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

	Page
PDP-12 SYSTEM DRAWINGS	
Introduction	1
Drawing Nomenclature	1
Size	1
Type	1
Equipment	1
Change Number	1
Drawing Identifier	1
Signal Names	2
Module Identification	2
Logic Symbology	2
Assertion Levels	2
AND, NAND	2
OR, NOR	3
Flip-Flops	3
Redefined Flip-Flops	3
One-Shot Delay	4
Delay Lines	4
Schmitt Trigger	4
Amplifiers	4
Other Functions	5

ILLUSTRATIONS

Figure Number	Art Number	Title	Page
1	12-0181	Drawing Identification Code	1
2	12-0182	AND Gate Symbol, AND Function, and Truth Table	2
3	12-0183	NAND Gate	2
4	12-0184	OR Gate Symbol, OR Function, and Truth Table	3
5	12-0185	NOR Gate	3
6	12-0187	Flip-Flop	3
7	12-0188	"Redefined" Flip-Flop	4
8	12-0189	One-Shot Delay	4
9	12-0190	Delay Line	4
10	12-0191	Schmitt Trigger	4
11	12-0186	Amplifier and Inverters	4

ENGINEERING DRAWINGS

Number	Option	Pages
PDP-12-0	PDP-12 System	7 to 36
EP12-0	PDP-12 Processor	37 to 86
EM12-0	Basic 4K Memory	87 to 102
MC12-0	Memory Extension Control	103 to 109
TC12-0	LINC Tape Control	111 to 141
VC12-0	LINC Scope Control	143 to 151
KE12-0	Arithmetic Operation	153 to 160
XY12-0	Plotter Control	161 to 163
KT12-0	PDP-12 Time Sharing Option	165 to 166
DP12-A	TTY/Dataphone	167 to 170
DP12-B	TTY/Dataphone (EIA Level)	171 to 172
KP12-0	Power Fail/Restart	173 to 174
KW12-A	Real Time Clock	175 to 195
KW12-B	Simple Clock	197 to 198
KW12-C	Simple Clock	199
TC12-F	8 Tape Control	201 to 202
AD12-0	Analog to Digital Converter	203 to 211
AG12-0	A-D Additional Preamps	213 to 216
AM12-0	Expanded Multiplexer	217
724-0-1	Power Supply 724	218
7005983-0-0	Fan Housing Assembly	219 to 221
7005963-0-1	Relay Panel PDP-12	222
7005963-0-0	Relay Panel Assembly (DR12)	223 to 225
7005964-0-1	Analog Panel PDP-12	226
7005964-0-0	Analog Panel Assembly	227 to 230
7006046-0-0	Relay Panel PDP-12	231
7006047-0-0	Relay Board Assembly	232 to 233
TU56-0	TU56	235 to 238

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.

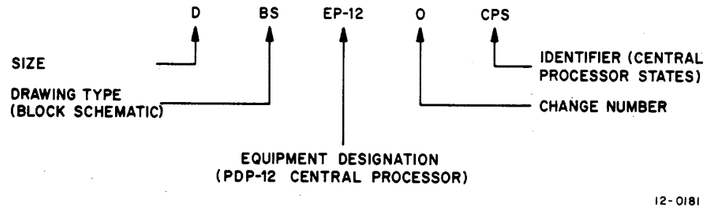


Figure 1 Drawing Identification Code

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.

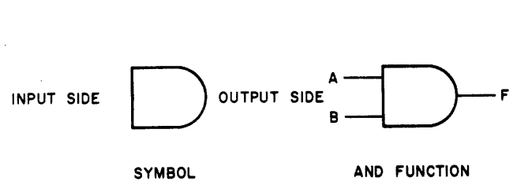
Assertion Levels

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.

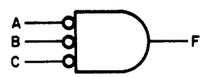


A	B	F
L	L	L
L	H	L
H	L	L
H	H	H

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.



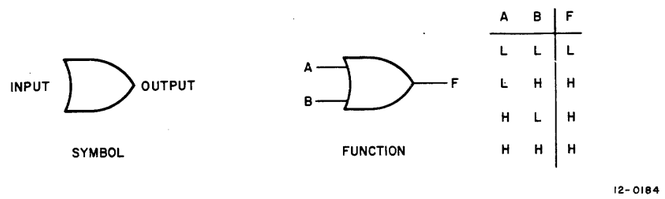
INPUT			OUTPUT
A	B	C	F
L	L	L	H
L	L	H	L
L	H	L	L
L	H	H	L
H	L	L	L
H	L	H	L
H	H	L	L
H	H	H	L

12-0183

Figure 3 NAND Gate

OR, NOR

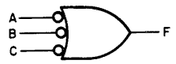
Figure 4 shows the symbol for an OR gate and the general form of a pure OR function. The output of an OR function is HIGH if any or all inputs are HIGH.



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.

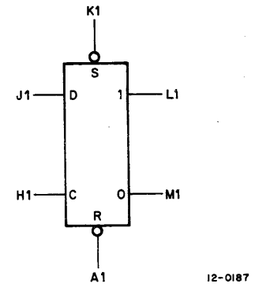


Figure 6 Flip-Flop

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-flop shown 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).

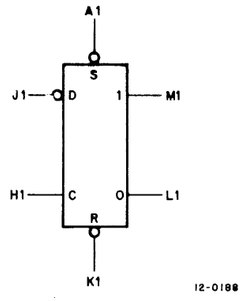


Figure 7 "Redefined" Flip-Flop

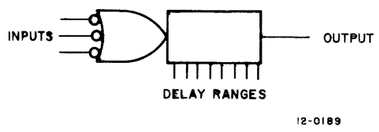


Figure 8 One-Shot Delay

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.

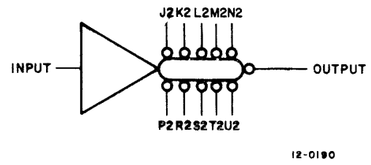


Figure 9 Delay Line

Schmitt Trigger

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

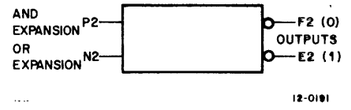


Figure 10 Schmitt Trigger

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.

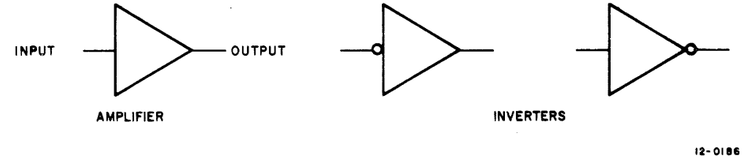


Figure 11 Amplifier and Inverters

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

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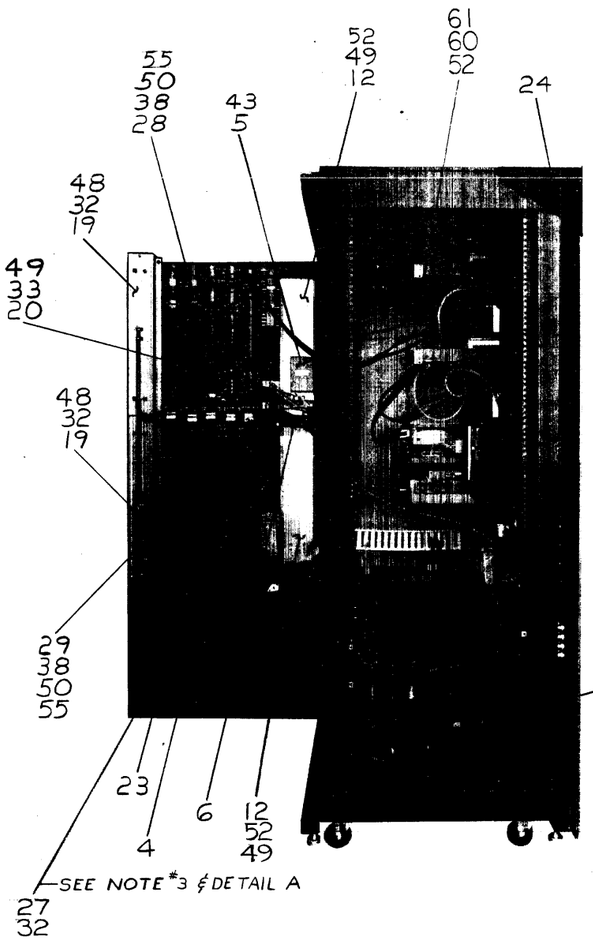
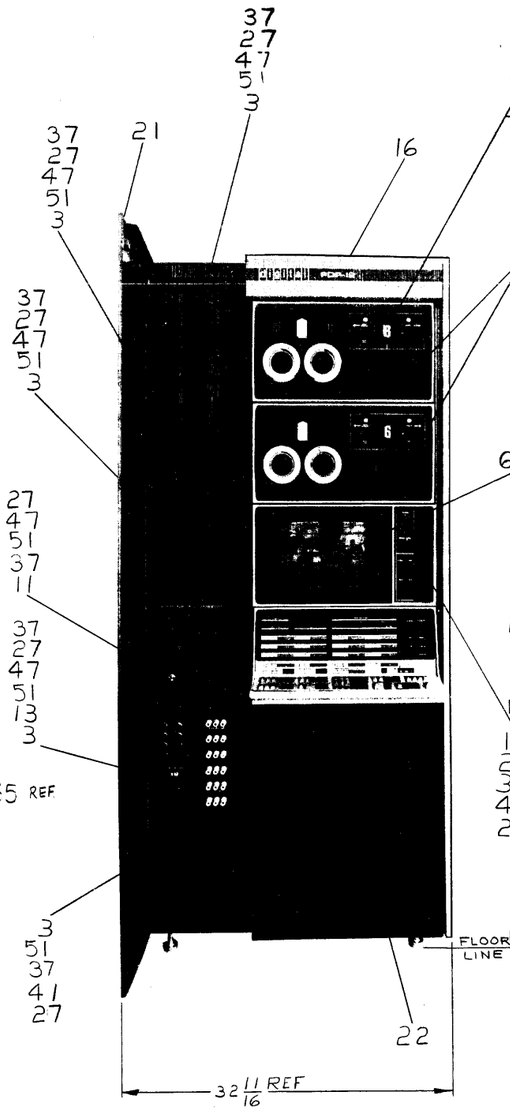
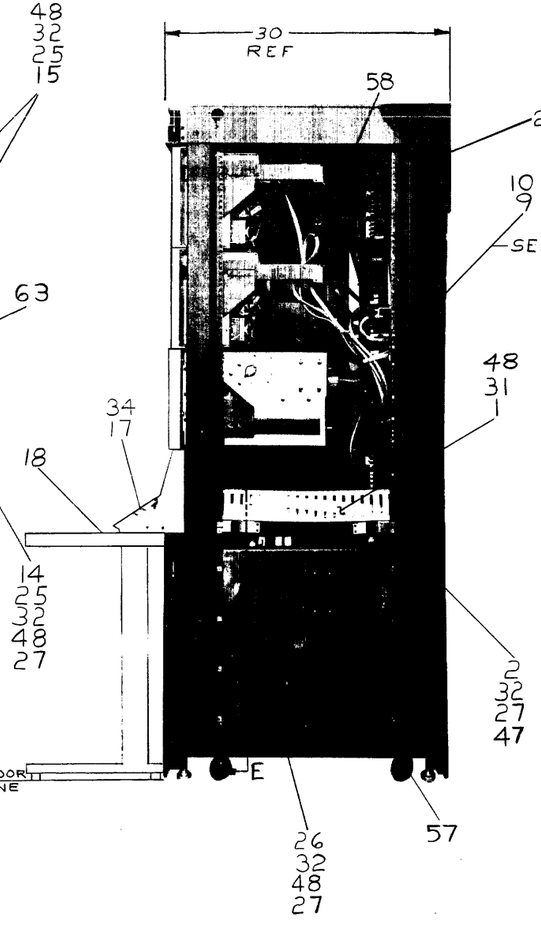






NOTES:
1. FOR DRAWING INDEX LIST DWG. NO. D-DI-PDP12-Ø-1
2. FOR OPTIONAL EQUIPMENT SEE DWG. NO. D-AR-PDP12
3. ITEM #27 & #32 USED 3 PLACES ON PLENUM DOOR ARE FOR SHIPPING PURPOSES ONLY.
4. FOR POWER WIRING & SIGNAL CABLE LOCATIONS SEE DWG. D-IC-PDP12-Ø-3
5. ITEM #35 TO BE USED FOR 240 V SYSTEM ONLY.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

REVISIONS				
REV.	CHANGE NO.			
A	12-00330	L. GALE	10-24-67	
B	12-00040	T. Sullivan	11-21-68	
C	12-00043	T. Quinn	12-2-68	
D	12-00044	T. Quinn	12-30-68	
E	12-00047	L. GALE	1-13-69	
F	12-00057	T. Sullivan	2-24-69	
H	12-00073	GALE	7-9-70	
J	12-00076	R. BERNIER	8-29-70	

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. Flaherty	DATE 5-22-69
CHKD.	T. Quinn	DATE 8-7-69
ENG.	L. Gale	DATE 8-11-69
PROJ. ENG.	L. Gale	DATE 8-11-69
PROD.	J. Call	DATE 8-11-69

NEXT HIGHER ASSY

SCALE NONE
SHEET 1 OF 2

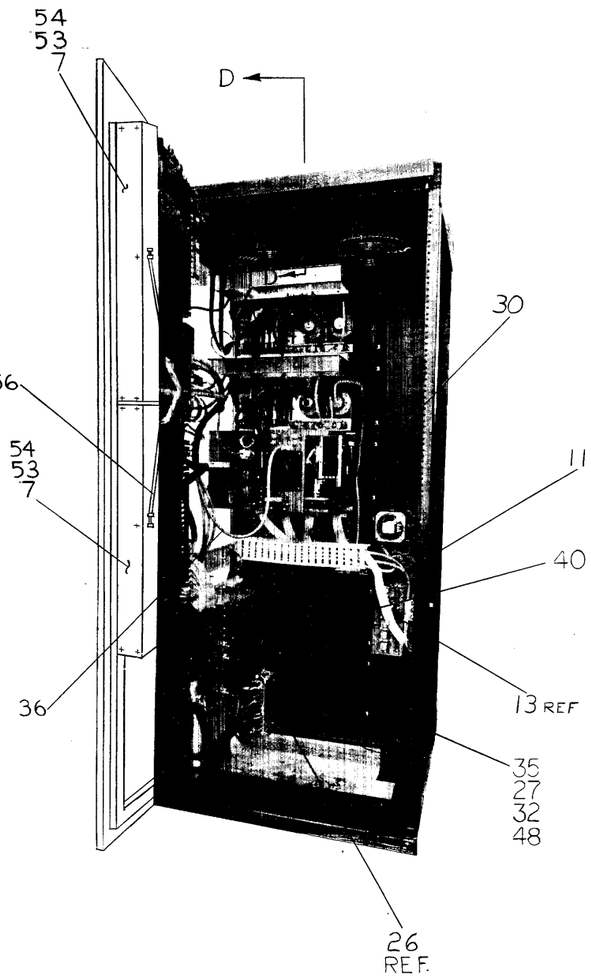
digital EQUIPMENT CORPORATION
MAYNARD, MASSACHUSETTS

TITLE
PDP12
ASSEMBLY

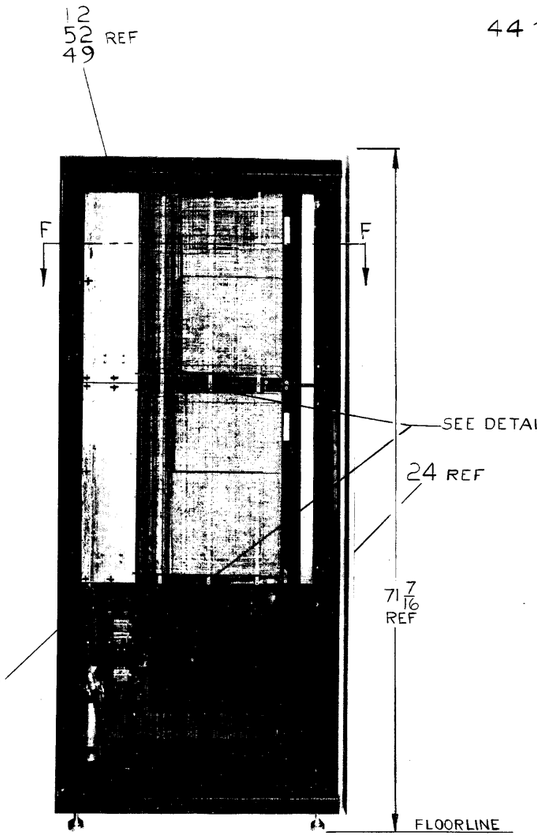
SIZE	CODE	NUMBER	REV.
D	UA	PDP12-Ø-Ø	J

DIST. G

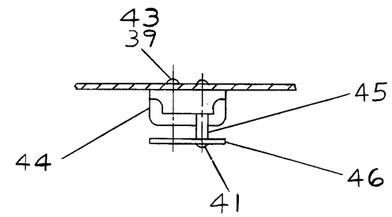
...ing and specifications, herein, are the proc... Equipment Corporation and shall not be ... or copied or used in whole or in part as ... for the manufacture or sale of items without ... permission.



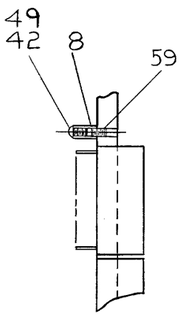
REAR VIEW - DOOR & PLENUM OPEN



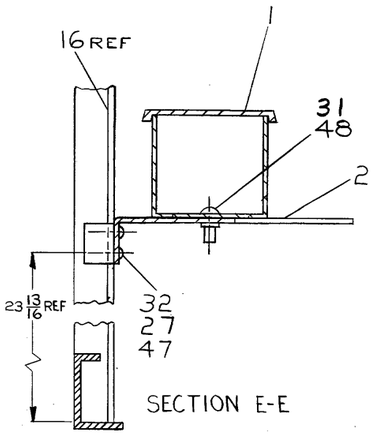
REAR VIEW - DOOR REMOVED



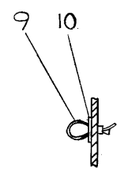
SECTION D-D



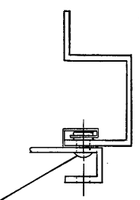
DETAIL C



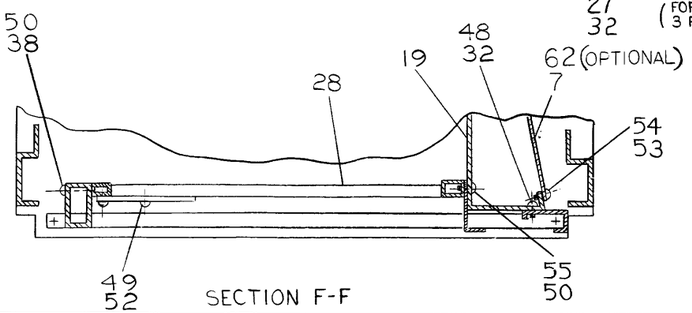
SECTION E-E



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.	Gol	DATE 8/6/69
PROJ. ENG.	Gab	DATE 8/6/69
PROD.	W Coll	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

SIZE	CODE	NUMBER	REV.
D	UA	PDP12 Ø Ø	J

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	ASSY NO.	SIZE	CODE	NUMBER	REV	ECO NO.
PDP 12 ASSEMBLY	D-UA-PDP12-Ø-Ø	A	PL	PDP12-Ø-Ø	J	
	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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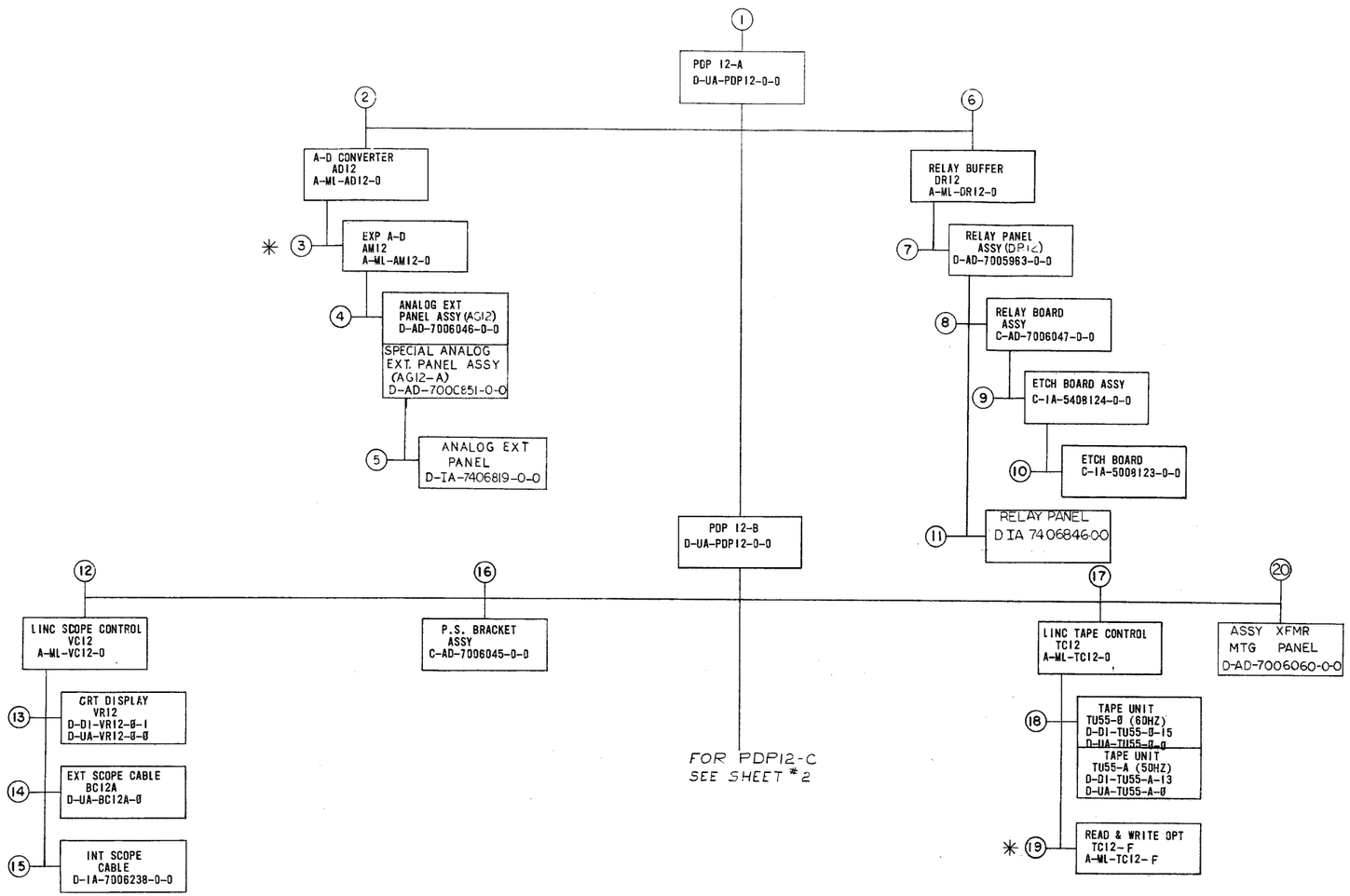
NOTES:
1. * ASTERISK INDICATES OPTIONS AVAILABLE.
2. LETTER DESIGNATION ABOVE BLOCK INDICATES THAT PART IS USED ONLY ON THAT SYSTEM WITH SAME LETTER DESIGNATION.



