITLE CONSOLE INDICATORS	
PROJ. ENG. L GALE	DATE 2/20/69		
PROD. D CALL	DATE 2/20/69		
FIRST USED ON EP12		SIZE D	CODE BS
SCALE		NUMBER EP12-Ø-CIN	REV. C
SHEET 1 OF 1		DIST.	

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CSI IF SW 0 H E2 — M141 K38 — H2 CPR IF SW 0 L

CSI IF SW 1 H D2 — M141 E38 — F2 CPR IF SW 1 L

CSI IF SW 2 H E2 — M141 E39 — H2 CPR IF SW 2 L

CST MFTP2 L D1, -CSI KEY ID PRESET L E1 — M112 L10 — F1 — D2, E2 — M112 L10 — F2 CPR SET RUN L

CST AUTO RESTART H

CST AUTO (0)H

CPR L HALT L A1, CPR 8 HALT L B1 — M113 L09 — C1 — A1, B1 — M112 L10 — C1 CPR HALT L

CPR HALT H

INS MSC H A1, INS N EQ 00 H B1, CPS FETCH B (1)H C1 — M115 L08 — D1 CPR L HALT L

SLA OPR2 H E1, PRF MB 10 (1)H F1, CPS FETCH B (1)H H1 — M115 L08 — J1 CPR 8 HALT L

CST FILL STEP (1)L D2, CSI KEY SS L E2, CPR MATCH L F2, MCT PWR STOP L H2 — M117 K05 — J2

CPS GNI H A1, CST DO (1)H B1, LIP PROGRESS (0)H C1, CPT T5 RECYCLE (0)H D1, E1, F1 — M160 K08 — R1

CSI (FILLS+EXAMS) H H1, CST MFTS0 H J1

CPR HALT H K1, TSS UF (0)H L1

LIP PROGRESS (0)H M1, CSI KEY STOP H N1, CPS GNI H P1

CPR ENABLE RUN H U2

CPTP TP5 H S2

CST ID PRESET L K2

D 1 V2, T2 — CPR RUN. M216 L07 — C 0 V1

CPR IOT 6141 L

FRB MB 03 (0)H M1, PRC MB 04 (0)H N1, PRC MB 05 (1)H P1, PRD MB 06 (1)H R1, PRD MB 07 (0)H R2, INS N EQ 01 H S2, INS IOT H T2, +3V K10U1 H U2 — M119 K10 — V2

N1 — M111 J09 — P1

CPR SET MODE H D1, CSI KEY LINC H E1 — M113 L09 — F1

CPR IOT 6141 H

CPTP TP1 H E2 — M113 L09 — F2

F1, H1, J1, K1 — M617 K12 — L1 CPR L MODE H

CPTP TP1 H D2, INS MSC H E2, INS N EQ 02 H F2 — M115 K13 — H2

M1, N1, P1, R1 — M617 K12 — S1 CPR 8 MODE H

MCT PWR CLR L

MPG MEM EXTN PRESET L R1 — M111 M38 — S1 CPR SET MODE H

H2, -CSI KEY LINC H J2 — M113 L09 — K2

CSI KEY F STOP H L1, CPS FETCH B (1)H M1 — M113 L09 — N1

CSI KEY E STOP H L2, CPS FETCH (0)H M2 — M113 L09 — N2

P1, R1 — M113 L09 — S1

PRA ADDRESS MATCH 0-1 H F1, PRB ADDRESS MATCH 2-3 H H1, PRC ADDRESS MATCH 4-5 H J1, PRD ADDRESS MATCH 6-7 H K1, PRE ADDRESS MATCH 8-9 H K2, PRF ADDR MATCH 10-11 H L2, M2, N2 — M119 K10 — P2 CPR MATCH L

CSI IF SW 0 H L1, -MXF EA 0 H M1 — M141 K39 — K1

CSI IF SW 1 H L2, -MXF EA 1 H M2

CSI IF SW 2 H U1, -MXF EA 2 H V1

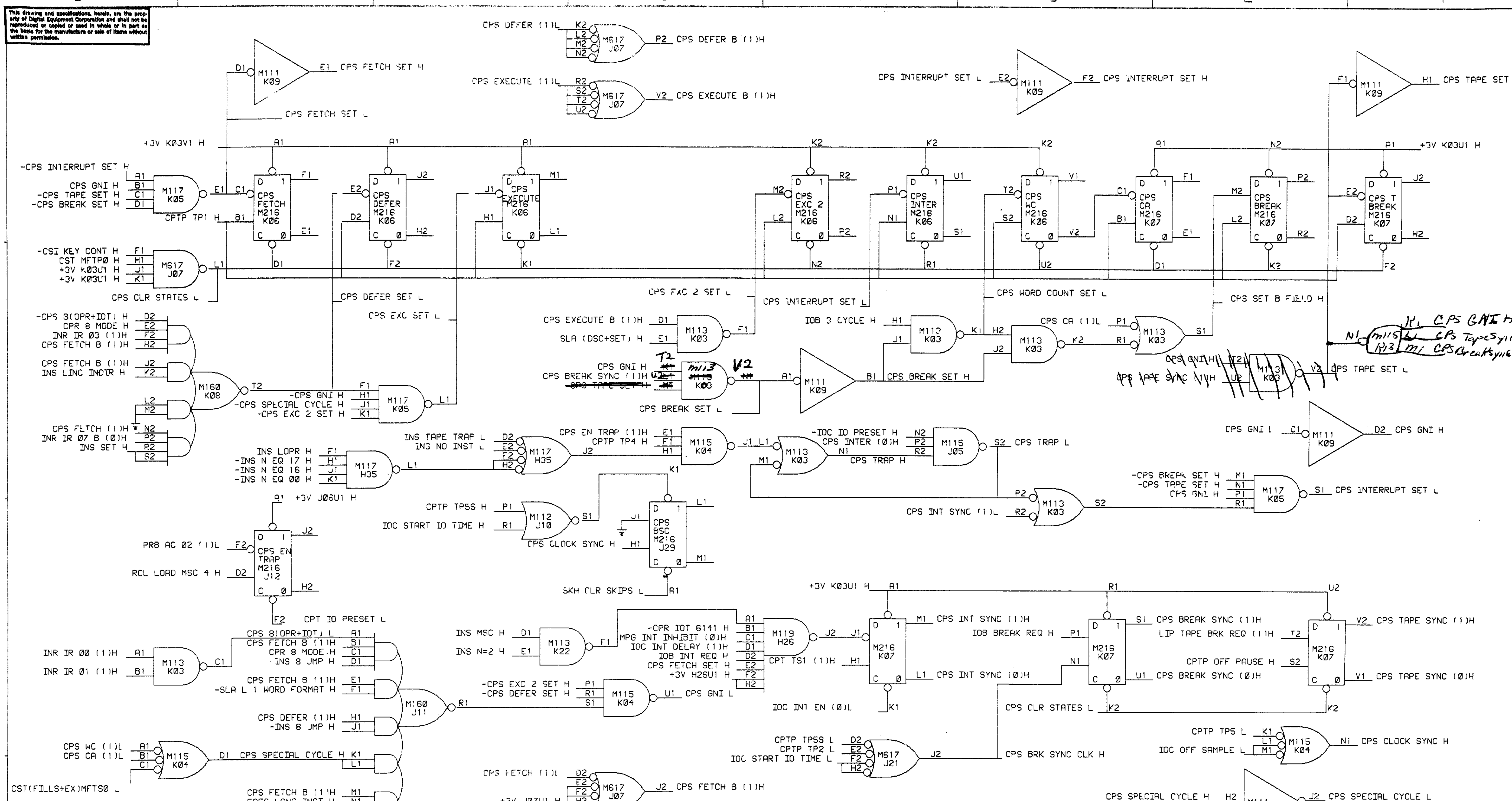
-CPR IF SW 0 H U2, MXF EA 0 H V2 — M141 K38 — T2

-CPR IF SW 1 H U2, MXF EA 1 H V2 — M141 K39 — T2

-CPR IF SW 2 H U2, MXF EA 2 H V2 — M141 K40 — T2

REVISIONS			REVISIONS		
CHK	CHANGE NO.	REV.	CHK	CHANGE NO.	REV.
JB	EP12-00001	A		EP12-00026	E
	ADS				
	J SCANLAN 3/13/69				
	EP12-00003	B			
	A WASHINGTON 6/17/69				
	L GALE 6/20/69				
NR	EP12-00006	C			
	A WASHINGTON 8/8/69				
	L GALE 8/13/69				
NR	EP12-00016	D			
	K COTE 11/12/69				
	J SCANLAN 11/14/69				

DRN. D SHEPARD	DATE 2/20/69	digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS
CHK'D D BISONETE	DATE 2/20/69	
ENG. L GALE	DATE 2/20/69	TITLE CENTRAL PROCESS RUN
PROJ. ENG. L GALE	DATE 2/20/69	
PROD. D CALL	DATE 2/20/69	
FIRST USED ON EP12		SIZE D, CODE BS, NUMBER EP12-0-CPR, REV. E
SCALE		
SHEET 1 OF		DIST.



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CPS DEFER (1)L
M617 J07
P2 CPS DEFER B (1)H
M111 K09
E1 CPS FETCH SET H
CPS FETCH SET L
CPS EXECUTE (1)L
M617 J07
V2 CPS EXECUTE B (1)H
CPS INTERRUPT SET L
F2 CPS INTERRUPT SET H
H1 CPS TAPE SET H
+3V K03V1 H
+3V K03U1 H
-CPS INTERRUPT SET H
CPS GNI H
-CPS TAPE SET H
-CPS BREAK SET H
M117 K05
CPTP TP1 H
CPS FETCH M216 K06
CPS DEFER M216 K06
CPS EXECUTE M216 K06
CPS EXC 2 M216 K06
CPS INTER M216 K06
CPS WC M216 K06
CPS CA M216 K07
CPS BREAK M216 K07
CPS T BREAK M216 K07
-CSI KEY CONT H
CST MFTP0 H
+3V K03U1 H
+3V K03U1 H
M617 J07
CPS CLR STATES L
CPS DEFER SET L
CPS EXC SET L
CPS EXC 2 SET L
CPS INTERRUPT SET L
CPS WORD COUNT SET L
CPS SET B FIELD H
-CPS 8(OPR+IOT) H
CPR 8 MODE H
INR IR 03 (1)H
CPS FETCH B (1)H
CPS FETCH B (1)H
INS LINC INDTR H
M160 K08
CPS FETCH (1)H
INR IR 07 B (0)H
INS SET H
-CPS GNI H
-CPS SPECIAL CYCLE H
-CPS EXC 2 SET H
M117 K05
CPS EXECUTE B (1)H
SLA (DSC+SET) H
M113 K03
CPS GNI H
CPS BREAK SYNC (1)H
CPS TAPE SET H
M113 K03
CPS BREAK SET L
M111 K09
CPS BREAK SET H
IOB 3 CYCLE H
M113 K03
M113 K03
CPS CA (1)L
M113 K03
CPS GNI H
CPS TapeSync
CPS BreakSync
M115
CPS GNI H
CPS TAPE SYNC (1)H
M113 K03
V2 CPS TAPE SET L
INS TAPE TRAP L
INS NO INST L
M117 H35
CPS EN TRAP (1)H
CPTP TP4 H
M115 K04
-IOC IO PRESET H
CPS INTER (0)H
M113 K03
M115 J05
S2 CPS TRAP L
CPS TRAP H
CPS GNI L
M111 K09
D2 CPS GNI H
INS LOPR H
-INS N EQ 17 H
-INS N EQ 16 H
-INS N EQ 00 H
M117 H35
+3V J06U1 H
CPTP TP5S H
IOC START IO TIME H
M112 J10
CPS CLOCK SYNC H
CPS BSC M216 J29
CPS INT SYNC (1)L
M113 K03
-CPS BREAK SET H
-CPS TAPE SET H
CPS GNI H
M117 K05
S1 CPS INTERRUPT SET L
PRB AC 02 (1)L
RCL LOAD MSC 4 H
CPS EN TRAP M216 J12
SKH CLR SKIPS L
CPT IO PRESET L
+3V K03U1 H
CPS 8(OPR+IOT) L
CPS FETCH B (1)H
CPR 8 MODE H
INS 8 JMP H
INR IR 00 (1)H
INR IR 01 (1)H
M113 K03
INS MSC H
INS N=2 H
M113 K22
-CPR IOT 6141 H
MPG INT INHIBIT (0)H
IOC INT DELAY (1)H
IOB INT REQ H
CPS FETCH SET H
+3V H26U1 H
M119 H26
CPT TS1 (1)H
M216 K07
M1 CPS INT SYNC (1)H
L1 CPS INT SYNC (0)H
IOB BREAK REQ H
M216 K07
S1 CPS BREAK SYNC (1)H
U1 CPS BREAK SYNC (0)H
LIP TAPE BRK REQ (1)H
CPTP OFF PAUSE H
M216 K07
V2 CPS TAPE SYNC (1)H
V1 CPS TAPE SYNC (0)H
CPS FETCH B (1)H
-SLA L 1 WORD FORMAT H
M160 J11
-CPS EXC 2 SET H
-CPS DEFER SET H
M115 K04
U1 CPS GNI L
IOC INT EN (0)L
CPS CLR STATES L
CPS DEFER (1)H
-INS 8 JMP H
CPS WC (1)L
CPS CA (1)L
M115 K04
D1 CPS SPECIAL CYCLE H
CPTP TP5S L
CPTP TP2 L
IOC START IO TIME L
M617 J21
CPS BRK SYNC CLK H
CPTP TP5 L
IOC OFF SAMPLE L
M115 K04
N1 CPS CLOCK SYNC H
CST(FILLS+EX)MFTS0 L
CPS FETCH B (1)H
EAEC LONG INST H
CPS FETCH (1)L
+3V J07U1 H
M617 J07
J2 CPS FETCH B (1)H
CPS SPECIAL CYCLE H
M111 K09
J2 CPS SPECIAL CYCLE L

*NOTE: SKH CLR SKIPS L SERVES NO LOGICAL PURPOSE HERE EXCEPT FOR POWER CLEAR. THIS CLEARS COMMON WITH FLIP FLOP ON SKH PRINT.

REVISIONS			REVISIONS			REVISIONS		
CHK	CHANGE NO.	REV.	CHK	CHANGE NO.	REV.	CHK	CHANGE NO.	REV.
JB	EP12-00001	A	NR	EP12-00007	E	GH	EP12-00026	K
	ADS			A WASHINGTON 8/15/69			S. GOLDSBY 9-1-70	
	J SCANLAN 3/13/69			L GALE 8/20/69			D. MACKLIN 9-2-70	
	EP12-00002	B	NR	EP12-00009	F		EP12-00030	L
	A WASHINGTON 5/20/69			A WASHINGTON 8/20/69				
	J SCANLAN 5/22/69			L GALE 8/22/69				
	EP12-00004	C	FV	EP12-00021	H			
	A WASHINGTON 7/9/69			D SOUTHER 6/6/70				
				J SCANLAN 6/17/70				
NR	EP12-00006	D	IC	EP12-00023	J			
	A WASHINGTON 8/6/69			D SOUTHER 6/30/70				
	J SCANLAN 8/20/69			D MACKLIN 7/2/70				

DRN. D SHEPARD	DATE 2/20/69	digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS
CHK'D. J BISONETE	DATE 2/20/69	TITLE CENTRAL PROCESSOR STATES
ENG. L GALE	DATE 2/20/69	
PROJ. ENG. L GALE	DATE 2/20/69	
PROD. D CALL	DATE 2/20/69	
FIRST USED ON EP12		SIZE D · CODE BS · NUMBER EP12-0-CPS · REV. L
SCALE		
SHEET 1 OF 1		DIST.

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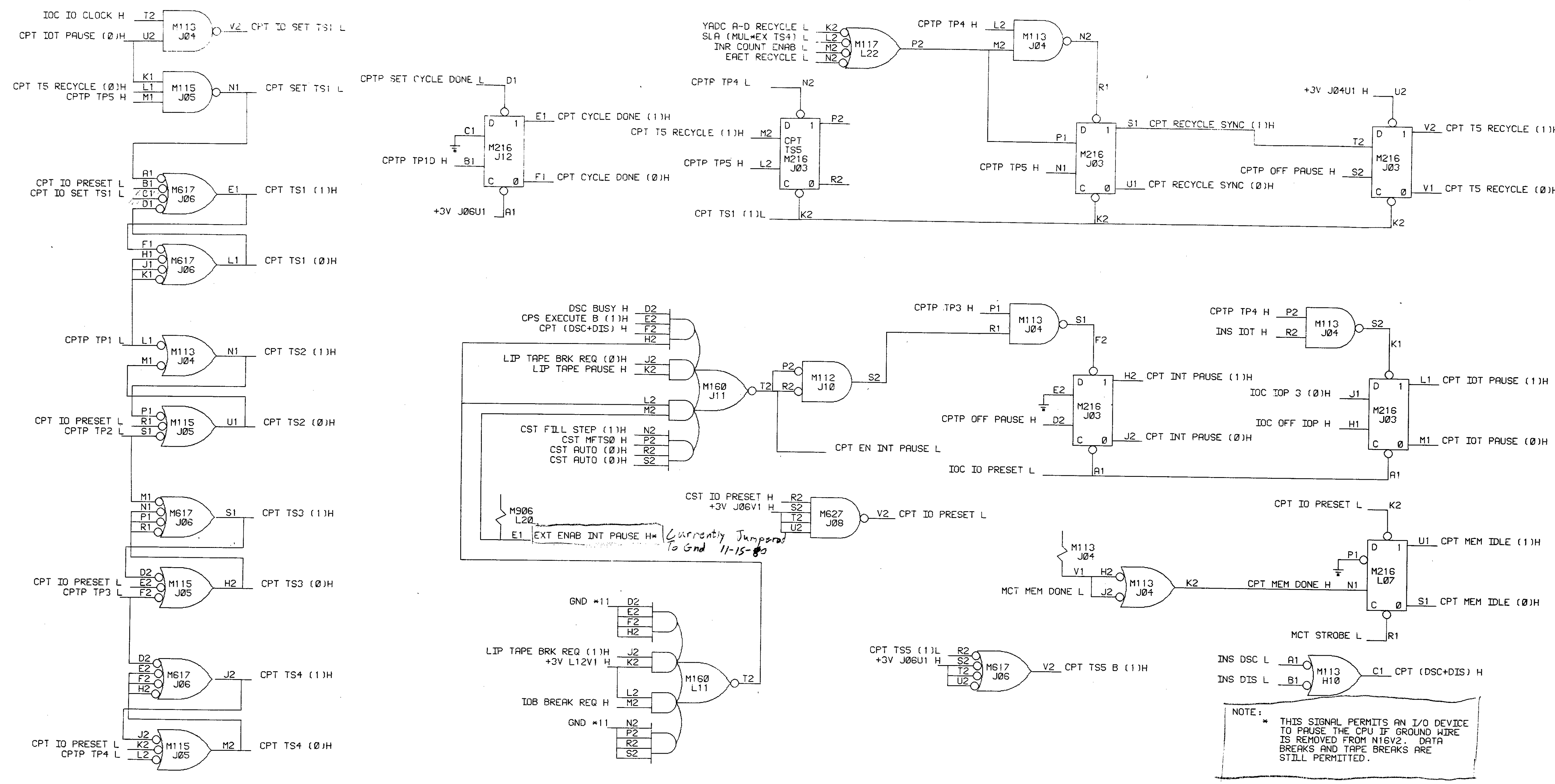

NOTE:
* THIS SIGNAL PERMITS AN I/O DEVICE TO PAUSE THE CPU IF GROUND WIRE IS REMOVED FROM N16V2. DATA BREAKS AND TAPE BREAKS ARE STILL PERMITTED.

CHK	CHANGE NO.	REV.	CHK	CHANGE NO.	REV.
	EP12-00001	A		EP12-00032	E
	ADS			K. ROSS 11.8..	
	J. SCANLAN 6/2/69				
	EP12-00003	B			
	A.WASHINGTON 6/17/69				
	L. GALE 6/20/69				
FV	EP12-00021	C			
	D SOUTHER 6/15/70				
	J. SCANLAN 6/17/70				
GH	EP12-00026	D			
	S GOLDSBY 9/1/70				
	D MACKLIN 9/2/70				

DRN. D. SHEPARD	DATE 2/20/69
CHK'D. J.BISONETE	DATE 2/20/69
ENG. L. GALE	DATE 2/20/69
PROJ. ENG. L. GALE	DATE 2/20/69
PROD. D. CALL	DATE 2/20/69
FIRST USED ON EP12	

digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS

TITLE CP TIME STATES

SIZE	CODE	NUMBER	REV.
D	BS	EP12-0-CPT	E

SCALE
SHEET 1 OF 1
DIST.

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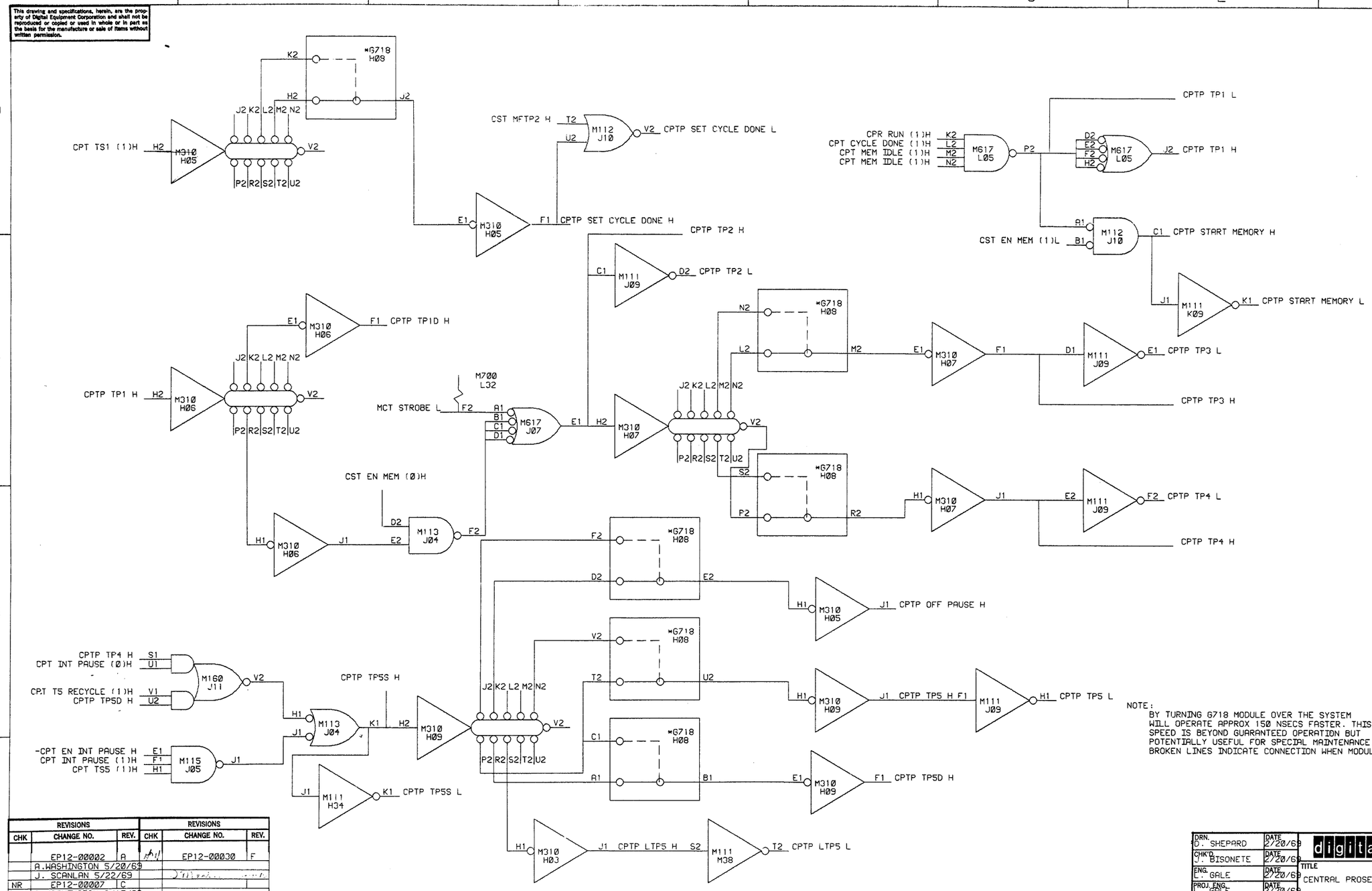
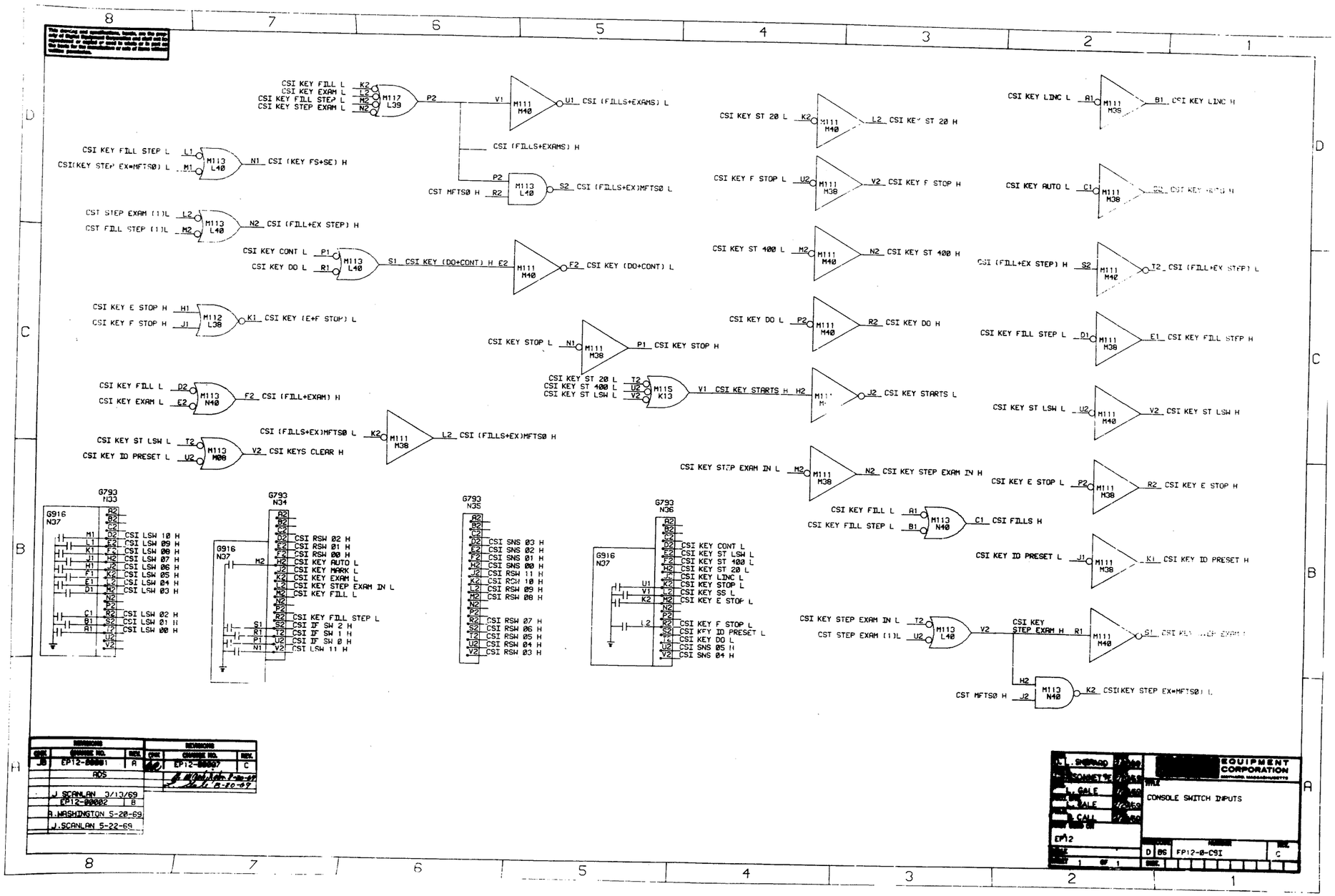


NOTE:
BY TURNING G718 MODULE OVER THE SYSTEM WILL OPERATE APPROX 150 NSECS FASTER. THIS SPEED IS BEYOND GUARANTEED OPERATION BUT POTENTIALLY USEFUL FOR SPECIAL MAINTENANCE BROKEN LINES INDICATE CONNECTION WHEN MODULE IS INVERTED.

REVISIONS			REVISIONS		
CHK	CHANGE NO.	REV.	CHK	CHANGE NO.	REV.
	EP12-00002	A		EP12-00030	F
	A.WASHINGTON 5/20/69				
	J. SCANLAN 5/22/69				
NR	EP12-00007	C			
	A.WASHINGTON 8/15/69				
	L. GALE 3/20/69				
FV	EP12-00021	D			
	D. SOUTHER 6/15/70				
	J. SCANLAN 6/17/70				
GH	EP12-00026	E			
	S. GOLDSBY 9-1-70				
	D. MACKLIN 9-2-70				

DRN. D. SHEPARD	DATE 2/20/69	digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS
CHK'D J. BISONETE	DATE 2/20/69	TITLE CENTRAL PROSESSOR TIME PULSES
ENG. L. GALE	DATE 2/20/69	
PROJ. ENG. L. GALE	DATE 2/20/69	
PROD. D. CALL	DATE 2/20/69	
FIRST USED ON EP12		SIZE D CODE BS NUMBER EP12-0-CPTP REV. F
SCALE		DIST.
SHEET 1 OF 1		



REVISIONS			REVISIONS		
ZONE	ENGINEER NO.	REV.	ZONE	ENGINEER NO.	REV.
J0	EP12-B0001	A	J0	EP12-B0007	C
	ADS				
	J.SCANLAN 3/13/69				
	EP12-B0002	B			
	R.WASHINGTON 5-20-69				
	J.SCANLAN 5-22-69				

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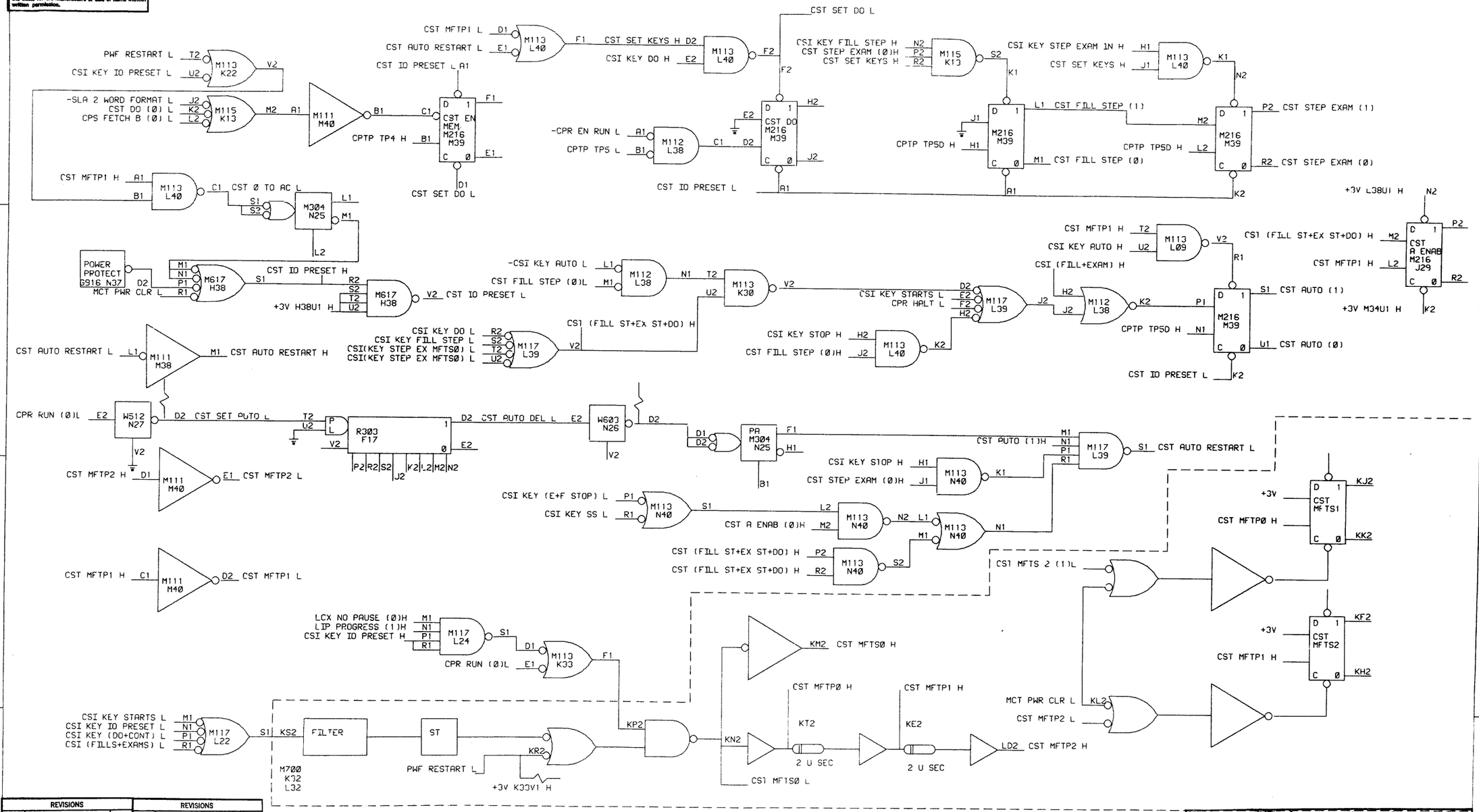

REVISIONS			REVISIONS		
CHK	CHANGE NO.	REV.	CHK	CHANGE NO.	REV.
JB	EP12-00001	A		EP12-00007	E
	ADS			A WASHINGTON 8/15/69	
	J SCANLAN 3/13/69			L GALE 8/20/69	
	EP12-00002	B		EP12-00015	F
	A WASHINGTON 5/20/69			K COTE 10/14/69	
	J SCANLAN 5/22/69			J SCANLAN 10/17/69	
	EP12-00003	C	NR	EP12-00016	H
	A WASHINGTON 6/17/69			K. COTE 11-12-69	
	J SCANLAN 6/20/69			J. SCANLAN 11-14-69	
	EP12-00004	D		EP12-00032	J
	A WASHINGTON 7/3/69				
	J SCANLAN 7/12/69				

DRN. D SHEPARD	DATE 2/20/69	digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS	
CHK'D. J BISONETTE	DATE 2/20/69		
ENG. L GALE	DATE 2/20/69	TITLE CONSOLE STARTS	
PROJ. ENG. L GALE	DATE 2/20/69		
PROD. D CALL	DATE 2/20/69		
FIRST USED ON EP12		SIZE D	CODE BS
SCALE		NUMBER EP12-0-CST	REV. J
SHEET 1 OF 1		DIST.	

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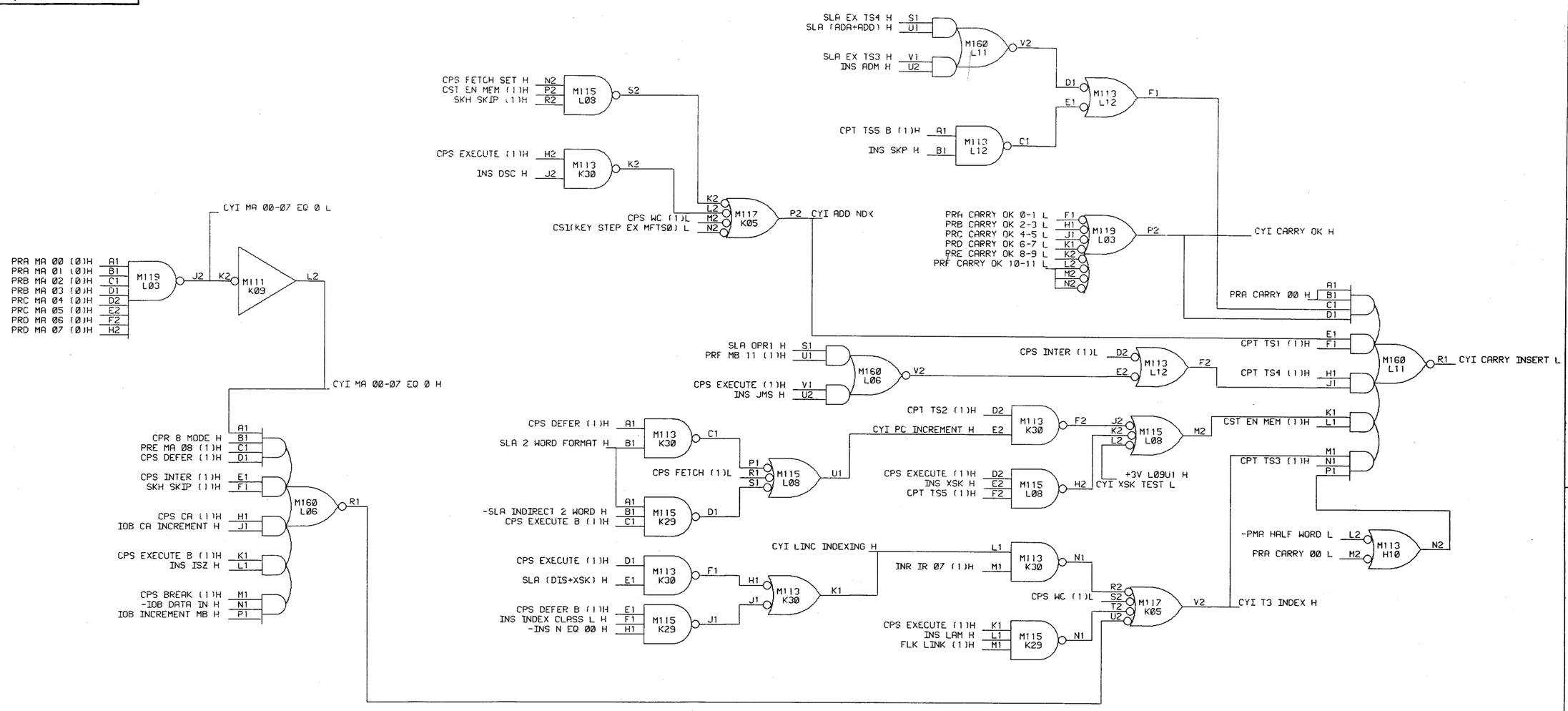

REVISIONS		
CHK	CHANGE NO.	REV.

DRN.		DATE
CHK'D.		DATE
ENG.		DATE
PROJ. ENG.		DATE
PROD.		DATE
FIRST USED ON	EP12	
SCALE		
SHEET 1 OF 1		

digital EQUIPMENT CORPORATION
MAYNARD, MASSACHUSETTS

TITLE: CARRY INSERT

SIZE	CODE	NUMBER	REV.
D	BS	EP12-0-CYI	A

DIST.

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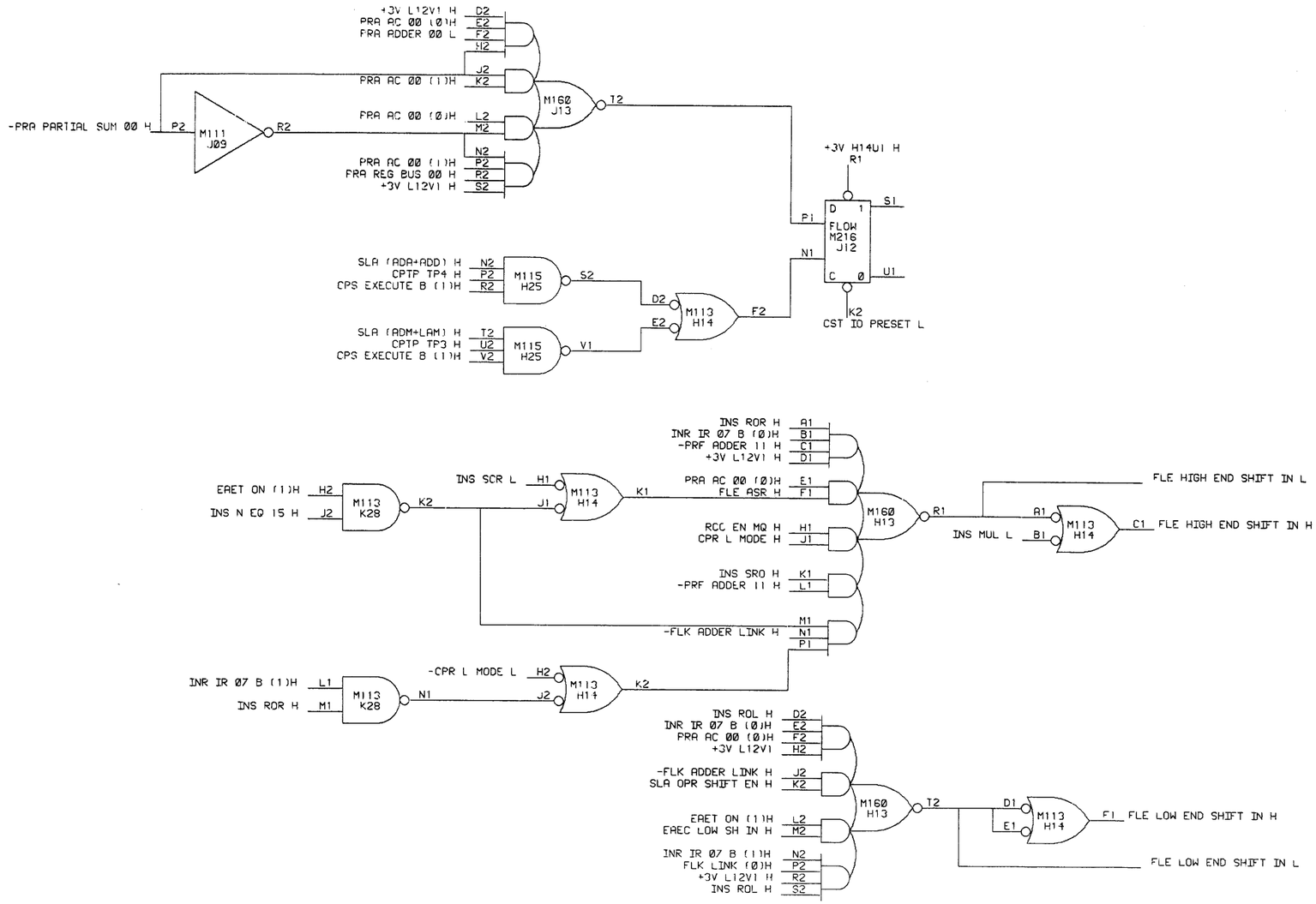

REVISIONS		
CHK	CHANGE NO.	REV.

DRN.	DATE	digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS
CHK'D.	DATE	
ENG.	DATE	TITLE: FLOW & END SHIFT
PROJ. ENG.	DATE	
PROD.	DATE	
FIRST USED ON: EP12		SIZE: D · CODE: BS · NUMBER: EP12-0-FLE · REV.: A
SCALE		
SHEET 1 OF 1		DIST.

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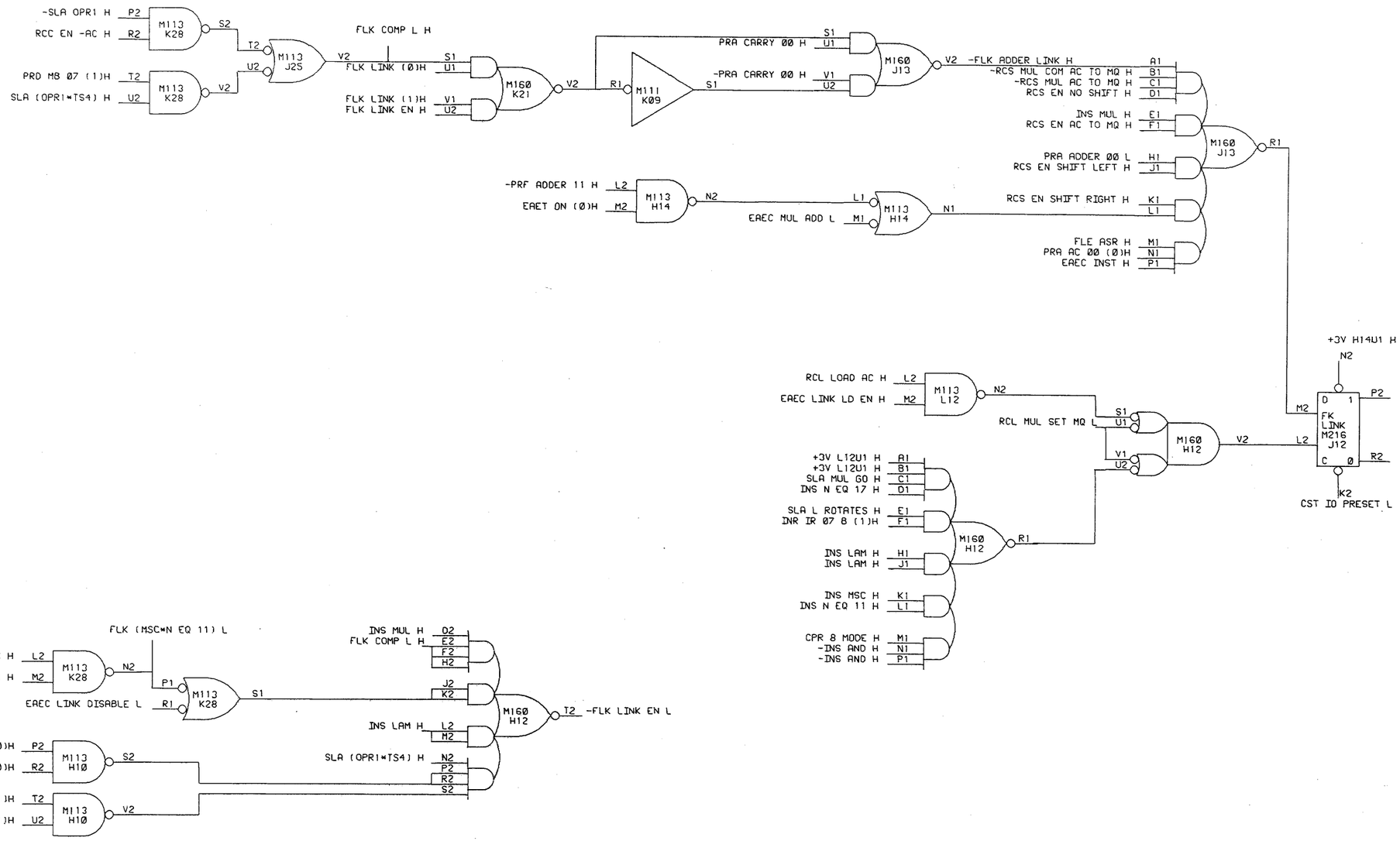

REVISIONS		
CHK	CHANGE NO.	REV.
JB	00001	A
	ADS	
	J SCANLAN 3/13/69	
	EP12-00002	B

DRN.	DATE	digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS
CHK'D.	DATE	
ENG.	DATE	TITLE: LINK LOGIC
PROJ. ENG.	DATE	
PROD.	DATE	
FIRST USED ON: EP12		SIZE: D CODE: BS NUMBER: EP12-0-FLK REV: B
SCALE		SHEET 1 OF 1 DIST.

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M903 N14

A1 B1 IOO BAC ØØ (1)H
C1
D1 IOO BAC Ø1 (1)H
E1 IOO BAC Ø2 (1)H
F1
H1 IOO BAC Ø3 (1)H
J1 IOO BAC Ø4 (1)H
K1
L1 IOO BAC Ø5 (1)H
M1 IOO BAC Ø6 (1)H
N1
P1 IOO BAC Ø7 (1)H
R1
S1 IOO BAC Ø8 (1)H
T1
U1
V1

M903 N15

A1 B1 IOO BMB ØØ (1)H
C1
D1 IOO BMB Ø1 (1)H
E1 IOO BMB Ø2 (1)H
F1
H1 IOO BMB Ø3 (Ø)H
J1 IOO BMB Ø3 (1)H
K1
L1 IOO BMB Ø4 (Ø)H
M1 IOO BMB Ø4 (1)H
N1
P1 IOO BMB Ø5 (Ø)H
R1
S1 IOO BMB Ø5 (1)H
T1
U1
V1

M903 N16

A1 B1 EXT IO BUS ØØ L
C1
D1 EXT IO BUS Ø1 L
E1 EXT IO BUS Ø2 L
F1
H1 EXT IO BUS Ø3 L
J1 EXT IO BUS Ø4 L
K1
L1 EXT IO BUS Ø5 L
M1 EXT IO BUS Ø6 L
N1
P1 EXT IO BUS Ø7 L
R1
S1 EXT IO BUS Ø8 L
T1
U1
V1

M903 N17

A1 B1 EXT DATA ADD ØØ L
C1
D1 EXT DATA ADD Ø1 L
E1 EXT DATA ADD Ø2 L
F1
H1 EXT DATA ADD Ø3 L
J1 EXT DATA ADD Ø4 L
K1
L1 EXT DATA ADD Ø5 L
M1 EXT DATA ADD Ø6 L
N1
P1 EXT DATA ADD Ø7 L
R1
S1 EXT DATA ADD Ø8 L
T1
U1
V1

M903 N18

A1 B1 EXT DATA ØØ L
C1
D1 EXT DATA Ø1 L
E1 EXT DATA Ø2 L
F1
H1 EXT DATA Ø3 L
J1 EXT DATA Ø4 L
K1
L1 EXT DATA Ø5 L
M1 EXT DATA Ø6 L
N1
P1 EXT DATA Ø7 L
R1
S1 EXT DATA Ø8 L
T1
U1
V1

M903 N13

A1 B1 IOB XL ØØ H
C1
D1 IOB XL Ø1 H
E1 IOB XL Ø2 H
F1
H1 IOB XL Ø3 H
J1 IOB XL Ø4 H
K1
L1 IOB XL Ø5 H
M1 IOB XL Ø6 H
N1
P1 IOB XL Ø7 H
R1
S1 IOB XL 10 H
T1
U1
V1

M903 N14

A2
B2
C2
D2 IOO BAC Ø9 (1)H
E2 IOO BAC 10 (1)H
F2
H2 IOO BAC 11 (1)H
J2
K2 IOO BIOP 1 H
L2
M2 IOO BIOP 2 H
N2
P2 IOO BIOP 4 H
R2
S2 IOO BTS 5 (1)H
T2 IOO BTS 2 (1)H
U2
V2 IOO BA INITIALIZE H

M903 N15

A2
B2
C2
D2 IOO BMB Ø6 (Ø)H
E2 IOO BMB Ø6 (1)H
F2
H2 IOO BMB Ø7 (Ø)H
J2
K2 IOO BMB Ø7 (1)H
L2
M2 IOO BMB Ø8 (Ø)H
N2
P2 IOO BMB Ø8 (1)H
R2
S2 IOO BMB Ø9 (1)H
T2 IOO BMB 10 (1)H
U2
V2 IOO BMB 11 (1)H

M903 N16

A2
B2
C2
D2 EXT IO BUS Ø9 L
E2 EXT IO BUS 10 L
F2
H2 EXT IO BUS 11 L
J2
K2 EXT SKIP BUS L
L2
M2 EXT INT RQST BUS L
N2
P2 EXT AC CLEAR BUS L
R2
S2 IOO B RUN (Ø)H
T2 MEA BRK SYNC CLK B H
U2
V2 EXT ENAB INT PAUSE H

M903 N17

A2
B2
C2
D2 EXT DATA ADD Ø9 L
E2 EXT DATA ADD 10 L
F2
H2 EXT DATA ADD 11 L
J2
K2 EXT BREAK RQST L
L2
M2 IOB DATA IN H
N2
P2 IOO B BREAK (Ø)H
R2
S2 IOO ADD ACCEPTED (Ø)H
T2 EXT INCREMENT MB L
U2
V2 IOO BB INITIALIZE H

M903 N18

A2
B2
C2
D2 EXT DATA Ø9 L
E2 EXT DATA 10 L
F2
H2 EXT DATA 11 L
J2
K2 EXT 3 CYCLE L
L2
M2 IOB CA INCREMENT H
N2
P2 IOO WC OVERFLOW (Ø)H
R2
S2 EXT EXT DATA ADD Ø2 L
T2 EXT EXT DATA ADD Ø1 L
U2
V2 EXT EXT DATA ADD ØØ L

M903 N13

A2
B2
C2
D2 IOB XL 11 H
E2 IOB XL 12 H
F2
H2 IOB XL 13 H
J2
K2
L2
M2
N2
P2
R2
S2 IWS IOT H
T2
U2
V2

NOTE:
IF AN FPP12 IS NOT USED, ADD GROUND WIRE N16V2 TO N19T1. IF FPP12 IS REMOVED FROM BUS, GROUND MUST BE ~~REMOVED~~. Installed

W021 N20

C2
D2 MXB MCBMB Ø3 (Ø)H
E2 MXB MCBMB Ø4 (Ø)H
F2
H2 MXB MCBMB Ø5 (Ø)H
J2
K2 MXB BMA ØØ (1)H
L2
M2 MXB BMA Ø1 (1)H
N2
P2 MXB BMA Ø2 (1)H
R2
S2 MXB BMA Ø3 (1)H
T2 MXB BMA Ø4 (1)H
U2
V2 MXB BMA Ø5 (1)H

W021 N21

C2
D2 MXB BMA Ø6 (1)H
E2 MXB BMA Ø7 (1)H
F2
H2 MXB BMA Ø8 (1)H
J2
K2 MXB BMA Ø9 (1)H
L2
M2 MXB BMA 10 (1)H
N2
P2 MXB BMA 11 (1)H
R2
S2 MXB MCBMB ØØ (Ø)H
T2 MXB MCBMB Ø1 (Ø)H
U2
V2 MXB MCBMB Ø2 (Ø)H

W021 N22

C2
D2 MXF EA Ø H
E2 MXF EA 1 H
F2
H2 MXF EA 2 H
J2
K2 MXB MCBMB Ø6 (Ø)H
L2
M2 MXB MCBMB Ø7 (Ø)H
N2
P2 MXB MCBMB Ø8 (Ø)H
R2
S2 MXB MCBMB Ø9 (Ø)H
T2 MXB MCBMB 10 (Ø)H
U2
V2 MXB MCBMB 11 (Ø)H

W021 N23

C2
D2
E2 MCS MEM ØØ H
F2
H2 MCS MEM Ø1 H
J2
K2 MCS MEM Ø2 H
L2
M2 MCS MEM Ø3 H
N2
P2 MCS MEM Ø4 H
R2
S2 MCS MEM Ø5 H
T2 MCS MEM Ø6 H
U2
V2 MCS MEM Ø7 H

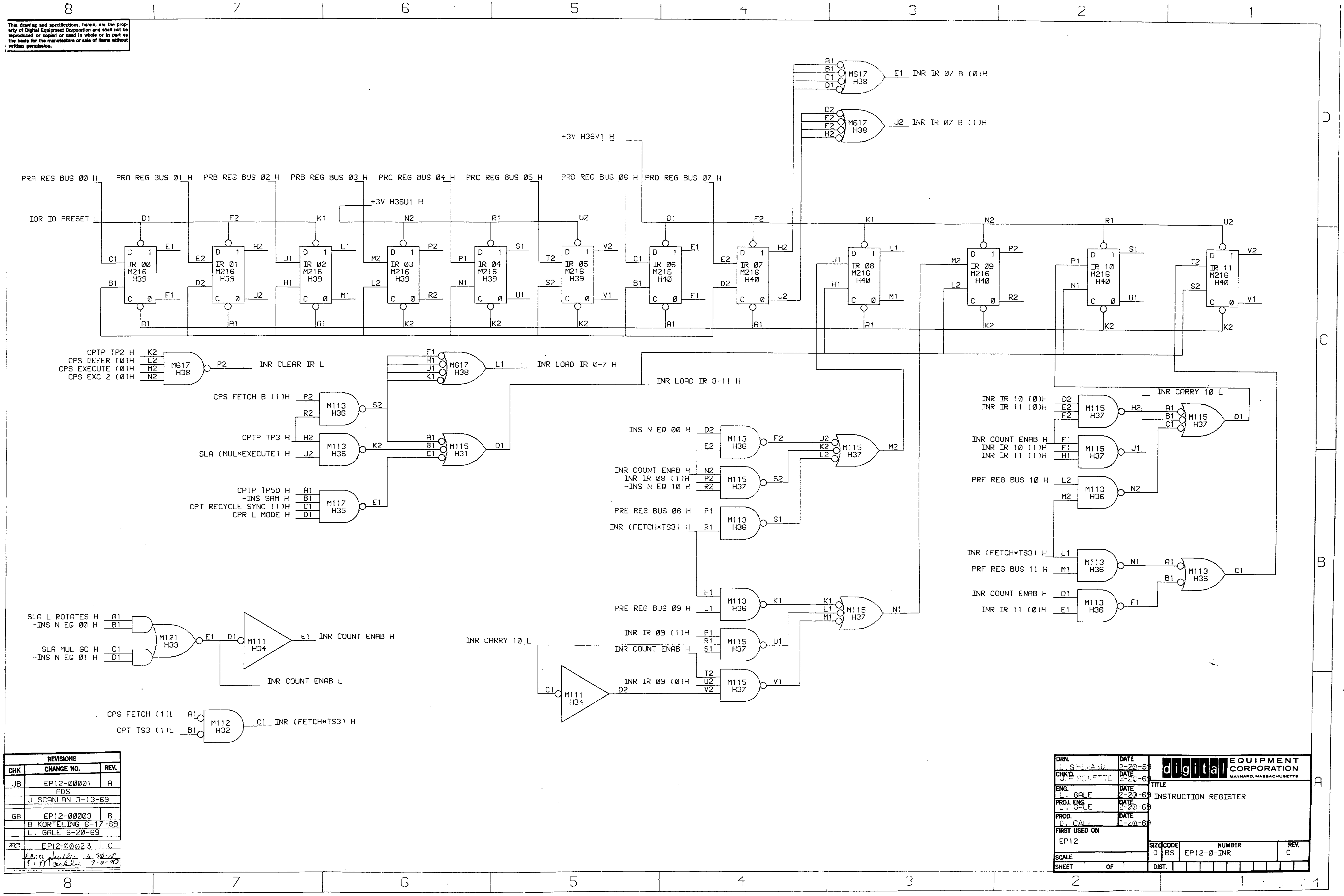
W021 N24

C2
D2 MCS MEM Ø8 H
E2 MCS MEM Ø9 H
F2
H2 MCS MEM 10 H
J2
K2 MCS MEM 11 H
L2
M2 MXB START MEMORY H
N2
P2 MCT STROBE L
R2
S2 MCT MEM DONE L
T2
U2
V2 MXB MEM TP3 H

REVISIONS			REVISIONS		
CHK	CHANGE NO.	REV.	CHK	CHANGE NO.	REV.
JB	EP12-00001	A	KRoss	EP12-00032	E
	ADS		K ROSS 11/5/71		
	J SCANLAN 3/13/69		" " 11/11/71		
PD	EP12-00002	B			
	A WASHINGTON 5/20/69				
	J SCANLAN 5/22/69				
FV	EP12-00021	C			
	D SOUTHER 6/15/70				
	J SCANLAN 6/17/70				
GH	EP12-00026	D			
	S GOLDSBY 9/1/70				
	D MACKLIN 9/2/70				

DRN. D SHEPARD	DATE 2/20/69	digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS
CHK'D. J BISONETTE	DATE 2/20/69	
ENG. L GALE	DATE 2/20/69	TITLE IO & EXT MEM CABLES
PROJ. ENG. L GALE	DATE 2/20/69	
PROD. D CALL	DATE 2/20/69	
FIRST USED ON EP12		SIZE D CODE BS NUMBER EP12-0-ICB REV. E
SCALE		DIST.
SHEET 1 OF 1		

11/3/71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PRA REG BUS 00 H
PRA REG BUS 01 H
PRB REG BUS 02 H
PRB REG BUS 03 H
PRC REG BUS 04 H
PRC REG BUS 05 H
PRD REG BUS 06 H
PRD REG BUS 07 H
+3V H36V1 H
+3V H36U1 H
IOR IO PRESET L
IR 00 M216 H39
IR 01 M216 H39
IR 02 M216 H39
IR 03 M216 H39
IR 04 M216 H39
IR 05 M216 H39
IR 06 M216 H40
IR 07 M216 H40
IR 08 M216 H40
IR 09 M216 H40
IR 10 M216 H40
IR 11 M216 H40
INR IR 07 B (0)H
INR IR 07 B (1)H
CPTP TP2 H
CPS DEFER (0)H
CPS EXECUTE (0)H
CPS EXC 2 (0)H
INR CLEAR IR L
INR LOAD IR 0-7 H
INR LOAD IR 8-11 H
CPS FETCH B (1)H
CPTP TP3 H
SLA (MUL*EXECUTE) H
CPTP TP5D H
-INS SAM H
CPT RECYCLE SYNC (1)H
CPR L MODE H
INS N EQ 00 H
INR COUNT ENAB H
INR IR 08 (1)H
-INS N EQ 10 H
PRE REG BUS 08 H
INR (FETCH*TS3) H
PRE REG BUS 09 H
INR IR 09 (1)H
INR IR 09 (0)H
INR CARRY 10 L
INR IR 10 (0)H
INR IR 11 (0)H
INR IR 10 (1)H
INR IR 11 (1)H
PRF REG BUS 10 H
PRF REG BUS 11 H
SLA L ROTATES H
-INS N EQ 00 H
SLA MUL GO H
-INS N EQ 01 H
INR COUNT ENAB L
CPS FETCH (1)L
CPT TS3 (1)L
REVISIONS
CHK | CHANGE NO. | REV.
JB | EP12-00001 | A
ADS
J SCANLAN 3-13-69
GB | EP12-00003 | B
B KORTELING 6-17-69
L. GALE 6-20-69
EP12-00023 | C
DRN. DATE 2-20-69
CHK'D. J. FISONETTE DATE 2-20-69
ENG. L. GALE DATE 2-20-69
PROJ. ENG. L. GALE DATE 2-20-69
PROD. D. CALL DATE 2-20-69
FIRST USED ON EP12
digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS
TITLE INSTRUCTION REGISTER
SIZE D CODE BS NUMBER EP12-0-INR REV. C
SHEET 1 OF 1

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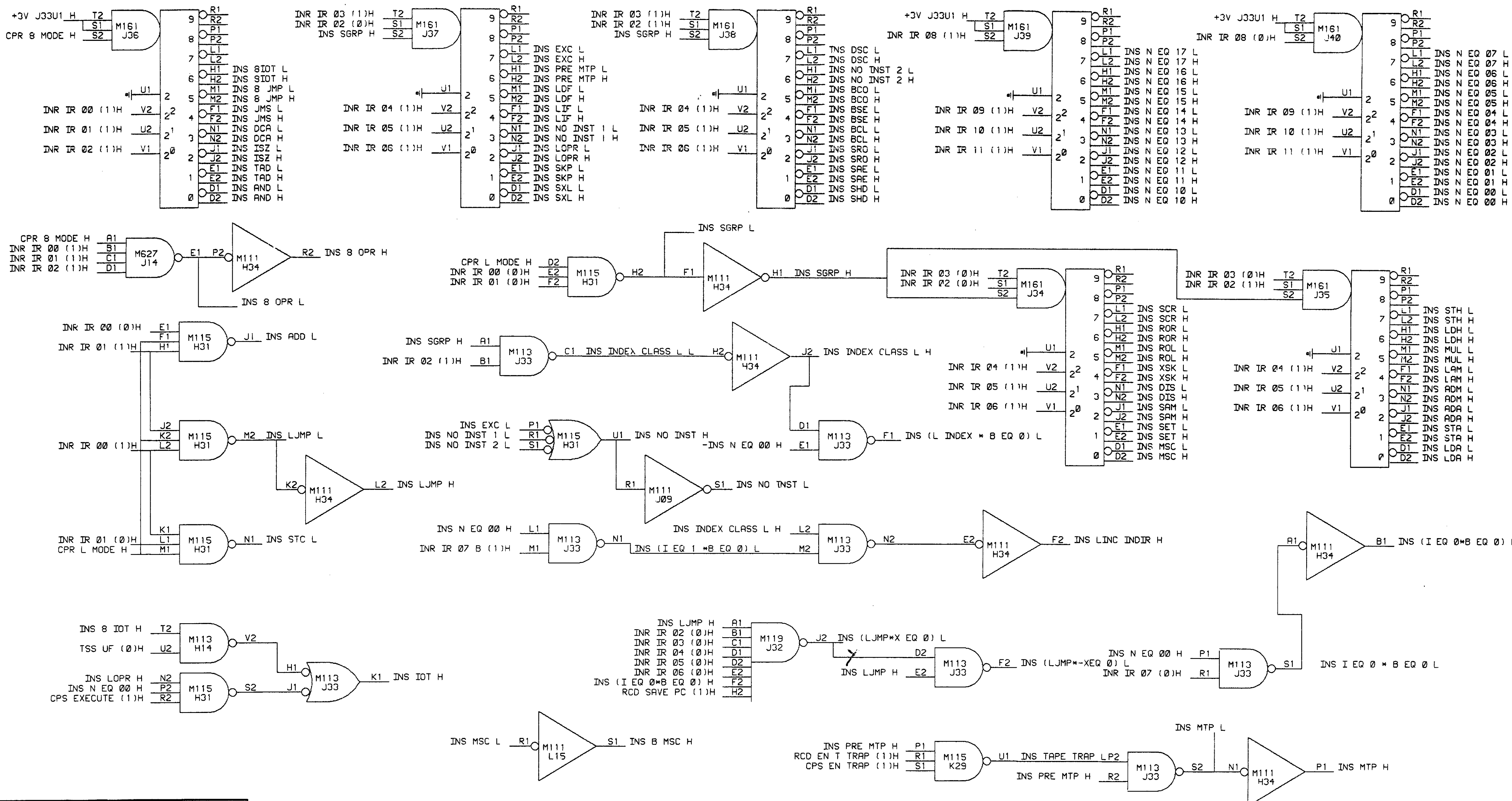

REVISIONS		
CHK	CHANGE NO.	REV.
NR	EP12-00001 ADS J SCANLAN 3/13/69	A
NR	EP12-00007 ADS L GALE 8/20/69	B
NR	EP12-00016 K. COTE 11-12-69 J. SCANLAN 11-14-69	C
FV	EP12-00021 D. SOUTHER 6-15-70 J. SCANLAN 6-17-70	D

REVISIONS		
CHK	CHANGE NO.	REV.
DJW	EP12-00030 KATHY WALSH 11/5/70	E

DRN. D SHEPARD	DATE 2/20/69
CHK'D J BISONETE	DATE 2/20/69
ENG. GALE	DATE 2/20/69
PROJ. ENG. L GALE	DATE 2/20/69
PROD. D CALL	DATE 2/20/69

digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS

TITLE INSTRUCTIONS

FIRST USED ON EP12

SIZE D CODE BS NUMBER EP12-0-INS REV. E

SHEET 1 OF 1

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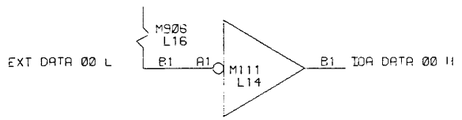

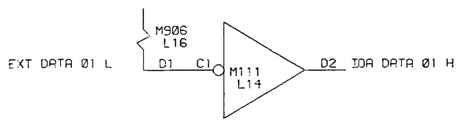

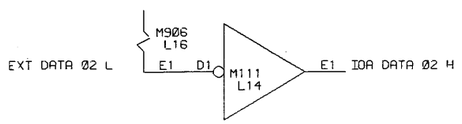

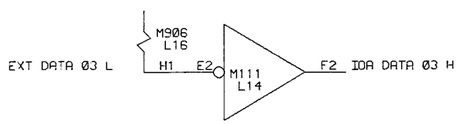

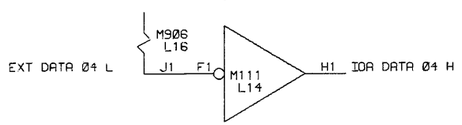

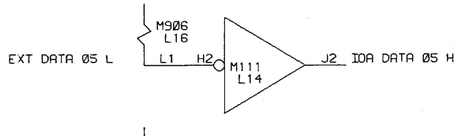

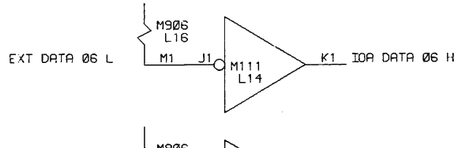

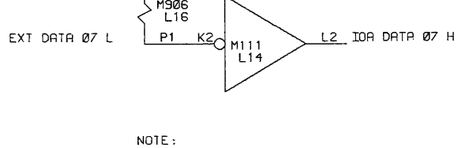

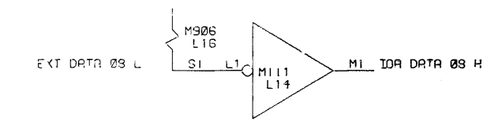

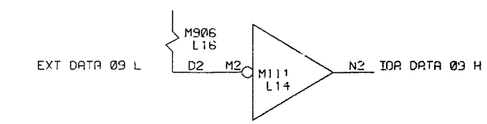

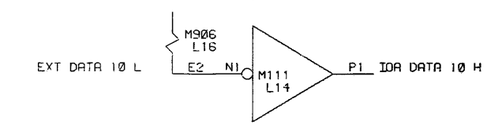

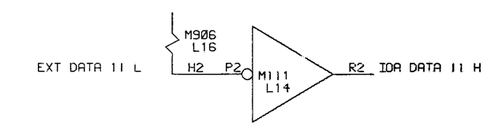

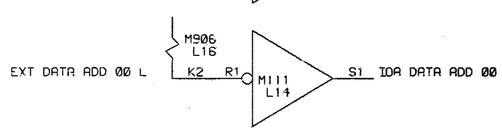

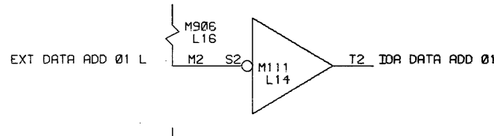

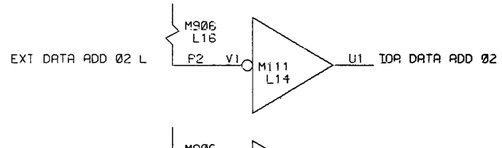

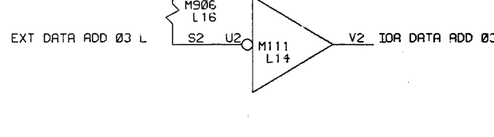

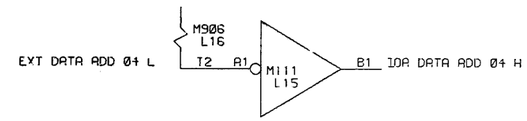

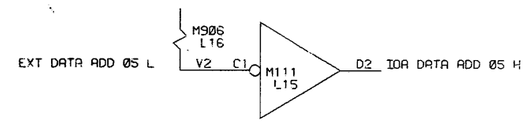

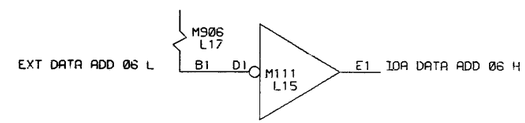

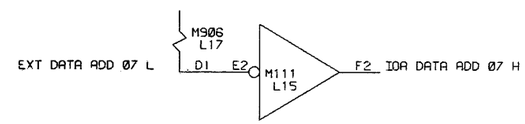

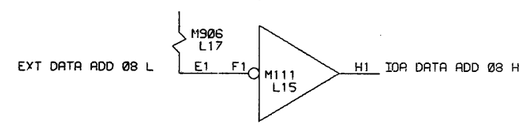

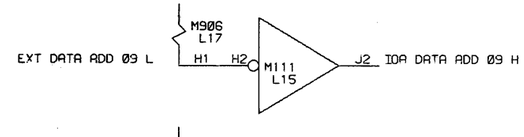

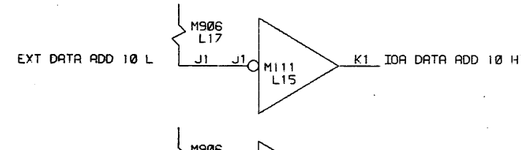

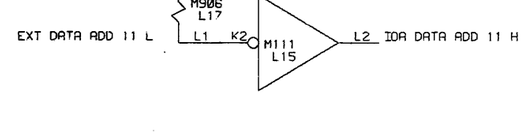

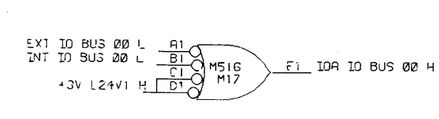

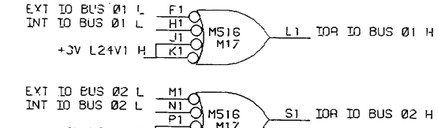

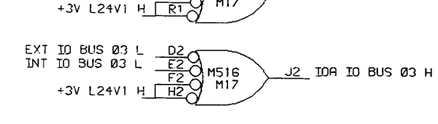

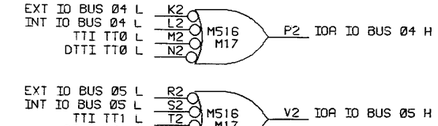

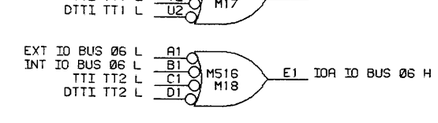

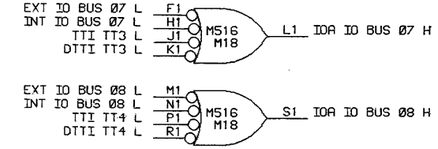

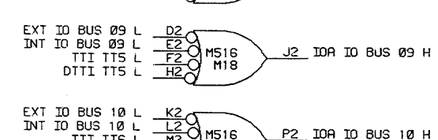

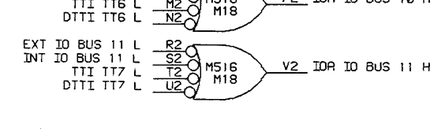

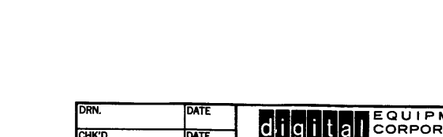

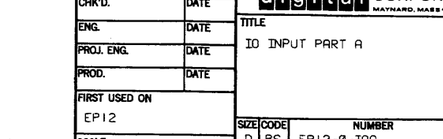

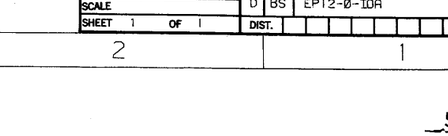

NOTE:

ALL SIGNALS STARTING WITH 'EXT' COME FROM THE EXTERNAL IO BUS. THE CABLES ARE SHOWN ON DRAWING ICB. SEE DRAWING IOB FOR DESCRIPTION OF M516 INPUTS.

REVISIONS		
CHK	CHANGE NO.	REV.

DRN.	DATE
CHK'D.	DATE
ENG.	DATE
PROJ. ENG.	DATE
PROD.	DATE
FIRST USED ON	EP12
SCALE	
SHEET 1 OF 1	

digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS

TITLE: IO INPUT PART A

SIZE	CODE	NUMBER	REV.
D	BS	EP12-Ø-IOA	A

DIST.

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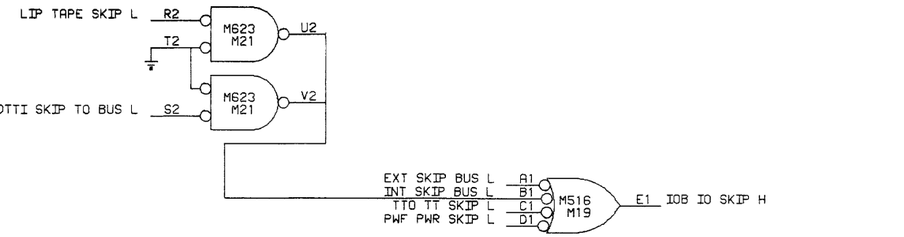
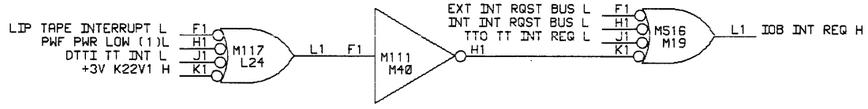
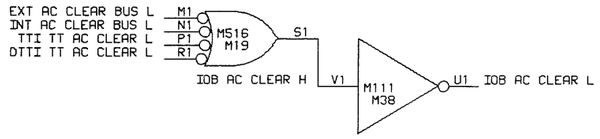
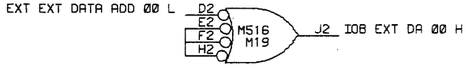
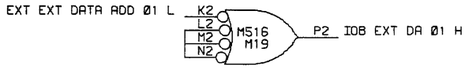
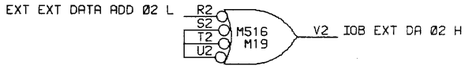




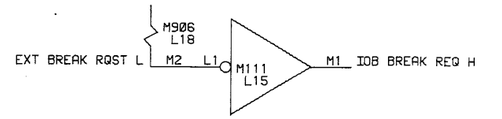


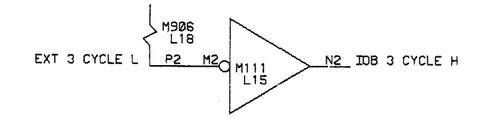


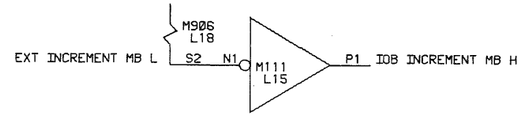


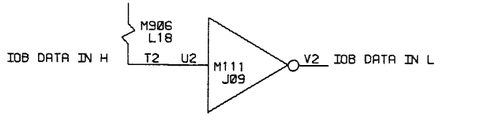


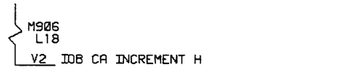
NOTE:
THE FIRST INPUT OF A M516 IS CLAMPED AT GND AND +3V. IN ADDITION. THIS INPUT IS SUPPLIED WITH 220 OHMS TO +5V. THE SECOND INPUT IS EFFECTIVELY A 500 OHMS TO 3.3V. BOTH THE FIRST AND SECOND INPUTS ARE USED FOR COLLECTOR ORED BUS INPUTS THIRD AND FORTH M516 INPUTS ARE STD TTL GATE INPUTS.



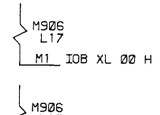


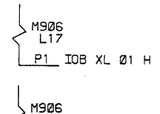


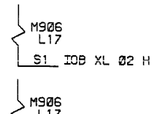


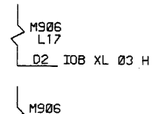


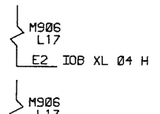
NOTE:
ALL SIGNALS PREFIXED WITH 'EXT' AS WELL AS IOB DATA IN, IOB CA INCREMENT, AND THE IOB XL SIGNALS COME FROM THE EXTERNAL IO BUS, THE CABLE CONNECTIONS ARE SHOWN ON DRAWING IOB.

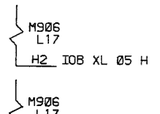


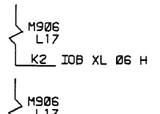


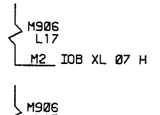


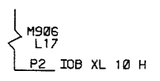


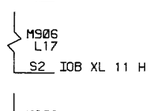


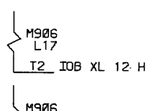


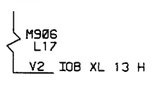












REVISIONS		
CHK	CHANGE NO.	REV.
JB	EP12-00001	A
	ADS	
	J SCANLAN 3/13/69	
	EP12-00016	B
	K Cain 11/13/69	
	J Scanlan 11/14/69	

DRN. D SHEPARD	DATE 2/20/69	digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS
CHK'D. J BISONETE	DATE 2/20/69	TITLE IO INPUT PART A
ENG. L GALE	DATE 2/20/69	
PROJ. ENG. L GALE	DATE 2/20/69	
PROD. D CALL	DATE 2/20/69	
FIRST USED ON EP12		SIZE D CODE 85 NUMBER EP12-0-IOB REV. B
SCALE		
SHEET 1 OF 1		DIST.

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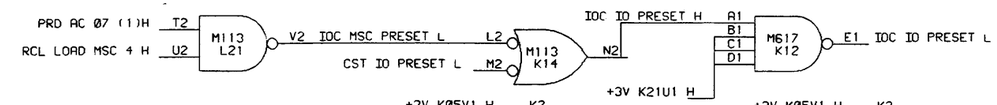

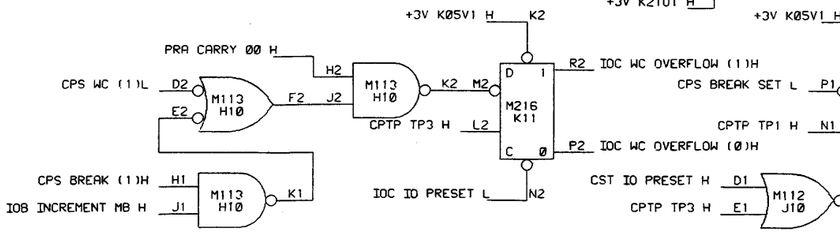

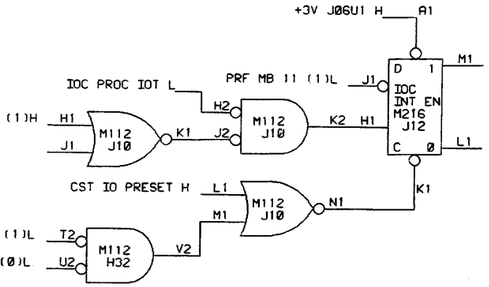

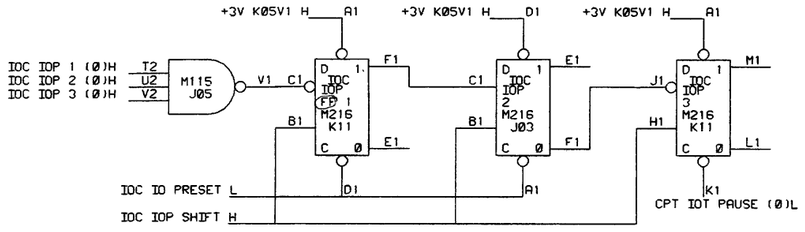

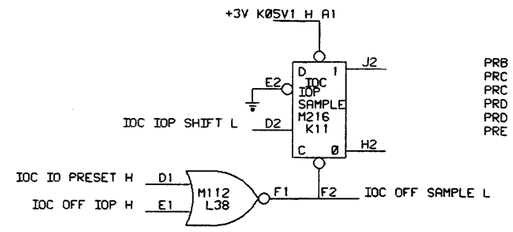

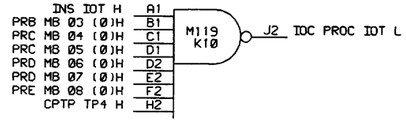

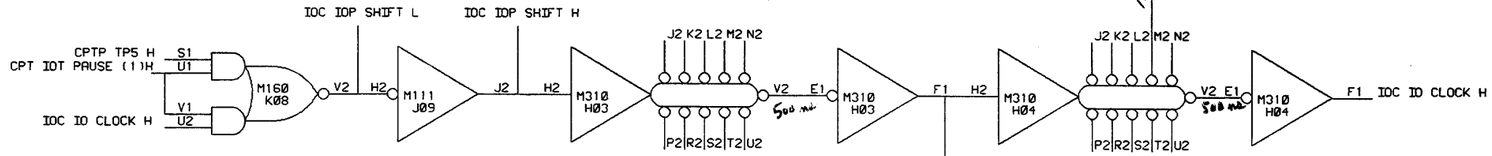

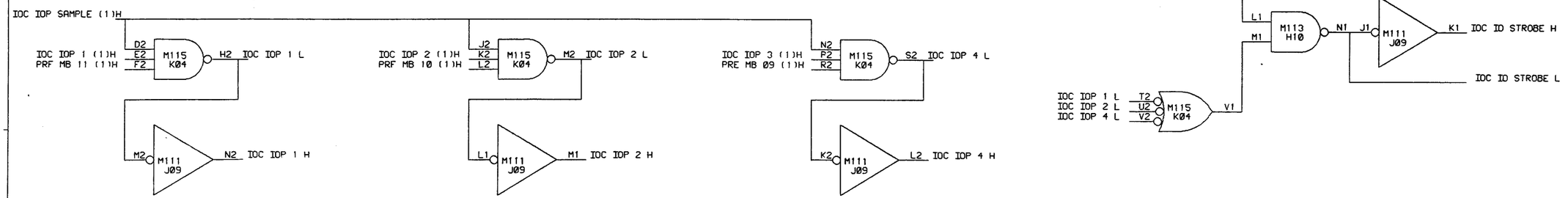

REVISIONS			REVISIONS		
CHK	CHANGE NO.	REV.	CHK	CHANGE NO.	REV.
JB	EP12-00001	A	GH	EP12-00026	E
	ADS			S. GOLDSBY 9-1-70	
	J. SCANLAN 3/13/69			D. MACKLIN 9-2-70	
PD	EP12-00002	B		EP12-00030	F
	A.WASHINGTON 5/20/69				
	J. SCANLAN 5/22/69				
NR	EP12-00013	C			
	D. SOUTHER 10/1/69				
	J. SCANLAN 10/6/69				
FV	EP12-00021	D			
	D. SOUTHER 6/15/70				
	J. SCANLAN 6/17/70				

DRN. D. SHEPARD	DATE 2/20/69	digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS
CHK'D J. BISONETTE	DATE 2/20/69	
ENG. L. GALE	DATE 2/20/69	TITLE IO CONTROL & TIMING
PROJ. ENG. L. GALE	DATE 2/20/69	
PROG. D. CALL	DATE 2/20/69	
FIRST USED ON EP12		SIZE D | CODE BS | NUMBER EP12-0-IOC | REV. F
SCALE		
SHEET OF		DIST.

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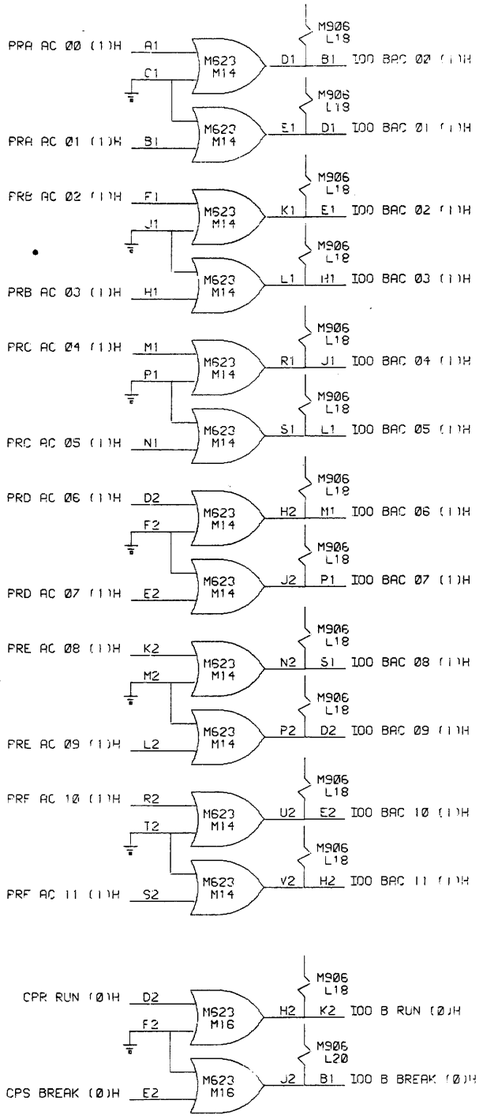

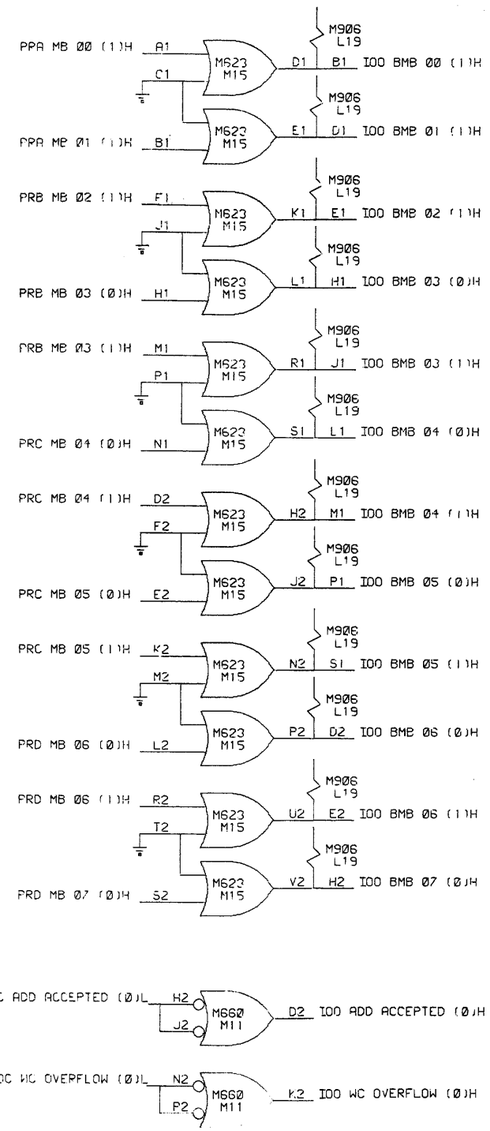

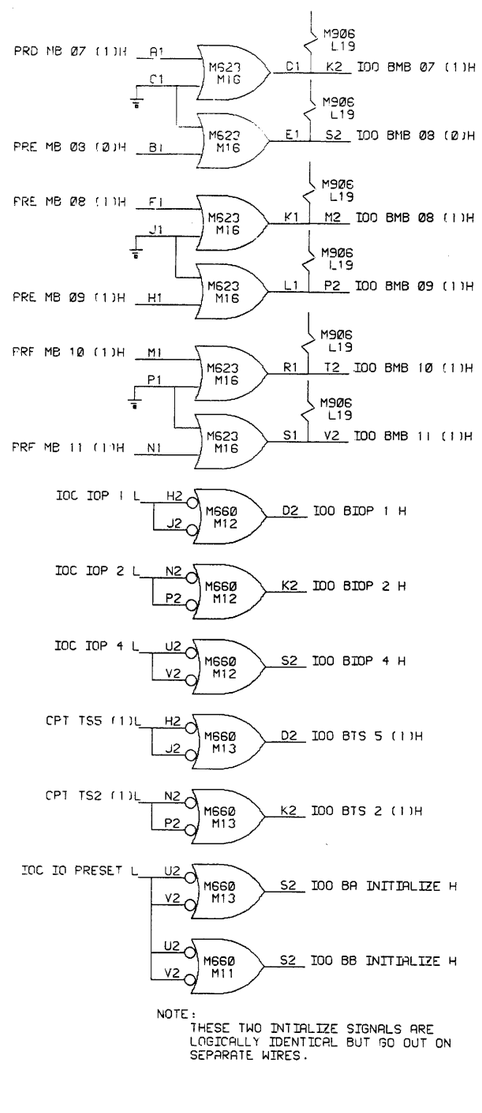

NOTE:
THESE TWO INTIALIZE SIGNALS ARE LOGICALLY IDENTICAL BUT GO OUT ON SEPARATE WIRES.

REVISIONS		
CHK	CHANGE NO.	REV.
	EP12-00002	A

DRN.	DATE	digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS
CHK'D.	DATE	
ENG.	DATE	TITLE: IO OUTPUT BUFFERS
PROJ. ENG.	DATE	
PROD.	DATE	
FIRST USED ON: EP12		SIZE: D | CODE: BS | NUMBER: EP12-0-100 | REV.: A
SCALE		DIST.
SHEET 1 OF 1		

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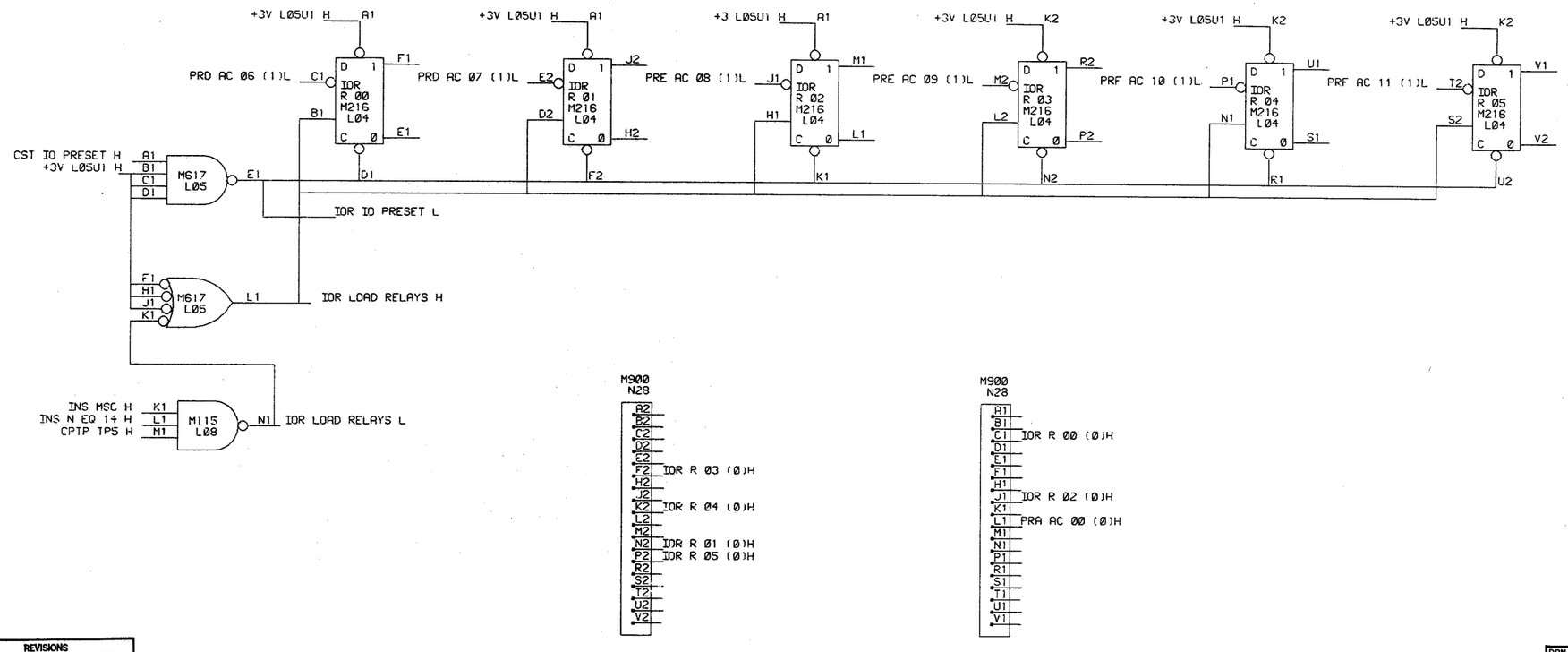

REVISIONS		
CHK	CHANGE NO.	REV.
	EP12-00001	A
	ADS	
	J.SCANLAN G-2-69	
	EP12-00003	B

DRN. D.L.SHEPARD	DATE 2-20-69	digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS
CHK'D. J.BISONETE	DATE 2-20-69	
ENG. L.GALE	DATE 2-20-69	TITLE RELAY BUFFER
PROJ. ENG. L.GALE	DATE 2-20-69	
PROD. D.CALI	DATE 2-20-69	
FIRST USED ON EP12		SIZE D | CODE BS | NUMBER EP12-0-IOR | REV. B
SCALE		DIST.
SHEET 1 OF 1		

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M901 H01

A1	LIP PROGRESS (1)H
B1	LTR WRITE ON L
C1	LIP TAPE PAUSE H
D1	LIP TAPE BRK REQ (0)H
E1	LIP TAPE INTERRUPT L
F1	LIP MSC TAC TO AC H
H1	LTP8 BLOCK (1)H
J1	LTP8 TAPE WORD H
K1	LIP TAPE BRK REQ (1)H
L1	LCS TURN ARND (1)H
M1	LIP PROGRESS (0)H
N1	LIP TAPE OUT H
P1	LTR MARK ON L
R1	LWN IM H
S1	LIP CHK SUM TO AC L
T1	GD
U1	LIP CHK SUM LD AC L
V1	GND

M903 J01

B1	MCS MEM 00 H
D1	MCS MEM 01 H
E1	MCS MEM 02 H
H1	MCS MEM 03 H
J1	MCS MEM 04 H
L1	MCS MEM 05 H
M1	MCS MEM 06 H
P1	MCS MEM 07 H
S1	MCS MEM 08 H

M903 K01

B1	PRB MB 03 (0)H
D1	PRB MB 03 (1)H
E1	PRC MB 04 (0)H
H1	PRC MB 04 (1)H
J1	PRC MB 05 (0)H
L1	PRC MB 05 (1)H
M1	PRD MB 06 (0)H
P1	PRD MB 06 (1)H
S1	PRD MB 07 (0)H

M903 L01

B1	PRA MA 00 (0)H
D1	PRA MA 00 (1)H
E1	PRA MA 01 (1)H
H1	PRB MA 02 (1)H
J1	PRB MA 03 (0)H
L1	PRB MA 03 (1)H
M1	PRC MA 04 (1)H
P1	PRC MA 05 (1)H
S1	PRD MA 06 (0)H

M903 H02

B1	INT ID BUS 00 L
D1	INT ID BUS 01 L
E1	INT ID BUS 02 L
H1	INT ID BUS 03 L
J1	INT ID BUS 04 L
L1	INT ID BUS 05 L
M1	INT ID BUS 06 L
P1	INT ID BUS 07 L
S1	INT ID BUS 08 L

M901 H02

A1	PWF POWER LOW (0)H
B1	CST SET AUTO L
C1	PRD AC 07 (0)H
D1	PRE AC 08 (0)H
E1	PRE AC 09 (0)H
F1	CPT TS RECYCLE (0)H
H1	CST AUTO DEL L
J1	INR IR 07 (0)H
K1	INR IR 07 B (1)H
L1	INR IR 09 (1)H
M1	INR IR 10 (1)H
N1	INR IR 11 (1)H
P1	INS N EQ 01 H
R1	INS N EQ 03 H
S1	CST D0 (1)H
T1	GND
U1	DSC SIZE (0)H
V1	PWF RESTART L

M901 H01

A2	+5V
B2	SLA EX TS4 H
C2	GND
D2	LTRA TAPE BUS 00 H
E2	LTRA TAPE BUS 01 H
F2	LTRB TAPE BUS 02 H
H2	LTRB TAPE BUS 03 H
J2	LTRC TAPE BUS 04 H
K2	LTRC TAPE BUS 05 H
L2	LTRD TAPE BUS 06 H
M2	LTRD TAPE BUS 07 H
N2	LTRE TAPE BUS 08 H
P2	LTRE TAPE BUS 09 H
R2	LTRF TAPE BUS 10 H
S2	LTRF TAPE BUS 11 H
T2	LIP TAPE BUS TO AC L
U2	
V2	LIP TAPE SKIP L

M903 J01

D2	MCS MEM 09 H
E2	MCS MEM 10 H
H2	MCS MEM 11 H
K2	PRA MB 00 (0)H
M2	PRA MB 00 (1)H
P2	PRA MB 01 (0)H
S2	PRA MB 01 (1)H
T2	PRB MB 02 (0)H
V2	PRB MB 02 (1)H

M903 K01

D2	PRD MB 07 (1)H
E2	PRE MB 08 (0)H
H2	PRE MB 08 (1)H
K2	PRE MB 09 (0)H
M2	PRE MB 09 (1)H
P2	PRF MB 10 (0)H
S2	PRF MB 10 (1)H
T2	PRF MB 11 (0)H
V2	PRF MB 11 (1)H

M903 L01

D2	PRD MA 06 (1)H
E2	PRD MA 07 (1)H
H2	PRE MA 08 (1)H
K2	PRE MA 09 (0)H
M2	PRE MA 09 (1)H
P2	PRF MA 10 (1)H
S2	PRF MA 11 (1)H
T2	MCT STROBE L
V2	MCT MEM DONE L

M903 H02

D2	INT ID BUS 09 L
E2	INT ID BUS 10 L
H2	INT ID BUS 11 L
K2	INT SKIP BUS L
M2	INT AC CLEAR BUS L
P2	DSC Z DRIVER H
S2	MXF EA 2 H
T2	IOC ID STROBE H
V2	INS SAM H

M901 H02

A2	INT INT RQST BUS L
B2	DSC 503 INTEN L
C2	GND
D2	LCS IDLE (1)L
E2	LCS SEARCH (1)L
F2	LCS BLOCK (1)L
H2	LCX NO PAUSE (1)L
J2	LCX EX ADD FORMAT (1)L
K2	LCS CHK WRD (1)L
L2	MCT PWR STOP L
M2	LIN TINR 11 (1)L
N2	LIN TINR 10 (1)L
P2	LIN TINR 09 (1)L
R2	LCX MARK (1)L
S2	INS MTP H
T2	INS B MSC H
U2	CSI KEY MARK L
V2	LIP TAPE WORD (1)H

M903 J02

B1	CPTP START MEMORY H
D1	IOC IO PRESET L
E1	CPTP TP2 H
H1	CPTP TP5D H
J1	CPTP TP4 H
L1	CPTP TP5 H
M1	IOC IDP 1 L
P1	IOC IDP 2 L
S1	IOC IDP 4 L

* USE M906 IF SYSTEM DOES NOT HAVE TAPES.