REVISIONS			
CHK	CHANGE NO.		REV.
	12-00031	D. NEVALA	A
	12-00032	GALE	B
	12-00034	NEVALA	C
	12-00035	GALE	D
	12-00040	NEVALA	E
	12-00044	NEVALA	F
	12-00047	L. GALE	J
	12-00050	GALL	K
	12-00064	R. BERNIER	M
	EM12-00035	GALE	N
	H950-00001	GRAHAM	P
	VR12-00024	BERNIER	R
	12-00083	S. BULIANSKY	S
	12-00088	D. MACKLIN	T

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.	J. T. Gerry	DATE 5-29-69
CHK'D.	R. Evans	DATE 6-6-69
ENG.	Y. Gale	DATE 6/10/69
PROJ. ENG.	Y. Gale	DATE 6/11/69
PROD.	N. Cook	DATE 6/16/69

NEXT HIGHER ASSY: A-ML-PDP12-0
SCALE: NONE
SHEET 1 OF 4

digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS

TITLE: DRAWING INDEX LIST (PDP12)

SIZE D | CODE DI | NUMBER PDP12-0-1 | REV T
DIST.

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

DRN.	DATE 8/11/69
CHK'D.	DATE 8/11/69
ENG.	DATE 8/11/69
PROJ. ENG.	DATE 8/11/69
PROD.	DATE 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

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

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.

FIND NO	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-7406898-0-0			
	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 (ADI2)	A-ML-ADI2-0			
* 3	EPANDED A-D (AMI2)	A-ML-AMI2-0			
* 4	ANALOG EXT PANEL ASSY (AGI2)	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. (AGI2-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 (DRI2)	A-ML-DRI2-0-0			
7	RELAY PANEL ASSY(DRI2)	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-7006128-1-0			
	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 (VCI2)	A-ML-VCI2-0			
13	CRT DISPLAY	D-UA-VRI2-0-0			
	CRT DISPLAY	A-PL-VRI2-0-0			
	DRAWING INDEX LIST	D-DI-VRI2-0-1			
14	EXT SCOPE CABLE (BCI2A)	D-UA-BCI2A-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			
	BRACKET, 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 (TCI2)	A-ML-TCI2-0			

FIND NO	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 TCI2-F	A-ML-TCI2-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-7406288-0-0			
	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	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-7406833-0-0			
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	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 (EMI2)	A-ML-EMI2-0			
56	LOGIC ASSY MEMORY(EMI2)	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

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

		DATE
DRN.	F Conroy	6-11-69
CHK'D.	[illegible]	7/8/69
ENG.	[illegible]	8/11/69
PROJ. ENG.	[illegible]	8/11/69
PROD.	[illegible]	8/11/69

NEXT HIGHER ASSY

digital EQUIPMENT CORPORATION
MAYNARD, MASSACHUSETTS

TITLE: DRAWING INDEX LIST (PDP12)

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

SCALE NONE
SHEET 2 OF 4
DIST.

DEC FORM NO. DRD 100

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

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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-7005876-0-0			
	LOGIC ASSEMBLY (PL)	A-PL-7005976-0-0			
	288 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-7005976O-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 D CODE DI NUMBER PDP12-Ø-1 REV T

DIST.

REVISIONS

REV.	CHANGE NO.	CHK

DEC FORM NO DRD 100

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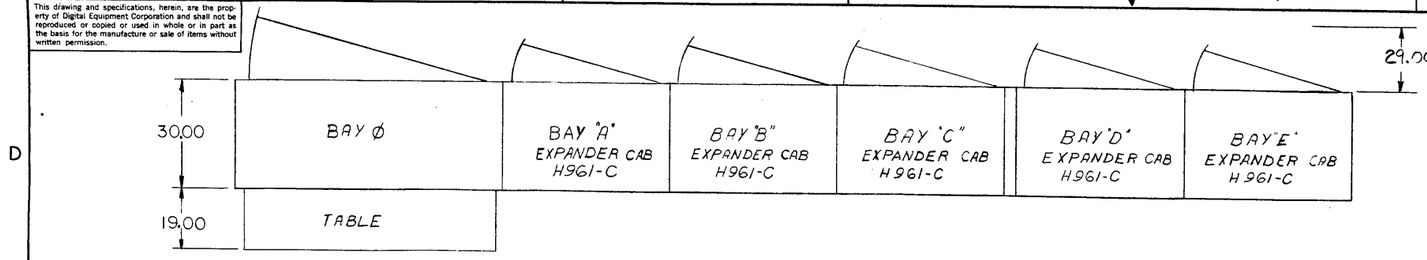
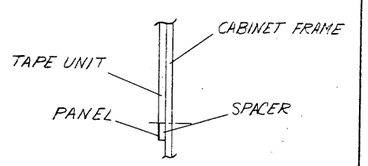
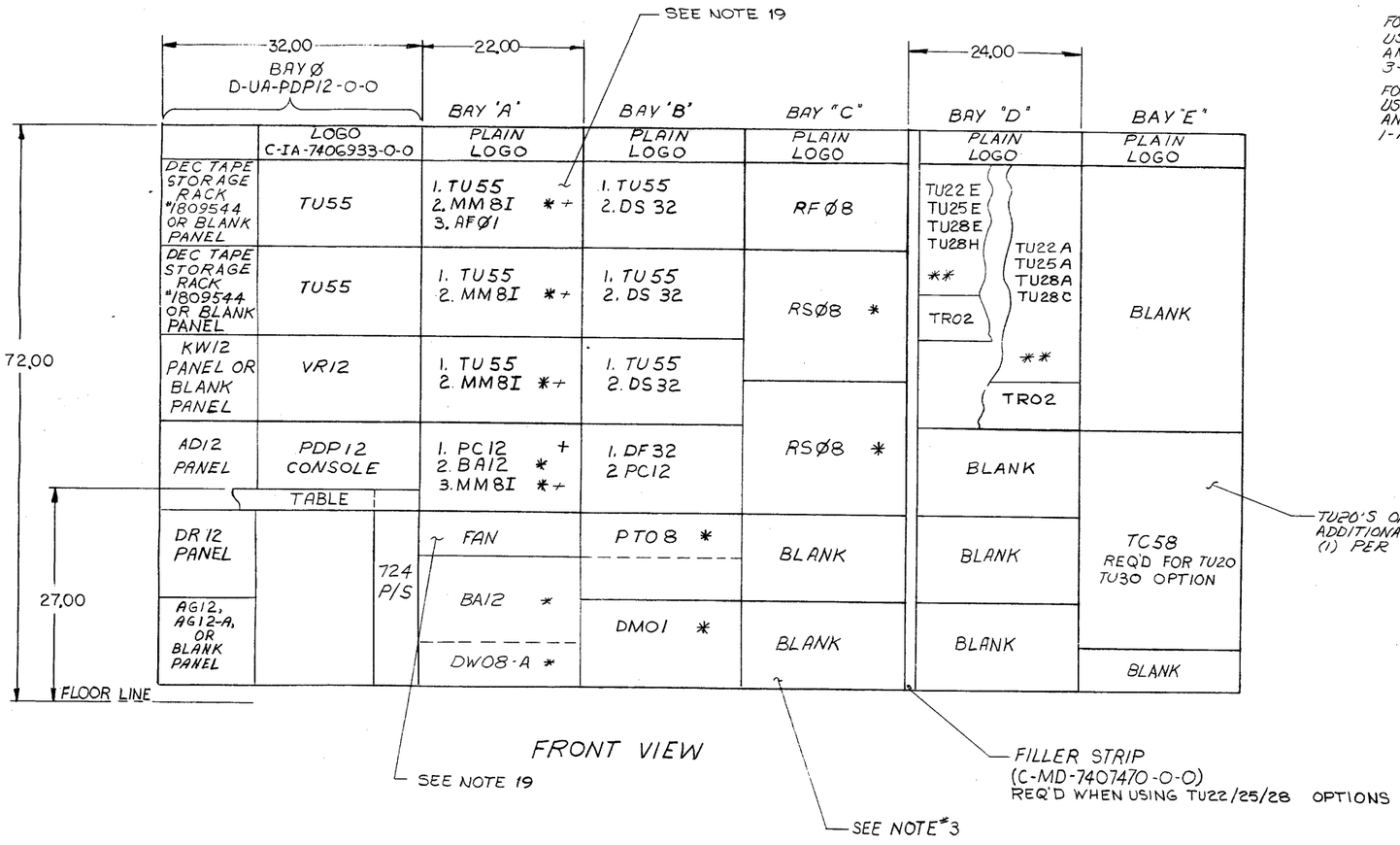




DETAIL A

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)



FRONT VIEW

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) RSO8 OPTIONS AND (1) RFO8 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/RFO8 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	CHK	CHANGE NO.	REV.
TQ w3Ellen 1-20-70 GALE	Bob	12-00051	A
G Fedorowicz 2:15 PM	FV	12-00060	B
D. MACKLIN 3-2-70			
D Mack 3-3-70	Rob	12-00079	C
T. Gallo 3-25-70 GALE			
D Mack 8-26-70	FV	12-00088	D
D MACKLIN 10/12/70			

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

DRN	Ron Gallo	DATE 10-5-69
CHK'D	K. Kraus	DATE 10-15-69
ENG.	J. Stolz	DATE 10-17-69
PROJ. ENG.	J. Stolz	DATE 10-17-69
PROD.	W Gall	DATE 10/20/69

digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS

TITLE: EQUIPMENT LAYOUT (PDP12)

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-950-PA
		RM 5Ø3
AD12 PANEL	PDP12 CONSOLE	PC12
	TABLE	
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	DF 32
	TABLE	
DR 12 PANEL OR BLANK	724 P/S	DWØ8-A
		BLANK
AG12, AG12-A, OR BLANK PANEL		BLANK

FRONT VIEW

7006555-00 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

REVISIONS	REV	CHANGE NO.	CHK

DEC FORM NO. DRD 100

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:	Ray Stark	10-13-69
CHK'D	K. Kraus	10-17-69
ENG	S. Gale	10/17/69
PROJ. ENG	S. Gale	10/17/69
PROD.	W Cook	10/17/69

SCALE —

SHEET 2 OF 5

digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS

TITLE: EQUIPMENT LAYOUT PDP12

SIZE	CODE	NUMBER	REV.
D	DAR	PDP12-0-2	D

DIST. C

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BAY "Ø" (D-UA-PDP12-00) BAY A (H960-C) BAY B (H960-C)

	LOGO	LOGO	LOGO
DEC TAPE STORAGE RACK #1809544 OR BLANK PANEL	TU55	TU55	TU55
DEC TAPE STORAGE RACK #1809544 OR BLANK PANEL	TU55	TU55	TU55
KW12 PANEL OR BLANK PANEL	VR12	DS 32	BLANK
AD12 PANEL	PDP12 CONSOLE TABLE	DF32	BLANK
DR 12 PANEL OR BLANK	724 P/S	DW08-A	BLANK
AG12, AG12-A, OR BLANK PANEL		BLANK	BLANK

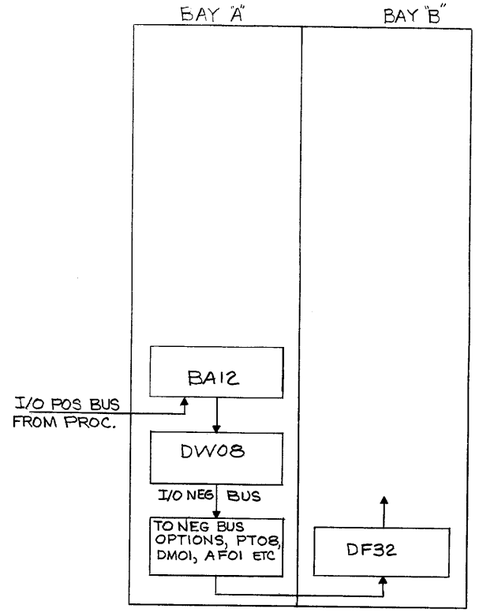
FRONT VIEW

H950-H (SERIES) DOOR REQ'D

TAPE UNIT CONFIGURATION

BAY "B"	BAY "C"	BAY "Ø"
PWR DIST #7005909	PWR DIST #7005909	MEMORY EM12
	734 B P/S VARIABLE	
	834 PWR CTRL	
		PROCESSOR EP12
	783 P/S	
	783 P/S	

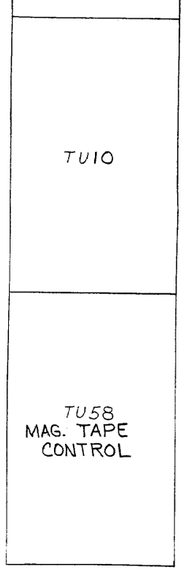
REAR VIEW



DETAIL OF PREFERRED I/O NEGATIVE BUS ROUTING

DETAIL-A

BAY "F" (TU10) CAB



FRONT VIEW

REVISIONS	CHANGE NO.	CHK	REV

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.	R. Smith	10-14-69
CHK'D.	[illegible]	10-15-69
ENG.	[illegible]	10/17/69
PROJ. ENG.	[illegible]	10/17/69
PROD.	K. Cook	10/17/69

NEXT HIGHER ASSY

SCALE

SHEET 3 OF 5

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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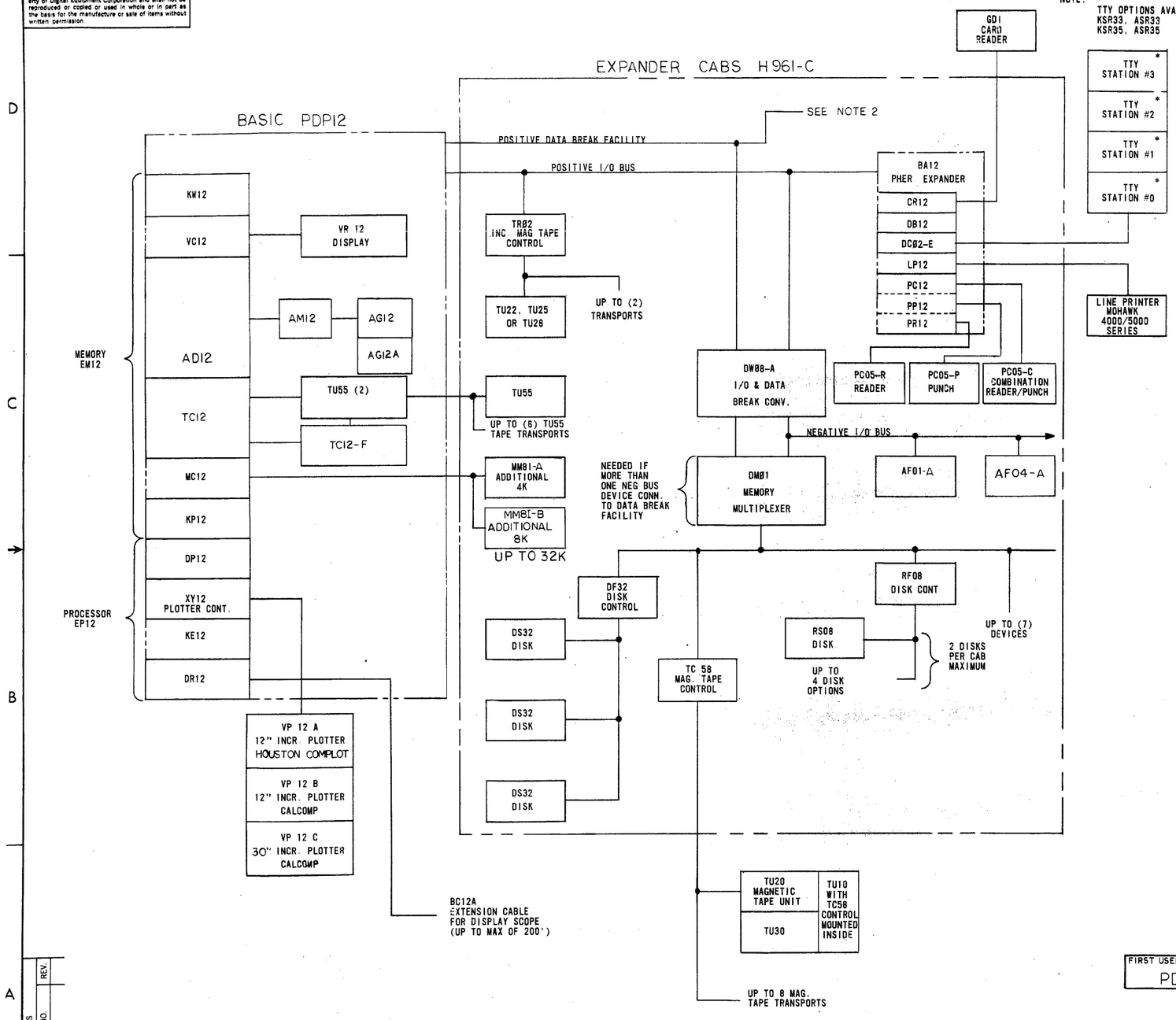
NOTE: * TTY OPTIONS AVAIL. KSR33, ASR33 KSR35, ASR35



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	W3I(2)	19 COND MYLAR
-2	2			
-4	4			
-6	6			
-8	8			
-9	9			
-15	15			
BC08C-25	25 FT	M9Ø3	W3I(2)	19 COND MYLAR
BC08D-1	1 FT	M9Ø4	W11(2)	FLAT COAXIAL 9 COND
2	2			
4	4			
6	6			
8	8			
9	9			
15	15			
BC08D-25	25 FT	M9Ø4	W11(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: 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. L. Kisnadel	DATE 10-10-69	digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS
CHK'D. R. Tews	DATE 10-15-69	
ENG. Y. Hali	DATE 10/17/69	
PROJ. ENG. Y. Hali	DATE 10/17/69	
PROD. D. Call	DATE 10/17/69	

NEXT HIGHER ASSY

SCALE

SHEET 4 OF 5

TITLE: EQUIPMENT LAYOUT (PDP12)

SIZE D | CODE AR | NUMBER PDP12-0- 2 | REV D

DIST.

REVISIONS | REV. | CHANGE NO. | CHK

DEC FORM NO. DRD 100

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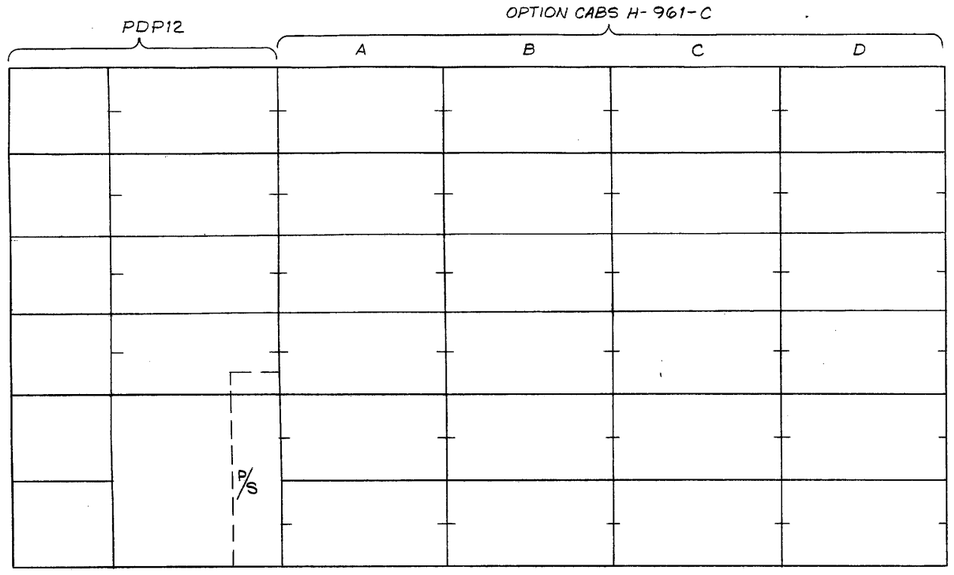
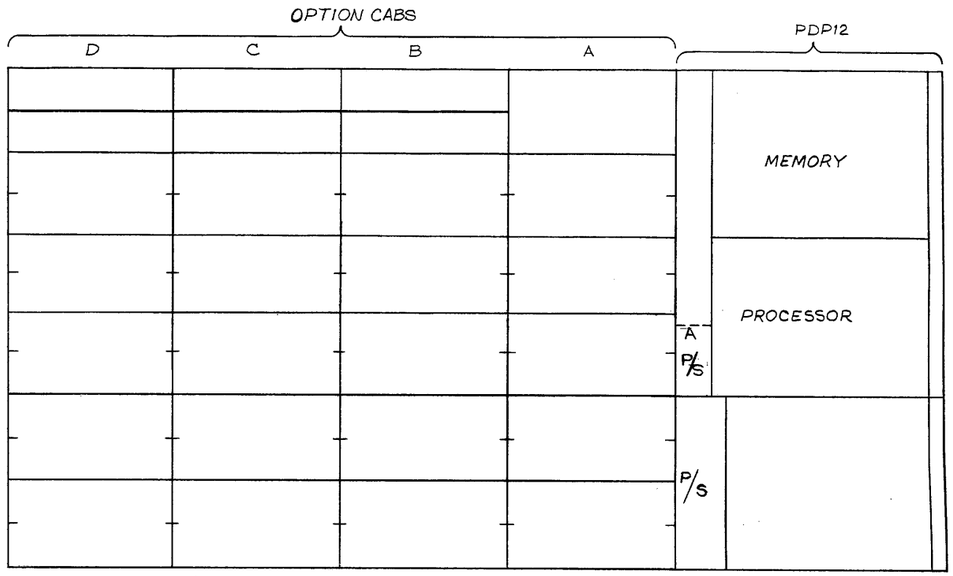


FRONT VIEW



REAR VIEW

REVISIONS	CHANGE NO.	CHK
REV.		

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

		DATE
DRN.	R. GRIFFIN	10-13-69
CHK'D.	K. RUSS	10-15-69
ENG.	L. GALE	10-17-69
PROJ. ENG.	L. GALE	10-17-69
PROD.	D. CALL	10-17-69

NEXT HIGHER ASSY —

SCALE —

SHEET 5 OF 5

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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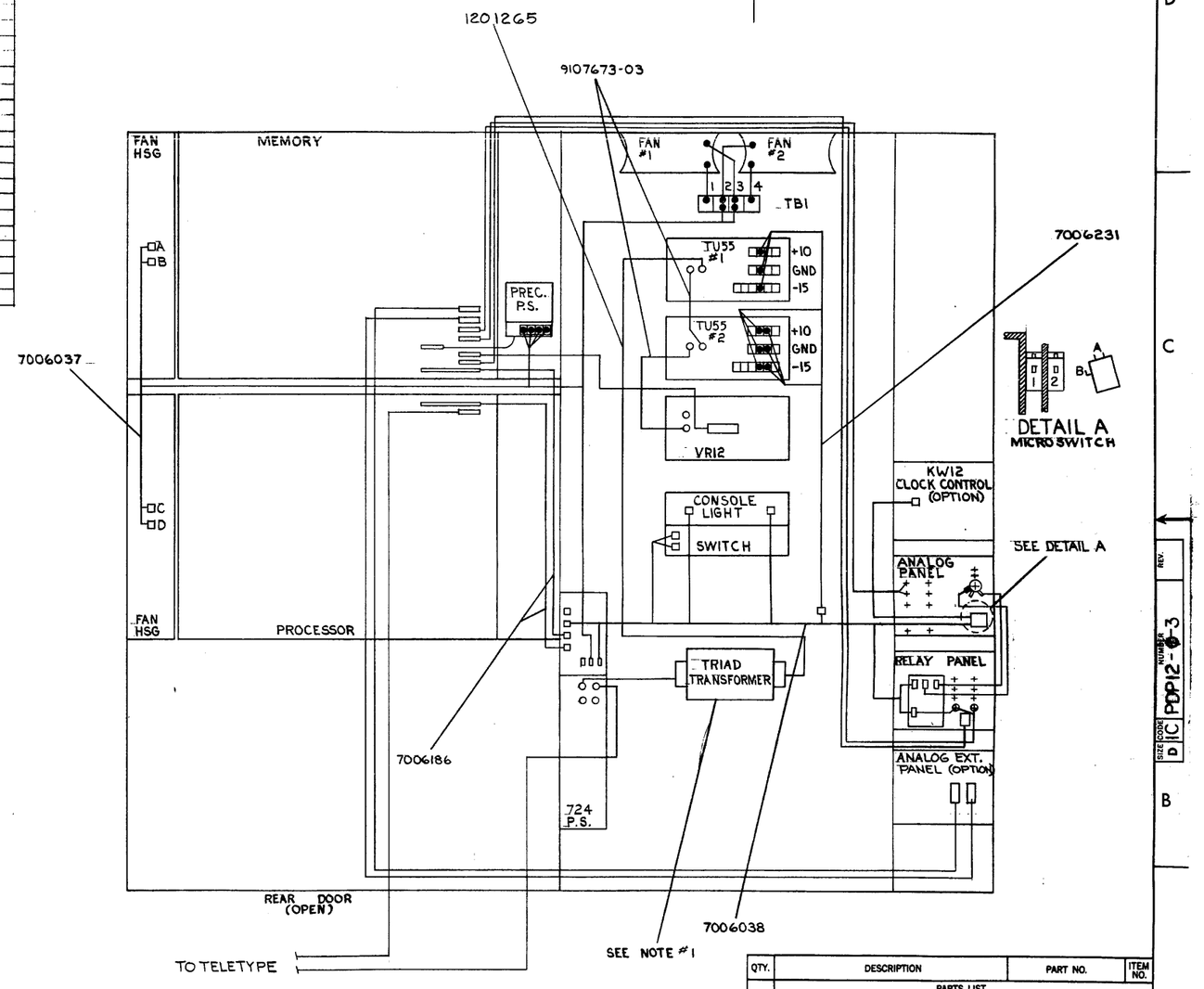
POWER WIRING & CABLES

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. CABLE 7006231-P1	POWER CABLE D.C.
7006231		P1	PWR CABLE D.C. 7006038-P3	LINC TAPE D.C.
	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 } SEE NOTE #1
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 → STEP EXAM FF

1 → A ENABLE

1 → AUTO FF IF AUTO SW ON

1 → FILL STEP

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 → DO 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

8 MODE

LINC MODE FETCH FLOW 12

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.
T. Quillin 5-30-69		EP12-00003	A
L. Gale 6/20/69		EP12-00004	B
L. Gale 7/15/69		EP12-00006	C
T. Quillin 7-28-69		GALE	
L. Gale 8-13-69		EP12-00015	D
L. Scarola 10-17-69		GALE	
T. Quillin 12-23-70		12-00085	E
D. Maddox 9/28/70		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

		DATE
DRN	Joe Ogna	9-24-68
CHK'D	L. Scarola	2/18/69
ENG	L. Gale	3/17/69
PROJ. ENG.	T. Quillin	2/19/69
PROD.	W. Hall	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 1

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

DIST.

DEC FORM NO. DRD 102A

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DO

START MEM
T1

PC → MA

STROBE
T2

MA → PC
Ø → IR

T3

LSW → IR
LSW → MB

T4

PER FORM INSTRUCTION
IF 2 WORD IN ST
DOES NOT START
MEM NEXT CYCLE, RSW → MB

T5

Ø → RUN
Ø → DO FF

Ø → AUTO FF IF
AUTO KEY = Ø

AUTO RESTART DELAY

(AUTO FF=1
(AUTO+DO KEYS=1)

AUTO FF = Ø

AUTO RESTART
1 → DO FF
1 → RUN

T1
DO

WAIT FOR FURTHER
CONSOLE ACTION

FILL + EXAM

LSW → MA

*

FILL STEP

MA → MA

*

STEP EXAM

MA+1 → MA

*

Ø → IR

FILL + FILLSTEP

RSW → MB

FILL

Ø → RUN
Ø → AUTO

FILLSTEP

AUTO FF(1)

Ø → INT. PAUSE

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 RESTART DELAY

1 → RUN

TO T1
STEP EXAM

AUTO FF(Ø)

1 → INT PAUSE

PAUSE
WAIT FOR RELEASE OF
KEY FILL STEP

TO MFT Ø
STEP EXAM
FLOW 10

EXAM + STEP EXAM

MEM → MB

EXAM

Ø → RUN
Ø → AUTO

AUTO FF (Ø)

(AUTO KEY=1 * FILLSTEP)

AUTO RESTART
1 → RUN
1 → FILLSTEP FF

TO T1
FILL STEP

WAIT FOR FURTHER
CONSOLE ACTION

STEPEXAM

Ø → RUN
Ø → STEP EXAM

Ø → AUTO FF IF
AUTO KEY = Ø

AUTO(Ø)

AUTO(1)

AUTO RESTART DELAY

AUTO FF(1)

(AUTO KEY=1 * STEP EXAM)

AUTO RESTART
1 → RUN
1 → STEP EXAM FF

TO T1
STEP EXAM

▭ 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

REVISIONS			
CHK	CHANGE NO.	REV.	
Cash	EP12-00015	A	
Cash Moore 10-16-69	L. GALE 10-17-69		
FV	12-000085	B	
Thurber P.23-70	GALE 9-30-70		

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
MATERIAL
FINISH

QTY.	DESCRIPTION	PART NO.	ITEM NO.
PARTS LIST			

DRN. Lee Ouve	DATE 9-26-68	digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS
CHK'D. D Scala	DATE 2/19/69	TITLE
ENG. L Gale	DATE 2/19/69	MANUAL TIMING FUNCTIONS PART 2
PROJ. ENG. Gale	DATE 2/19/69	
PROD. Wall	DATE 2/19/69	
FIRST USED ON PDP-12		SIZE D CODE FD NUMBER PDP12-Ø-11 REV. B
SCALE		DIST.
SHEET 1 OF 1		

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 — DATA

1 → INTERRUPT

3 CYCLE — NOT 3 CYCLE

1 → WC

NOT TAPE — TAPE

1 → BREAK

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		N=Ø-4	N=4-11	N=12-17	LIF	LDF
Ø		Ø → RUN			MB Ø7-11 → IB ØØ-Ø4; Ø → INHIBIT SYNC	MB Ø7-11 → DF ØØ-Ø4
1		I=Ø AC → TAPE EXT REG; I=1 TAPE EXT REG → AC				
2		SELECT PDP-8 MODE			1 → INT INHIBIT LOAD SAVE FIELD	
3		I=Ø TAC → AC; I=1 TAC → TMA SETUP				
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				
4 I=1			CONTROL FLIP-FLOPS TO AC			
5			MQ,N → AC,N+1			
6			Ø → PC SAVE			
7						
10						
11			CLEAR → AC; CLEAR → LINK; CLEAR → MQ			
12						
13						
14				AC 6-11 → R Ø-5		
15				R Ø-5 → AC 6-11		
16				NO OPERATION		
17				$\overline{AC}$ → AC		

NEXT INSTRUCTION

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

REVISIONS

REV.	CHANGE NO.	CHK	
A	EP12-00002	[illegible]	J. SCANLON
B	EP12-00003	[illegible]	T. Griffin 5-30-69 GALE
C	EP12-00015	[illegible]	L. GALE 10-17-69
D	12-00085	FV	T. Griffin 9-23-70 GALE 9-28-70

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
MATERIAL
FINISH

PARTS LIST

QTY.	DESCRIPTION	PART NO.	ITEM NO.

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

digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS

TITLE: LINC FETCH 1A

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

DIST.

DEC FORM NO. DRD 102A

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SIZE D CODE FD NUMBER PDP12-Ø-V3 REV E

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

I=Ø + COND MET
I=1 + NOT COND MET

1 → SKIP

Ø → PCØ-11

T5

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.
DHM	EP12-00002	A
DHM	EP12-00003	B
DHM	EP12-00016	C
EV	EM12-00030	D
EV	12-00085	E

J. SCANLON 12/68
T. GUILLIND 5-21-69
GALE
T. Guill 6/20/69
T. Guillo 11-6-69
GALE
T. Scanlon 11-14-69
T. Quillin 2-2-70
GALE
T. Scanlon 3-4-70
T. Guillo 9-23-70
GALE
D. Meade 9-28-70

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	Joe Ogren	DATE 10/4/68
CHK'D	D Scanlon	DATE 2/19/69
ENG	T Gale	DATE 2/19/69
PROD ENG	T Gale	DATE 2/19/69
PROD.	M Wall	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
18

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

DIST.

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EVENT TIME

START MEM T1

STROBE T2

T3

T4

T5

FROM FETCH 1A

OPR

N = 16
N = 17
N = ØØ

N=ØØ (IOT LINC MODE)

N=16

RSW → AC

N=17

LSW → AC

1 → EXECUTE

NEXT INSTRUCTION

TRAP EN (1)

TRAP EN (Ø)

1 → INT INH
Ø → INH SYNC

1 → INTERRUPT

EXC NO INST

NEXT INSTRUCTION

ENT TRAP(1) * EN TRAP(1)

ENT TRAP(Ø) + EN TRAP(Ø)

1 → INTERRUPT

1 → EXECUTE (SEE TAPE TIMING)

MTP

I=Ø

1 → DEFER

1 → EXECUTE

SET

I=1

(I=1*B=Ø)

[IRØ2(1)*IRØ,1=(Ø)] (IB+HB)

SAM

NOT SAM PAUSE

NOT(I=1*B=Ø)

1 → DEFER

SAM PAUSE

1 → RECYCLE SYNC

1 → T5 RECYCLE*

RECYCLE UNTIL SAM IS COMPLETE

A-D BUFFER → AC

NEXT INSTRUCTION

* OCCURS AT OFF PAUSE

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

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

PARTS LIST

QTY.	DESCRIPTION	PART NO.	ITEM NO.

DRN.		DATE 10-5-68
CHK'D		DATE 2/15/67
ENG.		DATE 2/15/67
PROJ. ENG.		DATE 2/17/67
PROD.		DATE 2/19/67

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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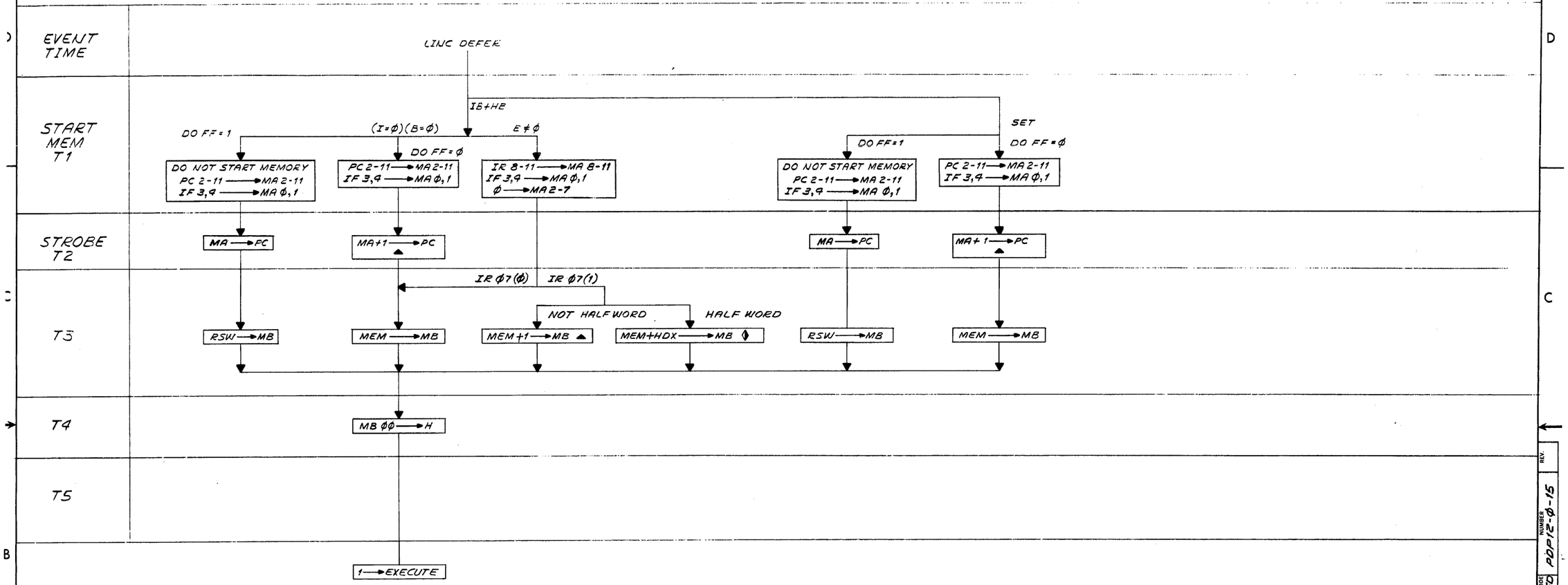

▲ INDICATES 1Ø BIT ADDITION (BITS 2-11)
◊ HALF WORD INDEXING

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 Clancy DATE 24 AUG 68
CHK'D [illegible] DATE 2/28/69
ENG. [illegible] DATE 2/19/69
PROJ. ENG. [illegible] DATE 1/69
PROD. [illegible] DATE 1/69
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. DRD 102A

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EXEC ITE

EVENT TIME

START MEM T1

IB + HE

I=1 * B=Ø
DO FF=Ø

PC 2-11 → MA 2-11
IF 3-4 → MA 2-1

I=1 * B=Ø
IO FF=1

DO NOT START MEMORY

NOT(I=1 * B=Ø)

MB △ → MA 2-11

STROBE T2

MA+1 ▲ → PC

USE ESWI INSTEAD OF MEM AT T3

LDA | STA | ADA | ADM | LAM | BCL BSE BCO SAE | CONT.

T3

LDA: MEM → MB

STA: AC → MB

ADA: MEM → MB

ADM: Σ(MEM,AC) → MB → AC
OVERFLOW → FLO FF

LAM: Σ(LINK,MEM,AC) → MB → AC
CARRY → LINK
OVERFLOW → FLOW FF

BCL BSE BCO SAE: MEM → MB

T4

LDA: MB → AC

ADA: Σ MB & AC → AC
OVERFLOW → FLO FF

BCL: MB BIT CLEAR → AC

BSE: MB BIT SET → AC

BCO: MB BIT CLEAR → AC
MB BIT SET → AC

T5

SAE: AC=MB THEN 1 → SKP

NEXT INSTRUCTION

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

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

REVISIONS			
REV.	CHANGE NO.	CHK	
A	EP12-00003	Fred	T Quillin 4-29-69
B	IC-00085	FV	GALE 6/27/69
			GALE 7-28-69

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. Joe Ogren DATE 9-SEPT68
CHK Scarlo DATE 2/11/69
ENG. DATE 2/11/69
PROJ. ENG. DATE 2/11/69
PROD. DATE 2/11/69
FIRST USED ON PDP-12
SCALE
SHEET 1 OF 1

digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS

TITLE: LINC EXECUTE

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

DIST.

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

FORM NO. 102A

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EXECUTE (CONT.)

EVENT TIME

START MEM T1

STROBE T2

T3

T4

T5

IB+HB (CONT.)

SRO

LDH

STH

SHD

DSC

$MEM_N \rightarrow MB_{N-1}$

$MEM \rightarrow MB$
$MEM \rightarrow AC$

H=Ø H=1

$AC_R \rightarrow MB_L$
$MEM_R \rightarrow MB_R$

$AC_R \rightarrow MB_R$
$MEM_L \rightarrow MB_L$

$MEM \rightarrow MB$

$MEM \rightarrow MB$

DISPLAY BUSY

DISPLAY NOT BUSY

$1 \rightarrow$ INT PAUSE

H=Ø H=1

$AC_L \rightarrow AC_R$
$Ø \rightarrow AC_L$

$AC_R \rightarrow AC_R$
$Ø \rightarrow AC_L$

H=Ø H=1

$AC_R \rightarrow AC_L$
$AC_L \rightarrow AC_R$

IF MBØØ=Ø
$1 \rightarrow$ SKIP

IF $AC_L \neq MB_L$ THEN
$1 \rightarrow$ SKIP

IF $AC_R \neq MB_R$ THEN
$1 \rightarrow$ SKIP

$AC_R \rightarrow AC_L$
$AC_L \rightarrow AC_R$

PAUSE
WAIT UNTIL PREVIOUS DISPLAY IS DONE

$MB \rightarrow$ INT REQ
$AC \rightarrow$ VERT
$Ø \rightarrow$ VA7-1Ø
$1 \rightarrow$ HA9
$Ø \rightarrow$ HA1Ø

NEXT INSTRUCTION

$1 \rightarrow$ EXECUTE 2

REVISIONS			
CHK	CHANGE NO.		REV.
[illegible]	EP12-00003	TSC [illegible] GALE	A
[illegible]	FV 12-00085	T.G. Cudlip 8-23-70 GALE	B

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 10/4/68
CHKD. [illegible] DATE 2/18/69
ENG. [illegible] DATE 2/10/69
PROJ. ENG. [illegible] DATE 2/10/69
PROD. [illegible] DATE 2/10/69
FIRST USED ON PDP-12
SCALE
SHEET 1 OF 1

digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS

TITLE: LINC EXECUTE

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

DIST.

DEC FORM NO. DRD 102A

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

MB 2-11 → MA 2-11
IF 3,4 → MA Ø,1

JMP

Ø → MA 2-11
IF 3,4 → MA Ø,1

XSK
DIS

IR 8-11 → MA 8-11
Ø → MA 2-7
IF 3,4 → MA Ø,1

SET

I=1

DO NOT START MEMORY
PC 2-11 → MA 2-11

MA → PC

RSW → MB

I=Ø

DO FF=Ø

PC 2-11 → MA 2-11

MA+1 → PC

MEM → MB

MB → MA

IOT
IOP =[OPR*N=ØØ]

DO FF=(1)

DO NOT START MEMORY
PC 2-11 → MA 2-11

MA 2-11 → PC 2-11

RSW → MB

DO FF=(Ø)

PC 2-11 → MA 2-11
IF 3,4 → MA Ø,1

MA+1 → PC

[OPR*N=ØØ]=IOB

MEM → MB

MTP [OPR*N=ØØ]=IOB

NO PAUSE (Ø)

1 → INT PAUSE

NO PAUSE (1)

ADD

MEM → MB

STC

AC → MB

SAVE PC (1)

SAVE PC (Ø)

PC → MB
1 → MB Ø,1

MEM → MB

1 → SAVE PC

IR 2-11 → PC 2-11
IF 3-4 → PC Ø,1
1 → INHIBIT SYNC

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 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

MB+AC → AC

OVERFLOW → FLOW

Ø → AC

QN BN → TAPE CONTROL
START TAPE EXECUTION

RESTART ON COMMAND FROM TAPE CONTROL

NOT MTB

MTB

TB → AC

1 → TAPE BREAK

1 → EXECUTE 2

IOT PAUSE

MB 11 (1) → IOP 1

MB 1Ø (1) → IOP 2

MB Ø9 (1) → IOP 4

Ø → IOT PAUSE

1 → 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.	
Jones	EP12-00000	A	J. SCANLON 5/22/68
Scott	EP12-00003	B	6/11/68
F V	12-00085	C	9/20/68

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

UNLESS OTHERWISE SPECIFIED	DRN. Joe Chura	DATE 10/4/68
UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES TOLERANCES DECIMALS ± .005 FRACTIONS ± 1/64 ANGLES ± 0°30' FINAL SURFACE QUALITY REMOVE BURRS AND BREAK SHARP CORNERS	CHKD. J. Scanlon	DATE 2/18/69
	ENG.	DATE 2/19/69
	PROJ. ENG.	DATE 2/19/69
MATERIAL	PROD.	DATE 2/19/69
FINISH	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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START MEM T1

STROBE T2

MUL

T3

MEM → MB
Ø → N (IR 8-11)

T4

AC ØØ = Ø

AC → MQ
Ø → LINK

AC ØØ = 1

$\overline{AC}$ → MQ
1 → LINK

1 → RECYCLE SYNC

OFF PAUSE

1 → TS RECYCLE

TS

MB → AC

N = 17

AC ØØ = Ø

AC → MB
AC → AC
LINK → LINK

AC ØØ = 1

$\overline{AC}$ → MB
$\overline{AC}$ → AC
$\overline{LINK}$ → LINK

N = 16

Ø → AC

N ≠ 2

MQ 11 = Ø

AC_N → AC N-1

MQ 11 = 1

Σ AC+MB → AC N-1

Σ AC 11 → MQ ØØ
MQ_N → MQ N+1

N = 2

H = 1

AC → AC

H = Ø

MQ_N → AC N+1

N = 1

LINK = Ø

AC → AC

LINK = 1

$\overline{AC}$ → AC

Ø → RECYCLE SYNC

N = 1

Ø → TS RECYCLE

TSD

(N-1) → N

(N-1) → N

(N-1) → N

(N-1) → N

(N-1) → N

NEXT INSTRUCTION

REVISIONS			
CHK	CHANGE NO.	REV.	
FV	12-00085	A	Incorp. per ltr. dtd. 9-22-70

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. — DATE 10/5/67
CHKD. D. Dean — DATE 2/16/68
ENG. — DATE 2/16/68
PROD. ENG. — DATE 2/19/68
PROD. M. Cullen — DATE 2/19/68

FIRST USED ON
PDP-12

SCALE

SHEET 1 OF 1

digital EQUIPMENT CORPORATION
MAYNARD, MASSACHUSETTS

TITLE
LINC EXECUTE

SIZE	CODE	NUMBER	REV.
D	FD	PDP12-Ø-19	A

DIST.