M903 J02

D2	MCT PWR CLR L
E2	CPT TS2 (1)H
H2	CPT TS3 (1)H
K2	CPT TS4 (1)H
M2	CPT TS5 B (1)H
P2	CPS EXECUTE B (1)H
S2	CPS FETCH B (1)H
T2	CST IO PRESET L
V2	PWF PWR SKIP L

M903 K02

B1	PRA AC 00 (1)H
D1	PRA AC 01 (1)H
E1	PRB AC 02 (1)H
H1	PRB AC 03 (1)H
J1	PRC AC 04 (0)H
L1	PRC AC 04 (1)H
M1	PRC AC 05 (1)H
P1	PRD AC 06 (1)H
S1	PRD AC 07 (1)H

M903 K02

D2	PRE AC 08 (1)H
E2	PRE AC 09 (1)H
H2	PRF AC 10 (0)H
K2	PRF AC 10 (1)H
M2	PRF AC 11 (0)H
P2	PRF AC 11 (1)H
S2	RCL LOAD MSC 4 H
T2	PRB AC 03 (0)H
V2	CPS T BREAK (1)H

M901 L02

A1	YAD AD 02 (1)H
B1	YADC AD 03 (0)H
C1	YADC AD 04 (0)H
D1	YADC AD 05 (0)H
E1	YADC AD 06 (0)H
F1	YADC AD 07 (0)H
H1	YADC AD 08 (0)H
J1	YADC AD 09 (0)H
K1	YADC AD 10 (0)H
L1	YADC AD 11 (0)H
M1	CPT (DSC+DIS) H
N1	SLA (DSC*EXECUTE 2) L
P1	INS DIS L
R1	INS DSC L
S1	CPR RUN (1)H
T1	GND
U1	DSC BUSY H
V1	YADC A-D RECYCLE L

* ADD GND DISABLE WIRE FOR PDP-12C SYSTEMS ONLY WHICH DO NOT HAVE VC12 SCOPE CONTROL.

M901 L02

A2	MXF EA 0 L
B2	MXF EA 1 L
D2	MXR DF 00 (1)H
E2	MXR DF 01 (1)H
F2	MXR DF 02 (1)H
H2	MPGDF 03 (1)H
J2	MPG DF 04 (1)H
K2	MXR IF 00 (1)H
L2	MXR IF 01 (1)H
M2	MXR IF 02 (1)H
N2	MPG IF 03 (1)H
P2	MPG IF 04 (1)H
R2	INR IR 08 (1)H
S2	YADC FAST SAM (1)H
T2	LCX TF 00 (1)H
U2	LCX TF 01 (1)H
V2	LCX TF 02 (1)H

REVISIONS			REVISIONS		
CHK	CHANGE NO.	REV.	CHK	CHANGE NO.	REV.
JB	EP12-00001	A	NR	EP12-00007	E
	ADS			A WASHINGTON	
	J SCANLAN 3/13/69			J SCANLAN	
	EP12-00002	B	NR	EP12-00011	F
	A WASHINGTON 5/20/69			BRUCE KORTELING	
	J SCANLAN 5/22/69			J SCANLAN	
NR	EP12-00004	C		EP12-00016	H
	A WASHINGTON 7/9/69				
	J SCANLAN 7/9/69				
	EP12-00006	D	MW	EP12-00033	J
	A WASHINGTON			N COTE 2/3/71	
	J SCANLAN				

QTY.	DESCRIPTION	PART NO.	ITEM NO.
	PARTS LIST		

DRN D SHEPARD DATE 2/20/69
CHKD J BISONETE DATE 2/20/69
ENG L GALE DATE 2/20/69
PROJ ENG L GALE DATE 2/20/69
PROD D CALL DATE 2/20/69

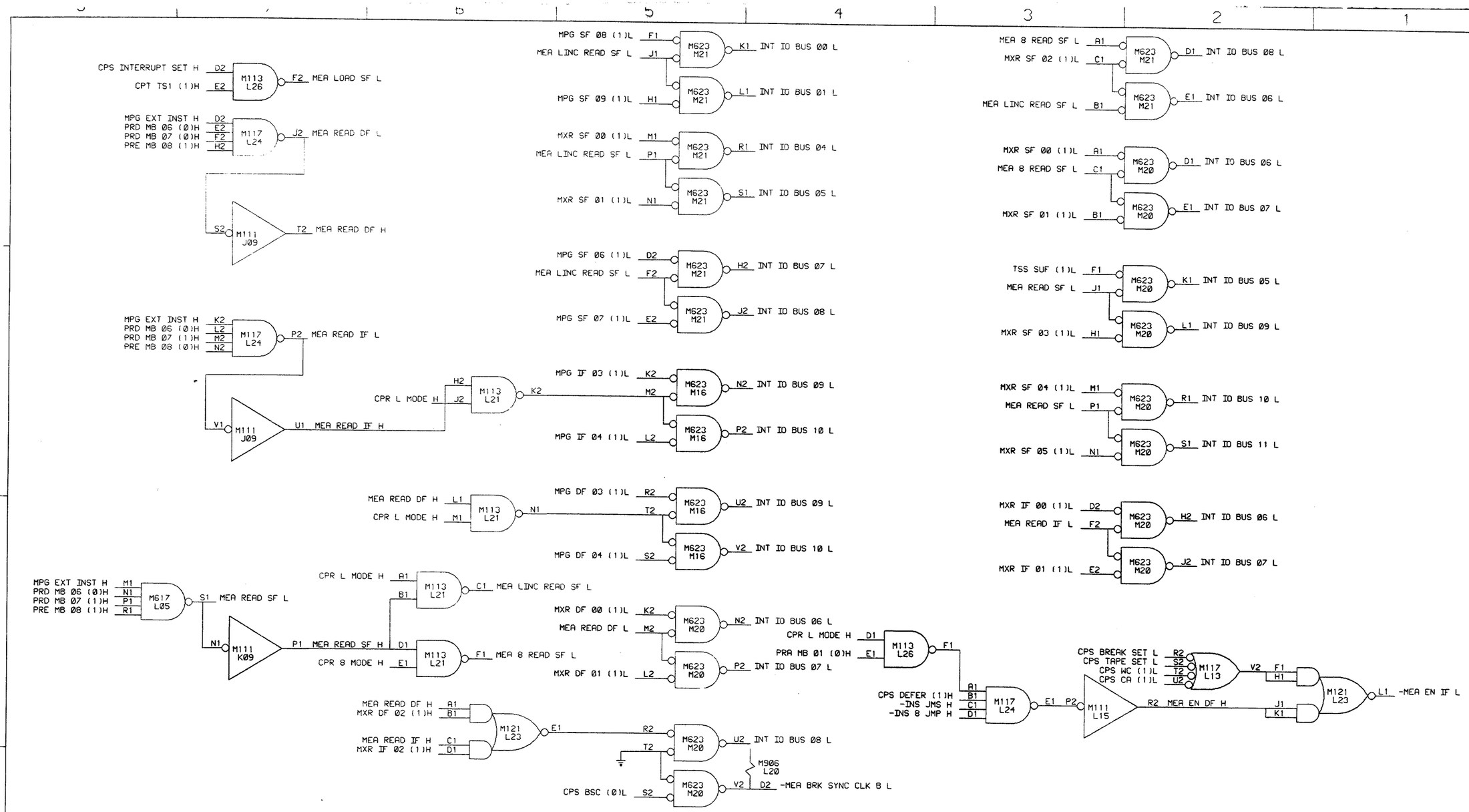
digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS

TITLE: INTER PROC CABLES

FIRST USED ON: EP12
SCALE:
SHEET 1 OF 1

SIZE	CODE	NUMBER	REV.
D	BS	EP12-0-IPC	J

DIST.



REVISIONS			REVISIONS		
CHK	CHANGE NO.	REV.	CHK	CHANGE NO.	REV.
JB	EP12-00001	A	FV	EP12-00021	E
	ADS			D. SOUTHER 6-16-70	
	J SCANLAN 3/13/69			J. SCANLAN 6-17-70	
	EP12-00002	B	TC	EP12-00023	F
	A WASHINGTON 5/20/69			D. SOUTHER 6-30-70	
	J SCANLAN 5/22/69			D. MACKLIN 7-2-70	
NR	EP12-00004	C		EP12-00030	H
	A WASHINGTON 7/9/69			Kathy Wilson 11/5/70	
	L GALE 7/15/69			DMacRae 11-19-70	
NR	EP12-00015	D			
	K.COTE 10-14-69				
	J.SCANLAN 10-17-69				

DRN D SHEPARD	DATE 2/20/69	digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS
CHKD J BISONETE	DATE 2/20/69	
ENG L GALE	DATE 2/20/69	TITLE MEM EXTN AC INPUTS
PROJ. ENG. L GALE	DATE 2/20/69	
PROD. D CALL	DATE 2/20/69	
FIRST USED ON EP12		SIZE D | CODE BS | NUMBER EP12-0-MEA | REV. H
SCALE		DIST.
SHEET 1 OF 1		

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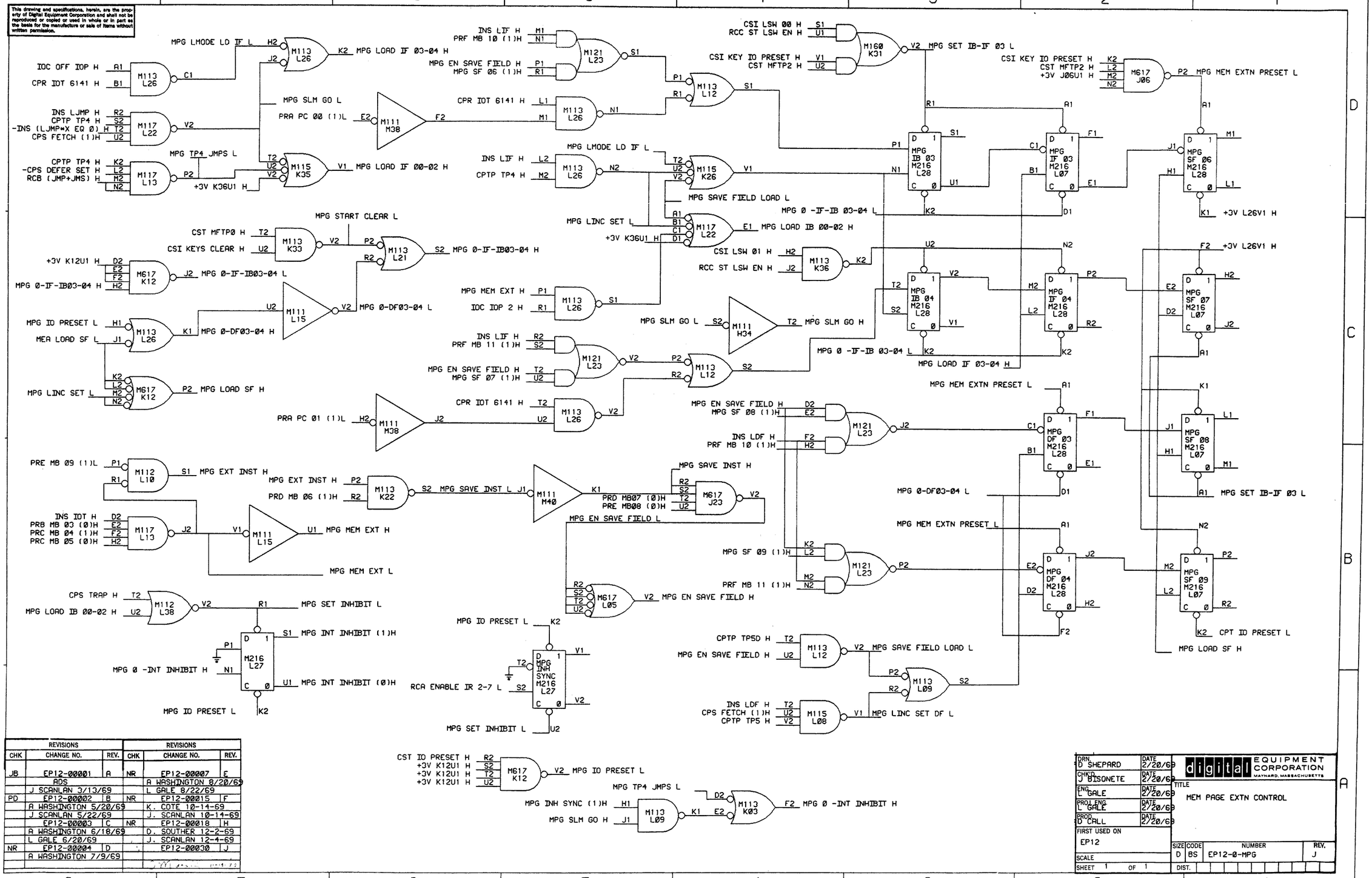

REVISIONS			REVISIONS		
CHK	CHANGE NO.	REV.	CHK	CHANGE NO.	REV.
JB	EP12-00001	A	NR	EP12-00007	E
	ADS			A WASHINGTON 8/20/69	
	J SCANLAN 3/13/69			L GALE 8/22/69	
PD	EP12-00002	B	NR	EP12-00015	F
	A WASHINGTON 5/20/69			K. COTE 10-14-69	
	J SCANLAN 5/22/69			J. SCANLAN 10-14-69	
	EP12-00003	C	NR	EP12-00018	H
	A WASHINGTON 6/18/69			D. SOUTHER 12-2-69	
	L GALE 6/20/69			J. SCANLAN 12-4-69	
NR	EP12-00004	D		EP12-00030	J
	A WASHINGTON 7/9/69				

DRN D SHEPARD	DATE 2/20/69	digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS	
CHK'D J BISONETE	DATE 2/20/69		
ENG L GALE	DATE 2/20/69	TITLE MEM PAGE EXTN CONTROL	
PROJ ENG L GALE	DATE 2/20/69		
PROD D CALL	DATE 2/20/69		
FIRST USED ON EP12		SIZE D	CODE 85
SCALE		NUMBER EP12-0-MPG	REV. J
SHEET 1 OF 1		DIST.	

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RCS EN -AC TO MQ H PRA AC 00 (0)H U2 F2
RCS EN MQ SH RIGHT H PRF ADDER 11 H L1 M1
RCS EN AC TO MQ H PRA AC 00 (1)H N1 L2
RCS EN MQ SH LEFT H MQR MQ 01 (1)H P1 F1
M212 K24
D MQR 1 M212 K24 MQ 00 C 0 B1
C1
D1
D2
+3V K23U1 H

RCS EN -AC TO MQ H PRA AC 01 (0)H U2 R1
RCS EN MQ SH RIGHT H MQR MQ 00 (1)H L1 D1
RCS EN AC TO MQ H PRA AC 01 (1)H N1 M2
RCS EN MQ SH LEFT H MQR MQ 02 (1)H P1 H2
M212 K24
D MQR 1 M212 K24 MQ 01 C 0 B1
C1
F1
E1
+3V K23U1 H

RCS EN -AC TO MQ H PRB AC 02 (0)H U2 S1
RCS EN MQ SH RIGHT H MQR MQ 01 (1)H L1 F1
RCS EN AC TO MQ H PRB AC 02 (1)H N1 N2
RCS EN MQ SH LEFT H MQR MQ 03 (1)H P1 H1
M212 K24
D MQR 1 M212 K24 MQ 02 C 0 B1
C1
H2
E2
+3V K23U1 H

RCS EN -AC TO MQ H PRB AC 03 (0)H U2 U1
RCS EN MQ SH RIGHT H MQR MQ 02 (1)H L1 H2
RCS EN AC TO MQ H PRB AC 03 (1)H N1 R2
RCS EN MQ SH LEFT H MQR MQ 04 (1)H P1 K2
M212 K24
D MQR 1 M212 K24 MQ 03 C 0 B1
C1
H1
F2
+3V K23U1 H

RCL LOAD MQ H

RCS EN -AC TO MQ H PRC AC 04 (0)H U2 A1
RCS EN MQ SH RIGHT H MQR MQ 03 (1)H L1 H1
RCS EN AC TO MQ H PRC AC 04 (1)H N1 V1
RCS EN MQ SH LEFT H MQR MQ 05 (1)H P1 K1
M212 K24
D MQR 1 M212 K24 MQ 04 C 0 B1
C1
K2
J2
+3V K23U1 H

RCS EN -AC TO MQ H PRC AC 05 (0)H U2 T2
RCS EN MQ SH RIGHT H MQR MQ 04 (1)H L1 K2
RCS EN AC TO MQ H PRC AC 05 (1)H N1 V2
RCS EN MQ SH LEFT H MQR MQ 06 (1)H P1 S2
M212 K24
D MQR 1 M212 K24 MQ 05 C 0 B1
C1
K1
J1
+3V K23U1 H

RCS EN -AC TO MQ H PRD AC 06 (0)H U2 P2
RCS EN MQ SH RIGHT H MQR MQ 05 (1)H L1 M1
RCS EN AC TO MQ H PRD AC 06 (1)H N1 L2
RCS EN MQ SH LEFT H MQR MQ 07 (1)H P1 F1
M212 K25
D MQR 1 M212 K25 MQ 06 C 0 B1
C1
D1
D2
+3V K23V1 H

RCS EN -AC TO MQ H PRD AC 07 (0)H U2 R1
RCS EN MQ SH RIGHT H MQR MQ 06 (1)H L1 D1
RCS EN AC TO MQ H PRD AC 07 (1)H N1 M2
RCS EN MQ SH LEFT H MQR MQ 08 (1)H P1 H2
M212 K25
D MQR 1 M212 K25 MQ 07 C 0 B1
C1
F1
E1
+3V K23V1 H

RCL LOAD MQ H

RCS EN -AC TO MQ H PRE AC 08 (0)H U2 S1
RCS EN MQ SH RIGHT H MQR MQ 07 (1)H L1 F1
RCS EN AC TO MQ H PRE AC 08 (1)H N1 N2
RCS EN MQ SH LEFT H MQR MQ 09 (1)H P1 H1
M212 K25
D MQR 1 M212 K25 MQ 08 C 0 B1
C1
H2
E2
+3V K23V1 H

RCS EN -AC TO MQ H PRE AC 09 (0)H U2 U1
RCS EN MQ SH RIGHT H MQR MQ 08 (1)H L1 H2
RCS EN AC TO MQ H PRE AC 09 (1)H N1 R2
RCS EN MQ SH LEFT H MQR MQ 10 (1)H P1 K2
M212 K25
D MQR 1 M212 K25 MQ 09 C 0 B1
C1
H1
F2
+3V K23V1 H

RCS EN -AC TO MQ H PRF AC 10 (0)H U2 A1
RCS EN MQ SH RIGHT H MQR MQ 09 (1)H L1 H1
RCS EN AC TO MQ H PRF AC 10 (1)H N1 V1
RCS EN MQ SH LEFT H MQR MQ 11 (1)H P1 K1
M212 K25
D MQR 1 M212 K25 MQ 10 C 0 B1
C1
K2
J2
+3V K23V1 H

RCS EN -AC TO MQ H PRF AC 11 (0)H U2 T2
RCS EN MQ SH RIGHT H MQR MQ 10 (1)H L1 K2
RCS EN AC TO MQ H PRF AC 11 (1)H N1 V2
RCS EN MQ SH LEFT H EAEC MQ 11 INSERT H P1 S2
M212 K25
D MQR 1 M212 K25 MQ 11 C 0 B1
C1
K1
J1
+3V K23V1 H

RCL LOAD MQ H

REVISIONS		
CHK	CHANGE NO.	REV.
PD	EP12-00002	A
	A.WASHINGTON 5-20-69	
	J. SCANLAN 5-22-69	
	EP12-00030	B

DRN. D. SHEPARD	DATE 2-20-69	digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS
CHK'D. J.BISSONNETTE	DATE 2-20-69	
ENG. L. GALE	DATE 2-20-69	TITLE MUL QUOTIENT
PROJ. ENG. L. GALE	DATE 2-20-69	
PROD. D. CALL	DATE 2-20-69	
FIRST USED ON EP12		SIZE D | CODE BS | NUMBER EP12-0-MQR | REV. B
SCALE		DIST.
SHEET 1 OF 1		

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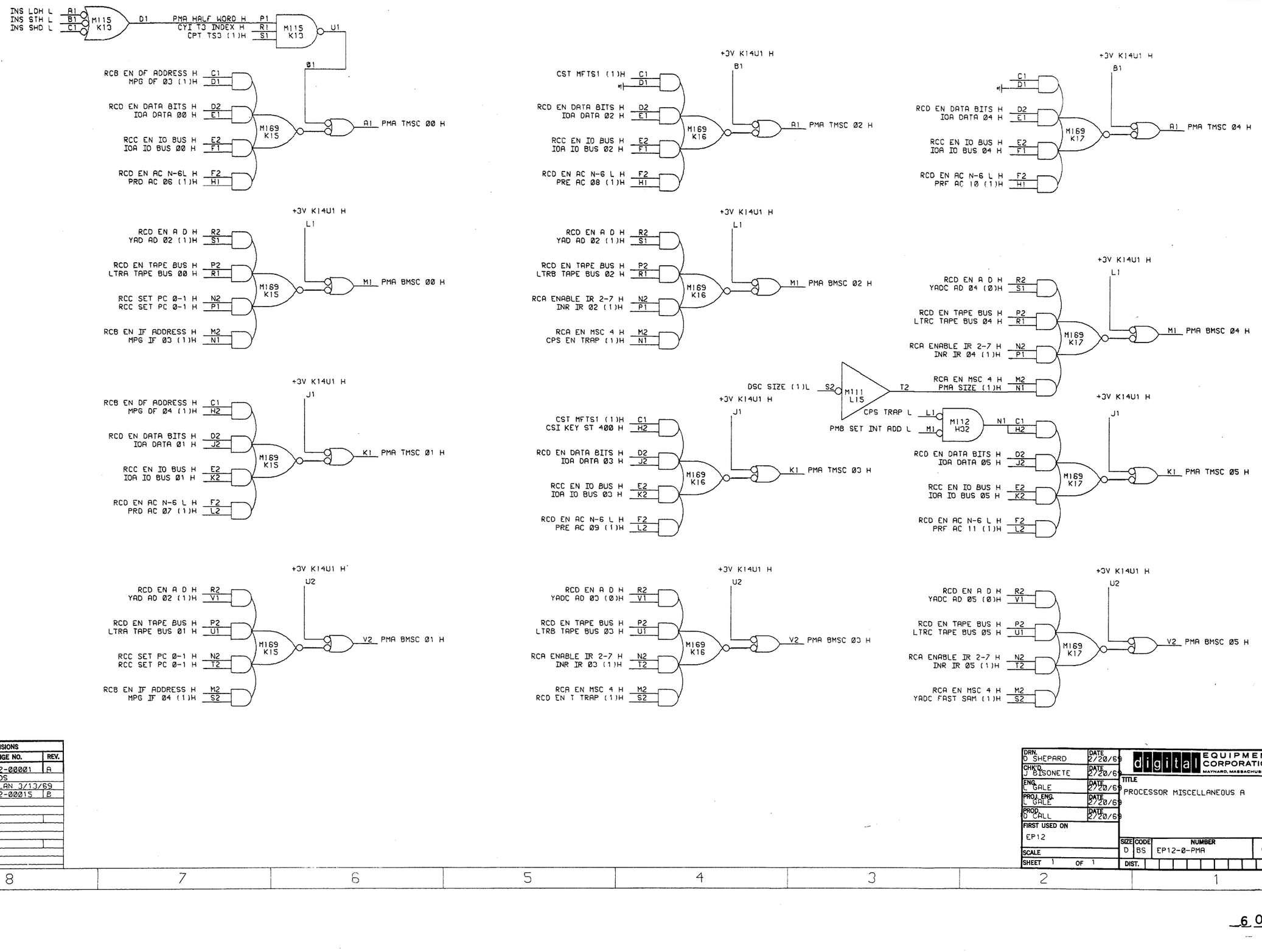

REVISIONS		
CHK	CHANGE NO.	REV.
JB	EP12-00001	A
	ADS	
	J SCANLAN 3/13/69	
	EP12-0001S	B

DRN. D SHEPARD	DATE 2/20/69	digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS
CHK'D. J BISONETE	DATE 2/20/69	
ENG. L GALE	DATE 2/20/69	TITLE PROCESSOR MISCELLANEOUS A
PROJ. ENG. L GALE	DATE 2/20/69	
PROD. D CALL	DATE 2/20/69	
FIRST USED ON EP12		SIZE D | CODE BS | NUMBER EP12-0-PMA | REV. B
SCALE		DIST.
SHEET 1 OF 1		

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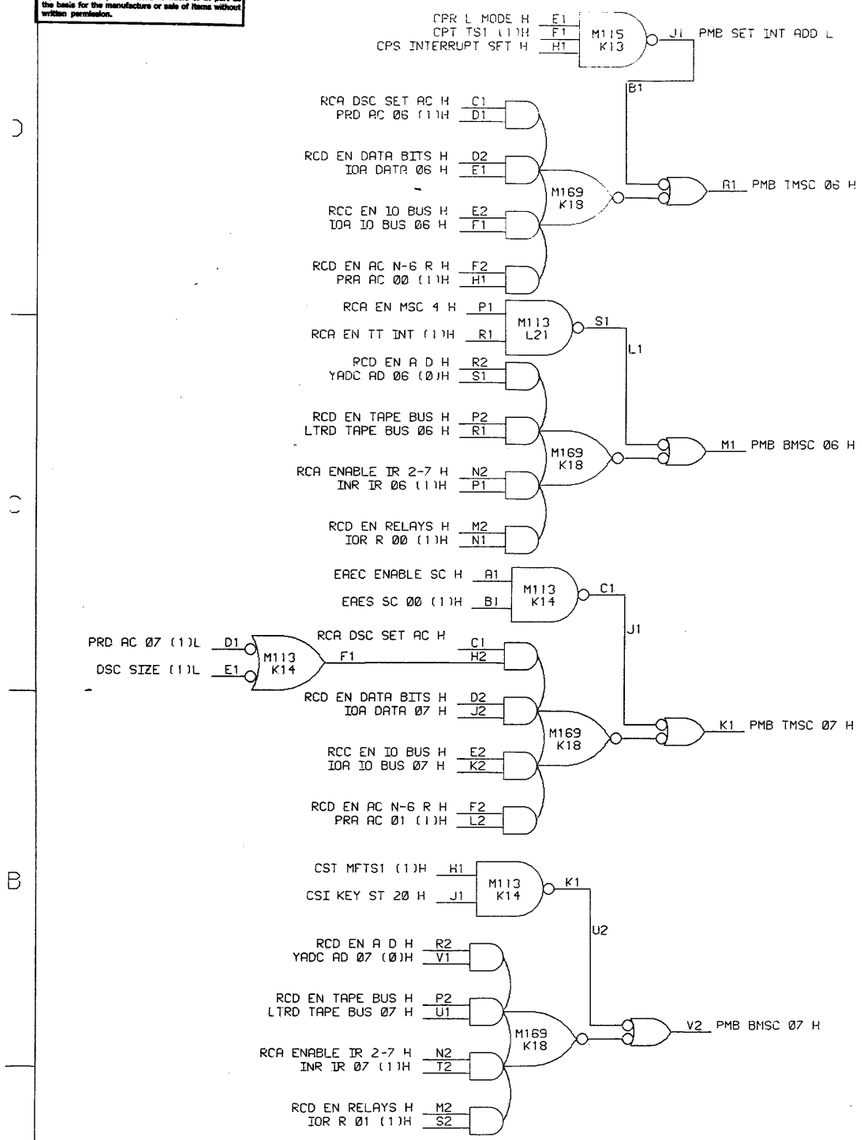

REVISIONS		
CHK	CHANGE NO.	REV.

DRN.	DATE	digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS
CHK'D.	DATE	
ENG.	DATE	TITLE: PROCESSOR MISCELLANEOUS B
PROJ. ENG.	DATE	
PROD.	DATE	
FIRST USED ON: EP12		SIZE: D; CODE: BS; NUMBER: EP12-0-PMB; REV.: A
SCALE		
SHEET 1 OF 1		DIST.

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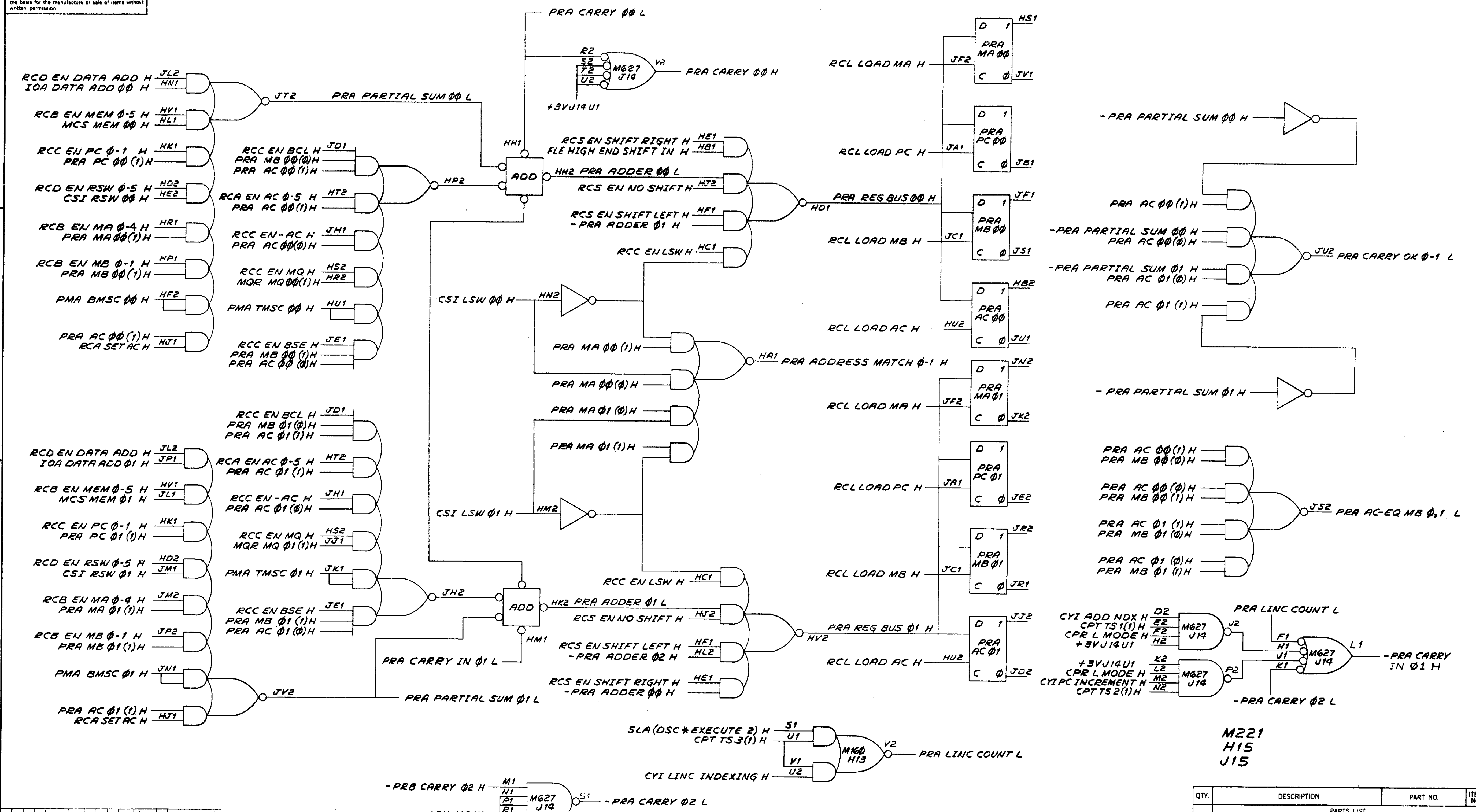
PRA CARRY ØØ L
R2
S2
T2
U2
M627 J14
V2
PRA CARRY ØØ H
+3VJ14U1
RCD EN DATA ADD H
IOA DATA ADD ØØ H
JL2
HN1
JT2
PRA PARTIAL SUM ØØ L
RCB EN MEM Ø-5 H
MCS MEM ØØ H
RCC EN PC Ø-1 H
PRA PC ØØ (1)H
RCD EN RSW Ø-5 H
CSI RSW ØØ H
RCB EN MA Ø-4 H
PRA MA ØØ(1)H
RCB EN MB Ø-1 H
PRA MB ØØ(1)H
PMA BMSC ØØ H
PRA AC ØØ (1) H
RCA SET AC H
RCC EN BCL H
PRA MB ØØ(Ø)H
PRA AC ØØ (1)H
RCA EN AC Ø-5 H
PRA AC ØØ(1)H
RCC EN-AC H
PRA ACØØ(Ø)H
RCC EN MQ H
MQR MQØØ(1)H
PMA TMSC ØØ H
RCC EN BSE H
PRA MB ØØ (1)H
PRA AC ØØ (Ø)H
HP2
HH1
ADD
HH2 PRA ADDER ØØ L
RCS EN SHIFT RIGHT H
FLE HIGH END SHIFT IN H
RCS EN NO SHIFT H
RCS EN SHIFT LEFT H
-PRA ADDER Ø1 H
RCC EN LSW H
HD1
PRA REG BUS ØØ H
CSI LSW ØØ H
HN2
PRA MA ØØ (1)H
PRA MA ØØ(Ø)H
PRA MA Ø1 (Ø)H
PRA MA Ø1 (1)H
HA1
PRA ADDRESS MATCH Ø-1 H
RCL LOAD MA H
PRA MA ØØ
RCL LOAD PC H
PRA PC ØØ
RCL LOAD MB H
PRA MB ØØ
RCL LOAD AC H
PRA AC ØØ
PRA MA Ø1
PRA PC Ø1
PRA MB Ø1
PRA AC Ø1
-PRA PARTIAL SUM ØØ H
PRA AC ØØ (1) H
-PRA PARTIAL SUM ØØ H
PRA AC ØØ(Ø) H
-PRA PARTIAL SUM Ø1 H
PRA AC Ø1 (Ø) H
PRA AC Ø1 (1) H
JU2 PRA CARRY OK Ø-1 L
- PRA PARTIAL SUM Ø1 H
PRA AC ØØ(1) H
PRA MB ØØ (Ø) H
PRA AC ØØ (Ø) H
PRA MB ØØ (1) H
PRA AC Ø1 (1) H
PRA MB Ø1 (Ø) H
PRA AC Ø1 (Ø) H
PRA MB Ø1 (1) H
JS2 PRA AC-EQ MB Ø,1 L
RCD EN DATA ADD H
IOA DATA ADD Ø1 H
RCB EN MEM Ø-5 H
MCS MEM Ø1 H
RCC EN PC Ø-1 H
PRA PC Ø1 (1)H
RCD EN RSW Ø-5 H
CSI RSW Ø1 H
RCB EN MA Ø-4 H
PRA MA Ø1 (1)H
RCB EN MB Ø-1 H
PRA MB Ø1 (1)H
PMA BMSC Ø1 H
PRA AC Ø1 (1) H
RCA SET AC H
RCC EN BCL H
PRA MB Ø1 (Ø)H
PRA AC Ø1 (1)H
RCA EN AC Ø-5 H
PRA AC Ø1 (1)H
RCC EN-AC H
PRA AC Ø1 (Ø)H
RCC EN MQ H
MQR MQ Ø1 (1)H
PMA TMSC Ø1 H
RCC EN BSE H
PRA MB Ø1 (1)H
PRA AC Ø1 (Ø)H
CSI LSW Ø1 H
HM2
JH2
ADD
HK2 PRA ADDER Ø1 L
HM1
PRA CARRY IN Ø1 L
JV2
PRA PARTIAL SUM Ø1 L
RCC EN LSW H
RCS EN NO SHIFT H
RCS EN SHIFT LEFT H
-PRA ADDER Ø2 H
RCS EN SHIFT RIGHT H
-PRA ADDER ØØ H
HV2
PRA REG BUS Ø1 H
CYI ADD NDX H
CPT TS 1(1) H
CPR L MODE H
+3VJ14U1
M627 J14
PRA LINC COUNT L
+3VJ14U1
CPR L MODE H
CYI PC INCREMENT H
CPT TS 2(1) H
L1
-PRA CARRY IN Ø1 H
-PRA CARRY Ø2 L
SLA(DSC*EXECUTE 2) H
CPT TS3(1) H
CYI LINC INDEXING H
M160 H13
PRA LINC COUNT L
-PRB CARRY Ø2 H
M627 J14
S1
- PRA CARRY Ø2 L
+3V J14 U1
M221
H15
J15

REVISIONS			
CHANGE NO.	REV.		CHK
00002	A	J. SCANLON	
EP 2-00004	B	L. GALE 7/15/69	
EP12-00015	C	L. GALE 10-17-69	
EP12-00023	D	GALE 7-2-70	

DEC FORM NO DRD 102A

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

QTY.	DESCRIPTION	PART NO.	ITEM NO.

PARTS LIST

DRN. / CHK'D / ENG. / PROJ. ENG. / PROD. — DATE 12/13/68, 2/18/69, 2/14/69, 2/14/69, 2/14/69
FIRST USED ON EP12
SCALE
SHEET 1 OF 1

digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS

TITLE
PRA PROCESSOR REG. BITS Ø & 1

SIZE D CODE BS NUMBER EP12-Ø-PRA REV. D

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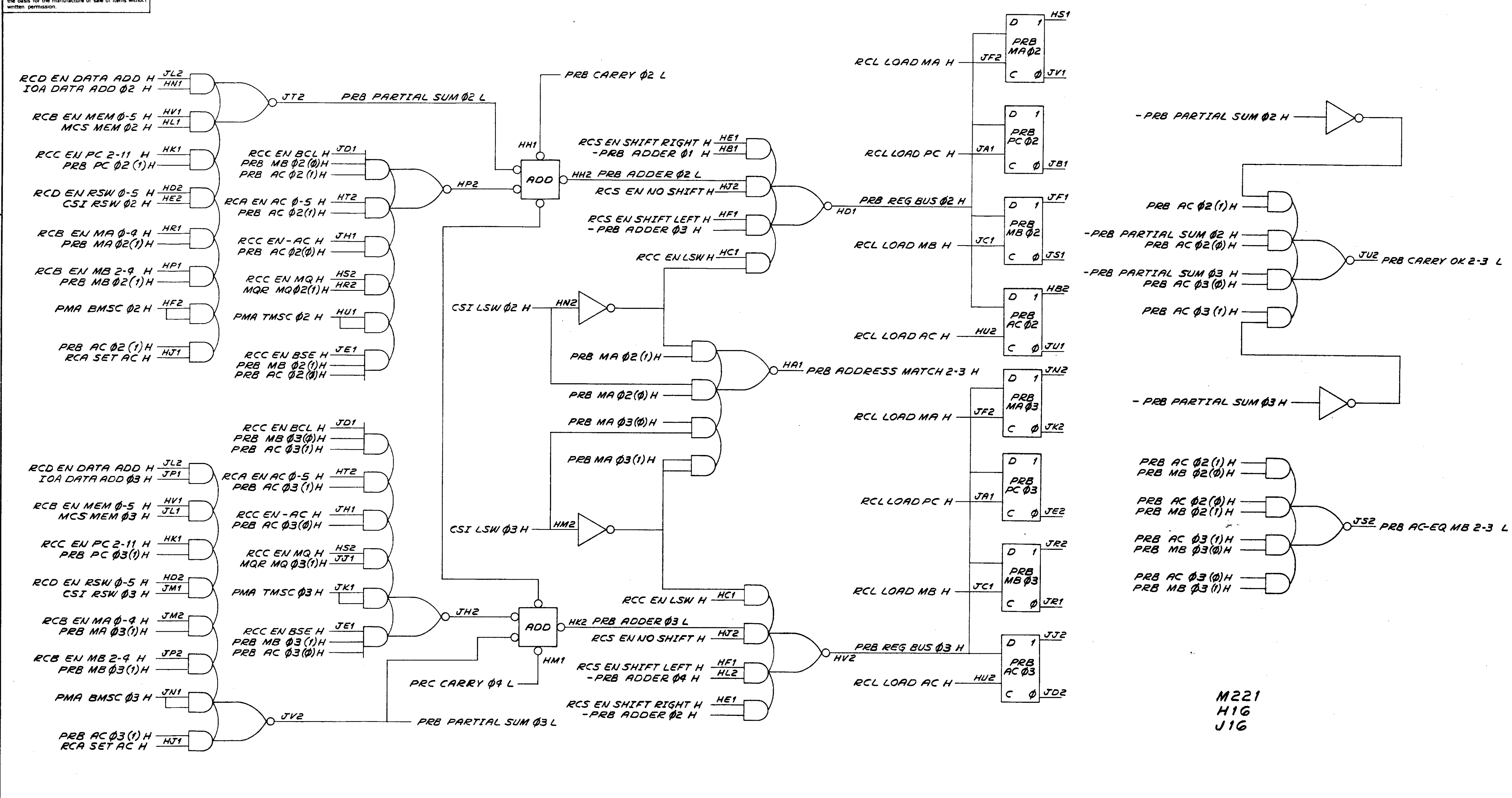


RCD EN DATA ADD H
IOA DATA ADD Ø2 H
RCB EN MEM Ø-5 H
MCS MEM Ø2 H
RCC EN PC 2-11 H
PRB PC Ø2 (1) H
RCD EN RSW Ø-5 H
CSI RSW Ø2 H
RCB EN MA Ø-4 H
PRB MA Ø2(1) H
RCB EN MB 2-4 H
PRB MB Ø2(1) H
PMA BMSC Ø2 H
PRB AC Ø2 (1) H
RCA SET AC H
JT2
PRB PARTIAL SUM Ø2 L
RCC EN BCL H
PRB MB Ø2(Ø) H
PRB AC Ø2(1) H
RCA EN AC Ø-5 H
PRB AC Ø2(1) H
RCC EN-AC H
PRB AC Ø2(Ø) H
RCC EN MQ H
MQR MQ Ø2(1) H
PMA TMSC Ø2 H
RCC EN BSE H
PRB MB Ø2(1) H
PRB AC Ø2(Ø) H
HP2
PRB CARRY Ø2 L
HH1
ADD
HH2 PRB ADDER Ø2 L
RCS EN SHIFT RIGHT H
-PRB ADDER Ø1 H
RCS EN NO SHIFT H
RCS EN SHIFT LEFT H
-PRB ADDER Ø3 H
RCC EN LSW H
HD1
PRB REG BUS Ø2 H
CSI LSW Ø2 H
PRB MA Ø2 (1) H
PRB MA Ø2(Ø) H
PRB MA Ø3(Ø) H
PRB MA Ø3(1) H
HA1 PRB ADDRESS MATCH 2-3 H
CSI LSW Ø3 H
RCL LOAD MA H
RCL LOAD PC H
RCL LOAD MB H
RCL LOAD AC H
PRB MA Ø2
PRB PC Ø2
PRB MB Ø2
PRB AC Ø2
PRB MA Ø3
PRB PC Ø3
PRB MB Ø3
PRB AC Ø3
-PRB PARTIAL SUM Ø2 H
PRB AC Ø2 (1) H
-PRB PARTIAL SUM Ø2 H
PRB AC Ø2(Ø) H
-PRB PARTIAL SUM Ø3 H
PRB AC Ø3 (Ø) H
PRB AC Ø3 (1) H
JU2 PRB CARRY OK 2-3 L
- PRB PARTIAL SUM Ø3 H
RCD EN DATA ADD H
IOA DATA ADD Ø3 H
RCB EN MEM Ø-5 H
MCS MEM Ø3 H
RCC EN PC 2-11 H
PRB PC Ø3(1) H
RCD EN RSW Ø-5 H
CSI RSW Ø3 H
RCB EN MA Ø-4 H
PRB MA Ø3(1) H
RCB EN MB 2-4 H
PRB MB Ø3(1) H
PMA BMSC Ø3 H
PRB AC Ø3 (1) H
RCA SET AC H
JV2
PRB PARTIAL SUM Ø3 L
RCC EN BCL H
PRB MB Ø3(Ø) H
PRB AC Ø3(1) H
RCA EN AC Ø-5 H
PRB AC Ø3 (1) H
RCC EN-AC H
PRB AC Ø3(Ø) H
RCC EN MQ H
MQR MQ Ø3(1) H
PMA TMSC Ø3 H
RCC EN BSE H
PRB MB Ø3 (1) H
PRB AC Ø3(Ø) H
JH2
HM1
PRC CARRY Ø4 L
HK2 PRB ADDER Ø3 L
RCC EN LSW H
RCS EN NO SHIFT H
RCS EN SHIFT LEFT H
-PRB ADDER Ø4 H
RCS EN SHIFT RIGHT H
-PRB ADDER Ø2 H
HV2
PRB REG BUS Ø3 H
PRB AC Ø2 (1) H
PRB MB Ø2(Ø) H
PRB AC Ø2(Ø) H
PRB MB Ø2(1) H
PRB AC Ø3 (1) H
PRB MB Ø3(Ø) H
PRB AC Ø3 (Ø) H
PRB MB Ø3 (1) H
JS2 PRB AC-EQ MB 2-3 L
M221
H16
J16

REVISIONS		
CHK	CHANGE NO.	REV.
	00002	A
	J. SCANLON	
	EP12-00015	B
	L. GALE	
FV	EP12-00023	C
	GALE	

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. DATE 12/13/68
CHK. DATE 2/14/69
ENG. DATE 2/19/69
PROJ. ENG. DATE 2/19/69
PROD. DATE 3/1/69

FIRST USED ON EP12

QTY. | DESCRIPTION | PART NO. | ITEM NO.
PARTS LIST

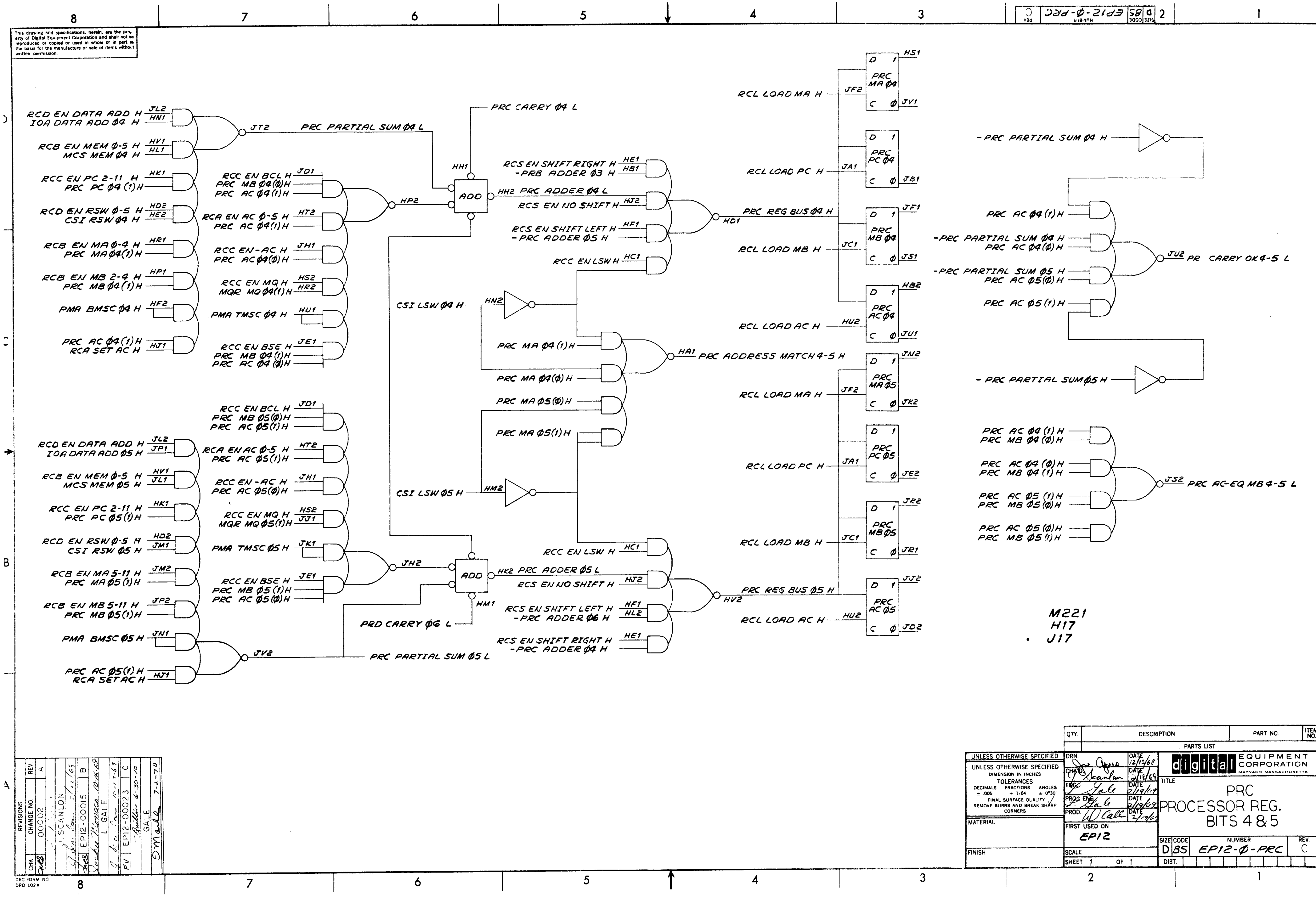
digital EQUIPMENT CORPORATION
MAYNARD, MASSACHUSETTS

TITLE
PRB PROCESSOR REG. BITS 2 & 3

SIZE D CODE BS NUMBER EP12-Ø-PRB REV. C

SCALE
SHEET 1 OF 1
DIST.

DEC FORM NO DRD 102A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RCD EN DATA ADD H
IOA DATA ADD Ø4 H
RCB EN MEM Ø-5 H
MCS MEM Ø4 H
RCC EN PC 2-11 H
PRC PC Ø4 (1) H
RCD EN RSW Ø-5 H
CSI RSW Ø4 H
RCB EN MA Ø-4 H
PRC MA Ø4 (1) H
RCB EN MB 2-4 H
PRC MB Ø4 (1) H
PMA BMSC Ø4 H
PRC AC Ø4 (1) H
RCA SET AC H
PRC PARTIAL SUM Ø4 L
RCC EN BCL H
PRC MB Ø4 (Ø) H
PRC AC Ø4 (1) H
RCA EN AC Ø-5 H
RCC EN-AC H
PRC AC Ø4 (Ø) H
RCC EN MQ H
MQR MQ Ø4 (1) H
PMA TMSC Ø4 H
RCC EN BSE H
PRC CARRY Ø4 L
ADD
PRC ADDER Ø4 L
RCS EN SHIFT RIGHT H
-PRB ADDER Ø3 H
RCS EN NO SHIFT H
RCS EN SHIFT LEFT H
-PRC ADDER Ø5 H
RCC EN LSW H
PRC REG BUS Ø4 H
CSI LSW Ø4 H
PRC MA Ø4 (1) H
PRC MA Ø4 (Ø) H
PRC MA Ø5 (Ø) H
PRC MA Ø5 (1) H
PRC ADDRESS MATCH 4-5 H
CSI LSW Ø5 H
RCL LOAD MA H
RCL LOAD PC H
RCL LOAD MB H
RCL LOAD AC H
PRC MA Ø4
PRC PC Ø4
PRC MB Ø4
PRC AC Ø4
PRC MA Ø5
PRC PC Ø5
PRC MB Ø5
PRC AC Ø5
-PRC PARTIAL SUM Ø4 H
PRC AC Ø4 (1) H
-PRC PARTIAL SUM Ø4 H
PRC AC Ø4 (Ø) H
-PRC PARTIAL SUM Ø5 H
PRC AC Ø5 (Ø) H
PRC AC Ø5 (1) H
PR CARRY OK 4-5 L
-PRC PARTIAL SUM Ø5 H
PRC AC Ø4 (1) H
PRC MB Ø4 (Ø) H
PRC AC Ø4 (Ø) H
PRC MB Ø4 (1) H
PRC AC Ø5 (1) H
PRC MB Ø5 (Ø) H
PRC AC Ø5 (Ø) H
PRC MB Ø5 (1) H
PRC AC-EQ MB 4-5 L
RCD EN DATA ADD H
IOA DATA ADD Ø5 H
RCB EN MEM Ø-5 H
MCS MEM Ø5 H
RCC EN PC 2-11 H
PRC PC Ø5 (1) H
RCD EN RSW Ø-5 H
CSI RSW Ø5 H
RCB EN MA 5-11 H
PRC MA Ø5 (1) H
RCB EN MB 5-11 H
PRC MB Ø5 (1) H
PMA BMSC Ø5 H
PRC AC Ø5 (1) H
RCA SET AC H
RCC EN BCL H
PRC MB Ø5 (Ø) H
PRC AC Ø5 (1) H
RCA EN AC Ø-5 H
PRC AC Ø5 (1) H
RCC EN-AC H
PRC AC Ø5 (Ø) H
RCC EN MQ H
MQR MQ Ø5 (1) H
PMA TMSC Ø5 H
RCC EN BSE H
PRC MB Ø5 (1) H
PRC AC Ø5 (Ø) H
PRD CARRY Ø6 L
PRC PARTIAL SUM Ø5 L
PRC ADDER Ø5 L
RCS EN NO SHIFT H
RCS EN SHIFT LEFT H
-PRC ADDER Ø6 H
RCS EN SHIFT RIGHT H
-PRC ADDER Ø4 H
PRC REG BUS Ø5 H
M221
H17
J17
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. DATE 12/13/68
CHK. DATE 2/19/69
ENG. DATE 2/19/69
PROJ. ENG. DATE 2/19/69
PROD. DATE 2/19/69
FIRST USED ON EP12
SCALE
SHEET 1 OF 1
digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS
TITLE PRC PROCESSOR REG. BITS 4 & 5
SIZE D CODE BS NUMBER EP12-Ø-PRC REV C
DIST.
REVISIONS
REV. A CHANGE NO. 0G002 J. SCANLON
REV. B EP12-00015 L. GALE
REV. C EP12-00023 GALE 7-2-70
DEC FORM NO DRD 102A

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RCD EN DATA ADD H
IOA DATA ADD Ø6 H — JL2 HN1 → JT2

RCB EN MEM 6-11 H
MCS MEM Ø6 H — HV1 HL1 → JT2

RCC EN PC 2-11 H
PRD PC Ø6(1) H — HK1

RCD EN RSW 6-11 H
CSI RSW Ø6 H — HD2 HE2

RCB EN MA 5-11 H
PRD MA Ø5(1) H — HR1

RCB EN MB 5-11 H
PRD MB Ø6(1) H — HP1

PMB BMSC Ø6 H — HF2

PRD AC Ø6(1) H
RCA SET AC H — HJ1

JT2 → PRD PARTIAL SUM Ø6 L

RCC EN BCL H
PRD MB Ø6(Ø) H
PRD AC Ø6(1) H — JD1

RCA EN AC 6-11 H
PRD AC Ø6(1) H — HT2

RCC EN-AC H
PRD AC Ø6(Ø) H — JH1

RCC EN MQ H
MQR MQ Ø6(1) H — HS2 HR2

PMB TMSC Ø6 H — HU1

RCC EN BSE H
PRD MB Ø6(1) H
PRD AC Ø6(Ø) H — JE1

JD1 JT2 HT2 JH1 HS2 JJ1 JE1 → HP2

PRD CARRY Ø6 L → HH1

HP2, HH1 → ADD

ADD → HH2 PRD ADDER Ø6 L

RCS EN SHIFT RIGHT H
-PRC ADDER Ø5 H — HE1 HB1

RCS EN NO SHIFT H — HJ2

RCS EN SHIFT LEFT H
-PRD ADDER Ø7 H — HF1

RCC EN LSW H — HC1

HE1 HB1 HJ2 HF1 HC1 → HD1

HD1 → PRD REG BUS Ø6 H

CSI LSW Ø6 H — HN2

PRD MA Ø6(1) H
PRD MA Ø6(Ø) H
PRD MA Ø7(Ø) H
PRD MA Ø7(1) H — HA1

HA1 → PRD ADDRESS MATCH 6-7 H

RCL LOAD MA H — JF2 → D PRD MA Ø6 C Ø — JV1 → HS1

RCL LOAD PC H — JA1 → D PRD PC Ø6 C Ø — JB1

RCL LOAD MB H — JC1 → D PRD MB Ø6 C Ø — JS1 → JF1

RCL LOAD AC H — HU2 → D PRD AC Ø6 C Ø — JU1 → HB2

RCL LOAD MA H — JF2 → D PRD MA Ø7 C Ø — JK2 → JN2

RCL LOAD PC H — JA1 → D PRD PC Ø7 C Ø — JE2 → JR2

RCL LOAD MB H — JC1 → D PRD MB Ø7 C Ø — JR1 → JJ2

RCL LOAD AC H — HU2 → D PRD AC Ø7 C Ø — JD2

RCD EN DATA ADD H
IOA DATA ADD Ø7 H — JL2 JP1 → JT2

RCB EN MEM 6-11 H
MCS MEM Ø7 H — HV1 JL1 → JT2

RCC EN PC 2-11 H
PRD PC Ø7(1) H — HK1

RCD EN RSW 6-11 H
CSI RSW Ø7 H — HD2 JM1

RCB EN MA 5-11 H
PRD MA Ø7(1) H — JM2

RCB EN MB 5-11 H
PRD MB Ø7(1) H — JP2

PMB BMSC Ø7 H — JN1

PRD AC Ø7(1) H
RCA SET AC H — HJ1

JT2 → JV2

RCC EN BCL H
PRD MB Ø7(Ø) H
PRD AC Ø7(1) H — JD1

RCA EN AC 6-11 H
PRD AC Ø7(1) H — HT2

RCC EN-AC H
PRD AC Ø7(Ø) H — JH1

RCC EN MQ H
MQR MQ Ø7(1) H — HS2 JJ1

PMB TMSC Ø7 H — JK1

RCC EN BSE H
PRD MB Ø7(1) H
PRD AC Ø7(Ø) H — JE1

JD1 JT2 HT2 JH1 HS2 JJ1 JE1 → JH2

CSI LSW Ø7 H — HM2

JH2, HM2 → ADD

ADD → HK2 PRD ADDER Ø7 L

PRE CARRY Ø8 L → HM1

RCC EN LSW H — HC1

RCS EN NO SHIFT H — HJ2

RCS EN SHIFT LEFT H
-PRE ADDER Ø8 H — HF1 HL2

RCS EN SHIFT RIGHT H
-PRD ADDER Ø6 H — HE1

HC1 HJ2 HF1 HL2 HE1 → HV2

HV2 → PRD REG BUS Ø7 H

JV2 → PRD PARTIAL SUM Ø7 L

- PRD PARTIAL SUM Ø6 H

PRD AC Ø6(1) H
-PRD PARTIAL SUM Ø6 H
PRD AC Ø6(Ø) H
-PRD PARTIAL SUM Ø7 H
PRD AC Ø7(Ø) H
PRD AC Ø7(1) H — JU2 → PRD CARRY OK 6-7 L

- PRD PARTIAL SUM Ø7 H

PRD AC Ø6(1) H
PRD MB Ø6(Ø) H
PRD AC Ø6(Ø) H
PRD MB Ø6(1) H — JS2 → PRD AC-EQ MB 6-7 L
PRD AC Ø7(1) H
PRD MB Ø7(Ø) H
PRD AC Ø7(Ø) H
PRD MB Ø7(1) H

M221
H18
J18

REVISIONS			
CHK	CHANGE NO.	REV.	
Scott	00002	A	J SCANLON
Scott	EP12-00015	B	L GALE
FV	EP12-00023	C	L GALE

DEC FORM NO DRD 102A

QTY.	DESCRIPTION	PART NO.	ITEM NO.

PARTS LIST

UNLESS OTHERWISE SPECIFIED
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. — DATE 12/13/68
CHK'D. D Scanlon — DATE 2/18/69
ENG. L Gale — DATE 2/19/69
PROJ. ENG. L Gale — DATE 2/19/69
PROD. W Cull — DATE 2/19/69
FIRST USED ON EP12

digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS

TITLE
PRD
PROCESSOR REG. BITS 6&7

SIZE D | CODE 85 | NUMBER EP12-Ø-PRD | REV. C
SCALE
SHEET 1 OF 1
DIST.

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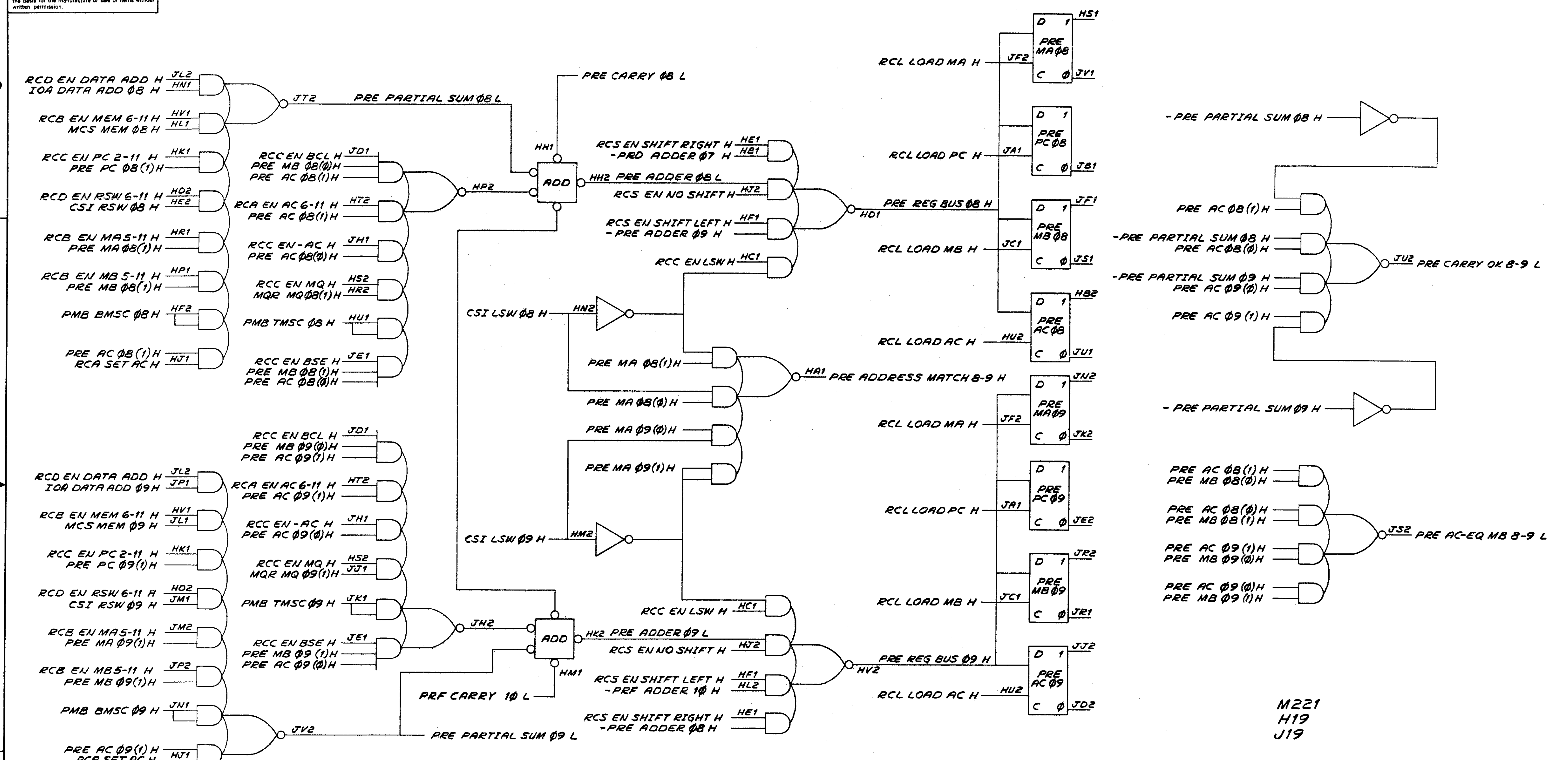

RCD EN DATA ADD H
IOA DATA ADD Ø8 H
RCB EN MEM 6-11 H
MCS MEM Ø8 H
RCC EN PC 2-11 H
PRE PC Ø8(1)H
RCD EN RSW 6-11 H
CSI RSW Ø8 H
RCB EN MA 5-11 H
PRE MA Ø8(1)H
RCB EN MB 5-11 H
PRE MB Ø8(1)H
PMB BMSC Ø8 H
PRE AC Ø8 (1) H
RCA SET AC H
JT2
PRE PARTIAL SUM Ø8 L
PRE CARRY Ø8 L
RCC EN BCL H
PRE MB Ø8(Ø)H
PRE AC Ø8(1)H
RCA EN AC 6-11 H
RCC EN-AC H
PRE AC Ø8(Ø)H
RCC EN MQ H
MQR MQ Ø8(1)H
PMB TMSC Ø8 H
RCC EN BSE H
HP2
ADD
HH2 PRE ADDER Ø8 L
RCS EN SHIFT RIGHT H
-PRD ADDER Ø7 H
RCS EN NO SHIFT H
RCS EN SHIFT LEFT H
-PRE ADDER Ø9 H
RCC EN LSW H
PRE REG BUS Ø8 H
CSI LSW Ø8 H
PRE MA Ø8(1)H
PRE MA Ø8(Ø) H
PRE MA Ø9(Ø) H
PRE MA Ø9(1)H
PRE ADDRESS MATCH 8-9 H
CSI LSW Ø9 H
RCL LOAD MA H
RCL LOAD PC H
RCL LOAD MB H
RCL LOAD AC H
PRE MA Ø8
PRE PC Ø8
PRE MB Ø8
PRE AC Ø8
PRE MA Ø9
PRE PC Ø9
PRE MB Ø9
PRE AC Ø9
-PRE PARTIAL SUM Ø8 H
PRE AC Ø8(1)H
-PRE PARTIAL SUM Ø8 H
PRE AC Ø8(Ø) H
-PRE PARTIAL SUM Ø9 H
PRE AC Ø9(Ø) H
PRE AC Ø9 (1) H
PRE CARRY OK 8-9 L
- PRE PARTIAL SUM Ø9 H
PRE AC Ø8(1) H
PRE MB Ø8(Ø) H
PRE AC Ø8(Ø) H
PRE MB Ø8 (1) H
PRE AC Ø9 (1) H
PRE MB Ø9 (Ø) H
PRE AC Ø9 (Ø) H
PRE MB Ø9 (1) H
PRE AC-EQ MB 8-9 L
IOA DATA ADD Ø9 H
MCS MEM Ø9 H
PRE PC Ø9(1)H
CSI RSW Ø9 H
PRE MA Ø9(1)H
PRE MB Ø9(1)H
PMB BMSC Ø9 H
PRE AC Ø9(1) H
PRE MB Ø9(Ø)H
PRE AC Ø9(1)H
PRE AC Ø9(Ø)H
MQR MQ Ø9(1)H
PMB TMSC Ø9 H
PRE MB Ø9 (1)H
PRE AC Ø9 (Ø)H
JH2
HK2 PRE ADDER Ø9 L
PRE REG BUS Ø9 H
-PRF ADDER 1Ø H
-PRE ADDER Ø8 H
PRF CARRY 1Ø L
JV2
PRE PARTIAL SUM Ø9 L
M221
H19
J19

REV.	CHANGE NO.		CHK
A	00002		
B	EP12-00015	J. SCANLON 1/22/69, L. GALE	
C	EP12-00023	GALE 6-30-70, 7-2-70	FV

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. DATE 12/13/68
CHK'D J. Scanlan DATE 2/18/69
ENG. L. Gale DATE 2/19/69
PROD. ENG. L. Gale DATE 2/19/69
PROD. DATE 2/18/69

FIRST USED ON EP12

digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS

TITLE PRE PROCESSOR REG. BITS 8 & 9

SIZE D CODE BS NUMBER EP12-Ø-PRE REV. C

SCALE

SHEET 1 OF 1

DEC FORM NO DRD 102A

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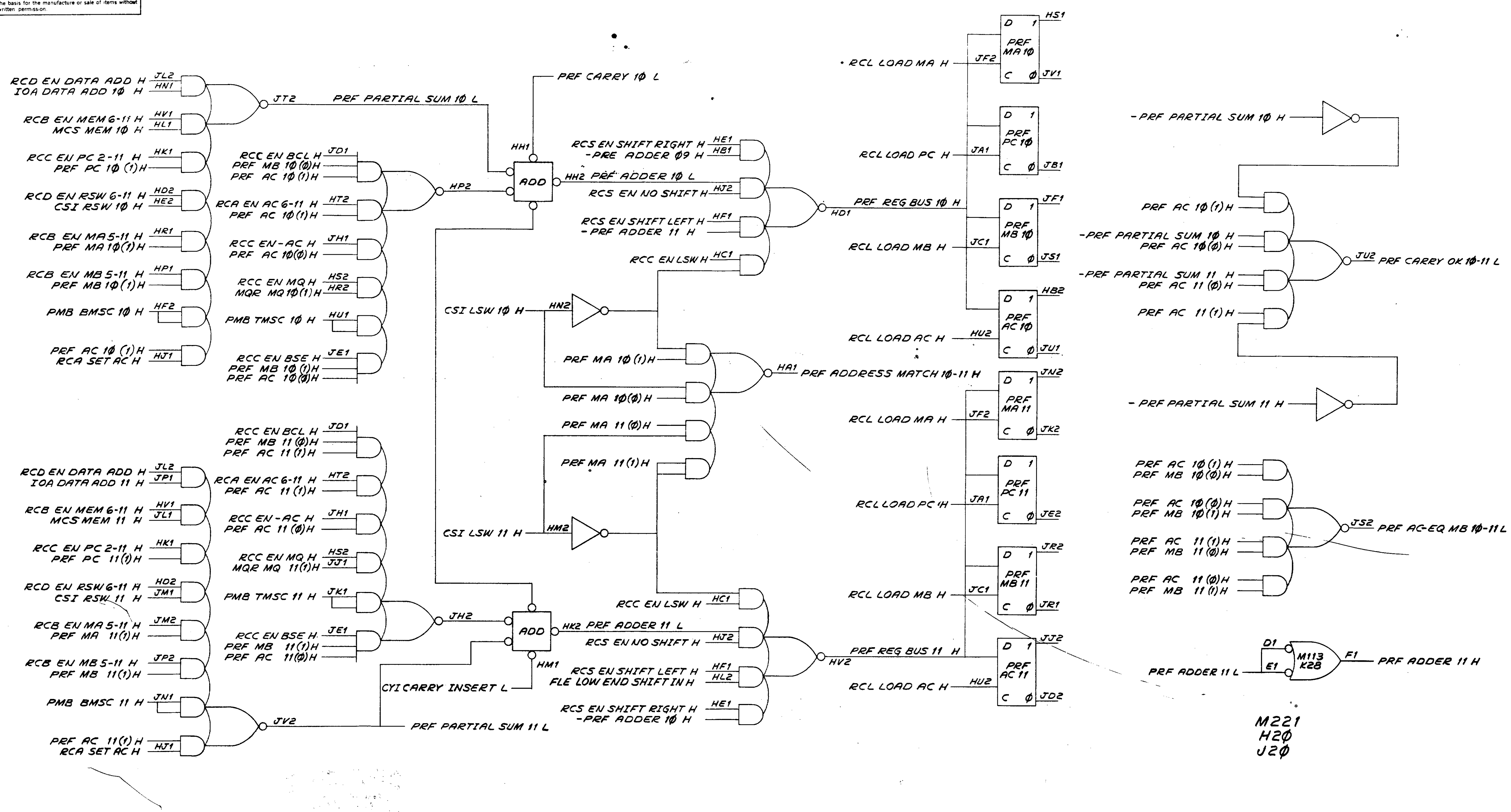
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IOA DATA ADD 1Ø H
RCB EN MEM 6-11 H
MCS MEM 1Ø H
RCC EN PC 2-11 H
PRF PC 1Ø (1) H
RCD EN RSW 6-11 H
CSI RSW 1Ø H
RCB EN MA 5-11 H
PRF MA 1Ø (1) H
RCB EN MB 5-11 H
PRF MB 1Ø (1) H
PMB BMSC 1Ø H
PRF AC 1Ø (1) H
RCA SET AC H
RCC EN BCL H
PRF MB 1Ø (Ø) H
PRF AC 1Ø (1) H
RCA EN AC 6-11 H
RCC EN -AC H
PRF AC 1Ø (Ø) H
RCC EN MQ H
MQR MQ 1Ø (1) H
PMB TMSC 1Ø H
RCC EN BSE H
PRF PARTIAL SUM 1Ø L
PRF CARRY 1Ø L
ADD
PRF ADDER 1Ø L
RCS EN SHIFT RIGHT H
-PRF ADDER Ø9 H
RCS EN NO SHIFT H
RCS EN SHIFT LEFT H
-PRF ADDER 11 H
RCC EN LSW H
CSI LSW 1Ø H
PRF MA 1Ø (1) H
PRF MA 1Ø (Ø) H
PRF MA 11 (Ø) H
PRF MA 11 (1) H
PRF ADDRESS MATCH 1Ø-11 H
CSI LSW 11 H
PRF REG BUS 1Ø H
RCL LOAD MA H
RCL LOAD PC H
RCL LOAD MB H
RCL LOAD AC H
PRF MA 1Ø
PRF PC 1Ø
PRF MB 1Ø
PRF AC 1Ø
PRF MA 11
PRF PC 11
PRF MB 11
PRF AC 11
-PRF PARTIAL SUM 1Ø H
PRF AC 1Ø (1) H
-PRF PARTIAL SUM 1Ø H
PRF AC 1Ø (Ø) H
-PRF PARTIAL SUM 11 H
PRF AC 11 (Ø) H
PRF AC 11 (1) H
PRF CARRY OK 1Ø-11 L
- PRF PARTIAL SUM 11 H
PRF AC 1Ø (1) H
PRF MB 1Ø (Ø) H
PRF AC 1Ø (Ø) H
PRF MB 1Ø (1) H
PRF AC 11 (1) H
PRF MB 11 (Ø) H
PRF AC 11 (Ø) H
PRF MB 11 (1) H
PRF AC-EQ MB 1Ø-11 L
PRF ADDER 11 L
M113 K28
PRF ADDER 11 H
RCD EN DATA ADD H
IOA DATA ADD 11 H
RCB EN MEM 6-11 H
MCS MEM 11 H
RCC EN PC 2-11 H
PRF PC 11 (1) H
RCD EN RSW 6-11 H
CSI RSW 11 H
RCB EN MA 5-11 H
PRF MA 11 (1) H
RCB EN MB 5-11 H
PRF MB 11 (1) H
PMB BMSC 11 H
PRF AC 11 (1) H
RCA SET AC H
RCC EN BCL H
PRF MB 11 (Ø) H
PRF AC 11 (1) H
RCA EN AC 6-11 H
RCC EN -AC H
PRF AC 11 (Ø) H
RCC EN MQ H
MQR MQ 11 (1) H
PMB TMSC 11 H
RCC EN BSE H
PRF MB 11 (1) H
PRF AC 11 (Ø) H
CYI CARRY INSERT L
PRF PARTIAL SUM 11 L
RCC EN LSW H
PRF ADDER 11 L
RCS EN NO SHIFT H
RCS EN SHIFT LEFT H
FLE LOW END SHIFT IN H
RCS EN SHIFT RIGHT H
-PRF ADDER 1Ø H
PRF REG BUS 11 H
M221
H2Ø
J2Ø

REVISIONS			
CHK	CHANGE NO.	REV.	
	00002	A	J. SCANLON
	EP12 00015	B	L. GALE
FV	EP12 00023	C	GALE

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

QTY.	DESCRIPTION	PART NO.	ITEM NO.

PARTS LIST

DRN. DATE 12/13/68
CHKD. DATE 2/18/69
ENG. DATE 2/19/69
PROJ. ENG. DATE 2/19/69
PROD. DATE

FIRST USED ON EP12

digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS

TITLE PRF PROCESSOR REG. BITS 1Ø & 11

SIZE D CODE BS NUMBER EP12-Ø-PRF REV. C

SCALE

SHEET 1 OF 1

DIST.

DEC FORM NO DRD 102A

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INS L JMP H P1
SLA EX TS5 H R1
M113 K30
S1 RCA ENABLE IR 2-7 L
S2
M111 K34
T2 RCA ENABLE IR 2-7 H

INS SET H T2
CPS EXECUTE (1)H U2
CPT TS1 (1)H V2
M115 K29
V1

SLA (DIS+VSK) L P2
INS (L INDEX ≠ 8 EQ 2) L R2
M113 K30
S2

J2
K2
L2
M115 K23
I2 RCA ENABLE IR 8-11 H

D2
E2
F2
M115 K29
H2
CPS FETCH B (1)H

SLA (QSC=EXECUTE 2) H P1
CPT TS2 (1)H R1
M113 H14
S1
V1
M111 KJ4
U1 RCA QSC SET AC H

EAEC ENABLE AC L M1
RCA T3 ADDS L N1
P1
R1
M117 J22
S1 RCH EN AC 0-5 H

PRC MB 04 (0)H R2
PRD MB 06 (1)H S2
PRC MB 04 (1)H T2
PRD MB 06 (0)H U2
M121 J24
V2

SLA OPR1 H P1
R1
M113 J31
S1

RCC BSE EN AC L T2
RCB AC ADDS L U2
M115 J30
V1

RCB (STC+DCA+STA) H A1
CPS EXECUTE (1)H B1
CPT TS3 (1)H C1
+3V J32U1 H D1
CPT TS4 (1)H E1
F1
M160 J28
R1

RCC EN ID BUS H H1
-IDB AC CLEAR H J1
CPT TS5 (1)H K1
L1
SLA MUL GO H M1
-KCC TS COMP AC H N1
P1

S2
M111 K09
T2 RCA (OPR2*TS5) H

SLA OPR2 H P2
CPT TS5 (1)H R2
M113 J31
S2
RCA (OPR2*TS5) L

L2
PRC MB 04 (0)L M2
M112 L10
N2 RCA SET AC H
L1
M1
M112 L10
N1

SLA OPR1 L M1
SLA L ROTATES L N1
SLA MUL ADD L P1
R1
M117 H30
S1

INS N EQ 02 H T2
SKH H (1)H U2
M113 J31
V2

INS N EQ 17 L N2
INS N EQ 01 L P2
R2
M115 K29
S2

EAEC ENABLE AC L F1
H1
J1
K1
M117 J22
L1 RCA EN AC 6-11 H

INS LDH H S1
SLA EX TS4 H U1
M160 J28
V2

INS STH H V1
SLA EX TS3 H U2

U2
M111 KJ4
V2
+3V MJ4U1 H

SKH H (1)H A1
B1
M113 K20
C1

SLA (ADM+LAM) H L2
SLA EX TS3 H M2
M113 J31
N2
RCH T2 ADDS L

INS MSC H D2
INR IR 07 0 (1)H E2
INS N EQ 04 H F2
+3V L22U1 H H2
M117 L22
J2
V1
M111 K09
U1 RCA EN LD MSC 4 H

RCA EN MSC 4 L

P2
CPT TS5 (1)L R2
M112 L38
S2 RCA EN MSC 4 H

K2
PRD AC 06 (1)L T2
RCL LOAD MSC 4 H S2
M216 J29
V1
V2
CST ID PRESET L U2

REVISIONS		
ORIG	CHANGE NO.	REV.

EQUIPMENT CORPORATION
MAYNARD, MASSACHUSETTS

TITLE
REGISTER CONTROL A

EP12

SIZE	CODE	NUMBER	REV.
D	85	EP12-A-RCA	A0

SCALE
SHEET 1 OF 1
DRAFT

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RCB 8 ADDRESS L — D1
RCB 8 JMP ADDRESS L — E1
M113 J25 — F1
-RCB EN MB H — T2
INR IR Ø4 (1)H — U2
V2
M115 H22 — V1
D2
E2
M113 K28 — F2 RCB EN MA Ø-4 H

CYI PC INCREMENT H — D2
-CPTP TP2 H — E2
CPT TS2 (1)H — F2
CPS WC (1)H — H2
CPT TS1 (1)H — J2
K2
RCB (ST+FS EN MA) H — L2
M2
CPT TS4 (1)H — N2
CPS EXECUTE B (1)H — P2
INS JMS H — R2
S2
M160 J26 — T2
H1
J1
M113 K28 — K1 RCB EN MA 5-11 H

CPS INTER (1)H — D2
CPT TS4 (1)H — E2
M113 J25 — F2

RCA ENABLE IR 2-7 L — L2
-CSI (FILLS+EX)MFTSØ H — A1
CPR L MODE H — B1
CPT TS1 (1)H — C1
MEA EN IF H — D1
M117 L13 — E1
M2
M113 KØ3 — N2 RCB EN IF ADDRESS H
RCB EN IF ADDRESS L

CPS DEFER (1)H — F1
PRA MB Ø1 (1)H — H1
CPT TS1 (1)H — J1
CPR L MODE H — K1
M117 L13 — L1
M2
M111 KØ9 — N2 RCB EN DF ADDRESS H
RCB EN DF ADDRESS L

RCB (JMP*SAVE PC)L — T2
INS JMS L — U2
M113 H36 — V2 RCB (LJMP + JMS) H

CSI (FILL+EX STEP) L — T2
U2
M113 K14 — V2 RCB (ST+FS EN MA) H

CSI (KEY FS+SE) H — P2
CST AUTO (1)H — R2
M113 K14 — S2

INS 8 JMP L — H2
INS JMS L — J2
M113 J33 — K2 RCB (JMP+JMS) H

SLA MUL GO H — H1
INS N EQ ØØ H — J1
M113 J25 — K1 RCB MUL LOAD AC L

INS 8 JMP H — A1
CPS DEFER B (1)H — B1
CPT TS4 (1)H — C1
D1
SLA MUL ADD H — E1
MQR MQ 11 (1)H — F1
M160 J26 — R1
CPT TS1 (1)H — H1
J1
EAEC EN MB H — K1
L1
CPT TS4 (1)H — M1
CPS EXECUTE B (1)H — N1
P1

A1
B1
M113 J25 — C1 RCB EN MB Ø-1 H
RCB EN MB L

CPS DEFER (1)H — N2
CPR 8 MODE H — P2
-INS 8 JMP H — R2
M115 H22 — S2
H2
CPS CA (1)L — J2
M113 J25 — K2

INS ADD L — N2
INS ADA L — P2
INS TAD L — R2
M115 K26 — S2 RCB AC ADDS H
INS DSC L — J2
INS LDA L — K2
L2
M115 H22 — M2
P2
CPS EXECUTE B (1)H — R2
M113 J25 — S2 RCB AC ADDS L

SLA (ADD+STC) H — S1
CPS FETCH B (1)H — U1
M160 J26 — V2
INS INDEX CLASS L H — V1
CPS DEFER B (1)H — U2
L2
M113 J25 — M2
INS SET H — P1
CPS DEFER B (1)H — R1
M113 J25 — S1

CPS DEFER SET L — L1
CPS EXC SET L — M1
M113 L12 — N1
CPT TS1 (1)H — M1
CPS DEFER (Ø)H — N1
P1
R1
M117 L13 — S1
RCB EN MB L — M1
CYI XSK TEST L — N1
RCB MUL LOAD AC L — P1
RCB TS1 EN MB L — R1
R2
S2
T2
M119 H26 — U2
RCB 8 ADDRESS
RCB 8 JMP ADDRESS L
V2 RCB EN MB 5-11 H

-CPR L MODE L — H2
-EAEC INST L — J2
M112 L10 — K2

CPT TS1 (1)H — L1
N2
M1
M117 J25 — M1
RCB MUL LOAD AC L — R2
N1 RCB TS1 EN MB L — S2
CYI XSK TEST L — T2
U2
M117 H30 — V2 RCB EN MB 2-4 H

INR IR ØØ (1)H — F1
INR IR Ø1 (Ø)H — H1
INR IR Ø2 (1)H — J1
INR IR Ø3 (Ø)H — K1
CPT TS4 (1)H — K2
+3V H24V1 H — L2
M2
CPR 8 MODE H — N2
M119 H26 — P2 RCB 8 JMP ADDRESS L

RCD EN AC N-6 L H — P1
CST EN MEM (1)H — R1
INS STH H — S1
M115 H22 — U1
P2
R2
M113 H21 — S2 RCB EN MEM 6-11 H

CSI FILLS H — A1
B1
CST MFTSØ H — C1
CST STEP EXAM (Ø)H — D1
IOB DATA IN H — E1
CPS BREAK (1)H — F1
M160 J27 — R1
CPS T BREAK (1)H — K1
LIP TAPE OUT H — L1

INS L JMP H — A1
RCD SAVE PC (1)H — B1
M113 K33 — C1 RCB (JMP*SAVE PC)L
F1
INS JMS L — H1
INS STH L — J1
+3V L22V1 H — K1
M117 L22 — L1
CPS EXECUTE B (1)H — H1
J1

INS STA L — J2
INS DCA L — K2
INS STC L — L2
M115 K26 — M2 RCB (STC+DCA+STA) H — M1
N1
CPS EXECUTE B (1)H — P1

R1 RCB GO MEM TS3 L — D2
CPS INTER (Ø)H — E2
CPT TS3 (1)H — F2
CST EN MEM (1)H — H2
M117 H30 — J2
T2
U2
M113 H21 — V2 RCB EN MEM Ø-5 H

RCA EN AC 6-11 H — D2
CST EN MEM (1)H — F2
INS STH H — F2
M115 H22 — H2

REVISIONS		
CHK	CHANGE NO.	REV.
JB	EP12-00001	A
	ADS	
	J SCANLAN 3/13/69	
NB	EP12-00015	B
	K.COTE 10/14/69	
	J.SCANLAN 10/17/69	
TC	EP12-41123	C
	[illegible] 7-2-70	

DRN D SHEPARD	DATE 2/20/69	digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS
CHKD J BISONETE	DATE 2/20/69	
ENG L GALE	DATE 2/20/69	TITLE REGISTER CONTROL B
PROJ ENG L GALE	DATE 2/20/69	
PROG D CALL	DATE 2/20/69	
FIRST USED ON EP12		SIZE D CODE BS NUMBER EP12-Ø-RCB REV. C
SCALE		SHEET 1 OF 1 DIST.

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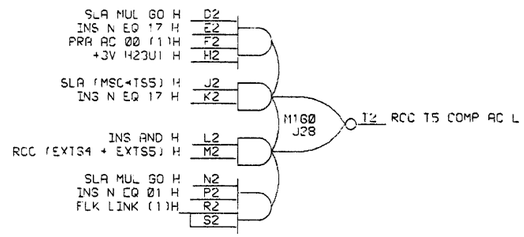

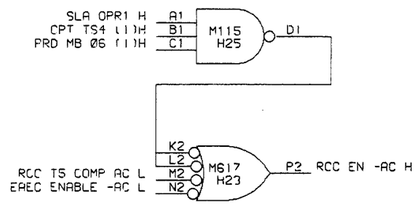

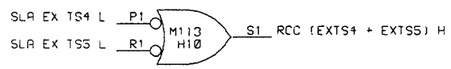

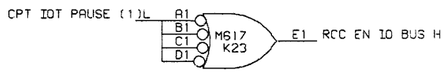

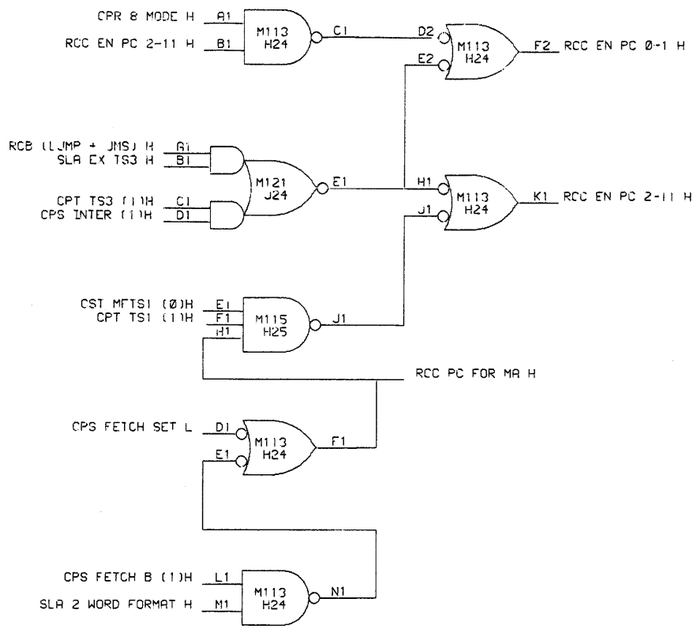

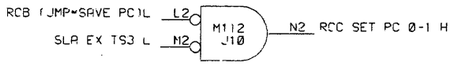

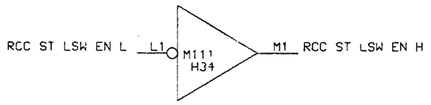

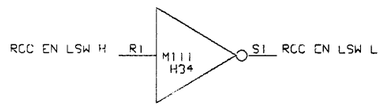

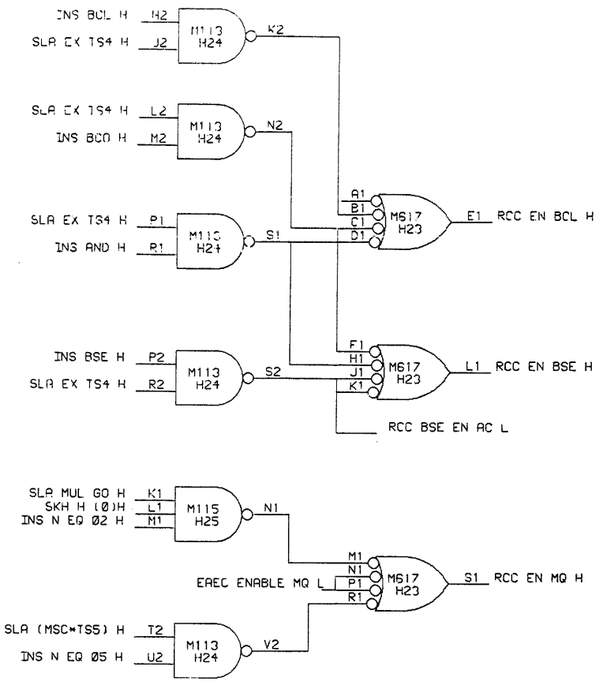

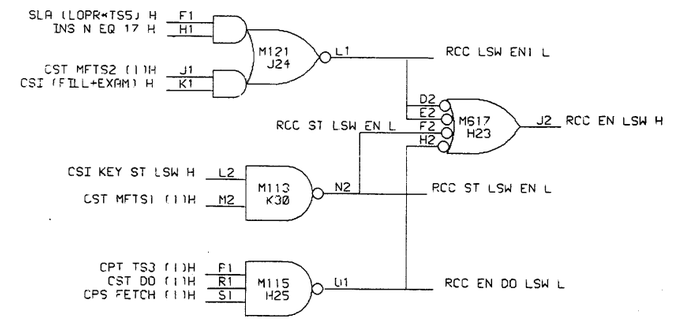

REVISIONS		
CHK	CHANGE NO.	REV.

DRN.	DATE	digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS
CHK'D.	DATE	
ENG.	DATE	TITLE: REGISTER CONTROL C
PROJ. ENG.	DATE	
PROD.	DATE	
FIRST USED ON: EP12		SIZE: D CODE: BS NUMBER: EP12-Ø-RCC REV: A
SCALE		
SHEET 1 OF 1		DIST.

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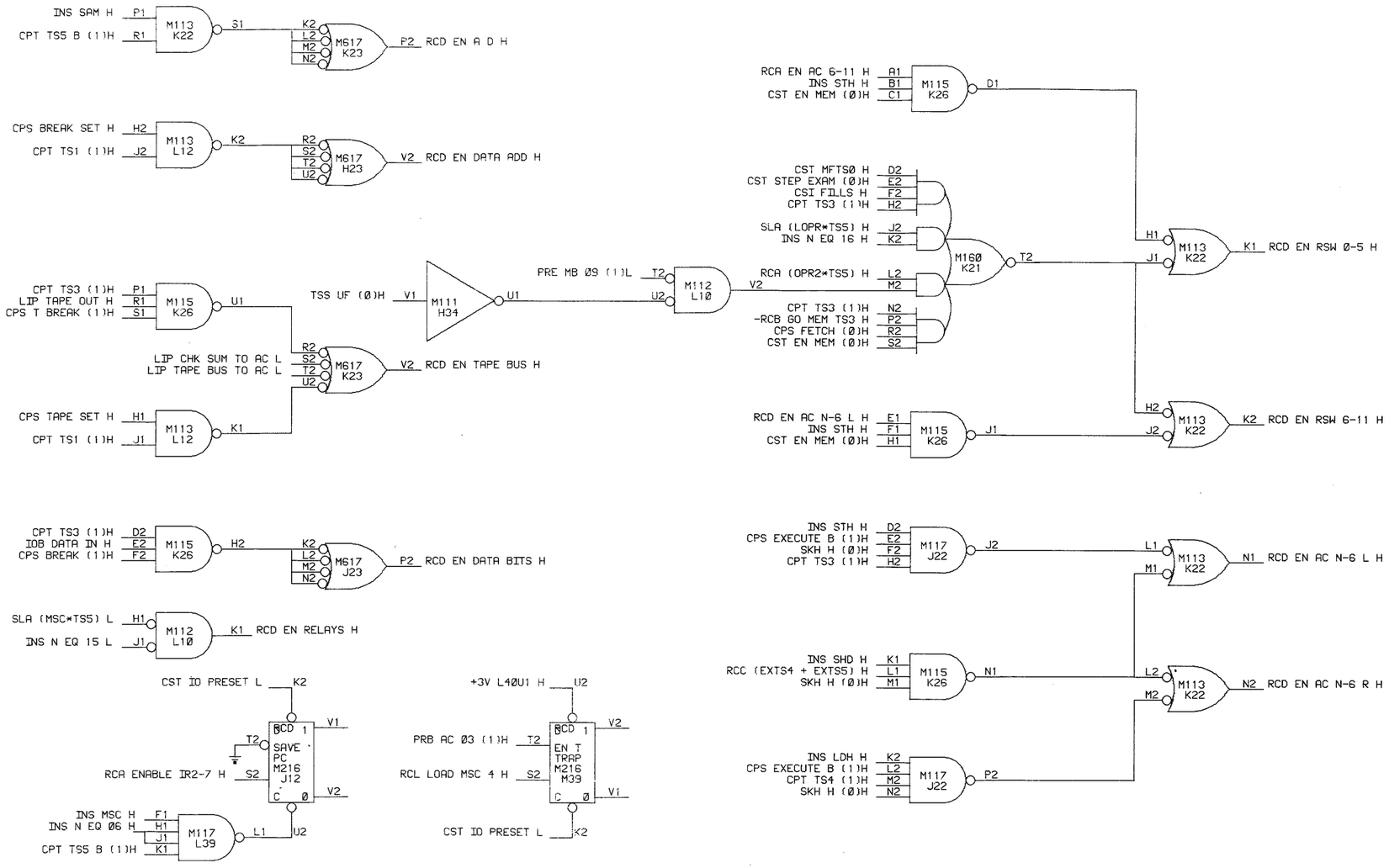

REVISIONS		
CHK	CHANGE NO.	REV.
JB	Ø0001	A
	ADS	
	J SCANLAN 3/13/69	
	EP12-00002	B

DRN.		DATE
CHK'D.		DATE
ENG.		DATE
PROJ. ENG.		DATE
PROD.		DATE
FIRST USED ON	EP12	
SCALE		
SHEET 1 OF 1		

digital EQUIPMENT CORPORATION
MAYNARD, MASSACHUSETTS

TITLE: REGISTER CONTROL D

SIZE	CODE	NUMBER	REV.
D	BS	EP12-Ø-RCD	B

DIST.

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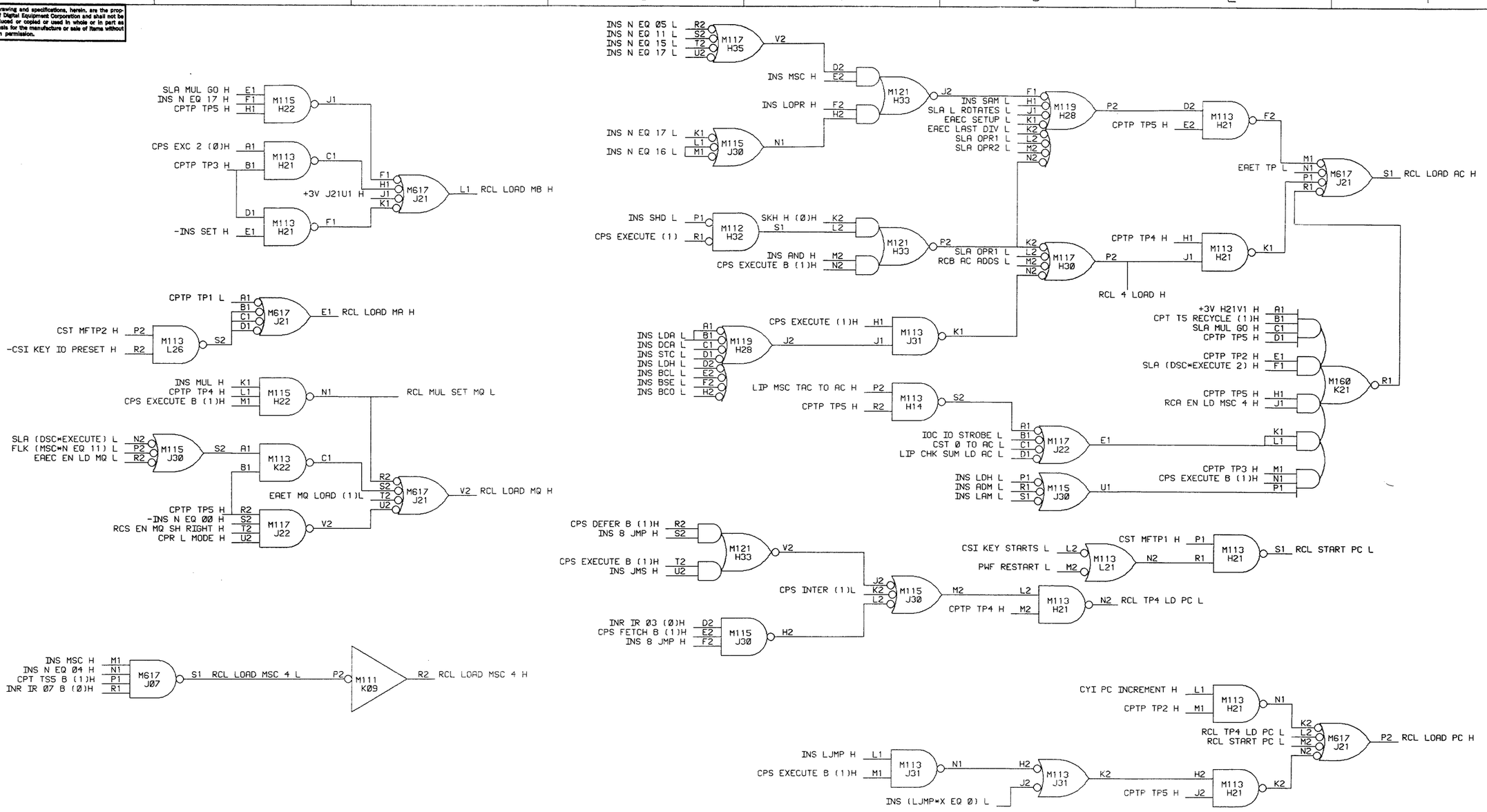

REVISIONS			REVISIONS		
CHK	CHANGE NO.	REV.	CHK	CHANGE NO.	REV.
	EP12-00001	A		EP12-00016	E
	ADS				
	J SCANLAN 3/13/69				
NR	EP12-00006	B			
	A WASHINGTON 8/17/69				
	L GALE 8/20/69				
NR	EP12-00007	C			
	A WASHINGTON 8/6/69				
	J SCANLAN 8/6/69				
	EP12-00015	D			
	K COTE 10/14/69				
	J SCANLAN 10/17/69				

DRN. D SHEPARD	DATE 2/20/69	digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS	
CHK'D J BISONETE	DATE 2/20/69		
ENG. L GALE	DATE 2/20/69	TITLE PROCESSOR REGISTER LOAD CONTROL	
PROJ. ENG. L GALE	DATE 2/20/69		
PROD. D CALL	DATE 2/20/69		
FIRST USED ON EP12		SIZE D / CODE BS / NUMBER EP12-Ø-RCL / REV. E	
SCALE		DIST.	
SHEET 1 OF 1			

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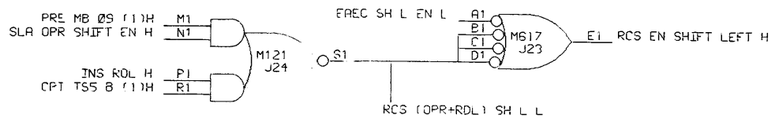

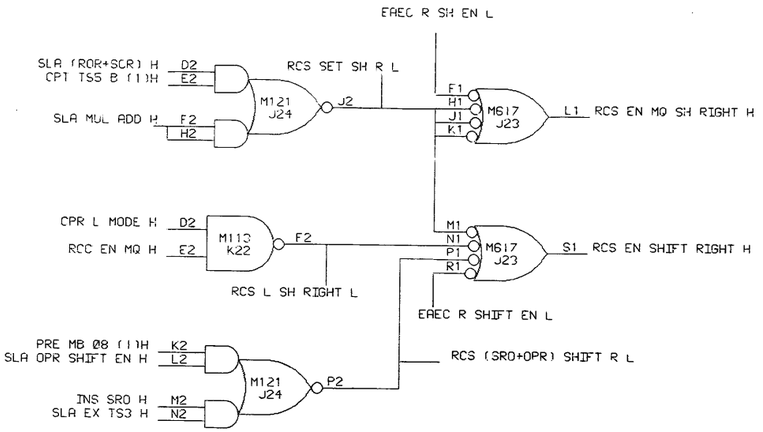

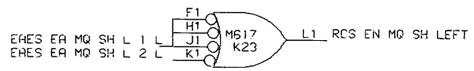

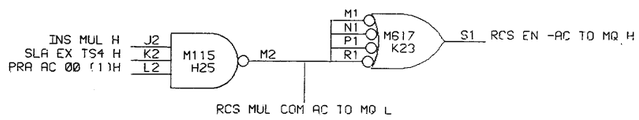

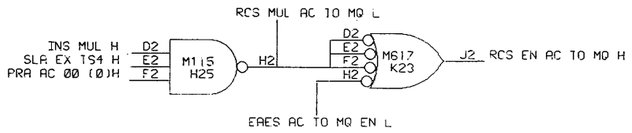

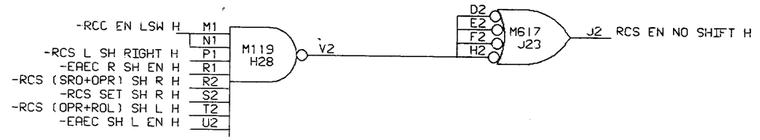

REVISIONS		
CHK	CHANGE NO.	REV.