DEC FORM NO. DRD 102A

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EXECUTE 2

EVENT TIME

START MEM T1

DSC

1 → MA 2-11
IF 3-9 → MA Ø-1

SET

IR 8-11 → MA 8-11
Ø → MA 2-7
IF 3-9 → MA Ø-1

STROBE T2

SIZE (1) (FULL SIZE)

AC Ø-6 → AC Ø-6
30_8 → AC 7-11

SIZE (Ø) (HALF SIZE)

AC Ø-7 → AC Ø-7
1_8 → AC 8-11

T3

Σ MEM ± $1Ø_8$ → MB

Σ MEM ± 1_8 → MB

T4

Ø → VB-11
MB → HORZ

T5

SIZE (Ø) SIZE (1) (FULL SIZE)

1 → HAIØ

1 → V7

1 → ACTIVE

TO DISPLAY CONTROL FLOW DIAGRAM

TO NEXT INSTRUCTION

TO NEXT INSTRUCTION

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

INTERRUPT

DF * IF → SAVE FIELD BUFFER
Ø → DF, IF

LINC MODE

NOT TRAP

ØØ4Ø → MA
Ø → INT EN

TRAP

Ø14Ø → MA
Ø → INT EN
Ø → TRAP

PDP-8 MODE

Ø → MA
Ø → INT EN

Ø → IR

PC + SKIP → MB

MA + 1 → PC

TO NEXT INSTRUCTION

▭ THESE FUNCTIONS OCCUR AT TPSD OF PREVIOUS CYCLE

REVISIONS

CHK	REV.
CHANGE NO.	
EP12-00015	A
Jacobi Warren 10-16-69	
L. GALE	
A Scanlon 10-17-69	B
FV 12-00085	
T. Gallo 7-23-70	
GALE	
D Mabee 9-28-70	

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	Joe Ayer	DATE 6 SEPT 68
CHK'D	A Scanlon	DATE 2/19/69
ENG	L. Gale	DATE 2/19/69
PROJ. ENG.	L. Gale	DATE 2/19/69
PROD.	D Call	DATE 2/19/69

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-Ø-2Ø | REV. B

DIST.

DEC FORM NO. DRD 102A

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ENTER HERE FROM END OF PREVIOUS INSTRUCTION

NOT BREAK REQ

BREAK REQ

PROG

1 → INTERRUPT

DATA

3 CYCLE

1 → WC

NOT 3 CYCLE

NOT TAPE

1 → BREAK

TAPE

1 → TAPE BREAK

DO FF = Ø

PC + SKIP → MA
1 → FETCH

MA + 1 → PC
Ø → IR

Ø → SKIP
MEM → MB
MEM → IR
Ø → H

DO FF = 1

PC → MA
1 → FETCH

MA → PC

LSW → MB
LSW → IR

START MEM T1

STROBE T2

T3

T4

T5

AND
TAD
ISZ
DCA
JMS

IR Ø3 = Ø

IR Ø3 = 1

JMP

IR Ø3 = 1

IR Ø3 = Ø

IR Ø4 = 1

MB 5-11 → PC 5-11
MA Ø-4 → PC Ø-4

IR Ø4 = Ø

MB 5-11 → PC 5-11
Ø → PC Ø-4

EXECUTE

DEFER

FETCH

OPR

IR Ø3 = Ø

MB Ø4	MB Ø6	
Ø	Ø	AC → AC
Ø	1	$\overline{AC}$ → AC
1	Ø	Ø → AC
1	1	AC + $\overline{AC}$ → AC

MB Ø5	MB Ø7	
Ø	Ø	L → L
Ø	1	$\overline{L}$ → L
1	Ø	Ø → L
1	1	L + $\overline{L}$ → L

MB 11 (1) → CARRY IN

MB Ø9 = 1

ROTATE AC & L LEFT 1

MB Ø8 = MB Ø9 = Ø

NO SHIFT

MB Ø8 = 1

ROTATE AC & L RIGHT 1

MB 1Ø = Ø

MB 1Ø = 1

ROTATE AC & L LEFT 1

NO SHIFT
AC → AC
L → L

MB 1Ø = 1

ROTATE AC & L RIGHT 1

IR Ø3 = 1

IR 11 = Ø

MB Ø6 * AC = Ø
+
MB Ø5 * AC ØØ = 1
+
MB Ø7 * L = 1
1 → SKIP IN

MB Ø8 = Ø
SKIP IN → SKIP

MB Ø8 = 1
$\overline{\text{SKIP IN}}$ → 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

IR 11 = 1

EAE INST

IOT

* 1 → IOT PAUSE

IOT PAUSE

MB 11 = 1
IOP 1

MB 1Ø = 1
IOP 2

MB Ø9 = 1
IOP 4

Ø → IOT PAUSE

* OCCURS AT OFF PAUSE

REVISIONS				
	CHANGE NO.	REV.		
CHK	EP12-00002	A	J. SCANLON	7/11/69
F.V.	12-00085	B	GALE	9-24-70
				5-28-70

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

		DATE
DRN.		8-7-68
CHKD.		2/10/69
ENG.		3/14/69
PROJ. ENG.		2/19/69
PROD.		3/19/69

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

DIST.

DEC FORM NO. DRD 102A

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DEFER

EXECUTE

START MEM T1

IR Ø4 = Ø
MB 5-11 → MA 5-11
Ø → MA Ø-4

IR Ø4 = 1
MB 5-11 → MA 5-11
MA Ø-4 → MA Ø-4

FROM FETCH
IR Ø4 = Ø
MB 5-11 → MA 5-11
Ø → MA Ø-4

IR Ø4 = 1
MB 5-11 → MA 5-11
MA Ø-4 → MA Ø-4

FROM DEFER
MB → MA

STROBE T2

T3

AUTO INDEX
MEM + 1 → MB

NOT AUTO INDEX
MEM → MB

AND TAD
MEM → MB

ISZ
MEM + 1 → MB
CARRY → SKP

DCA
AC → MB

JMS
PC → MB

T4

JMP
MB → PC

NOT JMP

AND
AC, BCL → AC

TAD
Σ AC AND MB → L, AC

Ø → AC

MA + 1 → PC

T5

AC̄ → AC

1 → FETCH
NEXT INST

1 → EXECUTE

1 → FETCH
NEXT INST

REVISIONS	REV.	CHK	CHANGE NO.
	A		EP12-0001.2
J. SCANLON			
	B	FV	12-00085
T. Quill 9.23.70			
GALE			
1/21/70			

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

		DATE
DRN.	Joe Cooper	25 AUG 66
CHKD	J. Scanlon	2/18/67
ENG.		2/19/67
PROJ. ENG.		2/19/67
PROD.	T. Quill	2/19/67

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

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

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	WORD COUNT	CURRENT ADDRESS	BREAK	TAPE BREAK INTERRUPT
START MEM T1	DATA ADD → MA EXT-DA ⇑-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
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		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 ARD (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 BISONETTE	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 | NUMBER EP12-Ø-CIN | REV. C
SCALE		DIST.
SHEET 1 OF 1		

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CSI IF SW Ø H E2 — M141 K38 — H2 CPR IF SW Ø 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 — M112 L10 — F2 CPR SET RUN L; CST AUTO RESTART H E2

CST AUTO (Ø)H A1 — M112 L10 — C1 CPR HALT L

CPR L HALT L A1, CPR 8 HALT L B1 — M113 L09 — C1; CPR HALT H

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

SLA OPR2 H E1, PRF MB 1Ø (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 KØ5 — J2

CPS GNI H A1, CST DO (1)H B1, LIP PROGRESS (Ø)H C1, CPT T5 RECYCLE (Ø)H D1, E1, F1 — M160 KØ8 — R1

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

CPR HALT H K1, TSS UF (Ø)H L1

LIP PROGRESS (Ø)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

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

CPR IOT 6141 L

FRB MB Ø3 (Ø)H M1, PRC MB Ø4 (Ø)H N1, PRC MB Ø5 (1)H P1, PRD MB Ø6 (1)H R1, PRD MB Ø7 (Ø)H R2, INS N EQ Ø1 H S2, INS IOT H T2, +3V K1ØU1 H U2 — M119 K1Ø — V2 — M111 J09 — N1

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 Ø2 H F2 — M115 K13 — H2 — MCT PWR CLR L P1

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

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 (Ø)H M2 — M113 L09 — N2

P1, R1 — M113 L09 — S1

PRA ADDRESS MATCH Ø-1 H H1, PRB ADDRESS MATCH 2-3 H J1, PRC ADDRESS MATCH 4-5 H K1, PRD ADDRESS MATCH 6-7 H K2, PRE ADDRESS MATCH 8-9 H L2, PRF ADDR MATCH 1Ø-11 H M2, N2 — M119 K1Ø — P2 CPR MATCH L

CSI IF SW Ø H L1, -MXF EA Ø 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 Ø H U2, MXF EA Ø 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-Ø-CPR; REV. E
SCALE		
SHEET 1 OF		DIST.

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CPS DEFER (1)L → M617 J07 K2 L2 M2 N2 → P2 CPS DEFER B (1)H

CPS EXECUTE (1)L → M617 J07 R2 S2 T2 U2 → V2 CPS EXECUTE B (1)H

D1 M111 K09 E1 CPS FETCH SET H

CPS FETCH SET L

CPS INTERRUPT SET L → M111 K09 E2 → F2 CPS INTERRUPT SET H

F1 M111 K09 H1 CPS TAPE SET H

+3V K03V1 H

-CPS INTERRUPT SET H
CPS GNI H
-CPS TAPE SET H
-CPS BREAK SET H
M117 K05 (A1 B1 C1 D1 → E1 C1 B1)
CPTP TP1 H

M216 K06 CPS FETCH (A1 → F1 E1)
M216 K06 CPS DEFER (E2 D2 → J2 H2)
M216 K06 CPS EXECUTE (J1 H1 → M1 L1)
M216 K06 CPS EXC 2 (M2 L2 → R2 P2)
M216 K06 CPS INTER (P1 N1 → U1 S1)
M216 K06 CPS WC (T2 S2 → V1 V2)
M216 K07 CPS CA (C1 B1 → F1 E1)
M216 K07 CPS BREAK (M2 L2 → P2 R2)
M216 K07 CPS T BREAK (E2 D2 → J2 H2)
+3V K03U1 H

M617 J07 (-CSI KEY CONT H, CST MFTP0 H, +3V K03U1 H, +3V K03U1 H → L1)
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 S(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
CPS FETCH (1)H
INR IR 07 8 (0)H
INS SET H
M160 K08 → T2
-CPS GNI H
-CPS SPECIAL CYCLE H
-CPS EXC 2 SET H
M117 K05 (F1 H1 J1 K1 → L1)

CPS EXECUTE B (1)H
SLA (DSC+SET) H
M113 K03 → F1

CPS GNI H
CPS BREAK SYNC (1)H
~~CPS TAPE SET H~~
M113 K03 → V2
CPS BREAK SET L

IOB 3 CYCLE H
M113 K03 (H1 J1 → K1)
CPS CA (1)L
M113 K03 (H2 J2 → K2)
M113 K03 (P1 R1 → S1)
CPS GNI H
CPS TAPE SYNC H
M113 K03 → V2 CPS TAPE SET L

N1 M115 R13 M1 CPS GNI H, CPS Tape Sync, CPS Break Sync

INS TAPE TRAP L
INS NO INST L
M117 H35 (D2 E2 F2 H2 → J2)
CPS EN TRAP (1)H
CPTP TP4 H
M115 K04 (E1 F1 H1 → J1 L1, K1)
INS LOPR H
-INS N EQ 17 H
-INS N EQ 16 H
-INS N EQ 00 H
M117 H35 (F1 H1 J1 K1 → L1)

-IOC IO PRESET H
CPS INTER (0)H
M115 J05 (N2 P2 R2 → S2) CPS TRAP L
CPS TRAP H
M113 K03 (M1 N1 → P2)
CPS INT SYNC (1)L
M113 K03 (P2 R2 → S2)

CPS GNI L → M111 K09 C1 → D2 CPS GNI H

-CPS BREAK SET H
-CPS TAPE SET H
CPS GNI H
M117 K05 (M1 N1 P1 R1 → S1) CPS INTERRUPT SET L

+3V J06U1 H
PRB AC 02 (1)L
RCL LOAD MSC 4 H
M216 J12 CPS EN TRAP (A1 F2 D2 → J2 H2)

CPTP TPSS H
IOC START IO TIME H
M112 J10 (P1 R1 → S1)
CPS CLOCK SYNC H
M216 J29 CPS BSC (J1 H1 → L1 M1)
SKH CLR SKIPS L → A1

CPT IO PRESET L

CPS S(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 (A1 B1 → C1)
CPS FETCH B (1)H
-SLA L 1 WORD FORMAT H
CPS DEFER (1)H
-INS 8 JMP H
CPS WC (1)L
CPS CA (1)L
M115 K04 (A1 B1 C1 → D1) CPS SPECIAL CYCLE H
CST(FILLS+EX)MFTS0 L
CPS FETCH B (1)H
EAEC LONG INST H
M160 J11 (H1 J1 K1 L1 M1 N1 P1 → R1)

INS MSC H
INS N=2 H
M113 K22 (D1 E1 → F1)
-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 (A1 B1 C1 D1 E1 F2 H2 → J2 J1)
CPT TS1 (1)H
IOC INT EN (0)L
-CPS EXC 2 SET H
-CPS DEFER SET H
M115 K04 (P1 R1 S1 → U1) CPS GNI L

+3V K03U1 H
M216 K07 (A1 → M1 CPS INT SYNC (1)H, L1 CPS INT SYNC (0)H, K1 IOC INT EN (0)L)
IOB BREAK REQ H
M216 K07 (R1 N1 → S1 CPS BREAK SYNC (1)H, U1 CPS BREAK SYNC (0)H, K2 CPS CLR STATES L)
LIP TAPE BRK REQ (1)H
CPTP OFF PAUSE H
M216 K07 (U2 → T2, S2 → V2 CPS TAPE SYNC (1)H, V1 CPS TAPE SYNC (0)H)

CPTP TP55 L
CPTP TP2 L
IOC START IO TIME L
M617 J21 (D2 E2 F2 H2 → J2)
CPS BRK SYNC CLK H

CPS FETCH (1)L
+3V J07U1 H
M617 J07 (D2 E2 F2 H2 → J2) CPS FETCH B (1)H

CPTP TP55 L
IOC OFF SAMPLE L
M115 K04 (K1 L1 M1 → N1) CPS CLOCK SYNC H

CPS SPECIAL CYCLE H → M111 K09 H2 → 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		
ENG. L GALE	DATE 2/20/69	TITLE CENTRAL PROCESSOR STATES	
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-CPS	REV. L
SHEET 1 OF 1		DIST.	

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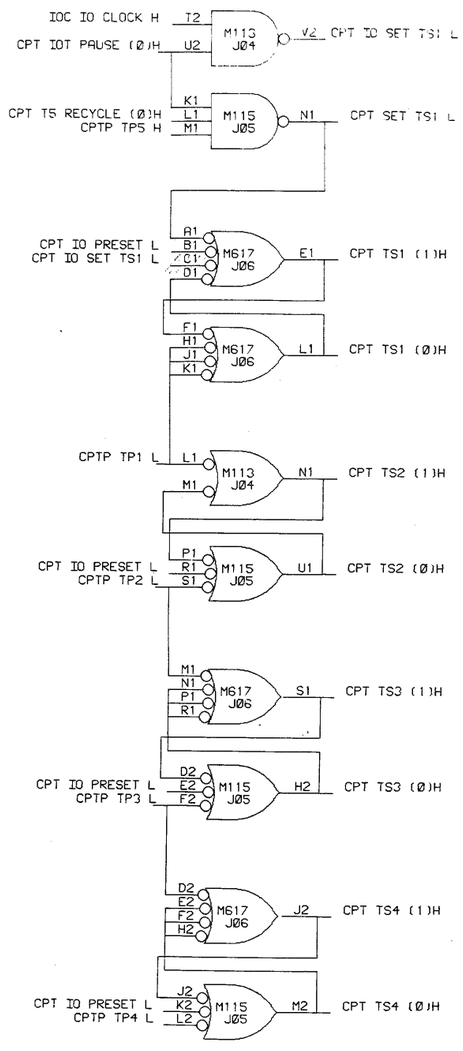

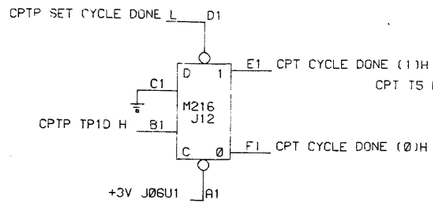

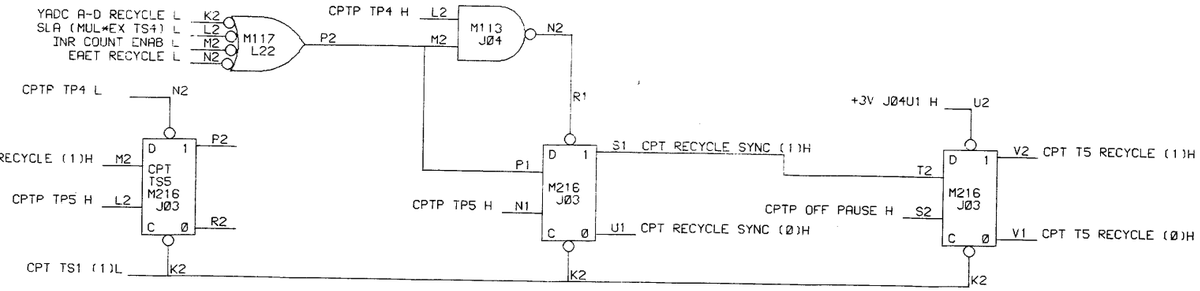

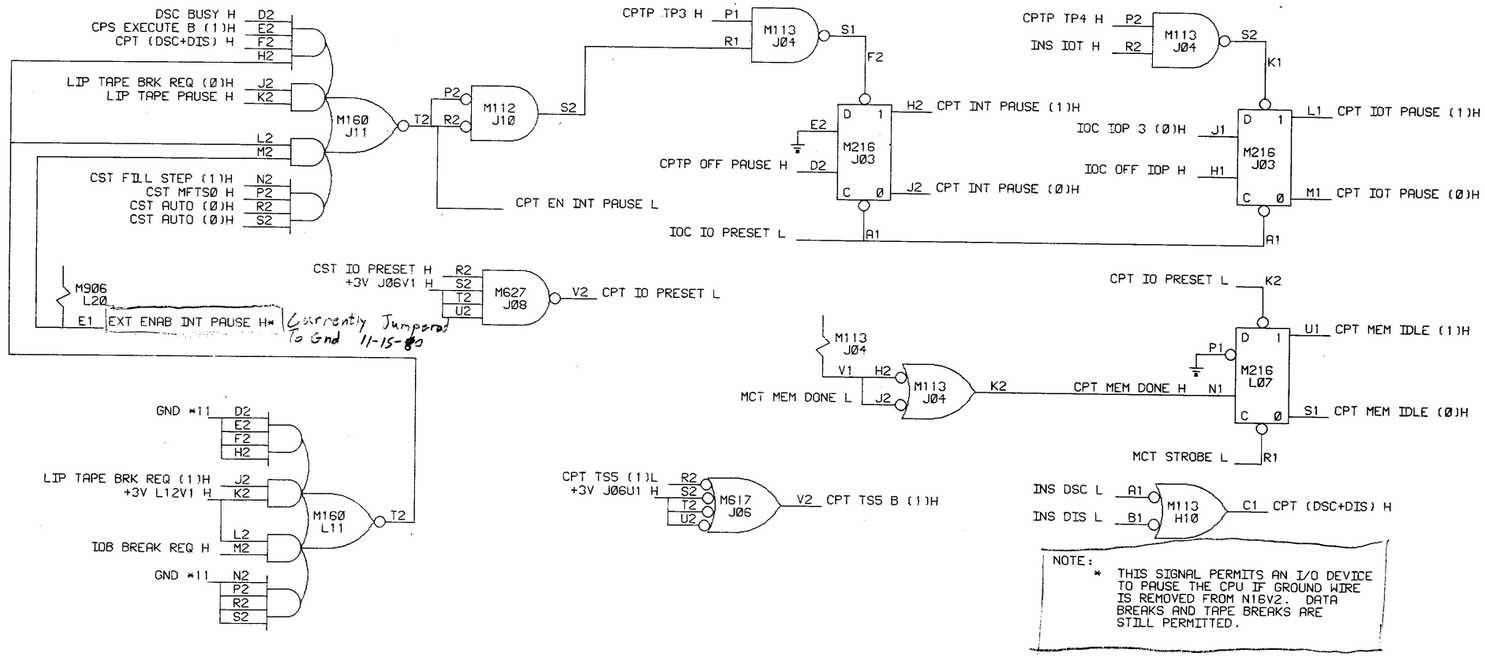

NOTE:
* THIS SIGNAL PERMITS AN I/O DEVICE TO PAUSE THE CPU IF GROUND WIRE IS REMOVED FROM N16V2. DATA BREAKS AND TAPE BREAKS ARE STILL PERMITTED.

REVISIONS			REVISIONS		
CHK	CHANGE NO.	REV.	CHK	CHANGE NO.	REV.
	EP12-00001	A	KAH	EP12-00032	E
	ADS		K. ROSS 11/15/71		
	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	digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS	
CHK'D. J.BISONETE	DATE 2/20/69		
ENG. L. GALE	DATE 2/20/69	TITLE CP TIME STATES	
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-CPT	REV. E
SHEET 1 OF 1		DIST.	

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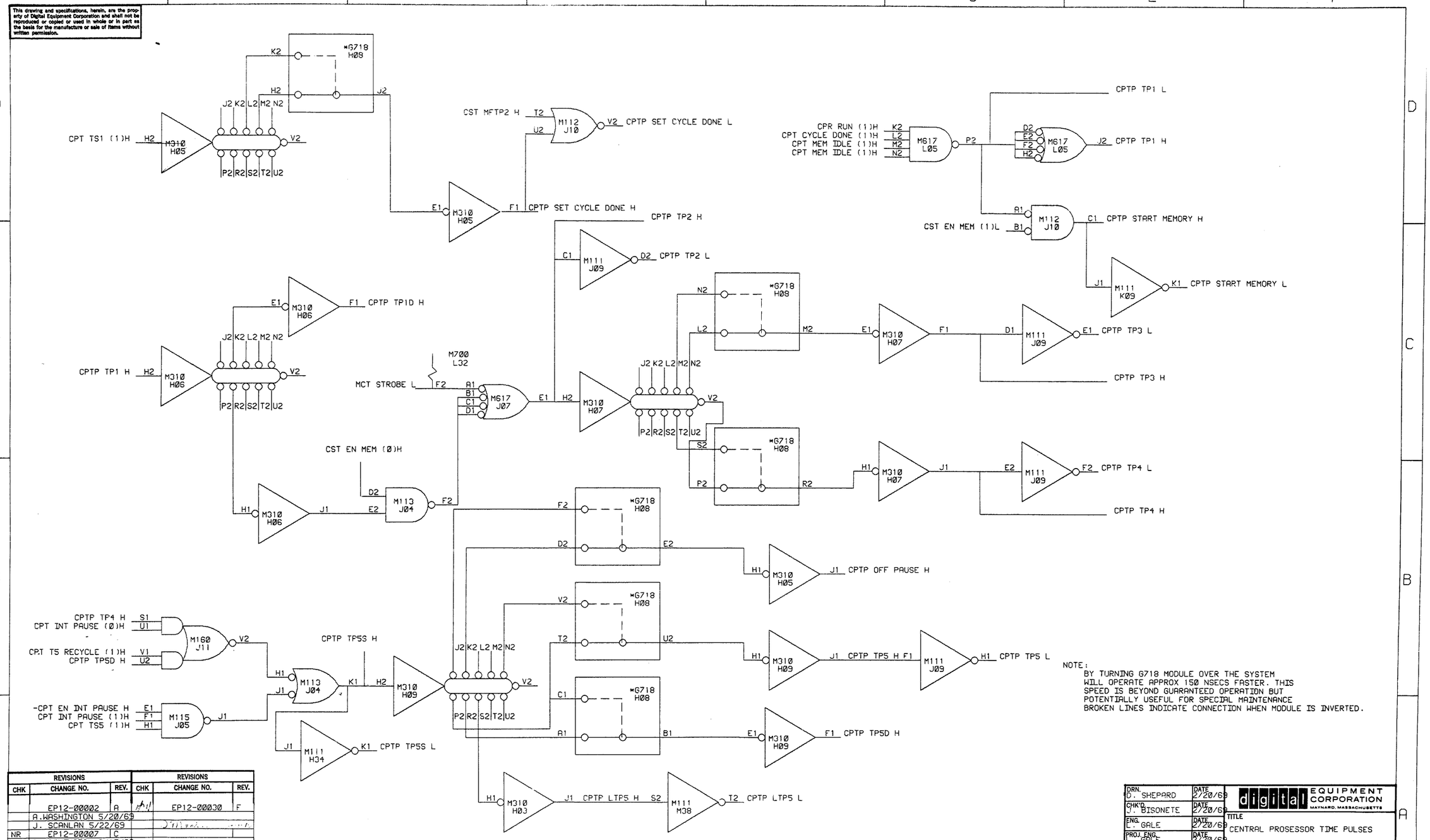
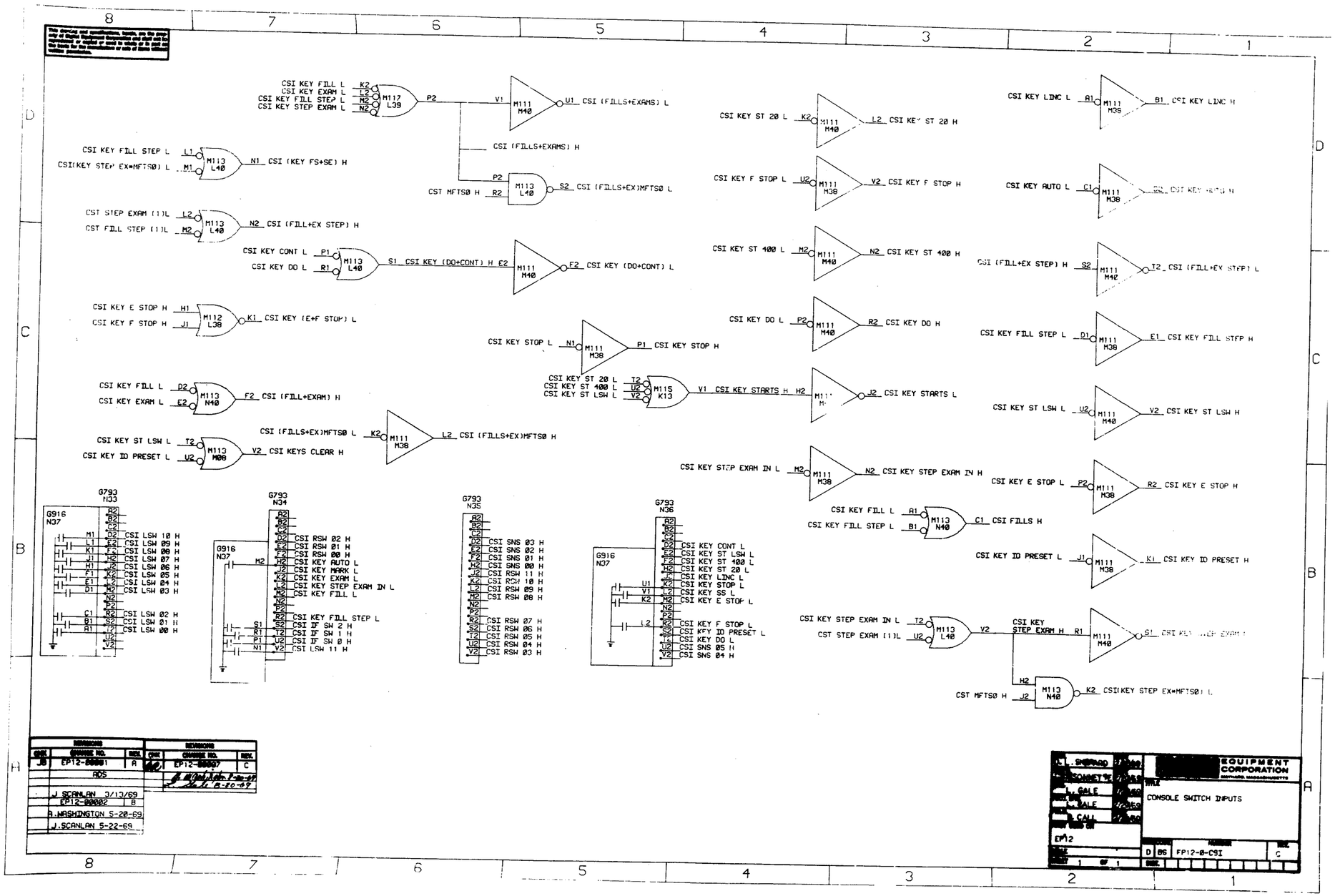


NOTE:
BY TURNING G718 MODULE OVER THE SYSTEM WILL OPERATE APPROX 150 NSECS FASTER. THIS SPEED IS BEYOND GUARANTEED OPERATION BUT POTENTIALLY USEFUL FOR SPECIAL MAINTENANCE BROKEN LINES INDICATE CONNECTION WHEN MODULE IS INVERTED.

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		


CSI KEY FILL L
CSI KEY EXAM L
CSI KEY FILL STEP L
CSI KEY STEP EXAM L
M117 L39
P2
V1
M111 M40
U1 CSI (FILLS+EXAMS) L
CSI (FILLS+EXAMS) H
CSI KEY FILL STEP L
CSI(KEY STEP EX*MFTSØ) L
M113 L40
N1 CSI (KEY FS+SE) H
P2
CST MFTSØ H
R2
M113 L40
S2 CSI (FILLS+EX)MFTSØ L
CSI STEP EXAM (1)L
CST FILL STEP (1)L
M113 L40
N2 CSI (FILL+EX STEP) H
CSI KEY CONT L
CSI KEY DO L
M113 L40
S1 CSI KEY (DO+CONT) H
E2
M111 M40
F2 CSI KEY (DO+CONT) L
CSI KEY E STOP H
CSI KEY F STOP H
M112 L38
K1 CSI KEY (E+F STOP) L
CSI KEY STOP L
M111 M38
P1 CSI KEY STOP H
CSI KEY FILL L
CSI KEY EXAM L
M113 N40
F2 CSI (FILL+EXAM) H
CSI KEY ST 20 L
CSI KEY ST 400 L
CSI KEY ST LSW L
M115 K13
V1 CSI KEY STARTS H
H2
J2 CSI KEY STARTS L
CSI KEY ST LSW L
CSI KEY ID PRESET L
M113 M08
V2 CSI KEYS CLEAR H
CSI (FILLS+EX)MFTSØ L
M111 M38
L2 CSI (FILLS+EX)MFTSØ H
CSI KEY ST 20 L
M111 M40
L2 CSI KEY ST 20 H
CSI KEY F STOP L
M111 M38
V2 CSI KEY F STOP H
CSI KEY ST 400 L
M111 M40
N2 CSI KEY ST 400 H
CSI KEY DO L
M111 M40
R2 CSI KEY DO H
CSI KEY STEP EXAM IN L
M111 M38
N2 CSI KEY STEP EXAM IN H
CSI KEY FILL L
CSI KEY FILL STEP L
M113 N40
C1 CSI FILLS H
CSI KEY STEP EXAM IN L
CST STEP EXAM (1)L
M113 L40
V2
CSI KEY STEP EXAM H
M111 M40
CST MFTSØ H
M113 N40
K2 CSI(KEY STEP EX*MFTSØ) L
CSI KEY LINC L
M111 M38
B1 CSI KEY LINC H
CSI KEY AUTO L
M111 M38
C2 CSI KEY AUTO H
CSI (FILL+EX STEP) H
M111 M40
I2 CSI (FILL+EX STEP) L
CSI KEY FILL STEP L
M111 M38
E1 CSI KEY FILL STEP H
CSI KEY ST LSW L
M111 M40
V2 CSI KEY ST LSW H
CSI KEY E STOP L
M111 M38
R2 CSI KEY E STOP H
CSI KEY ID PRESET L
M111 M38
K1 CSI KEY ID PRESET H
G793 N33
G916 N37
CSI LSW 10 H
CSI LSW 09 H
CSI LSW 08 H
CSI LSW 07 H
CSI LSW 06 H
CSI LSW 05 H
CSI LSW 04 H
CSI LSW 03 H
CSI LSW 02 H
CSI LSW 01 H
CSI LSW 00 H
G793 N34
G916 N37
CSI RSW 02 H
CSI RSW 01 H
CSI RSW 00 H
CSI KEY AUTO L
CSI KEY MARK L
CSI KEY EXAM L
CSI KEY STEP EXAM IN L
CSI KEY FILL L
CSI KEY FILL STEP L
CSI IF SW 2 H
CSI IF SW 1 H
CSI IF SW 0 H
CSI LSW 11 H
G793 N35
CSI SNS 03 H
CSI SNS 02 H
CSI SNS 01 H
CSI SNS 00 H
CSI RSW 11 H
CSI RSW 10 H
CSI RSW 09 H
CSI RSW 08 H
CSI RSW 07 H
CSI RSW 06 H
CSI RSW 05 H
CSI RSW 04 H
CSI RSW 03 H
G793 N36
G916 N37
CSI KEY CONT L
CSI KEY ST LSW L
CSI KEY ST 400 L
CSI KEY ST 20 L
CSI KEY LINC L
CSI KEY STOP L
CSI KEY SS L
CSI KEY E STOP L
CSI KEY F STOP L
CSI KEY ID PRESET L
CSI KEY DO L
CSI SNS 05 H
CSI SNS 04 H
REVISIONS
ZONE
DWG NO.
REV.
JD
EP12-B0001
A
ADS
J.SCANLAN 3/13/69
EP12-B0002
B
R.WASHINGTON 5-20-69
J.SCANLAN 5-22-69
REVISIONS
ZONE
DWG NO.
REV.
EP12-B0007
C
EQUIPMENT CORPORATION
CONSOLE SWITCH INPUTS
EP12
D 05
FP12-B-CSI
C
1 OF 1

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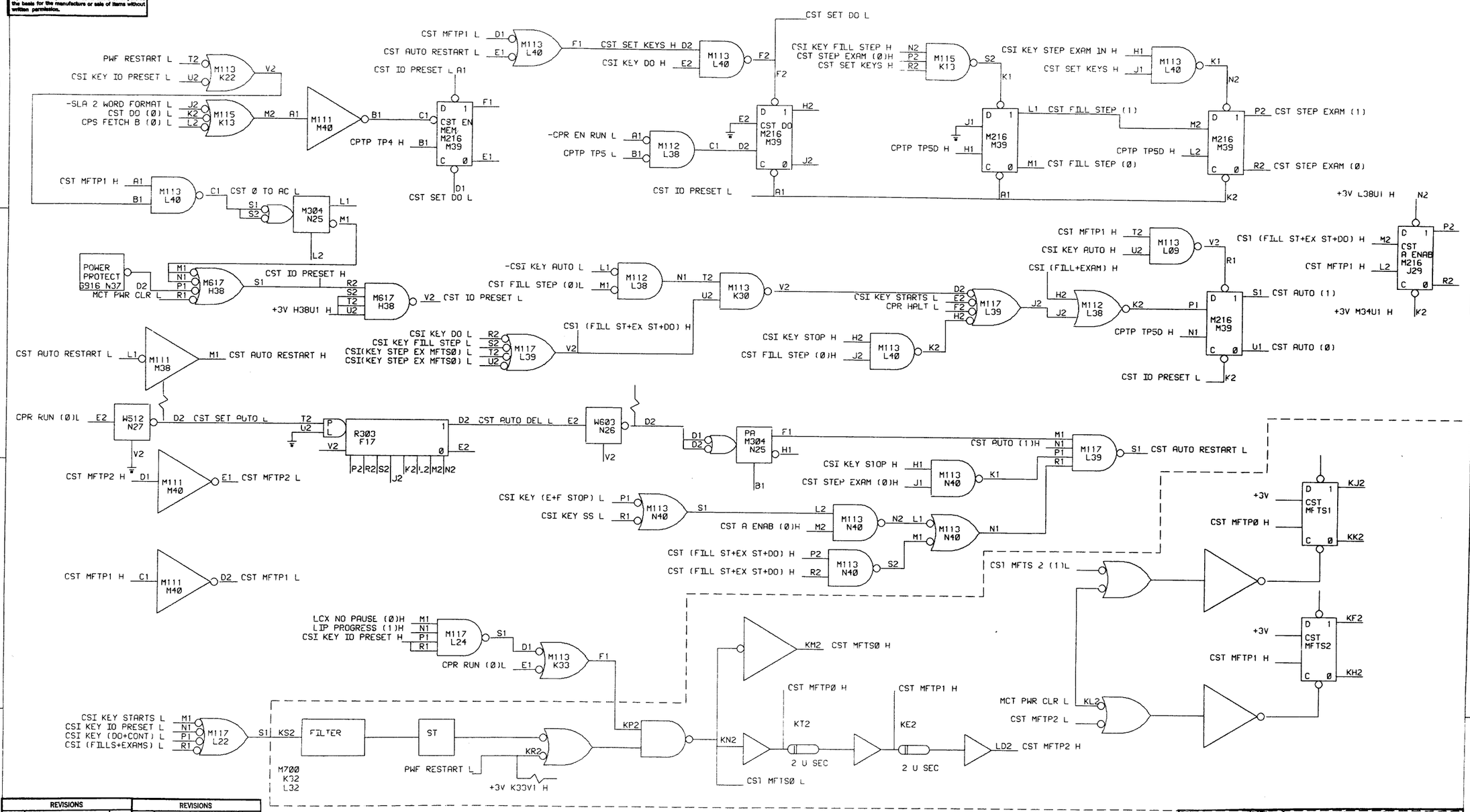

REVISIONS			REVISIONS		
CHK	CHANGE NO.	REV.	CHK	CHANGE NO.	REV.
JB	EP12-00001	A		EP12-00007	E
	ADS			A WASHINGTON 8/15/69	
	J SCANLAN 3/13/69			L GALE 8/20/69	
	EP12-00002	B		EP12-00015	F
	A WASHINGTON 5/20/69			K COTE 10/14/69	
	J SCANLAN 5/22/69			J SCANLAN 10/17/69	
	EP12-00003	C	NR	EP12-00016	H
	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 NUMBER EP12-Ø-CST REV. J
SCALE		
SHEET 1 OF 1		DIST.

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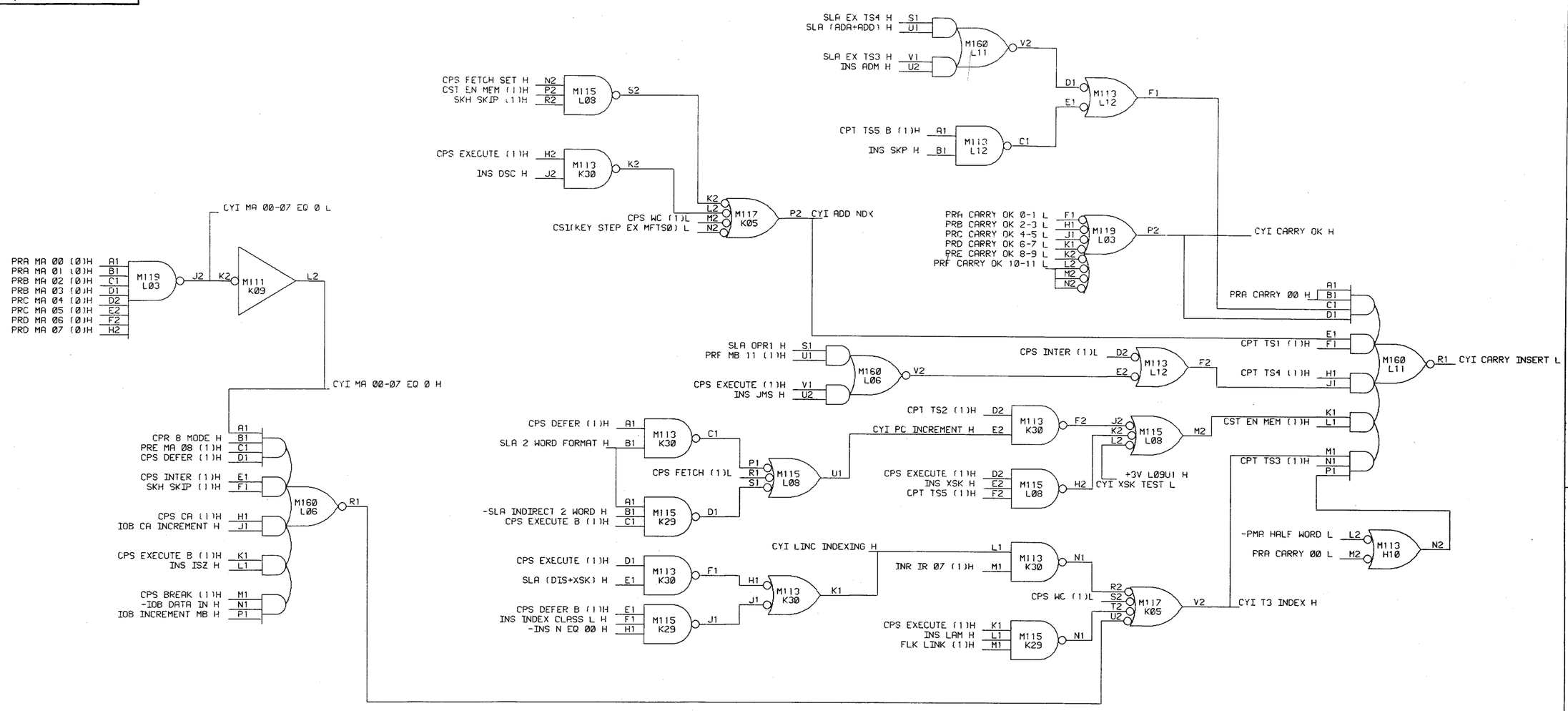

REVISIONS		
CHK	CHANGE NO.	REV.

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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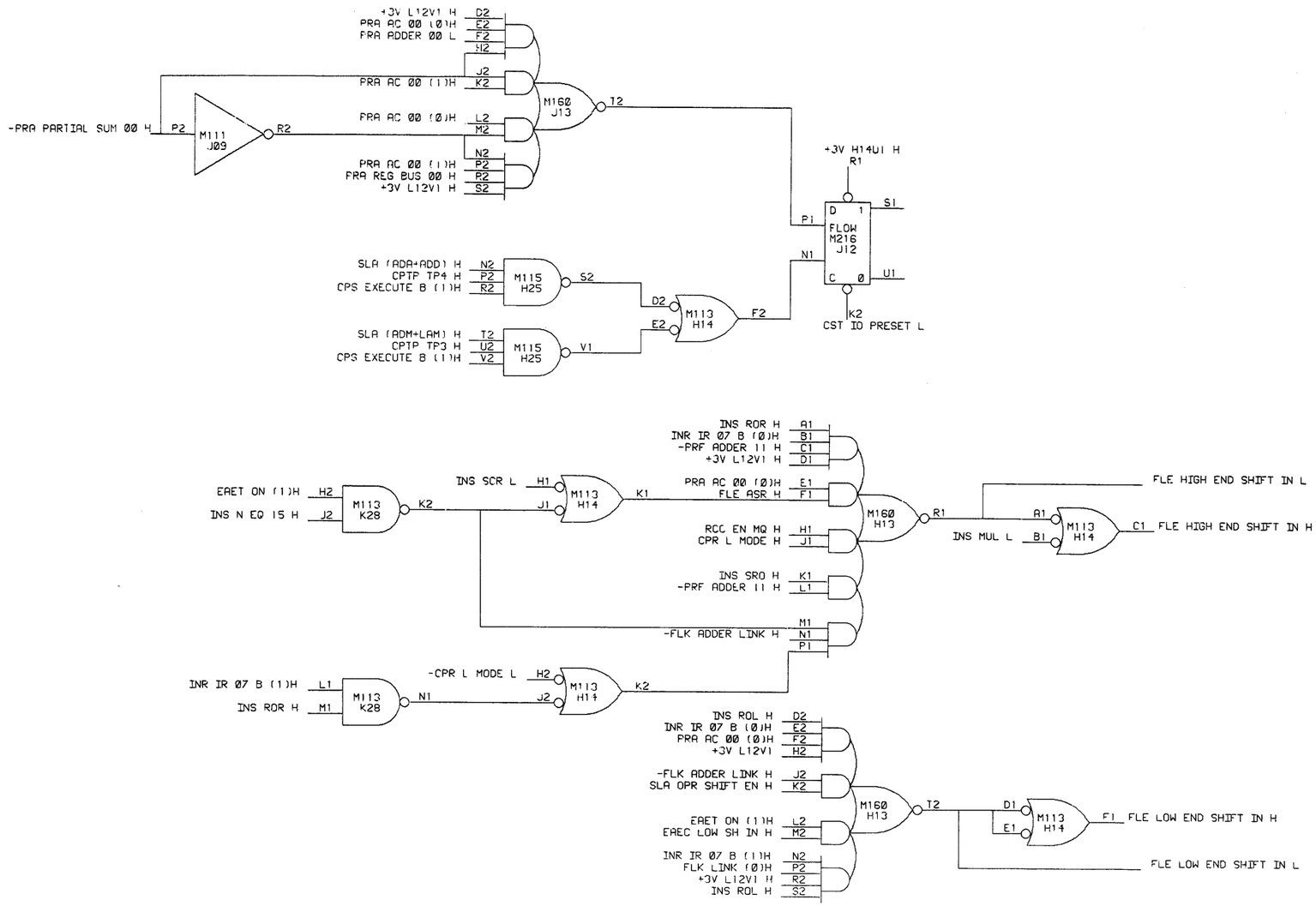

REVISIONS		
CHK	CHANGE NO.	REV.