DRN.	DATE
CHK'D.	DATE
ENG.	DATE
PROJ. ENG.	DATE
PROD.	DATE
FIRST USED ON: EP12	
SCALE	
SHEET 1 OF 1	

digital EQUIPMENT CORPORATION
MAYNARD, MASSACHUSETTS

TITLE: REG SHIFT & MQ INPUTS

SIZE	CODE	NUMBER	REV.
D	BS	EP12-Ø-RCS	ØØ

DIST.

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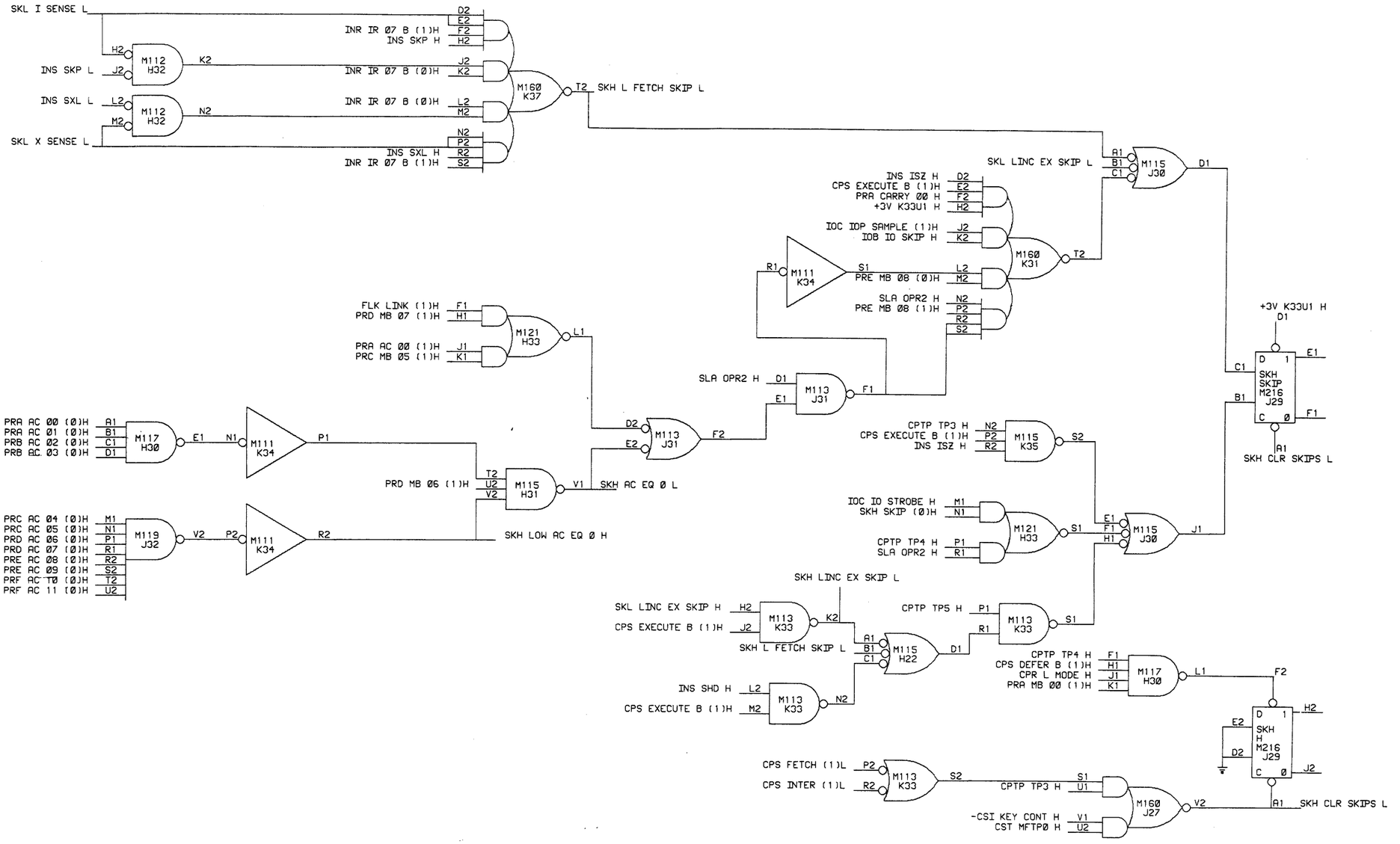

REVISIONS		
CHK	CHANGE NO.	REV.
JB	ØØØØ1	A
	ADS	
	J.SCANLAN 3-13-69	
	EP12-ØØØØ6	B
NR	A.WASHINGTON 8-5-69	
	L.GALE 8-15-69	

REVISIONS		
CHK	CHANGE NO.	REV.
T.C.	EP12-ØØØ23	C
	[illegible] 7-2-70	

DRN. D.L.SHEPARD	DATE 2-20-69	digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS	
CHK'D J.BISONETTE	DATE 2-20-69		
ENG. L.GALE	DATE 2-20-69	TITLE SKIP FF & H BIT	
PROJ. ENG. L.GALE	DATE 2-20-69		
PROD. D.CALL	DATE 2-20-69		
FIRST USED ON EP12		SIZE D	CODE BS	NUMBER EP12-Ø-SKH	REV. C
SCALE			
SHEET 1 OF 1		DIST.	

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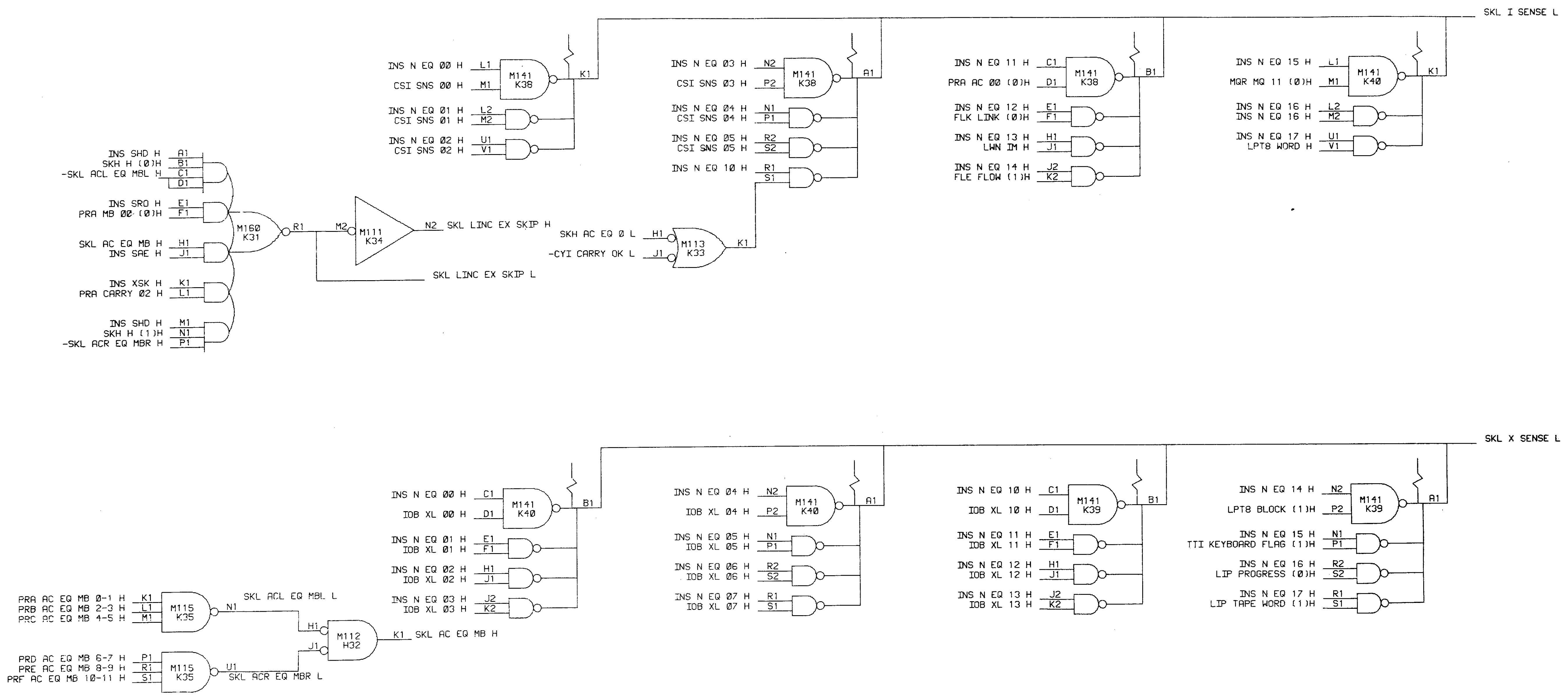

REVISIONS		
CHK	CHANGE NO.	REV.
JB	EP12-00001 ADS J SCANLAN 3/13/69	A
	EP12-00003 A WASHINGTON 6/17/69 L GALE 6/20/69	B
	EP12-00016	C

DRN. D SHEPARD	DATE 2/20/69	digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS
CHK'D J BISONETE	DATE 2/20/69	TITLE EP12 SKIPS
ENG. L GALE	DATE 2/20/69	
PROJ. ENG. L GALE	DATE 2/20/69	
PROD. D CALL	DATE 2/20/69	
FIRST USED ON EP12		SIZE D CODE BS NUMBER EP12-0-SKL REV.
SCALE		
SHEET 1 OF 1		DIST.

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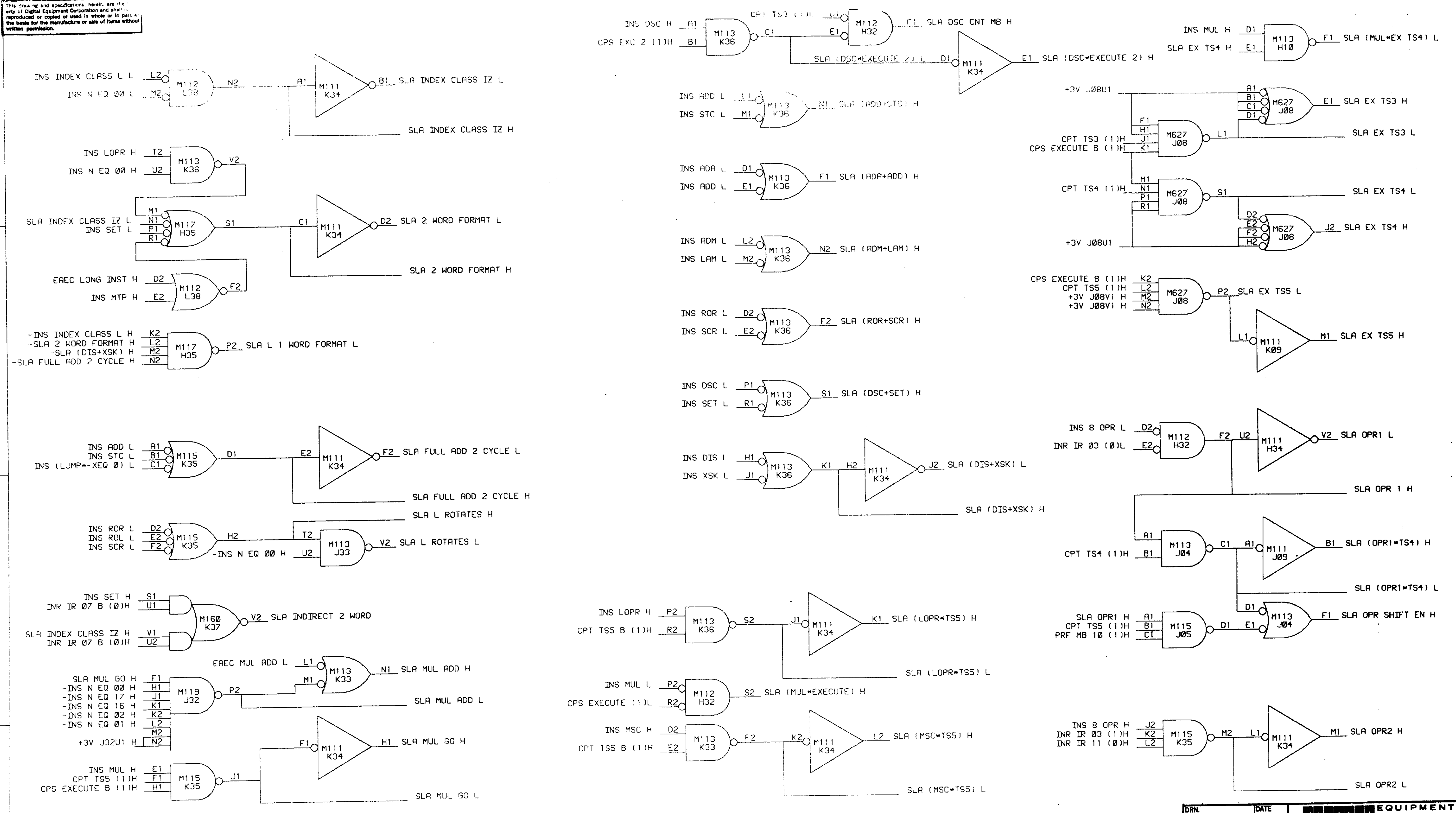

REVISIONS		
CHK	CHANGE NO.	REV.
TC	EP12-0002-3	A

DRN.	C.L. SHEPARD	DATE 2-20-69
CHK'D.	J.E. BISONETTE	DATE 2-20-69
ENG.	L. GALE	DATE 2-20-69
PROJ. ENG.	L. GALE	DATE 2-20-69
PROD.	L. CALL	DATE 2-20-69
FIRST USED ON	EP12	

digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS

TITLE SPECIAL LEVELS 1

SIZE	CODE	NUMBER	REV.
D	BS	EP12-0-SLA	A

SHEET 1 OF 1

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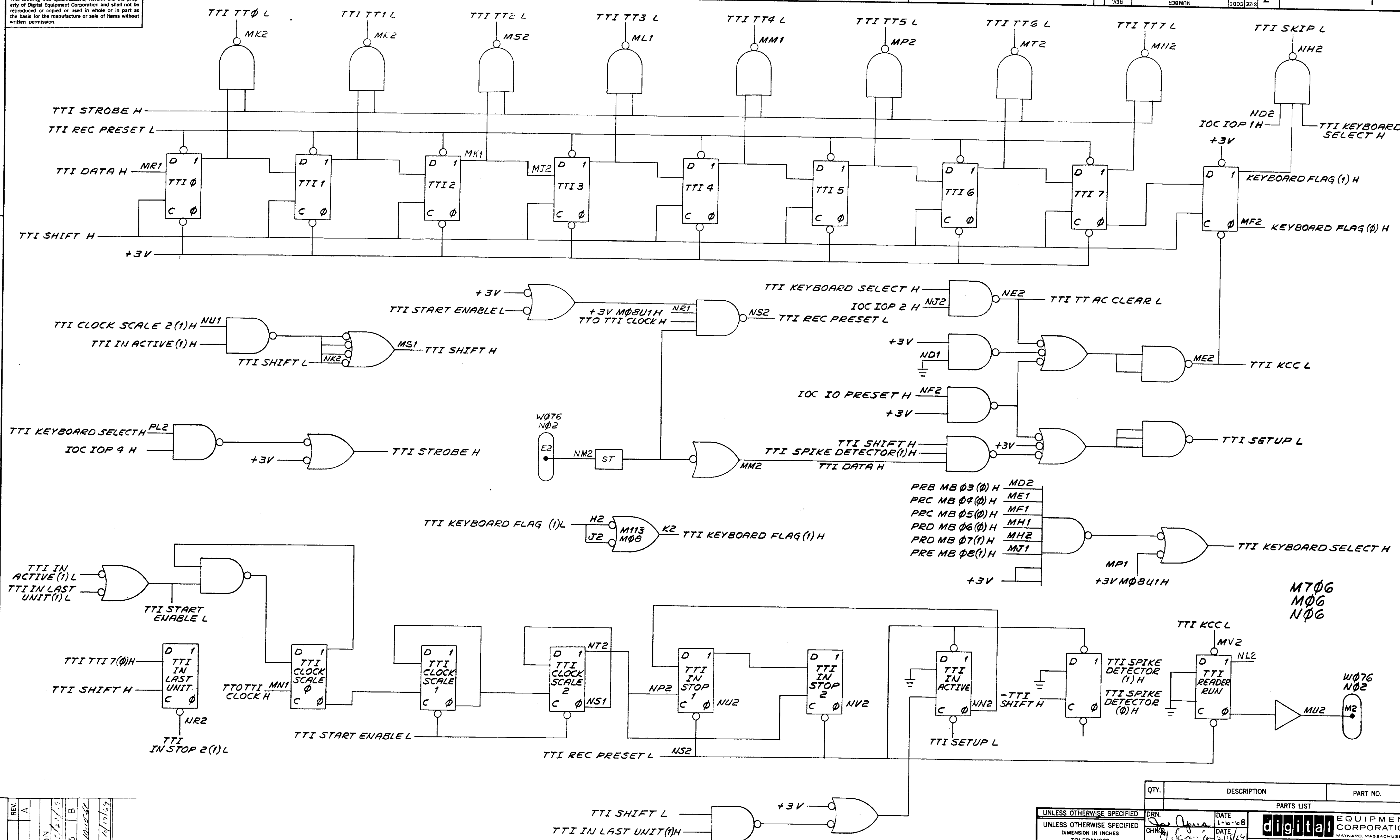

TTI TTØ L
MK2
TTI TT1 L
TTI TT2 L
MS2
TTI TT3 L
ML1
TTI TT4 L
MM1
TTI TT5 L
MP2
TTI TT6 L
MT2
TTI TT7 L
MH2
TTI SKIP L
NH2
TTI STROBE H
TTI REC PRESET L
TTI DATA H
MR1
TTI Ø
TTI 1
TTI 2
MK1
MJ2
TTI 3
TTI 4
TTI 5
TTI 6
TTI 7
TTI SHIFT H
+3V
ND2
IOC IOP 1 H
TTI KEYBOARD SELECT H
KEYBOARD FLAG (1) H
MF2
KEYBOARD FLAG (Ø) H
TTI START ENABLE L
+3V MØ8U1 H
TTO TTI CLOCK H
NR1
NS2
TTI REC PRESET L
TTI KEYBOARD SELECT H
IOC IOP 2 H
NJ2
NE2
TTI TT AC CLEAR L
TTI CLOCK SCALE 2 (1) H
NU1
TTI IN ACTIVE (1) H
TTI SHIFT L
NK2
MS1
TTI SHIFT H
ND1
ME2
TTI KCC L
IOC IO PRESET H
NF2
TTI KEYBOARD SELECT H
PL2
IOC IOP 4 H
TTI STROBE H
WØ76
NØ2
E2
NM2
ST
MM2
TTI SHIFT H
TTI SPIKE DETECTOR (1) H
TTI DATA H
TTI SETUP L
PRB MB Ø3 (Ø) H
MD2
PRC MB Ø4 (Ø) H
ME1
PRC MB Ø5 (Ø) H
MF1
PRD MB Ø6 (Ø) H
MH1
PRD MB Ø7 (1) H
MH2
PRE MB Ø8 (1) H
MJ1
MP1
+3V MØ8U1 H
TTI KEYBOARD SELECT H
TTI KEYBOARD FLAG (1) L
H2
J2
M113
MØ8
K2
TTI KEYBOARD FLAG (1) H
TTI IN ACTIVE (1) L
TTI IN LAST UNIT (1) L
TTI START ENABLE L
M7Ø6
MØ6
NØ6
TTI TTI 7 (Ø) H
TTI IN LAST UNIT
NR2
TTI IN STOP 2 (1) L
TTO TTI CLOCK H
MN1
TTI CLOCK SCALE Ø
TTI CLOCK SCALE 1
TTI CLOCK SCALE 2
NT2
NS1
NP2
TTI IN STOP 1
NU2
TTI IN STOP 2
NV2
TTI IN ACTIVE
NN2
-TTI SHIFT H
TTI SETUP L
TTI SPIKE DETECTOR (1) H
TTI SPIKE DETECTOR (Ø) H
TTI KCC L
MV2
NL2
TTI READER RUN
MU2
WØ76
NØ2
M2
TTI START ENABLE L
TTI REC PRESET L
NS2
TTI SHIFT L
TTI IN LAST UNIT (1) H

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

		DATE
DRN.	[signature]	1-6-68
CHKD.	J. Scanlon	2/14/64
ENG.	[signature]	
PROJ. ENG.	[signature]	
PROD.	[signature]	

FIRST USED ON EP12

SCALE

SHEET 2 OF

digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS

TITLE
TTI TELETYPE RECEIVER

SIZE D CODE BS NUMBER EP12-Ø-TTI REV B

DIST.

REVISIONS

REV.	CHANGE NO.		CHK
A	00002	J. SCANLON	[initials]
B	EP12-00015	L. GALE	[initials]

DEC FORM NO. DRD 102A

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PRE MB Ø8(Ø) H ME2
PRC MB Ø4(Ø) H ME1
PRC MB Ø5(Ø) H ME2
PRT MB Ø6(1) H MF1
PRD MB Ø7(Ø) H MH2
PRE MB Ø9(Ø) H MJ2
+3V NJ1 H NJ1

+3V MØ8U1 — MJ1 — TTO SELECT H — MS1 — IOC IOP4 H — MR1

+3V MØ8U1 — MN2 — PRC AC Ø4(1) H — MP2 — PRC AC Ø5(1) H — MR2 — PRD AC Ø6(1) H — ML2 — PRD AC Ø7(1) H — MM2 — PRE AC Ø8(1) H — MU2 — PRE AC Ø9(1) H — MS2 — PRF AC 1Ø(1) H — MT2 — PRF AC 11(1) H — MU1

TTO ENB — MK2 — ML1
TTO Ø
TTO 1
TTO 2 — MJ1
TTO 3
TTO 4
TTO 5
TTO 6
TTO 7
TTO LINE — MD2 — TTO OUT ACTIVE (Ø) L
MV2 TTO MAGNET DRIVER H

TTO SHIFT H
TTO PRESET L
MH1
TTO = Ø L

M7Ø7
MØ7
NØ7

TTO OUT ACTIVE (1) L
+3V MØ8U1 — NS2 — - TTO SHIFT L

TTO OUT ACTIVE (1) H — NP2 — TTO FREQ DIV
- TTO CLOCK H

TTO OUT STOP 1 — NR2
TTO OUT STOP 1.5 — NP1
TTO OUT STOP 2 — NN1

TTO OUT STOP 2 (Ø) H NN2
TTO ENB (1) H MK1
TTO OUT ACTIVE (1) H
- TTO = Ø H

+3V
TTO OUT ACTIVE (1) L
+3V

TTO OUT ACTIVE (1) H — MD1 — TTO OUT ACTIVE

IOC IOP 1 H — NH2 — NJ2 — TTO SKIP L
TTO SELECT H

TTO = Ø L
TTO SHIFT H — NK2 — TTO TPR FLG

+3V — TTO SHIFT H

CLK 880 HZ — J2 — M2 — N2 — L2 — K2 — TTO CLOCK L
P2 — R2 — TTO TTI CLOCK H
M452
NØ8

TTI SKIP L — D2 — E2 — TTO SKIP L
M113 MØ8 — F2 — A1 — B1 — C1 — TTO TT SKIP L

IOC IO PRESET H — NE2
+3V
+3V MØ8U1 — NF2
TTO PRESET L
+3V
+3V
TTO SELECT H
IOC IOP 2 H — ND2

RCA EN
TT INT (Ø) H — D1
TTI KEYBOARD FLAG (1) L — H1
TTO TPR FLG (1) L — J1
M113 MØ8 — K1 — E1 — F1 — TTO TT INT L

A2 +5V
B2 -15V
C2
D2
E2
F2
H2 TTO MAGNET DRIVER H
J2
K2
L2
M2
N2
P2
R2
S2
T2
U2
V2 -30V
WØ76
NØ2

QTY.	DESCRIPTION	PART NO.	ITEM NO.

PARTS LIST

UNLESS OTHERWISE SPECIFIED
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

		DATE
DRN.	Joe Ojala	12-27-68
CH'K'D.		DATE 2/18/69
ENG.		DATE 2/19/69
PROJ. ENG.		DATE
PROD.		DATE

FIRST USED ON
EP12

digital EQUIPMENT CORPORATION
MAYNARD, MASSACHUSETTS

TITLE
TTO TELETYPE TRANSMITTER

SIZE	CODE	NUMBER	REV.
D	B5	EP12-Ø-TTO	

DIST.

SCALE
SHEET OF

REVISIONS	CHANGE NO.	CHK
REV		

DEC FORM NO DPD 102A

SIZE D CODE B5 NUMBER EP12-Ø-TTO REV

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SIGNAL NAME	FROM PIN	TO PIN	COLOR	REMARKS
GROUND	N01B1	N40C2	BLACK	
	N01C1	N02C2		
	N01V1	N40T1		
	N01U1	M40T1		
	N01T1	M40C2		
	N01S1	M02C2		WIRE IS
	N01R1	M02T1		#24 AWG
	N01N1	L40C2		
	N01M1	L01T1		
	N01L1	L01C2		
	N01K1	K40T1		
	N01J1	K40C2		
	N01H1	K01T1		
	N01F1	K01C2		
	N01E1	J40T1		
	N01D1	J40C2		
	N01P1	L40T1		
	M01U1	J01C2		
	M01T1	J18T1		
	M01S1	J18C2		
	M01R1	H40T1		
	M01P1	H40C2		
	M01N1	H01T1		
	M01V1	J01T1		
	M01M1	H01C2		
	M01L1	H18T1		

REVISIONS			
REV.	DATE	CHG. NO.	APP'D.
A	11-21-69	EP12-00017	

DRN. R. Kingsbury DATE 3/11/69
CHK'D. R. Kingsbury DATE 3/14/69
ENG. L. Gale DATE 3/10/69
PROJ. ENG. L. Gale DATE 3/10/69
PROD. D. Call DATE 3/10/69
FIRST USED ON
SCALE
SHEET 1 OF 3

digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS

TITLE
GENERAL WIRING SHEET
FOR
D C POWER PROCESSOR LOGIC

SIZE	CODE	NUMBER	REV.
A	WL	EP12-0-4	A

DIST.

DEC FORM NO. DRA 104

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.

SIGNAL NAME	FROM PIN	TO PIN	COLOR	REMARKS
GROUND	M01K1	H18C2	BLACK	
+10v	N01E2	N27A2	GREEN	
+5v	N01B2	N40A2	RED	
	M01V2	M40A2		
	M01U2	M04A2		WIRE IS
	M01T2	L40A2		#24 AWG
	M01S2	L03A2		
	M01R2	K40A2		
	M01P2	K03A2		
	M01N2	J40A2		
	M01M2	J18A2		
	M01L2	J03A2		
	M01K2	H40A2		
	M01J2	H18A2		
	M01H2	H03A2		
	M01F2	N28A2		
	M01E2	J09A2		
	M01D2	K18A2		
	M01C2	L18A2		
	M01B2	M18A2		
	M01A2	N12A2		
-15v	N01L2	N33B2	BLUE	
	N01K2	N02B2	BLUE	
	N01J2	N03B2	BLUE	

REVISIONS			
REV.	DATE	CHG. NO.	APP'D.

DRN. R. Kingsbury DATE 3/11/69
CHK'D. R. Kingsbury DATE 3/11/69
ENG. L. Gale DATE 3/10/69
PROJ. ENG. L. Gale DATE 3/10/69
PROD. D. Call DATE 3/10/69
FIRST USED ON
SCALE
SHEET 2 OF 3

digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS

TITLE
GENERAL WIRING SHEET
FOR
DC POWER PROCESSOR LOGIC

SIZE	CODE	NUMBER	REV.
A	WL	EP12-0-4	A

DIST.

DEC FORM NO. DRA 104

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SIGNAL NAME	FROM PIN	TO PIN	COLOR	REMARKS
-30v	N01P2	N02V2	YELLOW	
-30v	N01S2	N03V2	YELLOW	

REVISIONS			
REV.	DATE	CHG. NO.	APP'D.

DRN. DATE
CHK'D. DATE
ENG. DATE
PROJ. ENG. DATE
PROD. DATE
FIRST USED ON
SCALE
SHEET 3 OF 3

digital EQUIPMENT CORPORATION
MAYNARD, MASSACHUSETTS

TITLE
GENERAL WIRING SHEET
FOR
D C POWER PROCESSOR LOGIC

SIZE	CODE	NUMBER	REV.
A	WL	EP12-0-4	A

DIST.

DEC FORM NO.
DRA 104

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MODULE UTILIZATION PROCESSOR

Row H

Slot	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Module	M901 CABLE	M903 A	M310 A	M310 A	M310 A	M310 A	M310 A	G718 A	M310 A	M113 A	M720 B	M160 A	M160 A	M113 A	M221 A	M221 A	M221 A	M221 A	M221 A	M221 A

Slot	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
Module	M113 A	M115 A	M617 A	M113 A	M115 A	M119 A	M117 K	M119 A	M216 K	M117 A	M115 A	M112 A	M121 A	M111 A	M117 A	M113 A	M115 A	M617 A	M216 A	M216 A

Row J

Slot	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Module	M903 A	M903 A	M216 A	M113 A	M115 A	M617 A	M617 A	M627 A	M111 A	M112 A	M160 A	M216 A	M160 A	M627 A						

Slot	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
Module	M617 A	M117 A	M617 A	M121 A	M113 A	M160 A	M160 A	M160 A	M216 A	M115 A	M113 A	M119 A	M113 A	M161 A	M161 A	M161 A	M161 A	M161 A	M161 A	M161 A

Row K

Slot	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Module	M903 A	M903 A	M113 A	M115 A	M117 A	M216 A	M216 A	M160 A	M111 A	M119 A	M216 A	M617 A	M115 A	M113 A	M169 A	M169 A	M169 A	M169 A	M169 A	M169 A

Slot	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
Module	M160 A	M113 A	M617 A	M212 A	M212 A	M115 A	M906 ▭	M113 A	M115 A	M113 A	M160 A	M700 A	M113 A	M111 A	M115 A	M113 A	M160 A	M141 A	M141 A	M141 A

Row L

Slot	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Module	M903 A	M901 A	M119 A	M216 J	M617 A	M160 A	M216 A	M115 A	M113 A	M112 A	M160 A	M113 A	M117 A	M111 A	M111 A	M906 A	M906 A	M906 A	M906 A	M906 A

Slot	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
Module	M113 A	M117 A	M121 A	M117 A	M121 B	M113 A	M216 A	M216 A	M115 C	M117 C	M121 C		M111 C	M115 C	M113 C	M113 C	M160 C	M112 A	M117 A	M113 A

▭ USE ONLY IF KE12 IS NOT INSTALLED

A = EP12
B = MC12
C = KE12
D = ASR33
E = DP12A
F = XY12
H = VC12
J = DR12
K = KT12

REVISIONS: RELEASED UNDER REV "A" 3/1/69; EP12-00003 C; EP12-00007 D; EP12-00016 E; EP12-00027 F; EP12-00030 H

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

NEXT HIGHER ASSY. PDP-12

digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS

TITLE MODULE UTILIZATION PROCESSOR

SIZE D CODE MU NUMBER EP12-Ø-1 REV. H

SHEET 1 OF 1

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Slot	M row module	M variant	M row signals	N row module	N variant	N row signals
1	G78Ø	A	PWR → IPC			
2	M9Ø1	A	IPC	WØ76	D	TTY CABLE; TTO TTI
3	W681	H	SCOPE DRIVER; L-SC	WØ76	□E	DATA PHONE CABLE; DTTO DTTI
4				WØ23	F	PLOTTER CABLE; PCL
5	M7Ø4	F	→ PCL			
6	M7Ø6	D	→ TTI			
7	M7Ø7	D	→ TTO			
8	M113	A	TTO, TTI, DTTI, CSI	M452	D	TTO CLOCK
9	M7Ø6	E	→ DTTI			
10	M7Ø7	E	→ DTTO			
11	M66Ø	A	IOO	M4Ø5	ΔL	DTTC
12	M66Ø	A	IOO	M216	L	DTTC
13	M66Ø	A	IOO	M9Ø3	A	ICB
14	M623	A	IOO	M9Ø3	A	ICB
15	M623	A	IOO	M9Ø3	A	ICB
16	M623	A	IOO, MEA	M9Ø3	A	ICB
17	M516	A	IOA	M9Ø3	A	ICB
18	M516	A	IOA	M9Ø3	A	ICB
19	M516	A	IOB			
20	M623	B	MEA	WØ21	B	ICB
21	M623	A	MEA, IOB, MEA, TSS, MEA	WØ21	B	ICB
22	M617	B	MXB	WØ21	B	ICB
23	M617	B	MXB	WØ21	B	ICB
24	M617	B	MXB	WØ21	B	ICB
25	M617	B	MXB	M3Ø9	A	AUTO CST, DTTC, CST
26	M617	*B	MXB, MXF, MXF	W6Ø3	A	CST
27	M113	B	MXR, MXF	M512	A	CST, DSC
28	M121	B/K	TSS, TSS, TSS, MXR	M9ØØ	A	RELAY & SPKR; IOR
29	M216	B	MXR	M9ØØ		CONSOLE LIGHTS; CIN
30	M216	B	MXR	M9ØØ		CONSOLE LIGHTS; CIN
31	M216	B	MXR	M9ØØ		CONSOLE LIGHTS; CIN
32	M169	B	MXR	M9ØØ		CONSOLE LIGHTS; CIN
33	M113	C	EAET, EAES	G793		CONSOLE SWITCHES; CSI
34	M117	C	EAET, EAES	G793		CONSOLE SWITCHES; CSI
35	M16Ø	C	EAES, EAET	G793		CONSOLE SWITCHES; CSI
36	M16Ø	C	EAES	G793		CONSOLE SWITCHES; CSI
37	M216	C	EAES, EAET	G916	A	PWR PROTECT LTE; SW CAPS; CSI
38	M111	A	CSI, CSI, EAEC, MPS, CSI, MPS, CST, CSI, CSI, CSI, CPR, CSI, IOB, CPTP, CSI			
39	M216	A	CST, RCD			
40	M111	A	CST, CST, IOB, CSI, MXF, CSI, MEG, CSI, TSS, CSI	M113	A	CSI, MXR, CSI, CST, CSI, CST, MXR
41–44						

← MEMORY EXTN CABLES →

* WHEN THE MC12 IS NOT INSTALLED USE A WØ23 WITH PINS J2, P2, V2, GROUNDED.

□ USE WØ76 FOR DP12A, M850 FOR DP12B. WHEN NEITHER CARD INSTALLED USE G700YA.

Δ = USE A G718 FOR DP12A

A = EP12
B = MC12
C = KE12
D = ASR33
E = DP12A
F = XY12
H = VC12
J = DR12
K = KT12
L = DP12 B

REV.	CHANGE NO.	CHK
A	RELEASED UNDER REV "A" 3/11/69 00002	
B	J. SCANLON	
C	EP12-00003	
D	EP12-00007 GALE	
E	EP12-00016 GALE	
F	EP12-00020 GALE	
H	EP12-00022 CLAYTON	
J	EP12-00027 GALE	
K	EP12-00030 D. MACKLIN	

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

DRN. DATE 10-29-68
CHK'D DATE 2/18/69
ENG. DATE 3/11/69
PROJ. ENG. DATE 3/11/69
PROD. DATE

FIRST USED ON PDP-12

digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS

TITLE: MODULE UTILIZATION PROCESSOR

SIZE D CODE MU NUMBER EP12-Ø-2 REV K

SHEET 1 OF 1

DEC FORM NO. DRD 105

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1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44
G780	M907	W281		M704	M706	M707	M113	M706	M707	MG60	MG60	MG60	MG23	MG23	MG23	M516	M516	M516	MG23	MG23	MG17	MG17	MG17	MG17	MG17	MG17	M113	M121	M216	M216	M216	M169	M113	M117	M160	M160	M216	M111	M216	M111				
A	F	H		F	D	D	A	E	E	A	A	A	A	A	A	A	A	A	B	A	B	B	B	B	*B	B	B/HK	B	B	B	B	C	C	C	C	C	A	A	A				
		SCOPE DRIVER					TTO TTI								IOO					MEA IOB MEA TSS					MXB MXF	MXR	TSS TSS TSS					EAET	EAET EAES EAET		EAES	EAES	EAET	CSI CSI EAEC MPG CSI MPC CST CSI CSI CSI CSI CPTP CSI	CST RCD	CST CST IOB CSI MXF CSI MEG CSI TSS	M			
	IPC	OSC					DTTI CSI			IOO	IOO	IOO	IOO	IOO	MEA	IOA	IOA	IOB	MEA	MEA	MXB	MXB	MXB	MXB	MXF	MXF	MXR	MXR	MXR	MXR	MXR	EAES	EAES		EAES	EAET	CSI	CSI				
	W076	W076	W023				M952			M905	M216	M903	M903	M903	M903	M903	M903	M903	W021	W021	W021	W021	W021	M504	W023	N512	M900	M900	M900	M900	M900	G793	G793	G793	G793	G916			M113				
	D	□E	F				D			△L	L	A	A	A	A	A	A	A	B	B	B	B	B	A	A	A	A	CONSOLE		LIGHTS		CONSOLE	SWITCHES		A		A				
		DATA PHONE CABLE	PLOTTER CABLE				TTO CLOCK												MEMORY EXTN CABLES					AUTO CST DTTC CST	CST	CST OSC	RELAY & SPKR									PWR PROTECT LTR SW CAPS		CST				
	TTY CABLE																																									
IPC	TTO TTI	DTTO DTTI	PCL	PCL	TTI	TTO		DTTI	DTTO	DTTC	DTTC	ICB	ICB	ICB	ICB	ICB	ICB		ICB	ICB	ICB	ICB	ICB				IOR	CIN	CIN	CIN	CIN	CSI	CSI	CSI	CSI	CSI			CST MXR				

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44

REVISIONS

CHK	CHANGE NO.	REV
	RELEASED UNDER REV "A" 3/11/68 00002	B
		C
	EP12-00003	D
	EP12-00007	E
	EP12-00016	F
		G
		H
		J
		K

* WHEN THE MC12 IS NOT INSTALLED USE A W023 WITH PINS J2, P2, V2, GROUNDED.

△ = USE A G718 FOR DP12A

A = EP12
B = MC12
C = KE12
D = ASR33
E = DP12A
F = KY12
H = VC12
J = DR12
K = KT12
L = DP12 B

UNLESS OTHERWISE SPECIFIED	DRN.	DATE 10-29-68
UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES TOLERANCES DECIMALS ± .005 FRACTIONS ± 1/64 ANGLES ± 0°30' FINAL SURFACE QUALITY REMOVE BURRS AND BREAK SHARP CORNERS	CHK'D	DATE 2/19/69
	ENGR	DATE 2/19/69
	PROJ. ENG.	DATE 2/15/69
	PROD.	DATE 2/24/69
MATERIAL	FIRST USED ON PDP-12	
FINISH	SCALE	
	SHEET 1 OF 1	

digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS

TITLE: MODULE UTILIZATION PROCESSOR

SIZE D | CODE MU | NUMBER EP12-0-2 | REV K

DIST.

DEC FORM NO DPD 105

DIGITAL EQUIPMENT CORPORATION
MAYNARD, MASSACHUSETTS

PARTS LIST

MADE BY R. COOK	CHECKED J. FLEMING	SECTION
DATE 3/28/69	DATE 4/1/69	
ENG L. Gale	PROD W Hall	ISSUED SECT.
DATE 5/6/69	DATE 5/6/69	

ITEM NO.	DWG NO./PART NO.	DESCRIPTION	QUANTITY/VARIATION											
			EP12	MC12	KE12	ASR12	DP12A	XY12	503 DISPLAY	DR12	KT12			
	M310	DELAY LINE	6											
	G718	TIMING JUMPER	1					-						
	M113	NAND GATE	21		2									
	M720	NON EXISTANT MEM		1										
	M160	AND/NOR GATE	13		1									
	M221	PROC REGISTER	6											
	M115	NAND GATE	11		2									
	M617	FOUR-INPUT POWER NAND GATE	9											
	M119	NAND GATE	5											
	M117	NAND GATE	9		1									
	M216	FLIP FLOP	13							1	1			
	M112	NOR GATE	4											
	M121	AND/NOR GATE	3	1	1									
	M111	INVERTER	6		1									
	M161	BINARY TO OCTAL/DECIMAL DECODER	7											
	M627	NAND POWER AMPLIFIER	2											
	M169	GATING MODULE	6											
	M212	SHIFT REGISTER	2											
	M700	MANUAL FUNCTION TIMING	1											
	M141	NAND/OR GATES	3											

TITLE	ASSY NO.	SIZE	CODE	NUMBER	REV	ECO NO.
MODULE COUNT	D-MU-EP12-0-1	A	PL	EP12-0-1	H	EP12 00030
	SHEET 1 OF 1	DIST.				

DEC FORM NO.
DRA 110

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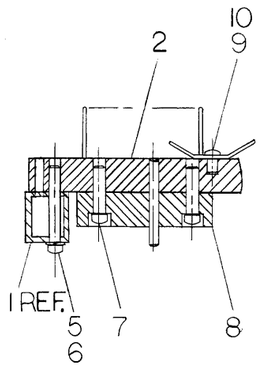
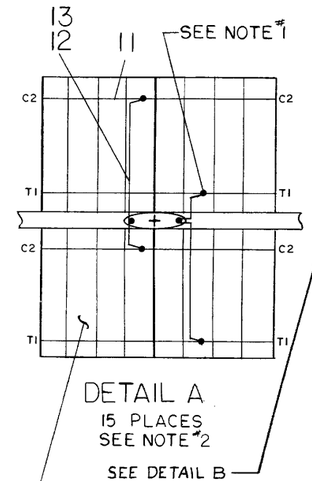
NOTES:
1. CONNECTIONS ON ITEMS #11 & #12 TO BE SOLDERED AND LOCATED AT MINIMUM PRACTICAL HEIGHT ABOVE BOARD.
2. ALL CONN BLOCKS TO BE GROUNDED TO GND LUGS AS SHOWN.
3. USE YELLOW WIRE (ITEM #3) FOR MACHINE WRAPPED & BLUE WIRE (ITEM #4) FOR HAND WRAPPED WIRE.
4. PINS ON SIDE #1 OF MØ1 & NØ1 ARE GND.

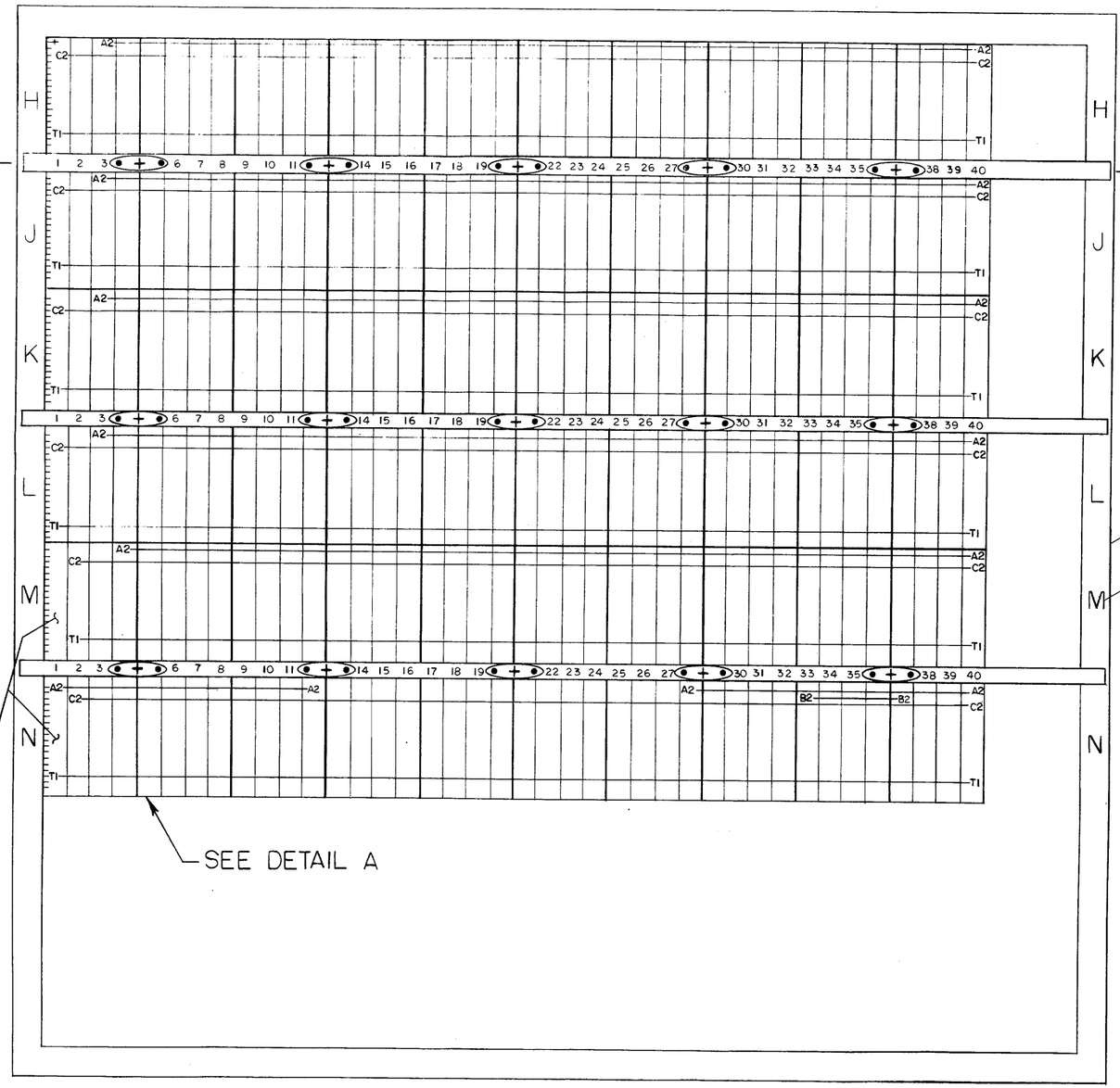


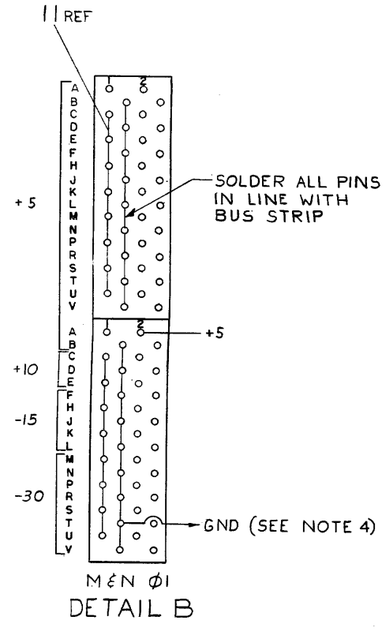
SECTION A-A
SCALE 1/1



DETAIL A
15 PLACES
SEE NOTE #2

SEE DETAIL B





DETAIL B

CHK	CHANGE NO	REV
	12-00004	A
	12-00007	B
	12-00009	C
	12-00010	D
	EP12-00002	E
	EP12-00008	F
	EP12-00014	H
	EP12-00017	J

FIRST USED ON OPTION/MODEL: PDP12

UNLESS OTHERWISE SPECIFIED

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

QTY.	DESCRIPTION	PART NO.	ITEM NO.

PARTS LIST

DRN.	DATE 7-16-68	digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS
CHK'D	DATE 1-3-69	
ENG.	DATE	
PROJ ENG.	DATE 1-6-69	
PROD.	DATE 1/7/69	

TITLE: LOGIC FRAME ASSY (EP12)

NEXT HIGHER ASSY: A-ML-EP12-0

SCALE NONE

SHEET 1 OF 1

SIZE D CODE AD NUMBER 7005976-0-0 REV J

DIST. G

FORM NO 100

DIGITAL EQUIPMENT CORPORATION
MAYNARD, MASSACHUSETTS

PARTS LIST

MADE BY G. GIANOULIS	CHECKED K. RUSS	SECTION
DATE 9/16/68	DATE 12/30/68	1
ENG [signature]	PROD [signature]	ISSUED SECT.
DATE 1/7/69	DATE 1/7/69	1

ITEM NO.	DWG NO./PART NO.	DESCRIPTION	QUANTITY/VARIATION
1	D-IA-7407207-0-0	LOGIC FRAME	1
2	D-IA-7406100-0-0	MTG BAR	3
3	9105740-5	#30 AWG SOLID TEF INS WIRE YELLOW	A/R
4	9105740-7	#30 AWG SOLID TEF INS WIRE BLUE	A/R
5	9008210	SCR PH HD PAN #8-32 x 1 SST W/NYLON PATCH	6
6	9006634	WASHER INT TOOTH #8	6
7	9006120	SCR PHL HD FIL POSI DRIVE #8-32 x 5/8 CPS	60
8	E-SC-1205348-0-0	288 PIN CONN BLOCK	30
9	9006121	SCR PHL HD FIL POSI DRIVE #8-32 x 3/8 CPS	15
10	9007597	TERMINAL #2116-08-00 SHAKIPROOF	15
11	1205541	STRIP, BUS	A/R
12	9107560-1	#22 AWG WIRE BUS	A/R
13	9107265	TUBING TEFLON #22 WHT	A/R
14	A-DC-7406370-0-0	LOGIC FRAME DECALS	A/R
REF	K-ML-EP12-0-3	WIRE LIST	

TITLE	ASSY NO.	SIZE	CODE	NUMBER	REV	ECO NO.
LOGIC FRAME ASSY (EP12)	D-AD-7005976-0-0	A	PL	7005976-0-0	U	EP12-00017
	SHEET 1 OF 1	DIST.	6			

DEC FORM NO.
DRA 110

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MASTER DRAWING LIST

DWG. NO.	PAGE	REV. LET.	NO. OF SHEETS	TITLE
D-AD-7005979-0-0	88	J	1	WIRED ASSY MEMORY (EM12)
A-PL-7005979-0-0		J	1	WIRED ASSY MEMORY (PARTS LIST) EM12
D-MU-EM12-0-1	90	M	1	MODULE UTILIZATION RACK A-D
D-MU-EM12-0-2	91	K	1	MODULE UTILIZATION RACK E-F
A-PL-EM12-0-1	92-93	M	1	MODULE UTILIZATION RACK A-D (PARTS LIST)
A-PL-EM12-0-2	94-95	K	1	MODULE UTILIZATION RACK E-F (PARTS LIST)
K-WL-EM12-0-3		T		WIRE LIST
A-WL-EM12-0-4	96-97	B	3	POWER WIRE LIST
D-BS-EM12-0-IPCM	98	H	1	INTER PROC CABLES
D-BS-EM12-0-MCS	99	A	1	MCS SENSE AMPS & INHIBIT DRIVERS
D-BS-EM12-0-MCT	100	C	1	MEMORY CONTROL
D-BS-EM12-0-MCX	101	B	1	X-AXIS SELECTION
D-BS-EM12-0-MCY	102	B	1	Y-AXIS SELECTION
A-ML-PDP12-0		REF.		PDP-12 SYSTEM

REVISIONS			
REV.	DATE	CHG. NO.	APP'D.
U	2/70	00030	L.G.
V	2/70	00032	L.G.
W	3/70	00034	L.G.
X	3/70	00035	L.G.
Z	7/70	00037	L.G.
AA	8/70	00039	L.G.
AB	8/70	00040	L.G.
AC	10/70	00041	L.G.
AD	1/71	00044	J.S.

DRN. J.Aorea	3/7/69	
CHK'D. R.Hutnak	3/10/69	
ENG. L.Gale	3/10/69	
PROJ ENG. L.Gale	3/10/69	
PROD. D.Ca[illegible]	3/10/69	
FIRST USED ON PDP-12		
SCALE		
SHEET 1 OF 1		

digital EQUIPMENT CORPORATION
MAYNARD, MASSACHUSETTS

TITLE: BASIC 4K MEMORY

SIZE	CODE	NUMBER	REV
A	ML	EM12-0	AD

DIST.

DEC FORM NO. DRA 103

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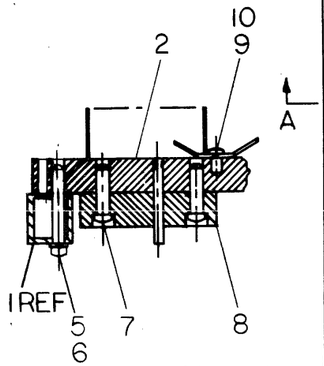
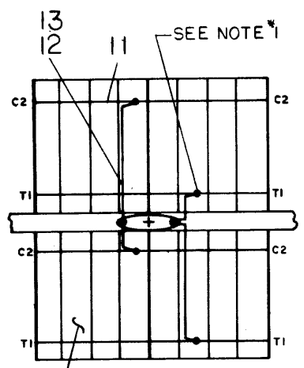
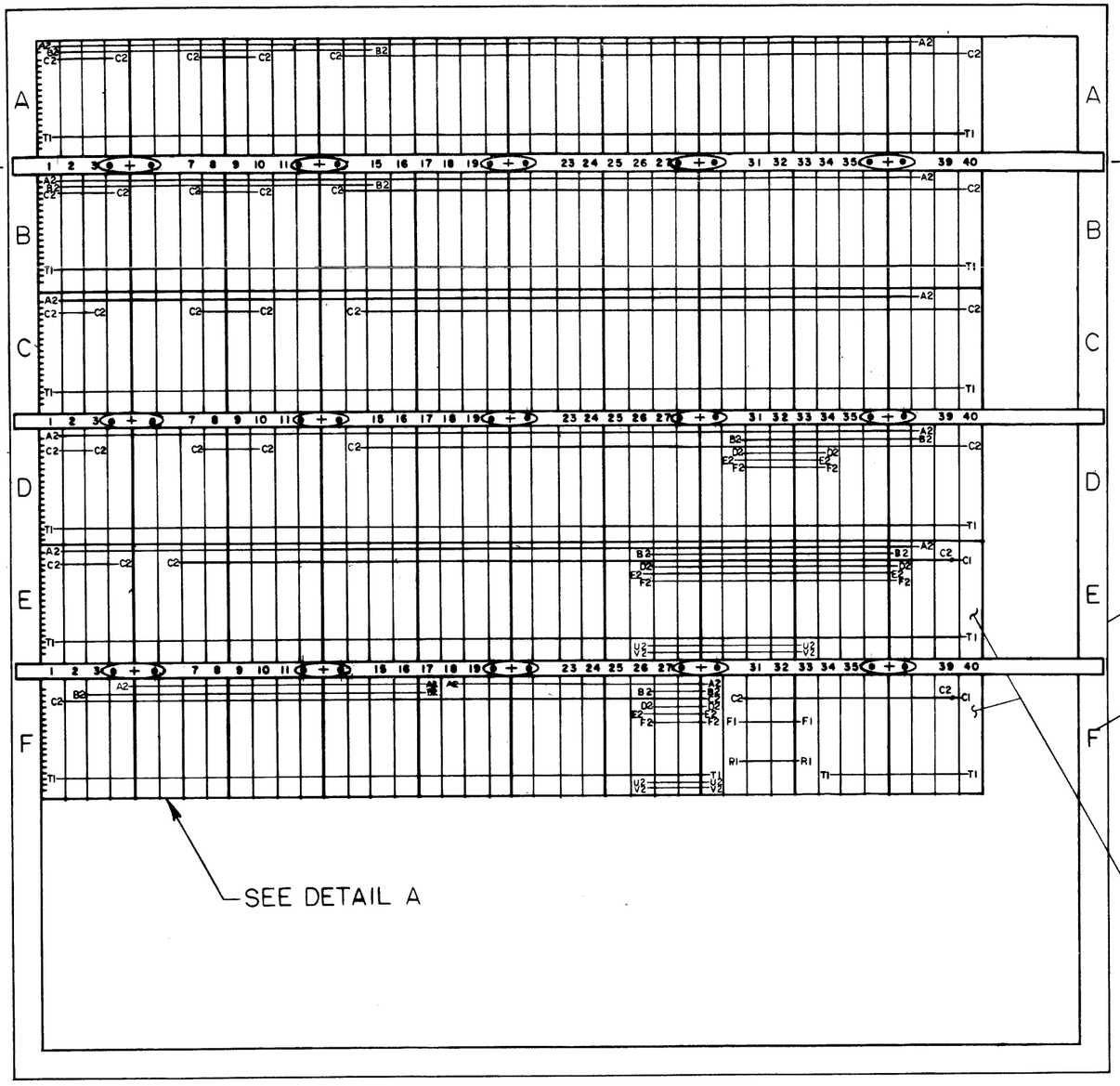


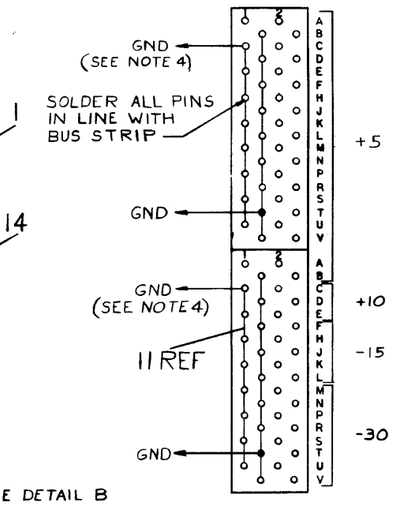
SECTION A-A
SCALE 1/1



DETAIL A
15 PLACES
SEE NOTE *2



NOTES:
1. CONNECTIONS ON ITEMS *11 & *12 TO BE SOLDERED AND LOCATED AT MINIMUM PRACTICAL HEIGHT ABOVE BOARD.
2. ALL CONN BLOCKS TO BE GROUNDED TO GND LUGS AS SHOWN.
3. USE YELLOW WIRE (ITEM *3) FOR MACHINE WRAPPED & BLUE WIRE (ITEM *4) FOR HAND WRAPPED WIRE.
4. SIDE *1 PINS OF E4Ø & F4Ø ARE GND.



E & F 4Ø
DETAIL B

REVISIONS					
CHK	CHANGE NO.	REV.			
[illegible]	12-00004	A			
Betty Welch 2-14-69					
S. ZNAMIEROWSKI					
[illegible] 9/1/69					
[illegible]	12-00006	B			
G. Paul 2/21/69					
C. CLAYTON					
R. Clayton					
[illegible]	12-00009	C			
Fred Henry 3-7-69					
ZNAMIEROWSKI					
[illegible] 3/14/69					
[illegible]	12-00010	D			
Fred Henry 3-11-69					
GALE					
G. Gonsalves 3/14/69					
[illegible]	EMI2-00001	E			
J. Mercer					
GALE					
J. Bell 4/24/69					
[illegible]	EMI2-00006	F			
I. Gallen 7-30-69					
GALE					
J. Bell 8/15/69					
[illegible]	EMI2-00008	H			
[illegible]					
L. GALE					
J. Bell 8-15-69					
[illegible]	EMI2-00018	J			
T. Quaile 11-20-69					
GALE					
G. Gonsalves 12-9-69					

FIRST USED ON OPTION MODEL: PDP12	QTY.	DESCRIPTION	PART NO. / ITEM NO.
		PARTS LIST	
UNLESS OTHERWISE SPECIFIED	DRN. B. Simonds	DATE 9/18/68	digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS
UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES TOLERANCES DECIMALS ± .005 FRACTIONS ± 1/64 ANGLES ± 0°30' FINAL SURFACE QUALITY ✓ REMOVE BURRS AND BREAK SHARP CORNERS	CHK'D. K. Ross	DATE 1-3-69	
	ENG. [illegible]	DATE 1/16/69	TITLE LOGIC FRAME ASSY (EMI2)
	PROJ. ENG. [illegible]	DATE 1-6-69	
MATERIAL	PROD. W. Call	DATE 1/16/69	
FINISH	NEXT HIGHER ASSY A-ML-EMI2-0		SIZE D CODE AD NUMBER 7005979-0-0 REV. J
	SCALE NONE		DIST.
	SHEET 1 OF 1		

DIGITAL EQUIPMENT CORPORATION
MAYNARD, MASSACHUSETTS

PARTS LIST

MADE BY A. Whalen	CHECKED	SECTION
DATE 9/18/68	DATE	1
ENG D.C. Peterson	PROD D.C. Peterson	ISSUED SECT.
DATE 10/2/69	DATE 10/2/69	1

ITEM NO.	DWG NO. / PART NO.	DESCRIPTION	QUANTITY / VARIATION
1	12 02188	VOLTAGE CHAIN	A/R
2	91 07560-1	# 22 AWG BUS WIRE	A/R
3	91 07265	# 22 TUBING, TEFLON, WHITE	A/R
4	91 07470-5	# 24 AWG SOLID TEF INS WIRE YEL	A/R
5	91 07470-10	#24 AWG SOLID TEF INS, WIRE BLU	A/R
6	A-DC-7406371-0-0	LOGIC FRAME DECALS	A/R
7	D-AD-1943-D-0	1943D MTG PANEL	1

TITLE	ASSY NO.	SIZE	CODE	NUMBER	REV.	ECO NO.
WIRED ASSY	C-AD-7005970-0-0	A	PL	7005970-0-0		
	SHEET 1 OF 1	DIST.				

DEC FORM NO.
DRA 110

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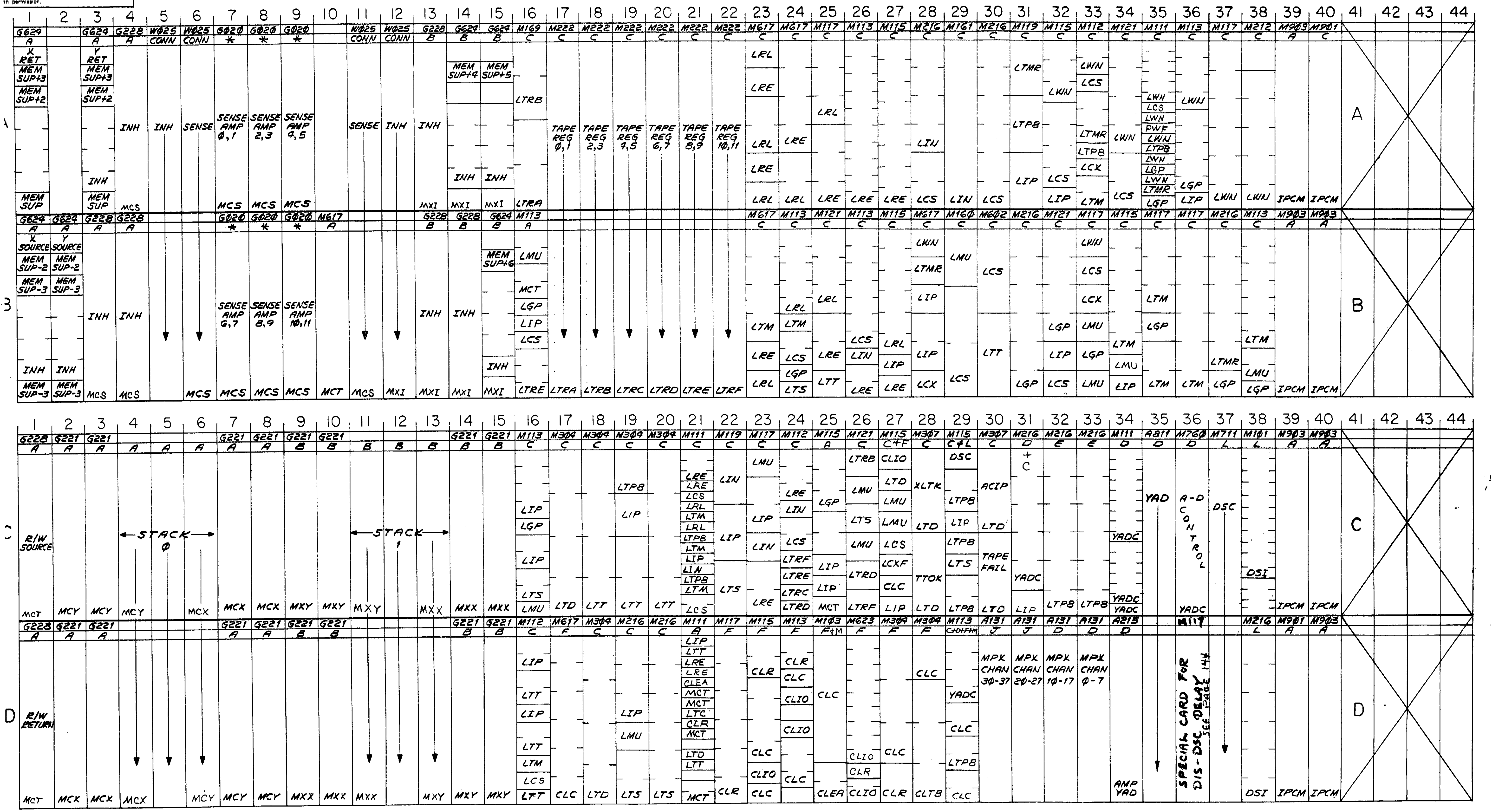

* USE GØ21 IF MC12 IS INSTALLED

A = EM12
B = MC12
C = TC12
D = AD12
E = TC12B
F = KW12 A
H = KP12
J = AM12
K = AG12
L = VC12
M = KW12 B/C

REV.	CHANGE NO.
A	00002 L.GALE
B	00005
C	EM12-00009 L.GALE
D	EM12-00009 L.GALE
E	EM12-00017 GALE
F	EM12-00022 GALE
H	EM12-00030 GALE
J	EM12-00035 GALE
K	EM12-00037 GALE
L	EM12-00040 D. MACKLIN
M	EM12-00041 D. MACKLIN

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

FIRST USED ON PDP-12

SCALE
SHEET 1 OF 1

digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS

TITLE
MODULE UTILIZATION (MEMORY)

SIZE D CODE MU NUMBER EM12-Ø-1 REV. M

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Row E

Slot	Module	Option	Signals
1	G8Ø5	A	MCT
2	G826	A	MCT
3	M217	F	CLKA
4	M217	F	CLKA, CLKB
5	WØ23	C	LTC
6	WØ32	C	TAPE HEAD CABLE
7	M217	F	CLKB
8	M216	A	MCT, MCT, LCX
9	M216	*F	CLR
10	M31Ø	A	MCT
11	M31Ø	A	MCT
12	M31Ø	A	MCT
13	M31Ø	A	MCT
14	M36Ø	A	STROBE Ø, MCT
15	M36Ø	E	STROBE 1, MCT
16	M117	C	LTC
17	M117	C	LTC, LTC, LRE, LMU, LMU
18	M216	C	LMU
19	M121	C	LTT, LTS, LTS, LMU
20	M216	C	LCX, LTS
21	M4Ø1	C	LTS
22	M121	E	C, LCXF, LIP, DSC
23	M113	E	C, LCXF, LTRF
24	M216	B	LCXF
25	M216	C	LCXF, LCX, LCX
26	A214	K	OPT PREAMPS CHAN 20-21, YADB
27	A214	K	CHAN 22-23, YADB
28	A214	K	CHAN 24-25, YADB
29	A214	K	CHAN 26-27, YADB
30	A214	E	PREAMPS CHAN 1Ø-11, YADA
31	A214	E	CHAN 12-13, YADA
32	A214	E	CHAN 14-15, YADA
33	A214	E	CHAN 16-17, YADA
34	A4Ø4	L	S& HOLD
35		E	HQ PWR SUPPLY, YAD
36	A615	L	Y AXIS
37	A615	L	X AXIS
38	M216	L	DSI
39	M7Ø1	A	IPCM
40	G78Ø	A	
41–44			

Row F

Slot	Module	Option	Signals
1			
2			
3	M7Ø3	H	PWR FAIL, PWF
4	G882	C	MARK LTR
5	G882	C	TIME LTR
6			LTR
7	G882	C	D1 LTR
8	G882	C	D2 LTR
9	G882	C	D3 LTR
10	G853	C	RES. BD LTC
11	W52Ø	C	UNIT OK LTC
12	R1Ø7	C	LTR
13	W512	C	(MARK TIME), LTR, (WRITE), LTR
14	W512	C	LTC
15	W512	C	LTC
16	W6Ø3	C	LTR, LTC
17	R3Ø3	A	AUTO RESTART, CST
18	M4Ø5	FORM **	CLTB
19	M216	F	CLC, CLR, CLIO, CLR, CLTB
20	M719	*F	CLTB, CLC, CLC, CLIO, CLC, CLEA
21	M719	F	CLTB, [illegible], CLR, CLR, CLEB
22	M719	F	CLTB, CLIO, CLR, CLR, CLR, CLEC
23	M5Ø3	F	CLEA, CLEB
24	M5Ø3	F	CLEC
25	M CABLE	***	CLEA, CLEB, CLEC
26	A214	K	OPT PREAMPS CHAN 30-31, YADB
27	A214	K	CHAN 32-33, YADB
28	A214	K	CHAN 34-35, YADB
29	A214	K	CHAN 36-37, YADB
30	G783	J	ANALOG INPUTS CHAN 3Ø-37, YADB
31	G783	J	CHAN 2Ø-27, YADB
32	G783	D	CHAN 1Ø-17, YADA
33	G783	D	CHAN Ø-7, YAD
34			YAD
35			
36			DSY
37			DSX
38	WO28	L	SCOPE CABLE, VR12, DSX
39	WO28	L	SCOPE CABLE, 5Ø5, DSX
40		A	POWER
41–44			

** USE M4Ø1 WITH KW12-B
USE M4Ø5 WITH KW12-A
OR KW12-C

A = EM12
B = MC12
C = TC12
D = AD12
E = TC128
F = KW12-A
H = KP12
J = AM12
K = AG12
L = VC12
M = KW12-B, KW12-C

* USE WØ23 WITH PINS C2-P2 JUMPERED IN SLOT E5 AND M908 WITH PINS C2-E1 JUMPERED IN SLOT F20 WHEN KW12A IS NOT INSTALLED

*** USE M870 WITH KW12B OR KW12C.

REV.	CHANGE NO.	CHK
A	JOOC...	
B	EM12-00009	
C	EM12-0001..	
D	EM12-00035	
E	EM12-00037	
F	EM1200039	
H	EM12-000040	
J	EM12-000..	
K	EM12-00044	

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. DATE 11-2-68
CHKD. DATE 2/27/69
ENG. DATE
PROJ. ENG. DATE
PROD. DATE 2/28/69

FIRST USED ON PDP-12

SCALE
SHEET 1 OF 1

digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS

TITLE MODULE UTILIZATION (MEMORY)

SIZE D CODE MU NUMBER EM12-Ø-2 REV K

DIST.

DEC FORM NO. DI 105

DIGITAL EQUIPMENT CORPORATION
MAYNARD, MASSACHUSETTS

PARTS LIST

MADE BY R. COOK	CHECKED J. FLEMING	SECTION
DATE 3/27/69	DATE 4/1/69	
ENG L. Hale	PROD W Cull	ISSUED SECT.
DATE 5/6/69	DATE 5/6/69	

ITEM NO.	DWG NO./PART NO.	DESCRIPTION	QUANTITY/VARIATION											
			EM12	MC12	TC12	AD12	TC12-F	KW12-A	KP12	AM12	AG12	VC12	KW12-B	KW12-C
	G624	RISISTOR BOARD	4	3										
	G228	INHIBIT DRIVER	5	3										
	G020	SENSE AMP	6		6	6	6		6	6	6	6		
	G021	SENSE AMP		6										
	M169	GATING MODULE			1									
	M222	TAPE REGISTER			6									
	M617	FOUR-INPUT POWER NAND GATE			4			1						
	M113	NAND GATE			7	1		2					1	1
	M115	NAND GATE			7			1				1		
	M216	SIx FLIP FLOPS			6	1	2					1		
	M161	BINARY TO OCTAL/DECIMAL DECODER			1									
	M119	NAND GATE			2									
	M112	NOR GATE			3									
	M121	AND/NOR GATE			4									
	M111	INVERTER	1		2	1								
	M212	SHIFT REGISTER			1									
	M160	AND/NOR GATE			1									
	M602	PULSE AMPLIFIER			1									
	M117	NAND GATE			6			1				1		
	G221	MEMORY SELECTOR	8	8										

TITLE	ASSY NO.	SIZE	CODE	NUMBER	REV	ECO NO.
MODULE COUNT	D-MU-EM12-0-1	A	PL	EM12-0-1	M	EM12-0004
	SHEET 1 OF 2	DIST.				

DEC FORM NO.
DRA 110

DIGITAL EQUIPMENT CORPORATION
MAYNARD, MASSACHUSETTS

PARTS LIST

MADE BY R. COOK	CHECKED J. FLEMING	SECTION
DATE 3/27/69	DATE 4/1/69	
ENG L. Gale	PROD D Cutt	ISSUED SECT.
DATE 5/6/69	DATE 5/6/69	

ITEM NO.	DWG NO./PART NO.	DESCRIPTION	EM12	MC12	TC12	AD12	TC12-F	KW12-A	KP12	AM12	AG12	VC12	KW12-B	KW12-C
	M304	PULSE AMPLIFIER			5			2						
	M307	ONE SHOT			2									
	A811	A-D CONVERTER				1								
	M760	A-D CONTROL				1								
	M711	DISPLAY CONTROL										1		
	M101	BUS DATA INTERFACE										1		
	M103	DEVICE SELECTOR						1					1	1
	M623	BUS DRIVER						1						
	A131	MULTIPLEXER				2				2				
	A215	ANALOG BUFFER				1								

QUANTITY/VARIATION

TITLE	ASSY NO.	SIZE	CODE	NUMBER	REV.	ECO NO.
MODULE COUNT	D-MU-EM12-0-1	A	PL	EM12-0-1	M	
	SHEET 2 OF 2	DIST.				

DEC FORM NO.
DRA 110

DIGITAL EQUIPMENT CORPORATION
MAYNARD, MASSACHUSETTS

PARTS LIST

MADE BY R. COOK	CHECKED J. FLEMING	SECTION
DATE 3/27/69	DATE 4/1/69	
ENG L. Gale	PROD D Daff	ISSUED SECT.
DATE 5/6/69	DATE 5/6/69	

ITEM NO.	DWG NO./PART NO.	DESCRIPTION	QUANTITY/VARIATION											
			EM12	MC12	TC12	AD12	TC12-F	KW12-A	KP12	AM12	AG12	VC12	KW12-C	KW12-B
	G805	NEGATIVE REGULATOR	1											
	G826	REGULATOR CONTROL	1											
	M217	CLOCK COUNTER BUFFER						3						
	M216	SIx FLIP FLOP	1	1	3			2				1		
	M310	DELAY LINE	4											
	M360	VARIABLE DELAY	1	1										
	M117	NAND GATE			2									
	M121	AND/NOR GATE		1	1									
	M401	VARIABLE CLOCK			1									
	M113	NAND GATE		1										
	A214	AMPLIFIER				4					8			
	A404	SAMPLE & HOLD				1								
	A615	D-A										2		
	G780	CONTROL FOR 739 POWER SUPPLY	1											
	M703	POWER FAIL							1					
	G882	MANCHESTER READER WRITER			5									
	G853	MOTION & SELECTION CIRCUIT			1									
	W520	COMPARATOR			1									
	R107	INVERTER			1									
	W512	POSITIVE LEVEL CONVERTER			3									
	W603	PULSE LEVEL AMPLIFIER			1									
	R303	INTERGRATING ONE SHOT	1											

TITLE	ASSY NO.	SIZE	CODE	NUMBER	REV	ECO NO.
MODULE COUNT	D-MU-EM12-0-2	A	PL	EM12-0-2	K	EM12-00044
	SHEET 1 OF 2	DIST.				

DEC FORM NO.
DRA 110

DIGITAL EQUIPMENT CORPORATION
MAYNARD, MASSACHUSETTS

PARTS LIST

MADE BY R. COOK	CHECKED J. FLEMING	SECTION
DATE 3/27/69	DATE 4/1/69	
ENG DATE 5/6/69	PROD DATE 5/6/69	ISSUED SECT.

ITEM NO.	DWG NO./PART NO.	DESCRIPTION	EM12	MC12	TC12	AD12	TC12-F	KW12-A	KP12	AM12	AG12	VC12	KW12-C	KW12-B
	M405	CRYSTAL CLOCK						1					1	
	M719	SUPER CLOCK SYNCRONIZER						3						
	M503	SCHMIDT TRIG & PA						2						
	~~G783~~	~~CABLE CONNECTOR~~				~~2~~				~~2~~				
	M870	SIMPLE CLOCK											1	1
	M401	VARIABLE CLOCK												1

TITLE	ASSY NO.	SIZE	CODE	NUMBER	REV	ECO NO.
MODULE COUNT	D-MU-EM12-0-2	A	PL	EM12-0-2	K	
	SHEET 2 OF 2	DIST.				

DEC FORM NO.
DRA 110

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SIGNAL NAME	FROM PIN	TO PIN	COLOR	REMARKS
Ground	F4ØV1	F28T1	Black	
	F4ØU1	F28C2		
	F40T1	FØ1C2		
	F4ØS1	F34C2		
	F4ØR1	FØ1T1		
	F4ØP1	F39C2		
	F4ØN1	EØ1C2		
	F4ØM1	EØ6C2		Wire is #24
	F4ØL1	EØ1T1		A.W.G.
	F4ØK1	E39C2		
	F4ØJ1	DØ1TI		
	F4ØH1	DOIC2		
	F4ØF1	DIØC2		
	F4ØE1	DI4C2		
	F4ØD1	D4ØTI		
	F4ØC1	D4ØC2		
	F4ØB1	CØITI		
	E4ØV1	CØ1C2		
	E4ØU1	C1ØC2		
	E4ØT1	C14C2		
	E4ØS1	C4ØT1		
	E4ØR1	C4ØC2		
	E4ØP1	BØITI		
	E4ØN1	BØ1C2		
	E4ØM1	B1ØC2		
	E4ØL1	B13C2		

REVISIONS			
REV.	DATE	CHG. NO.	APP'D.
A	4/69	00001	
B	11-20-69	EM12-00018	

DRN.		DATE 3/10/69
CHK'D.		DATE 3/10/69
ENG.		DATE 3/11/69
PROJ. ENG.		DATE 3/11/69
PROD.		DATE 3/11/69
FIRST USED ON		
SCALE		
SHEET 1	OF 3	

digital EQUIPMENT CORPORATION
MAYNARD, MASSACHUSETTS

TITLE
GENERAL WIRING SHEET
FOR DC Power Memory Logic

SIZE	CODE	NUMBER	REV.
A	WL	EM12-0-4	B

DIST.

DEC FORM NO.
DRA 104

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SIGNAL NAME	FROM PIN	TO PIN	COLOR	REMARKS
Ground	E4ØK1	B4ØT1	Black	
	E4ØJ1	B4ØC2		
	E4ØH1	A01T1		
	E4ØE1	AØ1C2		
	E4ØD1	A1ØC2		
	E4ØC1	A13C2		Wire is #24
	E4ØB1	A4ØT1		A. W. G.
	E4ØD1	A4ØC2		
	E4ØF1	B19C2		
	E4ØH1	A19C2		
	F4ØV1	EØ1P2		
	F4ØU1	FØ1L2		
+5V	F4ØA2	FØ2A2	RED	
	E4ØV2	E38A2		
	E40U2	EØ1A2		
	E4ØT2	D38A2		
	E40S2	DØ1A2		
	E4ØR2	C38A2		
	E4ØP2	CØ1A2		
	E4ØN2	B38A2		
	E4ØM2	BØ1A2		
	E4ØL2	A38A2		
	E4ØK2	A01A2		
	E4ØJ2	B19A2		
	E4ØH2	A19A2		
	F4ØB2	F29A2		

REVISIONS			
REV.	DATE	CHG. NO.	APP'D.

DRN.		DATE 3/10/69
CHK'D.		DATE 3/10/69
ENG.		DATE 3/11/69
PROJ. ENG.		DATE 3/11/69
PROD.		DATE 3/11/69
FIRST USED ON		
SCALE		
SHEET 2	OF 3	

digital EQUIPMENT CORPORATION
MAYNARD, MASSACHUSETTS

TITLE
GENERAL WIRING SHEET
FOR DC POWER Memory Logic

SIZE	CODE	NUMBER	REV.
A	WL	EM12-0-4	B

DIST.

DEC FORM NO.
DRA 104

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SIGNAL NAME	FROM PIN	TO PIN	COLOR	REMARKS
+10V	F4ØD2	F17A2	Green	
-15V	F4ØL2	F29B2	Blue	
	F4ØK2	FØ2B2		
	F4ØJ2	E37B2		
	F4ØH2	D33B2		Wire is #24
	F40F2	A01B2		A. W. G.
	F4Ø[illegible]2	[illegible]ØlB2		
-30V	F4ØN2	F4ØP2	Yellow	
	F4ØM2	F4ØN2		
	F4ØP2	EØlE2		
	F4ØR2	F4ØS2		
	F4ØS2	E01F2		
	E4042	E4ØV2		
	F4ØT2	F4Ø42		
	F4ØV2	EØlH2		
+5V	E4ØF2	C19A2		
	E4ØE2	D19A2		
MCT X R/W SOURCE	CØIK1	CØ7T2	GREEN	
MCT Y R/W SOURCE	CØIS1	CØ2T2	GREEN	

REVISIONS			
REV.	DATE	CHG. NO.	APP'D.

DRN.		DATE 3/10/69
CHK'D.		DATE 3/10/69
ENG.		DATE 3/11/69
PROJ. ENG.		DATE 3/11/69
PROD.		DATE 3/11/69
FIRST USED ON		
SCALE		
SHEET 3	OF 3	

digital EQUIPMENT CORPORATION
MAYNARD, MASSACHUSETTS

TITLE
GENERAL WIRING SHEET
FOR DC ~~POWER~~ MEMORY Logic

SIZE	CODE	NUMBER	REV.
A	WL	EM12-0-4	B

DIST.

DEC FORM NO.
DRA 104

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M901 A40

A1	LIP PROGRESS (1)H
B1	LTR WRITE ON L
C1	LIP TAPE PAUSE H
D1	LIP TAPE BRK REQ (0)H
E1	LIP TAPE INTERRUPT L
F1	LIP MSC TAC TO AC H
H1	LTP8 BLOCK (1)H
J1	LTP8 WORD H
K1	LIP TAPE BRK REQ (1)H
L1	LCS TURN ARND (1)L
M1	LIP PROGRESS (0)H
N1	LIP TAPE OUT H
P1	LTR MARK ON L
R1	LWN IM H
S1	LIP CHK SUM TO AC L
T1	GND
U1	LIP CHK SUM LD AC L
V1	GND

M903 B40

B1	MCS MEM 00 H
E1	MCS MEM 01 H
H1	MCS MEM 02 H
J1	MCS MEM 03 H
L1	MCS MEM 04 H
M1	MCS MEM 05 H
P1	MCS MEM 06 H
S1	MCS MEM 07 H
V1	MCS MEM 08 H

M903 C40

B1	PRB MB 03 (0)H
D1	PRB MB 03 (1)H
E1	PRC MB 04 (0)H
H1	PRC MB 04 (1)H
J1	PRC MB 05 (0)H
L1	PRC MB 05 (1)H
M1	PRD MB 06 (0)H
P1	PRD MB 06 (1)H
S1	PRD MB 07 (0)H

M903 D40

B1	PRA MA 00 (0)H
D1	PRA MA 00 (1)H
E1	PRA MA 01 (1)H
H1	PRB MA 02 (1)H
J1	PRB MA 03 (0)H
L1	PRB MA 03 (1)H
M1	PRC MA 04 (1)H
P1	PRC MA 05 (1)H
S1	PRD MA 06 (0)H

M903 A39

B1	INT IO BUS 00 L
D1	INT IO BUS 01 L
E1	INT IO BUS 02 L
H1	INT IO BUS 03 L
J1	INT IO BUS 04 L
L1	INT IO BUS 05 L
M1	INT IO BUS 06 L
P1	INT IO BUS 07 L
S1	INT IO BUS 08 L

M901 E39

A1	PWF PWR LOW (0)H
B1	CST SET AUTO L
C1	PRD AC 07 (0)H
D1	PRE AC 08 (0)H
E1	PRE AC 09 (0)H
F1	CPT TS RECYCLE (0)H
H1	CST AUTO DEL L
J1	INR IR 07 B (0)H
K1	INR IR 07 B (1)H
L1	INR IR 09 (1)H
M1	INR IR 10 (1)H
N1	INR IR 11 (1)H
P1	INS N EQ 01 H
R1	INS N EQ 03 H
S1	CST D0 (1)H
T1	GND
U1	DSC SIZE (0)H
V1	PWF RESTART L

M901 A40

B2	SLA EX TS4 H
D2	LTRA TAPE BUS 00 H
E2	LTRA TAPE BUS 01 H
F2	LTRB TAPE BUS 02 H
H2	LTRB TAPE BUS 03 H
J2	LTRC TAPE BUS 04 H
K2	LTRC TAPE BUS 05 H
L2	LTRD TAPE BUS 06 H
M2	LTRD TAPE BUS 07 H
N2	LTRE TAPE BUS 08 H
P2	LTRE TAPE BUS 09 H
R2	LTRF TAPE BUS 10 H
S2	LTRF TAPE BUS 11 H
T2	LIP TAPE BUS TO AC L
U2	GND
V2	LIP TAPE SKIP L

M903 B40

C2	MCS MEM 09 H
E2	MCS MEM 10 H
H2	MCS MEM 11 H
K2	PRA MB 00 (0)H
M2	PRA MB 00 (1)H
P2	PRA MB 01 (0)H
S2	PRA MB 01 (1)H
T2	PRB MB 02 (0)H
V2	PRB MB 02 (1)H

M903 C40

D2	PRD MB 07 (1)H
E2	PRE MB 08 (0)H
H2	PRE MB 08 (1)H
K2	PRE MB 09 (0)H
M2	PRE MB 09 (1)H
P2	PRF MB 10 (0)H
S2	PRF MB 10 (1)H
T2	PRF MB 11 (0)H
V2	PRF MB 11 (1)H

M903 D40

D2	PRD MA 06 (1)H
E2	PRD MA 07 (1)H
H2	PRE MA 08 (1)H
K2	PRE MA 09 (0)H
M2	PRE MA 09 (1)H
P2	PRF MA 10 (1)H
S2	PRF MA 11 (1)H
T2	MCT STROBE L
V2	MCT MEM DONE L

M903 A39

D2	INT IO BUS 09 L
E2	INT IO BUS 10 L
H2	INT IO BUS 11 L
K2	INT SKIP BUS L
M2	INT AC CLEAR BUS L
P2	DSC Z DRIVER
S2	MXF EA 2 H
T2	IOC IO STROBE L
V2	INS SAM H

M901 E39

A2	INT INT RQST BUS L
B2	DSC 503 INTEN L
D2	LCS IDLE (1)L
E2	LCS SEARCH (1)L
F2	LCS BLOCK (1)L
H2	LCX NO PAUSE (1)L
J2	LCX EX ADD FORMAT (1)L
K2	LCS CHK WRD (1)L
L2	MCT PWR STOP L
M2	LIN TINR 11 (1)L
N2	LIN TINR 10 (1)L
P2	LIN TINR 09 (1)L
R2	LCX MARK (1)L
S2	INS MTP H
T2	INS B MSC H
U2	CSI KEY MARK L
V2	LIP TAPE WORD (1)H

M903 B39

B1	CPTP START MEMORY H
D1	IOC IO PRESET L
E1	CPTP TP2 H
H1	CPTP TP5D H
J1	CPTP TP4 H
L1	CPTP TP5 H
M1	IOC IOP 1 L
P1	IOC IOP 2 L
S1	IOC IOP 4 L

M903 B39

D2	MCT PWR CLR L
E2	CPT TS2 (1)H
H2	CPT TS3 (1)H
K2	CPT TS4 (1)H
M2	CPT TS5 B (1)H
P2	CPS EXECUTE B (1)H
S2	CPS FETCH B (1)H
T2	CST IO PRESET H
V2	PWF PWR SKIP L

M903 C39

B1	PRA AC 00 (1)H
D1	PRA AC 01 (1)H
E1	PRB AC 02 (1)H
H1	PRB AC 03 (1)H
J1	PRC AC 04 (0)H
L1	PRC AC 04 (1)H
M1	PRC AC 05 (1)H
P1	PRD AC 06 (1)H
S1	PRD AC 07 (1)H

M903 C39

D2	PRE AC 08 (1)H
E2	PRE AC 09 (1)H
H2	PRF AC 10 (0)H
K2	PRF AC 10 (1)H
M2	PRF AC 11 (0)H
P2	PRF AC 11 (1)H
S2	RCL LOAD MSC 4 H
T2	PRB AC 03 (0)H
V2	LIP TAPE BRK REQ (0)H

M901 D39

B1	YAD AD 02 (1)H
C1	YADC AD 03 (0)H
D1	YADC AD 04 (0)H
E1	YADC AD 05 (0)H
F1	YADC AD 06 (0)H
H1	YADC AD 07 (0)H
J1	YADC AD 08 (0)H
K1	YADC AD 09 (0)H
L1	YADC AD 10 (0)H
M1	YADC AD 11 (0)H
N1	CPT (DIS+DSC) H
P1	SLA (DSC+EXECUTE 2) L
R1	INS DIS L
S1	INS DSC L
T1	CPR RUN (1)H
U1	GND
V1	DSC BUSY H
	YADC A-D RECYCLE L

M901 D39

B2	MXF EA (0)L
C2	MXF EA (1)L
D2	MXF DF 00 (1)H
E2	MXR DF 01 (1)H
F2	MXR DF 02 (1)H
H2	MPG DF 03 (1)H
J2	MPG DF 04 (1)H
K2	MXR IF 00 (1)H
L2	MXR IF 01 (1)H
M2	MXR IF 02 (1)H
N2	MPG TF 03 (1)H
P2	MPG TF 04 (1)H
R2	INR IR 08 (1)H
S2	YADC FAST SAM (1)H
T2	LCX TF 00 (1)H
U2	LCX TF 01 (1)H
V2	LCX TF 02 (1)H

REVISIONS			REVISIONS		
CHK	CHANGE NO.	REV.	CHK	CHANGE NO.	REV.
	EM12-00002	A	NR	EM12-00015	E
	J FASSHAUSER 4-15-69			ADS	
	L GALE 4-29-69			J SCANLAN	
	EM12-00002	B		EM12-00017	F
	A WASHINGTON 6-15-69			ADS	
	L GALE				
	EM12-00004	C		EM12-00044	H
	B KORTLANG 9-12-69				
	L GALE 9-12-69				
NR	EM12-00007	D			
	B KORTLANG 9-26-69				
	L GALE 9-26-69				

DRN. D.L.SHEPARD	DATE 3-9-69	digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS
CHK'D J.K.BISONETE	DATE 3-9-69	TITLE: INTER PROC CABLES
ENG. L.GALE	DATE 3-9-69	
PROJ. ENG. L.GALE	DATE 3-9-69	
PROD. D.CALL	DATE 3-9-69	
FIRST USED ON: EM12		SIZE D | CODE 85 | NUMBER EM12-0-IPCM | REV. H
SCALE		
SHEET 1 OF 1		DIST.

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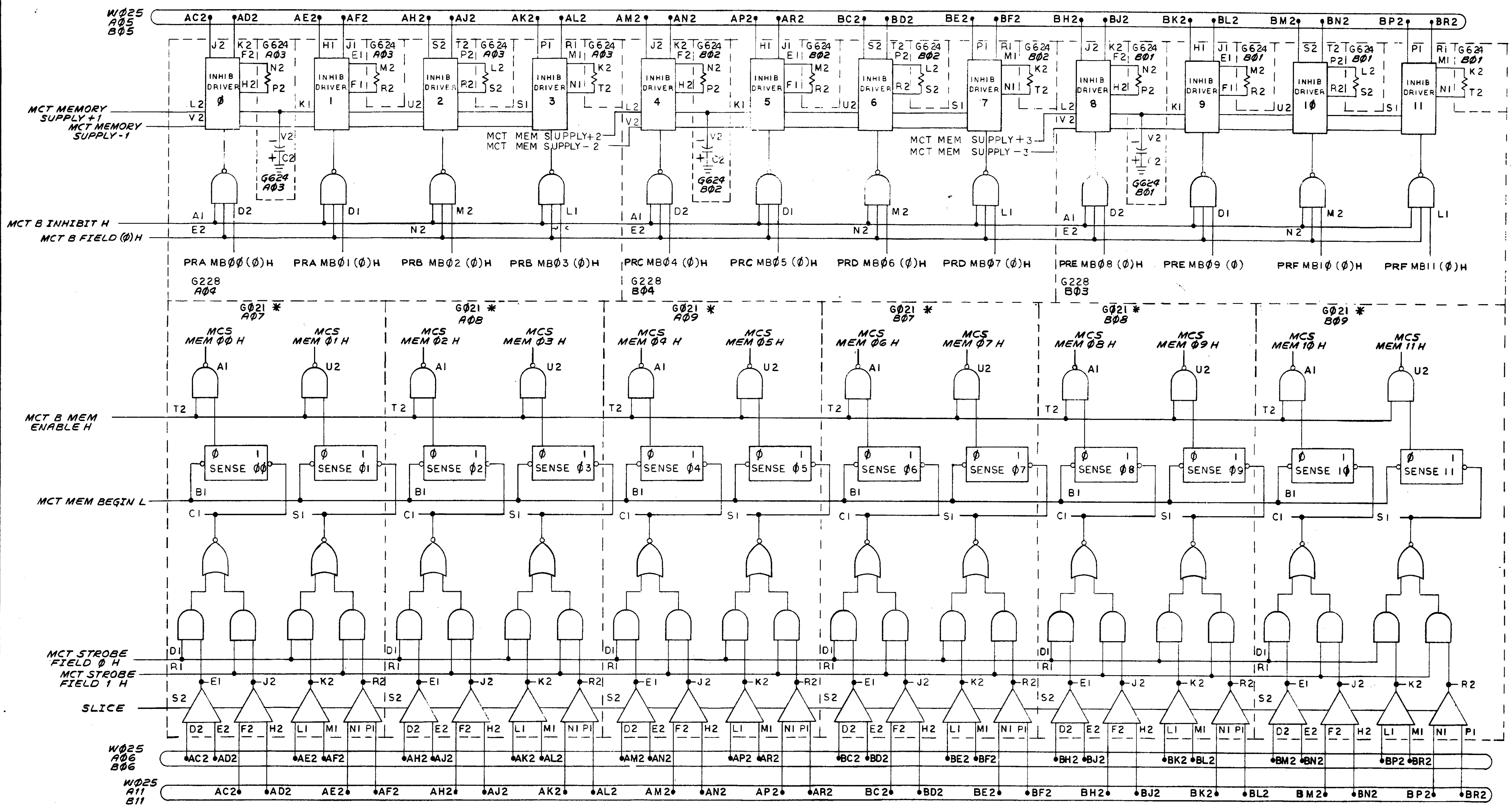

WØ25 AØ5 BØ5
MCT MEMORY SUPPLY +1
MCT MEMORY SUPPLY -1
INHIB DRIVER Ø
INHIB DRIVER 1
INHIB DRIVER 2
INHIB DRIVER 3
INHIB DRIVER 4
INHIB DRIVER 5
INHIB DRIVER 6
INHIB DRIVER 7
INHIB DRIVER 8
INHIB DRIVER 9
INHIB DRIVER 1Ø
INHIB DRIVER 11
G624 AØ3
G624 BØ2
G624 BØ1
MCT MEM SUPPLY+2
MCT MEM SUPPLY-2
MCT MEM SUPPLY+3
MCT MEM SUPPLY-3
MCT B INHIBIT H
MCT B FIELD (Ø) H
PRA MBØØ (Ø)H
PRA MBØ1 (Ø)H
PRB MBØ2 (Ø)H
PRB MBØ3 (Ø)H
PRC MBØ4 (Ø)H
PRC MBØ5 (Ø)H
PRD MBØ6 (Ø)H
PRD MBØ7 (Ø)H
PRE MBØ8 (Ø)H
PRE MBØ9 (Ø)
PRF MB1Ø (Ø)H
PRF MB11 (Ø)H
G228 AØ4
G228 BØ4
G228 BØ3
GØ21 * AØ7
GØ21 * AØ8
GØ21 * AØ9
GØ21 * BØ7
GØ21 * BØ8
GØ21 * BØ9
MCS MEM ØØ H
MCS MEM Ø1 H
MCS MEM Ø2 H
MCS MEM Ø3 H
MCS MEM Ø4 H
MCS MEM Ø5 H
MCS MEM Ø6 H
MCS MEM Ø7 H
MCS MEM Ø8 H
MCS MEM Ø9 H
MCS MEM 1Ø H
MCS MEM 11 H
MCT B MEM ENABLE H
SENSE ØØ
SENSE Ø1
SENSE Ø2
SENSE Ø3
SENSE Ø4
SENSE Ø5
SENSE Ø6
SENSE Ø7
SENSE Ø8
SENSE Ø9
SENSE 1Ø
SENSE 11
MCT MEM BEGIN L
MCT STROBE FIELD Ø H
MCT STROBE FIELD 1 H
SLICE
WØ25 AØ6 BØ6
WØ25 A11 B11

✱ USE GØ2Ø ONLY IF MC12 IS NOT INSTALLED

REV	CHANGE NO.	CHK
A	EM12-00003	

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: Joe Agnes — DATE 1-17-68
CHK'D — DATE 2/27/69
ENG — DATE 2-28-69
PROJ ENG — DATE 2-28-69
PROD — DATE
FIRST USED ON: EM12
SCALE
SHEET 1 OF 1

digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS

TITLE: MCS SENSE AMPS & INHIBIT DRIVERS

SIZE D CODE BS NUMBER EM12-Ø-MCS REV. A

DEC FORM NO DRD 102

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MCT B MEM ENABLE H
+3V B1ØV1 H
MCT B FIELD (Ø)H
MCT B FIELD (1)H
MCT B INHIBIT H
M216 EØ8
MCT MEM BEGIN L
MCT MEM ENABLE
MCT FIELD
MCT READ
MCT INHIBIT
MCT WRITE
CST IO PRESET L
+3V B1ØU1 L
CPTP START MEMORY H
MXF EA 2 H
M36Ø E14
MCT MEM DONE L
M31Ø E1Ø
M31Ø E11
M31Ø E12
M31Ø E13
MCT MEM FINISH H
-MXF EA Ø H
-MXF EA 1 H
MCT FIELD (Ø) H
MCT STROBE FIELD Ø H
MCT FIELD (1) H
MCT STROBE FIELD 1 H
M36Ø * E15
MCT STROBE L
PWF STOP OK H
-MCT POWER OK H
MCT PWR STOP L
G629 AØ3
G624 AØ1
G624 BØ2
G625 BØ1
G826 E2 F2
-MCT POWER OK H
-MCT POWER CLEAR H
MCT MEMORY SUPPLY +Ø
MCT MEMORY SUPPLY -Ø
MCT NEG CLAMP H
W Ø25 BØ5
REGULATOR AND POWER DETECTOR
THERMISTOR
PWF STOP OK H
-MCT SHUTDOWN H
G5Ø5 EØ1 FØ1
MCT X R/W SOURCE
MCT Y R/W SOURCE
MCT X R/W RETURN
MCT Y R/W RETURN
G228 DØ1
G228 CØ1
+3V B1ØU1H
MCT READ(1) H
MCT WRITE(1) H
* USE ONLY IF MC12 IS INSTALLED

REVISIONS	REV.	CHANGE NO.	CHK
T. Quillin	A	00002	
L. GALE	B	EM12-00004	
T. Quillin	C	EM12-00017	
L. GALE			

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

		DATE
DRN		2-13-69
CHKD		2/27/69
ENG		2-28-69
PROJ ENG		2-28-69
PROB		4/9/69

FIRST USED ON EM12
SCALE
SHEET / OF /

digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS

TITLE
MCT MEMORY CONTROL

SIZE D | CODE 85 | NUMBER EM12-Ø-MCT | REV C | DIST.

DEC FORM NO. D 102A

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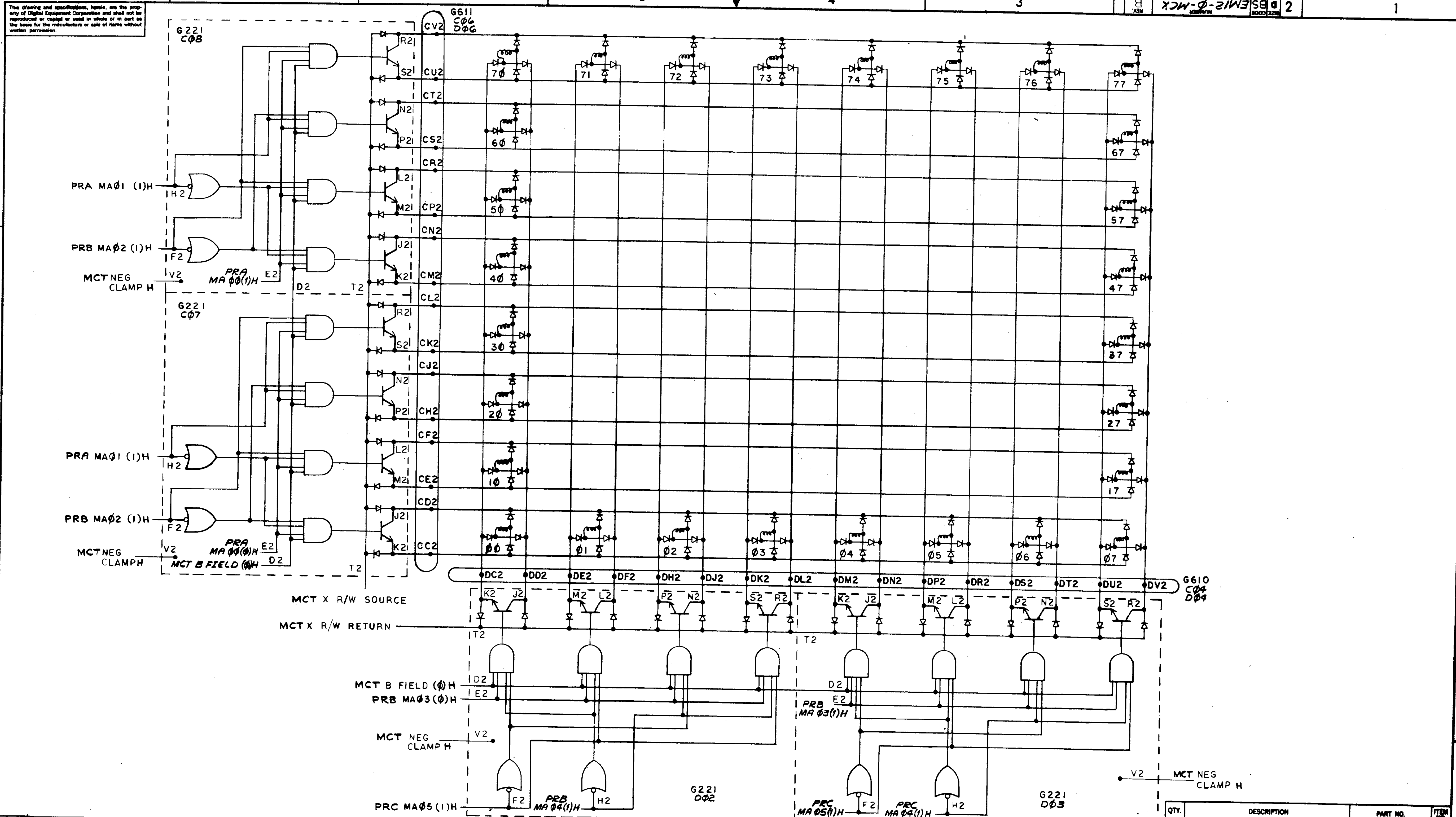

REV.	CHANGE NO.	CHK.
A	EM12-00015	L. GALE
B	EM12-00030	GALE

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. DATE 1-28-69
CHK'D DATE 2/27/69
ENG. DATE 2-28-69
PROJ. ENG. DATE 2-28-69
PROD. DATE 2/2/69

digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS

TITLE
MCX X AXIS SELECTION

FIRST USED ON EM12

SIZE D CODE BS NUMBER EM12-Ø-MCX REV. B

SCALE
SHEET 1 OF 1
DIST.