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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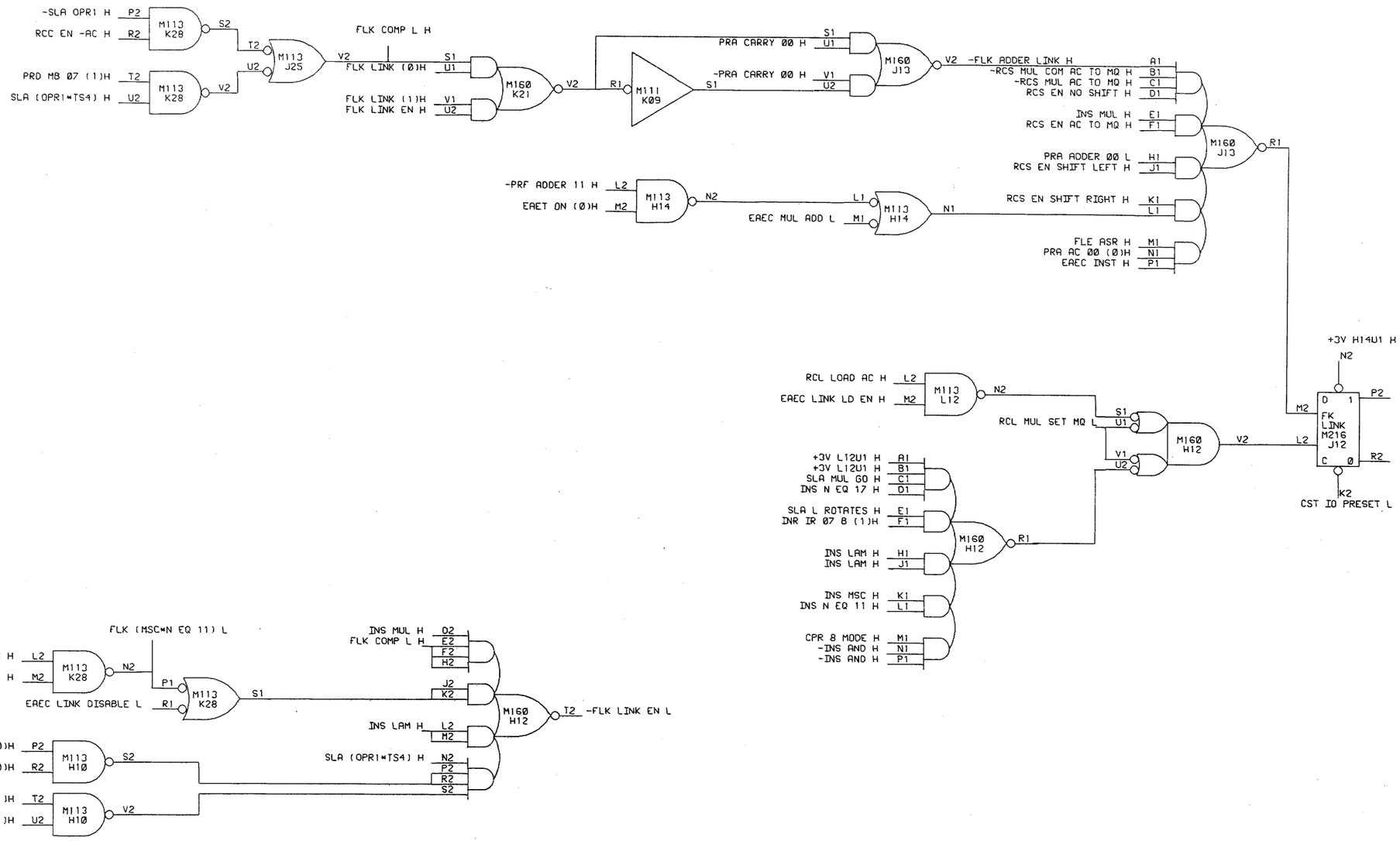

REVISIONS		
CHK	CHANGE NO.	REV.
JB	00001	A
	ADS	
	J SCANLAN 3/13/69	
	EP12-00002	B

DRN.	DATE
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: LINK LOGIC

SIZE	CODE	NUMBER	REV.
D	BS	EP12-0-FLK	B

DIST.

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M903 N14

A1 B1 IOO BAC 00 (1)H
C1
D1 IOO BAC 01 (1)H
E1 IOO BAC 02 (1)H
F1
H1 IOO BAC 03 (1)H
J1 IOO BAC 04 (1)H
K1
L1 IOO BAC 05 (1)H
M1 IOO BAC 06 (1)H
N1
P1 IOO BAC 07 (1)H
R1
S1 IOO BAC 08 (1)H
T1
U1
V1

M903 N15

A1 B1 IOO BMB 00 (1)H
C1
D1 IOO BMB 01 (1)H
E1 IOO BMB 02 (1)H
F1
H1 IOO BMB 03 (0)H
J1 IOO BMB 03 (1)H
K1
L1 IOO BMB 04 (0)H
M1 IOO BMB 04 (1)H
N1
P1 IOO BMB 05 (0)H
R1
S1 IOO BMB 05 (1)H
T1
U1
V1

M903 N16

A1 B1 EXT IO BUS 00 L
C1
D1 EXT IO BUS 01 L
E1 EXT IO BUS 02 L
F1
H1 EXT IO BUS 03 L
J1 EXT IO BUS 04 L
K1
L1 EXT IO BUS 05 L
M1 EXT IO BUS 06 L
N1
P1 EXT IO BUS 07 L
R1
S1 EXT IO BUS 08 L
T1
U1
V1

M903 N17

A1 B1 EXT DATA ADD 00 L
C1
D1 EXT DATA ADD 01 L
E1 EXT DATA ADD 02 L
F1
H1 EXT DATA ADD 03 L
J1 EXT DATA ADD 04 L
K1
L1 EXT DATA ADD 05 L
M1 EXT DATA ADD 06 L
N1
P1 EXT DATA ADD 07 L
R1
S1 EXT DATA ADD 08 L
T1
U1
V1

M903 N18

A1 B1 EXT DATA 00 L
C1
D1 EXT DATA 01 L
E1 EXT DATA 02 L
F1
H1 EXT DATA 03 L
J1 EXT DATA 04 L
K1
L1 EXT DATA 05 L
M1 EXT DATA 06 L
N1
P1 EXT DATA 07 L
R1
S1 EXT DATA 08 L
T1
U1
V1

M903 N13

A1 B1 IOB XL 00 H
C1
D1 IOB XL 01 H
E1 IOB XL 02 H
F1
H1 IOB XL 03 H
J1 IOB XL 04 H
K1
L1 IOB XL 05 H
M1 IOB XL 06 H
N1
P1 IOB XL 07 H
R1
S1 IOB XL 10 H
T1
U1
V1

M903 N14

A2
B2
C2
D2 IOO BAC 09 (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 06 (0)H
E2 IOO BMB 06 (1)H
F2
H2 IOO BMB 07 (0)H
J2
K2 IOO BMB 07 (1)H
L2
M2 IOO BMB 08 (0)H
N2
P2 IOO BMB 08 (1)H
R2
S2 IOO BMB 09 (1)H
T2 IOO BMB 10 (1)H
U2
V2 IOO BMB 11 (1)H

M903 N16

A2
B2
C2
D2 EXT IO BUS 09 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 (0)H
T2 MEA BRK SYNC CLK B H
U2
V2 EXT ENAB INT PAUSE H

M903 N17

A2
B2
C2
D2 EXT DATA ADD 09 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 (0)H
R2
S2 IOO ADD ACCEPTED (0)H
T2 EXT INCREMENT MB L
U2
V2 IOO BB INITIALIZE H

M903 N18

A2
B2
C2
D2 EXT DATA 09 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 (0)H
R2
S2 EXT EXT DATA ADD 02 L
T2 EXT EXT DATA ADD 01 L
U2
V2 EXT EXT DATA ADD 00 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 EWS 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 03 (0)H
E2 MXB MCBMB 04 (0)H
F2
H2 MXB MCBMB 05 (0)H
J2
K2 MXB BMA 00 (1)H
L2
M2 MXB BMA 01 (1)H
N2
P2 MXB BMA 02 (1)H
R2
S2 MXB BMA 03 (1)H
T2 MXB BMA 04 (1)H
U2
V2 MXB BMA 05 (1)H

W021 N21

C2
D2 MXB BMA 06 (1)H
E2 MXB BMA 07 (1)H
F2
H2 MXB BMA 08 (1)H
J2
K2 MXB BMA 09 (1)H
L2
M2 MXB BMA 10 (1)H
N2
P2 MXB BMA 11 (1)H
R2
S2 MXB MCBMB 00 (0)H
T2 MXB MCBMB 01 (0)H
U2
V2 MXB MCBMB 02 (0)H

W021 N22

C2
D2 MXF EA 0 H
E2 MXF EA 1 H
F2
H2 MXF EA 2 H
J2
K2 MXB MCBMB 06 (0)H
L2
M2 MXB MCBMB 07 (0)H
N2
P2 MXB MCBMB 08 (0)H
R2
S2 MXB MCBMB 09 (0)H
T2 MXB MCBMB 10 (0)H
U2
V2 MXB MCBMB 11 (0)H

W021 N23

C2
D2
E2 MCS MEM 00 H
F2
H2 MCS MEM 01 H
J2
K2 MCS MEM 02 H
L2
M2 MCS MEM 03 H
N2
P2 MCS MEM 04 H
R2
S2 MCS MEM 05 H
T2 MCS MEM 06 H
U2
V2 MCS MEM 07 H

W021 N24

C2
D2 MCS MEM 08 H
E2 MCS MEM 09 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	[illegible]	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

M617 H38 → E1 INR IR 07 B (0)H
M617 H38 → J2 INR IR 07 B (1)H

CPTP TP2 H
CPS DEFER (0)H
CPS EXECUTE (0)H
CPS EXC 2 (0)H
M617 H38 → P2 INR CLEAR IR L

M617 H38 → L1 INR LOAD IR 0-7 H
INR LOAD IR 8-11 H

CPS FETCH B (1)H
CPTP TP3 H
SLA (MUL*EXECUTE) H
M113 H36
M115 H31 → D1

CPTP TPSD H
-INS SAM H
CPT RECYCLE SYNC (1)H
CPR L MODE H
M117 H35 → E1

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
M113 H36
M115 H37 → M2

PRE REG BUS 09 H
INR IR 09 (1)H
INR COUNT ENAB H
INR IR 09 (0)H
INR CARRY 10 L
M111 H34
M115 H37 → N1

INR IR 10 (0)H
INR IR 11 (0)H
M115 H37 → H2
INR CARRY 10 L
INR COUNT ENAB H
INR IR 10 (1)H
INR IR 11 (1)H
M115 H37 → J1
PRF REG BUS 10 H
M113 H36 → N2
INR (FETCH*TS3) H
PRF REG BUS 11 H
M113 H36 → N1
INR COUNT ENAB H
INR IR 11 (0)H
M113 H36 → F1
M113 H36 → C1

SLA L ROTATES H
-INS N EQ 00 H
SLA MUL GO H
-INS N EQ 01 H
M121 H33 → E1
M111 H34 → E1 INR COUNT ENAB H
INR COUNT ENAB L

CPS FETCH (1)L
CPT TS3 (1)L
M112 H32 → C1 INR (FETCH*TS3) H

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	
RC	EP12-00023	C
	R. Mueller 12-2-70	

DRN. L. SCANLAN	DATE 2-20-69
CHK'D. J. PISCIOTTE	DATE 2-20-69
ENG. L. GALE	DATE 2-20-69
PROJ. ENG. L. GALE	DATE 2-20-69
PROD. D. CALI	DATE 2-20-69
FIRST USED ON EP12	
SCALE	
SHEET 1 OF 1	

digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS

TITLE: INSTRUCTION REGISTER

SIZE	CODE	NUMBER	REV.
D	BS	EP12-0-INR	C
DIST.			

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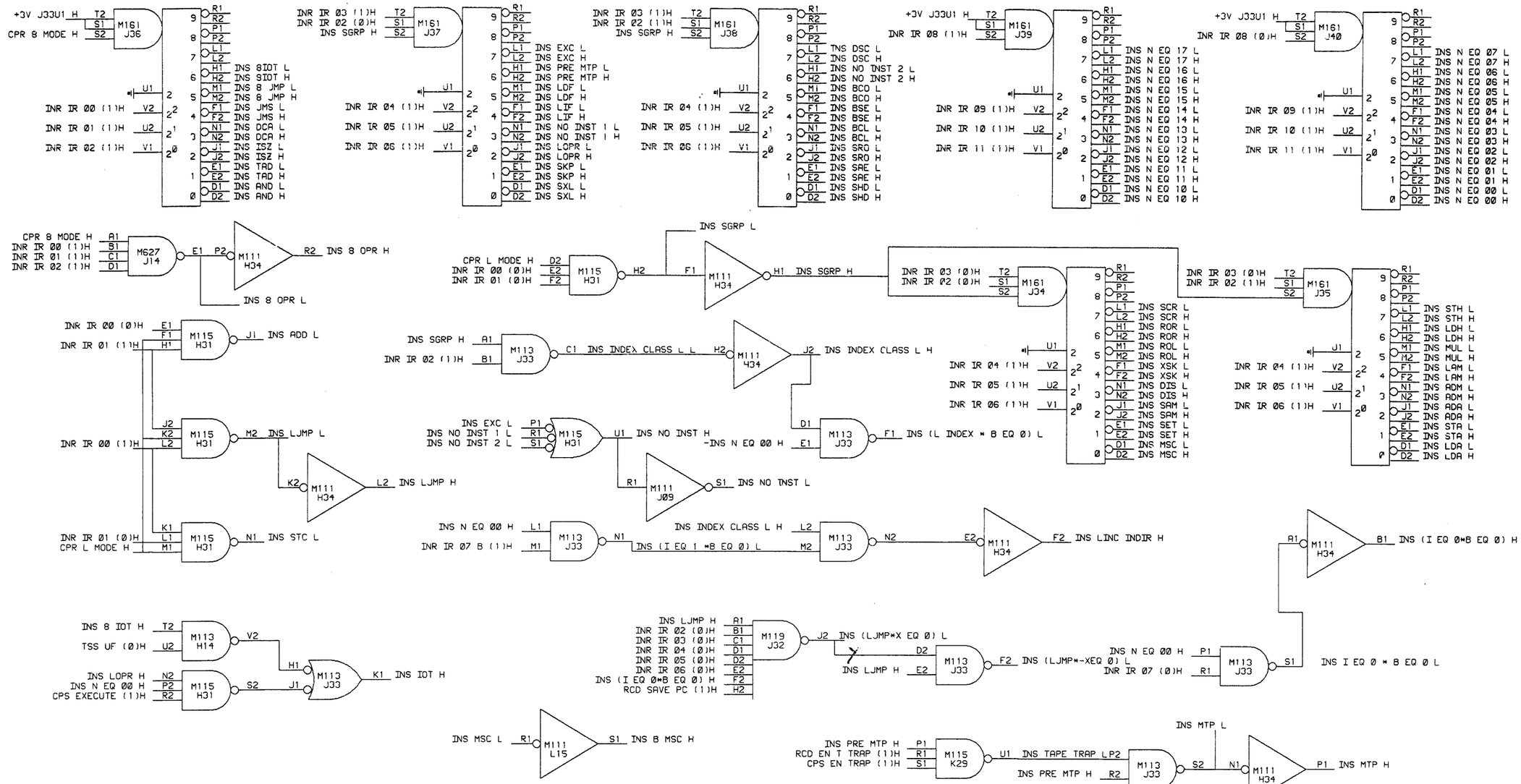

REVISIONS			REVISIONS		
CHK	CHANGE NO.	REV.	CHK	CHANGE NO.	REV.
NR	EP12-00001	A	RJN	EP12-00030	E
	ADS			KATHY WALSH 11/5/70	
	J. SCANLAN 3/13/69			DJO ank 11-17-70	
NR	EP12-00007	B			
	ADS				
	L. GALE 8/20/69				
NR	EP12-00016	C			
	K. COTE 11-12-69				
	J. SCANLAN 11-14-69				
FV	EP12-00021	D			
	D. SOUTHER 6-15-70				
	J. SCANLAN 6-17-70				

DRN D SHEPARD	DATE 2/20/69	digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS
CHK'D J BISONETE	DATE 2/20/69	
ENG L GALE	DATE 2/20/69	TITLE INSTRUCTIONS
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-INS | REV. E
SCALE		SHEET 1 OF 1 | DIST.

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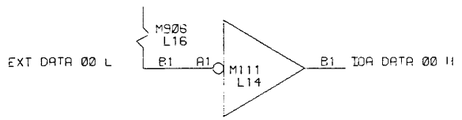

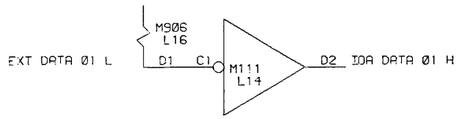

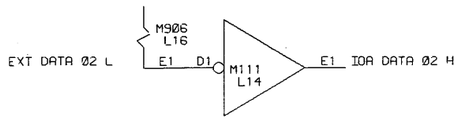

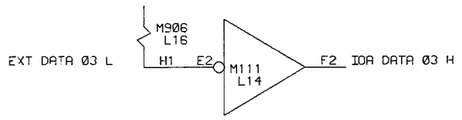

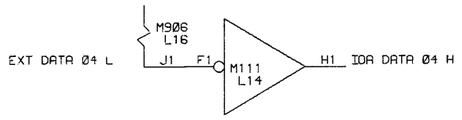

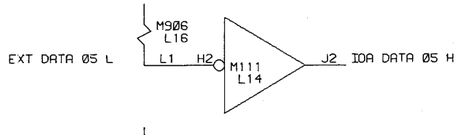

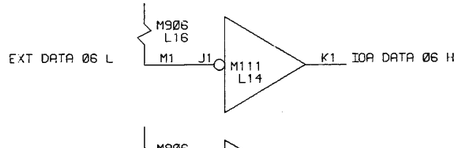

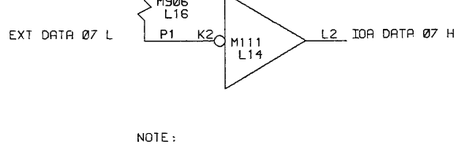

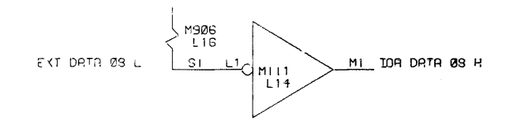

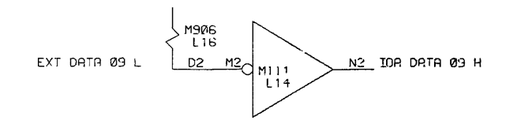

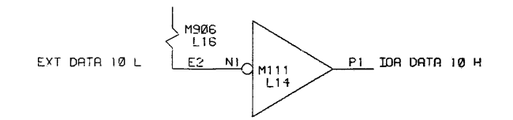

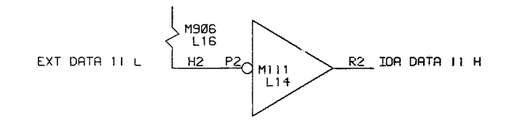

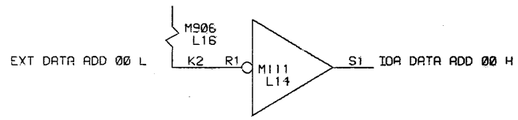

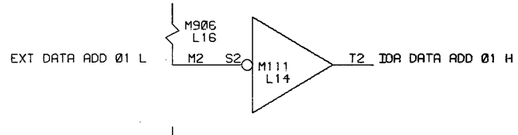

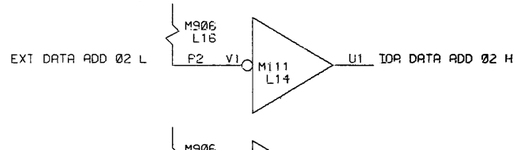

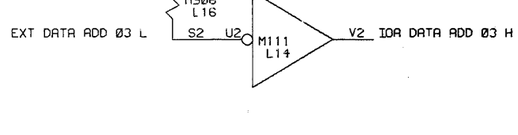

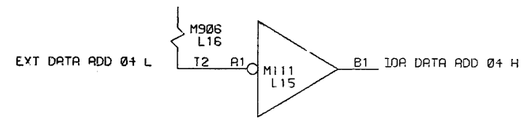

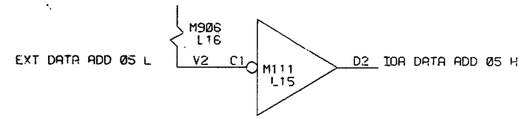

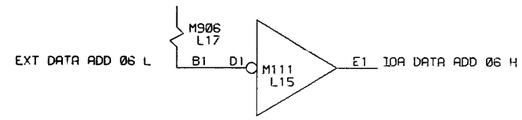

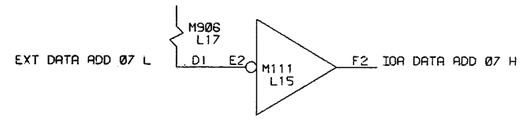

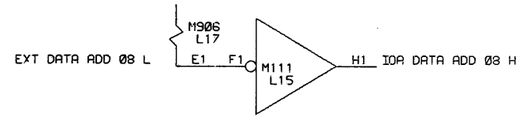

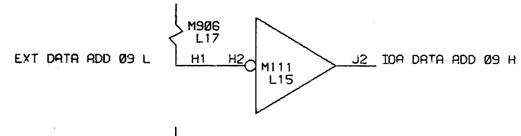

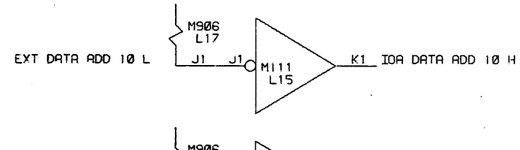

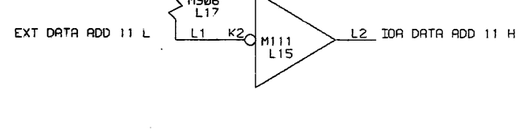

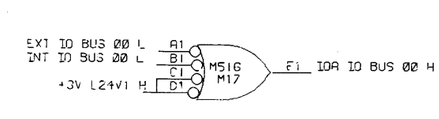

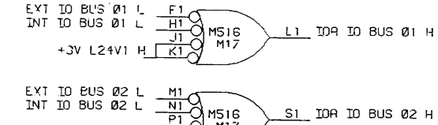

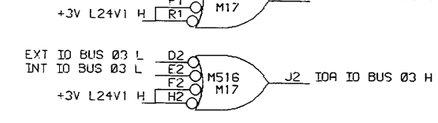

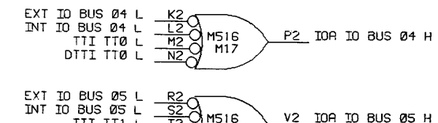

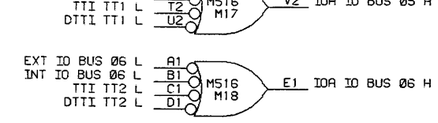

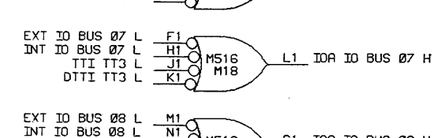

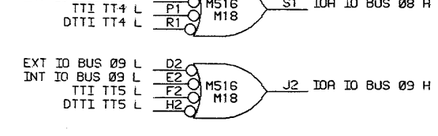

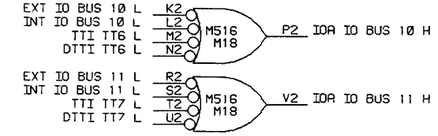

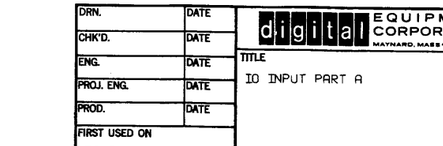

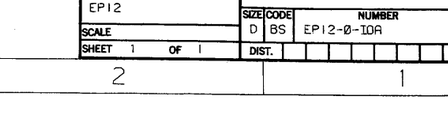

NOTE:

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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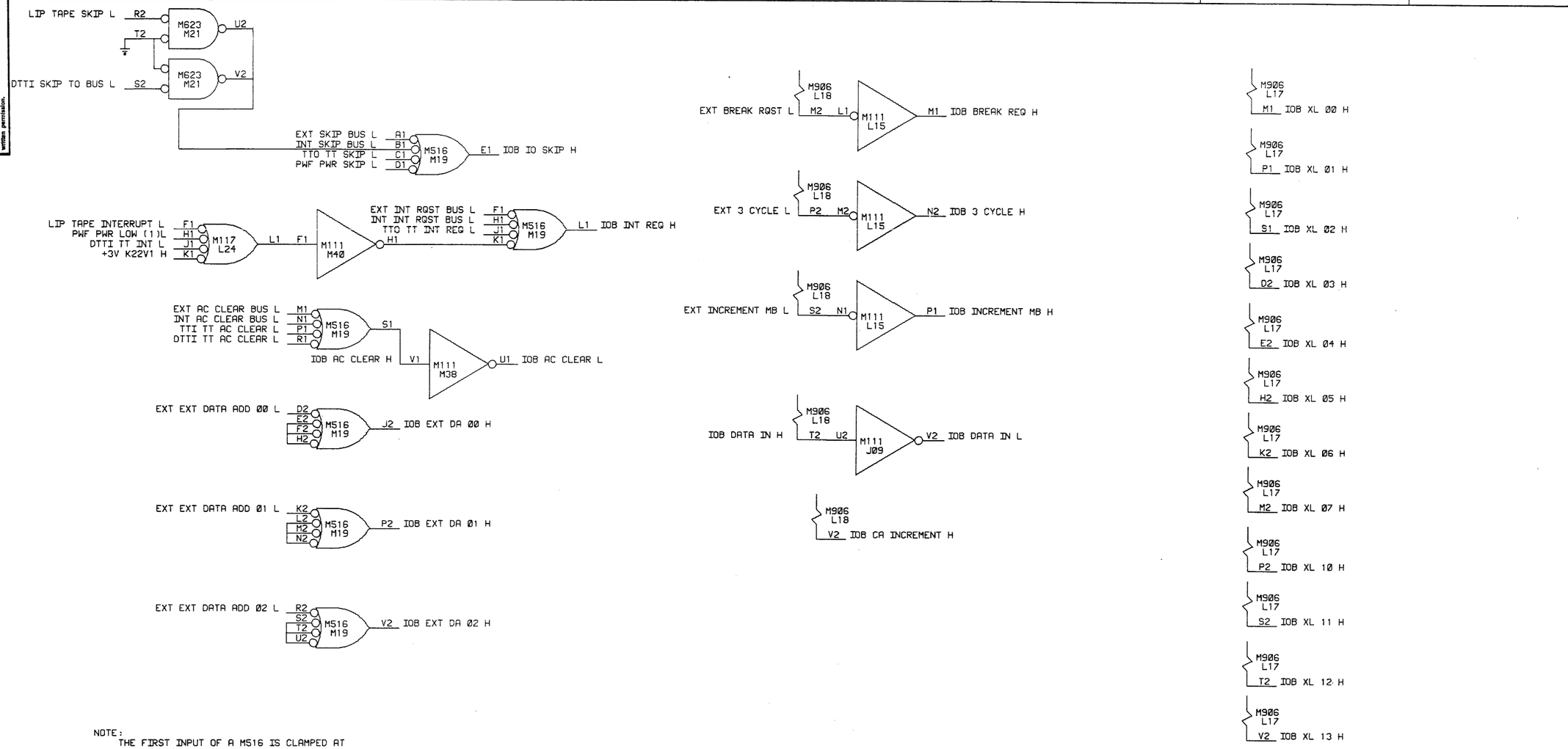

NOTE:
THE FIRST INPUT OF A M516 IS CLAMPED AT GND AND +3V. IN ADDITION. THIS INPUT IS SUPPLIED WITH 220 OHMS TO +5V. THE SECOND INPUT IS EFFECTIVELY A 500 OHMS TO 3.3V. BOTH THE FIRST AND SECOND INPUTS ARE USED FOR COLLECTOR ORED BUS INPUTS THIRD AND FORTH M516 INPUTS ARE STD TTL GATE INPUTS.

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 Bisonette 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 BS NUMBER EP12-0-IOB REV. B
SCALE		DIST.
SHEET 1 OF 1		

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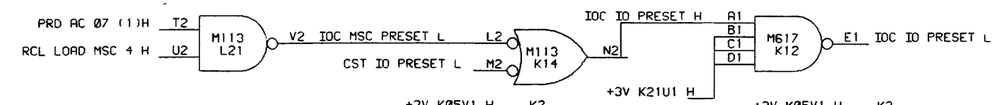

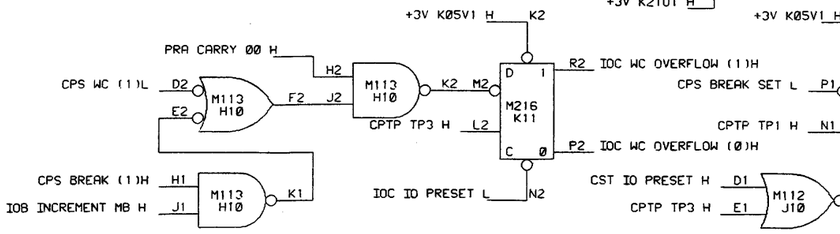

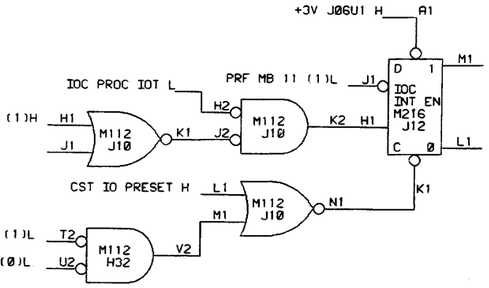

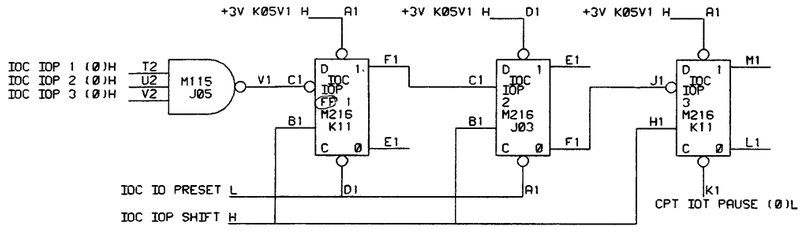

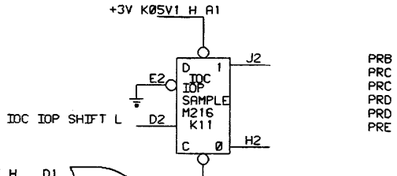

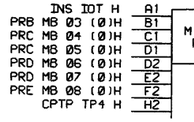

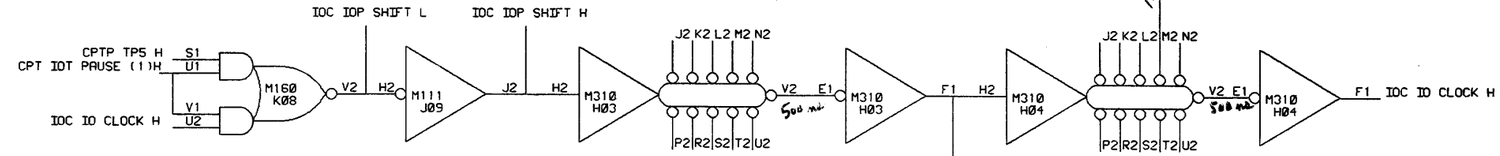

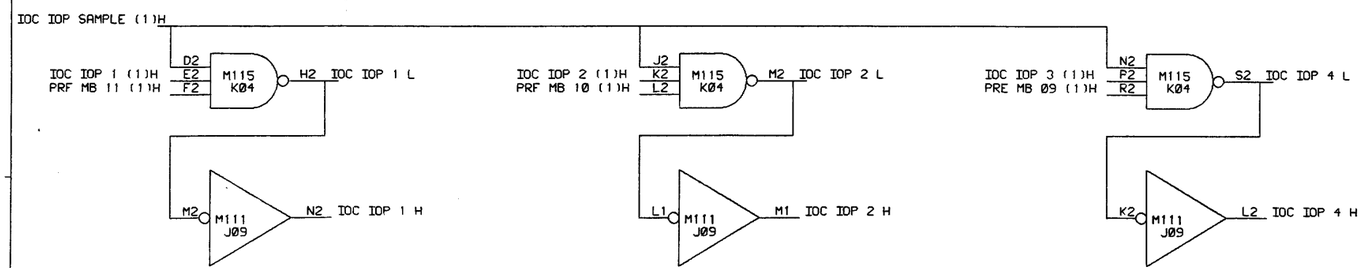

REVISIONS			REVISIONS		
CHK	CHANGE NO.	REV.	CHK	CHANGE NO.	REV.
JB	EP12-00001	A	GH	EP12-00026	E
	ADS			S. GOLDSBY 9-1-70	
	J. SCANLAN 3/13/69			D. MACKLIN 9-2-70	
PD	EP12-00002	B		EP12-00030	F
	A.WASHINGTON 5/20/69				
	J. SCANLAN 5/22/69				
NR	EP12-00013	C			
	D. SOUTHER 10/1/69				
	J. SCANLAN 10/6/69				
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. BISONETE	DATE 2/20/69	
ENG. L. GALE	DATE 2/20/69	TITLE IO CONTROL & TIMING
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-IOC | REV. F
SCALE		
SHEET OF		DIST.

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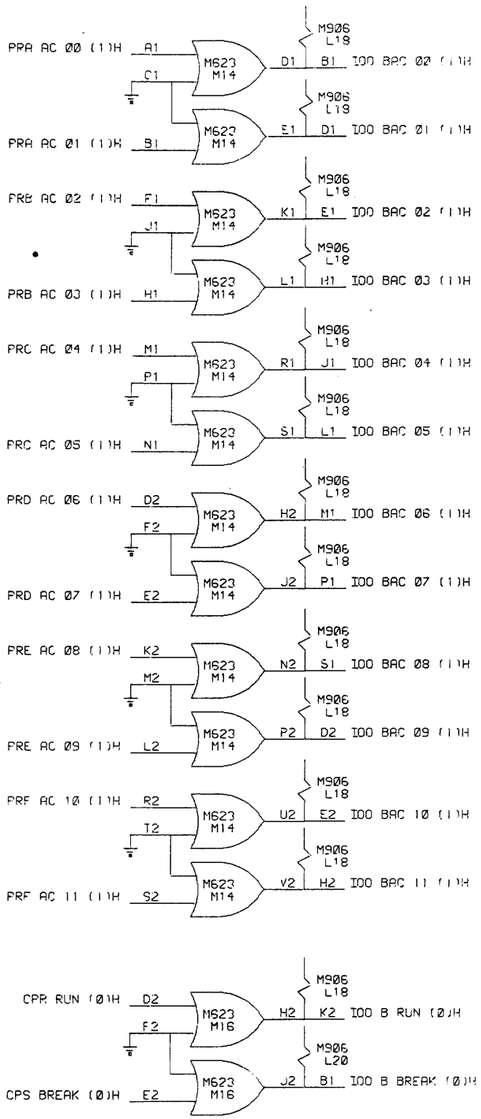

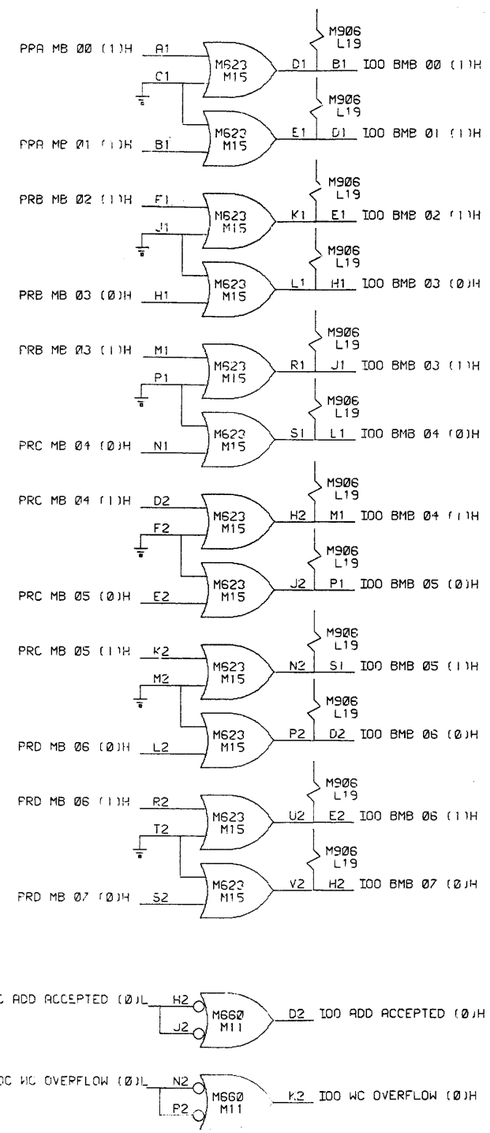

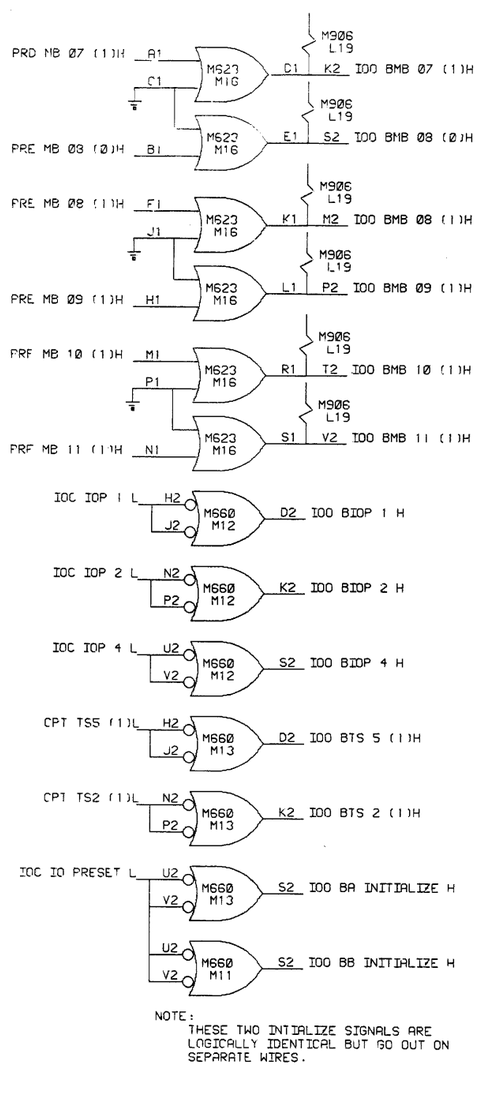

NOTE:
THESE TWO INTIALIZE SIGNALS ARE LOGICALLY IDENTICAL BUT GO OUT ON SEPARATE WIRES.

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		
SHEET 1 OF 1		DIST.

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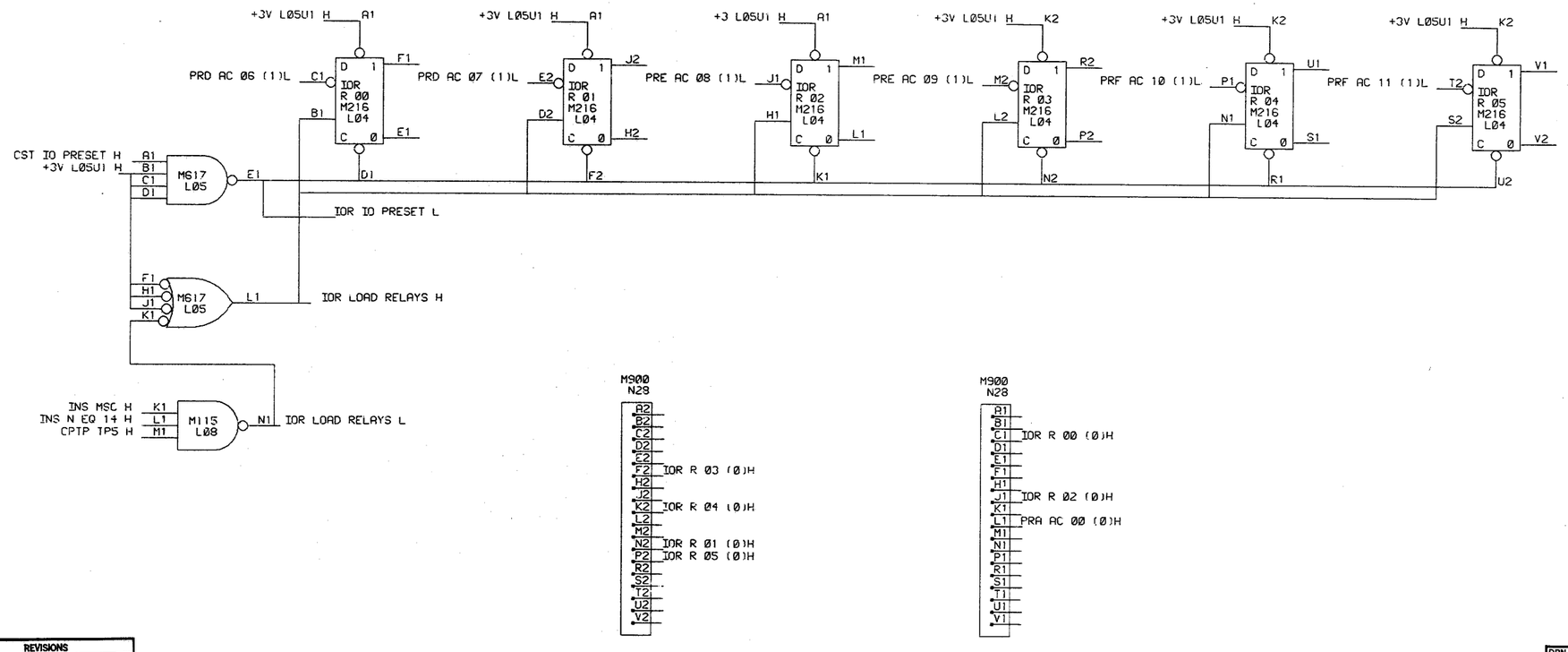

REVISIONS		
CHK	CHANGE NO.	REV.
	EP12-00001	A
	ADS	
	J.SCANLAN G-2-69	
	EP12-00003	B

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.