DEC FORM NO DRD 102

D BS EM12-Ø-MCY E

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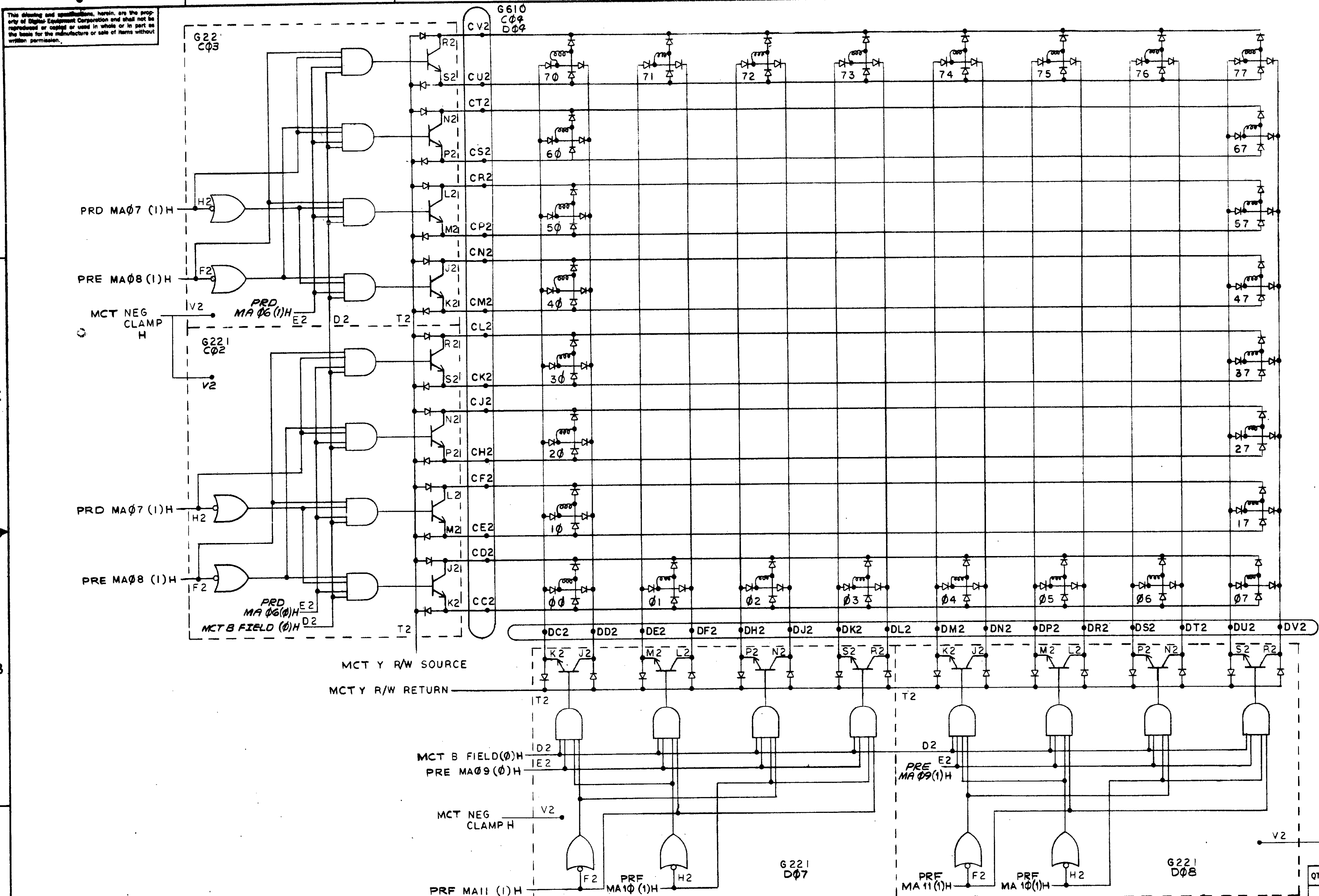

QTY.	DESCRIPTION	PART NO.	ITEM NO.

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 [signature] DATE 1-20-69
CHKD [signature] DATE 2/27/69
ENG [signature] DATE 2-28-69
PROJ. ENG. [signature] DATE 2-28-69
PROD. [signature] DATE 3/24/69

FIRST USED ON EM12

digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS

TITLE
MCY
Y AXIS SELECTION

SIZE D CODE BS NUMBER EM12-Ø-MCY REV. B

SCALE

SHEET OF

DIST.

REVISIONS			
CHK	CHANGE NO.	REV.	
	EM12-00015	A	L. GALE 1/1/69
FU	EM12-00030	B	T. Quellen 2-2-70 GALE 3-4-70

DEC FORM NO DRD 102

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Orig. Lost
Retyped 10/6/70

MASTER DRAWING LIST

DWG. NO.	REV. LET.	NO. OF SHEETS	TITLE
D-MU-EP12-0-1	REF		MODULE UTILIZATION PROC
D-MU-EP12-0-2	REF		MODULE UTILIZATION PROC
D-MU-EM12-0-1	REF		MODULE UTILIZATION (MEMORY)
D-MU-EM12-0-2	REF		MODULE UTILIZATION (MEMORY)
K-WL-EM12-0-3	REF		WIRE LIST
K-WL-EP12-0-3	REF		WIRE LIST
D-BS-MC12-0-MXB	D	1	MEM EXTN BUFFER
D-BS-MC12-0-MXF	L	1	MEM EXTN FIELD
D-BS-MC12-0-MXI	A	1	MXI INHIBIT DRIVERS
D-BS-MC12-0-MXR	D	1	MEM EXTN REGISTERS
D-BS-MC12-0-MXX	B	1	X-AXIS SELECTION
D-BS-MC12-0-MXY	B	1	Y-AXIS SELECTION
A-PL-EP12-0-1	REF		MODULE UTILIZATION PROC PL
A-PL-EP12-0-2	REF		MODULE UTILIZATION PROC PL
A-PL-EM12-0-1	REF		MODULE UTILIZATION MEM PL
A-PL-EM12-0-2	REF		MODULE UTILIZATION MEM PL

REVISIONS

REV.	DATE	CHG. NO.	APP'D.
A	3/18/69	EP12-1	J.S.
B	4/18/69	EP12-2	J.S.
C	5/21/69	EP12-3	L.G.
D	6/5/69	EP12-4	L.G.
E	6/11/69	EM12-3	L.G.
F	6/69	EP12-6	L.G.
H	7/69	EP12-7	L.G.
J	7/69	EP12-9	L.G.
K	9/69	EM12-15	L.G.
L	2/70	EM12-30	L.G.
M	5/70	EP12-21	L.G.
N	7/70	EP12-26	L.G.
P	10/70	EP12-30	L.G.

DRN. J. Aprea	DATE 3/7/69	digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS
CHK'D. R.Hutnak	DATE 3/7/69	
ENG. L. Gale	DATE 3/10/69	
PROJ. ENG. L. Gale	DATE 3/10/69	
PROD. D. Call	DATE 3/10/69	
FIRST USED ON PDP-12		
SCALE		
SHEET 1 OF 1		

TITLE: MEMORY EXTENSION CONTROL

SIZE	CODE	NUMBER	REV.
A	ML	MC12-0	P

DIST.

DEC FORM NO.
DRA 103

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PRA MA Ø0 (1)L — M617 M22 — E1 MXB BMA Ø0 (1)H
PRA MA Ø1 (1)L — M617 M22 — L1 MXB BMA Ø1 (1)H
PRB MA Ø2 (1)L — M617 M22 — S1 MXB BMA Ø2 (1)H
PRB MA Ø3 (1)L — M617 M22 — J2 MXB BMA Ø3 (1)H
PRC MA Ø4 (1)L — M617 M22 — P2 MXB BMA Ø4 (1)H
PRC MA Ø5 (1)L, +3V M22U1 H — M617 M22 — V2 MXB BMA Ø5 (1)H

PRD MA Ø6 (1)L — M617 M23 — E1 MXB BMA Ø6 (1)H
PRD MA Ø7 (1)L — M617 M23 — L1 MXB BMA Ø7 (1)H
PRE MA Ø8 (1)L — M617 M23 — S1 MXB BMA Ø8 (1)H
PRE MA Ø9 (1)L — M617 M23 — J2 MXB BMA Ø9 (1)H
PRF MA 1Ø (1)L — M617 M23 — P2 MXB BMA 1Ø (1)H
PRF MA 11 (1)L, +3V M23U1 H — M617 M23 — V2 MXB BMA 11 (1)H

PRA MB Ø0 (Ø)L — M617 M24 — E1 MXB MCBMB Ø0 (Ø)H
PRA MB Ø1 (Ø)L — M617 M24 — L1 MXB MCBMB Ø1 (Ø)H
PRB MB Ø2 (Ø)L — M617 M24 — S1 MXB MCBMB Ø2 (Ø)H
PRB MB Ø3 (Ø)L — M617 M24 — J2 MXB MCBMB Ø3 (Ø)H
PRC MB Ø4 (Ø)L — M617 M24 — P2 MXB MCBMB Ø4 (Ø)H
PRC MB Ø5 (Ø)L, +3V M24U1 H — M617 M24 — V2 MXB MCBMB Ø5 (Ø)H

PRD MB Ø6 (Ø)L — M617 M25 — E1 MXB MCBMB Ø6 (Ø)H
PRD MB Ø7 (Ø)L — M617 M25 — L1 MXB MCBMB Ø7 (Ø)H
PRE MB Ø8 (Ø)L — M617 M25 — S1 MXB MCBMB Ø8 (Ø)H
PRE MB Ø9 (Ø)L — M617 M25 — J2 MXB MCBMB Ø9 (Ø)H
PRF MB 1Ø (Ø)L — M617 M25 — P2 MXB MCBMB 1Ø (Ø)H
PRF MB 11 (Ø)L, +3V M25U1 H — M617 M25 — V2 MXB MCBMB 11 (Ø)H

CPTP START MEMORY L, +3V M26U1 H — M617 M26 — E1 MXB START MEMORY H

CST DO (1)H, CPS FETCH (1)H — M720 H11 — U2 MXB DO FETCH L
CPT CYCLE DONE (Ø)H, CPT TS2 (1)H, MXB DO FETCH L, +3V LØ3U1 H — M119 LØ3 — V2
M119 LØ3 V2, H1, J1 — M113 L21 — K1, J2

M720 H11
CPTP START MEMORY H — V2
K1, J2 — F2 — MCT STROBE L
F2 — 5 USEC — D2 — MCT MEM DONE L
NON EXISTANT MEMORY DETECT

+3V M27V1 H — M617 M26 — L1 MXB MEM TP3 H
CPTP TP3 H, CST EN MEM (1)H — M113 L21 — F2 MXB MEM TP3 L

REVISIONS		
CHK	CHANGE NO.	REV.
JB	EP12-00001	A
	ADS	
	J SCANLAN 3/13/69	
PD	EP12-00002	B
	A WASHINGTON 5/20/69	
	J SCANLAN 5/22/69	
GH	EP12-00026	C
	S. GOLDSBY 9-1-70	
	D. MACKLIN 9-2-70	
	EP12-00030	D

DRN D SHEPARD	DATE 2/20/69	digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS
CHKD J BISONETE	DATE 2/20/69	
ENG L GALE	DATE 2/20/69	TITLE MEM EXTN BUFFER
PROJ ENG L GALE	DATE 2/20/69	
PROG D CALL	DATE 2/20/69	
FIRST USED ON MC12		SIZE D | CODE BS | NUMBER MC12-Ø-MXB | REV. D
SCALE		DIST.
SHEET 1 OF 1		

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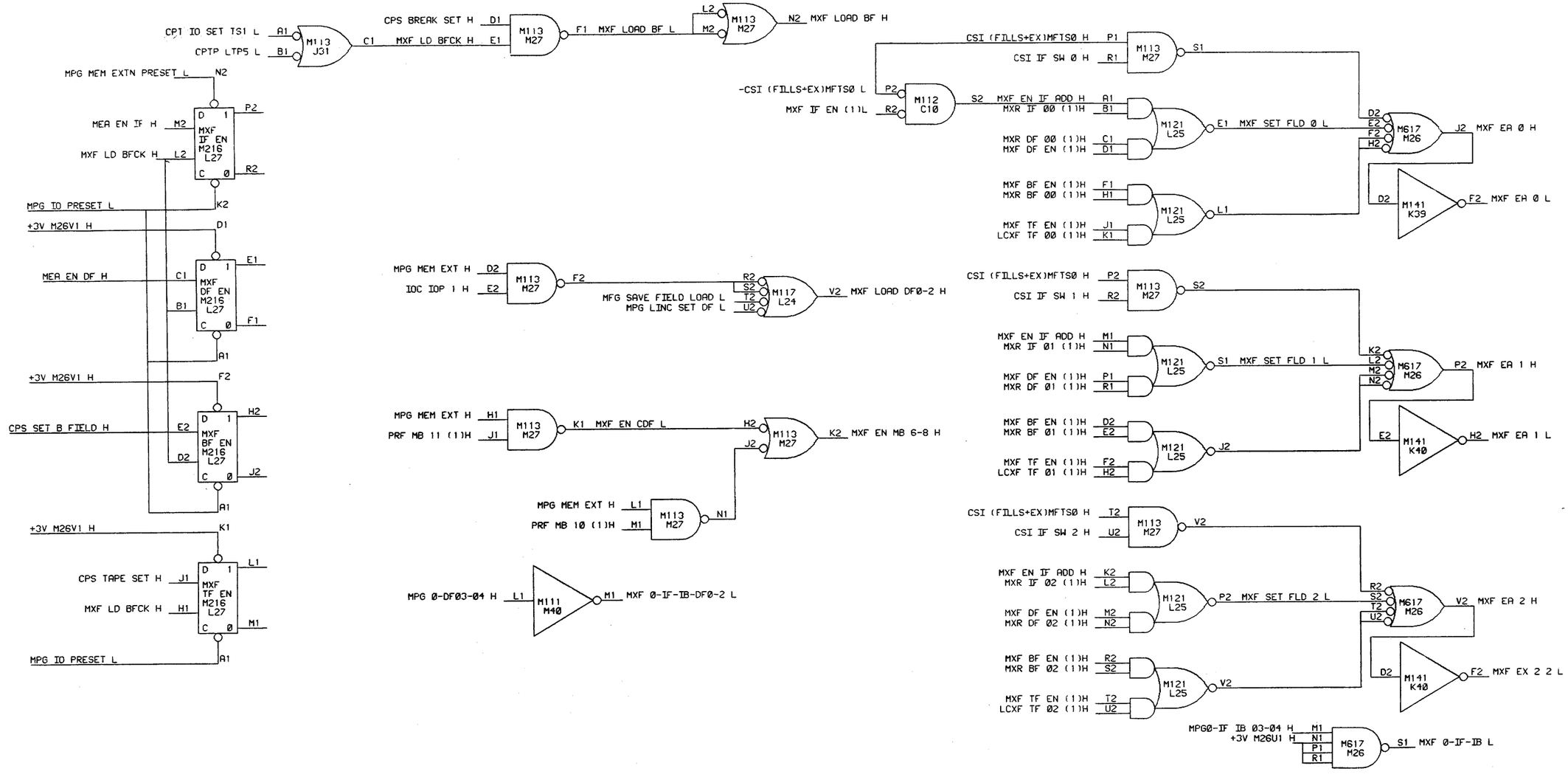
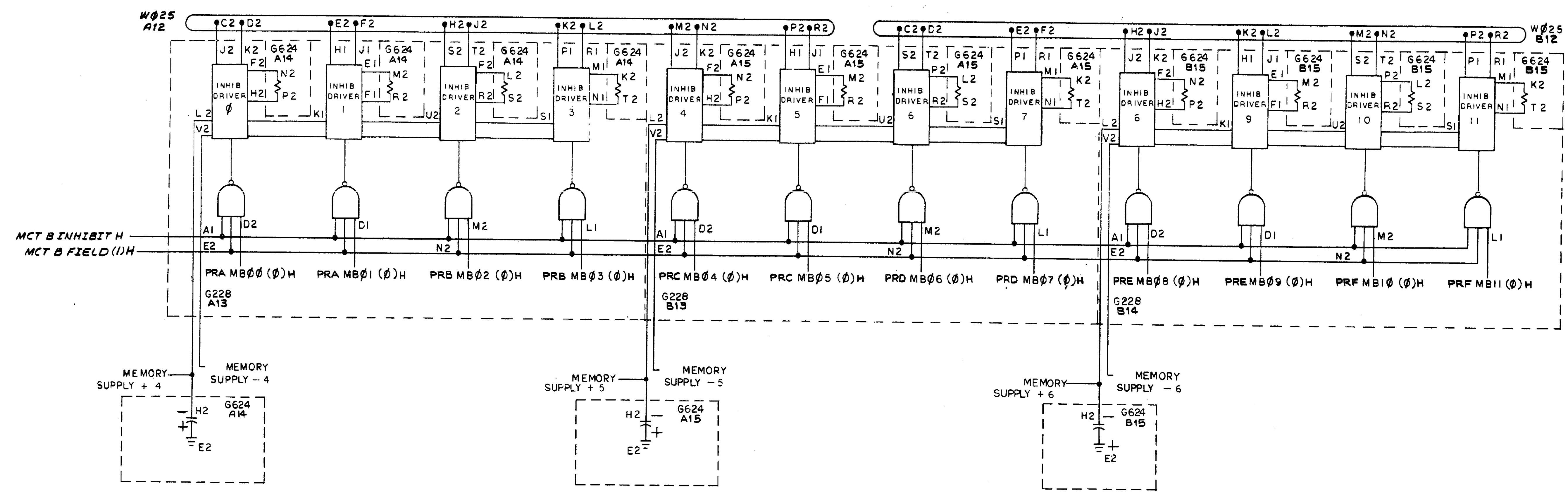


REVISIONS			REVISIONS			REVISIONS		
CHK	CHANGE NO.	REV.	CHK	CHANGE NO.	REV.	CHK	CHANGE NO.	REV.
	EM12-00001	A	NR	EP12-00007	E	GH	EP12-00026	K
	ADS			A.WASHINGTON 8/15/69			S. GOLDSBY 9-1-70	
	J. SCANLAN 3/13/69			L. GALE 8/20/69			D. MACKLIN 9-2-70	
	EP12-00003	B	NR	EP12-00009	F		EP12-00030	L
	A.WASHINGTON 5/20/69			A.WASHINGTON 8/20/69				
	J. SCANLAN 5/22/69			J. SCANLAN 8/20/69				
	EP12-00004	C		EM12-00015	H			
	A.WASHINGTON 7/9/69			K. BOGGS 10/14/69				
	J. SCANLAN			J. SCANLAN 10/17/69				
NR	EP12-00006	D	FV	EP12-00021	J			
	A.WASHINGTON 8/6/69			D. SOUTHER 6/17/70				
	J. SCANLAN 8/6/69			J.SCANLAN 6/17/70				

DRN. D. SHEPARD	DATE 2/20/69	digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS	
CHK'D. J. BISONETE	DATE 2/20/69		
ENG. L. GALE	DATE 2/20/69	TITLE MEM EXTN FIELD	
PROJ. ENG. L. GALE	DATE 2/20/69		
PROD. D. CALL	DATE 2/20/69		
FIRST USED ON MC12		SIZE D / CODE BS / NUMBER MC12-0-MXF / REV. L	
SCALE		DIST.	
SHEET 1 OF 1			



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REVISIONS		
REV.	CHANGE NO.	CHK
A	EM12-00003 T. Buller 6-24-69	
	J. GALE	
	J. Scanlan 8/8/65	

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

QTY.	DESCRIPTION	PART NO.	ITEM NO.

PARTS LIST

DRN	DATE 1-20-69	
CHKD	DATE 2/27/69	
ENG	DATE 2-28-69	
PROJ. ENG.	DATE 2-28-69	
PROD.	DATE 2/26/69	
FIRST USED ON MC12		
SCALE		
SHEET 1 OF 1		

digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS

TITLE: MXI INHIBIT DRIVERS

SIZE D | CODE BS | NUMBER MC12-Ø-MXI | REV A

DEC FORM NO DRD 102

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M121 L23 U1 MXR SF 00 (1)L

M121 L23 V1 MXR SF 01 (1)L

M117 L24 U1 MXR SF 02 (1)L

+3V M22V1 H — D1 — MXR IF 00 (1)H C1 — MPG LOAD SF H B1 — MXR SF 00 M216 M30 — E1 F1 — +3V M23V1 H A1

+3V M22V1 H — F2 — MXR IF 01 (1)H E2 — MPG LOAD SF H D2 — MXR SF 01 M216 M30 — H2 J2 — +3V M23V1 H A1

+3V M22V1 H — K1 — MXR IF 02 (1)H J1 — MPG LOAD SF H H1 — MXR SF 02 M216 M30 — L1 M1 — +3V M23V1 H A1

+3V M22V1 H — N2 — MXR DF 00 (1)H M2 — MPG LOAD SF H L2 — MXR SF 03 M216 M30 — P2 R2 — +3V M23V1 H K2

+3V M22V1 H — R1 — MXR DF 01 (1)H P1 — MPG LOAD SF H N1 — MXR SF 04 M216 M30 — S1 U1 — +3V M23V1 H K2

+3V M22V1 H — U2 — MXR DF 02 (1)H T2 — MPG LOAD SF H S2 — MXR SF 05 M216 M30 — V2 V1 — +3V M23V1 H K2

+3V M26V1 H — B1

MXF EN IF SW H C1 — CSI IF SW 0 H D1 — RCC ST LSW EN H A1 — CSI IF SW 0 H B1 — M113 M27 — C1 D1 — N2

MXF EN MB 6-8 H D2 — PRD MB 06 (1)H E1 — MXR EN MB 7-9 H E2 — PRD MB 07 (1)H F1 — MPG EN SAVE FIELD H F2 — MXR SF 01 (1)H H1 — M169 M32

A1 MXR SET IB 00 H C1 — MPG LOAD IB 00-02 H B1 — MXR IB 00 M216 M31 — E1 F1 — MXF 0-IF-IB-0-2 L A1

MXR IF 00 M216 M31 — M2 L2 — P2 R2 — K2

+3V M26V1 H — J1

C1 H2 — MXF EN MB 6-8 H D2 — PRD MB 07 (1)H J2 — MXR EN MB 7-9 H E2 — PRE MB 08 (1)H K2 — MPG EN SAVE FIELD H F2 — MXR SF 01 (1)H L2 — M169 M32

RCC ST LSW EN H T2 — CSI IF SW 1 H U2 — M113 N40 — V2 F2 — R1

K1 MXR SET IB 01 H E2 — MPG LOAD IB 00-02 H D2 — MXR IB 01 M216 M31 — H2 J2 — MXF 0-IF-IB-0-2 L A1

MXR IF 01 M216 M31 — P1 N1 — S1 U1 — K2

+3V M26V1 H — L1

R2 S1 — MXF EN MB 6-8 H P2 — PRE MB 08 (1)H R1 — MXR EN MB 7-9 H N2 — PRE MB 09 (1)H P1 — MPG EN SAVE FIELD H M2 — MXR SF 02 (1)H N1 — M169 M32

RCC ST LSW EN H D1 — CSI IF SW 2 H E1 — M113 N40 — F1 K1 — U2

M1 MXR SET IB 02 H J1 — MPG LOAD IB 00-02 H H1 — MXR IB 02 M216 M31 — L1 M1 — MXR IF 02 M216 M31 — T2 S2 — V2 V1 — MXF 0-IF-IB-0-2 L A1 — K2

MPG LOAD IF 00-02 H

U2

R2 V1 — MXF EN MB 6-8 H P2 — MXF EN MB 6-8 H U1 — MXR EN MB 7-9 H N2 — T2 — MPG EN SAVE FIELD H M2 — MPG EN SAVE FIELD H S2 — M169 M32

V2 -MXR EN MB 7-9 H U2 — M111 K09 — V2 MXR EN MB 7-9 H

MXR SET IB 00 H D2 — -MPG EN SAVE FIELD H E2 — MXR SF 03 (1)H F2 — MPG EN SAVE FIELD H H2 — M121 M28 — J2 — +3V M24V1 H A1 — MXF LOAD DF0-2 H B1 — MXR DF 00 M216 M29 — C1 F1 — MXF0-IF-IB-DF0-2 L D1

MXR SET IB 01 H K2 — -MPG EN SAVE FIELD H L2 — MXR SF 04 (1)H M2 — MPG EN SAVE FIELD H N2 — M121 M28 — P2 — +3V M24V1 H A1 — MXF LOAD DF0-2 H D2 — MXR DF 01 M216 M29 — E2 J2 — MXF0-IF-IB-DF0-2 L F2

MXR SET IB 02 H R2 — -MPG EN SAVE FIELD H S2 — MXR SF 05 (1)H T2 — MPG EN SAVE FIELD H U2 — M121 M28 — V2 — +3V M24V1 H A1 — MXF LOAD DF0-2 H H1 — MXR DF 02 M216 M29 — J1 M1 — MXF0-IF-IB-DF0-2 L K1 — L1

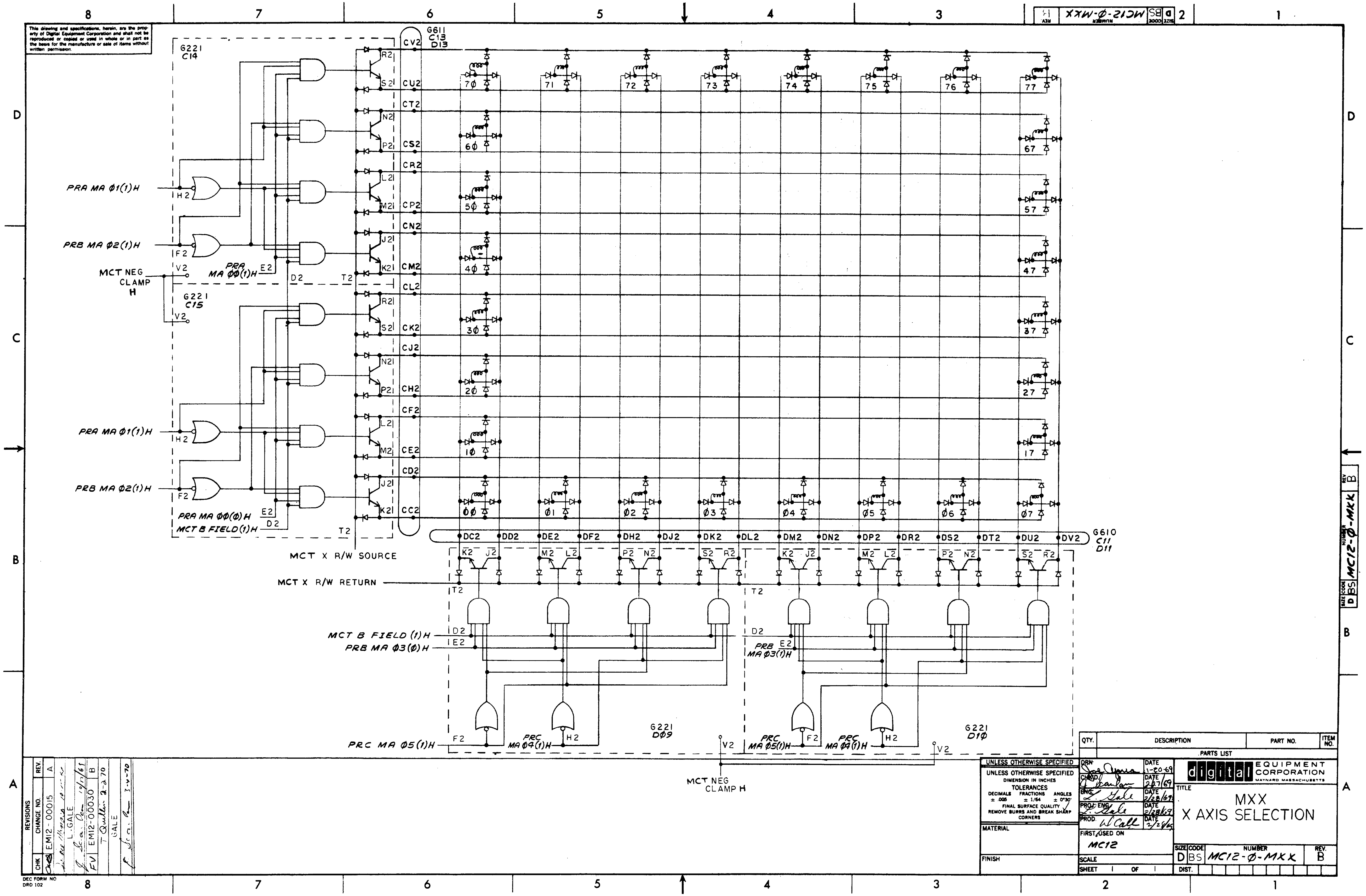
+3V M25V1 H — N2 — IOB EXT DA 00 H M2 — MXF LOAD BF H L2 — MXR BF 00 M216 M29 — P2 R2 — +3V M25V1 H K2

+3V M25V1 H — R1 — IOB EXT DA 01 H P1 — MXF LOAD BF H N1 — MXR BF 01 M216 M29 — S1 U1 — +3V M25V1 H K2

+3V M25V1 H — U2 — IOB EXT DA 02 H T2 — MXF LOAD BF H S2 — MXR BF 02 M216 M29 — V2 V1 — +3V M25V1 H K2

REVISIONS		
CHK	CHANGE NO.	REV.
JB	EP12-00001	A
	ADS	
	J. SCANLAN 3/13/69	
	EP12-00003	B
	A.WASHINGTON 6/18/69	
	L. GALE 6/20/69	
NR	EP12-00004	C
	A.WASHINGTON 7-9-69	
	L. GALE 7-15-69	
	EP12-00030	D

DRN. D. SHEPARD	DATE 2/20/69	digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS
CHK'D J. BISONETE	DATE 2/20/69	
ENG. L. GALE	DATE 2/20/69	TITLE: MEM EXTN REGISTER
PROJ. ENG. L. GALE	DATE 2/20/69	
PROD. D. CALL	DATE 2/20/69	
FIRST USED ON MC12		SIZE D | CODE BS | NUMBER MC12-0-MXR | REV. D
SCALE		DIST.
SHEET 1 OF 1		



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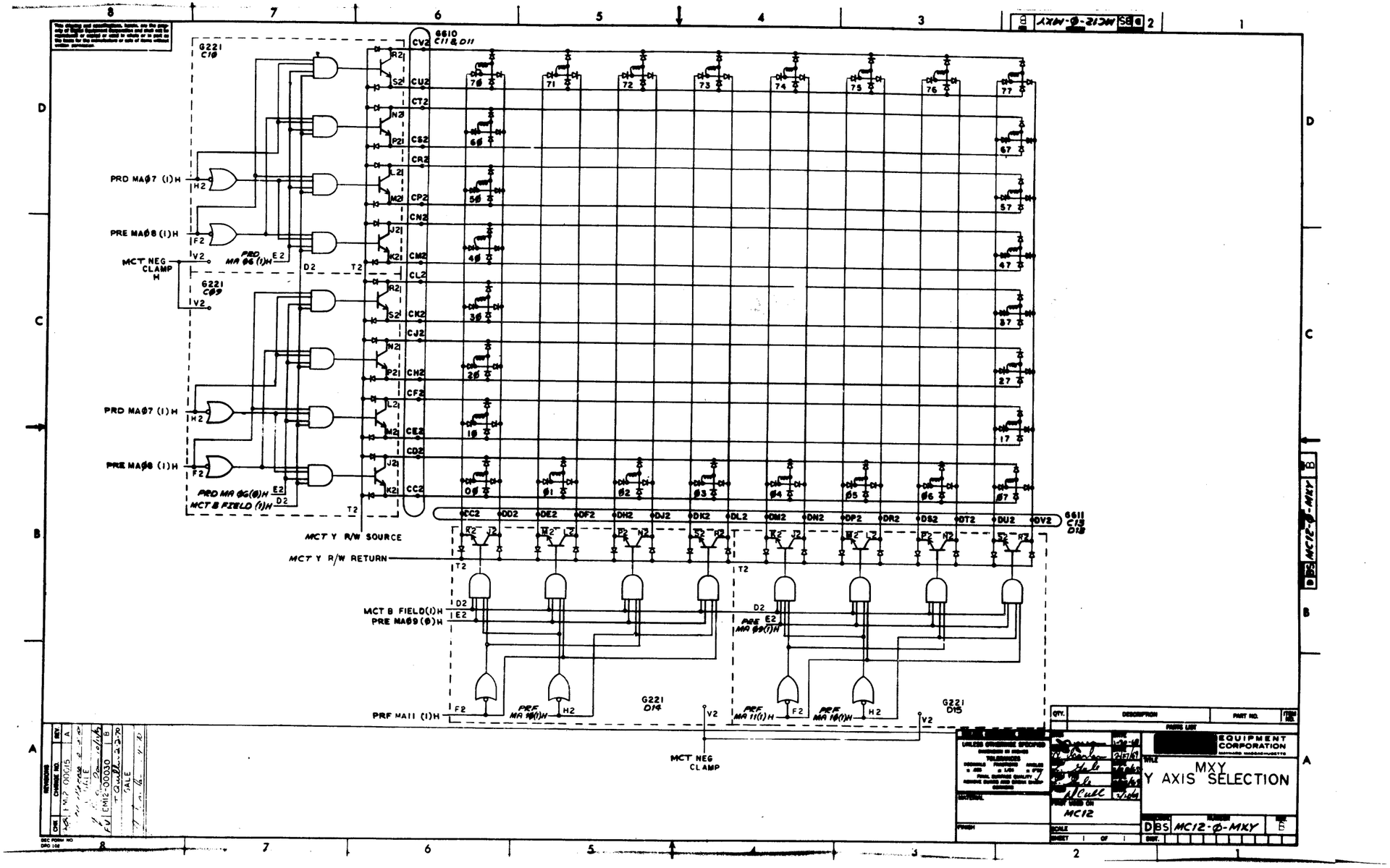
G221 C14
G221 C15
G611 C13 D13
G610 C11 D11
PRA MA Ø1(1)H
PRB MA Ø2(1)H
MCT NEG CLAMP H
PRA MA ØØ(1)H
PRA MA ØØ(Ø)H
MCT B FIELD(1)H
MCT X R/W SOURCE
MCT X R/W RETURN
MCT B FIELD (1)H
PRB MA Ø3(Ø)H
PRB MA Ø3(1)H
PRC MA Ø5(1)H
PRC MA Ø4(1)H
G221 DØ9
G221 D1Ø
MCT NEG CLAMP H
CV2 CU2 CT2 CS2 CR2 CP2 CN2 CM2 CL2 CK2 CJ2 CH2 CF2 CE2 CD2 CC2
DC2 DD2 DE2 DF2 DH2 DJ2 DK2 DL2 DM2 DN2 DP2 DR2 DS2 DT2 DU2 DV2
7Ø 71 72 73 74 75 76 77
6Ø 67 5Ø 57 4Ø 47 3Ø 37 2Ø 27 1Ø 17
ØØ Ø1 Ø2 Ø3 Ø4 Ø5 Ø6 Ø7
REVISIONS
CHK | CHANGE NO. | REV.
EM12-00015 | A
L. GALE
EM12-00030 | B
T. GALE
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 | DATE 1-20-69
CHKD | DATE 2/7/69
ENG L. Gale | DATE 2/28/69
PROJ ENG L. Gale | DATE 2/28/69
PROD W Call | DATE 2/28/69
FIRST USED ON MC12
SCALE
SHEET 1 OF 1
digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS
TITLE MXX X AXIS SELECTION
SIZE D CODE BS NUMBER MC12-Ø-MXX REV. B
DIST.
DEC FORM NO DRD 102


G221 C10
G610 C11 & D11
PRD MA∅7 (1)H
PRE MA∅8 (1)H
MCT NEG CLAMP H
PRD MA 06 (1)H
G221 C∅9
PRD MA∅7 (1)H
PRE MA∅8 (1)H
PRD MA 06(∅)H
MCT B FIELD (1)H
MCT Y R/W SOURCE
MCT Y R/W RETURN
G611 C13 D13
MCT B FIELD(1)H
PRE MA∅9(∅)H
PRE MA 09(1)H
PRF MA11 (1)H
PRF MA 10(1)H
PRF MA 11(1)H
PRF MA 10(1)H
G221 D14
G221 D15
MCT NEG CLAMP
MXY
Y AXIS SELECTION
MC12
DBS MC12-∅-MXY

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MASTER DRAWING LIST

DWG. NO.	REV. LET.	NO. OF SHEETS	TITLE
A-ML-PDP 12-0	REF.		PDP-12 SYSTEMS
D-MU-EM12-0-1	REF		MODULE UTILIZATION MEM
D-MU-EM12-0-2	REF		MODULE UTILIZATION MEM
K-WL-EM12-0-3	REF		WIRE LIST
A-PL-EM12-0-1	REF		MODULE UTILIZATION MEM PL.
A-PL-EM12-0-2	REF		MODULE UTILIZATION MEM PL.
D-FD-TC12-0-10	B	1	TAPE PROCESSOR MJR. ST. FLOW
D-FD-TC12-0-11	D	1	TAPE INST SETUP TIMING
D-FD-TC12-0-12	C	1	SEARCH TIMING
D-FD-TC12-0-13	C	1	BLOCK MODE READING
D-FD-TC12-0-14	C	1	BLOCK MODE WRITE
D-FD-TC12-0-15	C	1	BLOCK MODE CHECKING
D-FD-TC12-0-16	A	1	MARK TIMING
D-BS-TC12-0-LCS	E	1	TAPE CONTROL STATES
D-BS-TC12-0-LCX	B	1	TAPE EXTENDED OPERATIONS
D-BS-TC12-0-LCXF	A	1	TAPE EXTENDED FIELDS
D-BS-TC12-0-LGP	C	1	TAPE GROUP COUNTER
D-BS-TC12-0-LIN		1	TAPE INSTRUCTION
D-BS-TC12-0-LIP	E	1	INTERPROCESSOR SIGNALS
D-BS-TC12-0-LMU	B	1	TAPE UNIT AND MOTION
D-BS-TC12-0-LRE	C	1	TAPE REG ENABLE CONTROL
D-BS-TC12-0-LRL	A	1	TAPE REG LOAD CONTROL
D-BS-TC12-0-LTC	C	1	TRANSPORT CONTROL
D-BS-TC12-0-LTD	H	1	TAPE DELAYS
D-BS-TC12-0-LTM	A	1	TAPE MAINT
D-BS-TC12-0-LTMR	A	1	TAPE MAINT REG
D-BS-TC12-0-LTR	B	1	TAPE READERS-WRITERS
D-BS-TC12-0-LTRA	E	1	LTRA BITS 0 & 1
D-BS-TC12-0-LTRB	D	1	LTRB BITS 2 & 3
D-BS-TC12-0-LTRC	C	1	LTRC BITS 4 & 5
D-BS-TC12-0-LTRD	B	1	LTRD BITS 6 & 7
D-BS-TC12-0-LTRE	B	1	LTRE BITS 8 & 9
D-BS-TC12-0-LTRF	E	1	LTRF BITS 10 & 11

REVISIONS			
REV.	DATE	CHG. NO.	APP'D.
A	3/69	EM12-01	L.G.
B	5/69	EM12-02	L.G.
C	6/69	EM12-03	L.G.
D	6/69	EM12-04	L.G.
E	6/69	EM12-5	L.G.
F	7/69	EM12-7	L.G.
H	8/69	EM12-09	L.G.
J	8/69	EM12-10	L.G.
K	9/69	EM12-11	L.G.
L	9/69	EM12-15	L.G.
M	10/69	EM12-17	L.G.
N	12/69	EM12-19	L.G.
P	1/70	EM12-22	L.G.
R	2/70	EM12-30	L.G.
S	2/70	EM12-32	L.G.

DRN. J. APREA	DATE 3/7/69	digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS
CHK'D. R. HUTNAK	DATE 3/7/69	
ENG. L. Gale	DATE 3/10/69	TITLE LINC TAPE CONTROL
PROJ. ENG. L. Gale	DATE 3/10/69	
PROD. W Call	DATE 3/10/69	
FIRST USED ON PDP-12		SIZE A / CODE ML / NUMBER TC12-0 / REV V
SCALE		
SHEET 1 OF 2		DIST.

DEC FORM NO. DRA 103

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MASTER DRAWING LIST

DWG. NO.	REV. LET.	NO. OF SHEETS	TITLE
D-BS-TC12-0-LTS	D	1	TAPE STATES
D-BS-TC12-0-LTT	C	1	TAPE TIME PULSES
D-BS-TC12-0-LWN	D	1	TAPE MARK WINDOW

REVISIONS			
REV.	DATE	CHG. NO.	APP'D.
T	7/70	EM12-37	L.G.
U	8/70	EM12-38	L.G.

DRN. J. APREA	DATE 3/10/69	digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS
CHK'D. R. Hutnak	DATE 3/10/69	
ENG. L. Gale	DATE 3/10/69	TITLE LINC TAPE CONTROL
PROJ. ENG. L. Gale	DATE 3/10/69	
PROD. W Call	DATE 3/10/69	
FIRST USED ON PDP-12		SIZE A / CODE ML / NUMBER TC12-0 / REV V
SCALE		
SHEET 2 OF 2		DIST.

DEC FORM NO. DRA 103

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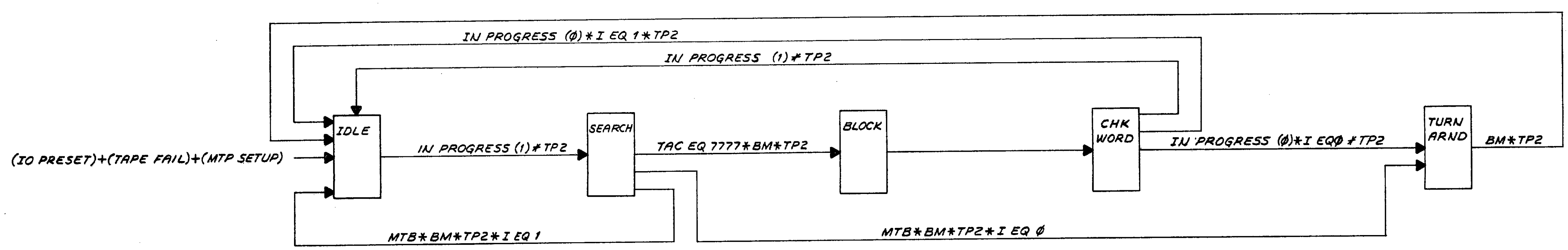

REVISIONS		
CHK	CHANGE NO.	REV.
	00002	A
	T. QUILLIN	
	L. GALE	
	6/18/69	
	EM12-00015	B
	10-15-69	
	L. GALE	
	10/17/69	

DEC FORM NO. DRD 102A

QTY.	DESCRIPTION	PART NO.	ITEM NO.
	PARTS LIST		

UNLESS OTHERWISE SPECIFIED

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

		DATE
DRN.	Joe Aprea	6 SEPT 68
CHKD.	J. Scanlon	2/27/69
ENG.	R. J. Clayton	2-28-69
PROJ. ENG.	R. J. Clayton	2-28-69
PROD.		2/28/69

FIRST USED ON TC12

SCALE

SHEET 1 OF 1

digital EQUIPMENT CORPORATION
MAYNARD, MASSACHUSETTS

TITLE
TAPE PROCESSOR MJR. ST. FLOW

SIZE	CODE	NUMBER	REV.
D	FD	TC12-Ø-1Ø	B

DIST.

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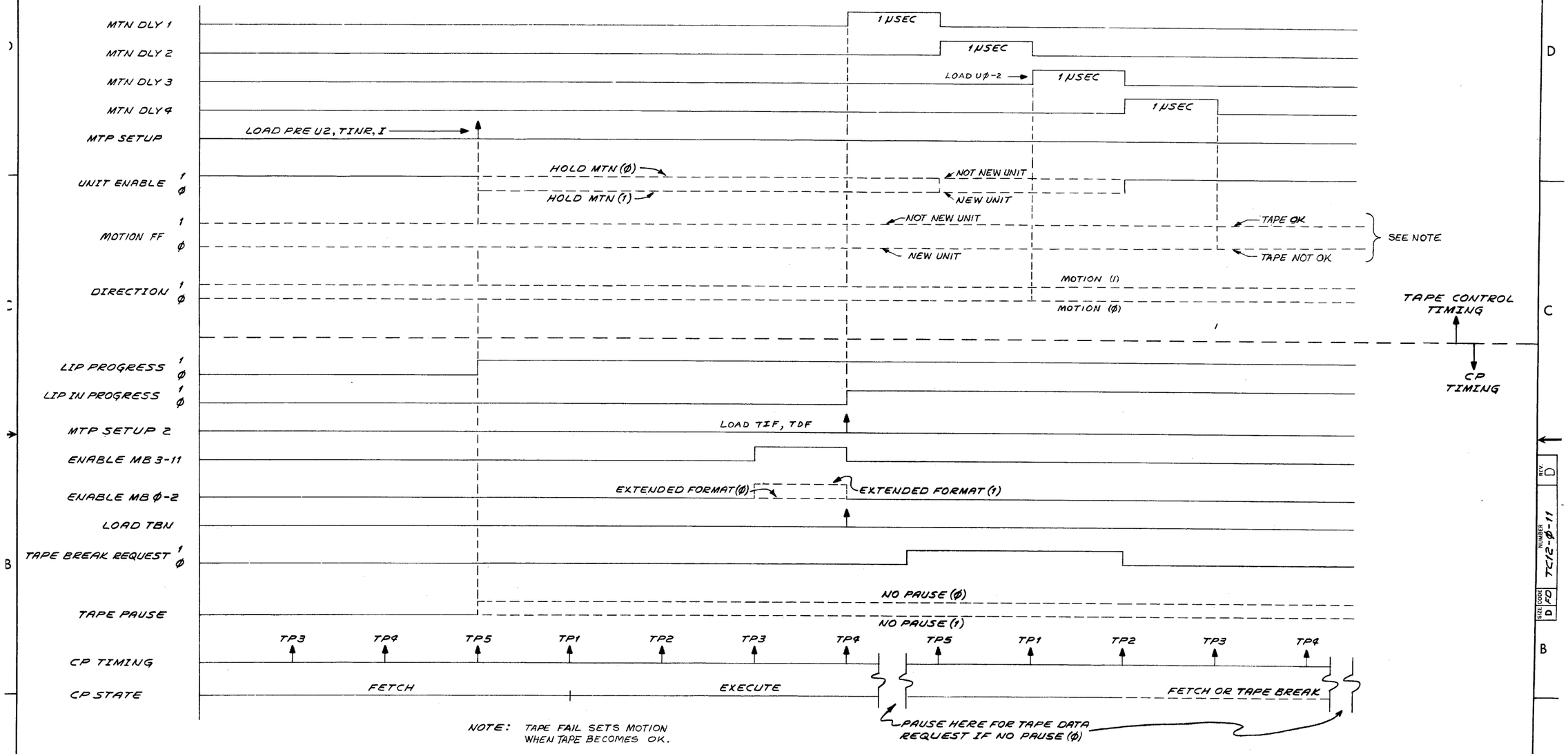

NOTE: TAPE FAIL SETS MOTION WHEN TAPE BECOMES OK.

REVISIONS			
CHK	CHANGE NO.	REV.	
	00002	A	T. Burke 6/18/69
and	EM12-00003	B	T. Burke 6-24-69 L. GALE
and	EM12-00015	C	L. GALE 8/5/69
and	EM12-00017	D	T. Burke 11-5-69 GALE 11-14-69

QTY.	DESCRIPTION	PART NO.	ITEM NO.
	PARTS LIST		

UNLESS OTHERWISE SPECIFIED
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

		DATE
DRN.		11-24-68
CHK'D.		12/27/69
ENG.		2-26-69
PROJ. ENG.		2-26-69
PROD.		2-26-69

FIRST USED ON: TC12
SCALE
SHEET 1 OF 1

digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS

TITLE: LINC TAPE INST SETUP TIMING

SIZE	CODE	NUMBER	REV.
D	FD	TC12-Ø-11	D

DIST.

DEC FORM NO. DRD 102A

REV. D
NUMBER TC12-Ø-11
SIZE CODE D FD

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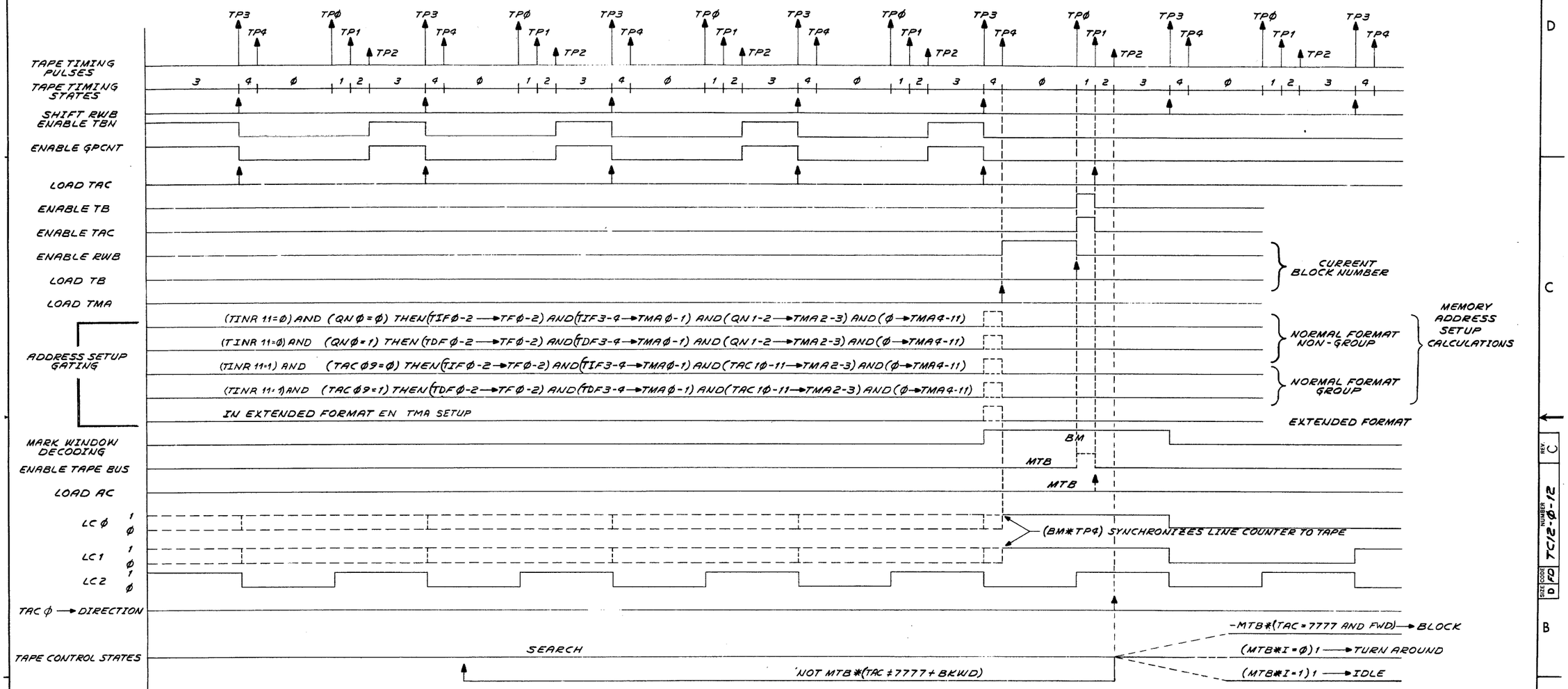


NOTE:
TIMING NOT SHOWN TO SCALE. TPØ & TP3 ARE DERIVED FROM ZERO CROSSINGS OF TAPE TIMING TRACK. TPØ & TP3 ARE SEPARATED BY APPROXIMATELY 15 μSEC. TTS1, TTS2, TTS4 ARE EACH 0.5 μSEC.

REVISIONS	REV.	CHK	
CHANGE NO. 00002 T. Quillin L. GALE 6/18/68	A		
EM12-00003 T. Quillin & ZKG L. GALE 8/15/69	B		
EM12-00015 L. GALE 10/7/69	C		

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.	DATE	11-25-68
CHK'D.	DATE	12/1/69
ENG.	DATE	
PROJ. ENG.	DATE	
PROD.	DATE	12/8/69

FIRST USED ON TC12

SCALE

SHEET 1 OF 1

digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS

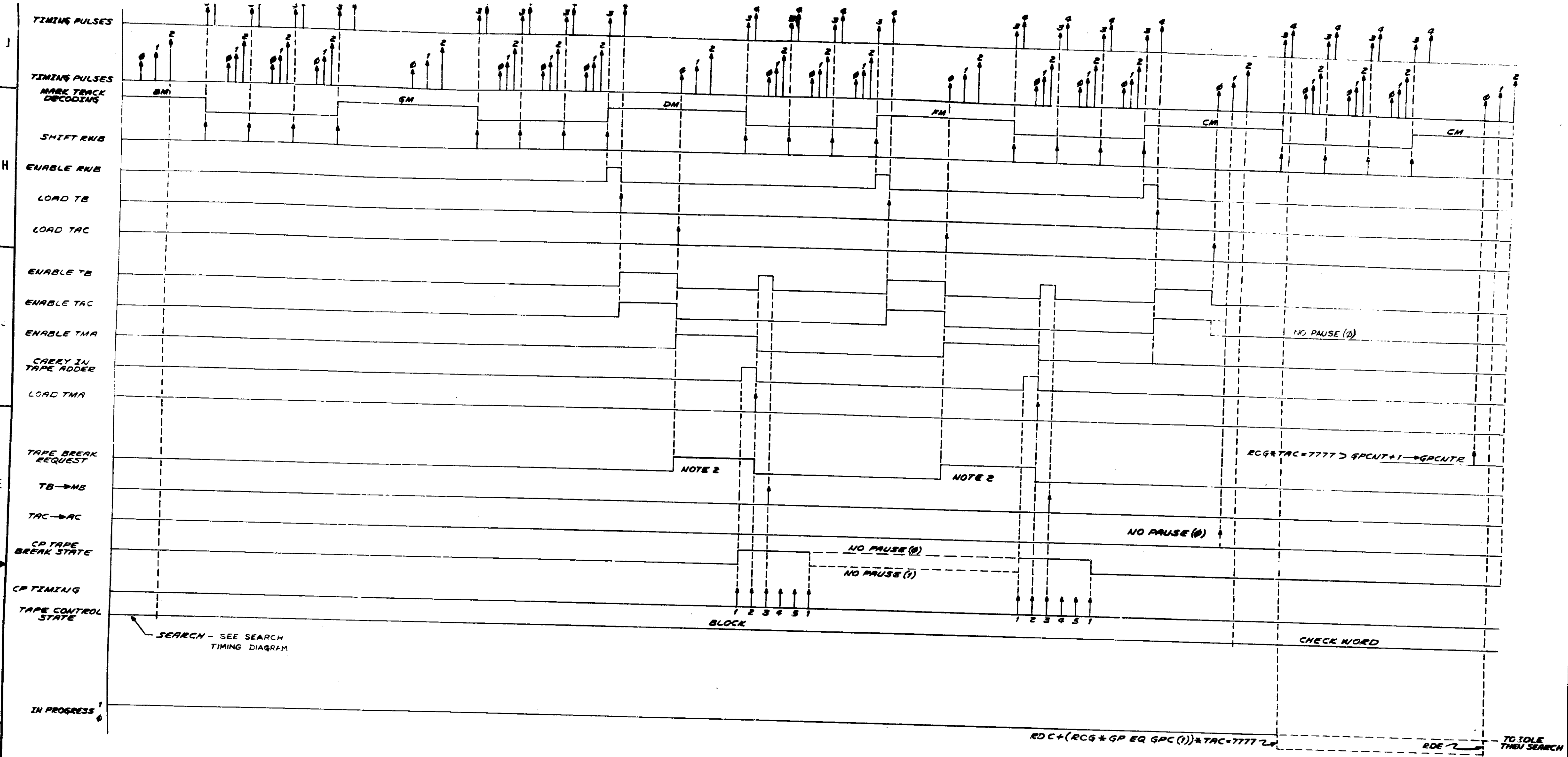
TITLE: SEARCH TIMING

SIZE	CODE	NUMBER	REV.
D	FD	TC12-Ø-12	C

DIST.

DEC FORM NO. DRD 102A

NUMBER TC12-Ø-12 SIZE D CODE FD REV. C



TIMING PULSES
TIMING PULSES
MARK TRACK DECODING
SHIFT RWB
ENABLE RWB
LOAD TB
LOAD TAC
ENABLE TB
ENABLE TAC
ENABLE TMA
CARRY IN TAPE ADDER
LOAD TMA
TAPE BREAK REQUEST
TB→MB
TAC→AC
CP TAPE BREAK STATE
CP TIMING
TAPE CONTROL STATE
IN PROGRESS
BM
SM
DM
FM
CM
CM
NOTE 2
NOTE 2
NO PAUSE (0)
NO PAUSE (1)
NO PAUSE (0)
NO PAUSE (1)
RCG*TAC=7777 ⊃ GPCNT+1→GPCNTR
SEARCH - SEE SEARCH TIMING DIAGRAM
BLOCK
CHECK WORD
RDC+(RCG*GP EQ GPC(1))*TAC=7777
RDE
TO IDLE THRU SEARCH
I=1→IDLE
I=0→TURN ARND

NOTES:
1. TIMING AND MARK TRACK DECODING NOT SHOWN TO SCALE
2. TIMING BETWEEN TAPE BREAK REQUEST AND CP TAPE BREAK STATE IS PROGRAM DEPENDENT

[redacted] EQUIPMENT CORPORATION

BLOCK MODE READING

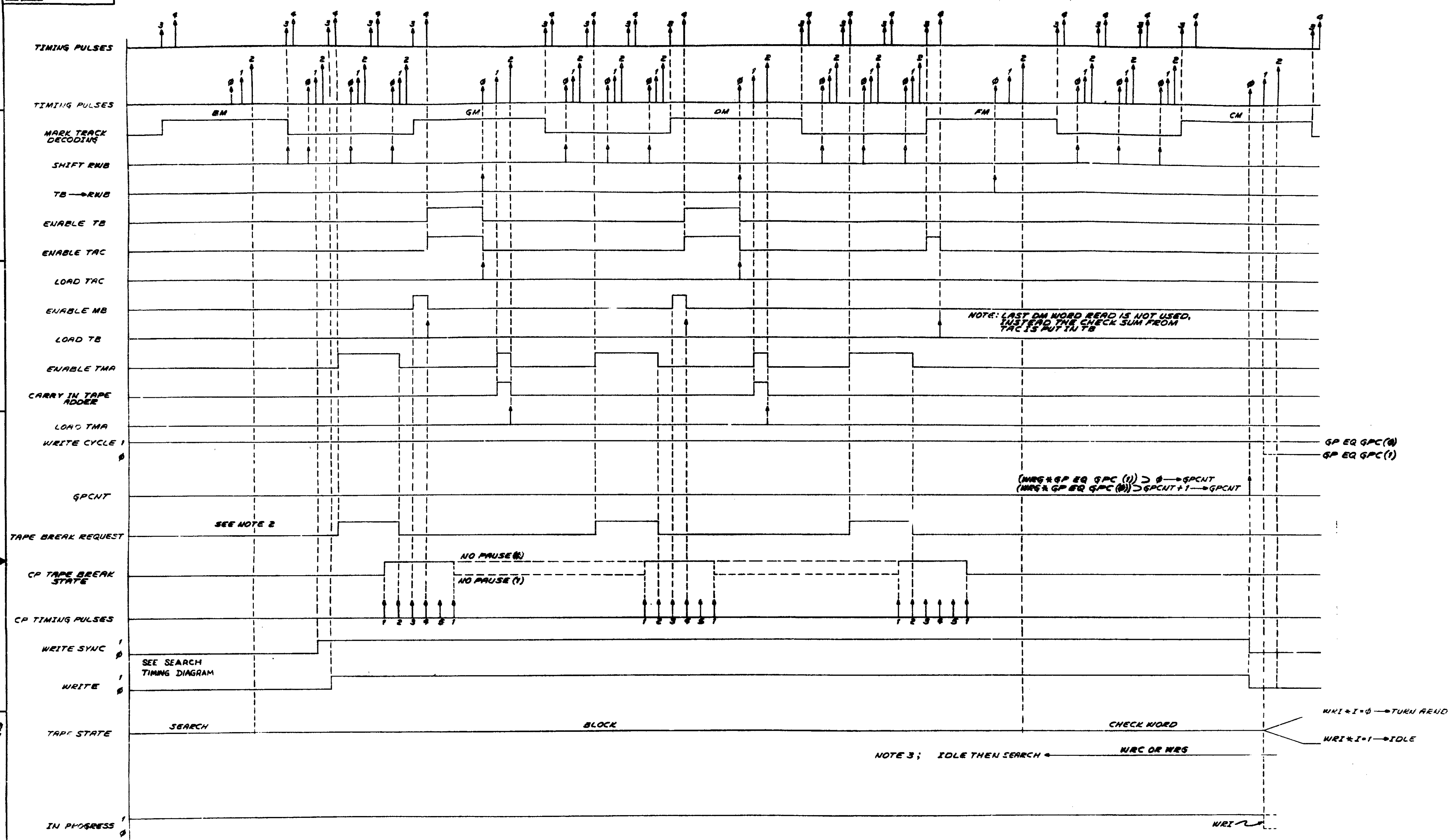
PDP-12

E FD TC12-0-13 REV. C

SHEET 1 OF 1

EM12-00003 L. GALE

EM12-00015 L. GALE



NOTES:

1. TIMING AND MARK TRACK DECODING NOT SHOWN TO SCALE.
2. TIMING BETWEEN TAPE BREAK REQUEST AND CP TAPE BREAK STATE IS PROGRAM DEPENDENT.
3. PERFORMS CHECK PHASE WHEN WRITE CYCLE GOES TO ZERO.

QTY.	DESCRIPTION	PART NO.	ITEM NO.
	PARTS LIST		

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

MATERIAL

FINISH

DATE 11-4-68

FIRST USED ON PDP-12

SCALE

SHEET 1 OF 1

[redacted] EQUIPMENT CORPORATION
MAYNARD MASSACHUSETTS

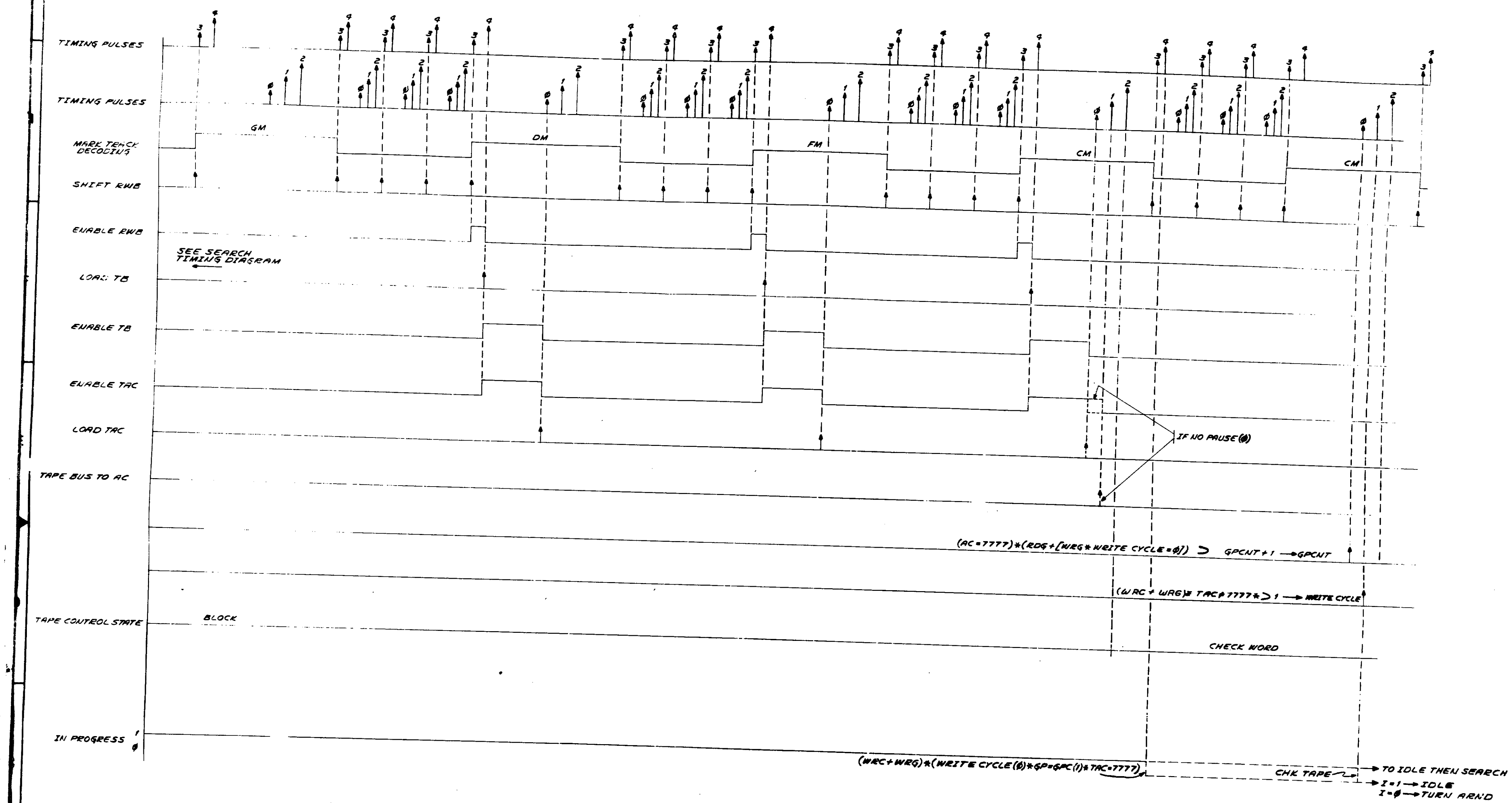
TITLE
BLOCK MODE WRITE

SIZE E CODE FD NUMBER TC12-0-14 REV. C

DIST.

CHG.	REVISIONS CHANGE NO.	REV.
	00002	A
	EM12-00003	B
	EM12-00015	C

8 7 6 5 4 3 2 1


TIMING PULSES
TIMING PULSES
MARK TRACK DECODING
SHIFT RWB
ENABLE RWB
LOAD TB
ENABLE TB
ENABLE TAC
LOAD TAC
TAPE BUS TO AC
TAPE CONTROL STATE
IN PROGRESS
GM
DM
FM
CM
CM
SEE SEARCH TIMING DIAGRAM
IF NO PAUSE (Ø)
(AC=7777)*(RDG+[WRG*WRITE CYCLE=Ø]) ⊃ GPCNT+1 → GPCNT
(WRC+WRG)*TAC≠7777*⊃1 → WRITE CYCLE
BLOCK
CHECK WORD
(WRC+WRG)*(WRITE CYCLE(Ø)*GP=GPC(1)*TAC=7777)
CHK TAPE
→ TO IDLE THEN SEARCH
→ I=1 → IDLE
I=Ø → TURN ARND

[redacted] EQUIPMENT CORPORATION

BLOCK MODE CHECKING

PDP-12

TC12-Ø-15

SHEET 1 OF 1

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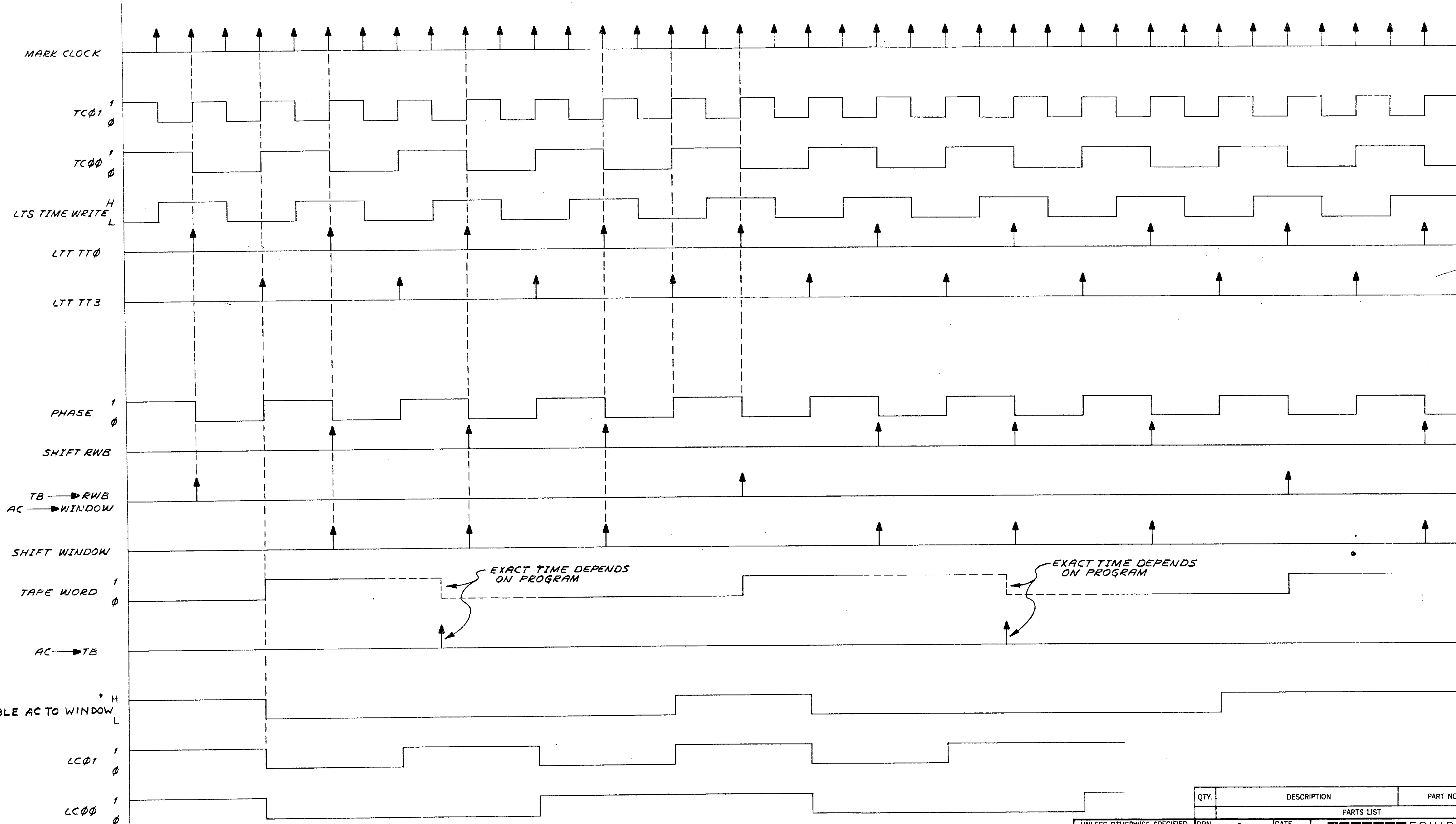

REVISIONS		
CHK	CHANGE NO.	REV.
	EM12-00003	A
	T.QUILLIN 2-24-69	
	L.GALE	

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

QTY.	DESCRIPTION	PART NO.	ITEM NO.

PARTS LIST

DRN DATE 9-21-68

digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS

TITLE
MARK TIMING

FIRST USED ON TC12

SIZE D CODE FD NUMBER TC12-Ø-16 REV. A

SCALE
SHEET 1 OF 1

DEC FORM NO. DRD 102A

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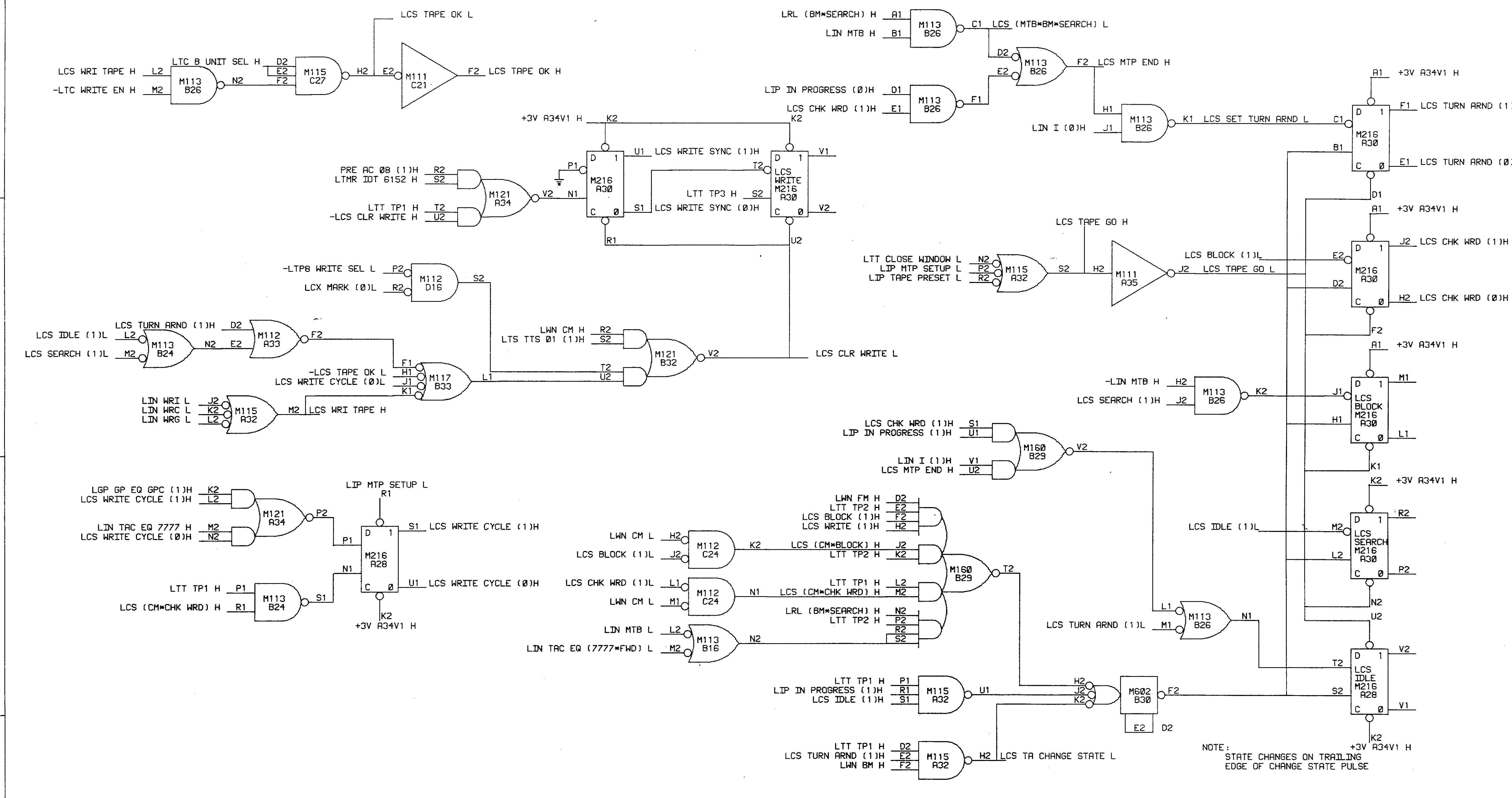

CHK	CHANGE NO.	REV.
	EM12-00003	A
	L GALE	
	EM12-00007	B
	B KORTLING 8-5-69	
	L GALE	
NR	EM12-00009	C
	B KORTLING	
	L GALE 8-26-69	
NR	EM12-00015	D
	K BOGGS 10-14-69	
	J SCANLAN 10-17-69	

CHK	CHANGE NO.	REV.
NR	EM12-00017	E
	[signature] 11-13-69	
	[signature] 11-14-69	

DRN. D SHEPARD	DATE 3-10-69	digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS
CHK'D. J BISONETE	DATE 3-10-69	TITLE TAPE CONT STATES + INST
ENG. L GALE	DATE 3-10-69	
PROJ. ENG. L GALE	DATE 3-10-69	
PROD. D CALL	DATE 3-10-69	
FIRST USED ON TC12		SIZE D CODE BS NUMBER TC12-0-LCS REV. E
SCALE		
SHEET 1 OF 1		DIST.

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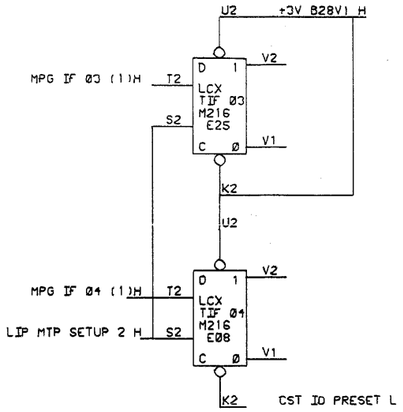
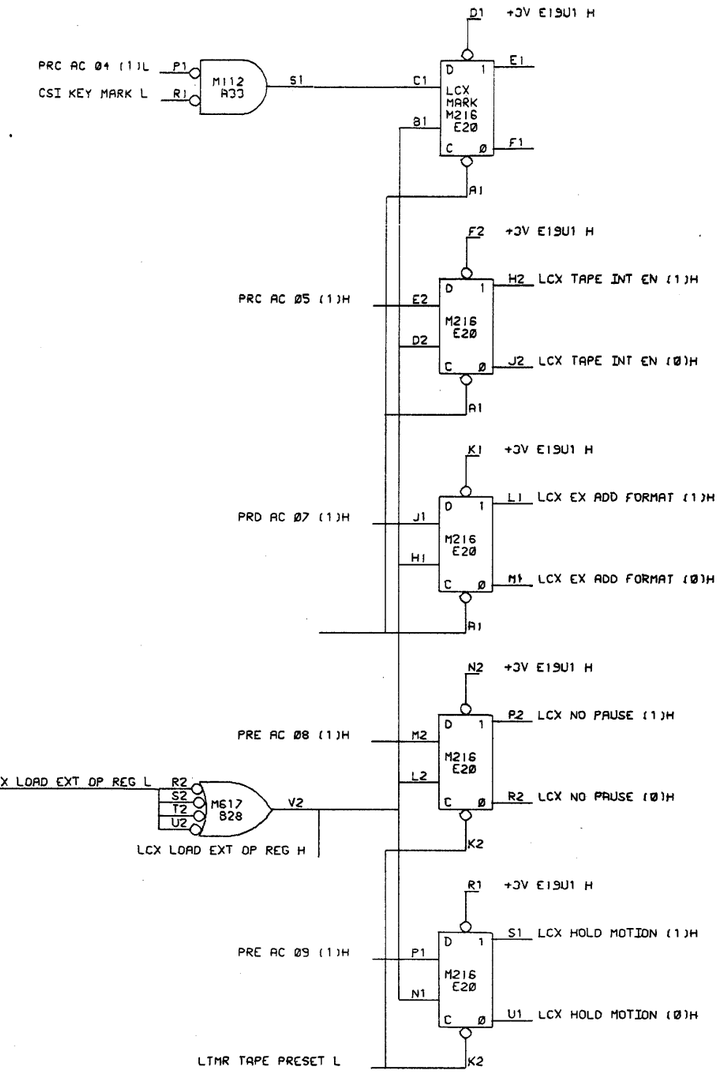
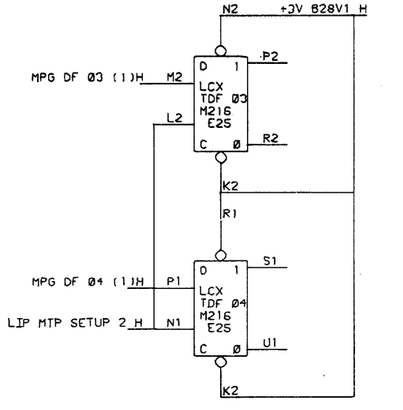
LIP TAPE PRESET L







REVISIONS		
CHK	CHANGE NO.	REV.
	EM12-00002	A
	A. WASHINGTON	
	L. GALE	
	EM12-00007	B
	BRUCE KORTELING	
	L. GALE	

DRN. D.L.SHEPARD	DATE 8-9-69	digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS
CHK'D. J.K. BISONETE	DATE 8-9-69	
ENG. L.GALE	DATE 8-9-69	TITLE TAPE EXTENDED OPERATIONS
PROJ. ENG. L.GALE	DATE 8-9-69	
PROD. D.CALL	DATE 8-9-69	
FIRST USED ON TC12		SIZE D CODE 85 NUMBER TC12-0-LCX REV. B
SCALE		
SHEET 1 OF 1		DIST.

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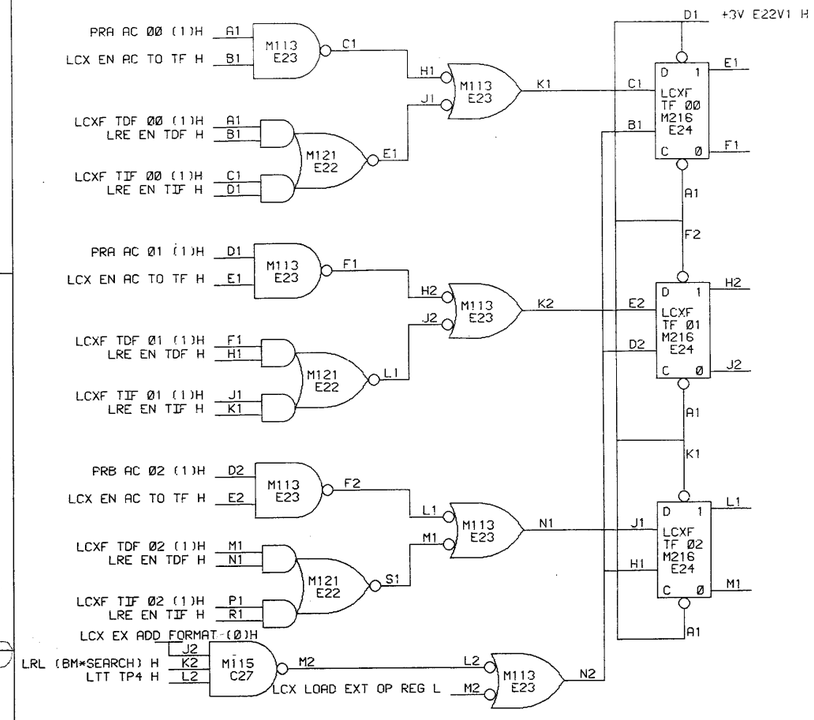

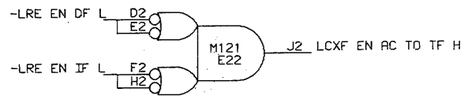

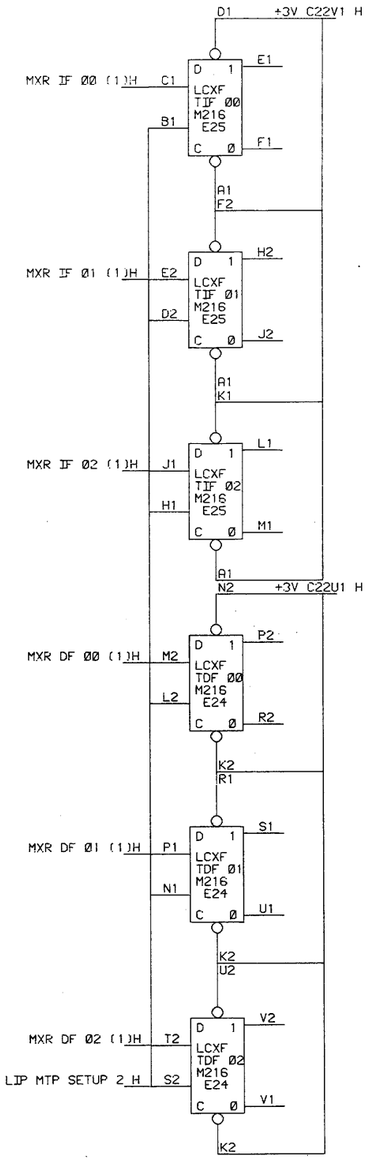

REVISIONS		
CHK	CHANGE NO.	REV.
	EM12-ØØØØ2	

DRN. D.I.SHEPARD	DATE 8-9-69	digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS	
CHK'D. J.K.BISONETE	DATE 8-9-69	TITLE TAPE EXTENDED FIELDS	
ENG. L.GALE	DATE 8-9-69		
PROJ. ENG. L.GALE	DATE 8-9-69		
PROD. D.CALI	DATE 8-9-69		
FIRST USED ON TC12		SIZE D	CODE BS	NUMBER TC12-Ø-LCXF	REV. A
SCALE		DIST.			
SHEET 1 OF 1					

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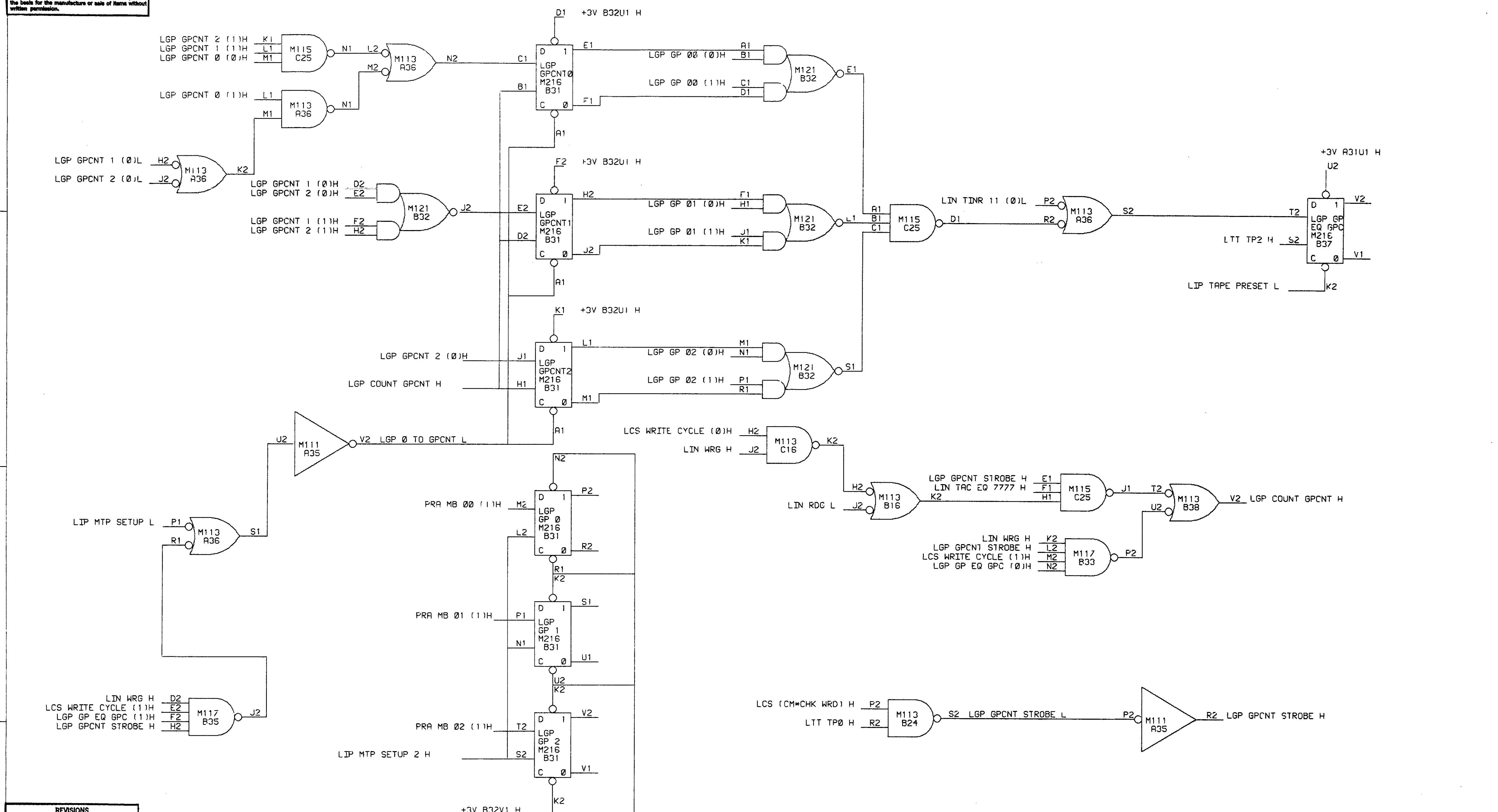

LGP GPCNT 2 (1)H
LGP GPCNT 1 (1)H
LGP GPCNT Ø (Ø)H
M115 C25
M113 A36
LGP GPCNT Ø (1)H
LGP GPCNT 1 (Ø)L
LGP GPCNT 2 (Ø)L
LGP GPCNT 1 (Ø)H
LGP GPCNT 2 (Ø)H
LGP GPCNT 1 (1)H
LGP GPCNT 2 (1)H
M121 B32
+3V B32U1 H
LGP GPCNTØ M216 B31
LGP GPCNT1 M216 B31
LGP GPCNT2 M216 B31
LGP GP ØØ (Ø)H
LGP GP ØØ (1)H
LGP GP Ø1 (Ø)H
LGP GP Ø1 (1)H
LGP GP Ø2 (Ø)H
LGP GP Ø2 (1)H
LGP GPCNT 2 (Ø)H
LGP COUNT GPCNT H
M111 A35
LGP Ø TO GPCNT L
LIP MTP SETUP L
LIN WRG H
LCS WRITE CYCLE (1)H
LGP GP EQ GPC (1)H
LGP GPCNT STROBE H
M117 B35
PRA MB ØØ (1)H
PRA MB Ø1 (1)H
PRA MB Ø2 (1)H
LGP GP Ø M216 B31
LGP GP 1 M216 B31
LGP GP 2 M216 B31
LIP MTP SETUP 2 H
+3V B32V1 H
LIN TINR 11 (Ø)L
+3V A31U1 H
LGP GP EQ GPC M216 B37
LTT TP2 H
LIP TAPE PRESET L
LCS WRITE CYCLE (Ø)H
LIN WRG H
M113 C16
LIN RDG L
M113 B16
LGP GPCNT STROBE H
LIN TAC EQ 7777 H
M113 B38
LGP COUNT GPCNT H
LIN WRG H
LGP GPCNT STROBE H
LCS WRITE CYCLE (1)H
LGP GP EQ GPC (Ø)H
M117 B33
LCS (CM=CHK WRD) H
LTT TPØ H
M113 B24
LGP GPCNT STROBE L
LGP GPCNT STROBE H

DRN. D SHEPHARD	DATE 3-10-69	digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS
CHK'D. J BISONETE	DATE 3-10-69	
ENG. L GALE	DATE 3-10-69	TITLE TAPE GROUP COUNTER
PROJ. ENG. L GALE	DATE 3-10-69	
PROD. D CALL	DATE 3-10-69	
FIRST USED ON TC12		SIZE D · CODE BS · NUMBER TC12-Ø-LGP · REV. C
SCALE		DIST.
SHEET 1 OF 1		

REVISIONS

CHK	CHANGE NO.	REV.
NR	EM12-ØØØ15	A
	K BOGGS 10-14-69	
	J SCANLAN 10-17-69	
AC	EM12-ØØØ37	B
	K KRYSIAK 7-29-70	
	G GALE 7-29-70	
	EM12-ØØØ41	C

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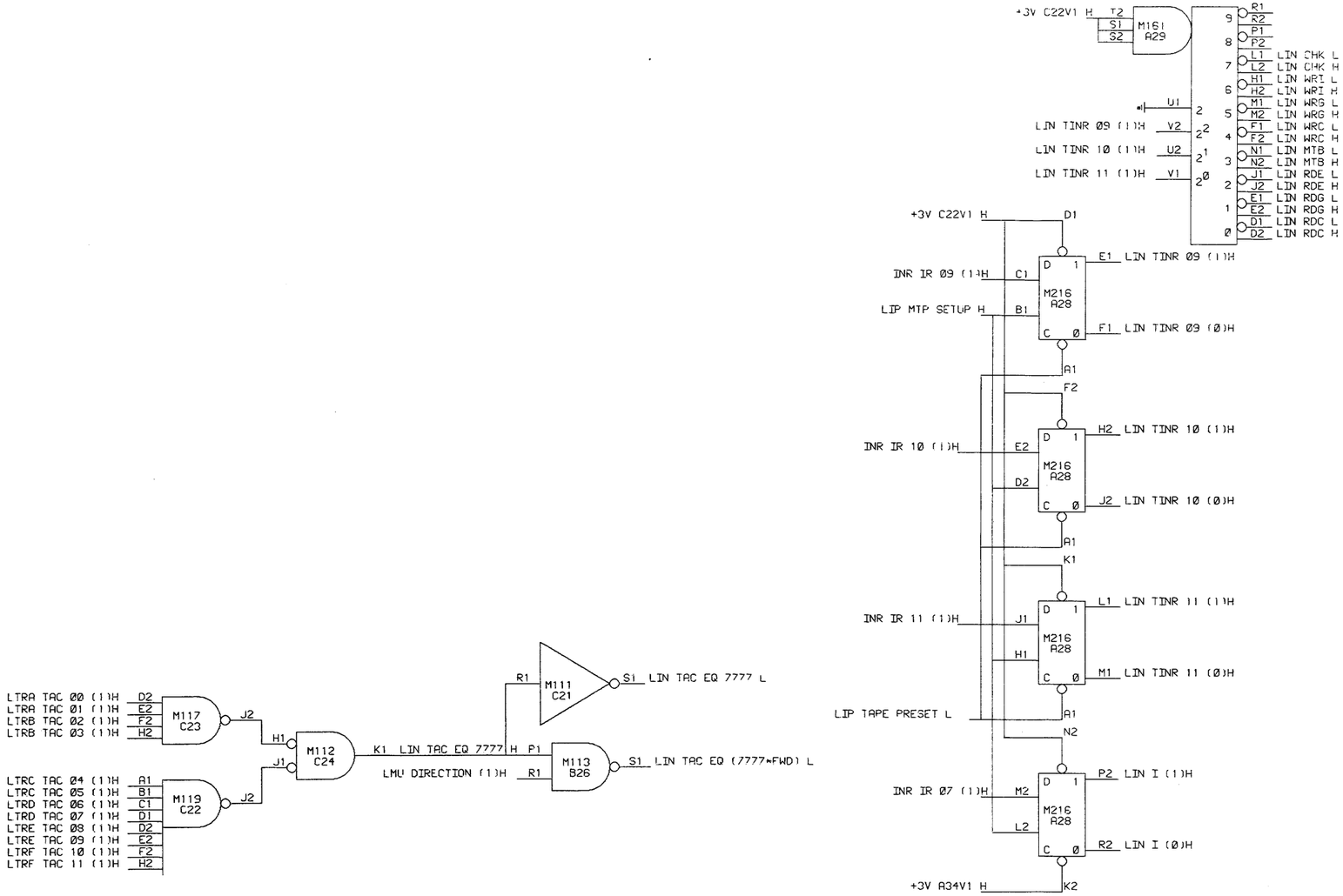

REVISIONS		
CHK	CHANGE NO.	REV.

DRN.	DATE
CHK'D.	DATE
ENG.	DATE
PROJ. ENG.	DATE
PROD.	DATE
FIRST USED ON	TC12
SCALE	
SHEET 1 OF 1	

digital EQUIPMENT CORPORATION
MAYNARD, MASSACHUSETTS

TITLE: TAPE INSTR

SIZE	CODE	NUMBER	REV.
D	BS	TC12-Ø-LIN	ØØ

DIST.

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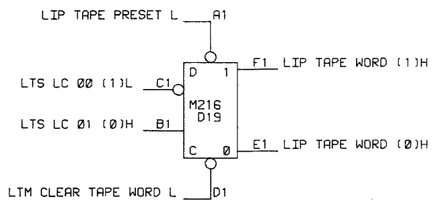

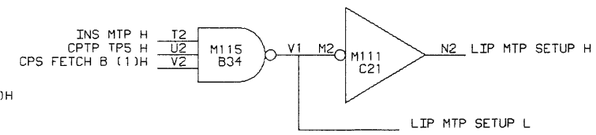

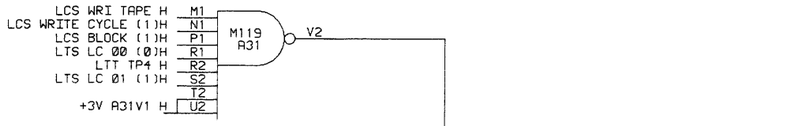

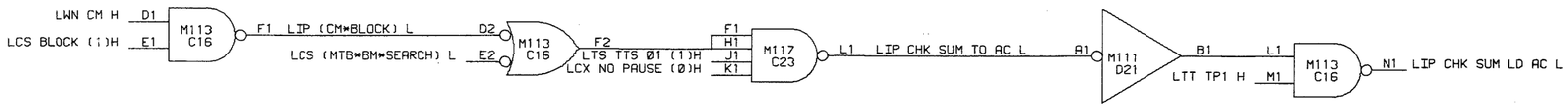

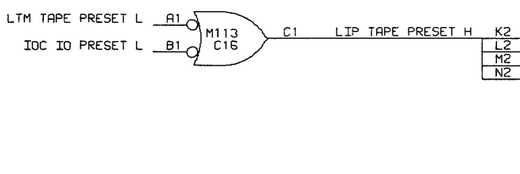

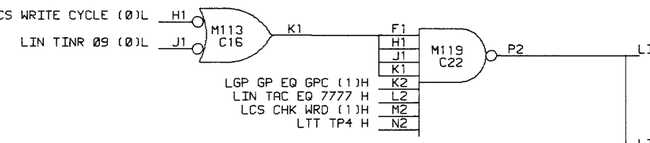

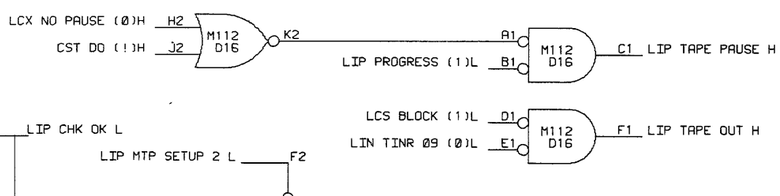

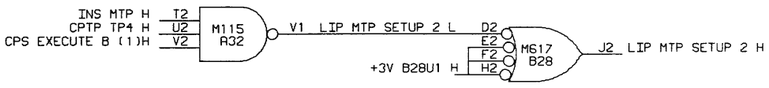

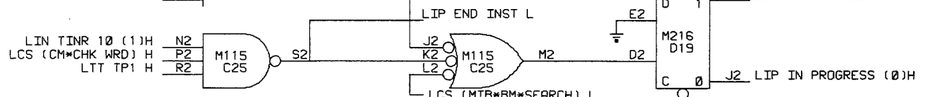

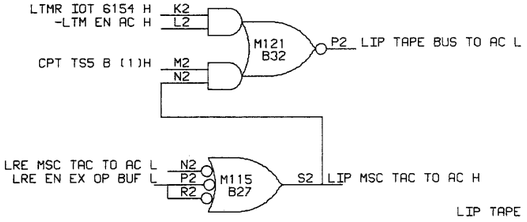

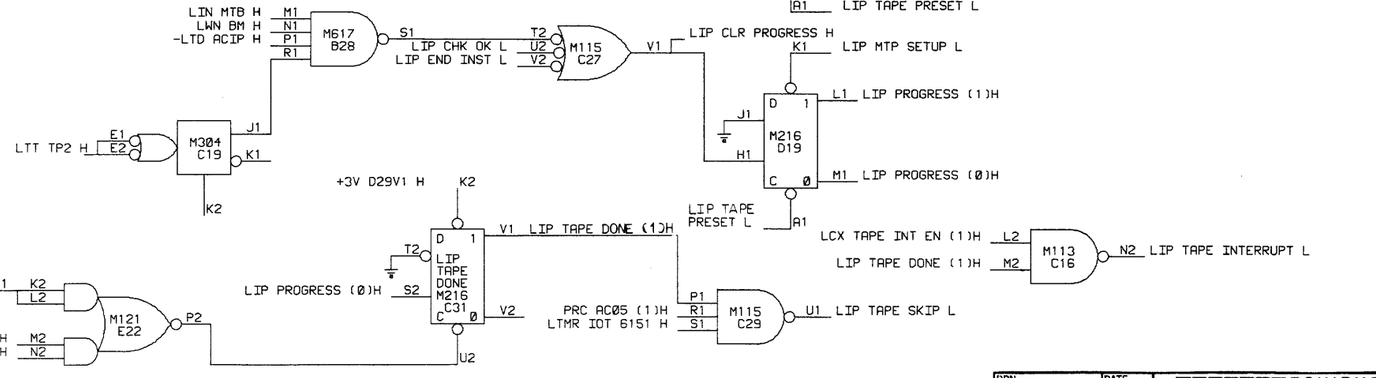

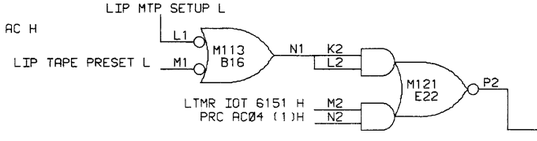

REVISIONS		
CHK	CHANGE NO.	REV.
PD	EM12-00002	A
	J FASSHAUER 4-15-69	
	L GALE 4-24-69	
	EM12-00003	B
	ADS	
	L GALE	
NR	EM12-00007	C
	B KORTELING 8-25-69	
	L GALE 8-26-69	
	EM12-00017	D

DRN D SHEPARD	DATE 3-9-69	digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS
CHK'D J BISONETE	DATE 3-9-69	
ENG L GALE	DATE 3-9-69	TITLE: INTERPROCESSOR SIGNALS
PROJ. ENG. L GALE	DATE 3-9-69	
PROD D CALL	DATE 3-9-69	
FIRST USED ON: TC12		SIZE D; CODE BS; NUMBER TC12-Ø-LIP; REV. D
SCALE		
SHEET 1 OF 1		DIST.

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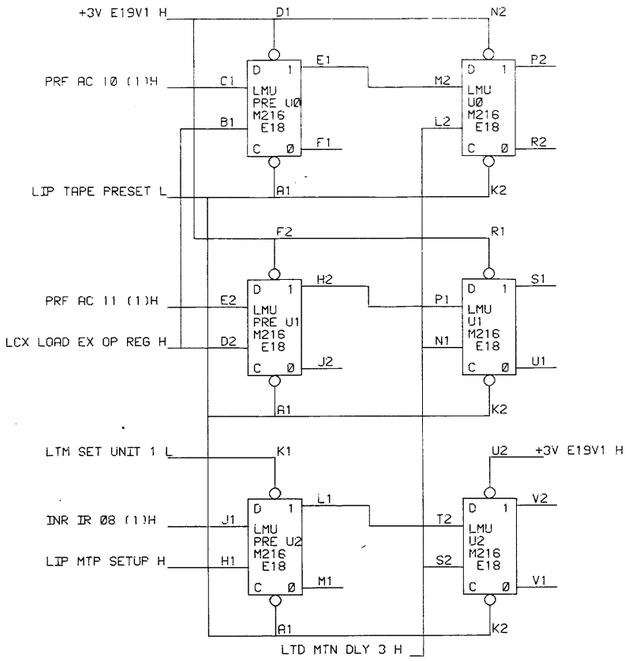

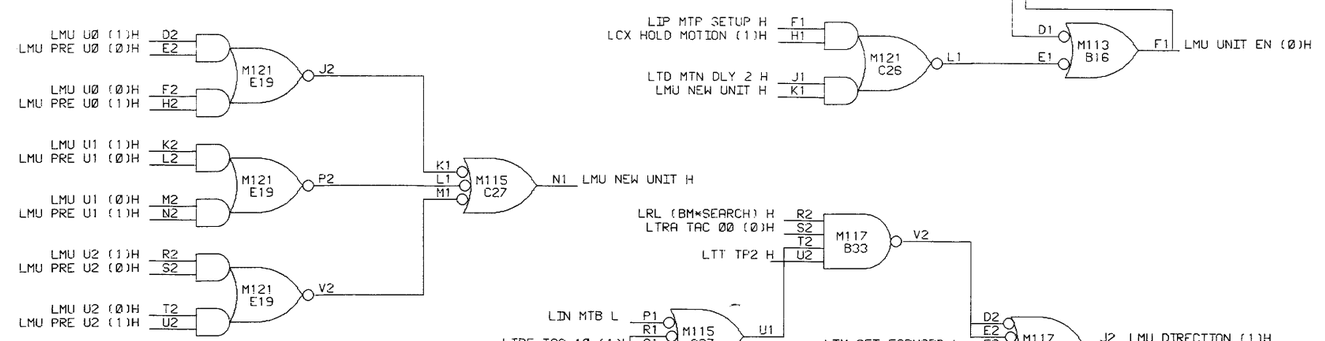

REVISIONS		
CHK	CHANGE NO.	REV.
NR	EM12-00003	A
	ADS	
	J SCANLAN 8/7/69	
	EM12-00017	B

DRN. D SHEPARD	DATE 3-10-69	digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS
CHK'D J BISONETE	DATE 3-10-69	
ENG. L GALE	DATE 3-10-69	TITLE: TAPE UNIT AND MOTION
PROJ. ENG. L GALE	DATE 3-10-69	
PROD. D CALL	DATE 3-10-69	
FIRST USED ON: TC12		SIZE D · CODE BS · NUMBER TC12-0-LMU · REV. B
SCALE		DIST.
SHEET 1 OF 1		

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CPT TS5 B (1)H
LIP IN PROGRESS (Ø)H
M117 E17
S1
F1
M111 D21
H1 LRE (TS5 * INPRG (Ø)) H

INS B MSC H
INR IR Ø7 B (1)H
INS N EQ Ø3 H
M117 A25
J2
LRE MSC TAC TO AC L

INS B MSC H
INR IR Ø7 B (1)H
CPT TS5 B (1)H
INS N EQ Ø3 H
M117 A25
V2
LTM EN AC L
M617 A24
J2 LRE EN AC H

LIP CHK SUM TO AC L
LRL (BM*SEARCH)L
M113 B26
V2
LTS TTS Ø1 (1)H
LCS WRITE (1)L
LWN FM L
M112 C24
LTS TTS Ø4 (1)H
LRE (WRITE * FM)H
M121 B25
J2
LTM TEST SUM L
M617 A24
E1 LRE EN TAC H

INS MTP H
SLA EX TS4 H
M113 A26
V2
M113 A26
K2 LRE EN MB 3-11 H

LRL BLOCK EN TAC LD H
LCS BLOCK (1)H
LTS TTS Ø0 (1)H
M115 A27
M2

INS MTP H
SLA EX TS4 H
LCX EX ADD FORMAT (1)H
M115 A27
M113 A26
N1 LRE EN MB Ø-2 H

LTM TEST SUM L
LTM EN TB L
M617 A24
L1 LRE EN TB H

LRL (BM*SEARCH)H
LTS TTS Ø1 (1)H
M121 B25
P2
CPT TS3 (1)H
LRE READ IN MEM H

LCS WRITE SYNC (1)H
CPT TS4 (1)H
CPS TAPE BREAK (1)H
+3V C23U1 H
M117 C23
P2

LIP TAPE BRK REQ (1)L

LCS WRITE SYNC (1)H
LWN (GM+DM) H
LTS TTS Ø2 (1)H
M115 A27
S2
LTM EN TMA L
M617 A23
P2 LRE EN TMA H

M111 C21
E1 LRE EN EX OP BUF H

INS B MSC H
INS N EQ Ø1 H
LRE (TS5 * INPRG (Ø)) H
INR IR Ø7 B (1)H
M117 C23
V2
LRE EN EX OP BUF L

LRE READ IN MEM L
CPS TAPE BREAK (1)H
LIN TINR Ø9 (Ø)H
LCS BLOCK (1)H
M115 B27
Y1
C1
M111 C21
CPT TS2 (1)H
M113 A26
N2
P1
R1
M113 A26
S1
LRE READ IN MEM H

D1
M111 D21
E1 LRE TAPE CARRY IN L

LTM EN TMA SETUP L
M617 B23
P2 LRE EN TMA SETUP H

LCX EX ADD FORMAT (1)L
M112 C24
C1
F1
M111 C21
H1

LCS BLOCK (1)H
LRL BLOCK EN TAC LD H
LCS WRITE (Ø)H
LTS TTS Ø4 (1)H
M117 A25
P2
LTM EN RWB L
LTP8 EN RWB L
M617 A23
L1 LRE EN RWB H

LRL (BM*SEARCH) H
LTS TTS Ø4 (1)H
M113 B26
S2
LCX EX ADD FORMAT (Ø)L
M112 C24
F1

LRL (BM*SEARCH) H
LTS TTS Ø0 (1)H
M113 A26
S2

LTM EN TBN L
LTM EN TBN L
LTM EN TBN L
M617 A24
S1 LRE EN TBN H

LIN TINR 11 (Ø)H
LGP GP Ø0 (1)H
M115 A27
D1
M113 A26
C1 LRE EN GP 1-2 H

LIN TINR 11 (1)H
LTRE TAC Ø9 (1)H
M115 A27
J1
M113 A26
F1 LRE EN TDF H

LIN TINR 11 (Ø)H
LGP GP Ø0 (Ø)H
M115 A27
N1
M113 A26
F2 LRE EN TAC 10-11 H

LIN TINR 11 (1)H
LTRE TAC Ø9 (Ø)H
M115 A27
U1
M113 A26
K1 LRE EN TIF H

LCS SEARCH (1)H
-LWN BM H
LTS TTS Ø3 (1)H
M115 A27
V1
M111 C21
B1 LRE EN GPCNT H

REVISIONS		
CHK	CHANGE NO.	REV.
	EM12-00002	A
	ADS	
	L GALE	
NR	EM12-00007	B
	B KOTELING 8-31-69	
	L GALE 8-26-69	
	EM12-00041	C
	D Meade 10/20/69	

DRN. D SHEPARD	DATE 3-9-69	digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS
CHK'D. J BISONNETTE	DATE 3-9-69	TITLE: TAPE REG ENABLE CTRL
ENG. L GALE	DATE 3-9-69	
PROJ. ENG. L GALE	DATE 3-9-69	
PROD. D CALL	DATE 3-9-69	
FIRST USED ON: TC12		SIZE D; CODE BS; NUMBER TC12-0-LRE; REV. C
SCALE		SHEET 1 OF 1; DIST.

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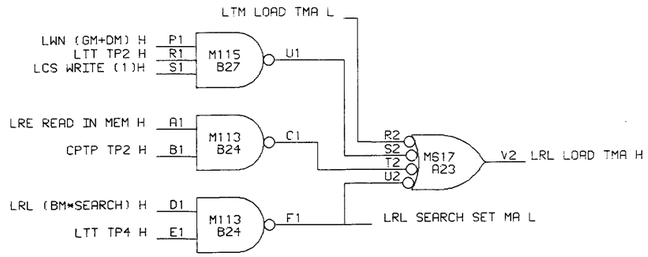

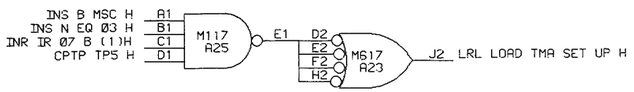

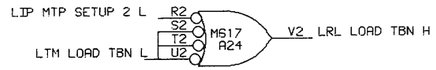

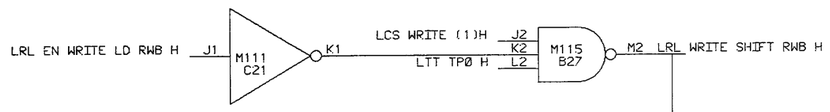

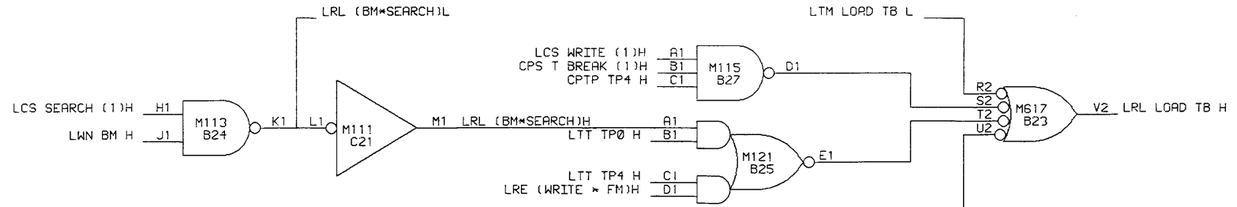

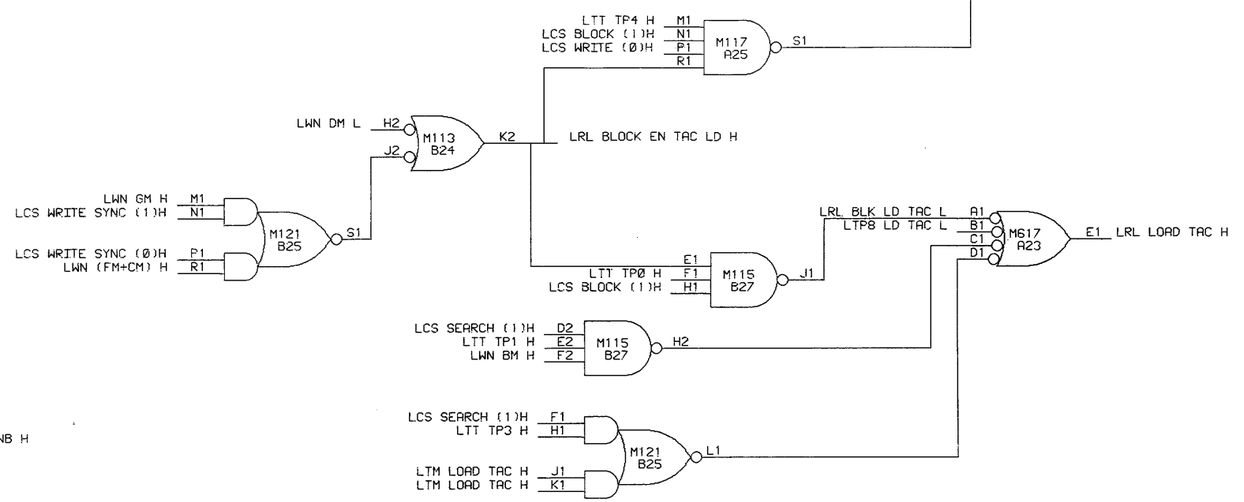

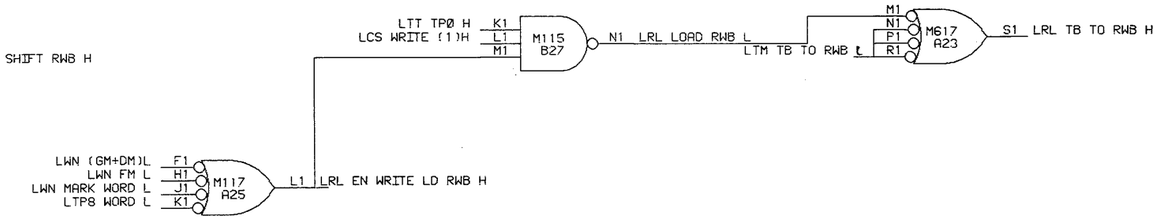

REVISIONS		
CHK	CHANGE NO.	REV.
	EM12-00007	A
	BRUCE KORTELING	
	L. GALE	

DRN.	DATE
CHK'D.	DATE
ENG.	DATE
PROJ. ENG.	DATE
PROD.	DATE
FIRST USED ON: TC12	
SCALE	
SHEET 1 OF 1	

digital EQUIPMENT CORPORATION
MAYNARD, MASSACHUSETTS

TITLE: TAPE REG LOAD CONTROL

SIZE	CODE	NUMBER	REV.
D	BS	TC12-Ø-LRL	A

DIST.

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LMU MOTION (1)L — E2 — W512 F15 — D2 — LTC GO H — V2

LMU MOTION (Ø)L — H2 — W512 F15 — F2 — LTC STOP H — V2

LMU DIRECTION (Ø)L — K2 — W512 F15 — J2 — LTC FWD H — V2

LMU DIRECTION (1)L — M2 — W512 F15 — L2 — LTC REV H — V2

LIP TAPE PRESET H — P2 — W512 F15 — N2 — LTC ALL HALT L — V2

W023 E05

- A2
- B2
- C2 LTC GO H
- D2 LTC STOP H
- E2 LTC FWD H
- F2 LTC REV H
- H2 LTC ALL HALT L
- J2
- K2
- L2
- M2 LTC UNIT 1
- N2 LTC UNIT 2
- P2 LTC UNIT 3
- R2 LTC UNIT 4
- S2 LTC UNIT 5
- T2 LTC UNIT 6
- U2 LTC UNIT 7
- V2 LTC UNIT 8

K2 — G853 F10 — D2 / L2

D2 — W520 F11.1 (+/−) — H2

E2 — W520 F11.1 (+/−) — H2

K2 — W520 F11 (+/−) — N2

L2 — W520 F11 (+/−) — N2

H2 — U2 — W603 F16 — T2 — LTC B UNIT SEL H — V2

N2 — U2 — W603 F16

LTC SINGLE UNIT H

LTC WRITE ON H

S2 — W603 F16 — R2 — LTC WRITE EN L — L1 — M111 D21 — M1 — LTC WRITE EN H

+3V B22U2 H — V2

LMU U0 (Ø)H — A1
LMU U1 (Ø)H — B1
LMU U2 (Ø)H — C1
LMU UNIT EN (1)H — D1
M117 E16 — E1 — LTC UNIT 8 L — E2 — W512 F14 — D2 — LTC UNIT 8 H — V2

LMU UNIT EN (1)H — F1
LMU U0 (Ø)H — H1
LMU U1 (Ø)H — J1
LMU U2 (1)H — K1
M117 E16 — L1 — LTC UNIT 1 L — H2 — W512 F14 — F2 — LTC UNIT 1 H — V2

LMU UNIT EN (1)H — M1
LMU U0 (Ø)H — N1
LMU U1 (1)H — P1
LMU U2 (Ø)H — R1
M117 E16 — S1 — LTC UNIT 2 L — K2 — W512 F14 — J2 — LTC UNIT 2 H — V2

LMU UNIT EN (1)H — D2
LMU U0 (Ø)H — E2
LMU U1 (1)H — F2
LMU U2 (1)H — H2
M117 E16 — J2 — LTC UNIT 3 L — M2 — W512 F14 — L2 — LTC UNIT 3 H — V2

LMU UNIT EN (1)H — K2
LMU U0 (1)H — L2
LMU U1 (Ø)H — M2
LMU U2 (Ø)H — N2
M117 E16 — P2 — LTC UNIT 4 L — P2 — W512 F14 — N2 — LTC UNIT 4 H — V2

LMU UNIT EN (1)H — R2
LMU U0 (1)H — S2
LMU U1 (Ø)H — T2
LMU U2 (1)H — U2
M117 E16 — V2 — LTC UNIT 5 L — S2 — W512 F14 — R2 — LTC UNIT 5 H — V2

LMU UNIT EN (1)H — A1
LMU U0 (1)H — B1
LMU U1 (1)H — C1
LMU U2 (Ø)H — D1
M117 E17 — E1 — LTC UNIT 6 L — U2 — W512 F14 — T2 — LTC UNIT 6 H — V2

LMU UNIT EN (1)H — F1
LMU U0 (1)H — H1
LMU U1 (1)H — J1
LMU U2 (1)H — K1
M117 E17 — L1 — LTC UNIT 7 L — S2 — W512 F15 — R2 — LTC UNIT 7 H — V2

REVISIONS		
CHK	CHANGE NO.	REV.
NR	EM12-00004	B
	B VADITO	
	L GALE 8-18-69	
	EM12-00015	C

DRN.	~~R.L. SHEPARD~~	DATE ~~3-8-69~~
CHK'D.	L.K. BISONETTE	DATE 3-9-69
ENG.	~~L. GALE~~	DATE ~~3-8-69~~
PROJ. ENG.	L. GALE	DATE 3-9-69
PROD.	~~R. CARL~~	DATE ~~3-9-69~~
FIRST USED ON	TC12	
SCALE		
SHEET	1 OF 1	

digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS

TITLE: TRANSPORT CONTROL

SIZE	CODE	NUMBER	REV.
D	BS	TC12-Ø-LTC	C

DIST.

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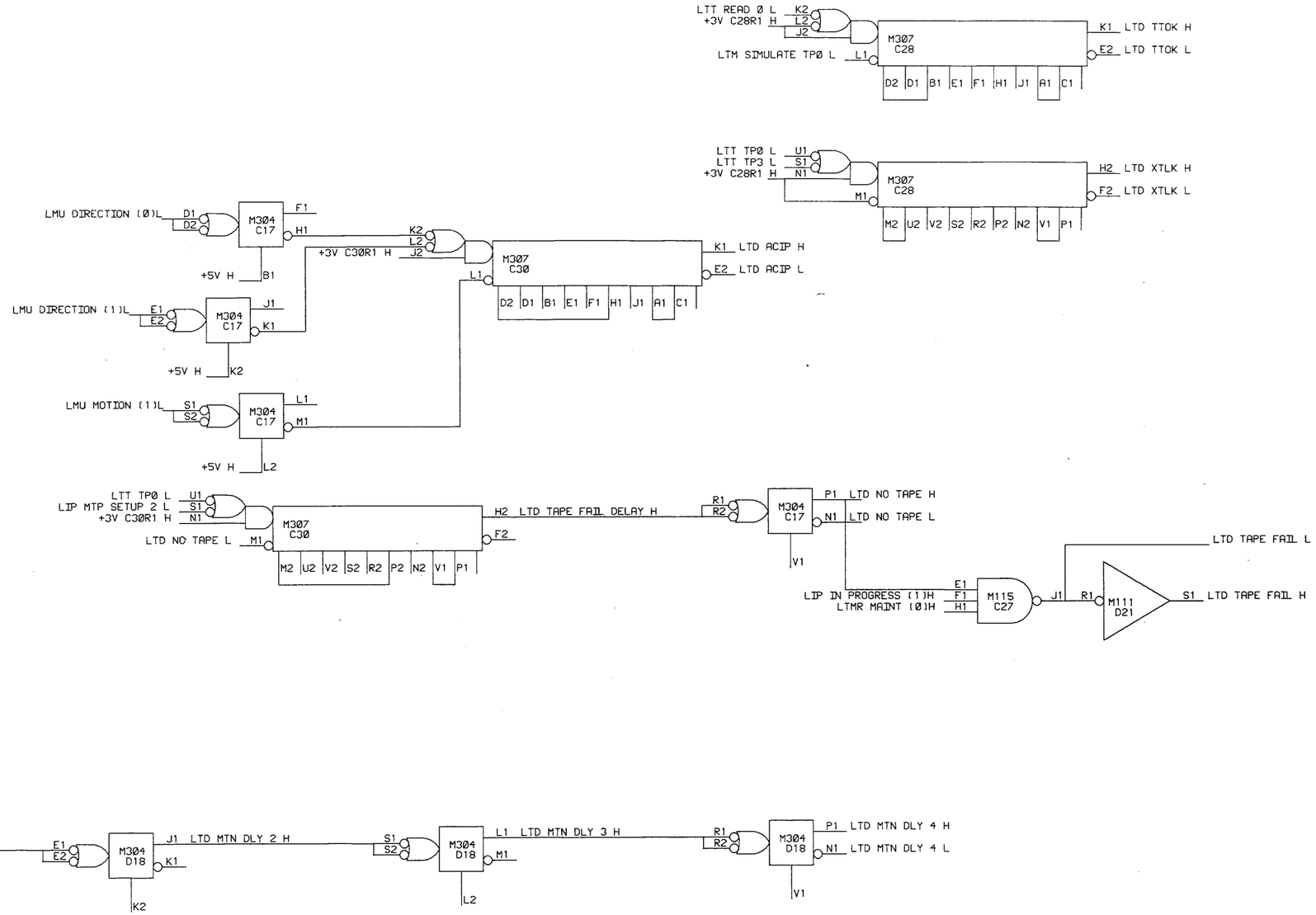
DELAY SETTINGS			
DELAY	TU55	TOLL.	SWITCH SET *
TTOK	48 USEC	± 4	5
ACIP	180 MSEC	± 20	1
XTLX	7 USEC	± 1	5
TAPE FAIL	300 MSEC	± 50	1
MARK CLOCK	7.5 USEC	± 0.3	5

* ON M307 REV.B AND GREATER-SEE B-CS-M307-0-† FOR DETAILS.



REVISIONS			REVISIONS		
CHK	CHANGE NO.	REV.	CHK	CHANGE NO.	REV.
	EM12-00001	A	NR	EM12-00017	E
J FASSHAUER 4/15/69			A WASHINGTON 11-3-69		
L GALE 4/29/69			J SCANLAN 11-14-69		
	EM12-00002	B		EM12-00037	F
A WASHINGTON			K KRYSIAK		
J SCANLAN			J SCANLAN		
	EM12-00003	C	AC	EM12-00038	H
A WASHINGTON					
J SCANLAN					
	EM12-00011	D			
A WASHINGTON					
J SCANLAN					

DRN. D SHEPARD	DATE 3-9-69	digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS	
CHK'D. J BISONETE	DATE 3-9-69		
ENG. L GALE	DATE 3-9-69	TITLE TAPE DELAYS	
PROJ. ENG. L GALE	DATE 3-9-69		
PROD. D CALL	DATE 3-9-69		
FIRST USED ON TC12		SIZE D	CODE BS
SCALE		NUMBER TC12-Ø-LTD	REV. H
SHEET 1 OF 1		DIST.	

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PRD AC Ø6 (1)H A1
LTMR IOT 6151 H B1
M113 B38
C1 LTM SIMULATE TPØ L

LTMR IOT 6151 H D1
PRD AC Ø7 (1)H E1
M113 B38
F1 LTM SIMULATE TP3 L

PRA AC ØØ (1)H D2
LTMR IOT 6152 H E2
M113 B38
F2 LTM TAPE PRESET L

PRA AC Ø1 (1)H H1
LTMR IOT 6152 H J1
M113 B38
K1 LTM SHIFT RWB L

PRB AC Ø2 (1)H H2
LTMR IOT 6152 H J2
M113 B38
K2 LTM TB TO RWB L

PRB AC Ø3 (1)H L1
LTMR IOT 6152 H M1
M113 B38
N1 LTM TEST SUM L

PRC AC Ø4 (1)H L2
LTMR IOT 6152 H M2
M113 B38
N2 LTM CLEAR TAPE WORD

PRC AC Ø5 (1)H P1
LTMR IOT 6152 H R1
M113 B38
S1 LTM SET FORWARD L

PRD AC Ø6 (1)H P2
LTMR IOT 6152 H R2
M113 B38
S2 LTM SET UNIT 1 L

IOC IO STROBE H V1
M111 C21
U1
LTM EN AC L P1
R1
M112 D16
S1

LTMR MAINT IR Ø2 (Ø)H A1
LTMR MAINT IR Ø3 (Ø)H B1
C1
M115 B34
D1 LTM LOAD TB L

LTMR MAINT IR Ø2 (Ø)H E1
LTMR MAINT IR Ø3 (1)H F1
H1
M115 B34
J1 LTM LOAD TBN L

LTMR MAINT IR Ø2 (1)H K1
LTMR MAINT IR Ø3 (1)H L1
M1
M115 B34
N1 LTM LOAD TMA L

LTMR MAINT IR Ø2 (1)H P1
LTMR MAINT IR Ø3 (Ø)H R1
S1
M115 B34
U1 LTM LOAD TAC L

L1
M1
M113 B24
N1 LTM LOAD TAC H

LTMR IOT 6152 H D2
IOC IO STROBE H E2
PRB AC Ø3 (1)H F2
M115 B34
H2 LTM LOAD SUM L

LTMR MAINT IR ØØ (Ø)L I2
LTMR MAINT IR Ø1 (1)L U2
M112 A33
V2

LTMR IOT 6154 L P2
LTMR MAINT IR ØØ (1)L R2
M112 A33
S2

LTMR IOT 6154 H J2
LTMR MAINT IR ØØ (Ø)H K2
LTMR MAINT IR Ø1 (Ø)H L2
M115 B34
M2 LTM EN AC L

LTMR IOT 6154 H A1
B1
LTMR MAINT IR Ø2 (Ø)H C1
LTMR MAINT IR Ø3 (Ø)H D1
M117 B36
E1 LTM EN TMA SETUP L

LTMR IOT 6154 H F1
H1
LTMR MAINT IR Ø2 (Ø)H J1
LTMR MAINT IR Ø3 (1)H K1
M117 B36
L1 LTM EN TBN L

LTMR IOT 6154 H M1
N1
LTMR MAINT IR Ø2 (1)H P1
LTMR MAINT IR Ø3 (Ø)H R1
M117 B36
S1 LTM EN TB L

LTMR IOT 6154 H D2
E2
LTMR MAINT IR Ø2 (1)H F2
LTMR MAINT IR Ø3 (1)H H2
M117 B36
J2 LTM EN RWB L

K2
LTMR MAINT IR Ø1 (Ø)H L2
LTMR MAINT IR Ø2 (Ø)H M2
LTMR MAINT IR Ø3 (Ø)H N2
M117 B36
P2
A1
B1
C1
D1
M617 B23
E1 LTM EN MARK WIND H

R2
LTMR MAINT IR Ø1 (Ø)H S2
LTMR MAINT IR Ø2 (Ø)H T2
LTMR MAINT IR Ø3 (1)H U2
M117 B36
V2
F1
H1
J1
K1
M617 B23
L1 LTM EN STATES H

A1
LTMR MAINT IR Ø1 (Ø)H B1
LTMR MAINT IR Ø2 (1)H C1
LTMR MAINT IR Ø3 (Ø)H D1
M117 B35
E1
M1
N1
P1
R1
M617 B23
S1 LTM EN UNITS H

F1
LTMR MAINT IR Ø1 (Ø)H H1
LTMR MAINT IR Ø2 (1)H J1
LTMR MAINT IR Ø3 (1)H K1
M117 B35
L1
D2
E2
F2
H2
M617 B23
J2 LTM EN INSTR H
LTM EN INSTR L

M1
LTMR MAINT IR Ø1 (1)H N1
LTMR MAINT IR Ø2 (Ø)H P1
LTMR MAINT IR Ø3 (Ø)H R1
M117 B35
S1 N1
M111 C21
P1 LTM EN STATUS 1 H

R2
LTMR MAINT IR Ø1 (1)H S2
LTMR MAINT IR Ø2 (Ø)H T2
LTMR MAINT IR Ø3 (1)H U2
M117 B35
V2 H2
M111 C21
J2 LTM EN STATUS 2 H

K2
LTMR MAINT IR Ø1 (1)H L2
LTMR MAINT IR Ø2 (1)H M2
LTMR MAINT IR Ø3 (Ø)H N2
M117 B35
P2 LTM EN TMA L

REVISIONS		
CHK	CHANGE NO.	REV.
	EM12-ØØØØ3	A

DRN. D.L.SHEPARD	DATE 3-10-69	digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS
CHK'D. J.BISONETTE	DATE 3-10-69	
ENG. L.GALE	DATE 3-10-69	TITLE TAPE MAINT SIGNALS
PROJ. ENG. L.GALE	DATE 3-10-69	
PROD. D.CALL	DATE 3-10-69	
FIRST USED ON TC12		SIZE D CODE BS NUMBER TC12-Ø-LTM REV. A
SCALE		DIST.
SHEET 1 OF 1		

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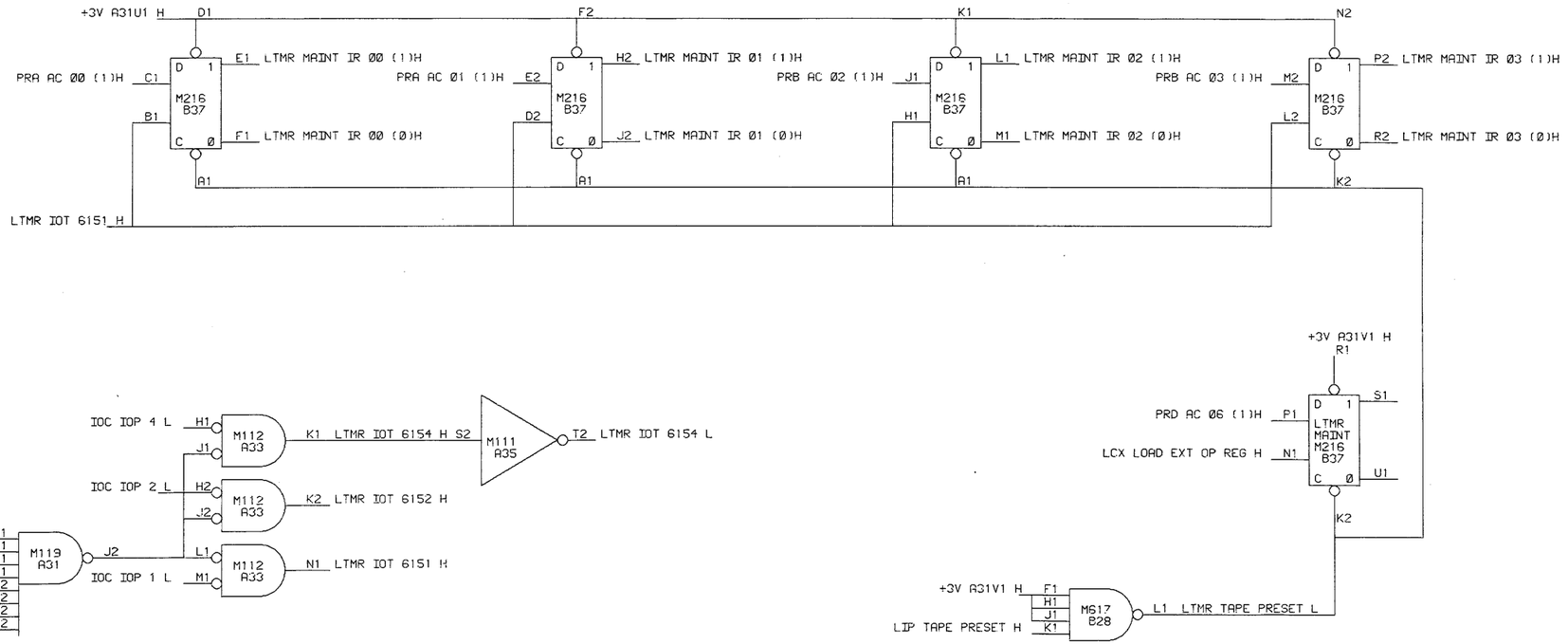
MSC 3 TAC TO AC
MSC I 3 AC TO TMA SETUP

IOT 6151	
AC BIT	FUNCTION
0	TO MAINT INST REG
1	TO MAINT INST REG
2	TO MAINT INST REG
3	TO MAINT INST REG
4	CLEAR TAPE DONE
5	SKIP ON TAPE DONE
6	GENERATE TT0
7	GENERATE TT3
8	SIMULATE MARK INPUT
9	SIMULATE DATA 1 INPUT
10	SIMULATE DATA 2 INPUT
11	SIMULATE DATA 3 INPUT

IOT 6152	
AC BIT	FUNCTION
0	TAPE PRESET
1	SHIFT RWB
2	TB TO RWB
3	TB + TAC TO TAC
4	0 TO TAPE WORD FF
5	SET 8 TAPE
6	SET UNIT 1
7	SET BKWRD
8	SET WRITE SYNC
9	SET 8 TAPE MOTN
10	SET 8 WRITE
11	

IOT 6154	
CONTENTS MAINT INST REG	ACTION
000 0	AC TO TB
000 1	AC TO TBN
001 0	AC TO TAC
001 1	AC TO TMA
010 0	TMA SETUP T0 AC
010 1	TBN TO AC
011 0	TB TO AC
011 1	RWB TO AC
100 0	MARK WINDOW TO AC
100 1	STATES TO AC
101 0	UNITS + MTN TO AC
101 1	TINST TO AC
110 0	MISC STATUS 1 TO AC
110 1	MISC STATUS 2 TO AC
111 0	TMA TO AC
111 1	NOT USED



REVISIONS		
CHK	CHANGE NO.	REV.
	EM12-00017	A

DRN. D SHEPARD	DATE 3-10-69	digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS
CHK'D. J BISONETE	DATE 3-10-69	
ENG. L GALE	DATE 3-10-69	TITLE: TAPE MAINT REG
PROJ ENG. L GALE	DATE 3-10-69	
PROD. D CALL	DATE 3-10-69	
FIRST USED ON: TC12		SIZE D | CODE BS | NUMBER TC12-0-LTMR | REV. A
SCALE		
SHEET 1 OF 1		DIST.

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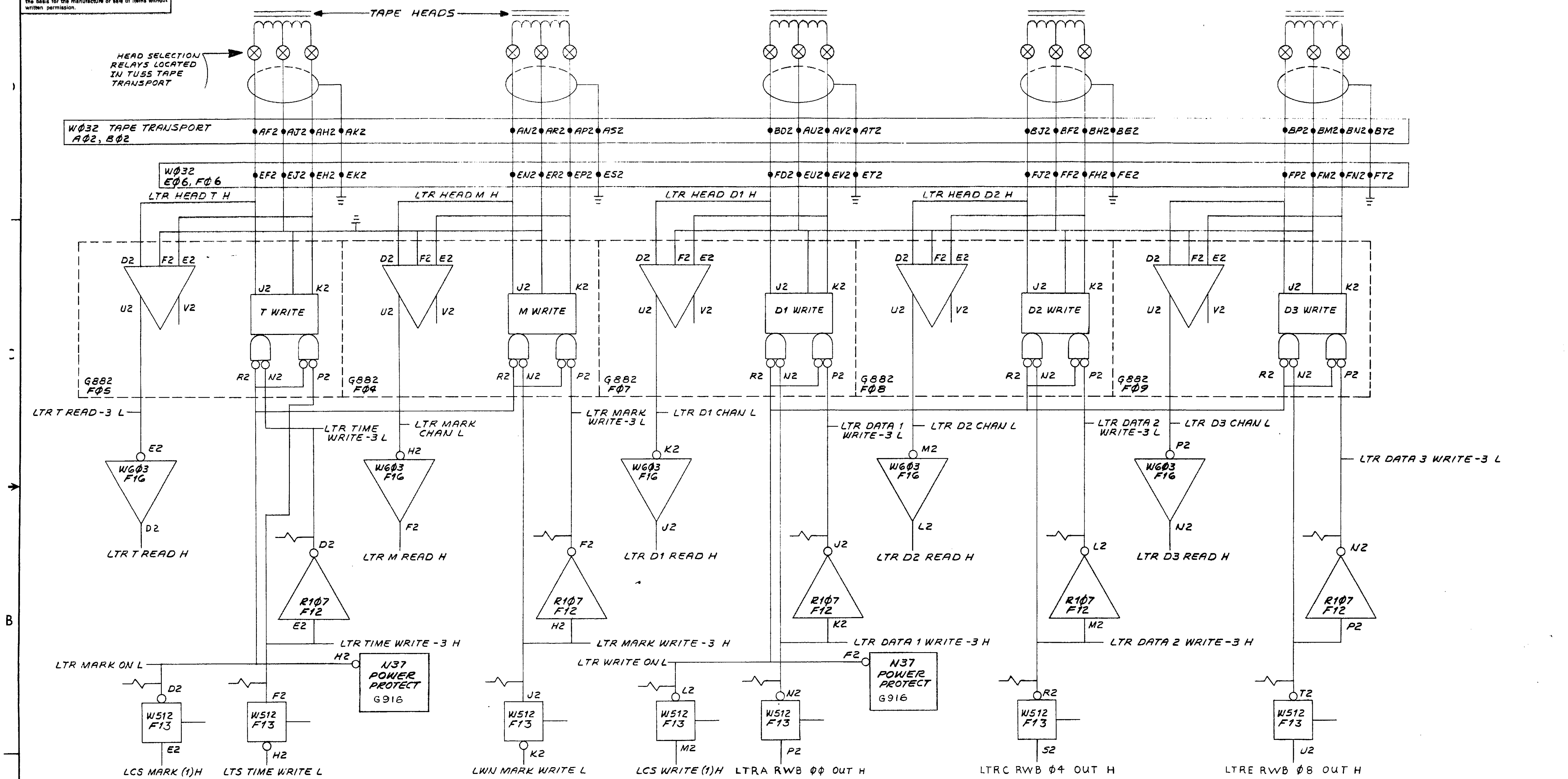

TAPE HEADS
HEAD SELECTION RELAYS LOCATED IN TU55 TAPE TRANSPORT
WØ32 TAPE TRANSPORT AØ2, BØ2
AF2 AJ2 AH2 AK2
AN2 AR2 AP2 AS2
BD2 AU2 AV2 AT2
BJ2 BF2 BH2 BE2
BP2 BM2 BN2 BT2
WØ32 EØ6, FØ6
EF2 EJ2 EH2 EK2
EN2 ER2 EP2 ES2
FD2 EU2 EV2 ET2
FJ2 FF2 FH2 FE2
FP2 FM2 FN2 FT2
LTR HEAD T H
LTR HEAD M H
LTR HEAD D1 H
LTR HEAD D2 H
T WRITE
M WRITE
D1 WRITE
D2 WRITE
D3 WRITE
G882 FØ5
G882 FØ4
G882 FØ7
G882 FØ8
G882 FØ9
LTR T READ -3 L
LTR TIME WRITE -3 L
LTR MARK CHAN L
LTR MARK WRITE -3 L
LTR D1 CHAN L
LTR DATA 1 WRITE -3 L
LTR D2 CHAN L
LTR DATA 2 WRITE -3 L
LTR D3 CHAN L
LTR DATA 3 WRITE -3 L
W6Ø3 F16
LTR T READ H
LTR M READ H
LTR D1 READ H
LTR D2 READ H
LTR D3 READ H
R1Ø7 F12
LTR TIME WRITE -3 H
LTR MARK WRITE -3 H
LTR DATA 1 WRITE -3 H
LTR DATA 2 WRITE -3 H
LTR MARK ON L
LTR WRITE ON L
N37 POWER PROTECT G916
W512 F13
LCS MARK (1)H
LTS TIME WRITE L
LWN MARK WRITE L
LCS WRITE (1)H
LTRA RWB ØØ OUT H
LTRC RWB Ø4 OUT H
LTRE RWB Ø8 OUT H

QTY.	DESCRIPTION	PART NO.	ITEM NO.

PARTS LIST

REVISIONS			
REV.	CHANGE NO.		CHK
A	00002	T. QUILLIN / L. GALE 6/18/69	
B	EM12-00003	T. QUILLIN 6/2/69 / L. GALE 8/5/69	

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. Joe Ayres — DATE 21 AUG 68
CHK'D — DATE 2/27/69
ENG. — DATE
PROJ. ENG. — DATE
PROD. — DATE
FIRST USED ON TC12
SCALE
SHEET 1 OF 1

digital EQUIPMENT CORPORATION, MAYNARD, MASSACHUSETTS

TITLE: LTR TAPE READER-WRITERS

SIZE	CODE	NUMBER	REV.
D	BS	TC12-Ø-LTR	B

DIST.

DEC FORM NO. DRD 102A

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PRA AC ØØ(1) H
LRE EN AC H
BN2 BM2 BP2 BU1

LWN WIND SHADE (1) H
LTM EN MARK WIND H
BK2 BL2

LIN TAC EQ 7777 H
LTM EN STATES H
BJ2 BS1

-LTC UNIT B H
LTM EN UNITS H
BR1 BF1

LCXF TF ØØ (1) H
LRE EN EX OP BUF H
BM1 BL1

LTRA TB ØØ(1) H
LRE EN TB H
BK1

PRA MB ØØ(1) H
LRE EN MB Ø-2 H
AS1 AR2

LTS PHASE H
LTM EN STATUS 1 H
AM2 AE2

LTRA RWB ØØ(1) H
LRE EN RWB H
AD2

LTRA TBN ØØ(1) H
LRE EN TBN H
AM1 AL1

LTRA TMA ØØ(1) H
LRE EN TMA H
AS2

LTR TMA SET UP ØØ(1) H
LRE EN TMA SET UP H
AP1

LTRA MSC IN ØØ H
AP2

LTRA TAC ØØ(1) H
LRE EN TAC H
AL2

BN1 BN2

AN2

AV2

LTRA CARRY OUT ØØ L

-LTS PHASE H
BS2

BV1 LTRA RWB ØØ OUT H

BV2 LTRA TAPE BUS ØØ H

D 1 LTRA TMA SETUP ØØ C Ø — AR1
D 1 LTRA TMA ØØ C Ø — AT2
D 1 LTRA TBN ØØ C Ø — AU1
D 1 LTRA TAC ØØ C Ø — AN1 — AJ2
D 1 LTRA TB ØØ C Ø — BP1
D 1 LTRA RWB ØØ C Ø

PRA AC Ø1 (1) H
LRE EN AC H
BH2 BU1

LWN WIND ØØ(1) H
LTM EN MARK WIND H
BJ1 BL2

LCS IDLE (1) H
LTM EN STATES H
BC1 BS1

-LTC UNIT 1 H
LTM EN UNITS H
BH1 BF1

LCXF TF Ø1(1) H
LRE EN EX OP BUF H
BE1 BL1

LTRA TB Ø1(1) H
LRE EN TB H
BK1

PRA MB Ø1 (1) H
LRE EN MB Ø-2 H
AB2 AC1

LIP IN PROGRESS (1) H
LTM EN STATUS 1 H
AE1 AE2

LTRA RWB Ø1 (1) H
LRE EN RWB H
AD2

LTRA TBN Ø1 (1) H
LRE EN TBN H
AF2 AL1

LTRA TMA Ø1 (1) H
LRE EN TMA H
AS2

LTR TMA SET UP Ø1 (1) H
LRE EN TMA SET UP H
AP1

LTRA TAC Ø1(1) H
LRE EN TAC H
AF1 AL2

BB1 BB2

BR2 LTRA TAPE BUS Ø1 H

D 1 LTRA TMA SETUP Ø1 C Ø — AH1
D 1 LTRA TMA Ø1 C Ø — AD1
D 1 LTRA TBN Ø1 C Ø — AK2
D 1 LTRA TAC Ø1 C Ø — AH2 — AB1
D 1 LTRA TB Ø1 C Ø — BD1
D 1 LTRA RWB Ø1 C Ø — BD2

LRE EN TDF H
LCX TDF Ø4(1) H
R2 S1

LRE EN TIF H
LCX TIF Ø4(1) H
P2 E1

LTM EN INSTR H
LIN RCG H
N2 P1

LTM EN STATUS 2 H
LTP B WRITE SEL H
M2 N1

M169 A16

L1 M1

+3V B16 U1 H

LRE EN TDF H
LCX TDF Ø3(1) H
R2 V1

LRE EN TIF H
LCX TIF Ø3(1) H
P2 U1

LTM EN INSTR H
LIN RDC H
N2 T2

LTM EN STATUS 2 H
LTP B TAPE SEL H
M2 S2

M169 A16

U2 V2 LTRA MSC IN ØØ H

+3V B16 U1 H

LRL LOAD TMA H AU2
LRL LOAD TBN H AJ1
LRL LOAD TAC H AA1
LRL LOAD TB H BT2
LRL TB TO RWB H BF2
LRL SHIFT RWB H BE2

LTRB RWB Ø2 OUT H

LTRB CARRY OUT Ø2 L BA1

LRL LOAD TMA SET UP H AK1

M222
A17
B17

REVISIONS	REV	CHK	
CHANGE NO. 00002	A		T. Quillin
EM12-00004	B		L GALE
EM12-00009	C		T. Quillin
EM12-00015	D		L. GALE
EM12-00032	E		T. Quillin

DEC FORM NO DRD 102A

QTY.	DESCRIPTION	PART NO.	ITEM NO.

PARTS LIST

UNLESS OTHERWISE SPECIFIED
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. DATE 12-8-68
CHK'D DATE 2/27/69
ENG. DATE 2-28-69
PROJ. ENG. DATE 2-28-69
PROD. DATE 4/4/69
FIRST USED ON TC12

digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS

TITLE
LTRA
BITS Ø & 1

SIZE D | CODE 85 | NUMBER TC12-Ø-LTRA | REV E
SCALE
SHEET 1 OF 1
DIST.

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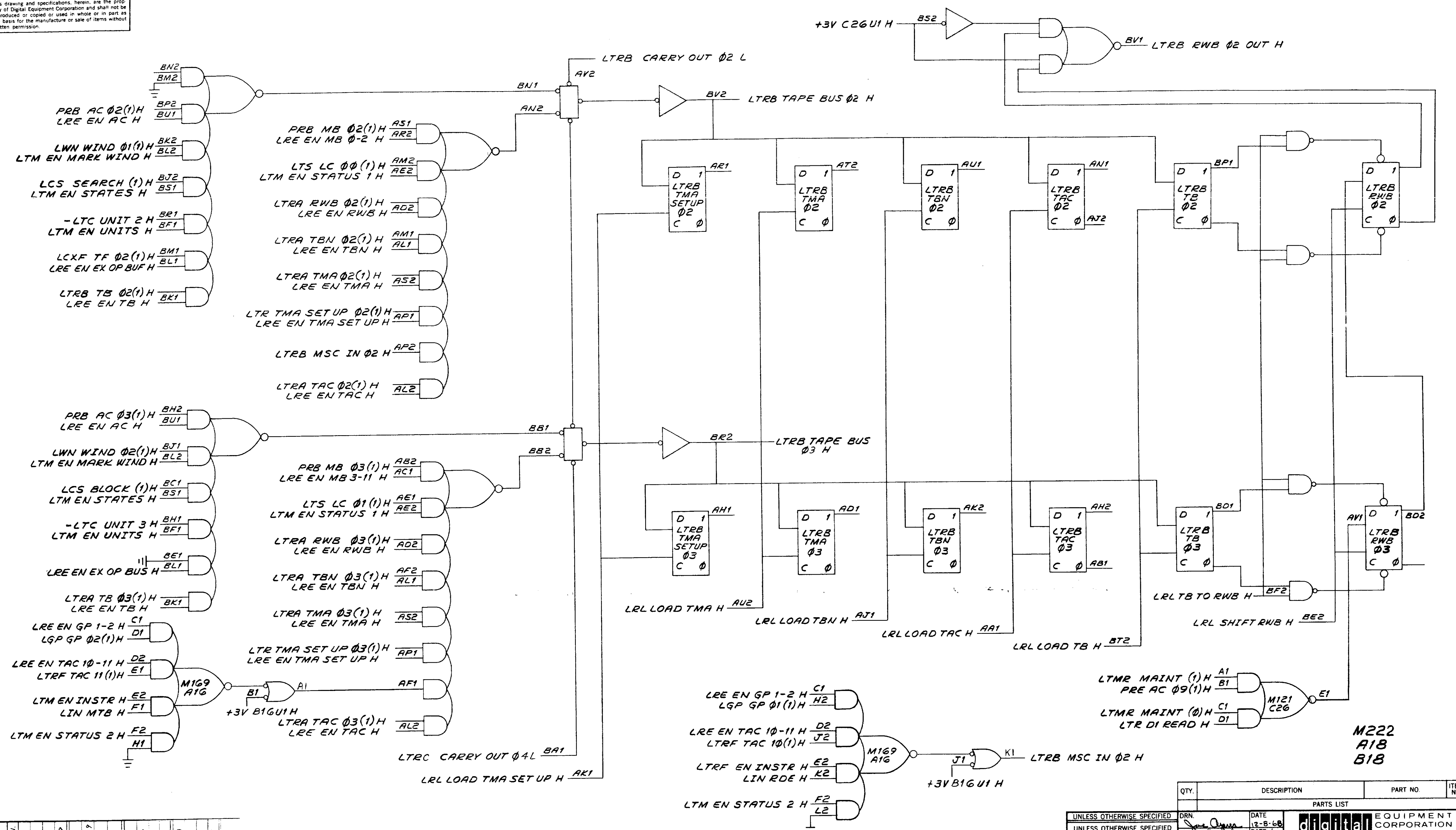

PRB AC Ø2(1) H
LRE EN AC H
LWN WIND Ø1(1) H
LTM EN MARK WIND H
LCS SEARCH (1) H
LTM EN STATES H
-LTC UNIT 2 H
LTM EN UNITS H
LCXF TF Ø2(1) H
LRE EN EX OP BUF H
LTRB TB Ø2(1) H
LRE EN TB H
PRB MB Ø2(1) H
LRE EN MB Ø-2 H
LTS LC ØØ (1) H
LTM EN STATUS 1 H
LTRA RWB Ø2(1) H
LRE EN RWB H
LTRA TBN Ø2(1) H
LRE EN TBN H
LTRA TMA Ø2(1) H
LRE EN TMA H
LTR TMA SET UP Ø2(1) H
LRE EN TMA SET UP H
LTRB MSC IN Ø2 H
LTRA TAC Ø2(1) H
LRE EN TAC H
LTRB CARRY OUT Ø2 L
LTRB TAPE BUS Ø2 H
+3V C26U1 H
LTRB RWB Ø2 OUT H
LTRB TMA SETUP Ø2
LTRB TMA Ø2
LTRB TBN Ø2
LTRB TAC Ø2
LTRB TB Ø2
LTRB RWB Ø2
PRB AC Ø3(1) H
LWN WIND Ø2(1) H
LTM EN MARK WIND H
LCS BLOCK (1) H
LTM EN STATES H
-LTC UNIT 3 H
LTM EN UNITS H
LRE EN EX OP BUS H
LTRA TB Ø3(1) H
LRE EN TB H
PRB MB Ø3(1) H
LRE EN MB 3-11 H
LTS LC Ø1(1) H
LTM EN STATUS 1 H
LTRA RWB Ø3(1) H
LRE EN RWB H
LTRA TBN Ø3(1) H
LRE EN TBN H
LTRA TMA Ø3(1) H
LRE EN TMA H
LTR TMA SET UP Ø3(1) H
LRE EN TMA SET UP H
LTRA TAC Ø3(1) H
LRE EN TAC H
LTRB TAPE BUS Ø3 H
LTRB TMA SETUP Ø3
LTRB TMA Ø3
LTRB TBN Ø3
LTRB TAC Ø3
LTRB TB Ø3
LTRB RWB Ø3
LRL LOAD TMA H
LRL LOAD TBN H
LRL LOAD TAC H
LRL LOAD TB H
LRL TB TO RWB H
LRL SHIFT RWB H
LRE EN GP 1-2 H
LGP GP Ø2(1) H
LRE EN TAC 1Ø-11 H
LTRF TAC 11(1) H
LTM EN INSTR H
LIN MTB H
LTM EN STATUS 2 H
M169 A16
+3V B1GU1 H
LTRC CARRY OUT Ø4 L
LRL LOAD TMA SET UP H
LTMR MAINT (1) H
PRE AC Ø9(1) H
LTMR MAINT (Ø) H
LTR DI READ H
M121 C26
LRE EN GP 1-2 H
LGP GP Ø1(1) H
LRE EN TAC 1Ø-11 H
LTRF TAC 1Ø(1) H
LTRF EN INSTR H
LIN RDE H
LTM EN STATUS 2 H
+3V B16U1 H
LTRB MSC IN Ø2 H
M222
A18
B18

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

		DATE
DRN.		12-8-68
CHKD.		2/27/69
ENG.		2-28-69
PROJ. ENG.		2-28-69
PROD.		2/28/69

FIRST USED ON TC12

SCALE

SHEET 1 OF 1

digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS

TITLE LTRB BITS 2 & 3

SIZE	CODE	NUMBER	REV
D	BS	TC12-Ø-LTRB	D

DIST.

REVISIONS

CHK	CHANGE NO.	REV.
	00002 T. Quillin L. GALE	A
	EM12-00003 T. Quillin 6-24-69 L. GALE	B
	EM12-00009 L. GALE	C
	EM12-00015 L. GALE	D

DEC FORM NO DRD 102A

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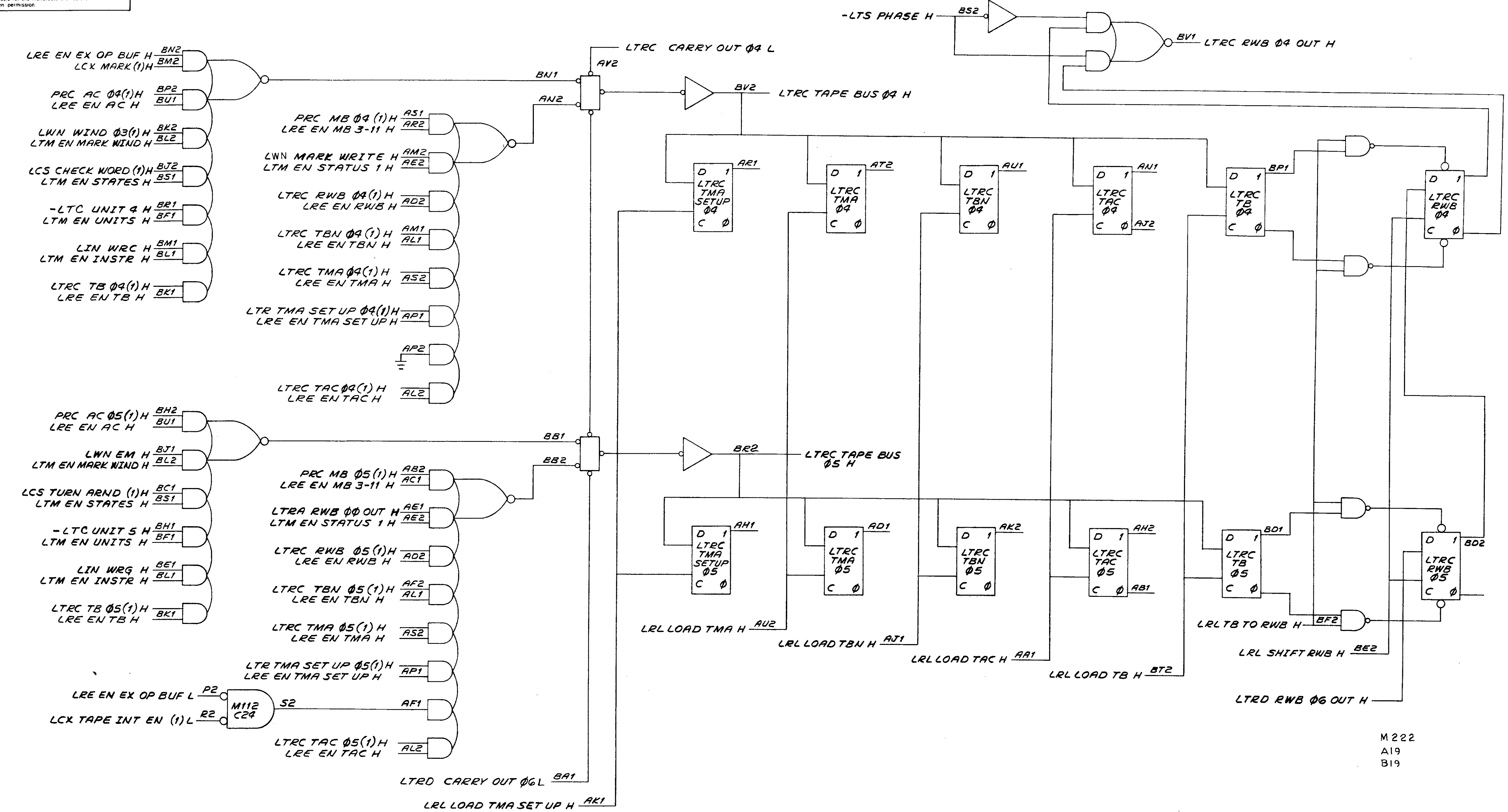


REV.	CHANGE NO.	REVISIONS	CHK
A	00002	T. QUILLIN / L. GALE 6/18/69	
B	EM12-00030	T. Quillin 2-2-70 / GALE	
C	EM12-00037	D. Moore 7-16-70 / GALE 7/21/70	

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

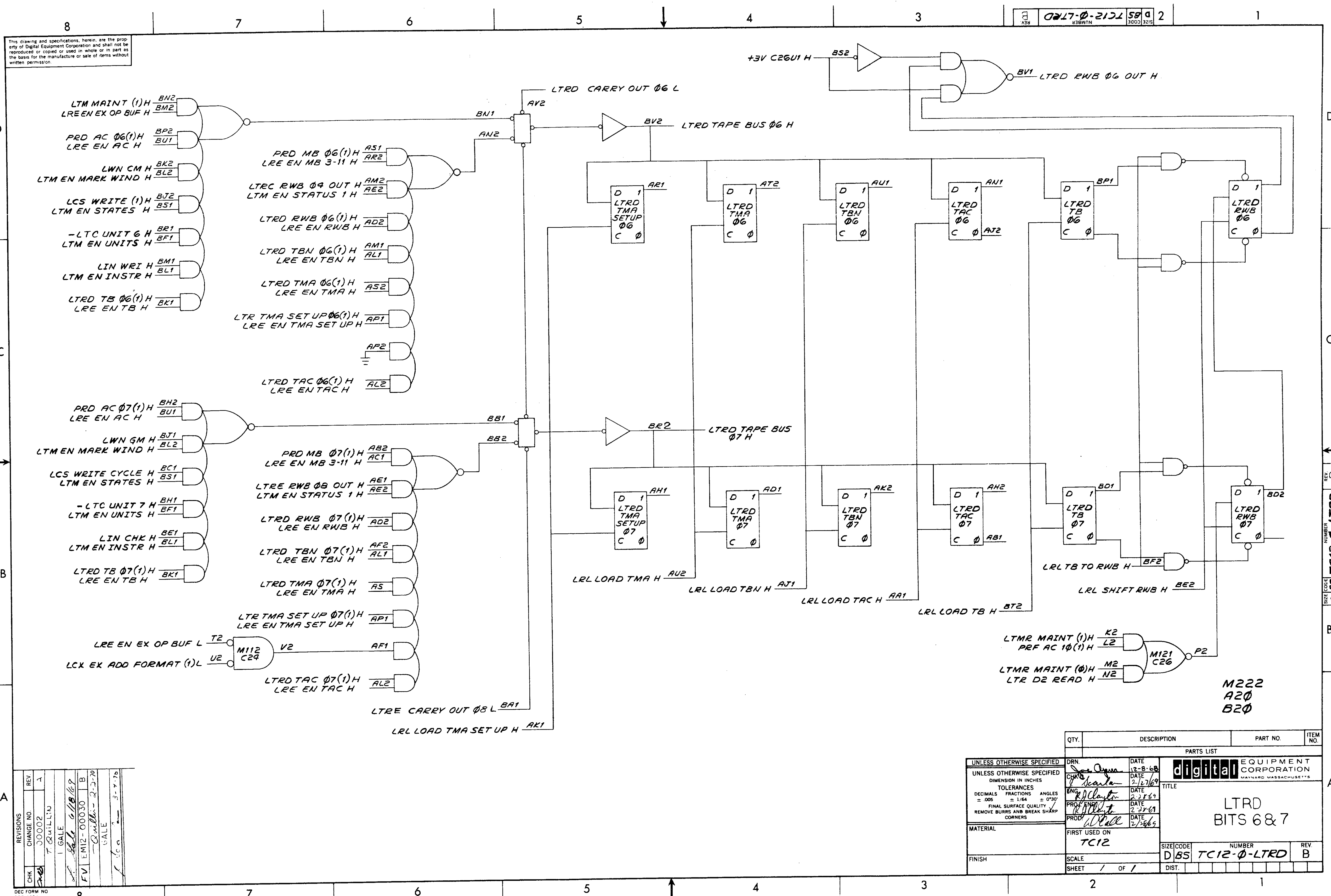
DRN. Joe Ayers DATE 12-5-68
CHKD. J. Scarlan DATE 2/3/69
ENG. R. J. Clayton DATE 2-28-69
PROJ. ENG. R. J. Clayton DATE 2-28-69
PROD. W. Ball DATE 2/28/69
FIRST USED ON TC12
SCALE
SHEET 1 OF 1

digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS

TITLE
LTRC BITS 4 & 5

SIZE D CODE BS NUMBER TC12-Ø-LTRC REV. C

DEC FORM NO DRD 102A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LTM MAINT (1) H
LRE EN EX OP BUF H
PRD AC Φ6(1) H
LRE EN AC H
LWN CM H
LTM EN MARK WIND H
LCS WRITE (1) H
LTM EN STATES H
-LTC UNIT 6 H
LTM EN UNITS H
LIN WRI H
LTM EN INSTR H
LTRD TB Φ6(1) H
LRE EN TB H
PRD MB Φ6(1) H
LRE EN MB 3-11 H
LTRC RWB Φ4 OUT H
LTM EN STATUS 1 H
LTRD RWB Φ6(1) H
LRE EN RWB H
LTRD TBN Φ6(1) H
LRE EN TBN H
LTRD TMA Φ6(1) H
LRE EN TMA H
LTR TMA SET UP Φ6(1) H
LRE EN TMA SET UP H
LTRD TAC Φ6(1) H
LRE EN TAC H
LTRD CARRY OUT Φ6 L
LTRD TAPE BUS Φ6 H
+3V C26U1 H
LTRD RWB Φ6 OUT H
LTRD TMA SETUP Φ6
LTRD TMA Φ6
LTRD TBN Φ6
LTRD TAC Φ6
LTRD TB Φ6
LTRD RWB Φ6
PRD AC Φ7(1) H
LRE EN AC H
LWN GM H
LTM EN MARK WIND H
LCS WRITE CYCLE H
LTM EN STATES H
-LTC UNIT 7 H
LTM EN UNITS H
LIN CHK H
LTM EN INSTR H
LTRD TB Φ7(1) H
LRE EN TB H
PRD MB Φ7(1) H
LRE EN MB 3-11 H
LTRE RWB Φ8 OUT H
LTM EN STATUS 1 H
LTRD RWB Φ7(1) H
LRE EN RWB H
LTRD TBN Φ7(1) H
LRE EN TBN H
LTRD TMA Φ7(1) H
LRE EN TMA H
LTR TMA SET UP Φ7(1) H
LRE EN TMA SET UP H
LRE EN EX OP BUF L
LCX EX ADD FORMAT (1) L
M112 C29
LTRD TAC Φ7(1) H
LRE EN TAC H
LTRE CARRY OUT Φ8 L
LRL LOAD TMA SET UP H
LTRD TAPE BUS Φ7 H
LTRD TMA SETUP Φ7
LTRD TMA Φ7
LTRD TBN Φ7
LTRD TAC Φ7
LTRD TB Φ7
LTRD RWB Φ7
LRL LOAD TMA H
LRL LOAD TBN H
LRL LOAD TAC H
LRL LOAD TB H
LRL TB TO RWB H
LRL SHIFT RWB H
LTMR MAINT (1) H
PRF AC 1Φ(1) H
LTMR MAINT (Φ) H
LTR D2 READ H
M121 C26
M222
A2Φ
B2Φ
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. CHKD. ENG. PROD. ENGR. PROD.
DATE 12-8-68
FIRST USED ON TC12
SCALE
SHEET 1 OF 1
digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS
TITLE
LTRD
BITS 6 & 7
SIZE D CODE BS NUMBER TC12-Φ-LTRD REV. B
DIST.
REVISIONS
CHANGE NO. REV.
00002 A
EM12-00030 B
DEC FORM NO DRD 102A

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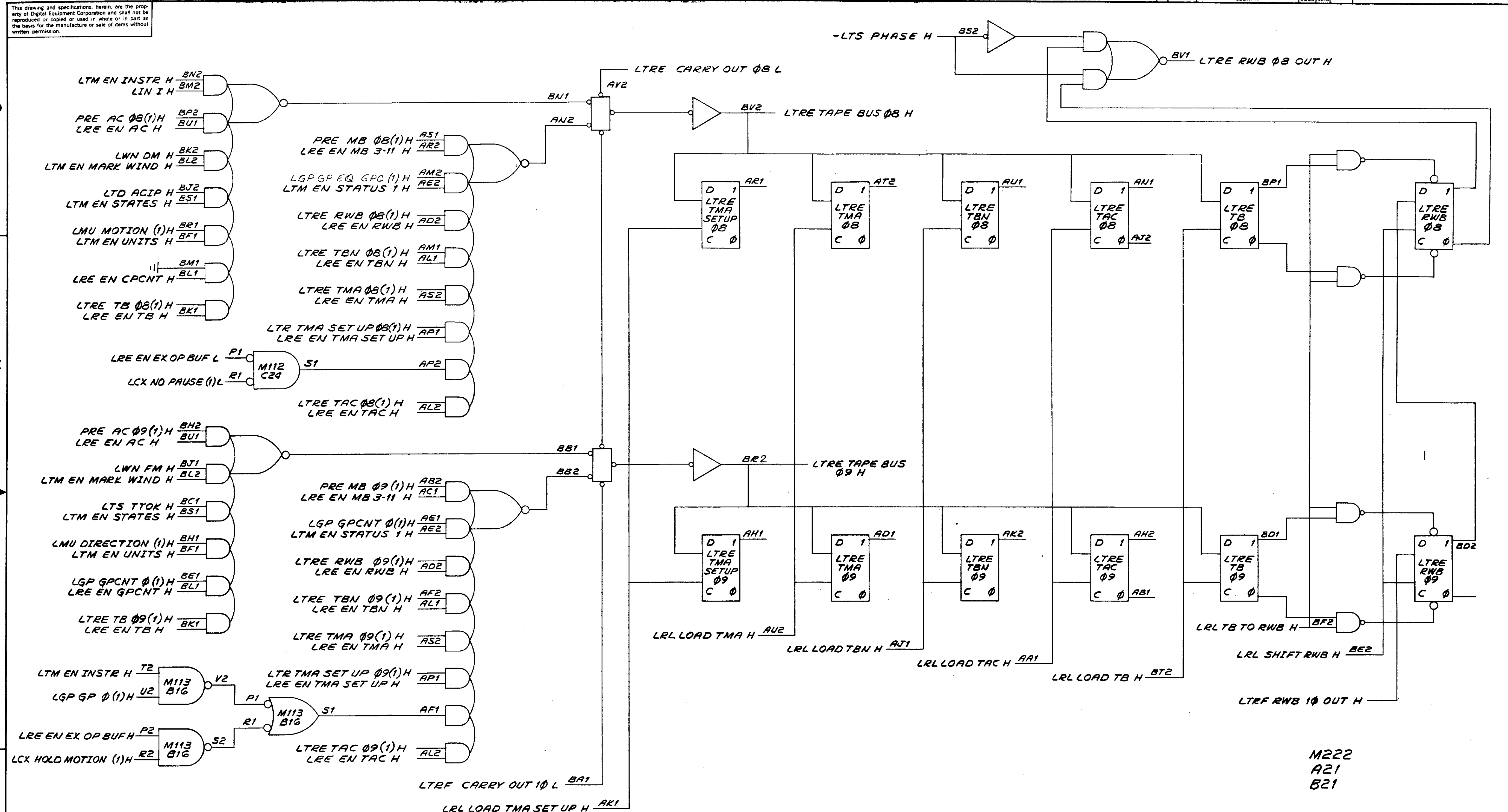
-LTS PHASE H
LTRE RWB Ø8 OUT H
LTRE CARRY OUT Ø8 L
LTRE TAPE BUS Ø8 H
LTM EN INSTR H
LIN I H
PRE AC Ø8(1)H
LRE EN AC H
LWN DM H
LTM EN MARK WIND H
LTD ACIP H
LTM EN STATES H
LMU MOTION (1)H
LTM EN UNITS H
LRE EN CPCNT H
LTRE TB Ø8(1) H
LRE EN TB H
PRE MB Ø8(1) H
LRE EN MB 3-11 H
LGP GP EQ GPC (1) H
LTM EN STATUS 1 H
LTRE RWB Ø8(1) H
LRE EN RWB H
LTRE TBN Ø8(1) H
LRE EN TBN H
LTRE TMA Ø8(1) H
LRE EN TMA H
LTR TMA SET UP Ø8(1) H
LRE EN TMA SET UP H
LRE EN EX OP BUF L
LCX NO PAUSE (1) L
M112 C24
LTRE TAC Ø8(1) H
LRE EN TAC H
LTRE TMA SETUP Ø8
LTRE TMA Ø8
LTRE TBN Ø8
LTRE TAC Ø8
LTRE TB Ø8
LTRE RWB Ø8
PRE AC Ø9(1) H
LWN FM H
LTS TTOK H
LMU DIRECTION (1) H
LGP GPCNT Ø (1) H
LRE EN GPCNT H
LTRE TB Ø9(1) H
LTRE TAPE BUS Ø9 H
PRE MB Ø9 (1) H
LGP GPCNT Ø(1) H
LTRE RWB Ø9(1) H
LTRE TBN Ø9 (1) H
LTRE TMA Ø9(1) H
LTR TMA SET UP Ø9(1) H
LTRE TAC Ø9 (1) H
LTM EN INSTR H
LGP GP Ø (1) H
M113 B16
LRE EN EX OP BUF H
LCX HOLD MOTION (1) H
LTRE TMA SETUP Ø9
LTRE TMA Ø9
LTRE TBN Ø9
LTRE TAC Ø9
LTRE TB Ø9
LTRE RWB Ø9
LRL LOAD TMA H
LRL LOAD TBN H
LRL LOAD TAC H
LRL LOAD TB H
LRL TB TO RWB H
LRL SHIFT RWB H
LTRF RWB 1Ø OUT H
LTRF CARRY OUT 1Ø L
LRL LOAD TMA SET UP H
M222
A21
B21

REV.	CHANGE NO.		CHK
A	00002	T QUILLIN	
B	EM12-00017		

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. DATE 12-8-68
CHKD. DATE 2/27/69
ENG. DATE 2-28-69
PROJ. ENG. DATE 2-28-69
PROD. DATE 2/28/69

FIRST USED ON TC12

QTY. | DESCRIPTION | PART NO. | ITEM NO.
PARTS LIST

digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS

TITLE
LTRE
BITS 8&9

SIZE D CODE BS NUMBER TC12-Ø-LTRE REV. B

SCALE
SHEET 1 OF 1
DIST.

DEC FORM NO DRD 102A

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LTM EN INSTR H — BN2
LGP GP Ø1(1) H — BM2
PRF AC 1Ø(1) H — BP2
LRE EN AC H — BU1
LWN BM H — BK2
LTM EN MARK WIND H — BL2
LTS TIMING OK H — BJ2
LTM EN STATES H — BS1
LCS TAPE OK H — BR1
LTM EN UNITS H — BF1
LGP GPCNT 1(1) H — BM1
LRE EN GPCNT H — BL1
LTRF TB 1Ø(1) H — BK1
LRE EN TB H

LRE EN EX OP BUF L — L2
LMU PRE U Ø (1) L — M2
M112 C24 — N2

PRF MB 1Ø(1) H — AS1
LRE EN MB 3-11 H — AR2
LGP GPCNT 1(1) H — AM2
LTM EN STATUS 1 H — AE2
LTRF RWB 1Ø(1) H — AD2
LRE EN RWB H
LTRF TBN 1Ø(1) H — AM1
LRE EN TBN H — AL1
LTRF TMA 1Ø(1) H — AS2
LRE EN TMA H
LTR TMA SET UP 1Ø(1) H — AP1
LRE EN TMA SET UP H
LTRF TAC 1Ø(1) H — AL2
LRE EN TAC H

BN1
AN2
LTRF CARRY OUT 1ØL — AV2

PRF AC 11(1) H — BH2
LRE EN AC H — BU1
LWN IM H — BJ1
LTM EN MARK WIND H — BL2
LTT TAPE FAIL DELAY H — BC1
LTM EN STATES H — BS1
LTC WRITE EN H — BH1
LTM EN UNITS H — BF1
LGP GPCNT 2(1) H — BE1
LRE EN GPCNT H — BL1
LTRF TB 11(1) H — BK1
LRE EN TB H

LTM EN INSTR H — P2
LGP GP Ø2 (1) H — R2
M113 E23 — S2
T2
M113 E23 — V2
LRE EN EX OP BUF H — P1
LMU PRE U1 (1) H — R1
M113 E23 — S1
U2

PRF MB 11(1) H — AB2
LRE EN MB 3-11 H — AC1
LGP GPCNT 2(1) H — AE1
LTM EN STATUS 1 H — AE2
LTRF RWB 11(1) H — AD2
LRE EN RWB H
LTRF TBN 11(1) H — AF2
LRE EN TBN H — AL1
LTRF TMA 11(1) H — AS1
LRE EN TMA H
LTR TMA SET UP 11(1) H — AP2
LRE EN TMA SET UP H
LTRF TAC 11(1) H — AF1
LRE EN TAC H — AL2

BB1
BB2
LRE TAPE CARRY IN L — BA1
LRL LOAD TMA SET UP H — AK1

+3V C26U1 H — BS2
BV1 LTRF RWB 1Ø OUT H

BV2 LTRF TAPE BUS 1Ø H

D 1 LTRF TMA SETUP 1Ø C Ø — AR1
D 1 LTRF TMA 1Ø C Ø — AT2
D 1 LTRF TBN 1Ø C Ø — AU1
D 1 LTRF TAC 1Ø C Ø — AN1 — AJ2
D 1 LTRF TB 1Ø C Ø — BP1
D 1 LTRF RWB 1Ø C Ø

BE2 LTRF TABE BUS 11 H

D 1 LTRF TMA SETUP 11 C Ø — AH1
D 1 LTRF TMA 11 C Ø — AD1
D 1 LTRF TBN 11 C Ø — AK2
D 1 LTRF TAC 11 C Ø — AH2 — AB1
D 1 LTRF TB 11 C Ø — BO1 — BF2
D 1 LTRF RWB 11 C Ø — BO2

LRL LOAD TMA H — AU2
LRL LOAD TBN H — AJ1
LRL LOAD TAC H — AA1
LRL LOAD TB H — BT2
LRL TB TO RWB H
LRL SHIFT RWB H — BE2

LTMR MAINT (1) H — R2
PRF AC 11(1) H — S2
M121 C26 — V2
LTMR MAINT (Ø) H — T2
LTR D3 READ H — U2

M222
A22
B22

REVISIONS	CHK	CHANGE NO.	
A		00002	T.GUILLIN 6/18/68 L.GALE
B		EM12-00003	T.Guillin L.GALE
C		FM12-00015	L.GALE
D		EM12-00017	T.Guillin 11-5-69 L.GALE
E		EM12-0009	L.GALE

QTY.	DESCRIPTION	PART NO.	ITEM NO.
	PARTS LIST		

UNLESS OTHERWISE SPECIFIED
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. — DATE 12-8-68
DSGN. — DATE 2/27/69
ENG. — DATE 2-28-69
PROJ. ENG. — DATE 2-28-69
PROD. — DATE 2/28/69
FIRST USED ON TC12
SCALE
SHEET 1 OF 1

digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS

TITLE
LTRF
BITS 1Ø&11

SIZE D | CODE BS | NUMBER TC12-Ø-LTRF | REV E
DIST.

DEC FORM NO ORD 102A

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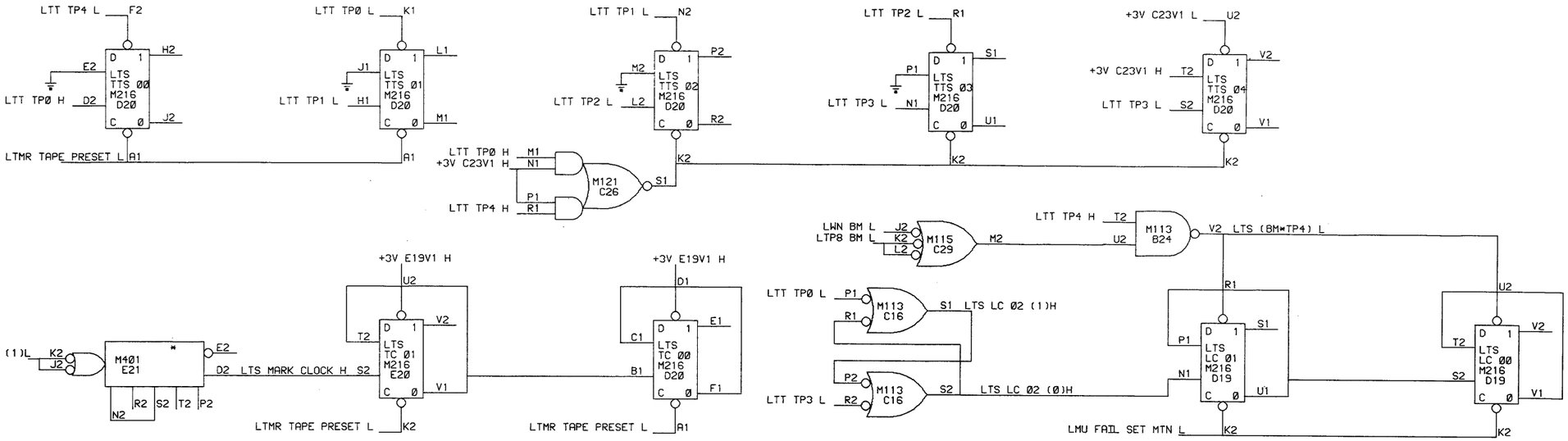

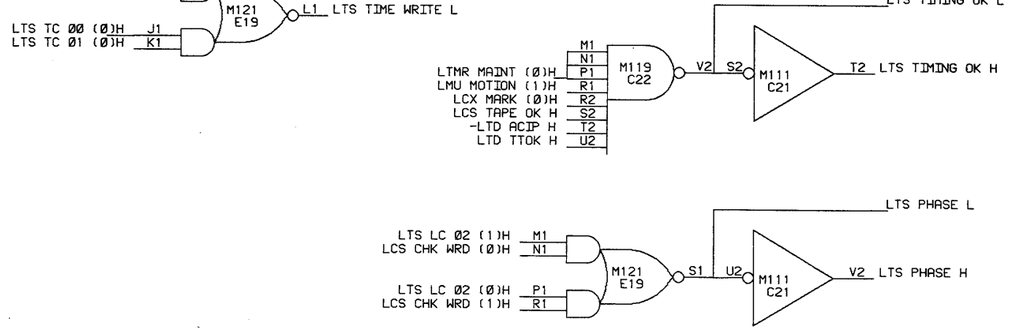

REVISIONS		
CHK	CHANGE NO.	REV.
	EM12-00002	A
	J SCANLAN 6-18-69	
	A WASHINGTON 6-5-69	
NR	EM12-00003	B
	A WASHINGTON 7-8-69	
	J SCANLAN 7-8-69	
MR	EM12-00015	C
	K BOGGS	
	J SCANLAN	
MR	EM12-00022	D
	K Gale 11-24-70	
	K Gale 12-14-70	

DRN. D L SHEPARD	DATE 8-9-69	digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS
CHK'D. J.K.BISONETE	DATE 8-9-69	
ENG. L GALE	DATE 8-9-69	TITLE: TAPE STATES
PROJ. ENG. L.GALE	DATE 8-9-69	
PROD. D. COLL	DATE 8-9-69	
FIRST USED ON: TC12		SIZE D; CODE BS; NUMBER TC12-0-LTS; REV. D
SCALE		DIST.
SHEET 1 OF 1		

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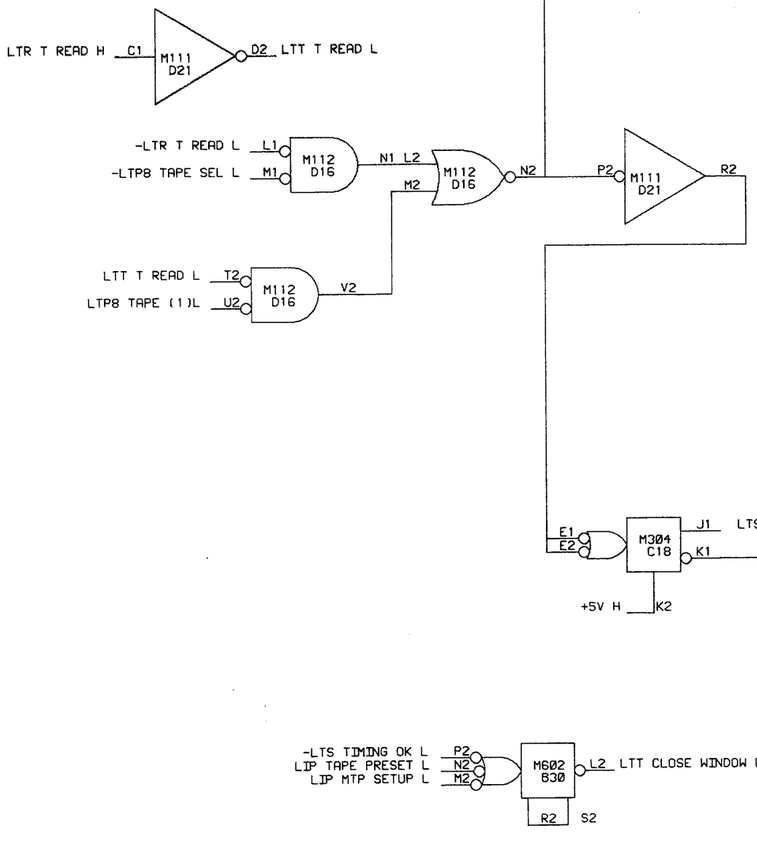

REVISIONS		
CHK	CHANGE NO.	REV.
PD	EM12-00001	A
	J FASSHAUER 4-15-69	
	L GALE 4-24-69	
NR	EM12-00005	B
	A WASHINGTON 7-18-69	
	L GALE 7-18-69	
	EM12-00015	C

DRN. D.L.SHEPARD	DATE 3-9-69
CHK'D. J.K.BISONETE	DATE 3-9-69
ENG. L.GALE	DATE 3-9-69
PROJ. ENG. L.GALE	DATE 3-9-69
PROD. D.CALI	DATE 3-9-69
FIRST USED ON TC12	
SCALE	
SHEET 1 OF 1	

digital EQUIPMENT CORPORATION
MAYNARD, MASSACHUSETTS

TITLE
TAPE TIME PULSES

SIZE	CODE	NUMBER	REV.
D	BS	TC12-Ø-LTT	C

DIST.

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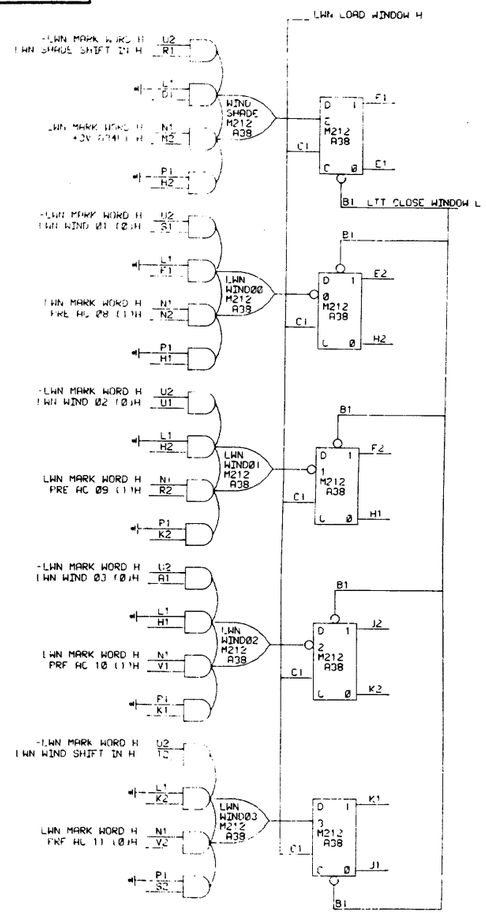

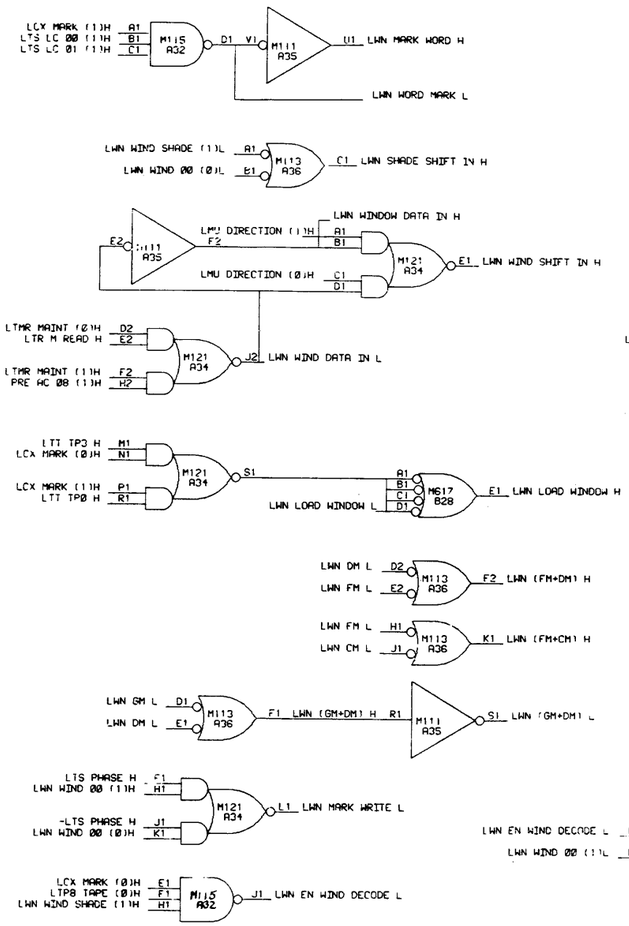

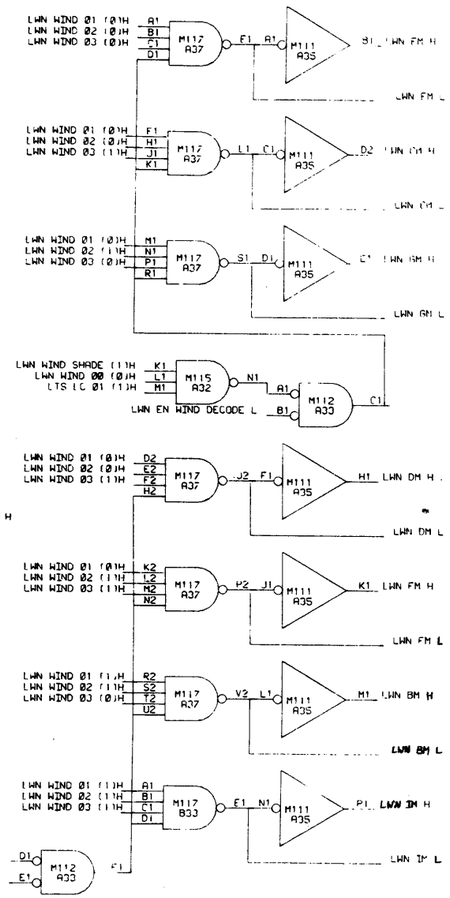

REVISIONS		
CHK	CHANGE NO.	REV.
NR	EM12-00005	A
	J FASSHAUER 4-15-69	
	L GALE 4-29-69	
	EM12-00015	B
	KEN BOGGS 10-14-69	
	J SCANLAN 10-17-69	
NR	EM12-00032	C
	A.WASHINGTON 3-13-70	
	J SCANLAN 3-16-70	
	EM12-00041	D

DRAWN D SHEPARD	DATE 3-5-69	EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS
CHECK C BISONETTE	DATE 3-5-69	
ENG L GALE	DATE 3-5-69	TITLE TAPE MARK WINDOW
MAINT ENG L GALE	DATE 3-5-69	
PROG D CALL	DATE 3-5-69	
FIRST USED ON TC12		SIZE D / CODE BS / NUMBER TC12-0-LWN / REV. D
SCALE		
SHEET 1 OF 1		DIST.

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MASTER DRAWING LIST

DWG. NO.	REV. LET.	NO. OF SHEETS	TITLE
A-ML-PDP12-0			PDP-12 SYSTEM
D-MU-EM12-0-1	REF		MODULE UTILIZATION MEM
D-MU-EM12-0-2	REF		MODULE UTILIZATION MEM
K-WL-EM12-0-3	REF		WIRE LIST
K-WL-EP12-0-3	REF		WIRE LIST
D-FD-VC12-0-4	C	1	LINC-8 SCOPE DISPLAY
A-PL-EM12-0-1	REF		MODULE UTILIZATION MEM PL
A-PL-EM12-0-2	REF		MODULE UTILIZATION MEM PL
D-BS-VC12-0-DSC	D	1	DSC DISPLAY CONTROL
D-BS-VC12-0-DSX	C	1	DSX HORIZONTAL D-A
D-BS-VC12-0-DSY	B	1	DSY VERTICAL D-A
D-BS-VC12-0-DS1		1	DISPLAY INT REG
A-SP-VC12-0-5		5	VC12 SPECIFICATIONS

REVISIONS			
REV.	DATE	CHG. NO.	APP'D.
A	4/69	EM12-02	L.G.
B	7/69	EM12-08	L.G.
C	8/69	EM12-10	L.G.
D	10/69	EM12-16	L.G.
E	2/70	EM12-33	L.G.
F	7/70	EM12-37	L.G.
H	8/70	EM12-39	L.G.
J	1/71	EM12-44	J.S.

DEC FORM NO. DRA 103

DRN.	J. APREA	DATE 3/7/69
CHK'D.	R. HUTNAK	DATE 3/7/69
ENG.	L. Gale	DATE 3/10/69
PROJ. ENG.	L. Gale	DATE 3/10/69
PROD.	Mall	DATE 3/10/69
FIRST USED ON	PDP-12	
SCALE		
SHEET	1 OF 1	

digital EQUIPMENT CORPORATION
MAYNARD, MASSACHUSETTS

TITLE
LINC SCOPE CONTROL

SIZE	CODE	NUMBER	REV.
A	ML	VC12-0	J

DIST.

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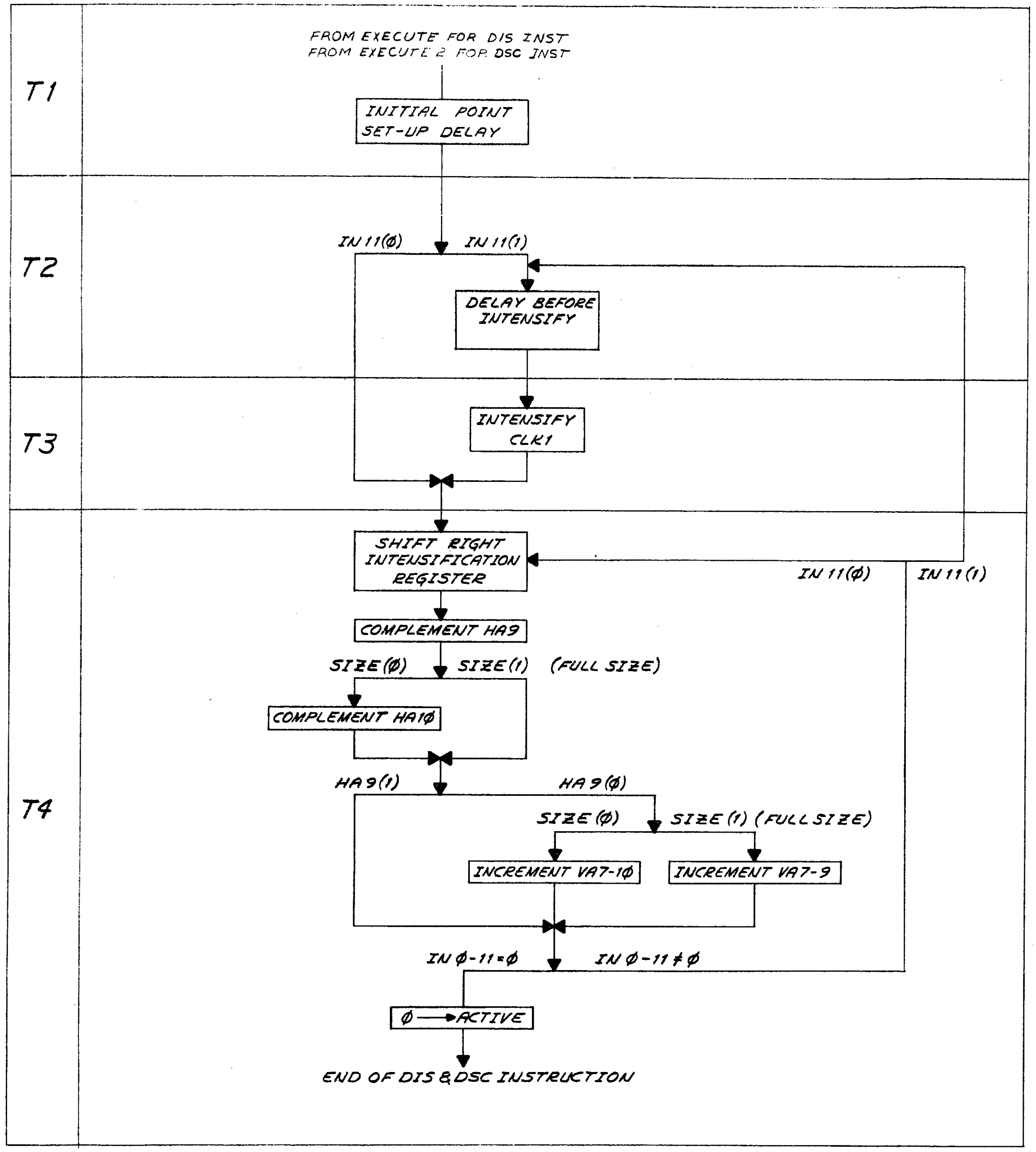
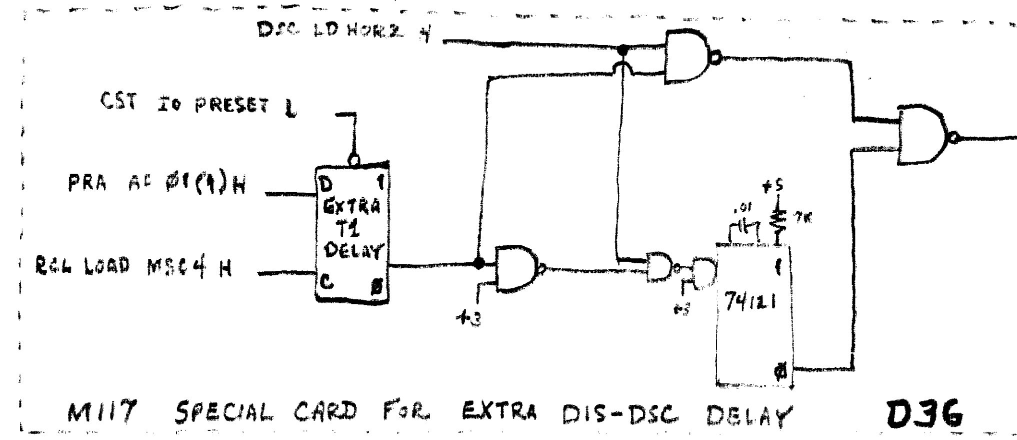
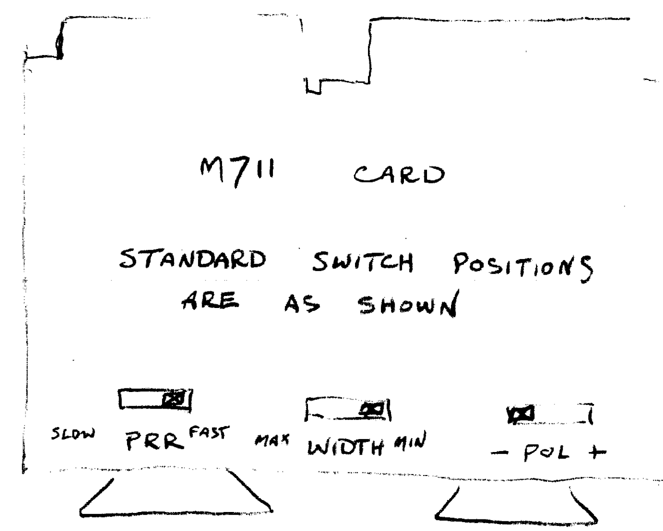




	TIMING TABLE (μSECS) STD SYS	COMMENTS
T1	25.Ø	CAN BE CHANGED BY REPLACING 30K Ω RESISTOR ADJACENT TO POLARITY SWITCH ON M711 15K Ω = 1Ø μSECS 7K Ω = 5 μSECS
T2	1.5 OR 7.Ø	PULSE REPETION RATE SWITCH SETS DESIRED TIME
T3	.5 OR 1Ø.Ø	INTENSIFICATION PULSE WIDTH IS DETERMINED BY WIDTH SWITCH SETTING ON M711
T4	.8	NON-ADJUSTABLE FIXED TIME

T1 = 25.Ø μSEC PLUS EXTRA μSEC IF "LONG DELAY" SET

"LONG DELAY" IS SET BY LINC ESF WITH AC_1 = 1



REVISIONS

REV.	CHANGE NO.		CHK
A	00002	T. QUILLIO, L. GALE 6/18/69	
B	EMI2-00008	L. GALE 8-15-69	
C	EMI2-00033	L. GALE 3-9-70	

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

QTY.	DESCRIPTION	PART NO.	ITEM NO.

PARTS LIST

DRN. / CHK'D. / ENG. / PROJ. ENG. / PROD. — DATE 2/17/69

FIRST USED ON VC12

SCALE

SHEET 1 OF 1

digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS

TITLE: LINC-8 SCOPE DISPLAY DIS & DSC

SIZE D CODE FD NUMBER VC12-Ø-4 REV. C

DIST.

DEC FORM NO. DRD 102A

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PRC MB5 (1)H
DSC LD IN H
A1
B1
C1
M115
C29
D1
DSC LD MB5 L

DSI IN 11(ϕ)H
DSI IN 10(ϕ)H
DSI IN 9(ϕ)H
DP1
DD2
DE1

DSI IN 8(ϕ)H
DSI IN 7(ϕ)H
DSI IN 6(ϕ)H
DJ1
DF2
DH1

DSI IN 5(ϕ)H
DSI IN 4(ϕ)H
DSI IN 3(ϕ)H
DK1
DH2
DJ2

DSI IN 2(ϕ)H
DSI IN 1(ϕ)H
DSI IN ϕ(ϕ)H
DL2
DL1
DK2

DSC LD HORZ H
D 1
DSC ACTIVE
C ϕ
DSC CLK 1 OUTPUT

DSC BUSY L
DM2
DN2
DSC BUSY H

DSC SHFT H
DN1
CD2
CE2
DSC SHFT L
(CD2, CE2 OPTIONAL INPUTS CLAMPED AT +3V)

DSI IN 11(ϕ)H
DP1

DSI IN 11 (1) H
CF1
DT2
DSC INTEN L
DV1
DSC Z DRIVER H
H2
W512
N27
F2
DU1
DSC INTEN H

CLK 1 OUTPUT
CLK 2
LONG CLK 1 INPUT
SHORT CLK 2
START
CF1
DSI IN 11 (1) H

J2
K2
L2
W681
MØ3
N2
DSC 5Ø3 INTEN L
A2
B2
+1ϕ
-15

SEE PAGE 144

DSC ACTIVE (1) H
DSC LD HORZ H
DLY = 25 μSEC
DSC INITIAL DELAY L

SLA (DSC * EXECUTE 2) L
R2
S2
T2
U2
- DSC BUSY L
M127
E22
V2
DSC START DSC H

CPT TS5 B(1) H
CV2
CT2
DSC START DSC H
CD1
DSC CLR V8-11 L
CU2
DSC CLR V7 L

CST IO PRESET L
CR2
PRC AC Ø9(1)H
DD1
DSC SIZE
RCL LOAD MSC4 H
CV1
C ϕ
DU2

DE2
DSC HA 1ϕ H
DSC SHFT L
DSX HA 9 (1) H
DM1
DSY VA 1ϕ (ϕ) H
DP2
DSC SIZE (ϕ) H
DR2
DSC VA 9 H

DSX HA 9 (1) L
DV2
DF1
DSC VA 7ϕ H

CPT TS5 B(1) H
CPT(DIS+DSC) H
CPS EXECUTE B(1) H
-DSC BUSY H
CP2
CE1
CH1
DM2
CJ2
DSC INITIALIZE L

-INS DIS H
CL2
-INS DSC H
CL1

CM2
DSC LD IN H
CK2
DSC LD VERT H
CST IO PRESET L
DSC CLR V8-11L
CR2
CD1
DS2
DSC LD HORZ H
DSC LD MB5 L
CH2
CF2
DSC SET IN 11 L

DSY V8 (1) H
CS1
CU1
DSC 8 L
DSY V7 (1) H
CS2
CW2
DSC 7 L

VA8
VA7
DSY VA 9(ϕ) H
CJ1
DSC INITIALIZE L

M711
C37
D37

REVISIONS					
CHK	CHANGE NO.	REV.			
	00002	A	T. GUILLIN L. GALE	6/18/68	
	EM12-00033	B	L. GALE	3-5-70	
FV	EM12-00037	C	GALE	7/29/70	
	EM12-00044	D	SCANLON	2-4-71	

DEC FORM NO. DRD 102A

QTY.	DESCRIPTION	PART NO.	ITEM NO.
	PARTS LIST		

UNLESS OTHERWISE SPECIFIED
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		DATE 4-SEPT-68
CHK		DATE 2/27/69
ENG		DATE 2-28-69
PROJ. ENG		DATE 3-4-69
PROD		DATE 3/28/69

FIRST USED ON VC12

digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS

TITLE
DSC
DISPLAY CONTROL

SIZE	CODE	NUMBER	REV.
D	BS	VC12-ϕ-DSC	D

SCALE
SHEET 1 OF 1
DIST.

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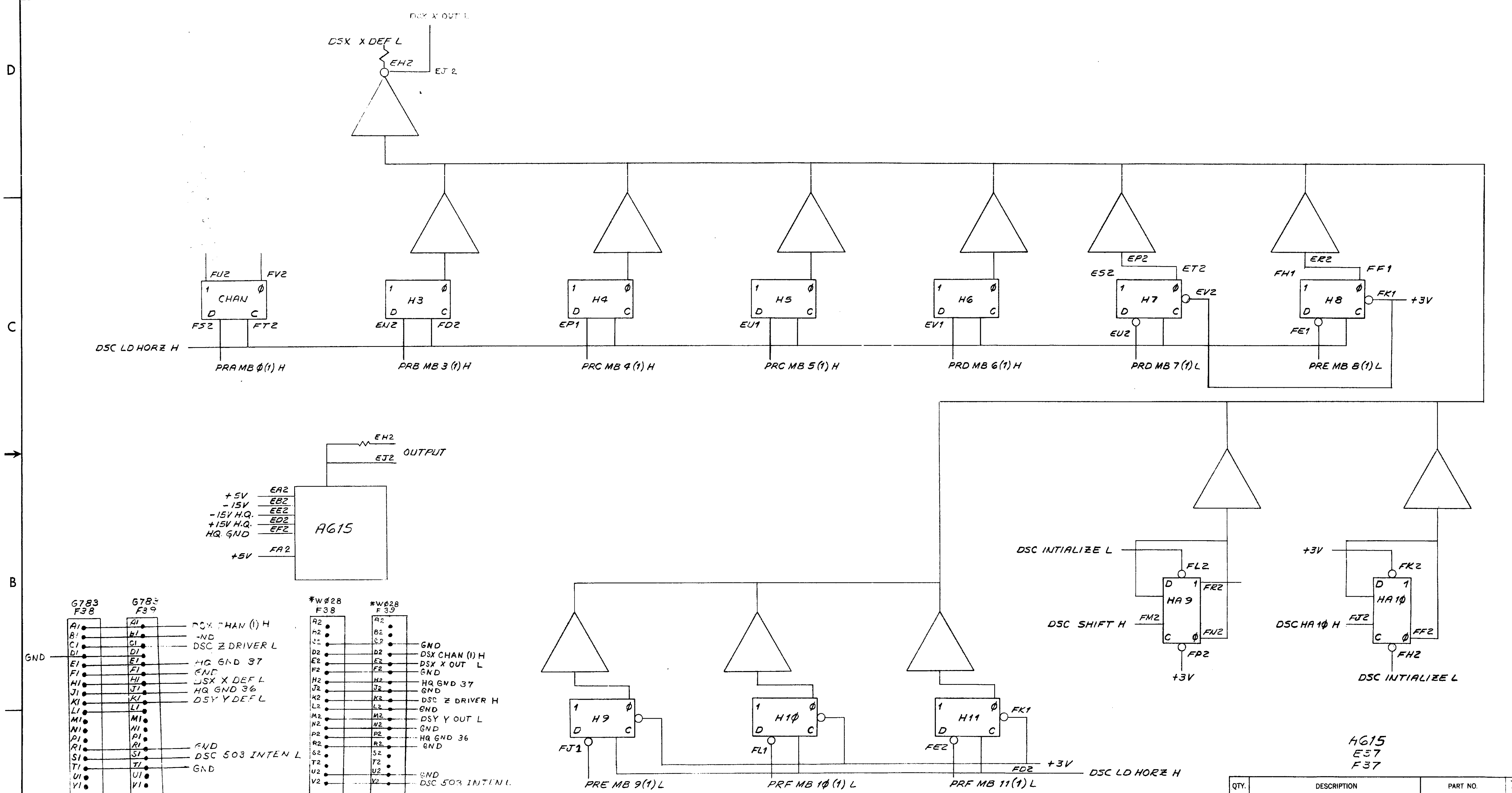

NOTE: HQ POWER FOR THIS MODULE AND E, F 36 IS DERIVED FROM HQ POWER SUPPLY SHOWN ON AD12-0-YAD
*AG783 CABLE ASSY. MAY ALSO BE USED.

REV.	CHANGE NO.	CHK
A	00000	
B	EMI2-0008	
C	EMI2-00039	

QTY.	DESCRIPTION	PART 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. DATE 2-16-69
CHK'D. DATE 2/27/69
ENG. DATE
PROJ. ENG. DATE
PROD. DATE

FIRST USED ON VC12

digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS

TITLE DSX HORIZONTAL D-A

SIZE D CODE 8S NUMBER VC12-Ø-DSX REV. C

SCALE

SHEET 1 OF 1

DEC FORM NO. DRD 102A

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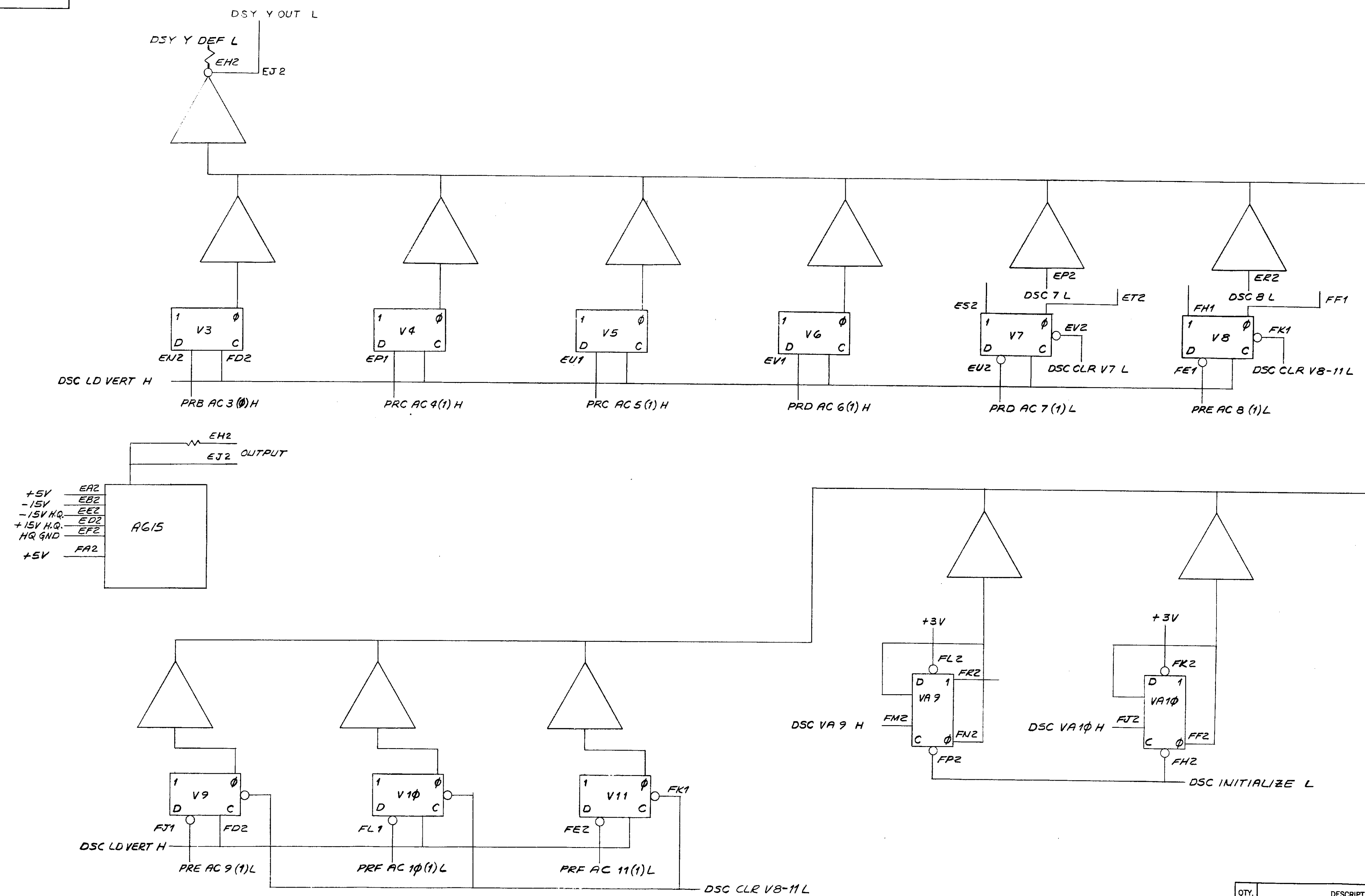

AG15
E36
F36

REV.	CHANGE NO.	CHK
A	00002 T. Quillin L. GALE 6/18/69	
B	EMI 200039 8-20-70 L. GALE 8-24-70	FV

FORM NO. 102A

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. DATE 6-2-68
CHK'D. DATE 2/27/69
ENG. DATE
PROJ. ENG. DATE
PROD. DATE

FIRST USED ON VC12

SCALE

SHEET OF

digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS

TITLE DSY VERTICAL D-A

SIZE D CODE BS NUMBER VC12-Ø-DSY REV B

DIST.

8 7 6 5 4 3 2 1

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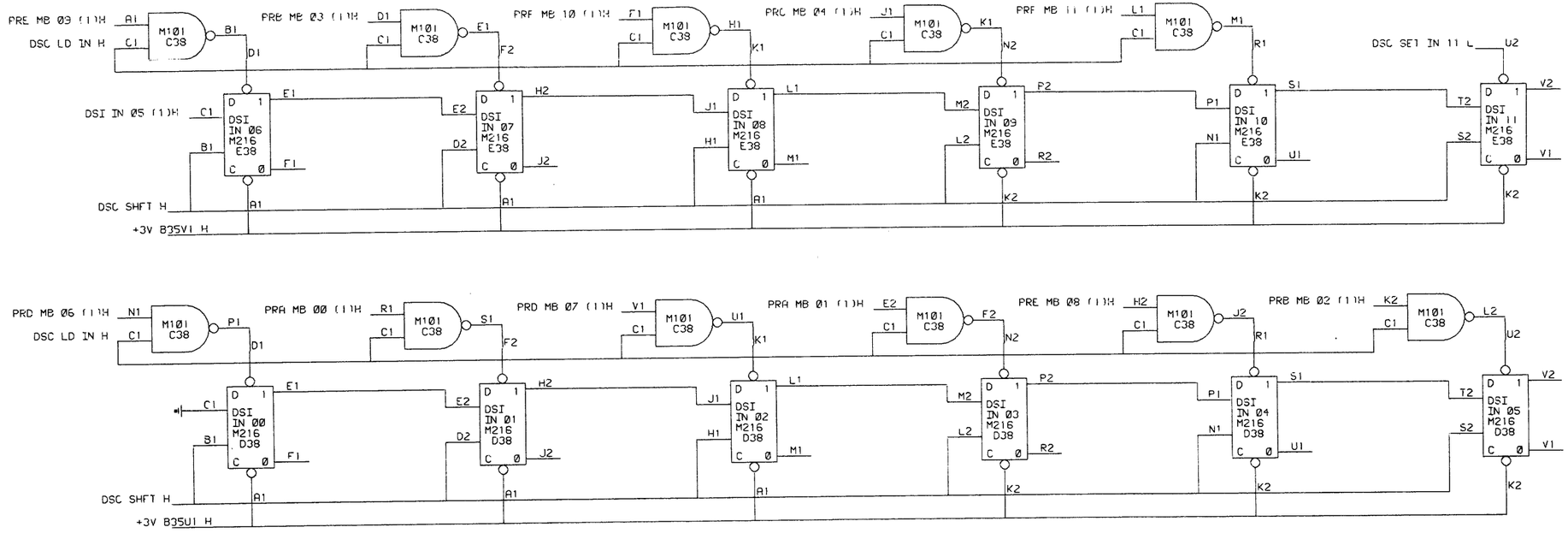

REVISIONS		
CHK	CHANGE NO.	REV.

DRN.	DATE	digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS
CHK'D.	DATE	
ENG.	DATE	TITLE: DISPLAY INT REG
PROJ. ENG.	DATE	
PROD.	DATE	
FIRST USED ON: VC12		SIZE: D; CODE: BS; NUMBER: VC12-0-DSI; REV.: 00
SCALE		
SHEET 1 OF 1		DIST.

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DIGITAL EQUIPMENT CORPORATION
MAYNARD, MASSACHUSETTS

ENGINEERING SPECIFICATION

DATE 9/24/69

TITLE VC12 SPECIFICATIONS

REVISIONS

REV	DESCRIPTION	CHG NO	ORIG	DATE	APPD BY	DATE

GENERAL

The VC12 Scope Control consists of electronic circuitry designed to convert digital voltage levels into analog voltages for application to the input amplifier circuitry of suitable CRT display scopes. Timing and logical circuitry designed to permit the display of information derived from the PDP-12 central processor and memory asynchronously in either of two modes, Point Plotting or Character Display, is provided.

INSTRUCTIONS

DIS mnemonic 140+20I+α

DSC mnemonic 1740+20I+β

DIGITAL TO ANALOG CONVERTER

VOLTAGE RANGE

Condition: digital input = $\emptyset\emptyset\emptyset_8$ Ø v ± .3 v

digital input = 777_8 -5.85 v ± .3 v

DEFINITION

The output voltage range is divided into 512 equal parts ± 1/2 part.

TEMPERATURE STABILITY

.02% / °C

ENG	APPD	SIZE	CODE	NUMBER	REV
R. Livingston	L. Gale	A	SP	VC12-0-5	

DEC FORM NO. DRA 107

SHEET 1 OF 5

ENGINEERING SPECIFICATION — digital — CONTINUATION SHEET

TITLE VC12 SPECIFICATIONS

TOTAL TRANSITION TIME

.3% of maximum voltage transition — 5 μsec + 25 nsec/ft. of output cable length

DC OUTPUT IMPEDANCE

100 Ωmin. -- 200Ωmax.

WORST CASE LOAD CONDITIONS

1 KΩmin in parallel with 5000 pf max.

MAXIMUM CABLE LENGTH

200 ft.

DIGITAL CIRCUITRY

Input Conditions: 2 TTL unit load at the data input from processor registers.

Other digital signals are generated on the M711 logical control circuit.

DISPLAY CHARACTER

Two additional register elements, drivers, and weighted resistors are provided to add the weighted values of 2 increments and 4 increments under control of the M711.

LOGICAL CONTROL CIRCUITRY

INPUT LOADS

TS5	3 TTL unit loads
EXECUTE B(1)	1 TTL unit load
DIS	1 TTL unit load
DSC	1 TTL unit load
DIS + DSC	1 TTL unit load
PIE DSC • EXECUTE 2	2 TTL unit loads
PRFAC(4)1	1 TTL unit load

	SIZE	CODE	NUMBER	REV
	A	SP	VC12-0-5	

DEC FORM NO DRA 108

SHEET 2 OF 5

OUTPUT DRIVE CAPABILITIES

BUSY H	10 TTL unit loads
BUSY L	8 TTL unit loads
Intensify H	10 unit loads if pol switch -
Intensify L	10 unit loads if pol switch +
Intensify A*	20 ma to +3 v
	8 ma to Ø v

* Intensify A is a push pull driver exhibiting 100 (nominal) drive impedance to ground or plus five volts. The polarity switch allows change of pulse polarity by connecting the input to the driver to either Intensify H or Intensify L outputs. The output has an integrator circuit built in to limit rise and fall time effects on the analog output.

INTENSIFICATION PATTERN REGISTER

BUFFER SIZE AND TYPE

12 bit shift register

NATURE OF LOAD SOURCE

1's transfer from memory buffer

INSTRUCTION EXECUTION TIME

DIS: <27 + a μsec where a = .5 μsec if width switch is MIN position or
a = 10 μsec if width switch is MAX position.

DSC: <27.5 + 1.5a + 2.5b + .5b

where a = number of non intensified points **
b = number of intensified points ***

** The PRR switch sets the time between intensification pulses during the execution of the DSC instruction.

Thus, the third term of the DSC time formula should read as written if the PRR switch is in FAST position or +7.6b for the PRR switch in SLOW position.

*** The WIDTH switch sets the width of the intensification pulse.

Thus, the fourth term of the DSC should read as written if the WIDTH switch is MIN or + 10b if the WIDTH switch is set to MAX position.

TIMING MODE

Asynchronous

NOTE: Execution times indicate the actual duration of execution of the display instructions; because of the asynchronous nature of the VC12 control the processor is free to execute other nondisplay instructions after 3.2 μsec for DIS instructions or 4.8 μsec for DSC instructions.

The PDP-12 processor will pause if instructed to execute a display instruction before completion of a previous display instruction unless forced to abort completion of the first display instruction in favor of execution of the second instruction by the assertion of a tape interrupt.

LOGICAL FUNCTION of VC12 shall be as illustrated on prints

FD-PDP12-Ø-17
FD-PDP12-Ø-18
FD-PDP12-Ø-2Ø
FD-VC12-Ø-4

CHARACTER DISPLAY

CHARACTER SIZE

Defined by a flip flop storage element in conjunction with circuitry in the logical control and Digital to Analog Converter modules.

The flip flop storage element is jam loaded from the contents of AC bit 4 by pulses produced during the execution of ESF instruction (Code ØØØ4). $C(AC_4)$ = 1 indicates half size.

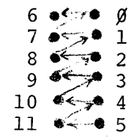
POINT INCREMENT SIZE

Half size: 24 mv. ±3 mv.*

Full size: 48 mv. ±5 mv.*

* On a VR12 adjusted to display a 6.75 inch by 9 inch image, half size character point increments shall be .026 inches on the vertical axis and .035 inches on the horizontal axis; and full size character point increments shall be .052 inches on the vertical axis and .070 inches on the horizontal axis.

THE ANALOG CIRCUITRY, CONTROL AND PATTERN INTENSIFICATION REGISTERS shall be constructed that the beam will be directed on the CRT to two parallel 6 point lines, the points of which are to be intensified by a 1 in the appropriate memory bit as indicated in the diagram below.



DISPLAY CHANNEL

A flip flop storage element shall be provided to apply to an appropriate output pin adigital voltage capable of driving up to 10 TTL gate input loads.

Load Source (channel flip flop) bit Ø of the alpha register referenced if a DIS instruction, or memory loc ØØØ1 if a DSC instruction.

"AND" logic gates must be provided at the CRT display logically select the intensification pulses defined to coincide with the analog points to be displayed on either channel as defined by the logic level.

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MASTER DRAWING LIST

DWG. NO.	REV. LET.	NO. OF SHEETS	TITLE
A-ML-PDP12-0		1	PDP12 SYSTEM
K-WL-EP12-0-3	REF		WIRE LIST
D-MU-EP12-0-1	REF		MODULE UTILIZATION PROC
D-MU-EP12-0-2	REF		MODULE UTILIZATION PROC
D-FD-KE12-0-2	A	1	EAE FETCH
D-FD-KE12-0-3		1	EAE EXECUTE PART 1
D-FD-KE12-0-4		1	EAE EXECUTE PART 2
A-PL-EP12-0-1	REF		MODULE UTILIZATION PROC PL.
A-PL-EP12-0-2	REF		MODULE UTILIZATION PROC PL.
D-BS-KE12-0-EAEC	B	1	EAE CONTROL
D-BS-KE12-0-EAED	A	1	EAE DISABLE
D-BS-KE12-0-EAES		1	EAE STEP COUNTER & MQ CONTROL
D-BS-KE12-0-EAET		1	EAE TIMING

REVISIONS			
REV.	DATE	CHG. NO.	APP'D.
A	3/18/69	EP12-01	J.S.
B	6/5/69	EP12-04	L.G.
C	10/70	EP12-30	L.G.

DRN. J. APREA	DATE 3/7/69	
CHK'D. R. HUTNAK	DATE 3/7/69	
ENG. L. Lalo	DATE 3/10/69	
PROJ. ENG. L. Lalo	DATE 3/10/69	
PROD. D Call	DATE 3/10/69	
FIRST USED ON PDP-12		
SCALE		
SHEET 1 OF 1		

digital EQUIPMENT CORPORATION
MAYNARD, MASSACHUSETTS

TITLE
ARITHMETIC OPERATION

SIZE	CODE	NUMBER	REV.
A	ML	KE12-C	C

DIST.

DEC FORM NO.
DRA 103

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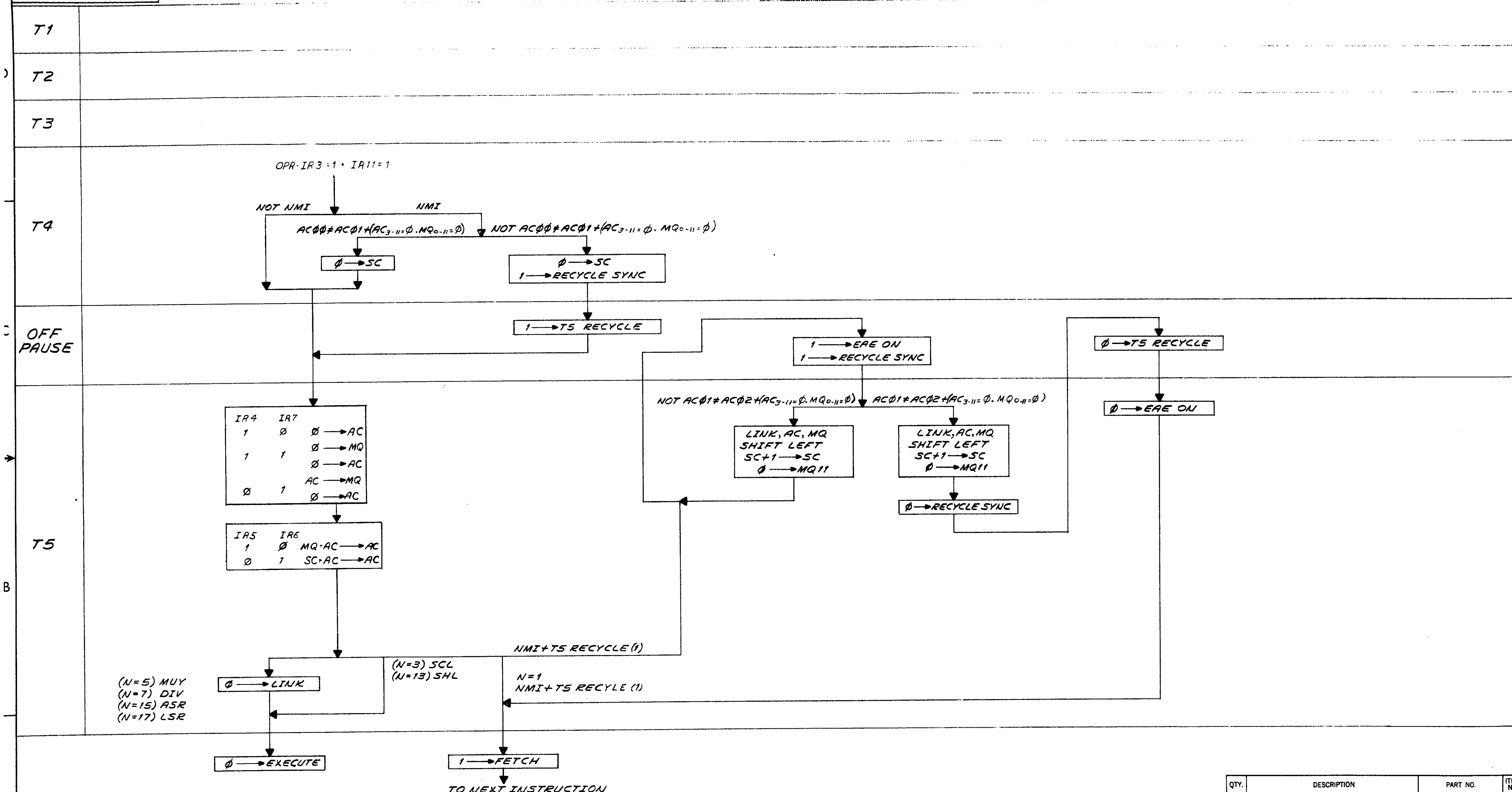

T1
T2
T3
T4
OFF PAUSE
T5
OPR·IR3 =1 · IR11=1
NOT NMI
NMI
ACØØ≠ACØ1+(AC3-11=Ø.MQ0-11=Ø)
NOT ACØØ≠ACØ1+(AC3-11=Ø. MQ0-11=Ø)
Ø→SC
Ø→SC
1→RECYCLE SYNC
1→TS RECYCLE
1→EAE ON
1→RECYCLE SYNC
Ø→TS RECYCLE
NOT ACØ1≠ACØ2+(AC3-11=Ø.MQ0-11=Ø)
ACØ1≠ACØ2+(AC3-11=Ø.MQ0-11=Ø)
Ø→EAE ON
LINK, AC, MQ
SHIFT LEFT
SC+1→SC
Ø→MQ11
LINK,AC,MQ
SHIFT LEFT
SC+1→SC
Ø→MQ11
Ø→RECYCLE SYNC
IR4 IR7
1 Ø Ø→AC
Ø→MQ
1 1 Ø→AC
AC→MQ
Ø 1 Ø→AC
IR5 IR6
1 Ø MQ·AC→AC
Ø 1 SC+AC→AC
NMI+TS RECYCLE (1)
(N=3) SCL
(N=13) SHL
N=1
NMI+TS RECYLE (1)
(N=5) MUY
(N=7) DIV
(N=15) ASR
(N=17) LSR
Ø→LINK
Ø→EXECUTE
1→FETCH
TO NEXT INSTRUCTION

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. DATE 11-22-68
CHK'D. DATE 2/18/69
ENG. DATE 2/19/69
PROJ. ENG. DATE 2/19/69
PROD. DATE 2/19/69
FIRST USED ON KE12

digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS

TITLE

EAE FETCH

SIZE D CODE FD NUMBER KE12-Ø-2 REV. A

SCALE
SHEET 1 OF 1
DIST.

REVISIONS
CHK	CHANGE NO.	REV.
FV	EP12-00030	A

D MACKLIN

DEC FORM NO. DRD 102A

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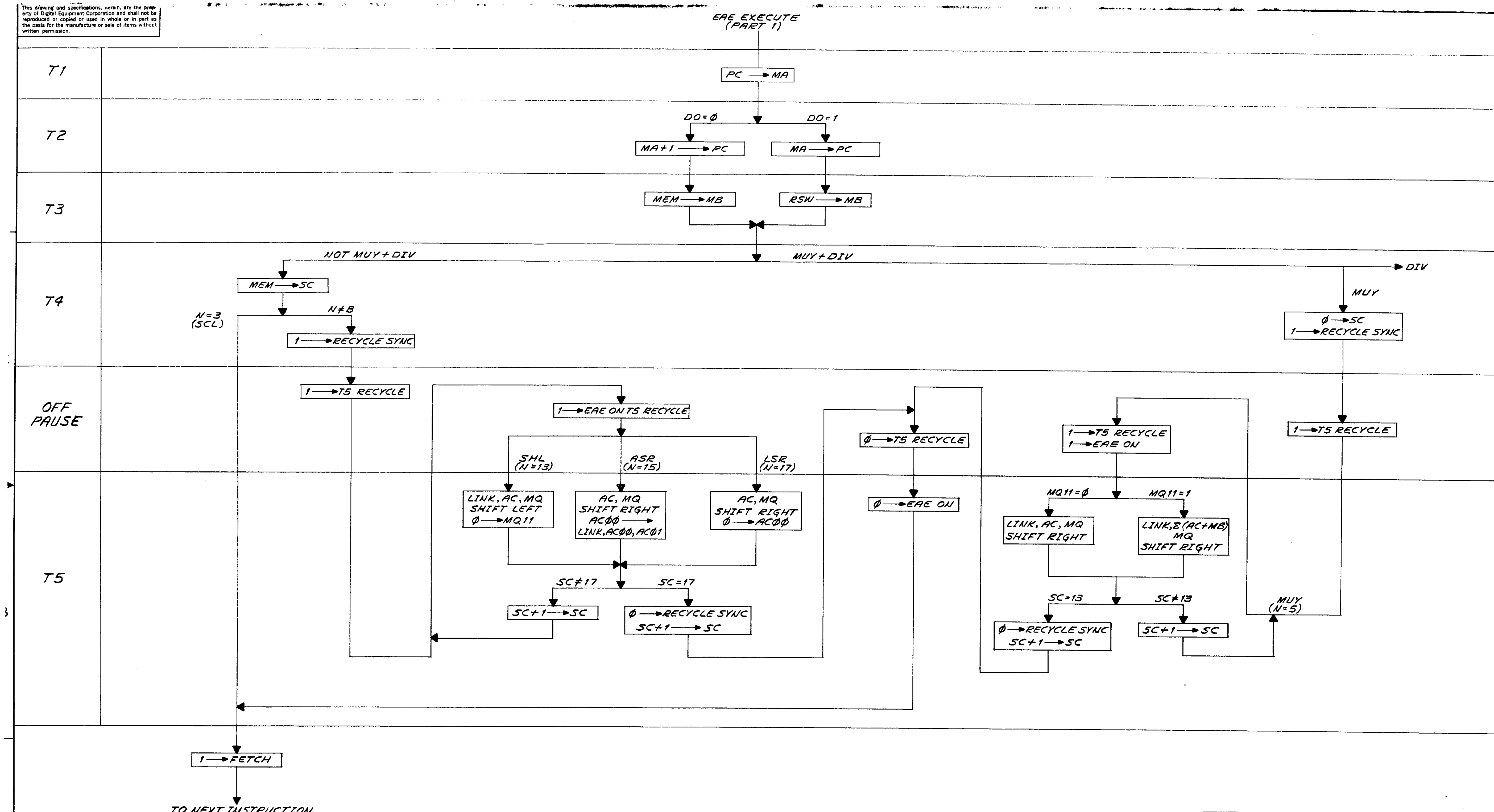

REVISIONS		
REV.	CHANGE NO.	CHK

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

		DATE
DRN.	Joe Quera	11-20-68
CHKD.	[signature]	2/18/69
ENG.	[signature]	2/19/69
PROJ. ENG.	[signature]	2/19/69
PROD.	W. Call	2/19/69

FIRST USED ON: KE12

SCALE

SHEET OF

digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS

TITLE: EAE EXECUTE PART 1

SIZE: D CODE: FD NUMBER: KE12-Ø-3 REV.

DIST.

DEC FORM NO. DRD 102A

8 7 6 5 4 3 2 1

A B C D

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EAE EXECUTE PART 2 (DIVIDE)

T1

T2

T3

T4

OFF
PAUSE

T5

ENTER FROM EAE EXECUTE PART 1

∅ → SC
1 → RECYCLE SYNC

1 → T5 RECYCLE

∅ → T5 RECYCLE

1 → EAE ON

(SC=∅)+(SC=1)+MQ1∅≠MQ11 (SC≠∅)+(SC≠1)+MQ1∅=MQ11

EN
Σ (MB) AND $\overline{\text{LINK}}$ AND $\overline{\text{AC}}$

EN
Σ MB AND LINK AND AC

SC=∅ + NOT CARRY ∅∅

EN Σ NO SHIFT
LOAD AC

EN SUM SHIFT LEFT
EN MQ SHIFT LEFT
LOAD AC LOAD MQ
LOAD LINK

NOT SC≠∅+MQ11(1) SC=∅+MQ11(1)

MQ ∅∅ → AC11

$\overline{\text{MQ ∅∅}}$ → AC11

SC=∅ + NOT CARRY ∅∅ SC≠∅ + CARRY ∅∅

∅ → RECYCLE SYNC

SC=∅ SC≠∅

∅ → MQ11

Σ LINK ADDER
AND MQ11
→ MQ11

SC=14 SC≠14

LOAD MQ
SC+1 → SC
∅ → RECYCLE SYNC

LOAD MQ
SC+1 → SC

∅ → T5 RECYCLE

MQ 1∅(∅) MQ 11(∅)	MQ 1∅(∅) MQ 11(1)	MQ 1∅(1) MQ 11(∅)	MQ 1∅(1) MQ 11(1)
Σ MB AND AC → AC	AC → AC	Σ MB AND $\overline{\text{AC}}$ → AC	$\overline{\text{AC}}$ → AC

1 → FETCH

TO NEXT INSTRUCTION

REVISIONS
REV.
CHANGE NO.
CHK

QTY.	DESCRIPTION	PART NO.	ITEM NO.
	PARTS LIST		

UNLESS OTHERWISE SPECIFIED

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

MATERIAL

FINISH

		DATE
DRN.		11-22-68
CHKD		3/11/69
ENG.		3/10/69
PROJ. ENG.		3/10/69
PROD.		3/10/69

FIRST USED ON
KE12

SCALE

SHEET OF

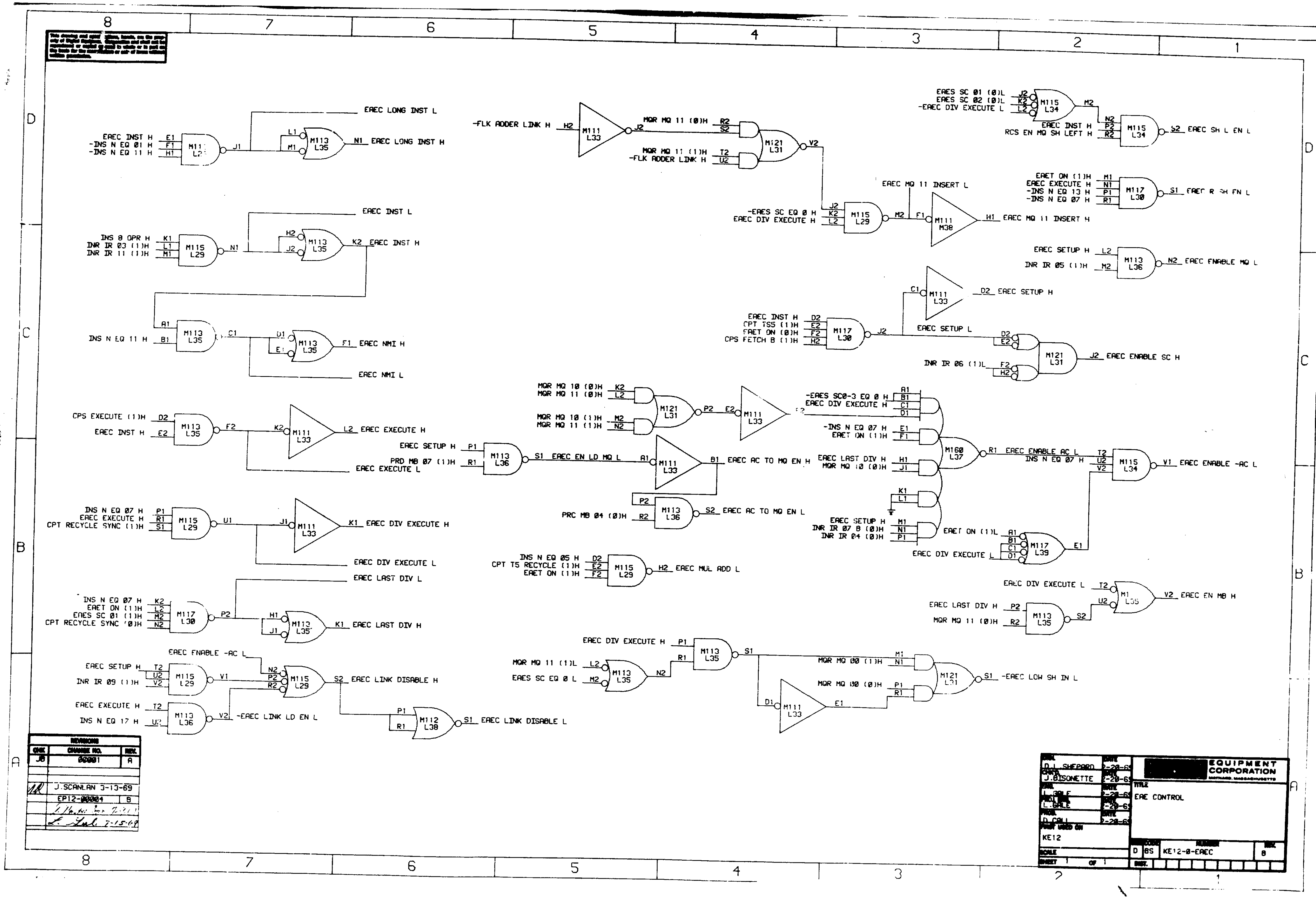
digital EQUIPMENT CORPORATION
MAYNARD, MASSACHUSETTS

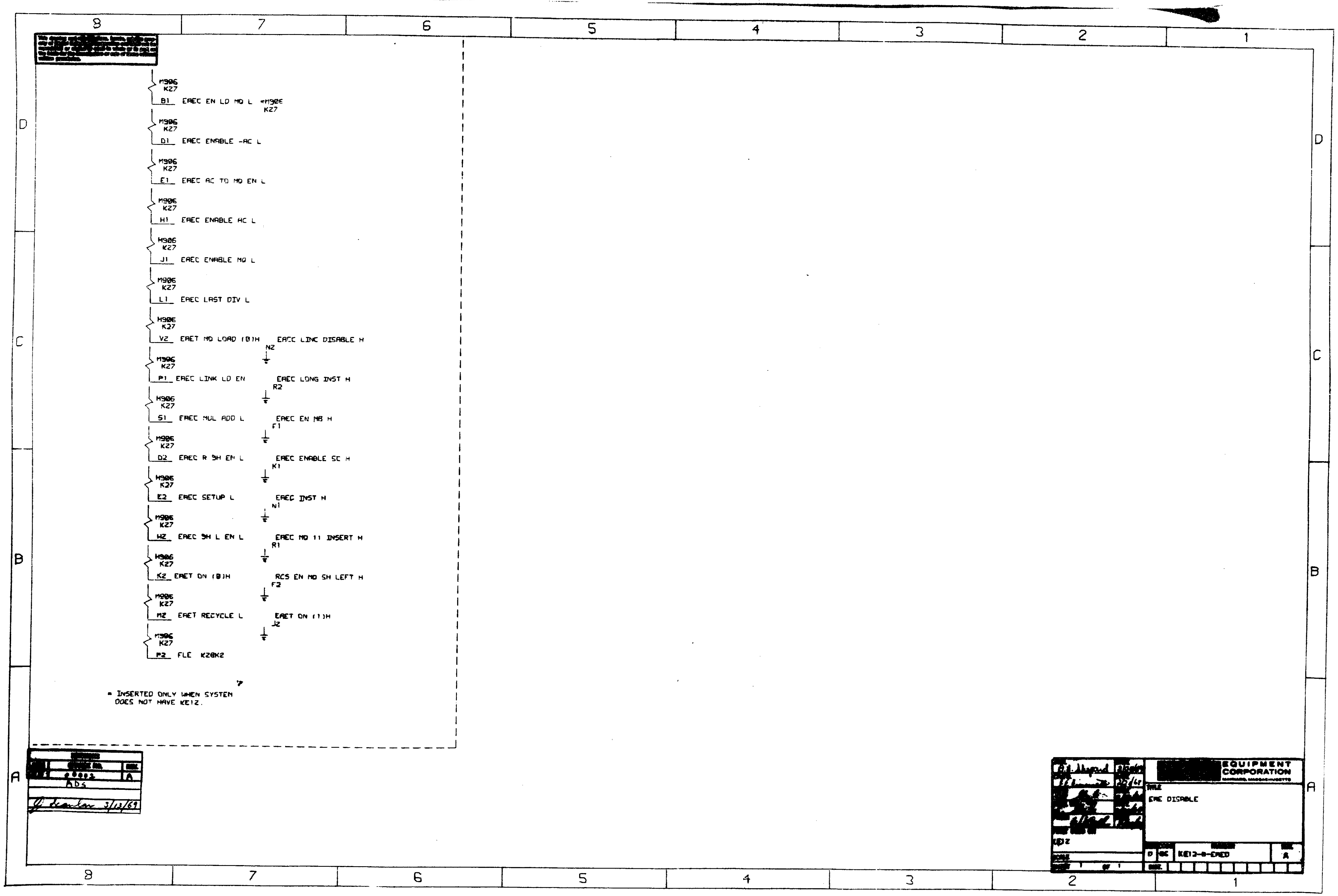
TITLE
EAE EXECUTE
PART 2

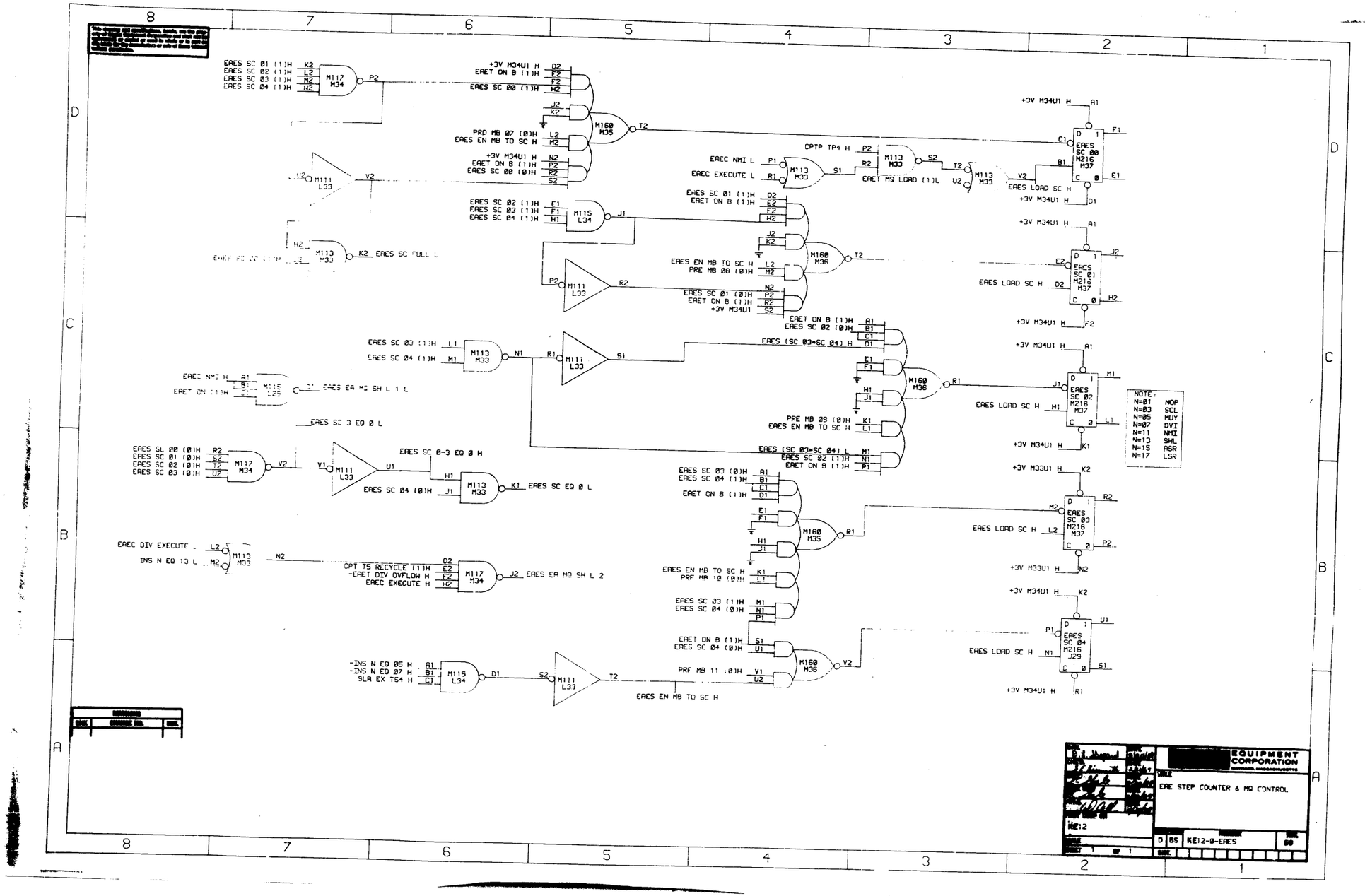
SIZE	CODE	NUMBER	REV.
D	FD	KE12-∅-4	

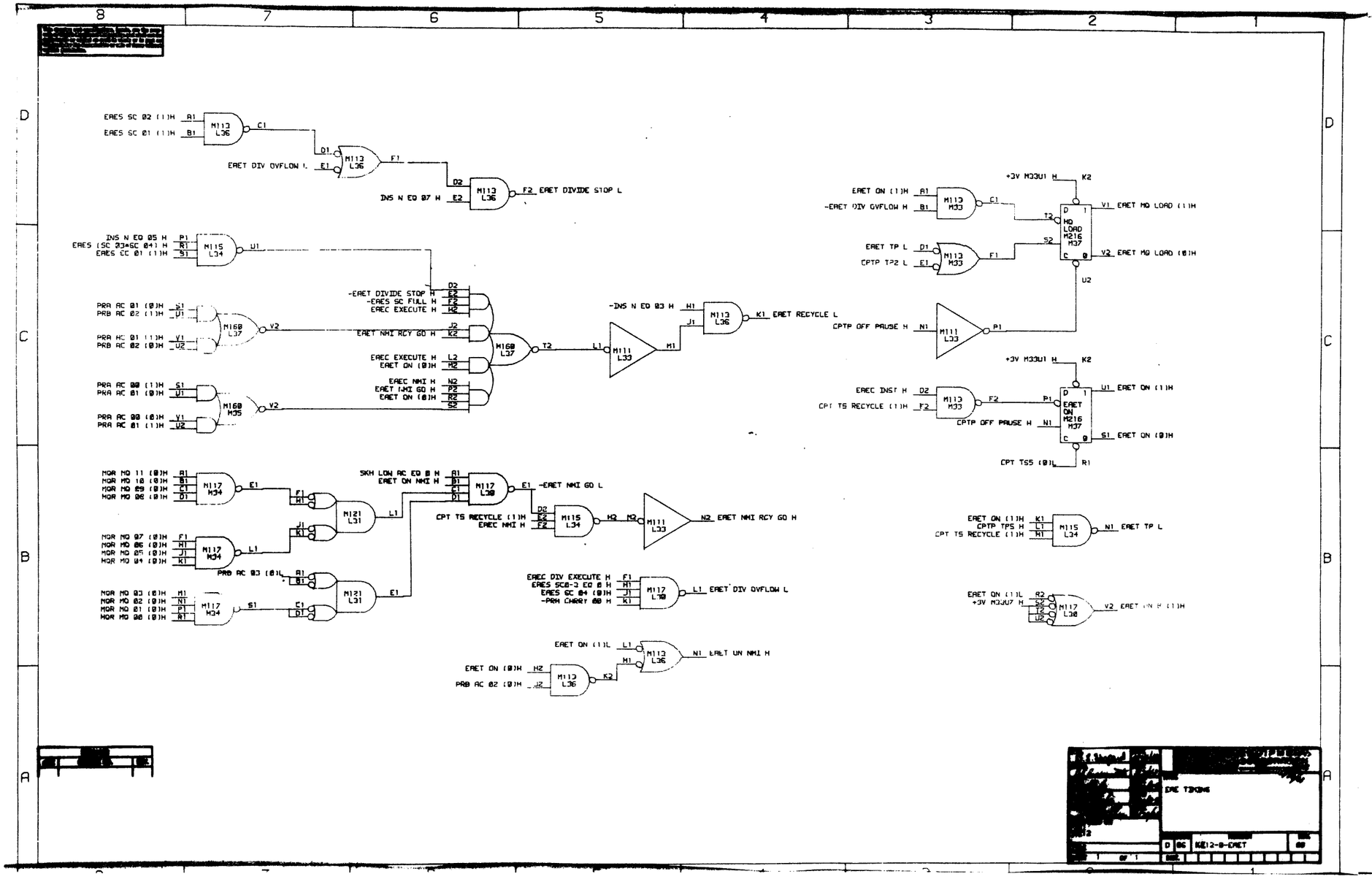
DIST.

DEC FORM NO.
DRD 102A


EAEC LONG INST L
EAEC INST H
-INS N EQ 01 H
-INS N EQ 11 H
EAEC LONG INST H
-FLK ADDER LINK H
MQR MQ 11 (0)H
MQR MQ 11 (1)H
-FLK ADDER LINK H
EAES SC 01 (0)L
EAES SC 02 (0)L
-EAEC DIV EXECUTE L
EAEC INST H
RCS EN MQ SH LEFT H
EAEC SH L EN L
EAEC INST L
INS 8 OPR H
INR IR 03 (1)H
INR IR 11 (1)H
EAEC INST H
EAEC MQ 11 INSERT L
-EAES SC EQ 0 H
EAEC DIV EXECUTE H
EAEC MQ 11 INSERT H
EAET ON (1)H
EAEC EXECUTE H
-INS N EQ 13 H
-INS N EQ 07 H
EAEC SETUP H
INR IR 05 (1)H
EAEC ENABLE MQ L
EAEC SETUP H
EAEC INST H
CPT TSS (1)H
EAET ON (0)H
CPS FETCH B (1)H
EAEC SETUP L
INR IR 06 (1)L
EAEC ENABLE SC H
INS N EQ 11 H
EAEC NMI H
EAEC NMI L
MQR MQ 10 (0)H
MQR MQ 11 (0)H
MQR MQ 10 (1)H
MQR MQ 11 (1)H
-EAES SC0-3 EQ 0 H
EAEC DIV EXECUTE H
-INS N EQ 07 H
EAET ON (1)H
EAEC LAST DIV H
MQR MQ 10 (0)H
EAEC SETUP H
INR IR 07 B (0)H
INR IR 04 (0)H
EAEC ENABLE AC L
INS N EQ 07 H
EAEC ENABLE -AC L
CPS EXECUTE (1)H
EAEC INST H
EAEC EXECUTE H
EAEC SETUP H
PRD MB 07 (1)H
EAEC EXECUTE L
EAEC EN LD MQ L
EAEC AC TO MQ EN H
PRC MB 04 (0)H
EAEC AC TO MQ EN L
INS N EQ 07 H
EAEC EXECUTE H
CPT RECYCLE SYNC (1)H
EAEC DIV EXECUTE H
EAEC DIV EXECUTE L
EAEC LAST DIV L
INS N EQ 05 H
CPT TS RECYCLE (1)H
EAET ON (1)H
EAEC MUL ADD L
EAET ON (1)L
EAEC DIV EXECUTE L
EAEC DIV EXECUTE L
EAEC LAST DIV H
MQR MQ 11 (0)H
EAEC EN MB H
EAET ON (1)H
EAES SC 01 (1)H
CPT RECYCLE SYNC (0)H
EAEC LAST DIV H
EAEC ENABLE -AC L
EAEC SETUP H
INR IR 09 (1)H
EAEC LINK DISABLE H
EAEC EXECUTE H
INS N EQ 17 H
-EAEC LINK LD EN L
EAEC LINK DISABLE L
EAEC DIV EXECUTE H
MQR MQ 11 (1)L
EAES SC EQ 0 L
MQR MQ 00 (1)H
MQR MQ 00 (0)H
-EAEC LOW SH IN L
REVISIONS
CHANGE NO.
REV.
J6
00001
A
J. SCANLAN 3-13-69
EP12-00001
B
D. L. SHEPARD
J. BISONETTE
L. GALE
D. CALL
2-28-69
EQUIPMENT CORPORATION
TITLE
EAE CONTROL
KE12
KE12-0-EAEC
B
SHEET 1 OF 1


M906 K27
B1 EAEC EN LD MQ L *M90E K27
M906 K27
D1 EAEC ENABLE -AC L
M906 K27
E1 EAEC AC TO MQ EN L
M906 K27
H1 EAEC ENABLE AC L
M906 K27
J1 EAEC ENABLE MQ L
M906 K27
L1 EAEC LAST DIV L
M906 K27
V2 EAET MQ LOAD (0)H
EACC LINC DISABLE H
N2
M906 K27
P1 EAEC LINK LD EN
EAEC LONG INST H
R2
M906 K27
S1 EAEC MUL ADD L
EAEC EN MB H
F1
M906 K27
D2 EAEC R SH EN L
EAEC ENABLE SC H
K1
M906 K27
E2 EAEC SETUP L
EAEC INST H
N1
M906 K27
H2 EAEC SH L EN L
EAEC MQ 11 INSERT H
R1
M906 K27
K2 EAET ON (0)H
RCS EN MQ SH LEFT H
F2
M906 K27
M2 EAET RECYCLE L
EAET ON (1)H
J2
M906 K27
P2 FLE K20K2
* INSERTED ONLY WHEN SYSTEM
DOES NOT HAVE KE12.
ADS
EQUIPMENT CORPORATION
TITLE
EAE DISABLE
D
KE12-0-EAED
A


EAES SC Ø1 (1)H
EAES SC Ø2 (1)H
EAES SC Ø3 (1)H
EAES SC Ø4 (1)H
M117 M34
+3V M34U1 H
EAET ON B (1)H
EAES SC Ø0 (1)H
M160 M35
PRD MB Ø7 (Ø)H
EAES EN MB TO SC H
+3V M34U1 H
EAET ON B (1)H
EAES SC Ø0 (Ø)H
M111 L33
EAES SC FULL L
EAES SC Ø2 (1)H
EAES SC Ø3 (1)H
EAES SC Ø4 (1)H
M115 L34
EAES EN MB TO SC H
PRE MB Ø8 (Ø)H
EAES SC Ø1 (Ø)H
EAET ON B (1)H
+3V M34U1
EAES SC Ø3 (1)H
EAES SC Ø4 (1)H
M113 M33
EAES SC 3 EQ Ø L
EAES SC Ø-3 EQ Ø H
EAES SC Ø4 (Ø)H
EAES SC EQ Ø L
EAES SL Ø0 (Ø)H
EAES SC Ø1 (Ø)H
EAES SC Ø2 (Ø)H
EAES SC Ø3 (Ø)H
EAEC DIV EXECUTE
INS N EQ 13 L
CPT TS RECYCLE (1)H
-EAET DIV OVFLOW H
EAEC EXECUTE H
EAES EA MQ SH L 2
-INS N EQ Ø5 H
-INS N EQ Ø7 H
SLA EX TS4 H
EAES EN MB TO SC H
EAES (SC Ø3*SC Ø4) H
EAES SC Ø2 (Ø)H
EAET ON B (1)H
PRE MB Ø9 (Ø)H
EAES EN MB TO SC H
EAES (SC Ø3*SC Ø4) L
EAES SC Ø2 (1)H
EAES SC Ø3 (Ø)H
EAES SC Ø4 (1)H
EAES EN MB TO SC H
PRF MB 10 (Ø)H
EAES SC Ø3 (1)H
EAES SC Ø4 (Ø)H
EAET ON B (1)H
EAES SC Ø4 (Ø)H
PRF MB 11 (Ø)H
EAES EN MB TO SC H
CPTP TP4 H
EAEC NMI L
EAEC EXECUTE L
EAET MQ LOAD (1)L
M113 M33
EAES SC Ø0 M216 M37
EAES LOAD SC H
EAES SC Ø1 M216 M37
EAES SC Ø2 M216 M37
EAES SC Ø3 M216 M37
EAES SC Ø4 M216 J29
NOTE:
N=Ø1 NOP
N=Ø3 SCL
N=Ø5 MUY
N=Ø7 DVI
N=11 NMI
N=13 SHL
N=15 ASR
N=17 LSR
EQUIPMENT CORPORATION
EAE STEP COUNTER & MQ CONTROL
KE12
D BS KE12-B-EAES


EAES SC 02 (1)H
EAES SC 01 (1)H
M113 L36
EAET DIV OVFLOW L
M113 L36
INS N EQ 07 H
M113 L36
EAET DIVIDE STOP L
INS N EQ 05 H
EAES (SC 03*SC 04) H
EAES SC 01 (1)H
M115 L34
-EAET DIVIDE STOP H
-EAES SC FULL H
EAEC EXECUTE H
PRA AC 01 (0)H
PRB AC 02 (1)H
PRA AC 01 (1)H
PRB AC 02 (0)H
M160 L37
EAET NMI RCY GO H
EAEC EXECUTE H
EAET ON (0)H
M160 L37
PRA AC 00 (1)H
PRA AC 01 (0)H
PRA AC 00 (0)H
PRA AC 01 (1)H
M160 M35
-INS N EQ 03 H
M111 L33
M113 L36
K1 EAET RECYCLE L
+3V M33U1 H
EAET ON (1)H
-EAET DIV OVFLOW H
M113 M33
M0 LOAD M216 M37
V1 EAET MQ LOAD (1)H
EAET TP L
CPTP TP2 L
M113 M33
V2 EAET MQ LOAD (0)H
CPTP OFF PAUSE H
M111 L33
+3V M33U1 H
EAEC INST H
CPT TS RECYCLE (1)H
M113 M33
EAET ON M216 M37
U1 EAET ON (1)H
S1 EAET ON (0)H
CPTP OFF PAUSE H
CPT TS5 (0)L
MQR MQ 11 (0)H
MQR MQ 10 (0)H
MQR MQ 09 (0)H
MQR MQ 08 (0)H
M117 M34
MQR MQ 07 (0)H
MQR MQ 06 (0)H
MQR MQ 05 (0)H
MQR MQ 04 (0)H
M117 M34
PRB AC 03 (0)L
MQR MQ 03 (0)H
MQR MQ 02 (0)H
MQR MQ 01 (0)H
MQR MQ 00 (0)H
M117 M34
M121 L31
M121 L31
SKM LOW AC EQ 0 H
EAET ON NMI H
M117 L38
-EAET NMI GO L
CPT TS RECYCLE (1)H
EAEC NMI H
M115 L34
M111 L33
N2 EAET NMI RCY GO H
EAEC DIV EXECUTE H
EAES SCA-2 EQ 0 H
EAES SC 04 (0)H
-PRA CARRY 00 H
M117 L38
L1 EAET DIV OVFLOW L
EAET ON (1)L
EAET ON (0)H
PRB AC 02 (0)H
M113 L36
N1 EAET ON NMI H
EAET ON (1)H
CPTP TPS H
CPT TS RECYCLE (1)H
M115 L34
N1 EAET TP L
EAET ON (1)L
+3V M33U7 H
M117 L38
V2 EAET ON H (1)H
EAE TIMING
D 06 KE12-B-EAET

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MASTER DRAWING LIST

DWG. NO.	REV. LET.	NO. OF SHEETS	TITLE
A-ML-PDP12-0		2	PDP12 SYSTEM
K-WL-EP12-0-3	REF		WIRE LIST
D-MU-EP12-0-1	REF		MODULE UTILIZATION PROC
D-MU-EP12-0-2	REF		MODULE UTILIZATION PROC
D-BS-XY12-0-PCL			PCL PLOTTER CONTROL
A-PL-EP12-0-1	REF		MODULE UTILIZATION PROC PL
A-PL-EP12-0-2	REF		MODULE UTILIZATION PROC PL
C-IA-7005543-0-0	B	1	PLOTTER CONTROL CABLE W023

REVISIONS			
REV.	DATE	CHG. NO.	APP'D.
A	12/69	00001	L.G.
B	6/70	EP12-23	L.G.

DRN. J. APREA	DATE 3/7/69	digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS
CHK'D. R. HUTNAK	DATE 3/7/69	
ENG. L. Gale	DATE 3/10/69	TITLE PLOTTER CONTROL
PROJ. ENG. L. Gale	DATE 3/10/69	
PROD. [illegible]	DATE 3/10/69	
FIRST USED ON PDP-12		SIZE A / CODE ML / NUMBER XY12-0 / REV. B
SCALE		
SHEET 1 OF 1		DIST.

DEC FORM NO. DRA 103

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PRE MB ϕ8 (ϕ)L
PRD MB ϕ7 (ϕ)L
PRB MB ϕ3 (1)H — MF2
PRC MB ϕ4 (ϕ)H — MH2
PRD MB ϕ6 (ϕ)H — MD2
PRC MB ϕ5 (1)H — ME2
IOC IOP 1 H
NH2
PCL PLTR IOT H
PRE MB ϕ8 (1)H — MK2
PCL FAST OP DONE L
PRD MB ϕ7 (1)H — MS2
PRD MB ϕ7 (ϕ)H
PRE MB ϕ8 (ϕ)H
PCL PLTR IOT H — MM2
IOC IOP 2 H — NP2
5ϕ INST L
M7ϕ4
MϕS
NϕS
IOC IOP 1 L
PCL PLTR IOT H
IOC IOP 4 H — NT2
PRD MB ϕ7 (ϕ)H — NU1
NL2
NM2
IOC IOP 2 L
PCL 5ϕ INST L
DLY 1 2.5 MS ϕ — NJ2
DLY 2 (1)H
DLY 2 (ϕ)H
IOC IOP 4 H
PCL PTRL IOT H
PRE MB ϕ8 (1)H
5ϕ INST L
5ϕ INST H — MU2
PCL SLOW OP DONE L
PRD MB ϕ7 (1)H
PCL PLTR FLAG (ϕ)H — NS2
PCL PLTR IOT H
IOC IOP 4 H — NV1
PRE MB ϕ8 (ϕ)H
DLY 1 35 MS ϕ — NK2
DLY 1 35 MS ϕ
PCL IO PRESET L
ND2 — PCL SLOW OP DONE L
DLY 2 (1)H
DLY 2 (1)L
PCL IO PRESET L
MP2 — PCL FAST OP DONE L
PCL PLTR IOT H
IOC IOP 2 H
PCL 5ϕ INST H
IOC IO PRESET H — NN2
FCL IO PRESET L

D 1 PEN RIGHT C ϕ
D 1 PEN LEFT C ϕ
D 1 DRUM UP C ϕ
D 1 DRUM DOWN C ϕ
D 1 PEN UP C ϕ
D 1 PEN DOWN C ϕ
D 1 PLTR FLAG C ϕ

MJ2 PCL PEN R H — C2 — P2 — 15 — 4
ML2 PCL PEN L H — R2 — 3
MN2 PCL DRUM UP H — S2 — 1
MR2 PCL DRUM DOWN H — T2 — 2
MT2 PCL PEN UP H — U2 — 9
MV2 PCL PEN DOWN H — V2 — 10
W ϕ25 N ϕ4
CANNON SK-19-21ϕ-1/2

PCL PLTR IOT H
IOC IOP 1 H
PCL 5ϕ INST H
NE2 — INT SKIP BUS L
NOTE: SKIP AND INT REQUESTS ARE OPEN COLLECTOR OUTPUT
+3V
NF2 — INT INT RQST BUS L

QTY.	DESCRIPTION	PART NO.	ITEM NO.
	PARTS LIST		

UNLESS OTHERWISE SPECIFIED
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. — DATE 2-5-69
CHK'D. — DATE 2-25-69
ENG. — DATE 2-28-69
PROJ. ENG. — DATE 2-28-69
PROD. — DATE 3/24/69
FIRST USED ON XY12
SCALE
SHEET 1 OF 1

digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS

TITLE
PCL PLOTTER CONTROL

SIZE D | CODE 85 | NUMBER XY12-ϕ-PCL | REV.
DIST.

REVISIONS | REV. | CHANGE NO. | CHK

DEC FORM NO. DRD 102A

SIZE CODE D 85 NUMBER XY12-ϕ-PCL REV.

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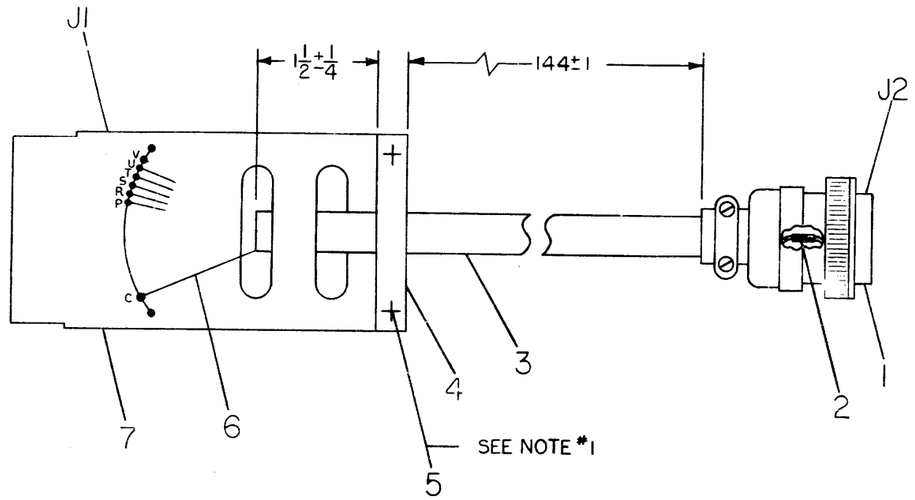
WIRE TABLE	
CONNECTION	
FROM	TO
J1 - C	J2 - 15
P	4
R	3
S	1
T	2
U	9
J1 - V	J2 - 10



NOTES:

1. ASSEMBLE CABLE CLAMP #4 WITH EYELETS #5 AFTER WIRE #6 IS SOLDERED TO BOARD.

QTY.	DESCRIPTION	PART NO.	ITEM NO.
	PARTS LIST		
1	WØ23 CABLE CONNECTOR	5002726	7
A/R	#18 AWG STRD TEF WHT		6
2	EYELET #A-94 E.B. STIMPSON		5
1	CLABLE CLAMP	5302016	4
A/R	BLK VINYL TUBING #2 — 17/64 ID		3
7	TUBING HY-SHRINK #18 X 1/4 LONG RED		2
1	CANNON SK-19-21C-1/2		1

REVISIONS			
CHK	CHANGE NO.	REV.	
	ECO #101	A	
	CHANGED DIM FROM 120±1 TO 144±1		
	W023-00003	B	

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.		DATE 6-30-67
CHK'D.		DATE 7-21-67
ENG.		DATE 7-22-67
QUALITY ENG.		DATE 7-22-67
MFG.		DATE 7-22-67

FIRST USED ON C-UA-350-C-0

SCALE 1/1

SHEET 1 OF 1

digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS

TITLE PLOTTER CONTROL CABLE WØ23

SIZE	CODE	NUMBER	REV.
C	IA	7005543-0-0	B

DIST.

DEC FORM NO. DRC 100

7005543-0-0 B

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MASTER DRAWING LIST

DWG. NO.	REV. LET.	NO. OF SHEETS	TITLE
A-ML-PDP12-0		2	PDP12 SYSTEM
D-MU-EP12-0-1	REF		MODULE UTILIZATION PROC
D-MU-EP12-0-2	REF		MODULE UTILIZATION PROC
K-WL-EP12-0-3	REF		WIRE LIST
D-BS-KT12-0-TSS	C	1	PDP-12 TIME SHARING OPTION
A-PL-EP12-0-1	REF		MODULE UTILIZATION PROC PL
A-PL-EP12-0-2	REF		MODULE UTILIZATION PROC PL

REVISIONS			
REV.	DATE	CHG. NO.	APP'D.
A	4/18/69	EP12-02	J.S.
B	7/70	EP12-26	L.G.
C	10/70	EP12-30	L.G.

DRN. J. SCANLAN	DATE 3/7/69	digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS
CHK'D. R. Hannah	DATE 3/7/69	
ENG. L. Gale	DATE 3/10/69	TITLE PDP-12 TIME SHARING OPTION
PROJ. ENG. L. Gale	DATE 3/10/69	
PROD. W Call	DATE 3/10/69	
FIRST USED ON		SIZE A / CODE ML / NUMBER KT12-0 / REV. C
SCALE		
SHEET 1 OF 1		DIST.

DEC FORM NO. DRA 103

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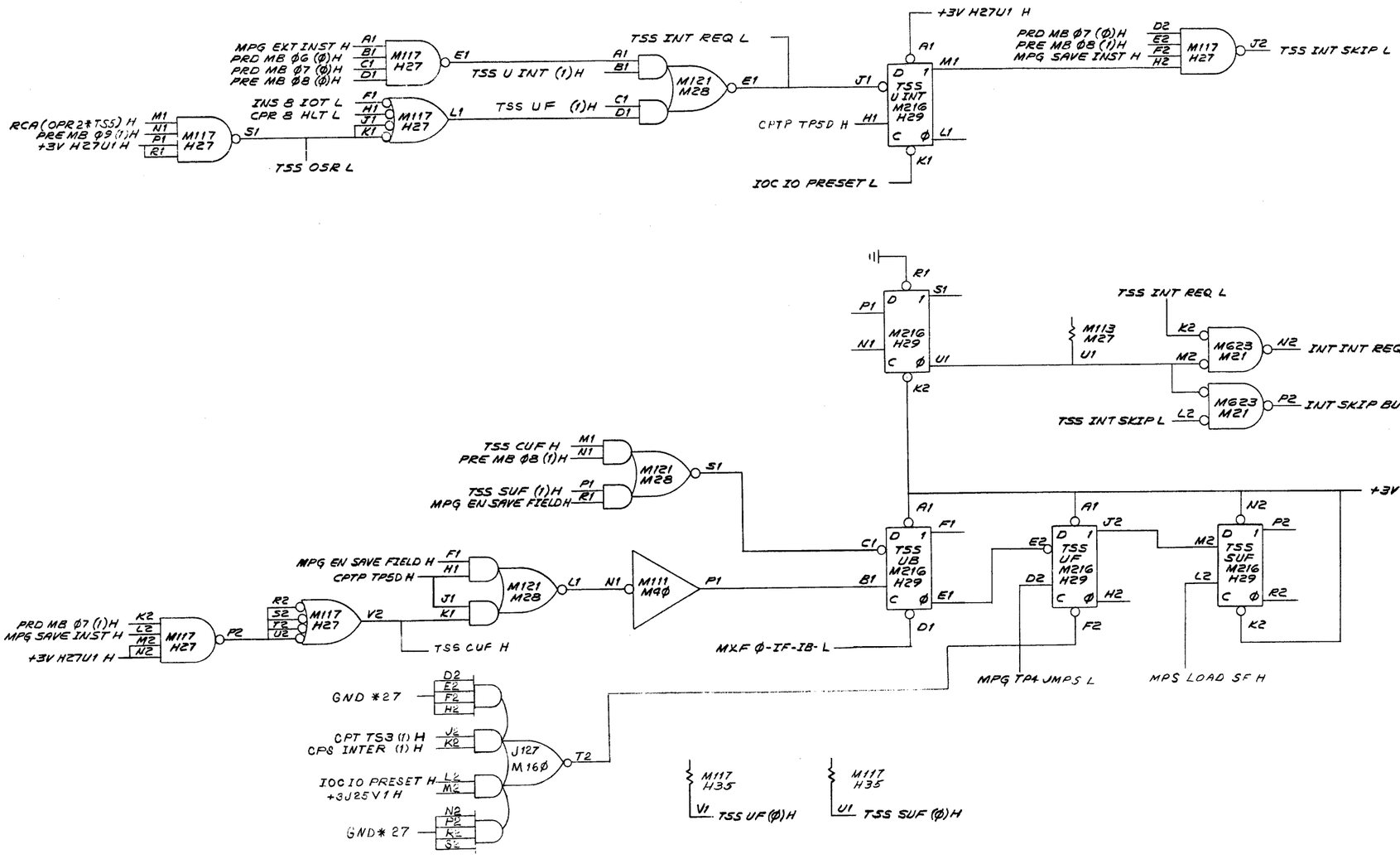

REVISIONS			
CHK	CHANGE NO.	REV.	
D-BS	EP12-00002	A	J. SCANLON 5/12/69
D-BS	EP12-00026	B	D. MACKLIN 8/18/70
FV	EP12-00030	C	D. MACKLIN 11-12-70

UNLESS OTHERWISE SPECIFIED			
UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES TOLERANCES DECIMALS ± .005 FRACTIONS ± 1/64 ANGLES ± 0°30' FINAL SURFACE QUALITY REMOVE BURRS AND BREAK SHARP CORNERS	DRN.	DATE 3/1/69	digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS
	CHKD.	DATE 3/1/69	
MATERIAL	ENG.	DATE 3/1/69	TITLE PDP-12 TIME SHARING OPTION
	PROJ. ENG.	DATE 3/1/69	
FINISH	PROD.	DATE 3/1/69	
	FIRST USED ON KT12		SIZE D CODE BS NUMBER KT12-ϕ-TSS REV. C
	SCALE		
	SHEET 1 OF 1		DIST.

QTY.	DESCRIPTION	PART NO.	ITEM NO.
PARTS LIST			

DEC FORM NO. DRD 102A

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MASTER DRAWING LIST

DWG. NO.	REV. LET.	NO. OF SHEETS	TITLE
A-ML-PDP12-0	REF	2	PDP 12 SYSTEM
K-WL-EP12-0-3	REF		WIRE LIST
D-MU-EP12-0-1	REF		MODULE UTILIZATION PROC.
D-MU-EP12-0-2	REF		MODULE UTILIZATION PROC.
A-PL-EP12-0-1	REF		MODULE UTILIZATION PROC. PL
A-PL-EP12-0-2	REF		MODULE UTILIZATION PROC. PL
D-BS-DP12-0-DTTC	B	1	DTTC DATAPHONE CLOCK
D-BS-DP12-0-DTTI	B	1	DTTI TELETYPE RECEIVER
D-BS-DP12-0-DTTO	C	1	DTTO TELETYPE TRANSMITTER
A-SP-DP12-0-1		7	ENGINEERING SPECIFICATION

REVISIONS			
REV.	DATE	CHG. NO.	APP'D.
A	2/70	EP12-20	L.G.
B	5/70	EP12-22	D.C.
C	9/70	EP12-29	L.G.

DRN.	J.APREA	DATE 3/7/69
CHK'D.	K. RUSS	DATE 7/25/69
ENG.		DATE 8/11/69
PROJ. ENG.		DATE 8/11/69
PROD.		DATE 8/18/69
FIRST USED ON	PDP12	
SCALE	H	
SHEET	1 OF 1	

digital EQUIPMENT CORPORATION
MAYNARD, MASSACHUSETTS

TITLE: TTY/DATAPHONE

SIZE	CODE	NUMBER	REV.
A	ML	DP12-A	C

DIST.

DEC FORM NO. DRA 103

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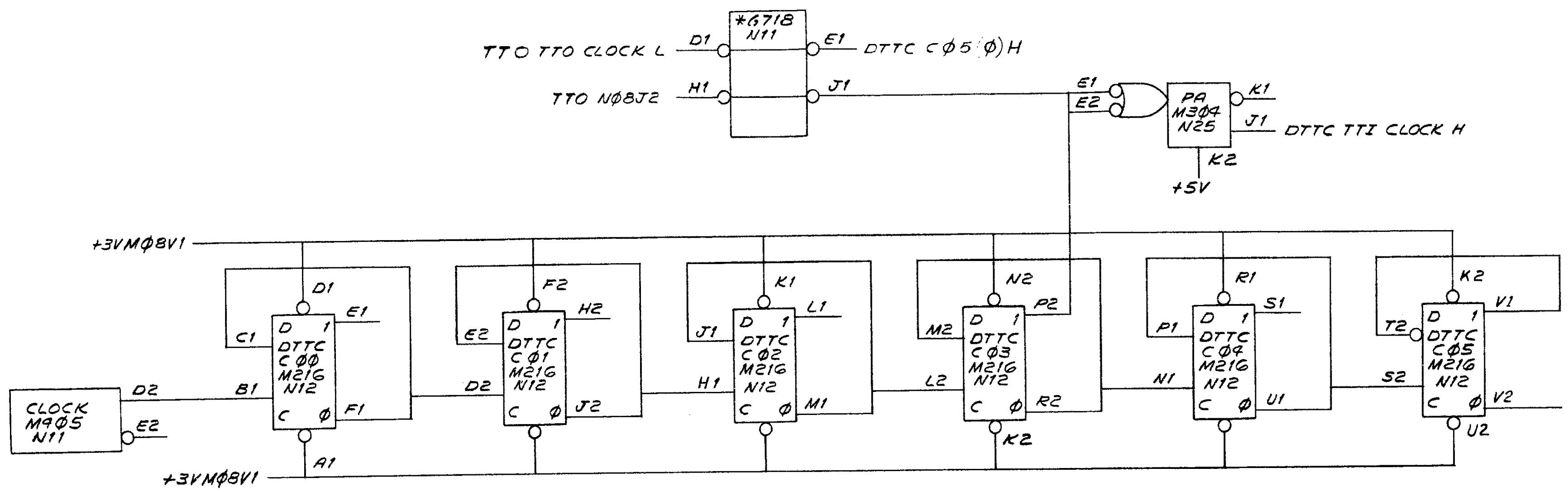

DP12-A

WHEN THE DP12 IS USED TO DRIVE A TELETYPE AT 11Ø BAUD, THE M4Ø5 (N11) AND M216 (N12) ARE NOT USED. G718 MODULE IS PLACED IN SLOT N11 THEREBY CONNECTING THE PDP-12 TELETYPE TO THE DP12 INPUT AND OUTPUT MODULES.

DP12-B

WHEN THE DP12 IS USED AT OTHER BAUD RATES (UP TO 1Ø,ØØØ BAUD) THE CRYSTAL CLOCK (M4Ø5, N11) IS SELECTED TO BE 128 TIMES THE BAUD RATE.

FOR BAUD RATES BETWEEN 1Ø,ØØØ TO 1ØØ,ØØØ THE WIRE FROM N12L2 TO N12M1 IS REMOVED AND A WIRE IS ADDED FROM N12L2 TO N11D2. THE CRYSTAL RATE IS THEN SELECTED TO BE 16 TIMES THE BAUD RATE.

USE CABLE BC01A-25 FOR INTER-CONNECTION TO DATAPHONE.

QTY.	DESCRIPTION	PART NO.	ITEM NO.

PARTS LIST

REVISIONS		
CHK	CHANGE NO.	REV.
	EP12-00003 GALE	A
	EP12-00020 L. GALE	B

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. DATE 2-23-69
CHK'D. DATE 2/27/69
ENG. DATE
PROJ. ENG. DATE
PROD. DATE
FIRST USED ON D12
SCALE NONE
SHEET OF

DIGITAL EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS

TITLE DTTC DATAPHONE CLOCK

SIZE D CODE BS NUMBER DP12-Ø-DTTC REV. B

DIST.

DEC FORM NO. DRD 102A

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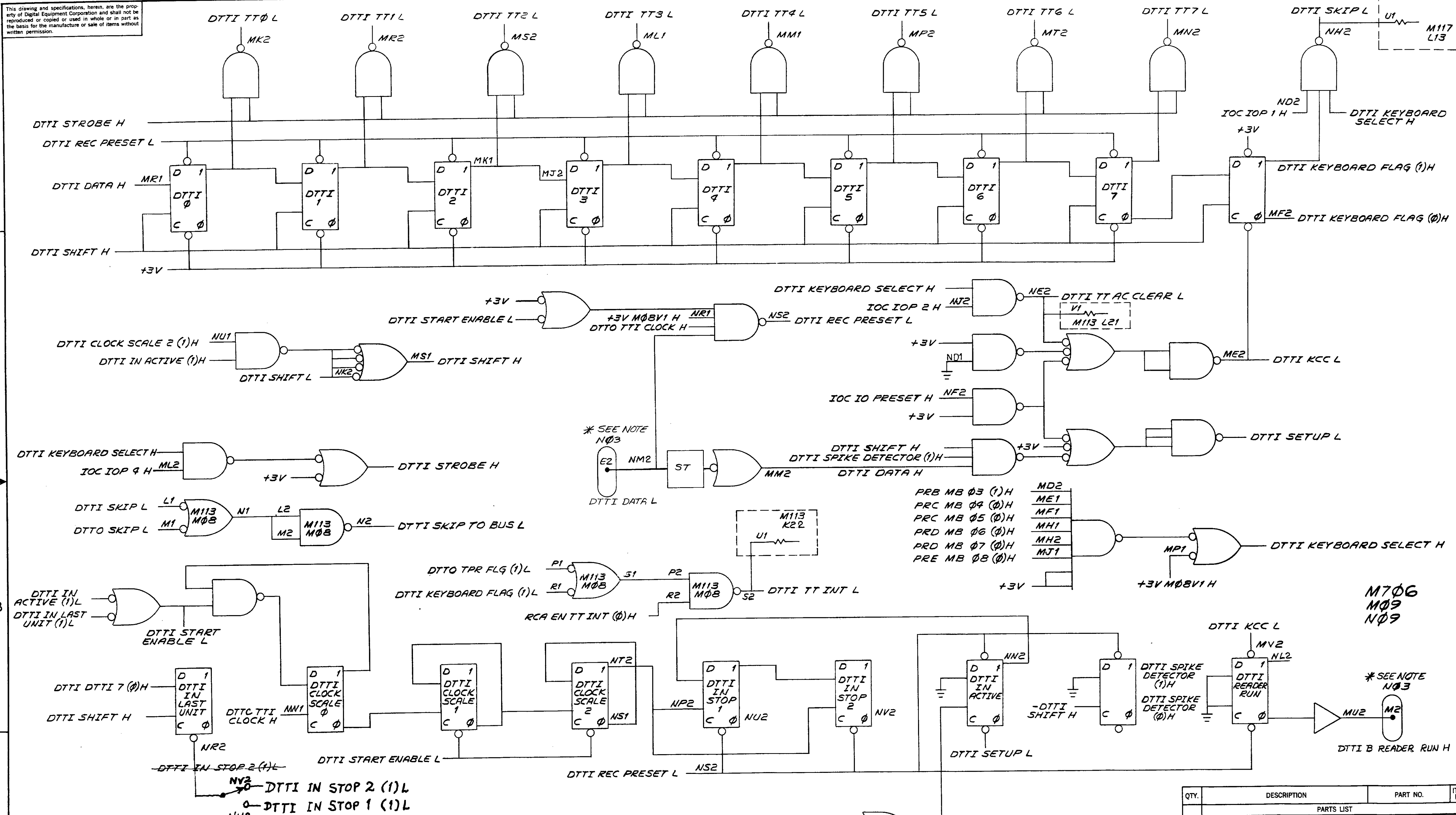

DTTI TTØ L
DTTI TT1 L
DTTI TT2 L
DTTI TT3 L
DTTI TT4 L
DTTI TT5 L
DTTI TT6 L
DTTI TT7 L
DTTI SKIP L
M117 L13
DTTI STROBE H
DTTI REC PRESET L
DTTI DATA H
DTTI SHIFT H
+3V
IOC IOP 1 H
DTTI KEYBOARD SELECT H
DTTI KEYBOARD FLAG (1)H
DTTI KEYBOARD FLAG (Ø)H
DTTI START ENABLE L
+3V MØ8V1 H
DTTO TTI CLOCK H
DTTI TT AC CLEAR L
M113 L21
IOC IOP 2 H
DTTI CLOCK SCALE 2 (1)H
DTTI IN ACTIVE (1)H
DTTI SHIFT L
DTTI KCC L
IOC IO PRESET H
DTTI SETUP L
* SEE NOTE
DTTI KEYBOARD SELECT H
IOC IOP 4 H
DTTI SHIFT H
DTTI SPIKE DETECTOR (1)H
DTTI DATA H
DTTI DATA L
DTTI SKIP L
DTTO SKIP L
M113 MØ8
DTTI SKIP TO BUS L
PRB MB Ø3 (1)H
PRC MB Ø4 (Ø)H
PRC MB Ø5 (Ø)H
PRD MB Ø6 (Ø)H
PRD MB Ø7 (Ø)H
PRE MB Ø8 (Ø)H
DTTO TPR FLG (1)L
DTTI KEYBOARD FLAG (1)L
DTTI TT INT L
RCA EN TT INT (Ø)H
+3V MØ8V1 H
M7Ø6
MØ9
NØ9
DTTI IN ACTIVE (1)L
DTTI IN LAST UNIT (1)L
DTTI START ENABLE L
DTTI DTTI 7 (Ø)H
DTTI IN LAST UNIT
DTTI CLOCK SCALE Ø
DTTI CLOCK SCALE 1
DTTI CLOCK SCALE 2
DTTI IN STOP 1
DTTI IN STOP 2
DTTI IN ACTIVE
DTTI SPIKE DETECTOR (1)H
DTTI SPIKE DETECTOR (Ø)H
DTTI READER RUN
-DTTI SHIFT H
DTTI B READER RUN H
DTTI REC PRESET L
DTTI IN STOP 2 (1)L
DTTI IN STOP 1 (1)L
DTTI IN LAST UNIT (1)H
STOP BIT SELECTOR SWITCH
1 stop bit : NR2 → NU2
2 stop bits : NR2 → NV2

NOTE: USE A WØ76 TELETYPE MODULE WITH DP12-A OPTION. WITH DP12-B OPTION USE M850 LEVEL CONVERTER. WHEN NEITHER CONNECTOR IS INSERTED, INSTALL G700YA DATAPHONE DISABLE MODULE TO PREVENT SPURIOUS INTERRUPTS CAUSED BY FLOATING DTTI DATA L.

REV.	CHANGE NO.	
A	EPIL-00004	L. GALE 7/15/69
B	EP12-00022	CLAYTON 1/22/70

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

DATE 2-22-69, 2/27/69, 2-28-69, 2/28/69

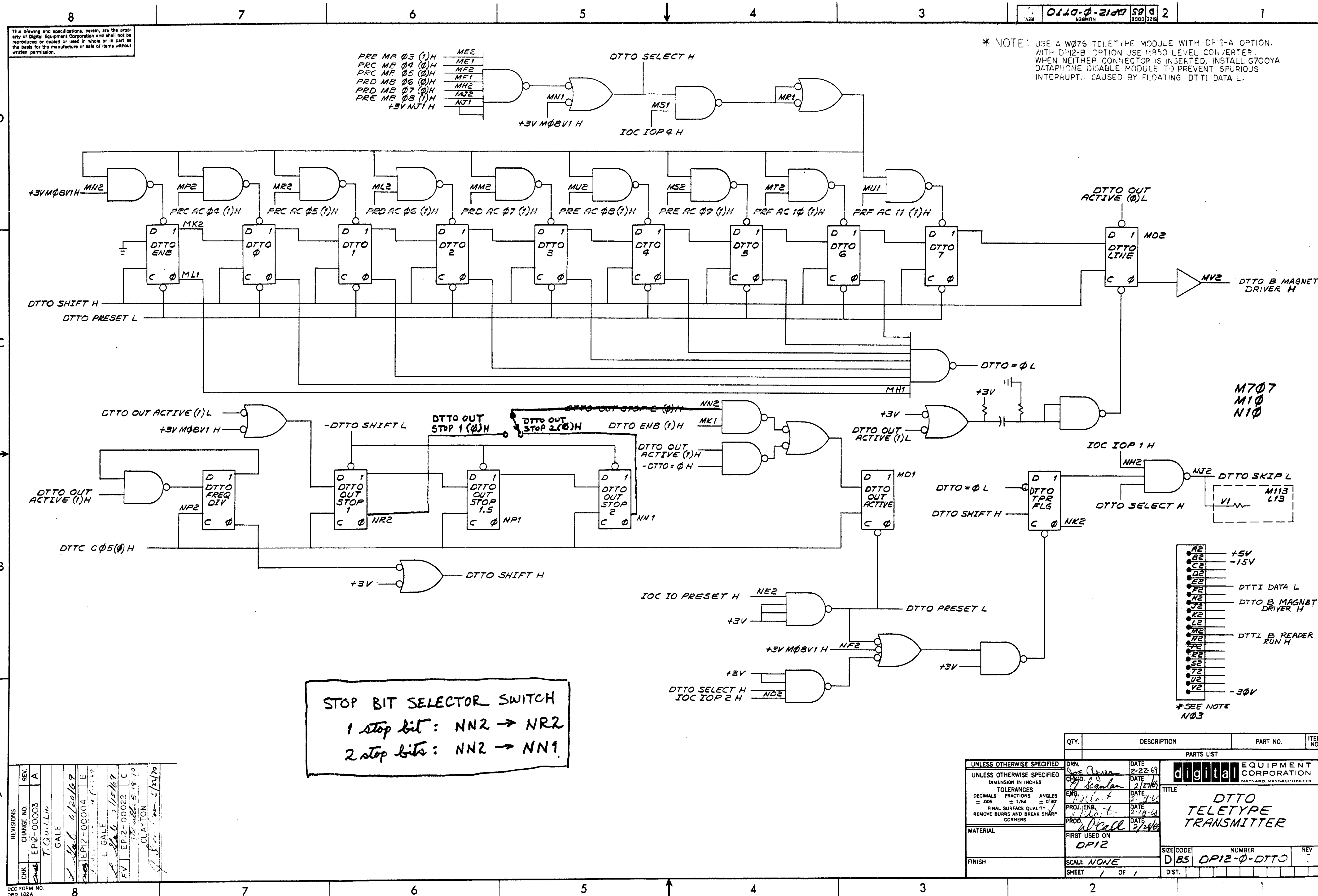
digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS

TITLE DTTI TELETYPE RECEIVER

FIRST USED ON DP12

SIZE D CODE BS NUMBER DP12-Ø-DTTI REV. B

SHEET 1 OF 1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* NOTE: USE A W076 TELETYPE MODULE WITH DP12-A OPTION. WITH DP12-B OPTION USE M850 LEVEL CONVERTER. WHEN NEITHER CONNECTOR IS INSERTED, INSTALL G700YA DATAPHONE DISABLE MODULE TO PREVENT SPURIOUS INTERRUPTS CAUSED BY FLOATING DTTI DATA L.
DTTO SELECT H
IOC IOP 4 H
+3V MØ8V1 H
DTTO SHIFT H
DTTO PRESET L
DTTO OUT ACTIVE (Ø) L
DTTO B MAGNET DRIVER H
DTTO = Ø L
M7Ø7
M1Ø
N1Ø
DTTO OUT ACTIVE (1) L
DTTO ENB (1) H
DTTO OUT STOP 1 (Ø) H
DTTO OUT STOP 2 (Ø) H
IOC IOP 1 H
DTTO SKIP L
DTTO SELECT H
DTTO SHIFT H
DTTC CØ5(Ø) H
IOC IO PRESET H
DTTO PRESET L
DTTO SELECT H
IOC IOP 2 H
+5V
-15V
DTTI DATA L
DTTO B MAGNET DRIVER H
DTTI B READER RUN H
-30V
*SEE NOTE
NØ3
STOP BIT SELECTOR SWITCH
1 stop bit: NN2 → NR2
2 stop bits: NN2 → NN1
REVISIONS
EP12-00003
EP12-00004
EP12-00022
UNLESS OTHERWISE SPECIFIED
DIMENSION IN INCHES
TOLERANCES
FINAL SURFACE QUALITY
REMOVE BURRS AND BREAK SHARP CORNERS
digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS
TITLE
DTTO TELETYPE TRANSMITTER
FIRST USED ON DP12
SCALE NONE
SHEET 1 OF 1
D B5 DP12-Ø-DTTO
REV C

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MASTER DRAWING LIST

DWG. NO.	REV. LET.	NO. OF SHEETS	TITLE
A-ML-PDP12-0	REF	2	PDP 12 SYSTEM
K-WL-EP12-0-3	REF		WIRE LIST
D-MU-EP12-0-1	REF		MODULE UTILIZATION PROC.
D-MU-EP12-0-2	REF		MODULE UTILIZATION PROC.
A-PL-EP12-0-1	REF		MODULE UTILIZATION PROC. PL
A-PL-EP12-0-2	REF		MODULE UTILIZATION PROC. PL
D-BS-DP12-0-DTTC	B	1	DTTC DATAPHONE CLOCK
D-BS-DP12-0-DTTI	B	1	DTTI TELETYPE RECEIVER
D-BS-DP12-0-DTTO	C	1	DTTO TELETYPE TRANSMITTER
D-IA-BC01A-0-0		1	LEVEL CONVERTER (BI POLAR) CABLE
A-SP-DP12-0-1		7	ENGINEERING SPECIFICATION

REVISIONS			
REV.	DATE	CHG. NO.	APP'D.
A	2/70	EP12-20	L.G.
B	5/70	EP12-22	D.C.
C	9/70	EP12-29	L.G.

DRN. J. APREA	DATE 3/7/69	digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS
CHK'D. K. RUSS	DATE 7/25/69	
ENG. L. Gale	DATE 8/11/69	
PROJ. ENG. L. Gale	DATE 8/11/69	
PROD. J. Call	DATE 8/18/69	
FIRST USED ON PDP12		
SCALE —		
SHEET 1 OF 1		

TITLE: TTY/DATAPHONE (EIA LEVEL)

SIZE	CODE	NUMBER	REV.
A	ML	DP12-B	C

DIST.

DEC FORM NO. DRA 103

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LEGEND

NUMBER	DIM "A"	TOLERANCE
BCØIA-5	5 FT	± 2 IN
BCØIA-10	10 FT	± 3 IN
BCØIA-15	15 FT	± 4 IN
BCØIA-20	20 FT	± 5 IN
BCØIA-25	25FT	± 6 IN
BCØIA-30	30 FT	± 7 IN
BCØIA-35	35 FT	± 8IN
BCØIA-40	40 FT	± 10 IN
BCØIA-45	45 FT	± 11 IN
BCØIA-50	50 FT	± 12IN

WIRE TABLE

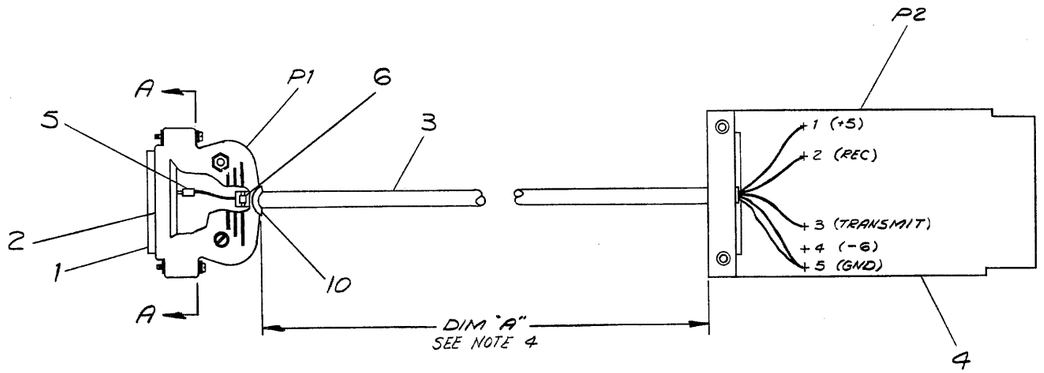
ITEM NO	DESCRIPTION AWG	COLOR	FROM CONNECTION	FROM WITH	TO CONNECTION	TO WITH
3	#22	BLK	P1-1	5-SOLDER	P2-5	SOLDER
3	#22	RED	P1-2	5-SOLDER	P2-3	SOLDER
3	#22	GRN	P1-3	5-SOLDER	P2-2	SOLDER
3	#22	ORN	P1-7	5-SOLDER	P2-5	SOLDER
3	#22	WHT	P1-20	5-SOLDER	P2-1	SOLDER

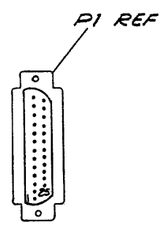
NOTES:

1. EACH SOLDERED CONNECTION ON P1 SHALL BE INSULATED WITH A 1/4 INCH PIECE OF HY-SHRINK TUBING (#5)
2. APPLY TAPE (#9) BETWEEN CABLE (#3) AND BOARD (#4) THEN SOLDER. ASSEMBLE CLAMP (#8) & EYELETS (#7) TO BOARD AFTER SOLDERING.
3. ~~VARIATIONS AND LENGTHS SHOWN IN LEGEND ARE STANDARD OTHER THAN STANDARD VARIATIONS WILL BE SPECIFIED BY ALPHANUMERIC DESIGNATION. FOR LENGTHS OTHER THAN FOOT INCREMENTS FROM ONE (1) FOOT THRU NINE (9) FEET, ELEVEN (11) INCHES.~~

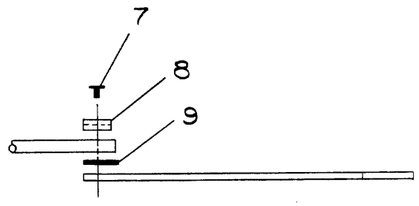
   ~~A = 1" G = 7"~~
   ~~B = 2" H = 8"~~
   ~~C = 3" J = 9"~~
   ~~D = 4" K = 10"~~
   ~~E = 5" L = 11"~~
   ~~F = 6"~~

   ~~EXAMPLE: BCØ2X-5D = 5'6"~~
   ~~LENGTHS WILL BE IN FOOT INCREMENTS FROM TEN (10) FEET ON. AND WILL BE SPECIFIED BY THE CORRESPONDING NUMERICAL DESIGNATION~~
   ~~EXAMPLE: BCØ2X-11 = 11 FEET~~
   ~~THE TOLORANCE ON DIMENSION "A" WILL BE ± 2 % OF THE FOOT INCREMENT.~~
4. CABLE TO BE CUT TO DIM "A" + 8 INCHES





SECTION A-A



QTY.	DESCRIPTION	PART NO.	ITEM NO.
1	GROMMET # 809 A.I.R.	9007668	10
A/R	TAPE #4032 1/2 x 1 3/4 LG (3M CO)	9007834-0-0	9
1	CABLE CLAMP	1202704	8
2	EYELET #GS-4-7 STIMPSON	9006732	7
1	TIE WRAP PANDUIT #SST-1B	9007031	6
4	HEAT SHRINK TUBING 1/8 DIA	9107255	5
1	M850 CABLE CONN	M850	4
A/R	CABLE, BELDEN 5 COND	9107680	3
1	PLUG CINCH HOOD #DB51226-1	1205885	2
1	PLUG CINCH DB-25P	1205886	1

PARTS LIST

REVISIONS	CHK	CHANGE NO.	REV.
		BCØIA-00001	A
		LKL 01Z	
		BCØIA-00003	B
		L. KLOTZ	

FIRST USED ON OPTION / MODEL: BCØ1A

DO NOT SCALE DRAWING

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

		DATE
DRN.	Robichaud	9-5-67
CHK'D.	L. Martin	9-11-67
ENG.		
PROJ. ENG.		
PROD		

NEXT HIGHER ASSY

SCALE

SHEET 1 OF 1

digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS

TITLE
LEVEL CONVERTER
(BI POLAR)

SIZE D | CODE IA | NUMBER BCØIA-Ø-Ø | REV B

DIST.

DEC FORM NO. DRD 100

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MASTER DRAWING LIST

DWG. NO.	REV. LET.	NO. OF SHEETS	TITLE
A-ML-PDP-12-0			PDP-12 SYSTEM
K-WL-EP12-0-3	REF		WIRE LIST
D-MU-EP12-0-1	REF		MODULE UTILIZATION PROC
D-MU-EP12-0-2	REF		MODULE UTILIZATION PROC
A-PL-EP12-0-1	REF		MODULE UTILIZATION PROC PL
A-PL-EP12-0-2	REF		MODULE UTILIZATION PROC PL
D-BS-KP12-0-PWF		1	PWF POWER FAIL/RESTART

REVISIONS			
REV.	DATE	CHG. NO.	APP'D.

DRN. J.Aprea	DATE 030769	digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS
CHK'D. R. Hutnak	DATE 030769	
ENG. L.Gale	DATE 031069	TITLE POWER FAIL/RESTART
PROJ. ENG. L.Gale	DATE 031069	
PROD. D.Call	DATE	
FIRST USED ON PDP-12		SIZE A / CODE ML / NUMBER KP12-0 / REV.
SCALE		
SHEET 1 OF 1		DIST.

DEC FORM NO.16--1033
DRA 103

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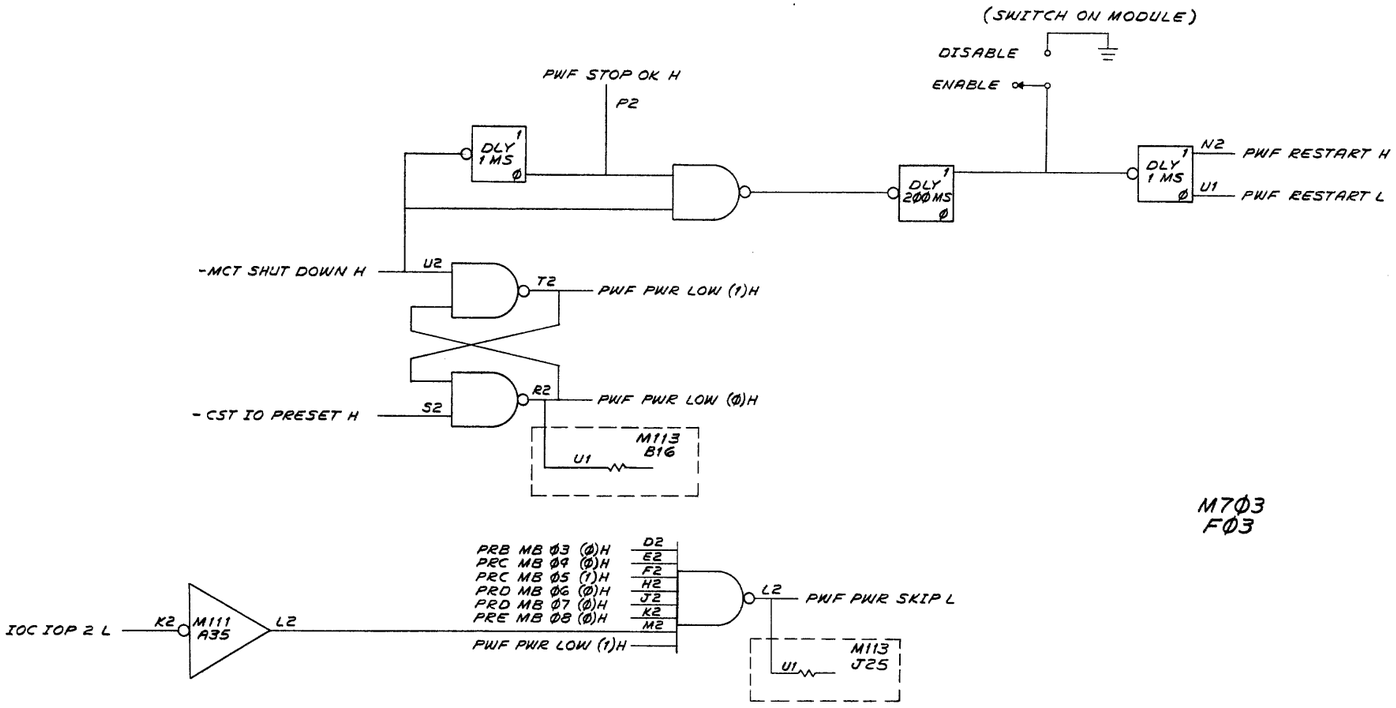

QTY.	DESCRIPTION	PART NO.	ITEM NO.

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.		DATE 2-11-69
CHKD.		DATE 2/27/69
ENG.		DATE
PROJ. ENG.		DATE
PROD.		DATE

FIRST USED ON KP12

SCALE

SHEET 1 OF 1

digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS

TITLE
POWER FAILURE/ RESTART

SIZE D | CODE BS | NUMBER KP12-Ø-PWF | REV.

DIST.

REVISIONS | REV. | CHANGE NO. | CHK

DEC FORM NO. DRD 102A

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MASTER DRAWING LIST

DWG. NO.	REV. LET.	NO. OF SHEETS	TITLE
A-PL-KW12-0-0	A	1	KW12 CLOCK CONTROL
A-ML-PDP12-0			PDP 12 SYSTEM
K-WL-EM12-0-3	REF		WIRE LIST
D-MU EM12-0-1	REF		MODULE UTILIZATION MEM
D-MU-EM12-0-2	REF		MODULE UTILIZATION MEM
D-BS-KW12-0-CLC	D	1	CLC CLOCK IO CONTROL
D-BS-KW12-0-CLEA	D	1	CLEA INPUT CHANNEL 1
D-BS-KW12-0-CLEB	C	1	CLEB INPUT CHANNEL 2
D-BS-KW12-0-CLEC	C	1	CLEC INPUT CHANNEL 3
D-BS-KW12-0-CLIO	A	1	CLIO CLOCK TO INPUT
D-BS-KW12-0-CLKA		1	CLKA CLOCK AND BUFFER 00-05
D-BS-KW12-0-CLKB		1	CLKB CLOCK AND BUFFER 06-11
D-BS-KW12-0-CLR	D	1	CLR CLOCK RATE
D-BS-KW12-0-CLTB	A	1	CLTB CLOCK TIME BASE
A-PL-EM12-0-1	REF		MODULE UTILIZATION MEM PL
A-PL-EM12-0-2	REF		MODULE UTILIZATION MEM PL
D-AD-7006335-0-0	C	2	CLOCK CONTROL PANEL ASSEMBLY
A-PL 7006335-0-0	C	2	CLOCK CONTROL PANEL ASSEMBLY PL
D-CS-7006335-0-1	A	1	CLOCK CONTROL CIRCUIT SCHEMATIC
A-SP-KW12-0-1		9	KW12 REAL TIME CLOCK

REVISIONS			
REV.	DATE	CHG. NO.	APP'D.
U	10/70	EM12-41	L.G.

DRN. J.APREA	DATE 030769	
CHK'D. R.HUTANK	DATE 030769	
ENG. L.GALE	DATE 031069	
PROJ. ENG. L.GALE	DATE 031069	
PROD. D.CALL	DATE 031069	
FIRST USED ON PDP-12		
SCALE		
SHEET OF		

digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS

TITLE

REAL TIME CLOCK

SIZE	CODE	NUMBER	REV.
A	ML	KW12-A	U

DIST.

DEC FORM NO. DRA 103

DIGITAL EQUIPMENT CORPORATION
MAYNARD, MASSACHUSETTS

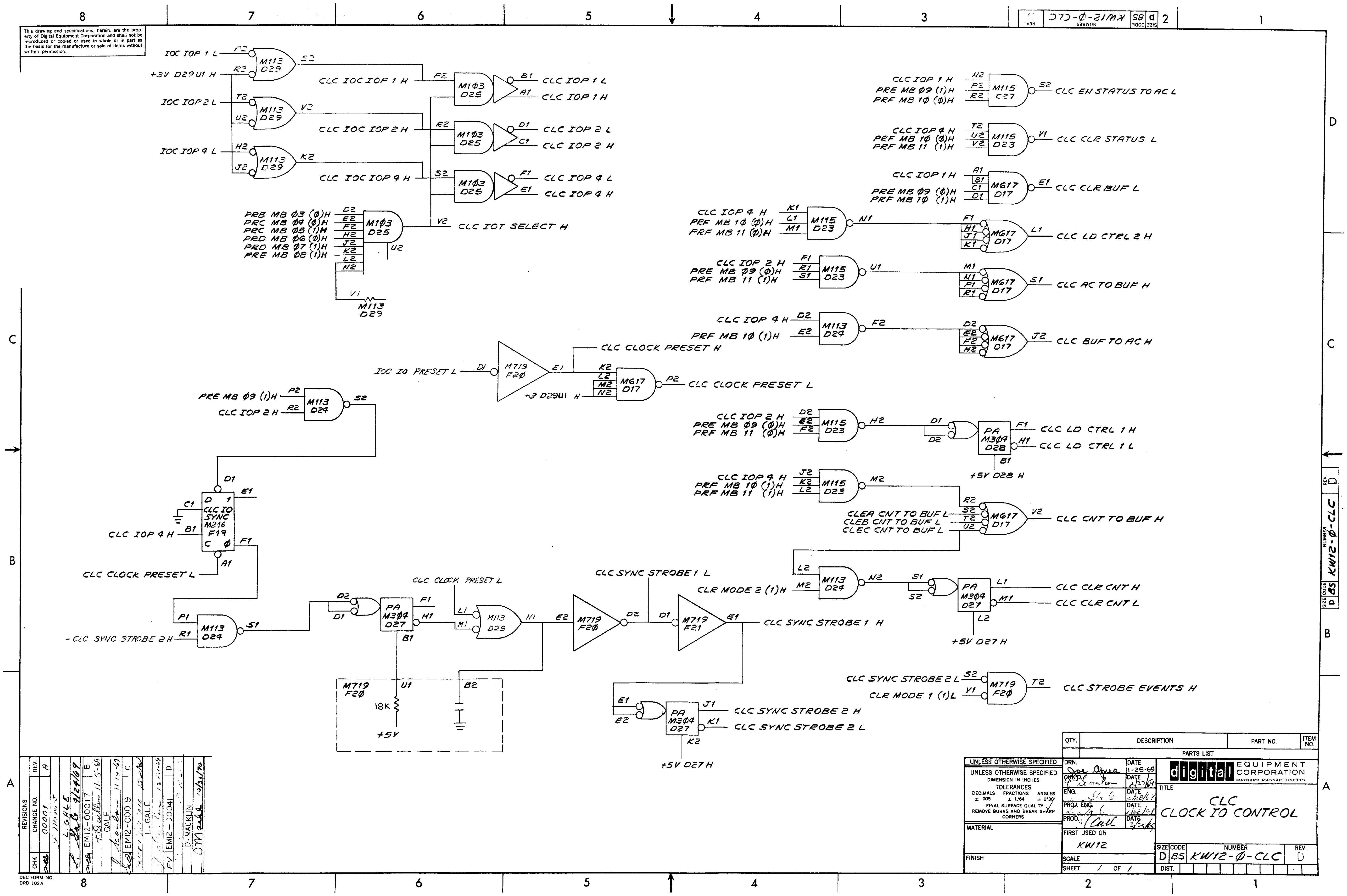
PARTS LIST

MADE BY [illegible] DATE 12-17-69	CHECKED W Sutherland DATE 12-17-69	SECTION
ENG L. Hall DATE 12/10/69	PROD D. Call DATE 12-18-69	ISSUED SECT.

ITEM NO.	DWG NO./PART NO. CL BASIC VAR.	DESCRIPTION	QTY/VAR KW12-A	KW12-B	KW12-C		UNIT COST		UNIT QUANTITY	QUANTITY ISSUED
	M503	Schmidt Trigger & PA	3							
	M719	Super Clock Synchronizer	3							
	M405	Crystal Clock	1		1					
	M216	Six Flip Flop	2							
	M217	Clock Counter Buffer	3							
	M623	Bus Driver	1							
	M103	Device Selector	1	1	1					
	M304	Pulse Amplifier	2							
	M117	NAND Gate	1							
	M115	NAND Gate	1							
	M113	NAND Gate	2	1	1					
	M617	Four Input Power NAND Gate	1							
	D-AD-7006335-0-0	Clock Control Panel	1							
	1203185-2	Power Supply (for PDP-12C only)	1							
	C-AD-7006045-0-0	Power Supply Bracket Assembly (12C only)	1							
	M870	Simple Clock		1	1					
	M401	Variable Clock		1						

TITLE	ASSY NO.	SIZE	CODE	NUMBER	REV	ECO NO.
(KW12) Clock Control	SHEET 1 OF 1	A	PL	KW12-Ø-Ø	A	EM12-00041
		DIST.				

DEC FORM NO 16-1027
DRA 123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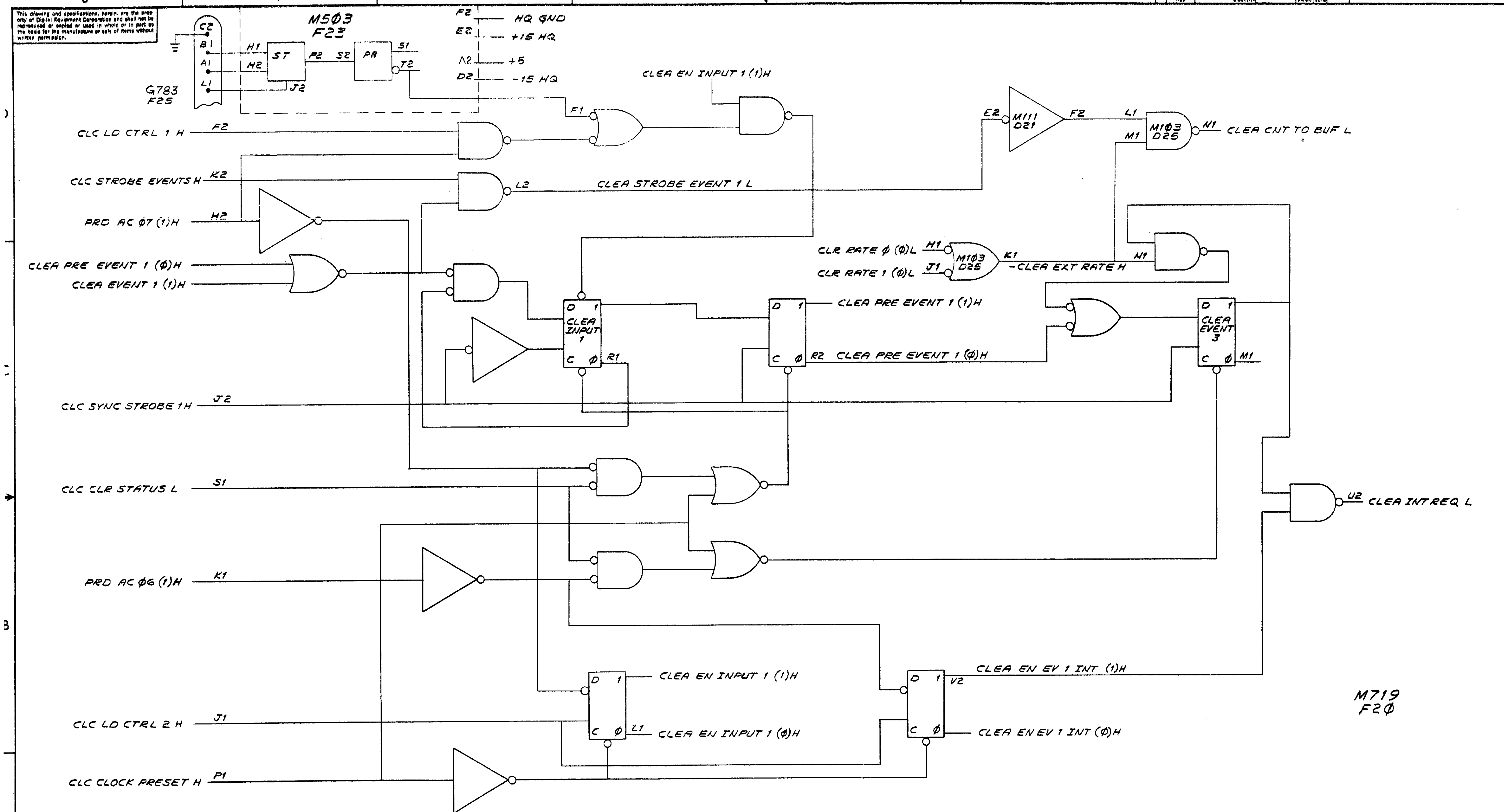
IOC IOP 1 L
+3V D29U1 H
IOC IOP 2 L
IOC IOP 4 L
M113 D29
CLC IOC IOP 1 H
CLC IOC IOP 2 H
CLC IOC IOP 4 H
M1Ø3 D25
CLC IOP 1 L
CLC IOP 1 H
CLC IOP 2 L
CLC IOP 2 H
CLC IOP 4 L
CLC IOP 4 H
PRB MB Ø3 (Ø)H
PRC MB Ø4 (Ø)H
PRC MB Ø5 (1)H
PRD MB Ø6 (Ø)H
PRD MB Ø7 (1)H
PRE MB Ø8 (1)H
CLC IOT SELECT H
CLC EN STATUS TO AC L
CLC CLR STATUS L
CLC CLR BUF L
CLC LD CTRL 2 H
CLC AC TO BUF H
CLC BUF TO AC H
IOC IO PRESET L
M719 F2Ø
CLC CLOCK PRESET H
CLC CLOCK PRESET L
M617 D17
M115 D23
PRE MB Ø9 (1)H
CLC IOP 2 H
M113 D24
CLC LD CTRL 1 H
CLC LD CTRL 1 L
+5V D28 H
CLC IO SYNC M216 F19
CLC CNT TO BUF H
CLEA CNT TO BUF L
CLEB CNT TO BUF L
CLEC CNT TO BUF L
CLC CLOCK PRESET L
CLC SYNC STROBE 1 L
CLR MODE 2 (1)H
CLC CLR CNT H
CLC CLR CNT L
+5V D27 H
-CLC SYNC STROBE 2 H
PA M3Ø4 D27
CLC SYNC STROBE 1 H
18K
+5V
CLC SYNC STROBE 2 L
CLR MODE 1 (1)L
CLC STROBE EVENTS H
CLC SYNC STROBE 2 H
CLC SYNC STROBE 2 L
REVISIONS
EM12-00017
EM12-00019
EM12-J0041
L. GALE
D. MACKLIN
UNLESS OTHERWISE SPECIFIED
DIMENSION IN INCHES
TOLERANCES
MATERIAL
FINISH
QTY.
DESCRIPTION
PART NO.
PARTS LIST
DRN.
CHKD.
ENG.
PROJ. ENG.
PROD.
DATE 1-28-69
digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS
TITLE
CLC CLOCK IO CONTROL
FIRST USED ON KW12
SIZE D CODE BS NUMBER KW12-Ø-CLC REV. D
SCALE
SHEET 1 OF 1
DEC FORM NO. DRD 102A



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REV.	CHANGE NO.	CHK
A	00001	
B	00002	
C	EM12-00015	
D	EM12-00030	FV

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. DATE 2-1-69
CHKD. DATE 2/27/69
ENG. DATE 2/28/69
PROJ. ENG. DATE 2/28/69
PROD. DATE 3/3/69

FIRST USED ON KW12

SCALE

SHEET 1 OF 1

digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS

TITLE CLEA INPUT CHAN 1

SIZE D CODE BS NUMBER KW12-Ø-CLEA REV. D

DEC FORM NO. DRD 102A

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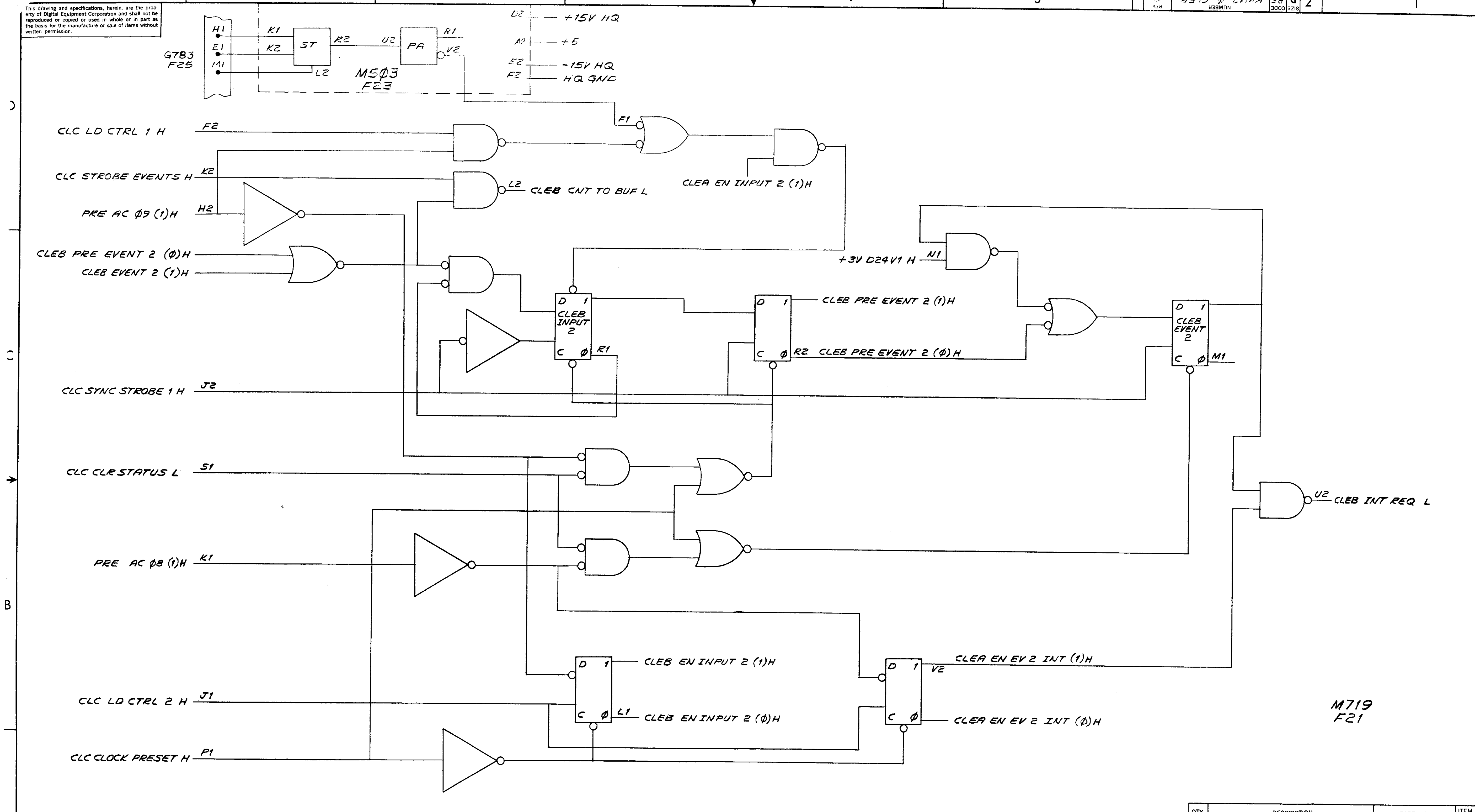

REVISIONS		
REV.	CHANGE NO.	CHK
A	C0001 L. GALE 4/24/69	
B	00002 L. GALE 6/18/69	
C	EM12-00015 L. GALE 10/7/69	

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. DATE 1-31-69
CHK'D DATE 2/27/69
ENG. DATE 2/28/69
PROJ. ENG. DATE 2/28/69
PROD. DATE 2/28/69

FIRST USED ON KW12

SCALE

SHEET 1 OF 1

digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS

TITLE
CLEB INPUT CHAN 2

SIZE D CODE BS NUMBER KW12-Ø-CLEB REV C

DIST.

DEC FORM NO. DRD 102A

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G783 F25

K1 H1 ST P2 S2 FA S1 T2
J1 H2
N1 J2
C1 D1 +6.2V
D1 E1 -6.2V

M503 F24

D2 +15 HQ
E2 -15 HQ
A2 +5
F2 HQ GND

CLC LD CTRL 1 H F2
CLC STROBE EVENTS H K2
PRF AC 11 (1)H H2
CLEC PRE EVENT 3 (Ø)H
CLEC EVENT 3 (1)H
CLC SYNC STROBE 1 H J2
CLC CLR STATUS L S1
PRF AC 1Ø (1)H K1
CLC LD CTRL 2 H J1
CLC CLOCK PRESET H P1

F1
L2 CLEC CNT TO BUF L
CLEA EN INPUT 2 (1)H

D 1 CLEC INPUT 3 C Ø R1
D 1 C Ø R2 CLEC PRE EVENT 3 (1)H
CLEC PRE EVENT 3 (Ø)H

+3V 024V1 H N1

D 1 CLEC EVENT 3 C Ø M1

U2 CLEC INT REQ L

D 1 C Ø L1 CLEC EN INPUT 3 (1)H
CLEC EN INPUT 3 (Ø)H

D 1 V2 C Ø CLEC EN EV 3 INT (1)H
CLEC EN EV 3 INT (Ø)H

M719 F22

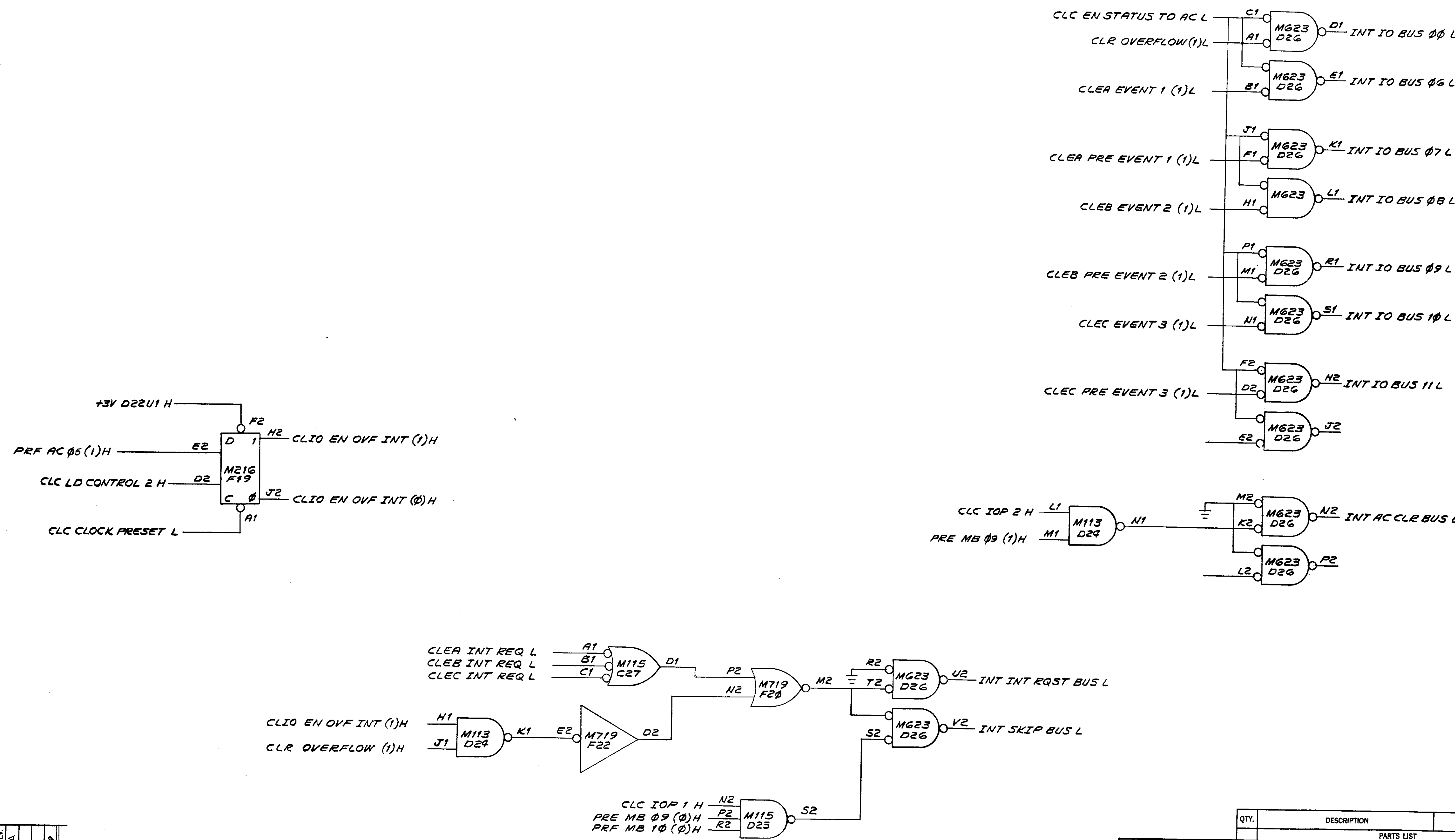
REVISIONS	REV.	CHK	CHANGE NO.
L. GALE 4/24/69	A	DNB	00001
L. GALE 6/18/69	B	DNB	00002
L. GALE 10/10/69	C	DNB	EM12-00015

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

QTY.	DESCRIPTION	PART NO.	ITEM NO.
	PARTS LIST		

DRN. Joe Hanlon	DATE 2-1-69	digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS
CHK'D Hanlon	DATE 2/7/69	
ENG. L. G.	DATE 2/28/69	TITLE CLEC INPUT CHAN 3
PROJ. ENG. L. Gale	DATE 2/28/69	
PROD. W. Call	DATE 2/28/69	
FIRST USED ON KW12		SIZE D CODE BS NUMBER KW12-Ø-CLEC REV. C
SCALE		DIST.
SHEET / OF /		

DEC FORM NO. DRD 102A


CLC EN STATUS TO AC L
CLR OVERFLOW (1) L
INT IO BUS ØØ L
INT IO BUS Ø6 L
CLEA EVENT 1 (1) L
CLEA PRE EVENT 1 (1) L
INT IO BUS Ø7 L
CLEB EVENT 2 (1) L
INT IO BUS Ø8 L
CLEB PRE EVENT 2 (1) L
INT IO BUS Ø9 L
CLEC EVENT 3 (1) L
INT IO BUS 1Ø L
CLEC PRE EVENT 3 (1) L
INT IO BUS 11 L
M623 D26
+3V D22U1 H
PRF AC Ø5 (1) H
CLC LD CONTROL 2 H
CLC CLOCK PRESET L
M216 F19
CLIO EN OVF INT (1) H
CLIO EN OVF INT (Ø) H
CLC IOP 2 H
PRE MB Ø9 (1) H
M113 D24
INT AC CLR BUS L
CLEA INT REQ L
CLEB INT REQ L
CLEC INT REQ L
M115 C27
M719 F2Ø
INT INT RQST BUS L
INT SKIP BUS L
CLIO EN OVF INT (1) H
CLR OVERFLOW (1) H
M719 F22
CLC IOP 1 H
PRE MB Ø9 (Ø) H
PRF MB 1Ø (Ø) H
M115 D23

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REVISIONS: REV. A — CHANGE NO. 00002 — T. QUILLIN — L. GALE — 6/18/69

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. DATE 1-29-69 — CHK'D. DATE 2/27/69 — ENG. L. Gale DATE 2/28/69 — PROJ. ENG. L. Gale DATE 2/28/69 — PROD. DATE

FIRST USED ON KW12

digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS

TITLE: CLIO CLOCK IO INPUT

SIZE D CODE BS NUMBER KW12-Ø-CLIO REV. A

SCALE — SHEET 1 OF 1

DEC FORM NO. DPO 102A

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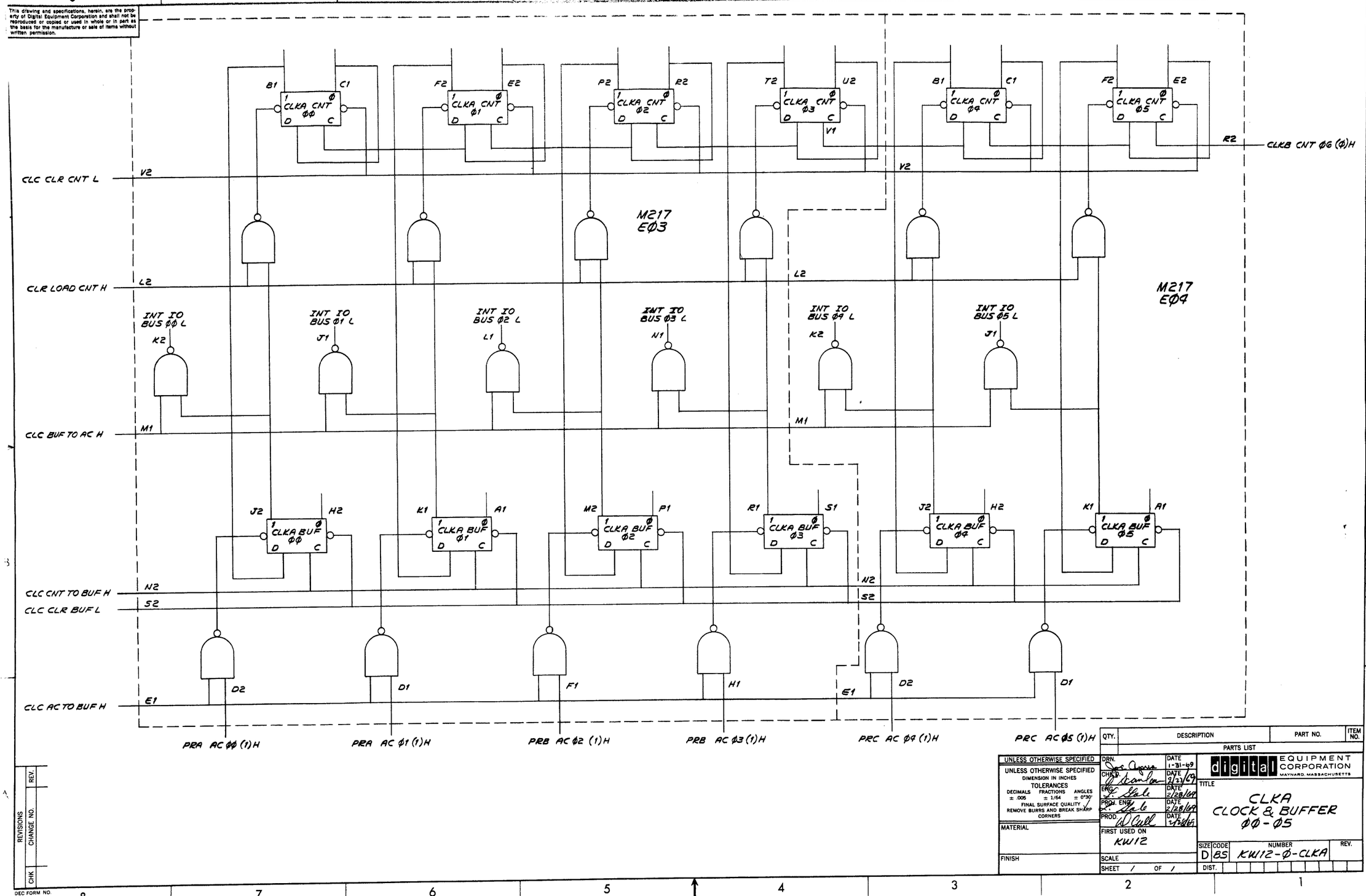

QTY.	DESCRIPTION	PART NO.	ITEM NO.

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

		DATE
DRN.		1-31-69
CHK'D		2/23/69
ENG.		2/28/69
PROJ. ENG.		2/28/69
PROD.		2/28/69

FIRST USED ON KW12

SCALE

SHEET 1 OF 1

digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS

TITLE
CLKA
CLOCK & BUFFER
ØØ-Ø5

SIZE	CODE	NUMBER	REV.
D	BS	KW12-Ø-CLKA	

DIST.

REVISIONS | REV. | CHANGE NO. | CHK

DEC FORM NO. DRD 102A

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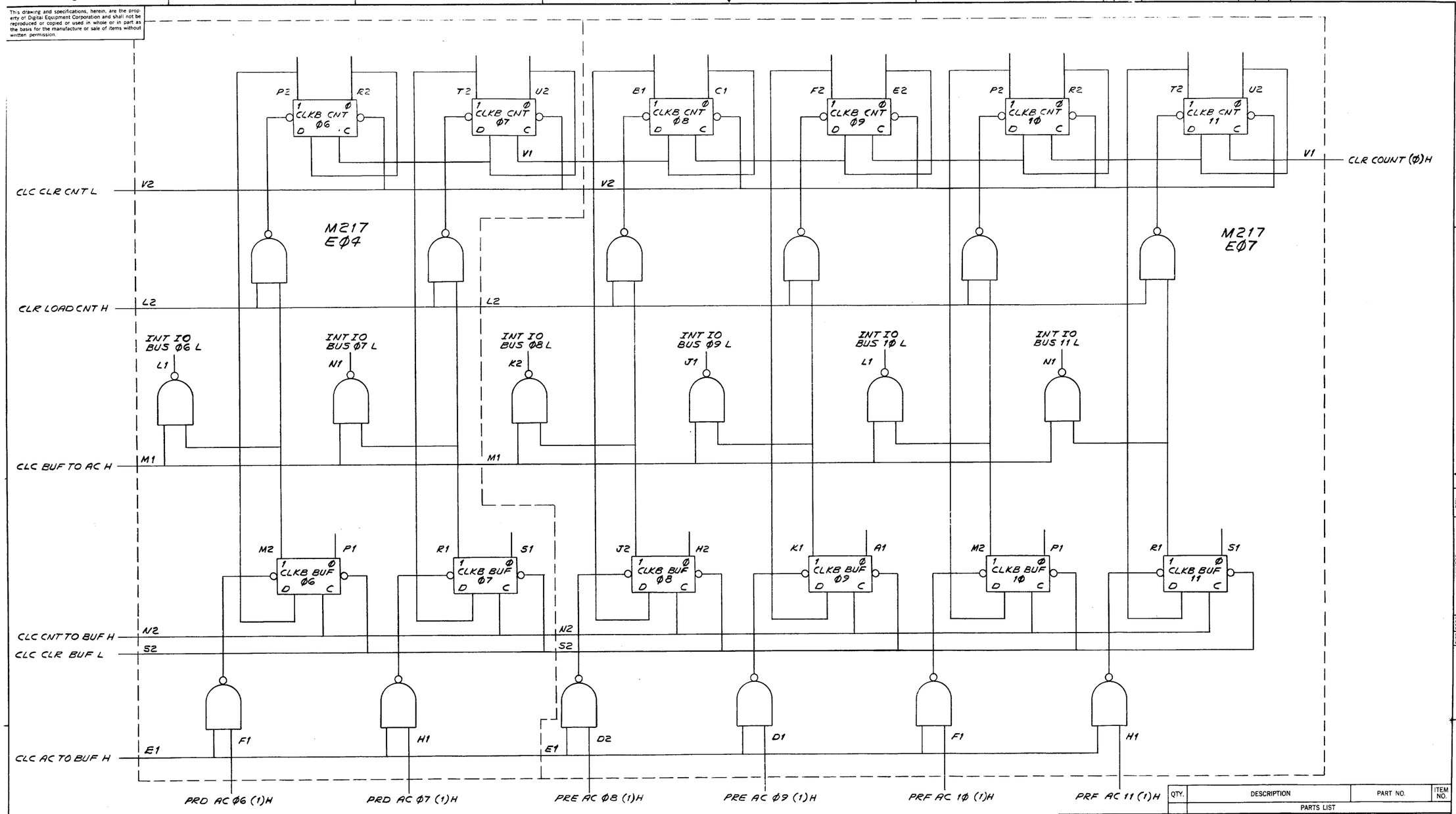


QTY.	DESCRIPTION	PART NO.	ITEM NO.

PARTS LIST

UNLESS OTHERWISE SPECIFIED	DRN.	DATE 1-31-69
UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES TOLERANCES DECIMALS ± .005 FRACTIONS ± 1/64 ANGLES ± 0°30' FINAL SURFACE QUALITY / REMOVE BURRS AND BREAK SHARP CORNERS	CHK'D.	DATE 2/27/69
	ENG.	DATE 2/28/69
	PROJ. ENG.	DATE 2/28/69
	PROD.	DATE 2/28/69
MATERIAL	FIRST USED ON KW12	
FINISH	SCALE	
	SHEET / OF /	

digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS

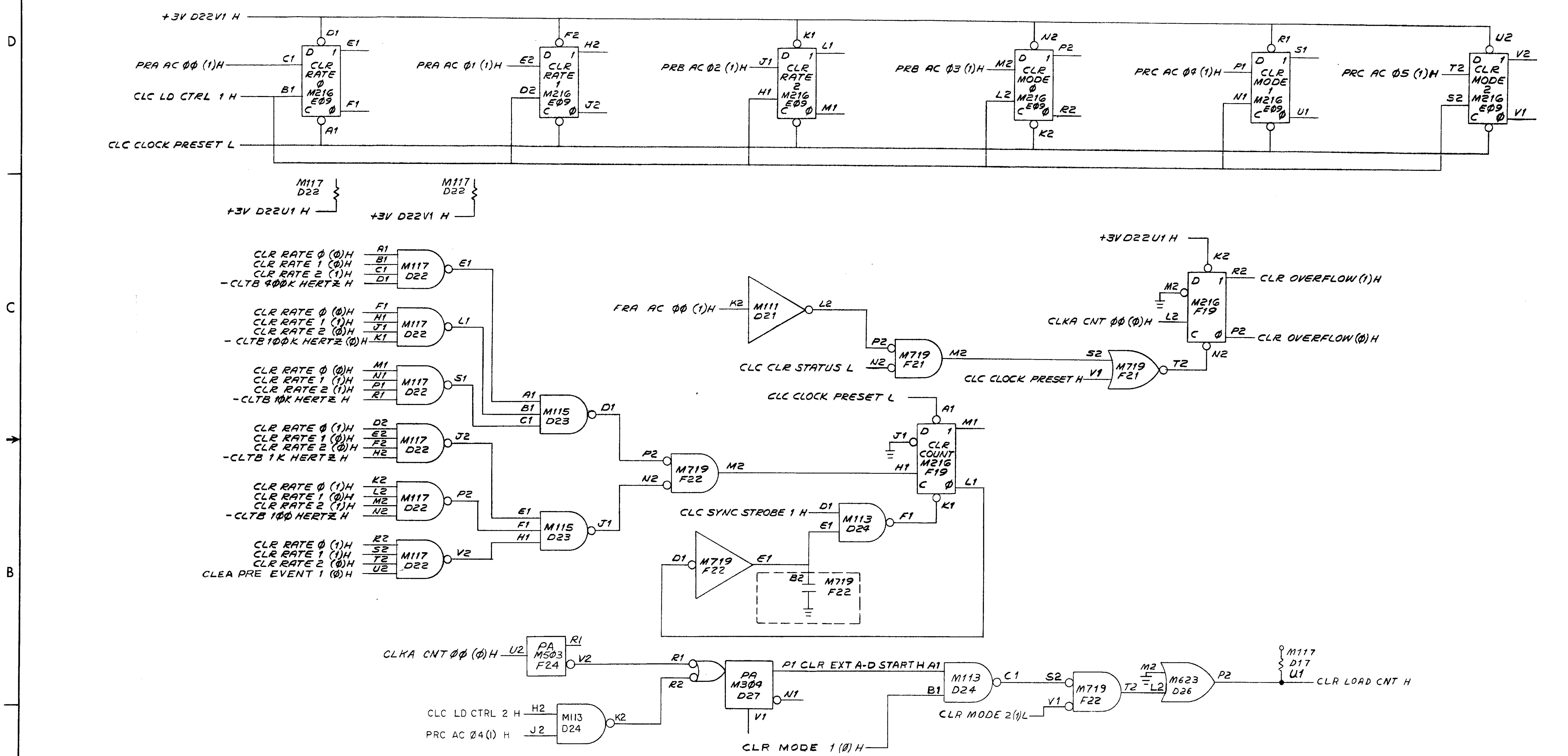
TITLE
CLKB
CLOCK & BUFFER
Ø6-11

SIZE	CODE	NUMBER	REV.
D	85	KW12-Ø-CLKB	

DIST.

REVISIONS	REV.	CHANGE NO.	CHK

DEC FORM NO DRD 102A



REV.	CHANGE NO.		CHK
A	00001	L. GALE 4/24/69	
B	EM12-00003	L GALE	
C	EM12-00009	L. GALE 8/26/69	
D	EM12-00034	T. Quill 3-19-70 GALE	

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. Jos. Ojeda — DATE 1-24-69
CHK'D. — DATE 2/27/69
ENG. L. Gale — DATE 2/28/69
PROJ. ENG. L. Gale
PROD.
FIRST USED ON KW12
SCALE
SHEET 1 OF 1

digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS

TITLE: CLR CLOCK RATE

SIZE D CODE BS NUMBER KW12-Ø-CLR REV. D

DEC FORM NO. DRD 102A

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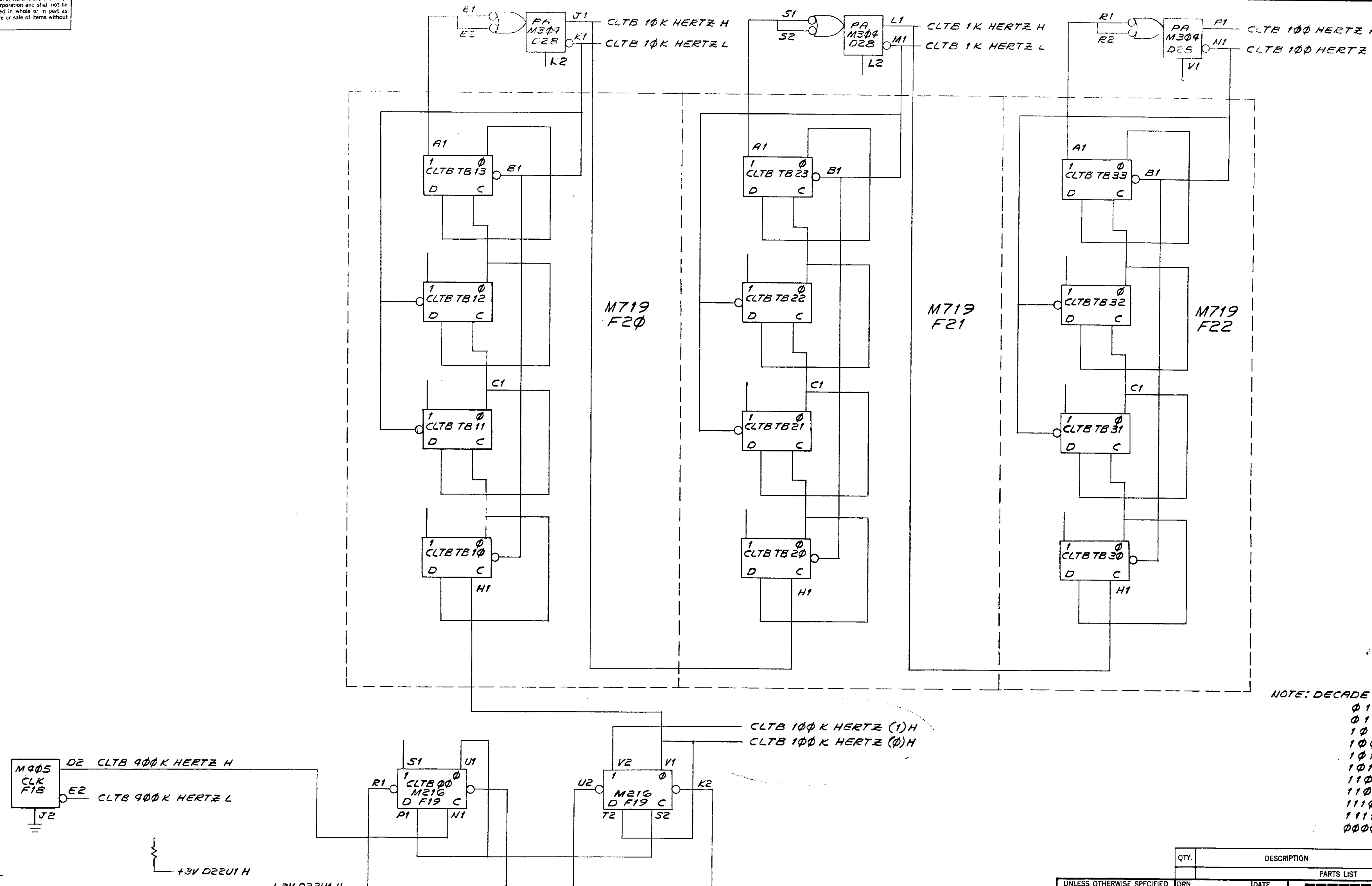


NOTE: DECADE COUNT SEQUENCE
Ø11Ø
Ø111
1ØØØ
1ØØ1
1Ø1Ø
1Ø11
11ØØ
11Ø1
111Ø
1111
ØØØØ

QTY.	DESCRIPTION	PART NO.	ITEM NO.

PARTS LIST

REVISIONS — CHANGE NO. EM12-00011 — REV. A — L. GALE

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

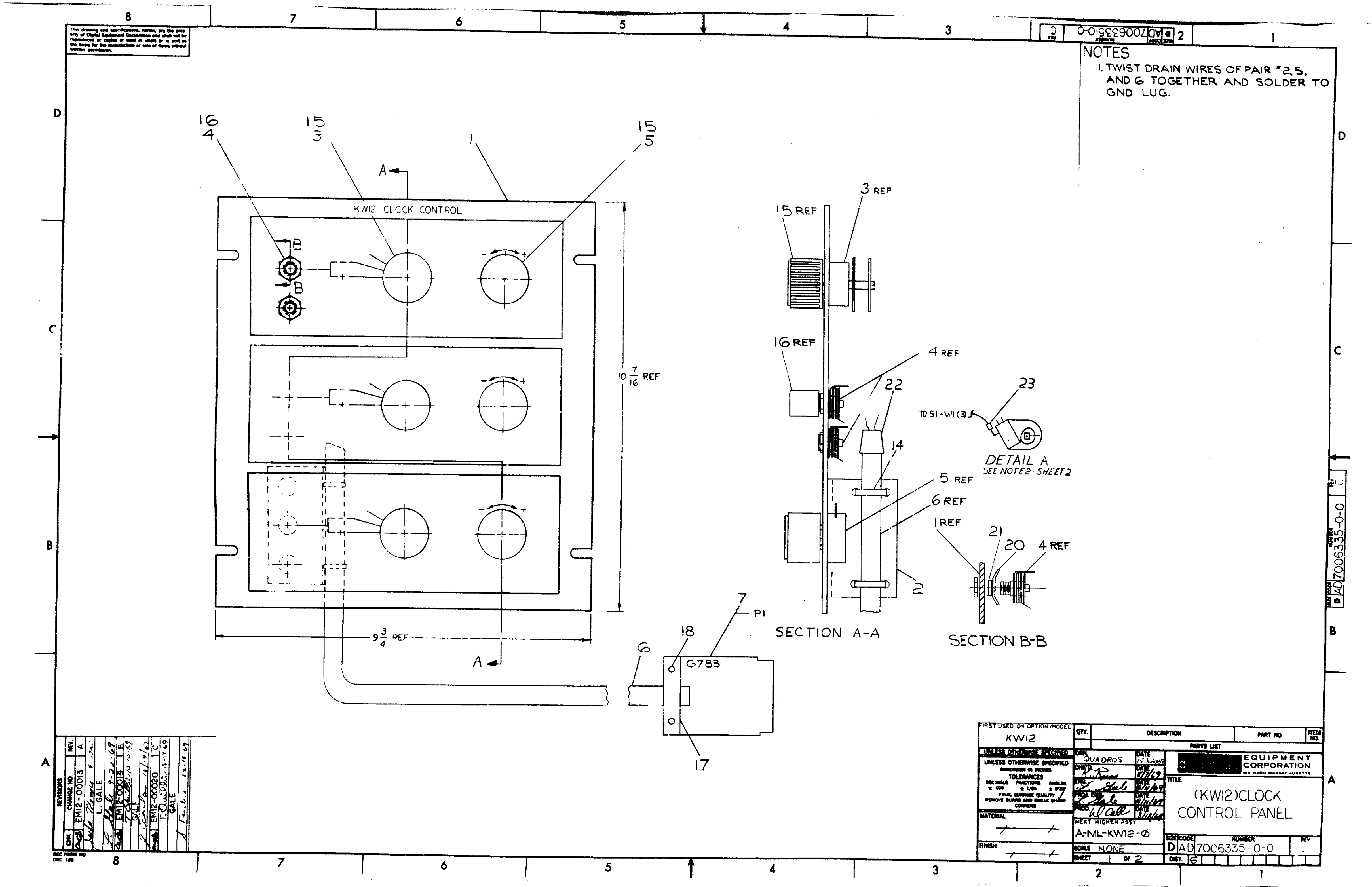
DATE 1-30-69; 2/28/69; 2/28/69; 2/28/69
FIRST USED ON KW12

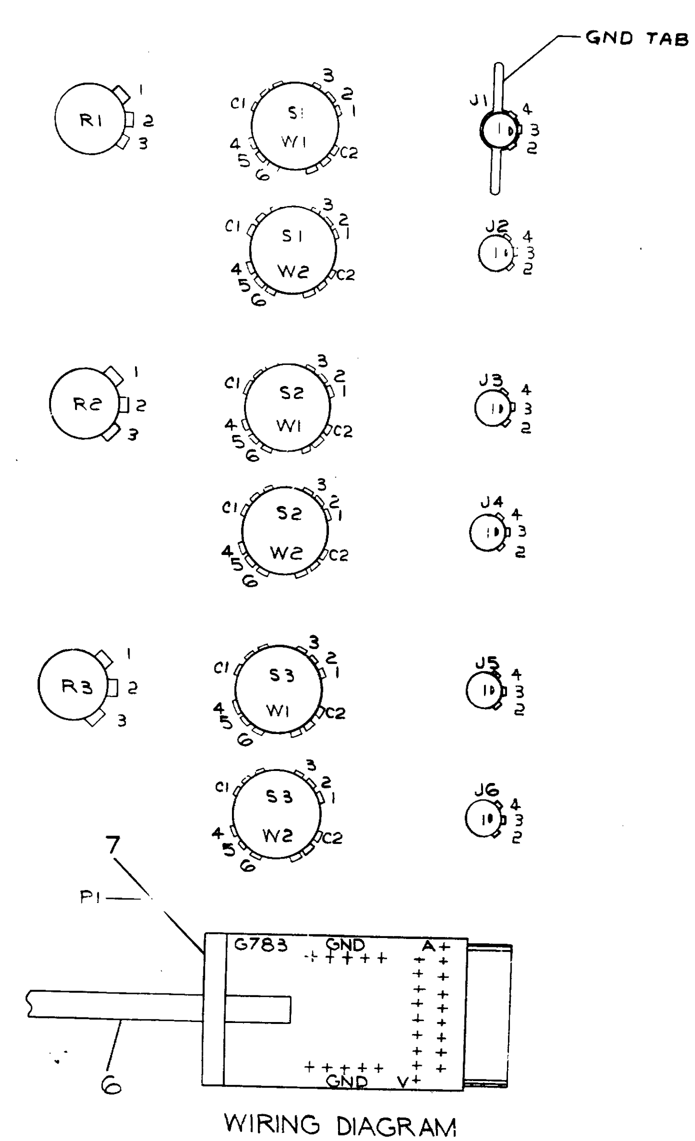
digital EQUIPMENT CORPORATION, MAYNARD, MASSACHUSETTS

TITLE: CLTB CLOCK TIME BASE

SIZE D — CODE BS — NUMBER KW12-Ø-CLTB — REV. A
SCALE
SHEET 1 OF 1

DEC FORM NO. DRD 102A


NOTES
1. TWIST DRAIN WIRES OF PAIR #2,5, AND 6 TOGETHER AND SOLDER TO GND LUG.
KW12 CLOCK CONTROL
10 7/16 REF
9 3/4 REF
G783
P1
SECTION A-A
SECTION B-B
DETAIL A
SEE NOTE 2 · SHEET 2
TO S1-W1 (3)
15 REF
3 REF
16 REF
4 REF
5 REF
6 REF
1 REF
FIRST USED ON OPTION/MODEL
KW12
UNLESS OTHERWISE SPECIFIED
DIMENSION IN INCHES
TOLERANCES
FINAL SURFACE QUALITY
REMOVE BURRS AND BREAK SHARP CORNERS
MATERIAL
FINISH
QTY.
DESCRIPTION
PART NO.
ITEM NO.
PARTS LIST
DRN. QUADROS
DATE 15 Jul 69
NEXT HIGHER ASSY
A-ML-KW12-Ø
SCALE NONE
SHEET 1 OF 2
EQUIPMENT CORPORATION
MAYNARD MASSACHUSETTS
TITLE
(KW12) CLOCK CONTROL PANEL
SIZE D
CODE AD
NUMBER 7006335-0-0
REV
DIST. 6
REVISIONS
CHANGE NO.
EM12-00013
EM12-00018
EM12-00020
L. GALE
GALE
T. QUADROS



WIRING DIAGRAM
VIEW FROM REAR OF PANEL

WIRE TABLE

ITEM NO	DESCRIPTION AWG	DESCRIPTION COLOR	CONNECTIONS FROM	CONNECTIONS TO	REMARKS	SIGNAL
6	22	BLK	P1-A1	S1-W1(C1)	RED SHIELD PAIR#1	-CLK1
		RED	P1-B1	S1-W1(C2)		+CLK1
		DRAIN	P1-GND	S1-W1(6)		SYS GND
		BLK	P1-C1	S1-W2(1)	GRN SHIELD PAIR#2	+6.2V
		WHT	P1-D1	S1-W2(2)		-6.2V
		DRAIN	P1-GND	GND TAB		SYS GND
		BLK	P1-E1	S2-W1(C1)	BLU SHIELD PAIR#3	-CLK2
		GRN	P1-H1	S2-W1(C2)		+CLK2
		DRAIN	P1-GND	S2-W1(6)		SYS GND
		BLK	P1-J1	S3-W1(C1)	BLU SHIELD PAIR#4	-CLK3
		BLU	P1-K1	S3-W1(C2)		+CLK3
		DRAIN	P1-GND	S3-W1(6)		SYS GND
		BLK	P1-L1	R1-2	BLU SHIELD PAIR#5	VCLK1
		YEL	P1-M1	R2-2		VCLK2
		DRAIN	P1-GND	GND TAB		SYS GND
		BLK	P1-N1	R3-2	BLU SHIELD PAIR#6	VCLK3
		BRN	P1-P1	GND TAB		SYS GND
6		DRAIN	P1-GND	GND TAB		SYS GND
8		BLK	S1-W1(1)	S1-W1(5)		-CLK1
			S1-W1(5)	J1-2		-CLK1
			J1-2	J1-4		-CLK1
			J1-4	J2-2		-CLK1
			S2-W1(1)	S2-W1(5)		-CLK2
			S2-W1(5)	J3-2		-CLK2
			J3-2	J3-4		-CLK2
			J3-4	J4-2		-CLK2
			S3-W1(1)	S3-W1(5)		-CLK3
			S3-W1(5)	J5-2		-CLK3
			J5-2	J5-4		-CLK3
			J5-4	J6-2		-CLK3
			S1-W2(1)	S1-W2(5)		+6.2V
			S1-W2(5)	S2-W2(1)		+6.2V
			S2-W2(1)	S2-W2(5)		+6.2V
			S2-W2[illegible]	S3-W2(1)		+6.2V
			S3-W2(1)	S3-W2(5)		+6.2V
			[illegible]	R1-1		+6.2V
			[illegible]	R1-3		VCLK1
			[illegible]	R3-1		+6.2V
8		BLK	[illegible]	R3-3		VCLK3
9		RED	S1-W1(2)	S1-W1(4)		+CLK1
			S1-W1(2)	J1-3		+CLK1
			J1-3	J2-3		+CLK1
			PWR SW	S1-W1(3)	NOTE 2	
			S1-W1(3)	S2-W1(3)		
9		RED	S2-W1(3)	S3-W1(3)		
10		BRN	S1-W1(6)	J1-1		CLK1 HQ GND
			J1-1	J2-1		CLK1 HQ GND
			S2-W1(6)	J3-1		CLK2 HQ GND
			J3-1	J4-1		CLK2 HQ GND
			S3-W1(6)	J5-1		CLK3 HQ GND
			J5-1	J6-1		CLK3 HQ GND
			S1-W2(3)	S1-W2(6)		SYS GND
			S1-W2(6)	S2-W2(3)		
			S2-W2(3)	S2-W2(6)		
			S2-W2(6)	S3-W2(3)		
			S3-W2(3)	S3-W2(6)		
10		BRN	S3-W2(6)	GND TAB		SYS GND
11		WHT	S1-W2(2)	S2-W2(2)		-6.2V
11		WHT	S2-W2(2)	S3-W2(2)		-6.2V
12		GRN	S2-W1(2)	S2-W1(4)		+CLK2
12		GRN	S2-W1(2)	J3-3		+CLK2
12		GRN	J3-3	J4-3		+CLK2
13		BLU	S3-W1(2)	S3-W1(4)		+CLK3
13		BLU	S3-W1(2)	J5-3		+CLK3
13		BLU	J5-3	J6-3		+CLK3
19		YEL	R2-1	S2-W2(C1)		+6.2V
19	22	YEL	R2-3	S2-W2(C2)		VCLK2

NOTES:

1. C1 IS WIPER CONTACT FOR SWITCH POSITIONS 1,2,3.
   C2 IS WIPER CONTACT FOR SWITCH POSITIONS 4,5,6.
2. 26" LONG RED WIRE FROM POWER SWITCH TO S1-W1(3) SHOULD BE TIE-WRAPPED TO BELDEN CABLE (ITEM#6) WITH SMALL TIE WRAPS (ITEM#28) AND SHOULD BE CONNECTED TO POWER SWITCH AS SHOWN IN DETAIL "A".

WIRE TABLE

ITEM NO	DESCRIPTION AWG	DESCRIPTION COLOR	CONNECTIONS FROM	CONNECTIONS TO	REMARKS	SIGNAL
20	22	WHT	S3-W2(2)	S3-W2(4)		-6.2V
20	22	WHT	S3-W2(4)	S2-W2(4)		-6.2V
20	22	WHT	S2-W2(4)	S1-W2(4)		-6.2V

QTY.	DESCRIPTION	PART NO.	ITEM NO.
	PARTS LIST		

FIRST USED ON OPTION/MODEL

DO NOT SCALE DRAWING
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. | DATE
CHKD. | DATE 8-5-69
ENG. | DATE 8/11/69
PROJ. ENG. | DATE 8/11/69
PROD. | DATE

digital EQUIPMENT CORPORATION
MAYNARD MASSACHUSETTS

TITLE
KW12 CLOCK
CONTROL PANEL

NEXT HIGHER ASSY

SIZE D CODE AD NUMBER 7006335-0-0 REV

SCALE NONE
SHEET 2 OF 2

D AD 7006335-0-0

REVISIONS: REV | CHANGE NO | CHK

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DEC FORM NO DRD 100

DIGITAL EQUIPMENT CORPORATION
MAYNARD, MASSACHUSETTS

PARTS LIST

MADE BY FRANK E. SOUSA	CHECKED K. RUSS	SECTION
DATE 7/15/69	DATE 7/16/69	1
ENG L. Gale 8/11/69	PROD W Cahill	ISSUED SECT.
DATE	DATE 8/18/69	1

ITEM NO.	DWG NO./PART NO.	DESCRIPTION	QUANTITY/VARIATION
1	D-IA-7407414-0-0	PANEL	1
2	B-MD-7406901-0-0	CABLE BRKT	1
3	B-MD-7407540-0-0	SWITCH ROTARY	3
4	1203562	JAX #13-B 3 COND SWITCH CRAFT	6
5	1309402-07	POT 5K 2W 20% A & B	3
6	9107582	CABLE #8778 BELDEN	8FT.
7	G783	CONN, CABLE G783	1
8	9107350-00	WIRE #22 AWG BLK STRD TEF INS	A/R
9	9107350-22	WIRE #22 AWG RED STRD TEF INS	A/R
10	9107350-11	WIRE #22 AWG BRN STRD TEF INS	A/R
11	9107350-99	WIRE #22 AWG WHT STRD TEF INS	A/R
12	9107350-55	WIRE #22 AWG GRN STRD TEF INS	A/R
13	9107350-66	WIRE #22 AWG BLU STRD TEF INS	A/R
14	9007032	TIE WRAP #SST-2-B PANDUIT	2
15	1209244	KNOB BUCKEYE SS-125L-2	6
16	1209430	PHONE PLUG #90 SWITCHCRAFT	6
17	1202790	CABLE CLAMP	1
18	9006741	EYELET A94 STIMPSON	2
19	9107350-44	WIRE #22 AWG YEL STRD TEF INS	A/R
20	9007612	SOLDER LUG	1
21	007959	WASHER EXT TOOTH 7/16 I.O.	1
22	9107252	TUBING SHRINKABLE 3/8 DIA. WHT	A/R

TITLE	ASSY NO.	SIZE	CODE	NUMBER	REV.	ECO NO.
(KW12) CLOCK CONTROL PNL	D-AD-7006335-0-0	A	PL	7006335-0-0	C	EM12-00020
	SHEET 1 OF 2	DIST.	6			

DEC FORM NO.
DRA 110

DIGITAL EQUIPMENT CORPORATION
MAYNARD, MASSACHUSETTS

PARTS LIST

MADE BY	FRANK E. SOUSA	CHECKED	K. RUSS	SECTION	
DATE	7-15-69	DATE	7-16-69		1
ENG	L. GALE	PROD	D. CALL	ISSUED SECT.	
DATE	8-11-69	DATE	8-18-69		1

ITEM NO.	DWG NO./PART NO.	DESCRIPTION	QUANTITY/VARIATION
23	9007929	CONN, SOLDERLESS #50321 ARKLESS	1
24	9107256-10	#22 TUBING, CLR	A/R
25	9107256-06	#22 TUBING, BLU	A/R
26	9107256-01	#22 TUBING, BRN	A/R
27	9107256-02	#22 TUBING, RED	A/R
28	90007031	TIE WRAP PANDUIT*SST-1B	8

TITLE	ASSY NO.	SIZE	CODE	NUMBER	REV.	ECO NO.
(XW12) CLOCK CONTROL PNL	D-AD-7006335-0-0	A	PL	7006335-0-0	C	
	SHEET 2 OF 2	DIST.	G			

DEC FORM NO.
DRA 110

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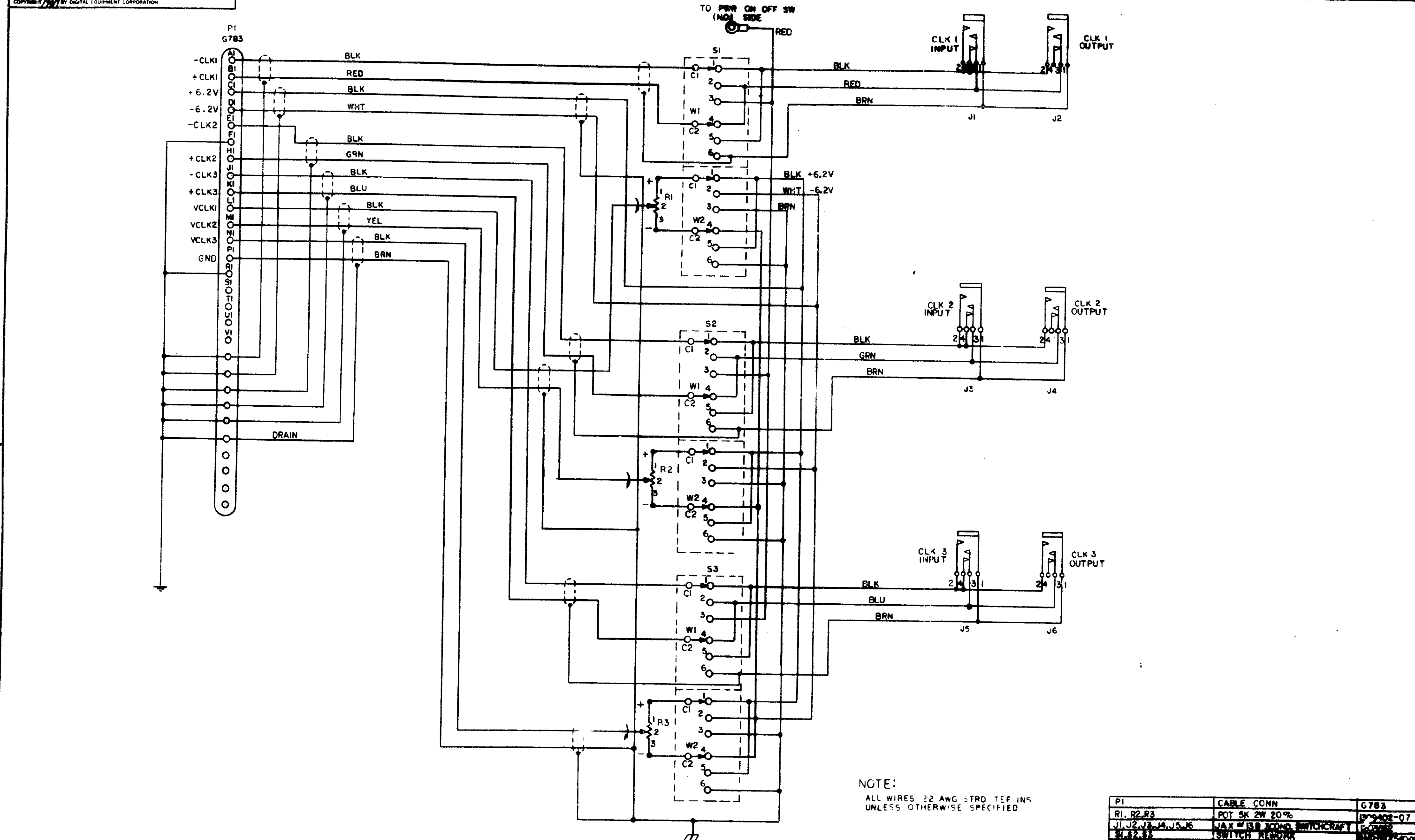

NOTE:
ALL WIRES 22 AWG STRD TEF INS UNLESS OTHERWISE SPECIFIED

REF. DESIGNATION	DESCRIPTION	PART NO.
P1	CABLE CONN	G783
R1, R2, R3	POT 5K 2W 20%	1309402-07
J1, J2, J3, J4, J5, J6	JAX #13B 3COND. SWITCHCRAFT	[illegible]
S1, S2, S3	SWITCH REWORK	[illegible]

PARTS LIST

TRANSISTOR & DIODE CONVERSION CHART

DEC	EIA	DEC	EIA

[redacted] EQUIPMENT CORPORATION, MAYNARD, MASSACHUSETTS

TITLE: CLOCK CONT. KW12

SIZE	CODE	NUMBER	REV.
D	CS	7006335-0-1	A

PRINTED CIRCUIT REV.

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DIGITAL EQUIPMENT CORPORATION
MAYNARD, MASSACHUSETTS

ENGINEERING SPECIFICATION DATE 8-26-69

TITLE KW-12 Real Time Clock

REVISIONS

REV	DESCRIPTION	CHG NO	ORIG	DATE	APPD BY	DATE

Scope: The following information details the function and operation of the KW-12 - Real Time Clock Option for the PDP-12.

ENG	APPD	SIZE	CODE	NUMBER	REV
S. Teicher	L. Gale	A	SP	KW12-0-1	

Functional Description

The KW-12 is a PDP-12 Option that may be used to measure intervals or count events with a great deal of flexibility. In addition, to a 12-bit counter the KW-12 has a crystal controlled programmable time base and three external input channels.

Logically the KW-12 contains the following sections.

a.) Clock Control Register

The Clock Control Register is set by an IOT instruction and controls the rate of the time base and the mode of counting.

b.) Clock Enable Register

The clock enable register is set by an IOT instruction and selectively enables each of the three input channels and the clock interrupt line. A special function of the Clock Enable Register is to permit presetting of the Clock Counter.

c.) Clock Buffer Preset Register

The Clock Buffer Preset Register stores data being transferred from the A/C to the Clock Counter or from the Clock Counter to the A/C.

d.) Clock Counter

The Clock Counter is a 12-bit Binary Counter with an over-flow indicator. The contents of the Clock Counter may be transferred to the Buffer Preset Register or the Clock Counter may be preset by the Buffer Preset Register.

e.) Programmable Time Base

The Programmable Time Base provides pulses to the Clock Counter according to the rate set in the Clock Counter Register.

	SIZE	CODE	NUMBER	REV
	A	SP	KW12 - 0 - 1	

f.) External Input Channels

Three External Input Channels are provided to record external events. Each channel contains an adjustable threshold Schmitt Trigger and gating set by the Clock Enable Register. All three channels may actuate the Clock Interrupt or cause the contents of the Clock Counter to be transferred to the Clock Buffer Preset Register. In addition, channel 1 and 3 have special capabilities as noted below:

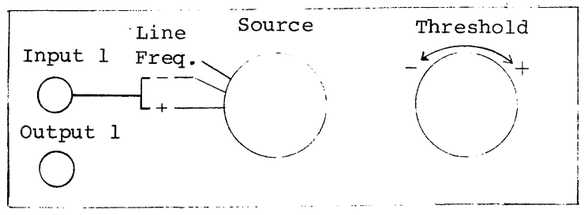
1) Channel 1

An event at channel 1 may be used as an input to the Clock Counter.

2) Channel 3

An event at channel 3 may be used to reset the Clock Counter.

Nominal Input Voltage Range	± 5 Volts
Input Type	differential
Input Resistance	10,000 ohms
Input Threshold	variable between -5 and +5
Slope	Selector switch or 60 Hz line frequency
Minimum duration input pulse	2 μsec
Maximum Permissible Input Voltage	± 50 volts



Typical Channel

Clock Control Panel

Location - behind door on left side of the front of the PDP-12.

Input Jack Type - 3 conductor phone plug

Output

This receptacle permits the input signal to be connected to another external device or to the analog input jacks of the A-D Converter.

Operation

The KW-12 is connected to the PDP-12 as a standard I/O device with device select code 13. Each data transfer from or to the clock requires 4.25 usec. All instructions for the KW-12 have the following form:

Mnemonic* $(613X)_8$ where X is $(1\text{-}7)_8$ the instructions are as follows:

Octal Code

CLSK	6131	Skip on Clock Interrupt Interrupt Conditions a) Enable Event 1 Interrupt (1) and Event 1 (1) b) Enable Event 2 Interrupt (1) and Event 2 (1) c) Enable Event 3 Interrupt (1) and Event 3 (1) d) Enable Overflow Interrupt (1) and Overflow (1)
CLLR	6132	C(AC) → C (Clock Control Register) The AC is unchanged

*Mnemonic defined in DIAL PMode only. In LMode user must define symbol himself.

Clock Control Register

Count Rate Reg.			Mode Reg.			Not Used		Not Used		Not Used	
00	01	02	03	04	05	06	07	08	09	10	11
C0	C1	C2	M0	M1	M2						
								Sim. Ch. 1 Event		Sim. Ch. 2 Event	Sim.

Count C0	Rate C1	Reg. C2	Counting Rate
0	0	0	Stop Counter
0	0	1	400 KHZ
0	1	0	100 KHZ
0	1	1	10 KHZ
1	0	0	1 KHZ
1	1	0	Rate of input Channel 1
1	1	1	Stop Counter (Providing Channel 1 enabled - otherwise rate = 0)

Mode M0	Control M1	Reg. M2	
0	0	0	Counter runs as selected rate and overflows every 4096 counts. Overflow remains set until cleared with 6135 instructions.
0	0	1	*Counter runs at selected rate. Overflow causes C (Buffer Preset Reg.) to be transferred to the Clock Counter which continues to run. Overflow remains set until cleared with 6135 instructions.

*Whenever mode control register b2 goes from 0 to 1 the Clock Counter is cleared.

Mode	Control	Reg.	
0	1	0	Counter runs at selected rate. When the following occurs, the Clock Counter is transferred to the Buffer Preset Register and the Counter continues. Enable Event X (1) and Event X (1) X= 1,2,3
0	1	1	Counter runs at selected rate. When the following occurs C (Clock Counter) is transferred to the Buffer Preset Register and the Clock Counter continues to run either from the present count or zero as shown. Enable Event X (1) and Event X (1) X= 1,2 Clock Counter continues from present count. Enable Event 3 (1) and Event 3 (1) also causes the Clock Control Counter to be cleared
100)			When M0 is a (1) the occurrence of overflow is used
101)			to trigger the A/D Converter if A-D Control also has
110)			FAST-SAMPLE flip-flop set. The remaining two mode
111)			control bits are decoded exactly as above. *

CLAB 6133 C (AC) → C (Buffer Preset Register) The AC is unchanged

CLEN 6134 C (AC) → C (Clock Enable Register)

Enable Register Bit

00 - 03 Not used

04 C (Buffer Preset Register) → (ORed) C (Clock Counter)

*This bars A-D conversion starts by the SAM instruction. A--D conversion starts with Clock Overflow only; loaded into AC by SAM instruction only.

	04 cont'd.	If mode control register 62 (1) and Overflow (0)*.
	05	Enable Interrupt when Overflow (1)
	06	Enable Interrupt on Event (1)
	07	Enable Input Channel (1)
	08	Enable Interrupt on Event 2 (1)
	09	Enable Input Channel 2
	10	Enable Interrupt on Event 3 (1)
	11	Enable Input Channel 3
CLSA	6135	Clock status is inclusive ORed into the AC. The clock status bits are then cleared.

AC Bit

00	Overflow (1)
01 - 05	Not used
06	Event 1 (1)
07	Pre-Event (1)
08	Event 2 (1)
09	Pre-Event 2 (1)
10	Event 3 (1)
11	Pre-Event 3 (1)

If both Event X (1) and Pre-Event X (1) then 2 or more events have occurred on Channel X since the previous 6135 instruction.

*Overflow flip-flop should be cleared with the 6135 IOT prior to use his instruction.

CLBA	6136	C (Buffer Preset Register) → C (AC)
CLCA	6137	C (Clock Counter) → C (Buffer Preset Register) → C (AC)

The following PDP-12 Drawings apply to the KW-12:

A-ML-PDP-12-0	PDP12 System
K-WL-EM12-0-3	Wire List
D-MU-EM12-0-1	Module Utilization Mem
D-MU-EM12-0-2	Module Utilization Mem
D-BS-KW12-0-CLC	CLC Clock IO Control
D-BS-KW12-0-CLEA	CLEA Input Channel 1
D-BS-KW12-0-CLEB	CLEB Input Channel 2
D-BS-KW12-0-CLEC	CLEC Input Channel 3
D-BS-KW12-0-CLIO	CLIO Clock to Input
D-BS-KW12-0-CLKA	CLKA Clock & Buffer 00-05
D-BS-KW12-0-CLKB	CLKB Clock & Buffer 06-11
D-BS-KW12-0-CLR	CLR Clock Rate
D-BS-KW12-0-CLTB	CLTB Clock Time Base
A-PL-EM12-0-1	Module Utilization MEM PL
A-PL-EM12-0-2	Module Utilization Mem PL
A-AD-7006335-0-0	Clock Control Panel Assembly
A-PL-7006335-0-0	Clock Control Panel Assembly (Parts List)
D-CS-70006335-0-1	Clock Control Circuit Schematic
A-PL-EM12-0-1	Module Utilization
A-PL-EM12-0-2	Module Utilization

TITLE KW-12 Real Time Clock

Module	Location
M103	D25
M113	D24, D29*
M115	D23
M117	D22
M216	E9, F19
M217	E3, E4, E7
M405	F18
M719	F20, F21, F22
M503	F23, F24 (Input Schmitt Trigger also requires ± 15 volts)
M617	D17
M623	D26
M304	D27, D28

Approx. +5V current 1.3 amps
15V current 0.1 amps

*M113 location D29 is used on the KW-12 ad AD12.

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MASTER DRAWING LIST

DWG. NO.	REV. LET.	NO. OF SHEETS	TITLE
D-BS-KW12-Ø-CLUB	A	1	SIMPLE CLOCK
D-MU-EM12-0-1	REF	1	MODULE UTILIZATION (MEMORY)
A-PL-EM12-0-1	REF		MODULE UTILIZATION (MEMORY)
D-DI-PDP12-0-1	REF	4	DWG INDEX LIST (PDP12)
K-WL-EM12-Ø-3	REF	REF	WIRE LIST
A-SP-KW12-B-1		1	ENGINEERING SPECIFICATION
A-PL-KW12-0-0	A	1	KW12 CLOCK CONTROL

REVISIONS			
REV.	DATE	CHG. NO.	APP'D.
A	3/70	EM12-35	L.G.
B	7/70	EM12-37	L.G.
C	10/70	EM12-41	

DRN.	Fontaine	DATE 2/24/70
CHK'D.		DATE 3/5/70
ENG.		DATE 3/5/70
PROJ. ENG.		DATE 3/9/70
PROD.		DATE 3/9/70

FIRST USED ON: A-ML-PDP12-Ø

SCALE:

SHEET \ OF \

digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS

TITLE: SIMPLE CLOCK

SIZE	CODE	NUMBER	REV.
A	ML	KW12-B	C

DIST.

DEC FORM NO.16-1033
DRA 103

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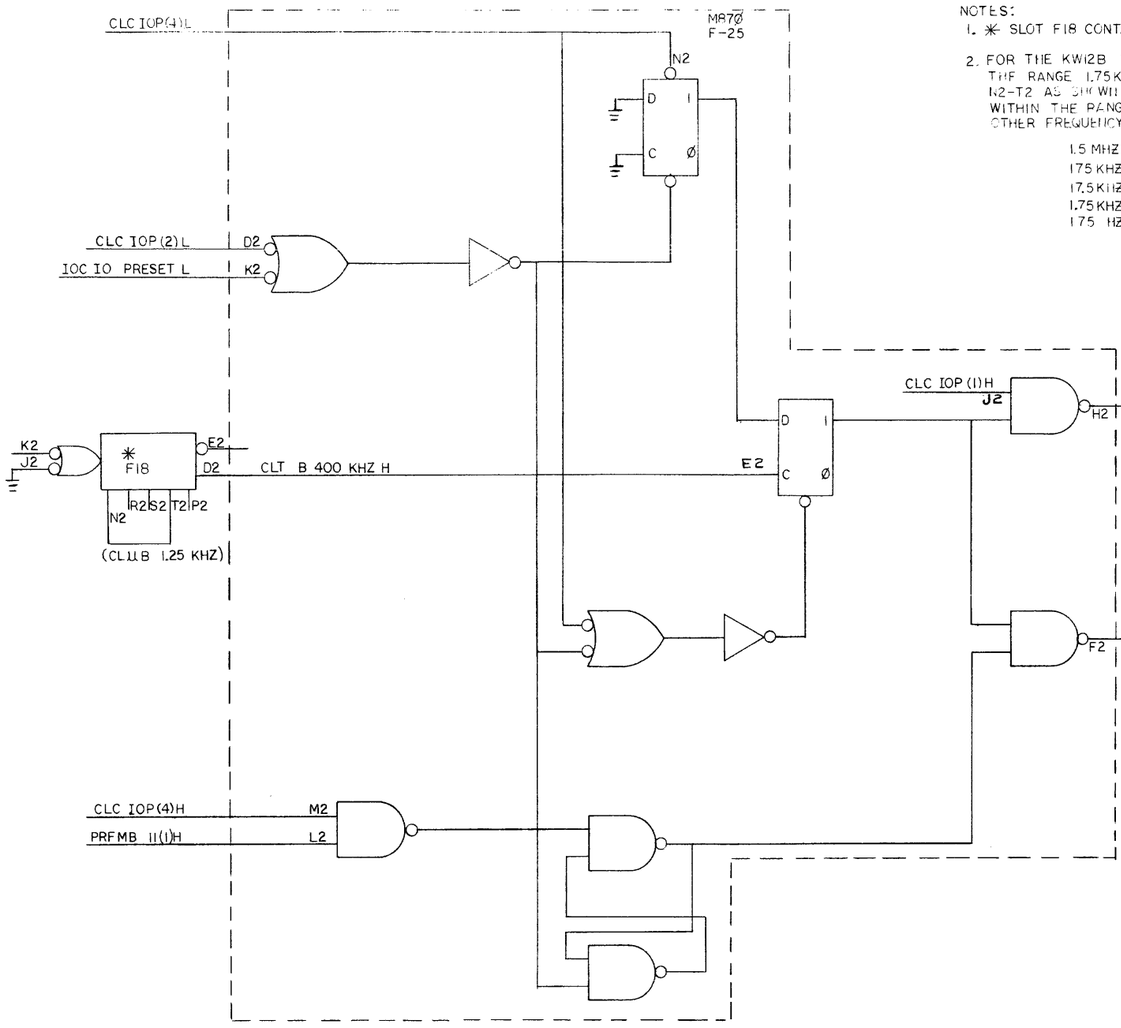
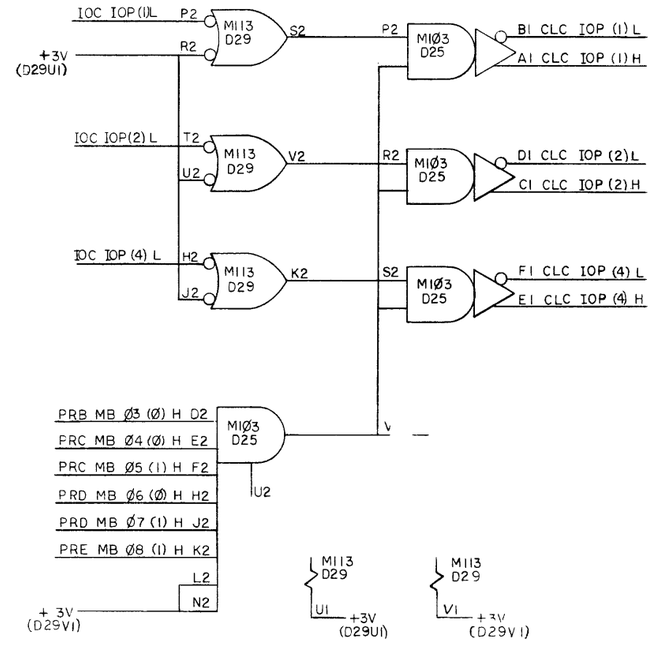
NOTES:
1. ✳ SLOT F18 CONTAINS M4Ø1 FOR KW12B AND M 1Ø/5 KW12C.
2. FOR THE KW12B THE M4Ø1 WILL NOMINALLY BE SET TO THE RANGE 1.75KHZ TO 17.5 KHZ BY CONNECTING PINS N2-T2 AS SHOWN ON THE DRAWING. FREQUENCY IS VARIABLE WITHIN THE RANGE BY A POT. ADJUSTMENT ON M4Ø1. OTHER FREQUENCY RANGES MAY BE HAD BY THE FOLLOWING:

	INTERCONNECTIONS REQ'D
1.5 MHZ TO 1ØMHZ	NOTE (NOT RECOMMENDED)
175 KHZ TO 1.75 MHZ	F18N2—F18R2
17.5 KHZ TO 175 KHZ	F18N2—F18S2
1.75 KHZ TO 17.5 KHZ	F18N2—F18T2
175 HZ TO 1.75 KHZ	F18N2—F18P2





REVISIONS				
CHK	CHANGE NO.	REV		
RV	EM12—00241	A	D. MACKLIN	10/30/70

FIRST USED ON OPTION/MODEL	QTY.	DESCRIPTION	PART NO.	ITEM NO.
KW12		PARTS LIST		

UNLESS OTHERWISE SPECIFIED
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.	J. Fontaine	DATE 7/28/70
CHKD.	[illegible]	DATE 3/5/70
ENG.	[illegible]	DATE 7/9/70
PROJ. ENG.	[illegible]	DATE 7/9/70
PROD.	[illegible]	DATE 7/9/70

NEXT HIGHER ASSY: A-ML-KW12-B

SCALE

SHEET OF

digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS

TITLE: SIMPLE CLOCK

SIZE	CODE	NUMBER	REV.
D	BS	KW12—Ø—CLUB	A

DIST.

DEC FORM NO DRD 102A

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MASTER DRAWING LIST

DWG. NO.	REV. LET.	NO. OF SHEETS	TITLE
D-BS-KW12-0-CLUB	A	1	SIMPLE CLOCK
D-MU-EM12-0-1	REF	1	MODULE UTILIZATION (MEMORY)
A-PL-EM12-0-1	REF		MODULE UTILIZATION (MEMORY)
D-DI-PDP12-0-1	REF	4	DWG INDEX LIST (PDP12)
K-WL-EM12-0-3	REF	REF	WIRE LIST
A-SP-KW12-B-1		1	ENGINEERING SPECIFICATION
A-PL-KW12-0-0	A	1	KW12 CLOCK CONTROL

REVISIONS			
REV.	DATE	CHG. NO.	APP'D.
A	3/70	EM12-35	L.G.
B	7/70	EM12-37	L.G.
C	10/70	EM12-41	L.G.

DRN. [signature] DATE 2/24/70
CHK'D. [signature] DATE 3/5/70
ENG. [signature] DATE 3/5/70
PROJ. ENG. [signature] DATE 3/9/70
PROD. [signature] DATE 3/9/70
FIRST USED ON A-ML-PDP12-0
SCALE
SHEET OF

digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS

TITLE SIMPLE CLOCK

SIZE	CODE	NUMBER	REV
A	ML	KW12-C	C

DIST.

DEC FORM NO 16-1033
DRA 103

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MASTER DRAWING LIST

DWG. NO.	REV. LET.	NO. OF SHEETS	TITLE
A-SP-TC12-F-1		3	ENGINEERING SPECS.
D-FD-TC12-F-2			TIMING DIAGRAM
A-SP-TC12-F-3		2	ACCEPTANCE & CHECKOUT PROCEDURE
D-BS-TC12-F-LTP8	[illegible]	1	LTP8 TAPE CONTROL
K-WL-EM12-0-3	REF		WIRE LIST
D-MU-EM-0-1	REF		MODULE UTILIZATION MEM
D-MU-EM-0-2	REF		MODULE UTILIZATION MEM
A-PL-EM12-0-1	REF		MODULE UTILIZATION MEM PL
A-PL-EM12-0-2	REF		MODULE UTILIZATION MEM PL

REVISIONS			
REV.	DATE	CHG. NO.	APP'D.
A	3/69	EM12-01	L.G.
B	6/69	EM12-04	L.G.
C	8/69	EM12-10	L.G.
D	2/70	EM12-32	L.G.
E	4/70	EM12-36	L.G.

DRN. J. APREA	DATE 3/10/69	digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS	
CHK'D. [illegible]	DATE 3/10/69		
ENG. L. Gale	DATE 3/10/69	TITLE 8 TAPE CONTROL	
PROJ. ENG. L. Gale	DATE 3/10/69		
PROD. [illegible]	DATE 3/10/69		
FIRST USED ON PDP-12		SIZE A	CODE ML
SCALE		NUMBER TC12-F	REV. [illegible]
SHEET OF		DIST.	

DEC FORM NO. DRA 103

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LTP8 W1(1)H
LTP8 W2(1)H
M112 A33 → N2

+3V A33V1 H

+3V A33U1 H

-LWN WINDOW DATA IN L

LTP8 CLOSE 8 WIND L
LTT TP3 H

D 1 LTP8 W9 M216 C33
D 1 LTP8 W8 M216 C33
D 1 LTP8 W7 M216 C33
D 1 LTP8 W6 M216 C33
D 1 LTP8 W5 M216 C33
D 1 LTP8 W4 M216 C33
D 1 LTP8 W3 M216 C32
D 1 LTP8 W2 M216 C32
D 1 LTP8 W1 M216 C32

LTP8 SET 8 TAPE L

D 1 LTP8 TAPE M216 C32

LIP TAPE PRESET H
+3V A33V1 H

LTP8 TAPE SEL H
LTP8 W1(1)H
M115 C29 → LTP8 8M L

LTP8 W9(Ø)H
LTP8 W8(1)H
LTP8 W7(1)H
LTP8 W6(Ø)H
LTP8 W5(1)H
LTP8 W9(Ø)H
LTP8 W3(1)H
LTP8 W2(Ø)H
M119 A31 → M111 A35

LTT CLOSE WINDOW L
LIP TAPE PRESET L
PA M3[illegible] C19 → LTP8 CLOSE 8 WIND H, LTP8 CLOSE 8 WIND L
+5V

LTMR IOT 6152 H
PRE AC Ø9(1)H
+3V C22U1 H
M115 C29 → LTP8 SET 8 MTN L

LTMR IOT 6152 H
PRF AC 1Ø(1)H
+3V C22U1 H
M115 C29 → LTP8 SET 8 TAPE L

+3V A33V1 H

D 1 LTP8 BLOCK M216 C32
D 1 LTP8 WRITE M216 C32

LTP8 8M L
LTT TP9 H
PRF AC11(1) L
M112 C24
M111 D21 → LTP 8 WRITE SEL H

LTM CLEAR TAPE WORD L
LTP8 SET 8 TAPE L
LTP 8 CLOSE 8 WIND L

M111 C21 → LTP8 TAPE WORD H

LTS TTS9 (1)H
LTP8 WRITE (Ø)H
M115 C29 → LTP8 EN RWB L

LTS LC ØØ(Ø)H
LTS LC Ø1(1)H
M115 C29

LTP8 TAPE WORD L
LTP8 8M L
M113 D29 → S1

LTT TP9 H
M113 D29 → LTP8 LD TAC L

M112 C24
LTP8 TAPE (1) L
M111 C21 → LTP8 TAPE SEL H

IOT 6152	
AC BIT	FUNCTIONS
AC 9(1)	CLEAR BLOCK
AC 5(1)	SET BACKWARD
AC 6(1)	SELECT UNIT 1
AC 7(1)	SET FORWARD
AC 9(1)	SET 8 MOTION & FORWARD IF MOTION = Ø
AC 1Ø(1)	SEL 8 TAPE AND AC 11 → WRITE

SKL 14 = SKIP ON 8 BLOCK
SKL 17 = SKIP ON 8 WORD
TAPE PRESET = Ø → WRITE
Ø → MOTION
DESELECT 8 TAPE

REVISIONS	CHK	CHANGE NO.	REV.
		EM12-00001	A
		EM12-00004	B
		EM12-00010	C
		DWG. # WAS TC128-0-LTP8	
		EM12-000032	D

QTY.	DESCRIPTION	PART NO.	ITEM NO.
	PARTS LIST		

UNLESS OTHERWISE SPECIFIED
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. [illegible] DATE 1-29-69
CHKD. [illegible] DATE 2/7/69
ENG. [illegible] DATE 2-28-69
PROJ. ENG. [illegible] DATE 2-28-69
PROD. [illegible] DATE 2/28/69
FIRST USED ON TC12-F
SCALE
SHEET / OF /

digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS

TITLE
LTP8
8 TAPE CONTROL

SIZE D | CODE 85 | NUMBER TC12-F-LTP8 | RFV. D
DIST.

DEC FORM NO. ORD 102A

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MASTER DRAWING LIST

DWG. NO.	REV. LET.	NO. OF SHEETS	TITLE
A-ML-PDP12-0	AN	1	PDP12 SYSTEM
K-WL-EM12-0-3	REF		WIRE LIST
D-MU-EM12-0-1	REF		MODULE UTILIZATION MEM
D-MU-EM12-0-2	REF		MODULE UTILIZATION MEM
D-BS-AD12-0-YAD	C	1	A-D CONVERTER
D-BS-AD12-0-YADA	A	1	YADA CHAN 10-17
D-BS-AD12-0-YADB	A	1	YADB CHAN 20-37
D-BS-AD12-0-YADC	D	1	YADC A-D CONTROL
A-PL-EM12-0-1	REF		MODULE UTILIZATION MEM PL
A-PL-EM12-0-2	REF		MODULE UTILIZATION MEM PL
A-SP-AD12-0-1	C		PDP-12 ANALOG TO DIGITAL CONVERTER

REVISIONS			
REV.	DATE	CHG. NO.	APP'D.
A	3/69	EM12-01	L.G.
B	4/69	EM12-02	L.G.
C	7/69	EM12-08	L.G.
D	8/69	EM12-09	L.G.
E	1/70	12-55	L.G.
F	4/70	12-68	L.G.
H	6/70	12-76	L.G.
J	10/70	EM12-41	L.G.
K	11/70	EP12-30	L.G.

DRN. J. APREA	DATE	3/7/69
CHK'D. R. HUTANK	DATE	3/7/69
ENG. L. Gale	DATE	3/10/69
PROJ. ENG. L. Gale	DATE	3/10/69
PROD. W. Wall	DATE	3/10/69
FIRST USED ON	PDP-12	
SCALE		
SHEET 1 OF 1		

digital EQUIPMENT CORPORATION
MAYNARD, MASSACHUSETTS

TITLE
ANALOG TO DIGITAL CONVERTER

SIZE	CODE	NUMBER	REV
A	ML	AD12-0	K

DIST.

DEC FORM NO. DRA 103

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YAD ANALOG CHAN 7
YAD ANALOG CHAN 6
YAD ANALOG CHAN 5
YAD ANALOG CHAN 4
YAD ANALOG CHAN 3
YAD ANALOG CHAN 2
YAD ANALOG CHAN 1
YAD ANALOG CHAN Ø
CW

G783 F33
E1 H1 J1 K1 L1 M1 N1 P1

ANALOG BUFF A215 D34
R2 S1 P1 T2 M1 L2 K1 N2

V2

+5V A2
-15V B2
GRD C2
+15V REG D2
-15V REG E2
HQ GND F2

YADC IR 11(1)H
YADC IR 1Ø(1)H
YADC IR 11(Ø)H
YADC IR 1Ø(Ø)H
C1 YADC IR Ø9(1)H
YADC IR 11(Ø)H
YADC IR 11(1)H
D1 YADC IR 1Ø(1)H
YADC IR 11(Ø)H
B1 YADC IR 11(1)H
E1 YADC IR 1Ø(Ø)H
A1 YADC IR Ø9(Ø)H
F1 YADC IR 11(Ø)H

D33 MULTIPLEX A131
H1 YADC N EQ ØØ L

U1
YAD MPX RTN H

D1 -7V -15V
J2 H2
C1 +7V +15V
F1 Ø
R1 GRD

D2 +15V REG
E2 -15V REG
F2 HQ GRD

W Ø23 E35
F2 BLK
H2 BLK
J2 BLK
K2 BLK
L2 ORG
D2 RED
E2 BLU
M2 GRN
12-03185-2
1 2 3 4 5 6 7 8 9 10 11
120VAC(47-420CPS)

YAD MPX NODE H
ANA. BUF A215 D34
+15V REG D2
-15V REG E2
HQ GRD F2
P2
U2
YAD MPX RTN H
V2
E34 F34
FJ2
+15V REG ED2
FL2
YADC HOLD (1) L FF2
-15V REG EE2
FM2
HQ GRD EF2
FK2
EU2 ES2
SAMPLE & HOLD AR ØØ
EH2
EJ2
EV2
DV2
A-D CONV A811
C35 D35
YADC START H CH2
+15V REG DU2
-15V REG CV2
HQ GRD DN2
+5V CA2
DM2
29 CE2 YAD AD 2(1) H
28 CD2 YAD AD 3(1) H
27 CN2 YAD AD 4(1) H
26 CM2 YAD AD5(1) H
25 DL2 YAD AD6(1) H
24 DR2 YAD AD 7(1) H
23 DK2 YAD AD8(1) H
22 DP2 YAD AD9(1) H
21 DS2 YAD AD 1Ø(1) H
20 DT2 YAD AD 11 (1) H
YAD DONE H

REVISIONS			
CHK	CHANGE NO.	REV.	
DRS	00001	A	L GALE 4/24/68
	EM12-00008	B	L GALE 8-15-69
DRS	12-00076	C	L. GALE 7-2-70

QTY.	DESCRIPTION	PART NO.	ITEM NO.
	PARTS LIST		

UNLESS OTHERWISE SPECIFIED
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. DATE 1-4-68
CHKD. DATE 2/27/69
ENG. DATE 2-28-69
PROJ. ENG. DATE 2-28-69
PROD. DATE 2/28/69
FIRST USED ON AD12
SCALE
SHEET 1 OF 1

digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS

TITLE A-D CONVERTER YAD

SIZE D | CODE 85 | NUMBER AD12-Ø-YAD | REV. C
DIST.

DEC FORM NO. DRD 102A

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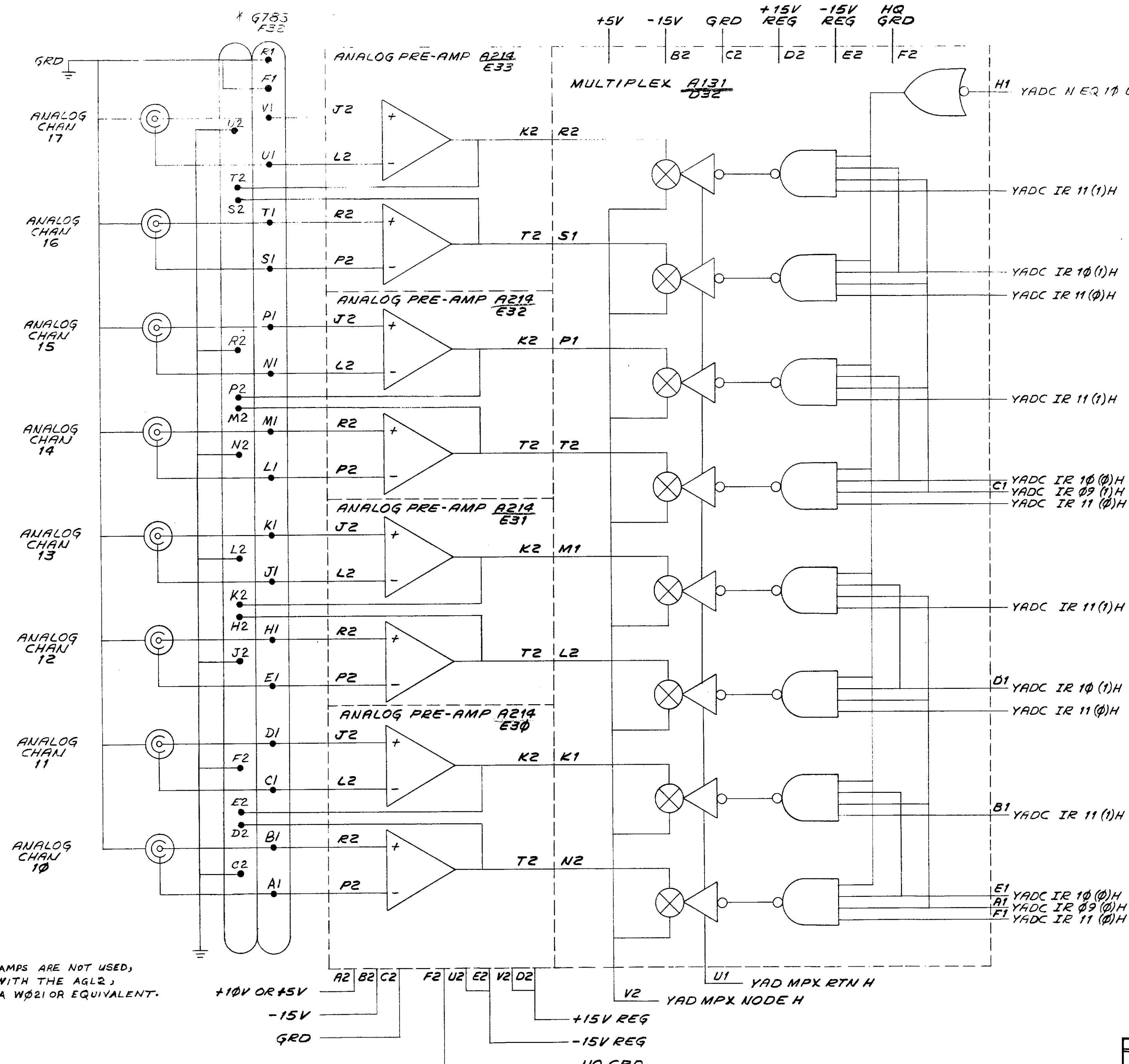


* WHEN PREAMPS ARE NOT USED, SUCH AS WITH THE AGL2, CABLE IS A WØ21 OR EQUIVALENT.

REVISIONS			
CHK	CHANGE NO.	REV.	
	00002 T. QUILLIN L. GALE 6/18/69	A	

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

QTY.	DESCRIPTION	PART NO.	ITEM NO.

PARTS LIST

DRN. DATE 1-4-69
CHK'D. DATE 2/17/69
ENG. DATE
PROJ. ENG. DATE
PROD. DATE
FIRST USED ON AD12

DIGITAL EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS

TITLE: YAD A CHAN 1Ø-17

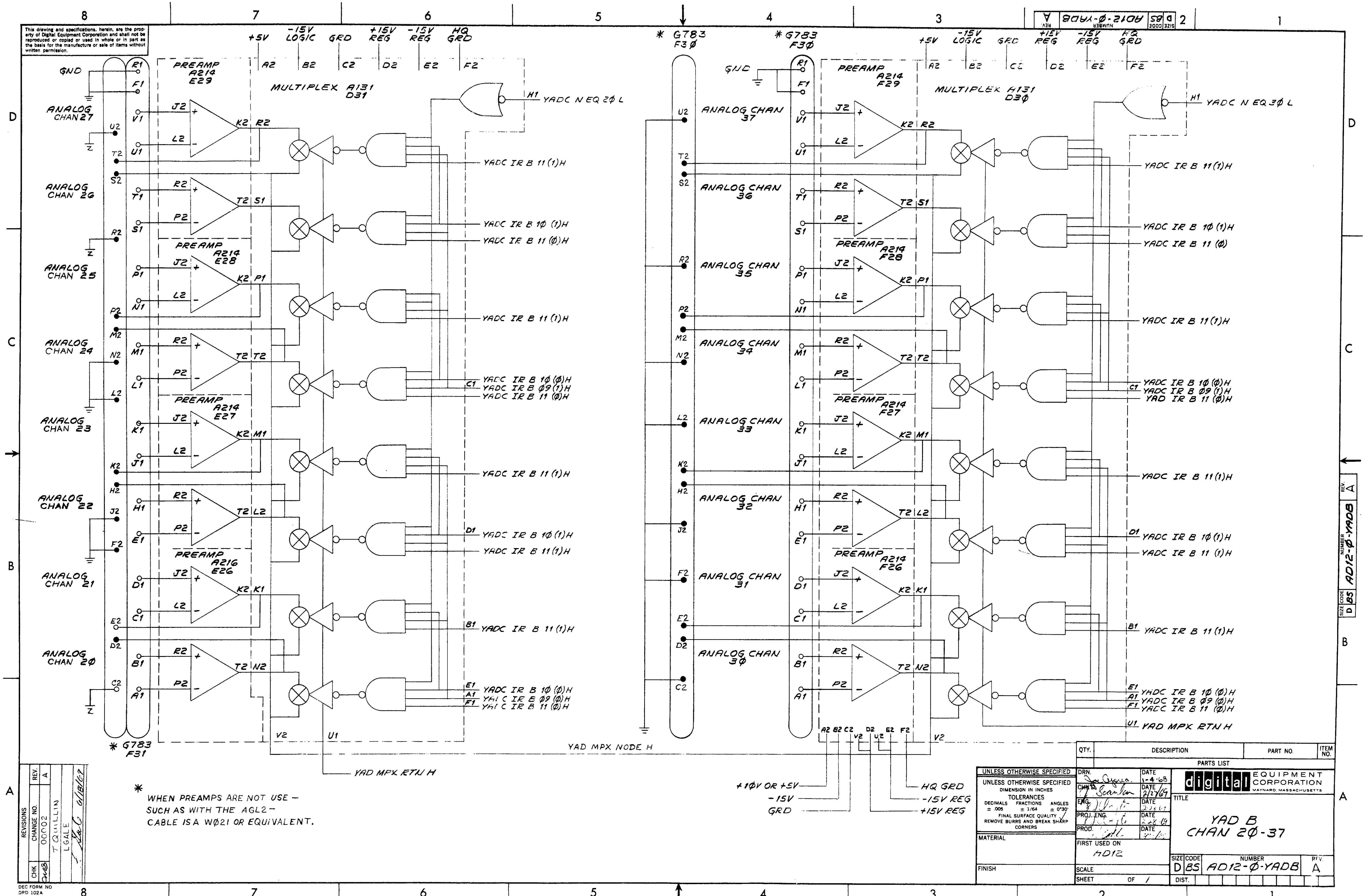
SIZE D CODE BS NUMBER AD12-Ø-YADA REV. A

SCALE

SHEET 1 OF 1

DIST.

DEC FORM NO. DRD 102A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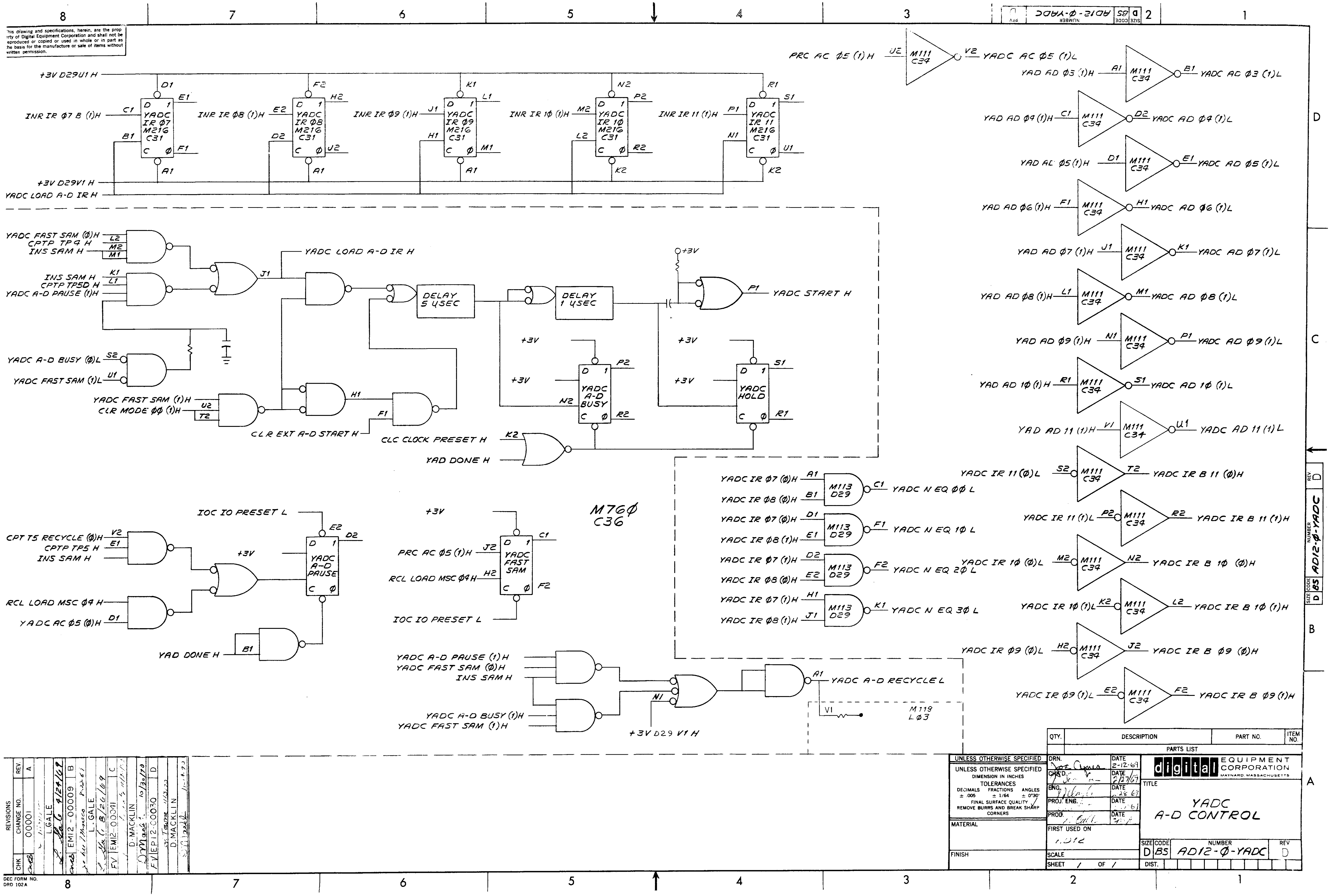
+5V
-15V LOGIC
GRD
+15V REG
-15V REG
HQ GRD
PREAMP A214 E29
MULTIPLEX A131 D31
YADC N EQ 2Ø L
ANALOG CHAN 27
ANALOG CHAN 26
ANALOG CHAN 25
ANALOG CHAN 24
ANALOG CHAN 23
ANALOG CHAN 22
ANALOG CHAN 21
ANALOG CHAN 2Ø
PREAMP A214 E28
PREAMP A214 E27
PREAMP A216 E26
YADC IR B 11 (1)H
YADC IR B 1Ø (1)H
YADC IR B 11 (Ø)H
YADC IR B 1Ø (Ø)H
YADC IR B Ø9 (1)H
YADC IR B Ø9 (Ø)H
* G783 F31
YAD MPX RTN H
YAD MPX NODE H
* G783 F3Ø
PREAMP A214 F29
MULTIPLEX A131 D3Ø
YADC N EQ 3Ø L
ANALOG CHAN 37
ANALOG CHAN 36
ANALOG CHAN 35
ANALOG CHAN 34
ANALOG CHAN 33
ANALOG CHAN 32
ANALOG CHAN 31
ANALOG CHAN 3Ø
PREAMP A214 F28
PREAMP A214 F27
PREAMP A214 F26
+1ØV OR +5V
-15V
GRD
HQ GRD
-15V REG
+15V REG
* WHEN PREAMPS ARE NOT USE – SUCH AS WITH THE AGL2 – CABLE IS A WØ21 OR EQUIVALENT.
REVISIONS
REV. A
CHANGE NO. 00002
T QUILLIN
L GALE
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
QTY.
DESCRIPTION
PART NO.
ITEM NO.
PARTS LIST
DRN.
CHK'D
ENG.
PROJ. ENG.
PROD.
DATE 1-4-68
FIRST USED ON AD12
SCALE
SHEET OF 1
digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS
TITLE YAD B CHAN 2Ø-37
SIZE D
CODE BS
NUMBER AD12-Ø-YADB
REV. A
DIST.
DEC FORM NO DPD 102A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+3V D29U1 H
INR IR Ø7 B (1)H
INR IR Ø8 (1)H
INR IR Ø9 (1)H
INR IR 1Ø (1)H
INR IR 11 (1)H
YADC IR Ø7 M216 C31
YADC IR Ø8 M216 C31
YADC IR Ø9 M216 C31
YADC IR 1Ø M216 C31
YADC IR 11 M216 C31
+3V D29V1 H
YADC LOAD A-D IR H
PRC AC ØE (1)H
YADC AC Ø5 (1)L
YAD AD Ø3 (1)H
YADC AC Ø3 (1)L
YAD AD Ø4 (1)H
YADC AD Ø4 (1)L
YAD AC Ø5 (1)H
YADC AD Ø5 (1)L
YAD AD Ø6 (1)H
YADC AD Ø6 (1)L
YAD AD Ø7 (1)H
YADC AD Ø7 (1)L
YAD AD Ø8 (1)H
YADC AD Ø8 (1)L
YAD AD Ø9 (1)H
YADC AD Ø9 (1)L
YAD AD 1Ø (1)H
YADC AD 1Ø (1)L
YAD AD 11 (1)H
YADC AD 11 (1)L
M111 C34
YADC FAST SAM (Ø)H
CPTP TP4 H
INS SAM H
CPTP TP5D H
YADC A-D PAUSE (1)H
YADC LOAD A-D IR H
DELAY 5 USEC
DELAY 1 USEC
+3V
YADC START H
YADC A-D BUSY (Ø)L
YADC FAST SAM (1)L
YADC FAST SAM (1)H
CLR MODE ØØ (1)H
CLR EXT A-D START H
CLC CLOCK PRESET H
YAD DONE H
YADC A-D BUSY
YADC HOLD
YADC IR Ø7 (Ø)H
YADC IR Ø8 (Ø)H
YADC IR Ø7 (1)H
YADC IR Ø8 (1)H
M113 D29
YADC N EQ ØØ L
YADC N EQ 1Ø L
YADC N EQ 2Ø L
YADC N EQ 3Ø L
YADC IR 11 (Ø)L
YADC IR B 11 (Ø)H
YADC IR 11 (1)L
YADC IR B 11 (1)H
YADC IR 1Ø (Ø)L
YADC IR B 1Ø (Ø)H
YADC IR 1Ø (1)L
YADC IR B 1Ø (1)H
YADC IR Ø9 (Ø)L
YADC IR B Ø9 (Ø)H
YADC IR Ø9 (1)L
YADC IR B Ø9 (1)H
M76Ø C36
IOC IO PRESET L
CPT T5 RECYCLE (Ø)H
CPTP TP5 H
INS SAM H
RCL LOAD MSC Ø4 H
YADC AC Ø5 (Ø)H
YADC A-D PAUSE
YAD DONE H
PRC AC Ø5 (1)H
RCL LOAD MSC Ø4 H
YADC FAST SAM
IOC IO PRESET L
YADC A-D PAUSE (1)H
YADC FAST SAM (Ø)H
INS SAM H
YADC A-D BUSY (1)H
YADC FAST SAM (1)H
+3V D29 V1 H
YADC A-D RECYCLE L
M119 LØ3
REVISIONS
DIGITAL EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS
TITLE YADC A-D CONTROL
SIZE D CODE BS NUMBER AD12-Ø-YADC REV D
SHEET 1 OF 1
FIRST USED ON 1012
DEC FORM NO. DRD 102A

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DIGITAL EQUIPMENT CORPORATION
MAYNARD, MASSACHUSETTS

ENGINEERING SPECIFICATION DATE

TITLE PDP-12 ANALOG TO DIGITAL CONVERTER

REVISIONS

REV	DESCRIPTION	CHG NO	ORIG	DATE	APPD BY	DATE
	1) AD12, AM12, AG12 Specifications 2) AD12, AM12, AG12 Parts Allocation 3) Adjustment Procedure					
A	DWG. NO. WAS A-SP-PDP12-1-6	12-00055	T.J.DUGGAN	2-3-70		2/4/70
B		12-00068	L. GALE	4-15-70		4/21/70
C		12-00076	BUDIANSKY	6-4-70		7/21/70

ENG	APPD	SIZE	CODE	NUMBER	REV
L. Gale 6/3/69	L. Gale 6/3/69	A	SP	AD12-0-1	C

DEC FORM NO. DRA 107

SHEET 1 OF 7

ENGINEERING SPECIFICATION CONTINUATION SHEET

TITLE

1) AD12, AM12, AG12 Specifications

Analog Input

Input Voltage Range: AD-12, AG12	±1 volt
AM-12	±5 volts
Input Resistance AD-12, AG12	±2%
(normal noninverting connection):	70 kΩ, 300 pf in parallel
(inverting input connection):	35 k, 300 pf in parallel
AM-12	>10 meg. ohms, 300 pf to selected multiplex
Common-Mode Rejection: AD12, AG12	25 db worse case
(source IMP <250)	35 db typical
AM-12	No. com. mode rej.
Common-Mode Voltage Range: AD12, AG12	±3.5 volts from system fault line ground
Input Protection: AD-12, AG12	±67 volts from fault line indefinitely
AM-12	120-volts rms for 5 sec. ± 8 volts indef.
Overvoltage Recovery Time: AD12, AG12	8 μsec
Frequency Response: AD12, AG12, AM12	0- to 30-kHz flat 60-kHz 3-db down
Parameter Pots: AD12	8 10-turn parameter potentiometers are provided. 1-½ to 2 turns at each extreme are beyond the A to D range.
Long Term Stability (1 hour)	Better than 1% for ± 30C.

Multiplexer Performance

Number and Type:	16 FET multiplex switches expandable to 32 (AM-12)

SIZE	CODE	NUMBER	REV
A	SP	AD12-0-1	C

DEC FORM NO DRA 108

SHEET 2 OF

1) AD12, AM12, AG12 Specifications cont'd.

A/D Performance

Resolution:	10 bits ±½ LSB ± .1%/°C for Inputs to ch. 10→ 37
Conversion Rate:	50 kHz
Sample Acquisition Time:	5 μsec (±1 μsec)
Aperture Time:	200 nsec

Mechanical

Precision-stabilized power supplies, input amplifiers, sample-and-hold multiplexers and analog-to-digital converter modules are located with the memory in the PDP-12 main frame. Connection is made to the data terminal section to the left of the console.

Analog parameters may be set in by precision 10 turn potentiometers.

Analog input jacks are provided to accept standard three-contact phone plugs.

Inverting inputs must have ≤dc resistance less than 250 Ω in all input conditions.

No temp or long term stability is implied for parameter pots.

AM12 inputs have a small current leakage, similar to a capactive charge, as the channel first becomes selected under some conditions. This leakage is less than 3 ma for a period not to exceed 1 μsec.

Qty.	Part #	Use in AD12	Location	Print Ref.
4	A214	8 Analog Preamplifiers	E30 to E33	AD12-Ø-YADA
2	A131	16 Multiplex FET Switches	D32, D33	AD12-Ø-YAD AD12-Ø-YADA
1	A215	Pot. Filter Cap., Zener Ref. & Bootstrap Amp.	D34	AD-12-Ø-YAD
1	A404	Sample and Hold	E34, F34	AD-12-Ø-YAD
1	A811	A/D Converter Mod.	C35, D35	AD-12-Ø-YAD
1	M760	A/D Control Logic	C36	AD-12-Ø-YADC
1	12-3185-2	Regulated Power Supply ±15V	Lower Right of Memory Panel	UA-PDP-12-Ø-Ø
1	700-6045	Bracket		700-6045
1	700-7964	Analog Panel	To Left of PDP-12 Console	CS-700-7964 AD-700-5964
		Connects to ADC with Cable		
		Terminated in G783 con.	F33	AD-12-Ø-YAD
1	700-5963	Relay Input	Below Power Switch Panel	CS-700-5963 AD-700-5963
		Panel--8 Phone Plug Recept.		
		Cable Terminated in G783	F32	AD-12-Ø-YADA

Qty.	Part #	Use in AM12	Location	Print Ref.
2	A131	16 Multiplex FET Switches	D30, D31	AD-12-Ø-YADB
		Input Connector	F30, F31	AD-12-Ø-YADB

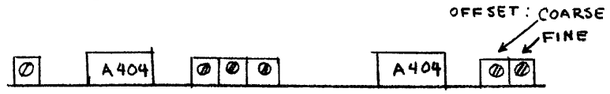
Qty.	Part #	Use in AG12	Location	Print Ref.
8	A214	Analog Preamplifiers	E26-E29	AD12-Ø-YADB
			F26-F29	
		Input, Relay Panel	F30-F31	AD-700-6046
				AD12-Ø-YADB

1) Set Ch. Ø pot about 5 turns from either end.

2) Connect pin D34N2 to D34F2.

3) Run AD TST Program with all sense switches → Ø.

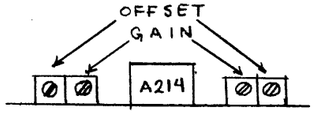
4) Adjust A404 Sample and Hold offset until Ch. Ø reaches the threshold point of +Ø and -Ø volts.



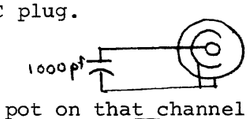
5) Remove D34N2 to D34F2 connection.

6) Turn parameter potentiometer slowly 10 turns over the full range. Assure that each count is displayed on Ch. Ø display. Repeat this test on each of the remaining parameter pots. (1-½ to 2 turns at each end of the pot do not offset the number displayed.)

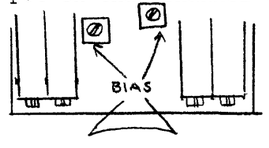
7) Insert EDC Prec. Voltage source in channel to be tested; set to Ø volts, then adjust offset pots on respective A214 to the switching point of +Ø and -Ø volts.



Note: If the boards have been tested in the module test facility, bias has been preset. If the bias has not been preset, place A214 on module extender and insert a phone plug with the following circuit in place of the EDC plug.



Adjust the bias pot on that channel to assure ±Ø volts display.



Replace EDC and assure ±Ø volts.
Readjust offset if necessary.

8) Set EDC to +.985; adjust gain to indicate +776 readout on channel under test.

9) Increase EDC voltage to +.995; assure +777.

10) Set EDC at -.985; assure -776 reading. If necessary, slightly readjust the offset pot on the A214 in question, but insure that a reading of +Ø or -Ø (or the ±Ø threshold) is still present when EDC is set to Ø volts. See step 7.

11) Record voltage of switching indecision point for the numbers -770 to -777 and +000 to +007; assure non is less 1 mv nor greater than 3 mv.

12) Repeat steps 7 through 12 for successive analog channels.

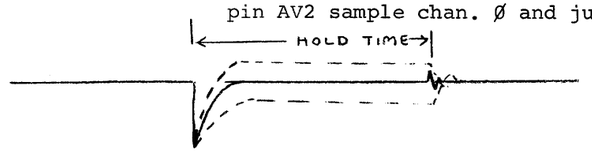
13) A note about the other pots on the A404: Only the offset pot should be adjusted in the normal set-up procedure of the PDP-12 analog-to-digital converter.

If inadvertently other pots are adjusted, the following information may be helpful:

Pot A (marked on board) is the amplifier balance

Pot B — is gain. This adjustment is very fine; being only ±.2% misadjustment would not be disasterous.

Pot C — is pedistal, to adjust this look at pin AV2 sample chan. Ø and jump back.



Adjust this voltage to hold exactly equal to sample voltage.

Pot D — No normal machine mode facilitates readjustment.

The analog preamplifiers are designed with bias circuitry to simplify change of input characteristics from DC to AC sources for signals applied to the noninverting input. The inverting input must at all times be driven from a low DC impedance.

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MASTER DRAWING LIST

DWG. NO.	REV. LET.	NO. OF SHEETS	TITLE
A-ML-AD12-0	REF	1	ANALOG TO DIGITAL CONVERTER
D-BS-AD12-0-YAD	REF	1	A-D CONVERTER
D-BS-AD12-0-YADA	REF	1	YADA CHAN 10-17
D-BS-AD12-0-YADB	REF	1	YADB CHAN 20-37
D-BS-AD12-0-YADC	REF	1	YADC A-D CONTROL
D-MU-EM12-0-1	REF	1	MODULE UTILIZATION MEMORY
D-MU-EM12-0-2	REF	1	MODULE UTILIZATION MEMORY
A-PL-EM12-0-1	REF	1	MODULE COUNT
A-PL-EM12-0-2	REF	1	MODULE COUNT
D-AD-7006046-0-0	A	2	ANALOG EXTENSION PANEL
A-PL-7006046-0-0	A	1	ANALOG EXTENSION PANEL (PL)

REVISIONS			
REV.	DATE	CHG. NO.	APP'D.
A	7/70	EM12-37	L.G.

DRN. K.RUSS	DATE 8/1/69	
CHK'D. K.RUSS	DATE 8/1/69	
ENG. L. Gale	DATE 8/11/69	
PROJ. ENG. L. Gale	DATE 8/11/69	
PROD. A. Cull	DATE 8/18/69	
FIRST USED ON PDP12		
SCALE H		
SHEET 1 OF 1		

digital EQUIPMENT CORPORATION
MAYNARD, MASSACHUSETTS

TITLE
A-D
ADDITIONAL
PREAMPS

SIZE	CODE	NUMBER	REV.
A	ML	AG12-0	A

DIST.

DEC FORM NO.
DRA 103

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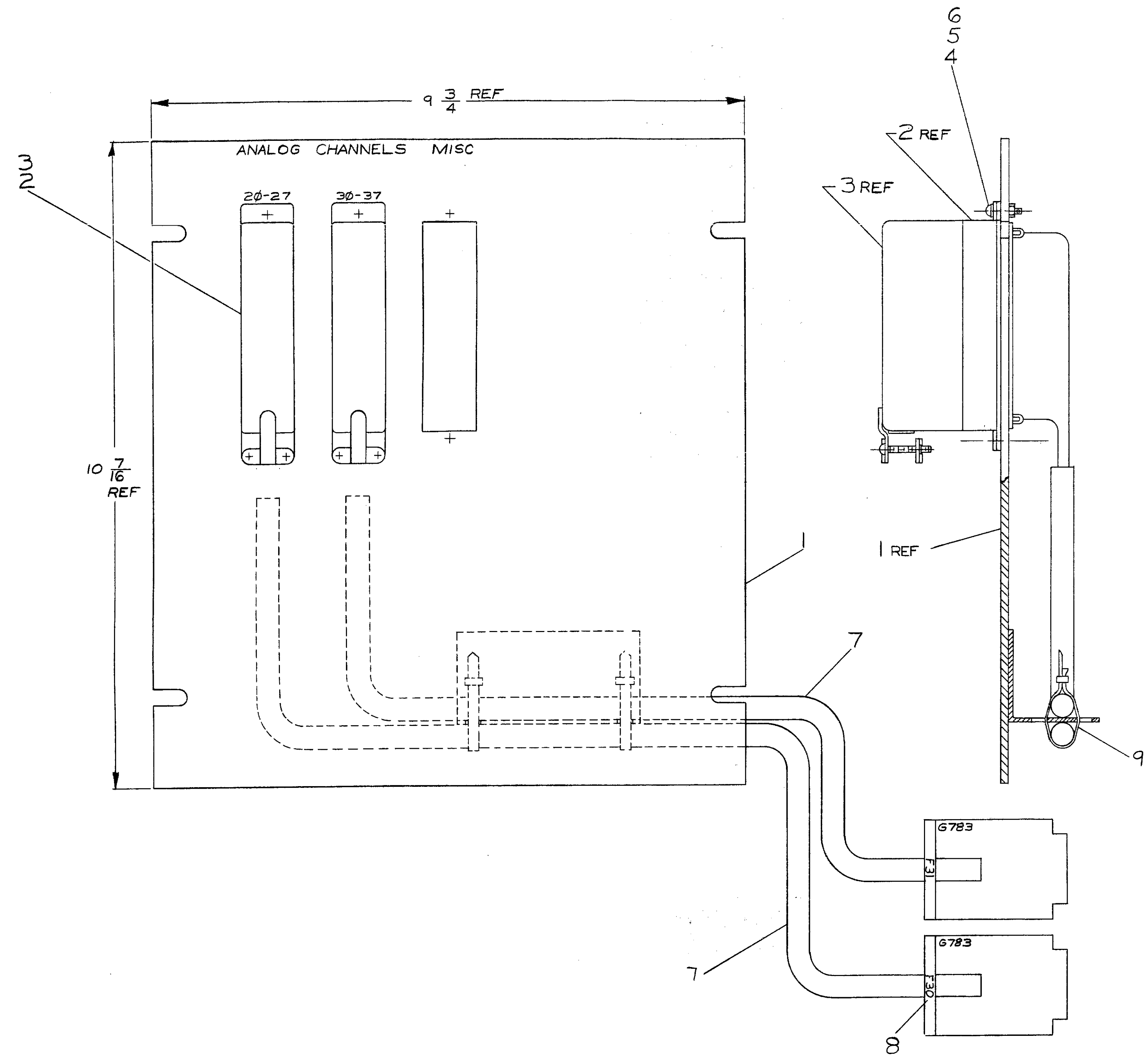

FIRST USED ON OPTION/MODEL	QTY.	DESCRIPTION	PART NO.	ITEM NO.
PDP 12		PARTS LIST		

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. R. Cook DATE 2/28/69
CHK'D. DATE 2/28/69
ENG. DATE 3/3/69
PROJ. ENG. DATE 3/3/69
PROD. DATE 3/3/69

NEXT HIGHER ASSY A-ML-AG12-Ø
SCALE —/—
SHEET 1 OF 2

digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS

TITLE
ANALOG EXT PANEL ASSY (AG12)

SIZE D CODE AD NUMBER 7006046-0-0 REV. A
DIST. G

REVISIONS			
CHK	CHANGE NO.		REV.
	AM12-00001 T. Quillen 8-1-69	GALE 8/15/69	A

DEC FORM NO. DRD 100

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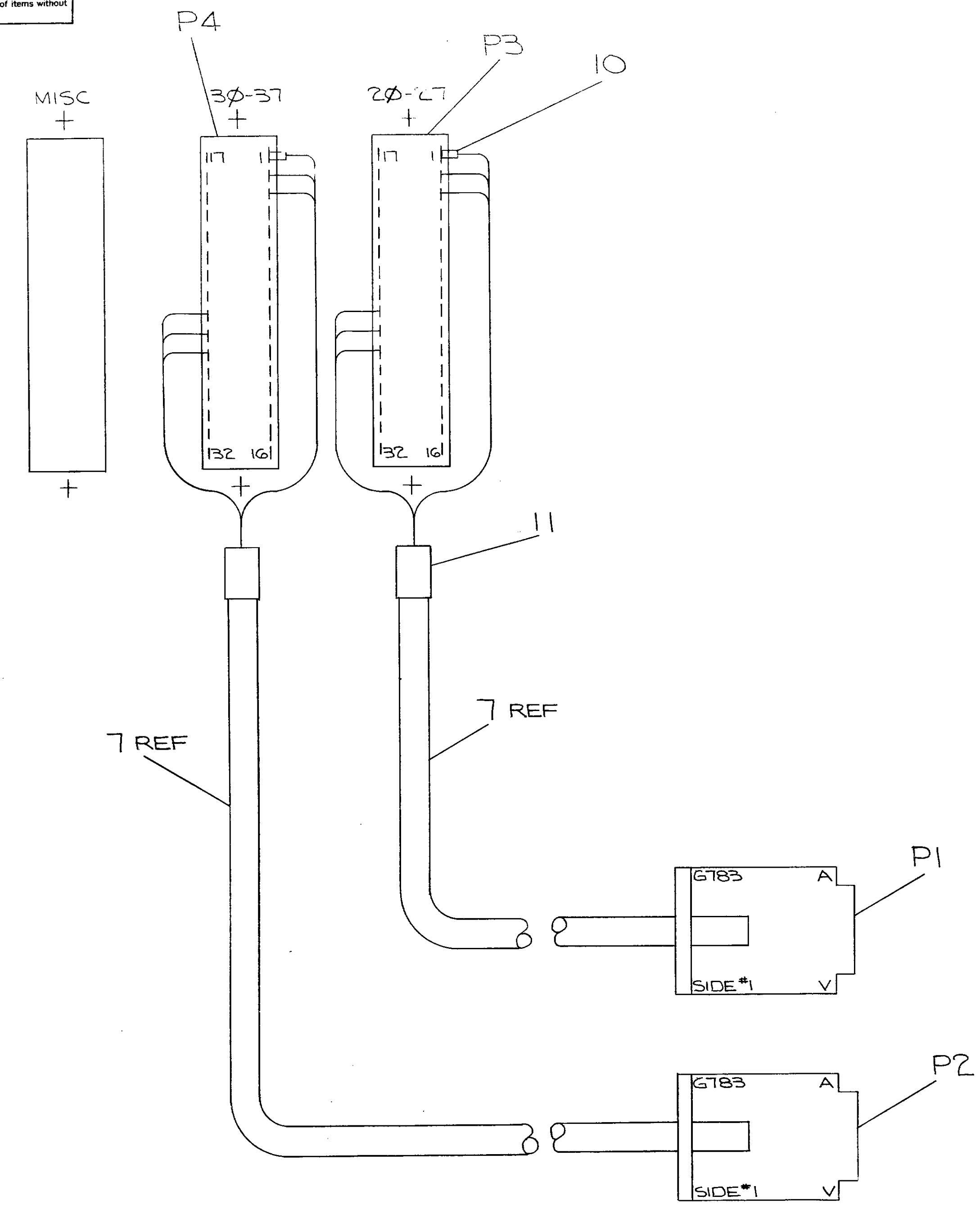

WIRING DIAGRAM
VIEW TAKEN FROM REAR OF PANEL

WIRE TABLE

ITEM NO.	AWG	COLOR	FROM	TO	REMARKS	SIGNAL
7	22	BLK	P1-A1	P3-1	RED SHIELD PAIR #1	-CHAN 20
		RED	P1-B1	-2		+CHAN 20
		DRAIN	GND	-3		SYS GND
		BLK	P1-C1	-4	RED SHIELD PAIR #2	-CHAN 21
		WHT	P1-D1	-5		+CHAN 21
		DRAIN	GND	-6		SYS GND
		BLK	P1-E1	-7	GRN SHIELD PAIR #3	-CHAN 22
		GRN	P1-H1	-8		+CHAN 22
		DRAIN	GND	-9		SYS GND
		BLK	P1-J1	-10	BLU SHIELD PAIR #4	-CHAN 23
		BLU	P1-K1	-11		+CHAN 23
		DRAIN	GND	-12		SYS GND
		BLK	P1-L1	-13	BLU SHIELD PAIR #5	-CHAN 24
		YEL	P1-M1	-14		+CHAN 24
		DRAIN	GND	-15		SYS GND
		BLK	P1-N1	-16	BLU SHIELD PAIR #6	-CHAN 25
		BRN	P1-P1	-32		+CHAN 25
		DRAIN	GND	-31		SYS GND
		BLK	P1-S1	-30	BLU SHIELD PAIR #7	-CHAN 26
		ORN	P1-T1	-29		+CHAN 26
		DRAIN	GND	-28		SYS GND
		RED	P1-U1	-27	BLU SHIELD PAIR #8	-CHAN 27
		WHT	P1-V1	-26		+CHAN 27
7	22	DRAIN	GND	-25		SYS GND
				-24		
				-23		
				-22		
				-21		
				-20		
				-19		
				-18		
				P3-17		
7	22	BLK	P2-A1	P4-1	RED SHIELD PAIR #1	-CHAN 30
		RED	P2-B1	-2		+CHAN 30
		DRAIN	GND	-3		SYS GND
		BLK	P2-C1	-4	RED SHIELD PAIR #2	-CHAN 31
		WHT	P2-D1	-5		+CHAN 31
		DRAIN	GND	-6		SYS GND
		BLK	P2-E1	-7	GRN SHIELD PAIR #3	-CHAN 32
		GRN	P2-H1	-8		+CHAN 32
		DRAIN	GND	-9		SYS GND
		BLK	P2-J1	-10	BLU SHIELD PAIR #4	-CHAN 33
		BLU	P2-K1	-11		+CHAN 33
		DRAIN	GND	-12		SYS GND
		BLK	P2-L1	-13	BLU SHIELD PAIR #5	-CHAN 34
		YEL	P2-M1	-14		+CHAN 34
		DRAIN	GND	-15		SYS GND
		BLK	P2-N1	-16	BLU SHIELD PAIR #6	-CHAN 35
		BRN	P2-P1	-32		+CHAN 35
		DRAIN	GND	-31		SYS GND
		BLK	P2-S1	-30	BLU SHIELD PAIR #7	-CHAN 36
		ORN	P2-T1	-29		+CHAN 36
		DRAIN	GND	-28		SYS GND
		RED	P2-U1	-27	BLU SHIELD PAIR #8	-CHAN 37
		WHT	P2-V1	-26		+CHAN 37
7	22	DRAIN	GND	-25		SYS GND
				-24		
				-23		
				-22		
				-21		
				-20		
				-19		
				-18		
				P4-17		

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. DATE 2/28/69
CHK'D DATE 2/28/69
ENG. DATE 3/5/69
PROJ. ENG. DATE 3/5/69
PROD. DATE 3/5/69
NEXT HIGHER ASSY

digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS

TITLE: ANALOG EXT PANEL ASSY (AG12)

SIZE D CODE AD NUMBER 7006046-0-0 REV. A
SCALE —//—
SHEET 2 OF 2
DIST.

REVISIONS | REV. | CHANGE NO. | CHK

DEC FORM NO. DRD 100

DIGITAL EQUIPMENT CORPORATION
MAYNARD, MASSACHUSETTS

PARTS LIST

MADE BY W.F. McCARTHY DATE 12/2/68	CHECKED K. RUSS DATE 12/11/68	SECTION 1
ENG DATE L. Gale 3-3-69	PROD D Call DATE 3/3/69	ISSUED SECT. 1

ITEM NO.	DWG NO./PART NO.	DESCRIPTION	QUANTITY/VARIATION
1	D-IA-7406819-0-0	ANALOG EXT PANEL	1
2	120357**8**	CONN BLUE RIBBON #26-4401-32**P** AMP	2
3	120358**4**	CONN BLUE RIBBON #26-4501-32**S** AMP.	2
4	9006010-1	SCR PHL HD PAN #4-40 x 5/16 LG	4
5	9006557	NUT KEPS #4-40	4
6	9006632	WASH INT TOOTH #4	4
7	C-IA-7006028-**2**-0	CABLE ASSY (G783)	2
8	A-DC-7407193-0-0	LOGIC DECALS	A/R
9	9007032	TIE WRAP #SST-2-B PANDUIT	2
10	9107255	TUBING SHRINKABLE WHT 1/8 DIA	A/R
11	9107252	TUBING SHRINKABLE WHT 3/8 DIA	A/R

TITLE	ASSY NO.	SIZE	CODE	NUMBER	REV.	ECO NO.
ANALOG EXT PANEL ASSY (A612)	D-AD-7006046-0-0	A	PL	7006046-0-0	A	AM12-00001
	SHEET 1 OF 1	DIST.	G			

DEC FORM NO.
DRA 110

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MASTER DRAWING LIST

DWG. NO.	REV. LET.	NO. OF SHEETS	TITLE
A-ML-AD12-0	REF	1	ANALOG TO DIGITAL CONVERTER
D-BS-AD12-0-YAD	REF	1	A-D CONVERTER
D-BS-AD12-0-YADA	REF	1	YADA CHAN 10-17
D-BS-AD12-0-YADB	REF	1	YADB CHAN 20-37
D-BS-AD12-0-YADC	REF	1	YADC A-D CONTROL
D-MU-EM12-0-1	REF	1	MODULE UTILIZATION MEMORY
D-MU-EM12-0-2	REF	1	MODULE UTILIZATION MEMORY
A-PL-EM12-0-1	REF	1	MODULE COUNT
A-PL-EM12-0-2	REF	1	MODULE COUNT

REVISIONS			
REV.	DATE	CHG. NO.	APP'D.

		DATE
DRN.	K. RUSS	8/1/69
CHK'D.	K. RUSS	8/1/69
ENG.	[signature]	8/14/69
PROJ. ENG.	[signature]	8/14/69
PROD.	[signature]	8/15/69

FIRST USED ON: PDP 12

SCALE: H

SHEET 1 OF 1

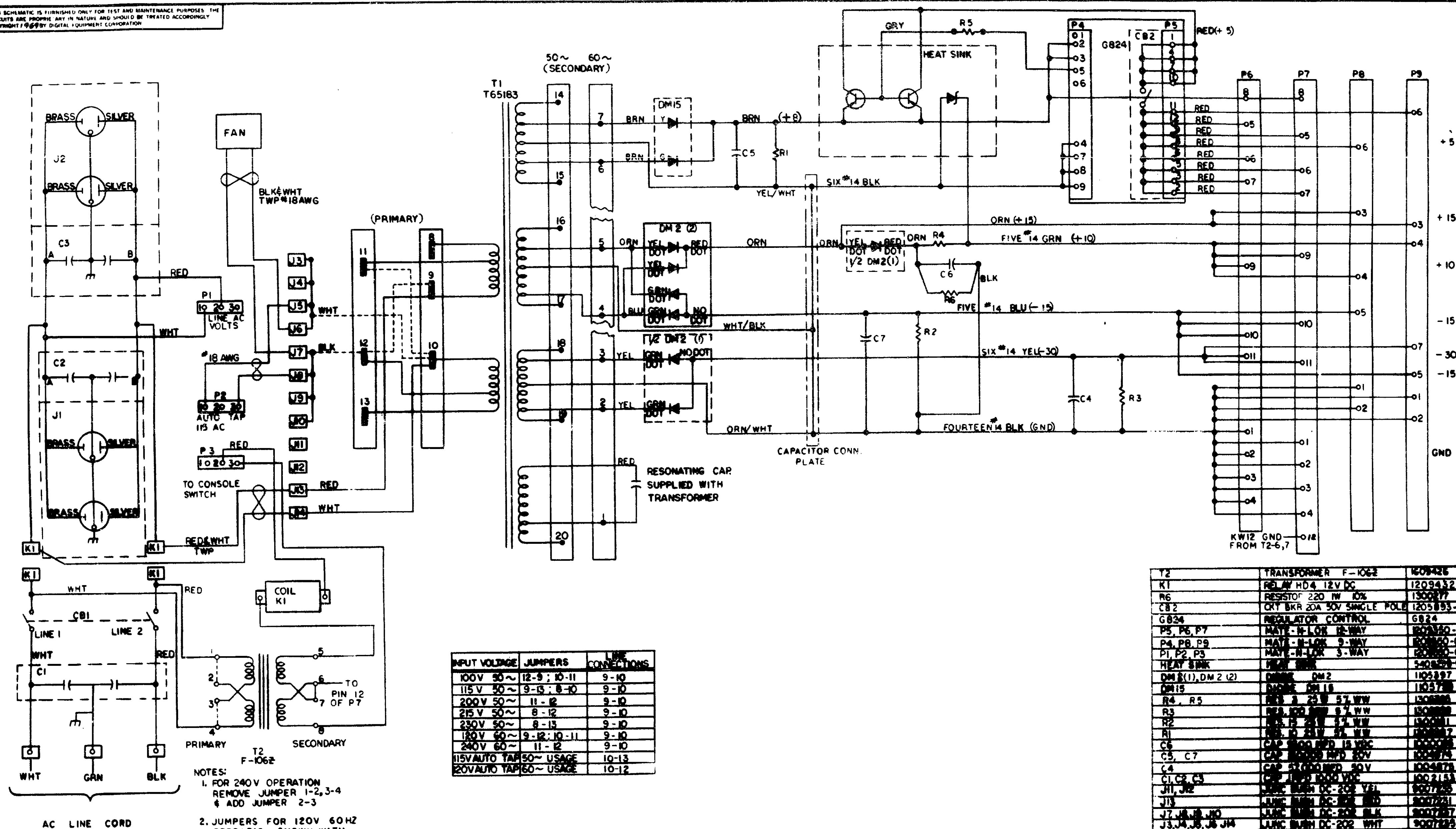
digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS

TITLE: EXPANDED MULTIPLEXER

SIZE	CODE	NUMBER	REV.
A	ML	AM12-0	

DIST.

DEC FORM NO. DRA 103



NOTES:
1. FOR 240V OPERATION REMOVE JUMPER 1-2, 3-4 $ ADD JUMPER 2-3
2. JUMPERS FOR 120V 60HZ OPERATION SHOWN WITH DOTTED LINES
3. UNLESS OTHERWISE SPECIFIED ALL WIRE TO BE 14 AWG STRD

INPUT VOLTAGE	JUMPERS	LINE CONNECTIONS
100V 50~	12-9 ; 10-11	9-10
115V 50~	9-13 ; 8-10	9-10
200V 50~	11-12	9-10
215V 50~	8-12	9-10
230V 50~	8-13	9-10
120V 60~	9-12 ; 10-11	9-10
240V 60~	11-12	9-10
115V AUTO TAP	50~ USAGE	10-13
120V AUTO TAP	60~ USAGE	10-12

REF DESIGNATION	DESCRIPTION	PART NO.
T2	TRANSFORMER F-1062	1609426
K1	RELAY HD4 12V DC	1209432
R6	RESISTOR 220 1W 10%	1300377
CB2	CKT BKR 20A 50V SINGLE POLE	1205893-20
G824	REGULATOR CONTROL	G824
P5, P6, P7	MATE-N-LOK 12-WAY	[illegible]-12
P4, P8, P9	MATE-N-LOK 9-WAY	[illegible]-09
P1, P2, P3	MATE-N-LOK 3-WAY	[illegible]-03
HEAT SINK	[illegible]	[illegible]
DM 2(1), DM 2 (2)	DIODE DM2	1105397
DM15	DIODE DM15	11057[illegible]
R4, R5	[illegible] 5% WW	[illegible]
R3	[illegible] 5% WW	[illegible]
R2	[illegible] 5% WW	[illegible]
R1	[illegible] 5% WW	[illegible]
C6	CAP [illegible] MFD 15 VDC	[illegible]
C5, C7	CAP [illegible] MFD 20V	[illegible]
C4	CAP [illegible] MFD 50V	[illegible]
C1, C2, C3	CAP [illegible] 1000 VDC	1002153
J11, J12	JUNC [illegible] DC-202 YEL	[illegible]
J13	JUNC [illegible] DC-[illegible]	[illegible]
J7, J8, J9, J10	JUNC [illegible] DC-202 BLK	[illegible]
J3, J4, J5, J6 J14	JUNC [illegible] DC-202 WHT	[illegible]
J1-J2	[illegible]	[illegible]
CB1	CKT BKR 20AMP 250V 60~	[illegible]
FAN	FAN, [illegible] 50/60 ~	12 09942-1
T1	[illegible] T65183	[illegible]

PARTS LIST

TRANSISTOR & DIODE CONVERSION CHART

[redacted] EQUIPMENT CORPORATION

POWER SUPPLY 724

D | CS | 724-0-1

PRINTED CIRCUIT REV.

PINK

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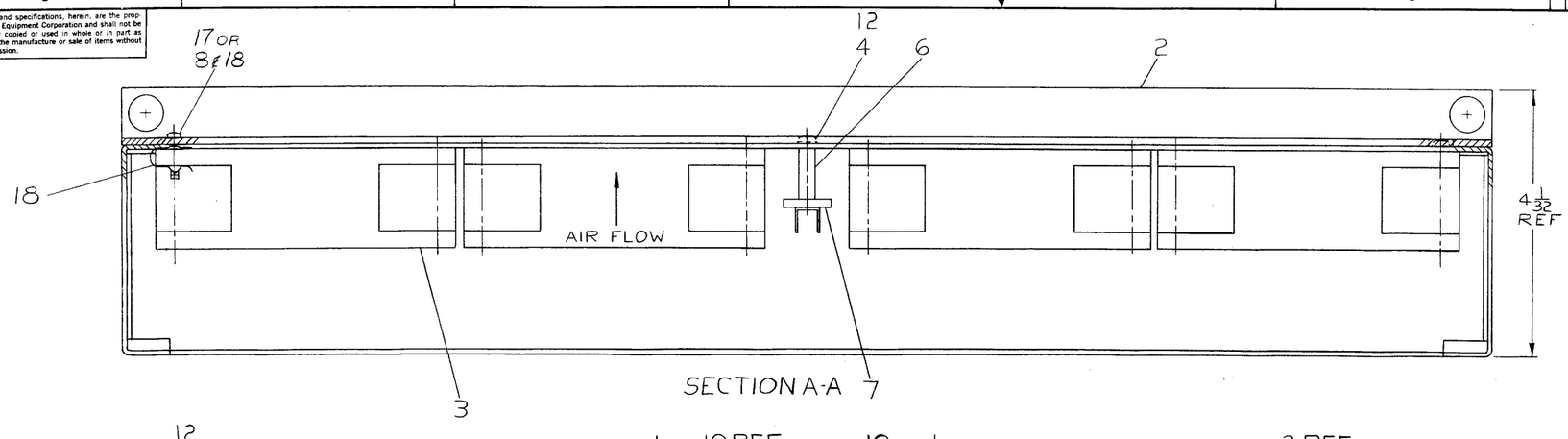
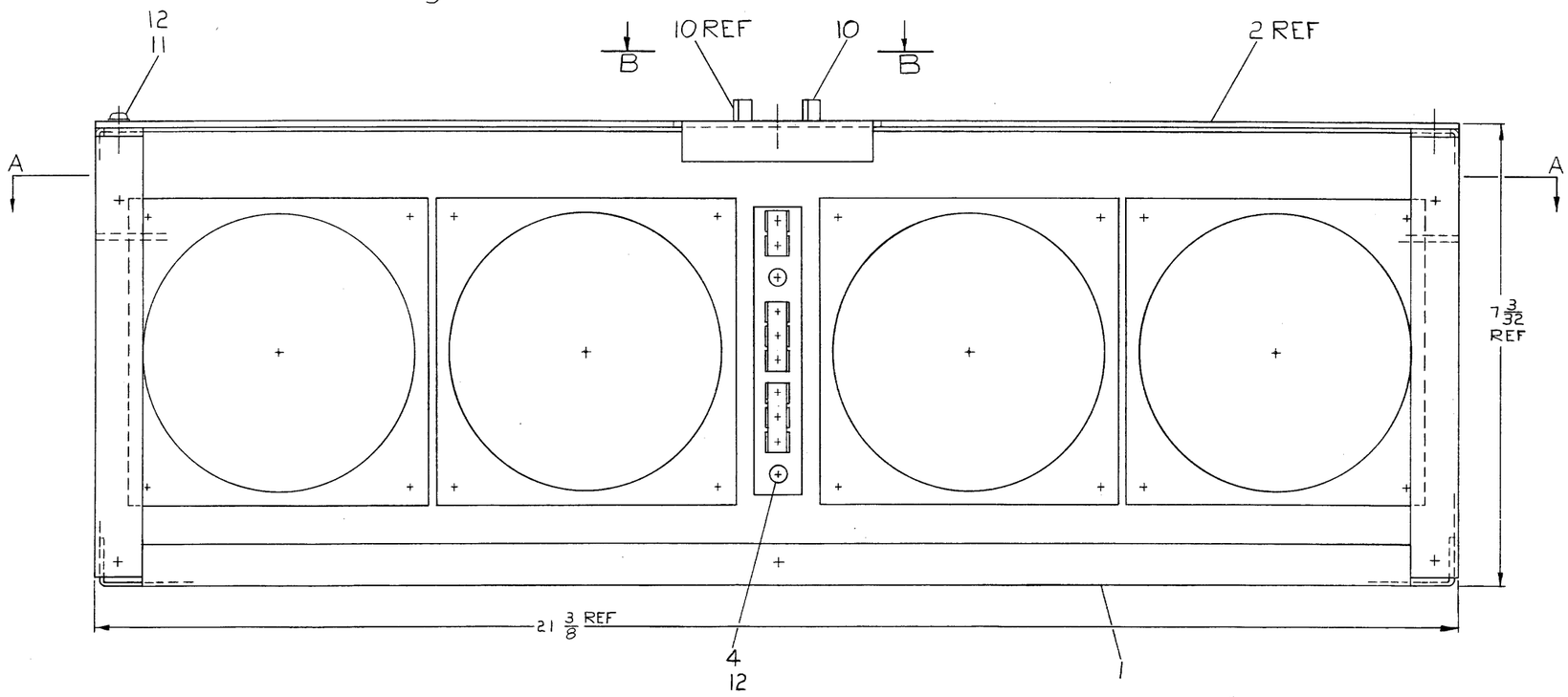
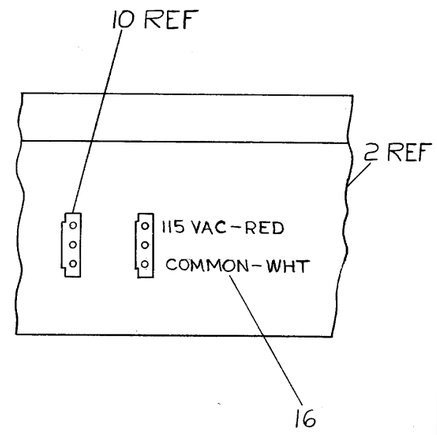
NOTES:
1. USE ITEM 17 WITH # 1209942 FAN, AND ITEM 8 & 18 WITH # 1209942-1 FAN.



SECTION A-A





VIEW B-B

REVISIONS	REV.	CHK	DRN	DATE
CHANGE NO. 12-00014 REVISED & REDRAWN	A		S. ZNAMIEROWSKI	4-30-69
12-00028	B		D. NEVALA	9-18-69
12-00041	C		T. QUINN	12-10-69
12-00074	D		L. GALE	1/9/70

DEC FORM NO. DRD 100

FIRST USED ON OPTION/MODEL: PDP-12

UNLESS OTHERWISE SPECIFIED

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

QTY.	DESCRIPTION	PART NO.	ITEM NO.

PARTS LIST

DRN. J. Fleming	DATE 3-21-69	digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS
CHK'D.	DATE 4/5/69	
ENG.	DATE 4/2/69	
PROJ. ENG.	DATE 4/2/69	
PROD.	DATE 4/11/69	

NEXT HIGHER ASSY: D-UA-PDP12-0-0

SCALE 1/1

SHEET 1 OF 2

TITLE: FAN HOUSING ASSY

SIZE	CODE	NUMBER	REV.
D	AD	7005983-0-0	D

DIST.

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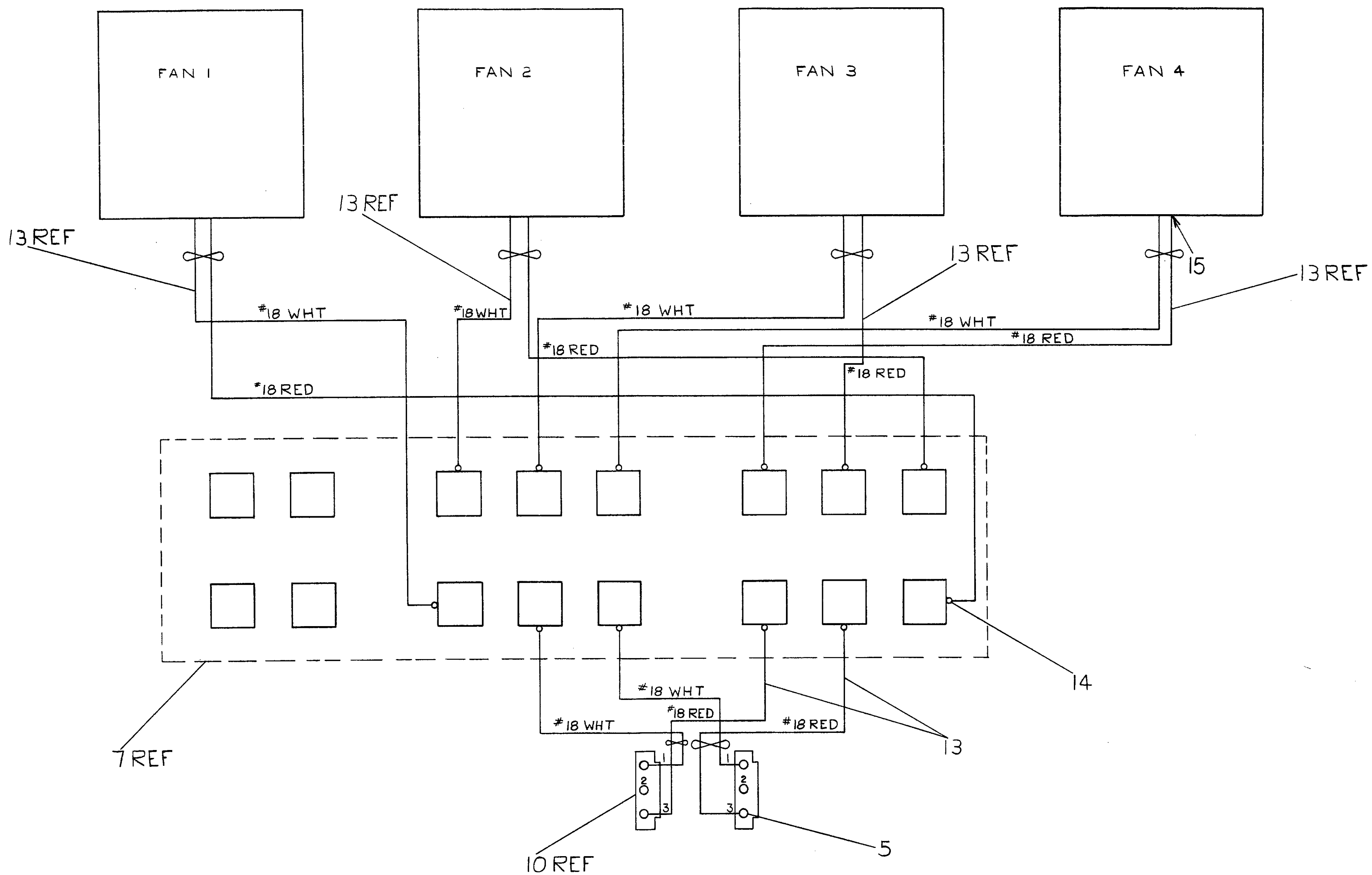

WIRING DIAGRAM

FIRST USED ON OPTION/MODEL	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. J. Fleming DATE 3-21-69
CHK'D Ken Russ DATE 4/2/69
ENG. DATE
PROJ. ENG. DATE 4/9/69
PROD. W Call DATE 4/1/69
NEXT HIGHER ASSY

digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS

TITLE FAN HOUSING ASSY

SIZE D CODE AD NUMBER 7005983-0-0 REV. D

SCALE NONE
SHEET 2 OF 2

DEC FORM NO. DRD 100

DIGITAL EQUIPMENT CORPORATION
MAYNARD, MASSACHUSETTS

PARTS LIST

MADE BY J. FLEMING	CHECKED K. RUSS	SECTION 1	
DATE 3/21/69	DATE 4/2/69		
ENG [illegible signature]	PROD [illegible signature]	ISSUED SECT. 1	
DATE [illegible]	DATE 4/11/69		

ITEM NO.	DWG NO./PART NO.	DESCRIPTION	QUANTITY/VARIATION
1	E-IA-7407254-0-0	CHASSIS, FAN HOUSING	1
2	D-MD-7406948-0-0	COVER, FAN HOUSING	1
3	1209942 or 1209942-1	FA[illegible]	4
4	9006022-1	SCR PHL HD PAN #6-32 X 3/8 SST	4
5	1209379-01	PIN #60619-4 AMP	4
6	9006859	SPACER 1/4 AF X 3/4 X #6-32	2
7	C-IA-7405083-0-0	TERMINAL STRIP	1
8	9006024-1	SCR PHL HD PAN #6-32 X 1/2 SST	16
9	~~9006560~~	~~NUT KEPS #6-32~~	~~16~~
10	1209350-03	HOUSING SOCKET MATE-N-LOK	2
11	9006021-1	SCR PHL HD PAN #6-32 X 5/16	3
12	9006633	WASH INT TOOTH #6	7
13	9107430-29	WIRE #18 AWG STRD TWP (RED & WHT)	A/R
14	9006997	CONN SLDS #42025-1 AMP	12
15	9107305	TUBING SHRINKABLE #14 X 9/16 LG RED	8
16	A-DC-7406899-0-0	FAN DECALS	A/R
17	9006121	SCR, SELFTAPPING 8-32 x 3/8 LG	16
18	9008202	FAN CLIP	16
19	9007031	TIE WRAP SST-1B PANDUIT	5

TITLE FAN HOUSING ASSY	ASSY NO. D-AD-7005983-0-0	SIZE A	CODE PL	NUMBER 7005983-0-0	REV. D	ECO NO. 12-00074
	SHEET 1 OF 1	DIST. 6				

DEC FORM NO.
DRA 110

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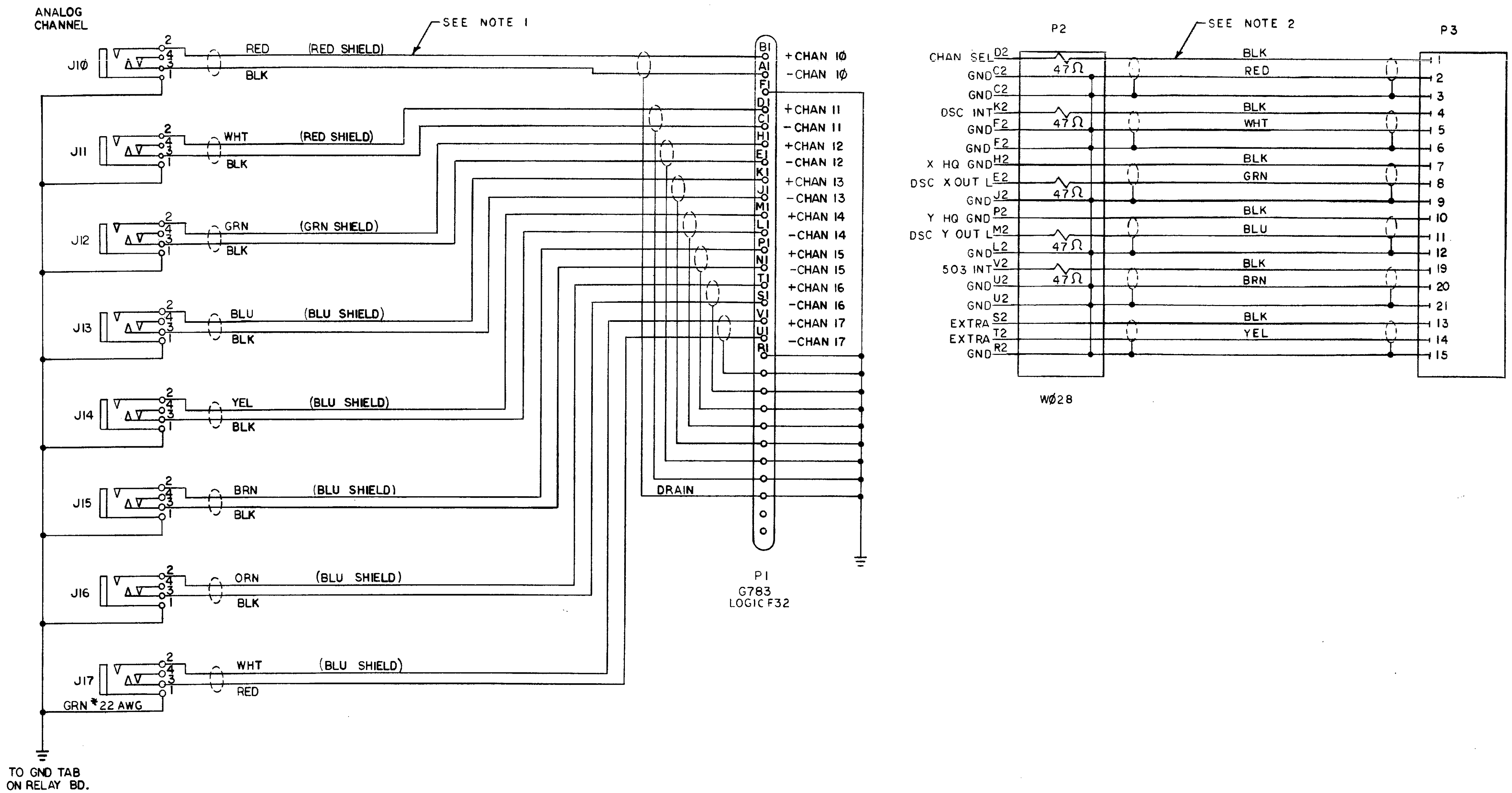
NOTES:
1. WIRE IS BELDEN CABLE #8774
2. WIRE IS BELDEN CABLE #8778



P2	W028 CABLE ASSY.	7007005-7E-0
P3	CONN BLU RIBBON #26-4401-24P	1209265
P1	G783 CABLE CONN.	G783
J10 THRU J17	JAX #13-B 3 COND SWITCHCRAFT	1203562
REF. DESIGNATION	DESCRIPTION	PART NO.

PARTS LIST

TITLE RELAY PANEL PDP 12

digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS

SIZE D CODE CS NUMBER 7005963-0-1 REV. A

REVISIONS REV A ECO 0062

DRN DATE 8/13/69
CHKD DATE 8-14-69
ENG. DATE 8-18-69
PROD. DATE 8/18/69

TRANSISTOR & DIODE CONVERSION CHART DEC EIA DEC EIA

PRINTED CIRCUIT REV.

DEC FORM NO. DRD 101

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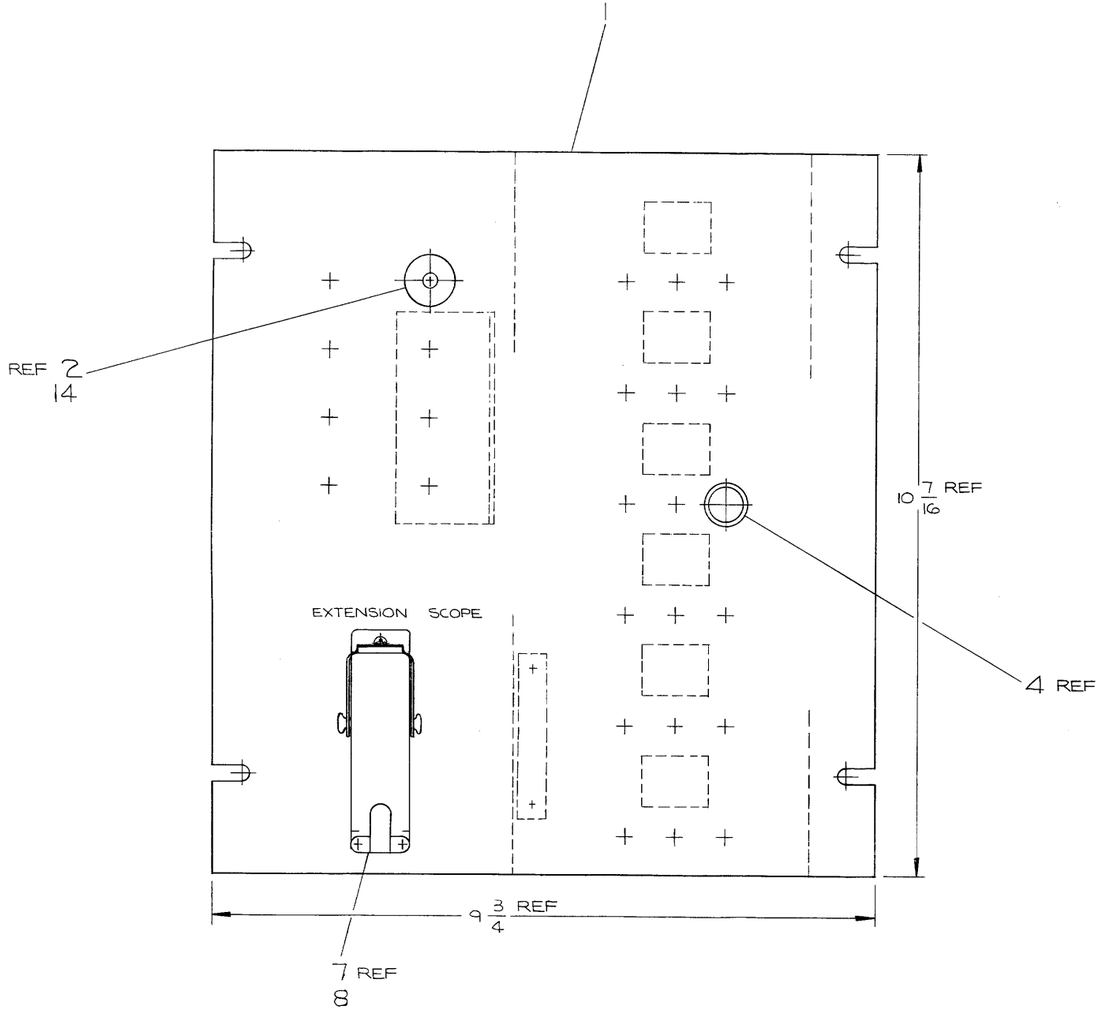
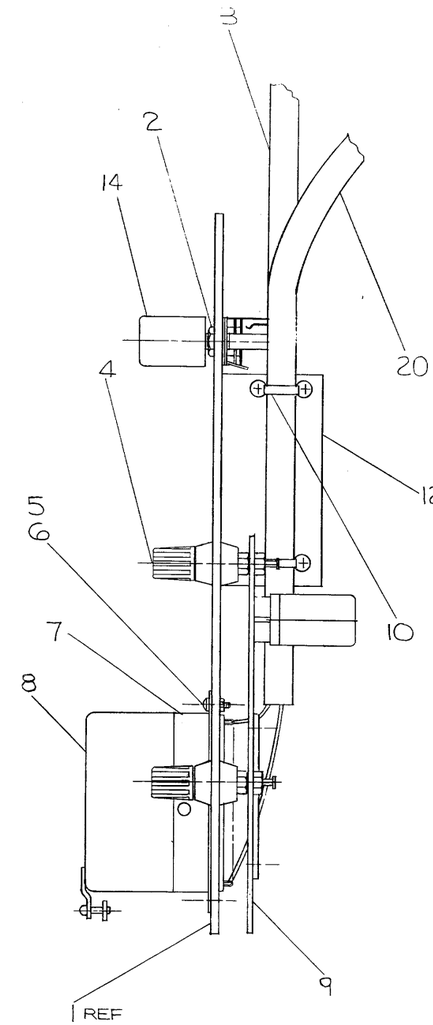
NOTES:
1. ALL WIRES FROM ITEM #3 NOT USED ARE TO BE CUT OFF AT CASING.





REVISIONS			
CHK	CHANGE NO.	REV	
[illegible]	DRI2-00001	A	
GALE	12-00026	B	
L. GALE	12-00062	C	
G. BUDIANSKY			

FIRST USED ON OPTION/MODEL	QTY.	DESCRIPTION	PART NO.	ITEM NO.
PDP12		PARTS LIST		

UNLESS OTHERWISE SPECIFIED
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.	[illegible]	DATE 11-21-68
CHK'D.	L. Russ	DATE 11-22-68
ENG.	[illegible]	DATE 3-3-69
PROJ. ENG.	[illegible]	DATE 3-3-69
PROD.	[illegible]	DATE 3/3/69

NEXT HIGHER ASSY A-ML-DRI2-Ø

SCALE —//—

SHEET 1 OF 2

digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS

TITLE
RELAY PANEL ASSY (DRI2)

SIZE	CODE	NUMBER	REV
D	AD	7005963-0-0	C

DIST. C

DEC FORM DRD 100

SIZE D CODE AD NUMBER 7005963-0-0 REV C

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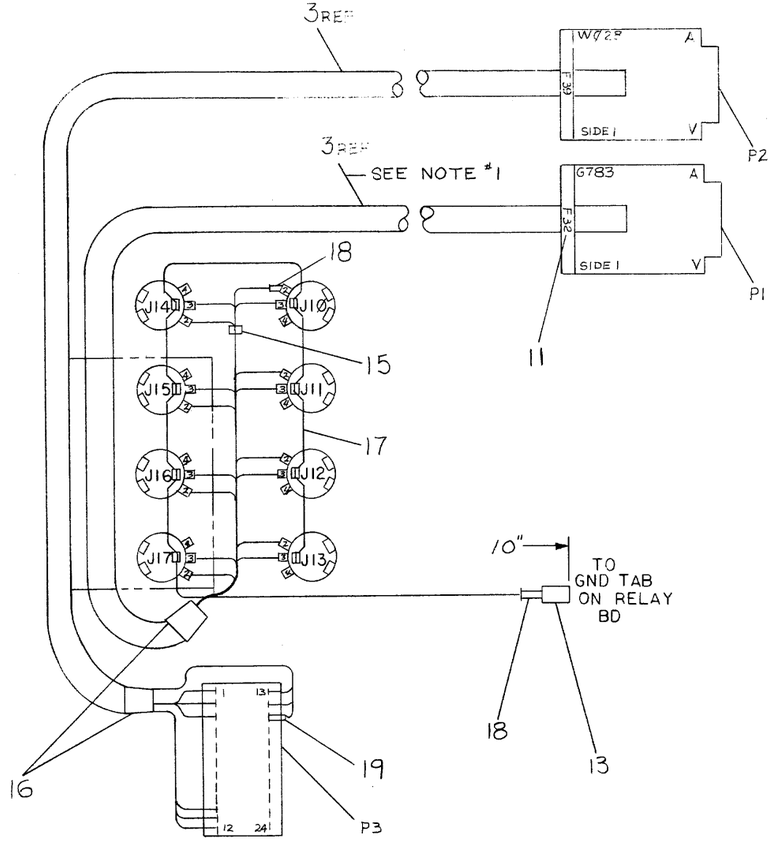

WIRING DIAGRAM
VIEW LOOKING AT REAR OF PANEL

WIRE TABLE

ITEM NO	AWG	COLOR	FROM	TO	REMARKS	SIGNAL
3	22	BLK	P1-A1	J10-2	RED SHIELD PAIR#1	-CHAN 10
		RED	P1-B1	J10-3		+CHAN 10
		DRAIN	GND	OPEN		
		BLK	P1-C1	J11-2	RED SHIELD PAIR#2	-CHAN 11
		WHT	P1-D1	J11-3		+CHAN 11
		DRAIN	GND	OPEN		
		BLK	P1-E1	J12-2	GRN SHIELD PAIR#3	-CHAN 12
		GRN	P1-H1	J12-3		+CHAN 12
		DRAIN	GND	OPEN		
		BLK	P1-J1	J13-2	BLU SHIELD PAIR#4	-CHAN 13
		BLU	P1-K1	J13-3		+CHAN 13
		DRAIN	GND	OPEN		
		BLK	P1-L1	J14-2	BLU SHIELD PAIR#5	-CHAN 14
		YEL	P1-M1	J14-3		+CHAN 14
		DRAIN	GND	OPEN		
		BLK	P1-N1	J15-2	BLU SHIELD PAIR#6	-CHAN 15
		BRN	P1-P1	J15-3		+CHAN 15
		DRAIN	GND	OPEN		
		BLK	P1-S1	J16-2	BLU SHIELD PAIR#7	-CHAN 16
		ORN	P1-T1	J16-3		+CHAN 16
		DRAIN	GND	OPEN		
		RED	P1-U1	J17-2	BLU SHIELD PAIR#8	-CHAN 17
		WHT	P1-V1	J17-3		+CHAN 17
3	22	DRAIN	GND	OPEN		
17	22	GRN	J17-1	J16-1		SYS GND
			J16-1	J15-1		
			J15-1	J14-1		
			J14-1	J10-1		
			J10-1	J11-1		
			J11-1	J12-1		
			J12-1	J13-1		
17	22	GRN	J17-1	GND TAB		SYS GND
3	22	BLK	P2-D2*	P3-1	PAIR#1	CHAN SEL
		RED	GND	P3-2		GND
		DRAIN	GND	P3-3		SHIELD
		BLK	P2-K2*	P3-4	PAIR#2	DSC INT
		WHT	GND	P3-5		GND
		DRAIN	GND	P3-6		SHIELD
		BLK	P2-H2	P3-7	PAIR# 3	X HQ GND
		GRN	P2-E2*	P3-8		DSC X OUT L
		DRAIN	GND	P3-9		SHIELD
		BLK	P2-P2	P3-10	PAIR#4	Y HQ GND
		BLU	P2-M2*	P3-11		DSC Y OUTL
		DRAIN	GND	P3-12		SHIELD
		BLK	P2-S2	P3-13	PAIR#5	EXTRA
		YEL	P2-T2	P3-14		EXTRA
		DRAIN	GND	P3-15		SHIELD
				P3-16	NOT USED	
				P3-17		
				P3-18		
		BLK	P2-V2*	P3-19	PAIR#6	503 INT
		BRN	GND	P3-20		GND
		DRAIN	GND	P3-21		SHIELD
				P3-22		
				P3-23	NOT USED	
3	22			P3-24		

* THROUGH 47Ω RESISTOR

REVISIONS

REV.	CHANGE NO.	CHK

FIRST USED ON OPTION/MODEL

UNLESS OTHERWISE SPECIFIED

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

QTY.	DESCRIPTION	PART NO.	ITEM NO.

PARTS LIST

DRN.		DATE 11/22/65
CHK'D.		DATE 11/24/65
ENG.		DATE
PROJ. ENG.		DATE
PROD.		DATE

NEXT HIGHER ASS'Y

SCALE NONE

SHEET 2 OF 2

digital EQUIPMENT CORPORATION
MAYNARD, MASSACHUSETTS

TITLE
RELAY PANEL ASS'Y (DR12)

SIZE	CODE	NUMBER	REV
D	AD	7005963-0-0	C

DIST.

DEC FORM NO. ORD 100

SIZE D CODE AD NUMBER 7005963-0-0 REV C

DIGITAL EQUIPMENT CORPORATION
MAYNARD, MASSACHUSETTS

PARTS LIST

MADE BY R. COOK	CHECKED K. RUSS	SECTION 1
DATE 10/8/68	DATE 11/11/68	
ENG L. Gale DATE 3/3/69	PROD A. Cale DATE 3/3/69	ISSUED SECT. 1

ITEM NO.	DWG NO. / PART NO.	DESCRIPTION	QUANTITY / VARIATION
1	D-IA-7406846-0-0	PANEL RELAY	1
2	1203562	JAX #13-B 3 COND SWITCH CRAFT	8
3	C-IA-7006028-1-0	CABLE ASSY G7S3	1
4	1209352-02	BINDER POST #DF31 WTC SUPERIOR ELEC.	18
5	9006010-1	SCR PHL HD PAN #4-40 x 5/16 LG	2
6	9006557	NUT KEPS #4-40	2
7	1209265	CONN BLU RIBBON #26-4401-24P AMP	1
8	1209277	CONN BLU RIBBON #26-4501-24S AMP	1
9	C-AD-7006047-0-0	RELAY BD. ASSY	1
10	9007032	TIE WRAP #SST-2-B PANDUIT	2
11	A-DC-7407193-0-0	LOGIC DECALS	A/R
12	B-MD-7406901-0-0	CABLE BRACKET	1
13	9006997	FASTON TAB #42025-1	1
14	1209430	PHONE PLUG #90 SWITCH CRAFT	8
15	9007031	TIE WRAP #SST-1-B PANDUIT	A/R
16	9107252	TUBING SHRINKABLE WHT 3/8 DIA	A/R
17	9107350-6	WIRE #22 AWG STRD TEF/INS (GRN)	A/R
18	9107305	TUBING SHRINKABLE RED 3/16 DIA	A/R
19	9107255	TUBING SHRINKABLE WHT 1/8 DIA	A/R
20	C-IA-7007005-7E-0	CABLE ASSY W028	1

TITLE	ASSY NO.	SIZE	CODE	NUMBER	REV.	ECO NO.
RELAY PANEL ASSY (DR12)	D-AD-7005963-0-0	A	PL	7005963-0-0	C	12-00082
	SHEET 1 OF 1	DIST. 6				

DEC FORM NO.
DRA 110

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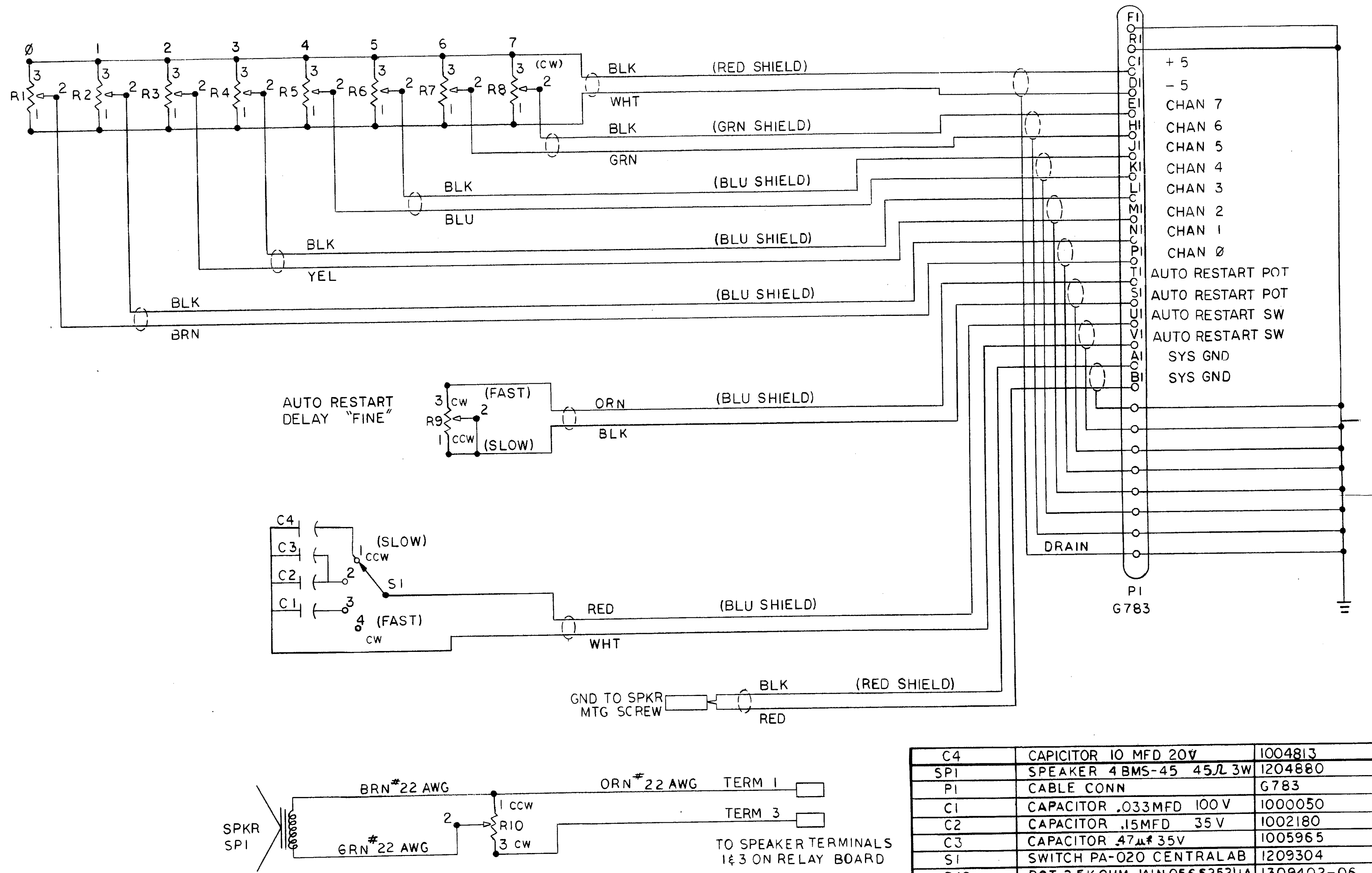
ANALOG CHANNELS Ø THRU 7



REF DESIG	DESCRIPTION	PART NO
C4	CAPICITOR 10 MFD 20V	1004813
SP1	SPEAKER 4BMS-45 45Ω 3W	1204880
P1	CABLE CONN	G783
C1	CAPACITOR .033MFD 100V	1000050
C2	CAPACITOR .15MFD 35V	1002180
C3	CAPACITOR .47µf 35V	1005965
S1	SWITCH PA-020 CENTRALAB	1209304
R10	POT 2.5K OHM JAIN 056S252UA	1309402-06
R9	POT 25K JAIN 056S253 UA	1309402-09
R1 THRU R8	POT 5K OHM 10 TURN DUNCAN	1309532-6

PARTS LIST

NOTE: WIRE IS BELDEN CABLE #8774 EXCEPT AS NOTED

REVISIONS		
REV.	CHG NO.	CHK
A	12-00054	

DRN: F.C. Sousa DATE 10 JUN 69
CHK'D: R. Russ DATE 25 JUN 69
ENG: J. Gale DATE 8/11/69
PROD: D. Call DATE 8/12/69

TRANSISTOR & DIODE CONVERSION CHART

DEC	EIA	DEC	EIA

digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS

TITLE ANALOG PANEL PDP-12

SIZE C CODE CS NUMBER 7005964-0-1 REV. A

PRINTED CIRCUIT REV.

DEC FORM NO. DRC 102

PINK

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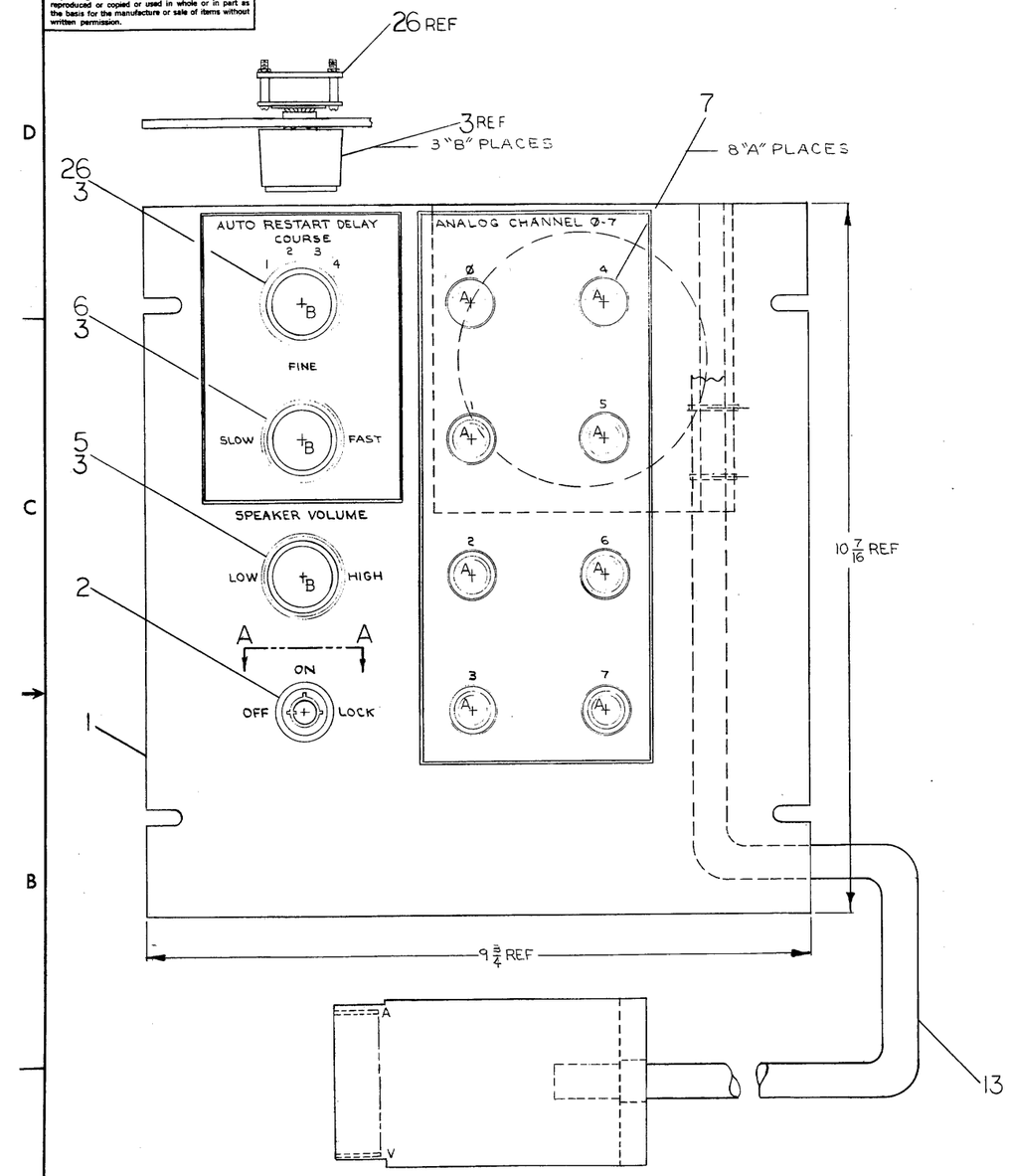
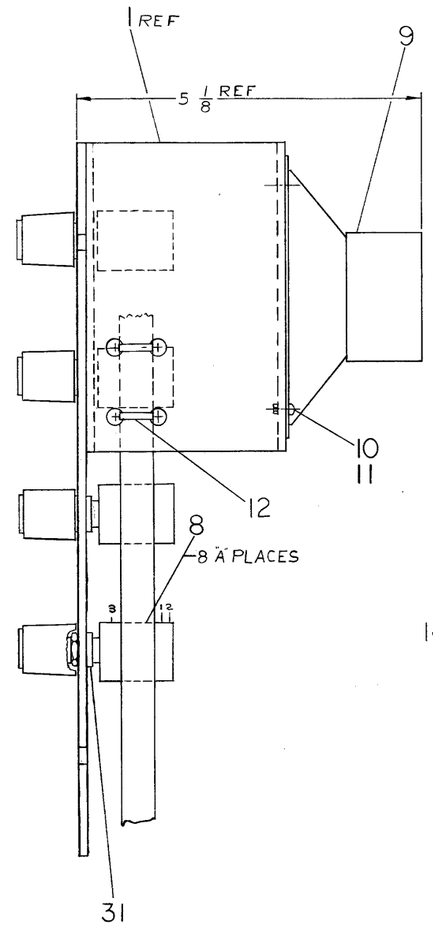
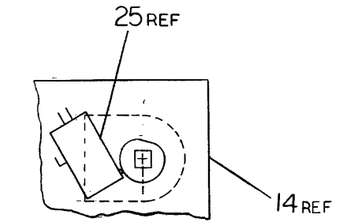


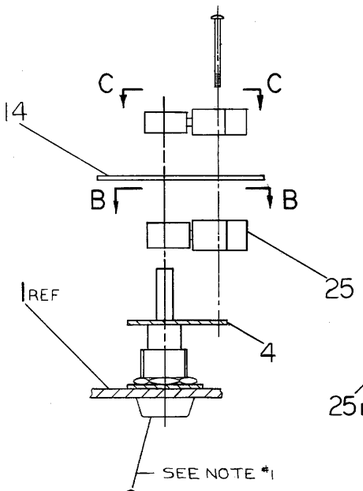


NOTES:

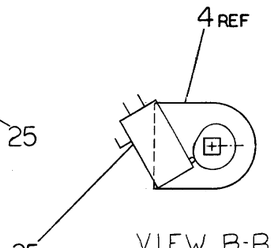
1. FIRST ASSEMBLE LOCK BRKT AGAINST ITEM #1 THEN ASSEMBLE FIRST CAM IN POSITION SHOWN IN VIEW B-B. SLIDE ITEM #14 AGAINST 1ST CAM THEN ASSEMBLE REMAINING CAM & MICROSWITCH AGAINST ITEM #14 AS SHOWN IN VIEW C-C.
2. WIRES FROM ITEM #13, NOT USED ARE TO BE CUT OFF AT CASING.
3. ATTACH GND LUG (ITEM #32) & WASHER (ITEM #34) TO SPEAKER MTG. SCREW



VIEW C-C
SHOWING POSITION OF SECOND CAM



SECTION A-A
(SHOWING ASSY OF LOCK)



VIEW B-B
SHOWING POSITION OF FIRST CAM

REVISIONS		
CHK	CHANGE NO.	REV.
[illegible]	12-00011	A
L. GALE 5/21/68	12-00054	B
T. Quinn 2-5-70		
GALE 2/16/70	12-00067	C
L. GALE 4-7-70		

DEC FORM NO. DRD 100

FIRST USED ON OPTION/MODEL: PDP 12	QTY.	DESCRIPTION	PART NO. / ITEM NO.
		PARTS LIST	

UNLESS OTHERWISE SPECIFIED
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. Stan Pottorff	DATE 10/2/68
CHK'D. K. Russ	DATE 2/25/69
ENG. [illegible]	DATE 3-3-69
PROJ. ENG. [illegible]	DATE 3-3-69
PROD. W Cook	DATE 3/3/69

NEXT HIGHER ASSY: D-UA-PDP12-Ø-Ø
SCALE: NONE
SHEET 1 OF 2

digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS

TITLE: ANALOG PANEL ASSY

SIZE D | CODE AD | NUMBER 7005964-0-0 | REV. C
DIST. G

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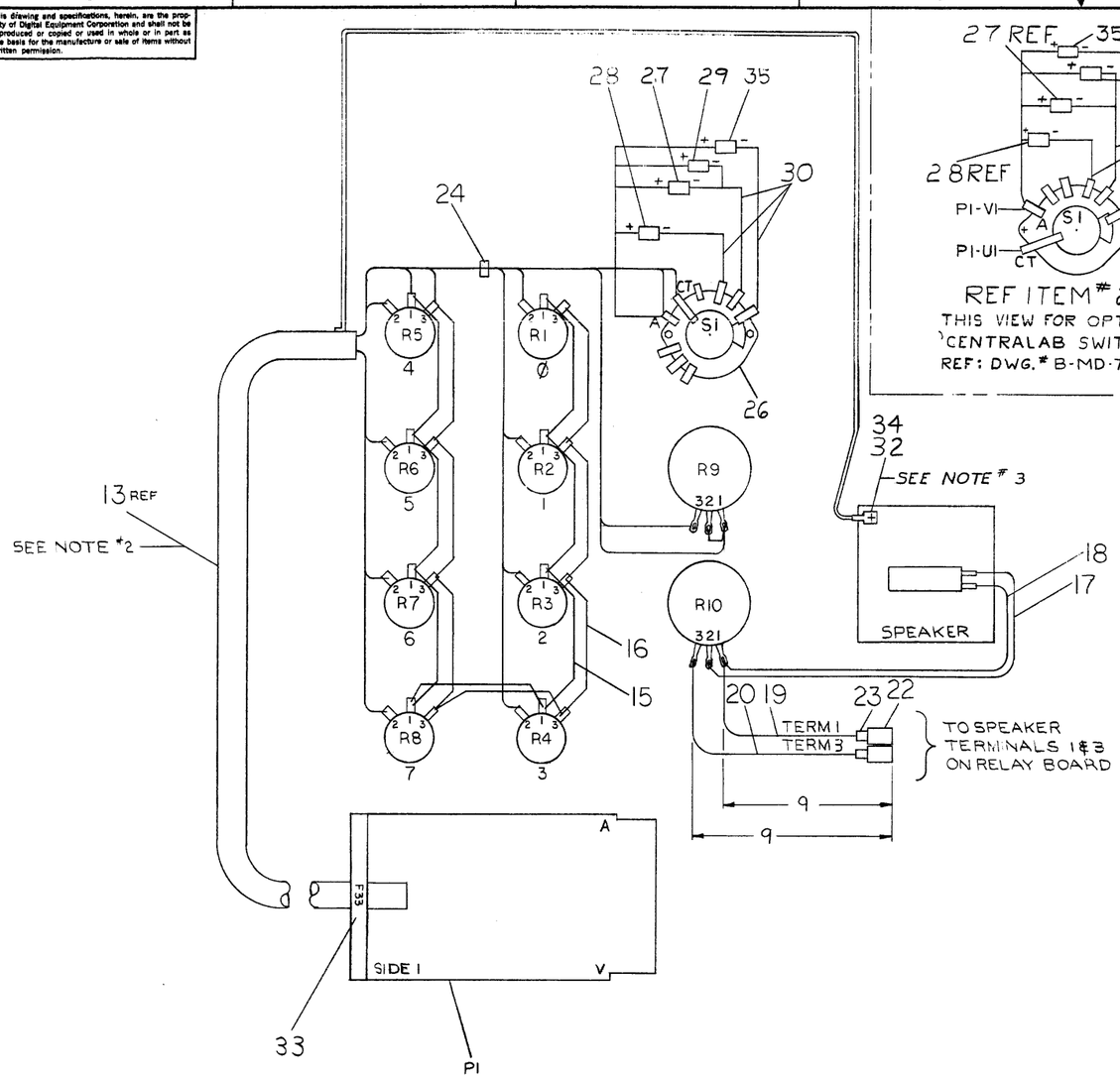

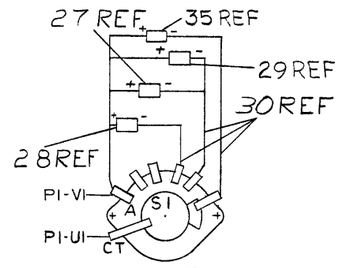

REF ITEM # 26
THIS VIEW FOR OPTIONAL REWORKED CENTRALAB SWITCH ONLY
REF: DWG.* B-MD-7407195-0-0

WIRE TABLE

ITEM NO	AWG	COLOR	FROM	TO	REMARKS	SIGNAL
13	22	BRN	P1-P1	R1-2	BLU SHIELD	CHAN Ø
↑	↑	BLK	P1-N1	R2-2	PAIR # 6	CHAN 1
		YEL	P1-M1	R3-2	BLU SHIELD	CHAN 2
		BLK	P1-L1	R4-2	PAIR # 5	CHAN 3
		BLU	P1-K1	R5-2	BLU SHIELD	CHAN 4
		BLK	P1-J1	R6-2	PAIR # 4	CHAN 5
		GRN	P1-H1	R7-2	GRN SHIELD	CHAN 6
		BLK	P1-E1	R8-2	PAIR # 3	CHAN 7
		WHT	P1-D1	R5-1	RED SHIELD	-5
		BLK	P1-C1	R5-3	PAIR # 2	+5
		ORN	P1-T1	R9-3	BLU SHIELD	AUTO RESTART POT
		BLK	P1-S1	R9-1	PAIR # 7	AUTO RESTART POT
↓		RED	P1-U1	S1-CT	BLU SHIELD	AUTO RESTART SW
13		WHT	P1-V1	S1-A	PAIR # 8	AUTO RESTART SW
15		WHT	R1-1	R2-1		-5
↑		↑	R2-1	R3-1		-5
			R3-1	R4-1		-5
			R4-1	R8-1		-5
			R8-1	R7-1		-5
		↓	R7-1	R6-1		-5
15		WHT	R6-1	R5-1		-5
16		BLK	R1-3	R2-3		+5
↑		↑	R2-3	R3-3		+5
			R3-3	R4-3		+5
			R4-3	R8-3		+5
			R8-3	R7-3		+5
			R7-3	R6-3		+5
		↓	R6-3	R5-3		+5
16		BLK	R9-2	R9-1		AUTO RESART POT
17		GRN	SPKR	R10-2		SPKR OUTPUT
18		BRN	SPKR	R10-1		SPKR OUTPUT
19	↓	ORN	R10-1	TERM 1		SPKR AMP OUTPUT TERM 1
20	22	V10	R10-3	TERM 3		SPKR AMP OUTPUT TERM 3
13	22	BLK	P1-A1	SPKRGND	RED SHIELD	SYS GND
13	22	RED	P1-B1	SPKRGND	PAIR # 1	SYS GND

REVISIONS	REV.	CHANGE NO.	CHK

FIRST USED ON OPTION/MODEL

QTY.	DESCRIPTION	PART NO.	ITEM NO.
	PARTS LIST		

UNLESS OTHERWISE SPECIFIED
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	Stan Pitras	DATE 10/15/68
CHK'D	K. Russ	DATE 2/25/69
ENG.	[illegible]	DATE 5-3-69
PROJ. ENG.	[illegible]	DATE 5-3-69
PROD.	W. Call	DATE 2/5/69

NEXT HIGHER ASSY

SCALE NONE
SHEET 2 OF 2

digital EQUIPMENT CORPORATION
MAYNARD, MASSACHUSETTS

TITLE
ANALOG PANEL ASSY

SIZE	CODE	NUMBER	REV.
D	AD	7005964-0-0	C

DIST.

DEC FORM NO. DRD 100

SIZE D AD 7005964-0-0 REV C

DIGITAL EQUIPMENT CORPORATION
MAYNARD, MASSACHUSETTS

PARTS LIST

MADE BY S. POITRAS	CHECKED K. RUSS	SECTION 1
DATE 10/9/68	DATE 11/21/68	
ENG DATE 3-3-69	PROD as Call DATE 3/3/69	ISSUED SECT. 1

ITEM NO.	DWG NO./PART NO.	DESCRIPTION	QUANTITY/VARIATION
1	D-IA-7406845-0-0	ANALOG PANEL	1
2	1209236-00	SWITCH EXA-112-2 CHICAGO LOCK CO.(BARREL)	1
3	1209244	KNOB, BUCKEYE SS-125L-2	3
4	1209236-01	BRACKET CHICAGO LOCK	1
5	1309402-06	POT 2.5K OHM #JAIN056S252UA A-B	1
6	1309402-09	POT 25K OHM #JAIN056S253UA A-B	1
7	1209245	KNOB, BUCKEYE SSN 70-2	8
8	1309532-6	POT. 5K OHM 10 TURN DUNCAN	8
9	1204880	SPEAKER 4 BMS-45, 45 OHM 3W OXFORD	1
10	9006022-1	SCR PHL PAN HD #6-32 x 3/8 LG	4
11	9006560	KEPS NUT #6-32	4
12	9007032	TIEWRAP #SST-2-B PANDUIT	2
13	C-IA-7006028-1-0	CABLE ASSEMBLY (G783)	1
14	B-MD-7407049-0-0	INSULATOR,SWITCH	1
15	9107350-10	WIRE #22 AWG STRD TEF INS (WHT)	A/R
16	9107350-1	WIRE #22 AWG STRD TEF INS (BLK)	A/R
17	9107350-6	WIRE #22 AWG STRD TEF INS (GRN)	A/R
18	9107350-2	WIRE #22 AWG STRD TEF INS (BRN)	A/R
19	9107350-4	WIRE #22 AWG STRD TEF INS (ORN)	A/R
20	9107350-8	WIRE #22 AWG STRD TEF INS (VIO)	A/R
~~21~~	~~9107252~~	~~TUBING SHRINKABLE WHT 3/8~~	~~A/R~~
22	9006997	FASTON TAB #42025-1	2

TITLE	ASSY NO.	SIZE	CODE	NUMBER	REV.	ECO NO.
ANALOG PANEL ASSY	D-AD-7005964-0-0	A	PL	7005964-0-0	C	12-00067
	SHEET 1 OF 2	DIST. 6				

DEC FORM NO.
DRA 110

DIGITAL EQUIPMENT CORPORATION
MAYNARD, MASSACHUSETTS

PARTS LIST

MADE BY S. POITRAS DATE 10/9/68	CHECKED K. RUSS DATE 11/21/68	SECTION 1
ENG DATE L. Jack 3-3-69	PROD W Cable DATE 3/3/69	ISSUED SECT. 1

ITEM NO.	DWG NO./PART NO.	DESCRIPTION	QUANTITY/VARIATION
23	~~9107255~~	~~TUBING WIP SHRINKABLE 1/8 O.D.~~	A/R
24	9007031	TY. WRAP #SST-1-B PANDUIT	A/R
25	1209355	MICRO SW #6831 "MICRO"	2
** 26	B-MD-7407195-0-0	SWITCH CENTRALAB (REWORK)	1
26	1209394	SWITCH CENTRALAB PA-020	1
27	1005965	CAPACITOR .47 uf 35V 10%	1
28	1000050	CAPACITOP .033 MFD 100V 10%	1
29	1002180	CAPACITOR .15 MFD 35V 10%	1
30	9107256-02	TUBING #22 AWG TEF (BRN)	A/R
31	9006680	WASHER .401 ID X .812 OD	8
32	9007634	SOLDERLESS CONN #36242	1
33	A-DC-7407193-0-0	LOGIC DECAL	A/R
34	9007649	WASHER EXT TOOTH #6	1
35	1004813	CAPICITOR 10 MFD 20 V 10%	1
**	OPTIONAL SWITCH SEE ASSY DWG.		

TITLE	ASSY NO.	SIZE	CODE	NUMBER	REV.	ECO NO.
ANALOG PANEL ASSY	D-AD-7005964-0-0	A	PL	7005964-0-0	C	
	SHEET 2 OF 2	DIST. 6				

DEC FORM NO.
DRA 110