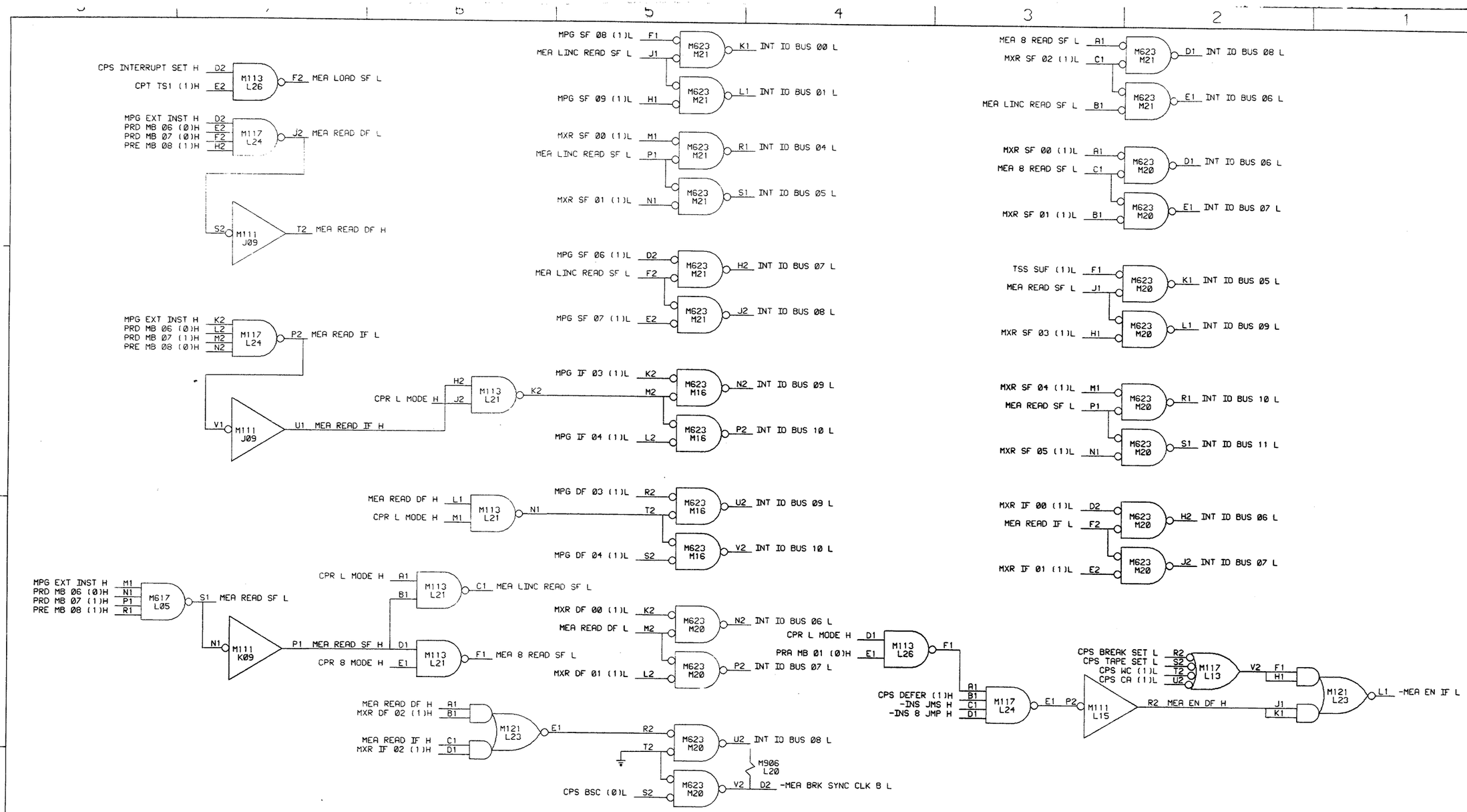
M901 L02

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	KJW	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	digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS
CHKD J BISONETE	DATE 2/20/69	
ENG L GALE	DATE 2/20/69	TITLE: INTER PROC 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-IPC · REV. J
SCALE		DIST.
SHEET 1 OF 1		



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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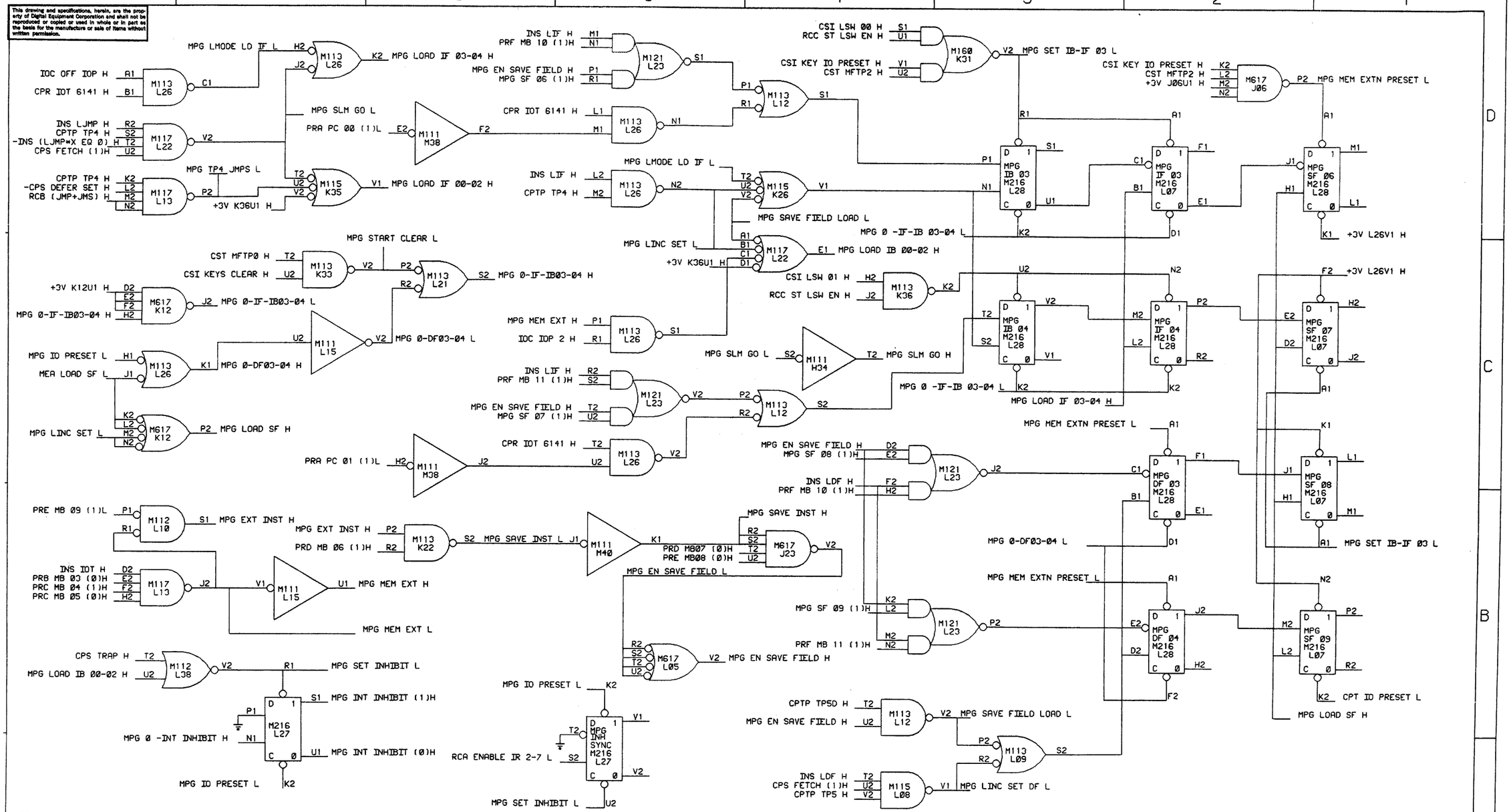

REVISIONS			REVISIONS		
CHK	CHANGE NO.	REV.	CHK	CHANGE NO.	REV.
JB	EP12-00001	A	NR	EP12-00007	E
	ADS			A WASHINGTON 8/20/69	
	J SCANLAN 3/13/69			L GALE 8/22/69	
PD	EP12-00002	B	NR	EP12-00015	F
	A WASHINGTON 5/20/69			K. COTE 10-14-69	
	J SCANLAN 5/22/69			J. SCANLAN 10-14-69	
	EP12-00003	C	NR	EP12-00018	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	TITLE MEM PAGE EXTN CONTROL	
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
SCALE		NUMBER EP12-0-MPG	REV. J
SHEET 1 OF 1		DIST.	

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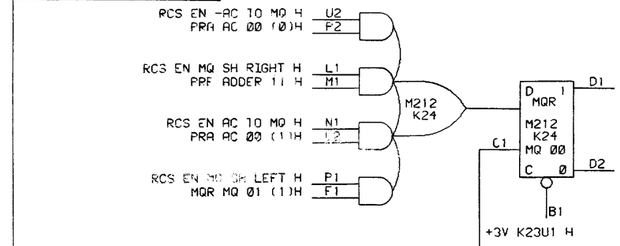

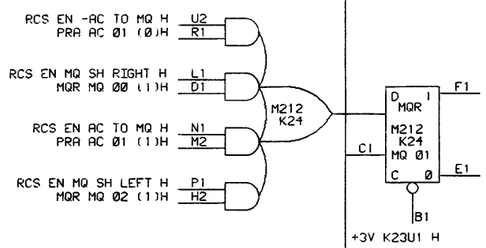

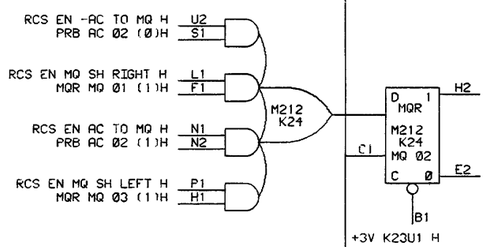

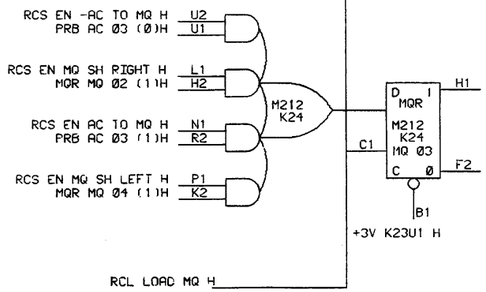

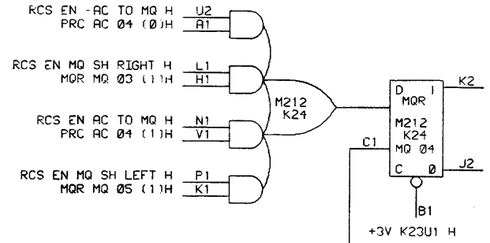

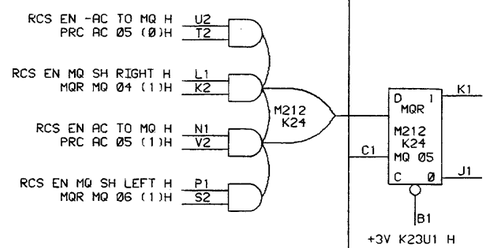

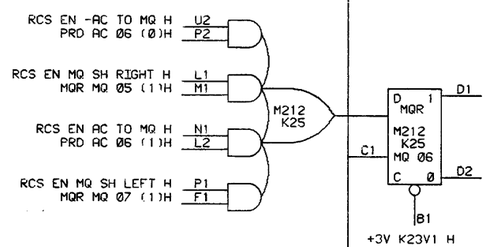

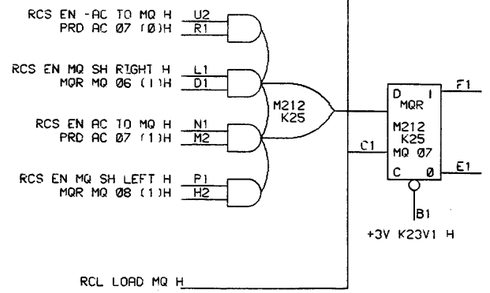

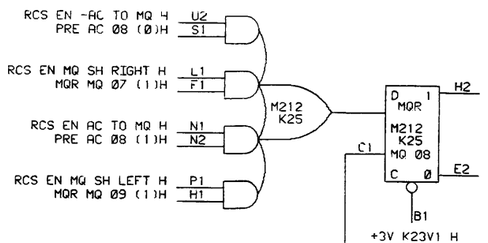

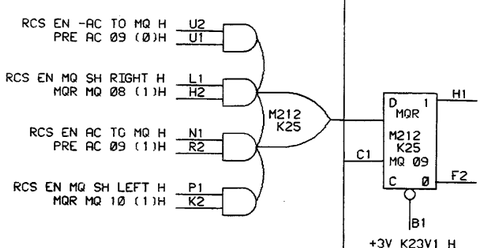

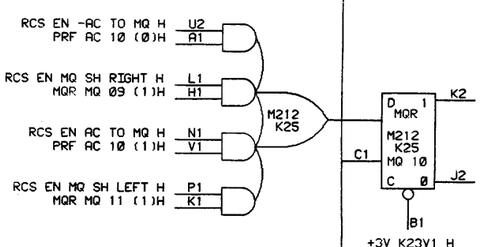

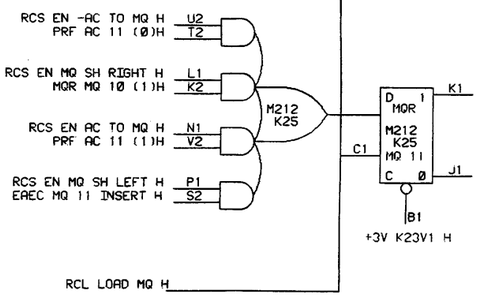

REVISIONS		
CHK	CHANGE NO.	REV.
PD	EP12-00002	A
	A.WASHINGTON 5-20-69	
	J. SCANLAN 5-22-69	
	EP12-00030	B

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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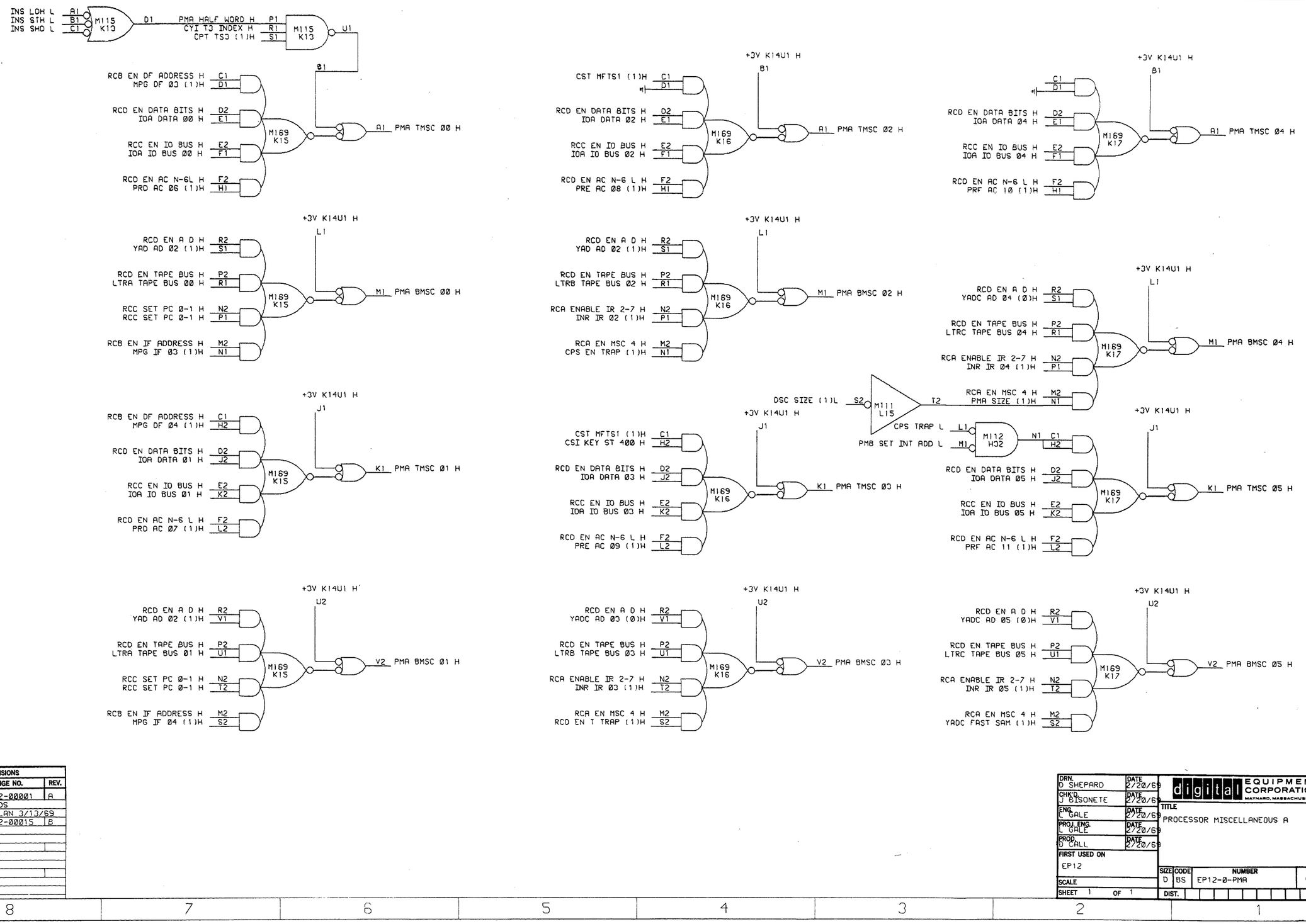

REVISIONS		
CHK	CHANGE NO.	REV.
JB	EP12-00001	A
	ADS	
	J SCANLAN 3/13/69	
	EP12-0001S	B

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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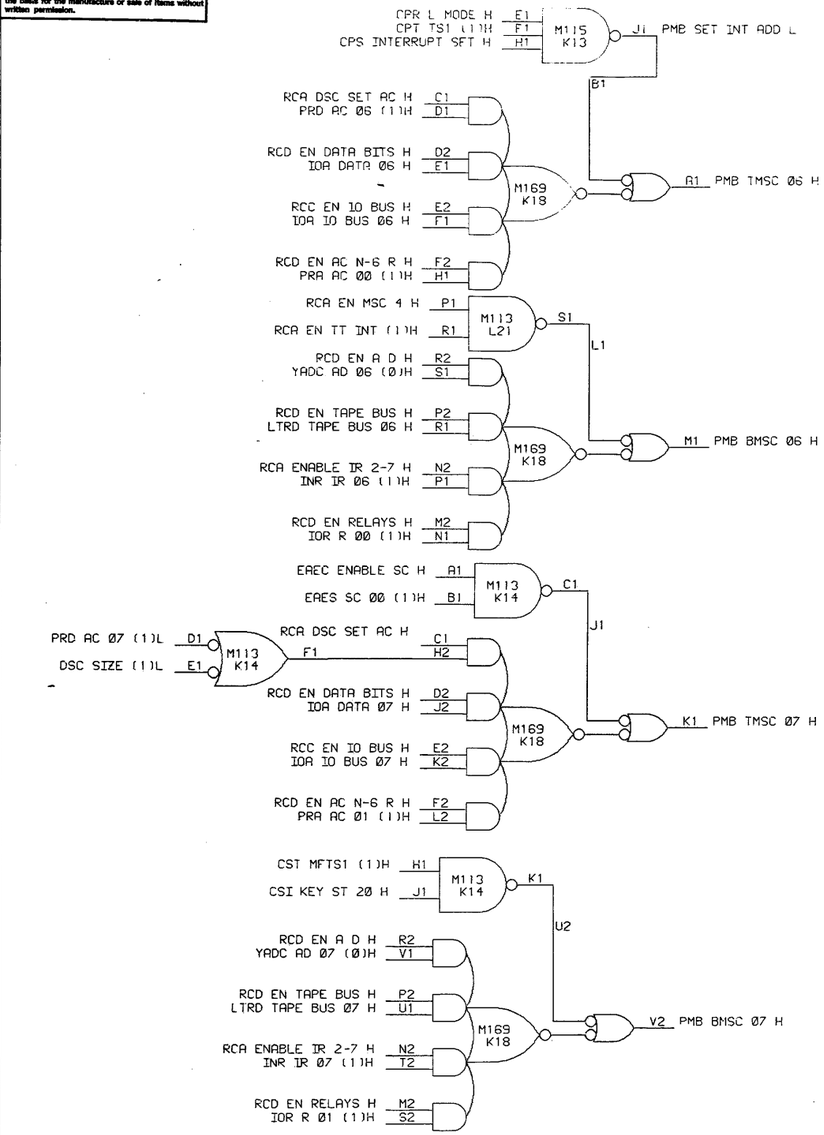

REVISIONS		
CHK	CHANGE NO.	REV.

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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RCD EN DATA ADD H
IOA DATA ADD ØØ H
JL2 HN1

RCB EN MEM Ø-5 H
MCS MEM ØØ H
HV1 HL1

RCC EN PC Ø-1 H
PRA PC ØØ (1) H
HK1

RCD EN RSW Ø-5 H
CSI RSW ØØ H
HD2 HE2

RCB EN MA Ø-4 H
PRA MA ØØ(1) H
HR1

RCB EN MB Ø-1 H
PRA MB ØØ (1) H
HP1

PMA BMSC ØØ H
HF2

PRA AC ØØ (1) H
RCA SET AC H
HJ1

JT2 PRA PARTIAL SUM ØØ L

RCC EN BCL H
PRA MB ØØ (Ø) H
PRA AC ØØ (1) H
JD1

RCA EN AC Ø-5 H
PRA AC ØØ (1) H
HT2

RCC EN-AC H
PRA AC ØØ (Ø) H
JH1

RCC EN MQ H
MQR MQ ØØ (1) H
HS2 HR2

PMA TMSC ØØ H
HU1

RCC EN BSE H
PRA MB ØØ (1) H
PRA AC ØØ (Ø) H
JE1

HP2

PRA CARRY ØØ L

R2 S2 T2 U2
M627 J14 V2
PRA CARRY ØØ H

+3V J14 U1

HH1 ADD HH2 PRA ADDER ØØ L

RCS EN SHIFT RIGHT H
FLE HIGH END SHIFT IN H
HE1 HB1

RCS EN NO SHIFT H
HT2

RCS EN SHIFT LEFT H
-PRA ADDER Ø1 H
HF1

RCC EN LSW H
HC1

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
JF2

RCL LOAD PC H
JA1

RCL LOAD MB H
JC1

RCL LOAD AC H
HU2

D 1 PRA MA ØØ C Ø HS1 JV1
D 1 PRA PC ØØ C Ø JA1 JB1
D 1 PRA MB ØØ C Ø JF1 JS1
D 1 PRA AC ØØ C Ø HB2 JU1
D 1 PRA MA Ø1 C Ø JN2 Jk2
D 1 PRA PC Ø1 C Ø JA1 JE2
D 1 PRA MB Ø1 C Ø JC1 JR2 JR1
D 1 PRA AC Ø1 C Ø JJ2 JD2

- 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
JS2 PRA AC-EQ MB Ø,1 L
PRA AC Ø1 (1) H
PRA MB Ø1 (Ø) H
PRA AC Ø1 (Ø) H
PRA MB Ø1 (1) H

RCD EN DATA ADD H
IOA DATA ADD Ø1 H
JL2 JP1

RCB EN MEM Ø-5 H
MCS MEM Ø1 H
HV1 JL1

RCC EN PC Ø-1 H
PRA PC Ø1 (1) H
HK1

RCD EN RSW Ø-5 H
CSI RSW Ø1 H
HD2 JM1

RCB EN MA Ø-4 H
PRA MA Ø1 (1) H
JM2

RCB EN MB Ø-1 H
PRA MB Ø1 (1) H
JP2

PMA BMSC Ø1 H
JN1

PRA AC Ø1 (1) H
RCA SET AC H
HJ1

JV2

RCC EN BCL H
PRA MB Ø1 (Ø) H
PRA AC Ø1 (1) H
JD1

RCA EN AC Ø-5 H
PRA AC Ø1 (1) H
HT2

RCC EN-AC H
PRA AC Ø1 (Ø) H
JH1

RCC EN MQ H
MQR MQ Ø1 (1) H
HS2 JJ1

PMA TMSC Ø1 H
JK1

RCC EN BSE H
PRA MB Ø1 (1) H
PRA AC Ø1 (Ø) H
JE1

JH2

CSI LSW Ø1 H
HM2

ADD HK2 PRA ADDER Ø1 L
HM1

PRA CARRY IN Ø1 L

PRA PARTIAL SUM Ø1 L

RCC EN LSW H
HC1

RCS EN NO SHIFT H
HJ2

RCS EN SHIFT LEFT H
-PRA ADDER Ø2 H
HF1 HL2

RCS EN SHIFT RIGHT H
-PRA ADDER ØØ H
HE1

HV2 PRA REG BUS Ø1 H

RCL LOAD MB H
JC1

RCL LOAD AC H
HU2

D 1 PRA AC Ø1 C Ø JJ2 JD2

CYI ADD NDX H
CPT TS 1(1) H
CPR L MODE H
+3V J14 U1
D2 E2 F2 H2
M627 J14 V2

+3V J14 U1
CPR L MODE H
CYI PC INCREMENT H
CPT TS 2(1) H
K2 L2 M2 N2
M627 J14 P2

PRA LINC COUNT L
F1 H1 J1 K1
M627 J14 L1
-PRA CARRY IN Ø1 H
-PRA CARRY Ø2 L

M221
H15
J15

SLA (OSC * EXECUTE 2) H
CPT TS 3(1) H
S1 U1 V1 U2
M620 H13 V2
PRA LINC COUNT L
CYI LINC INDEXING H

-PRB CARRY Ø2 H
+3V J14 U1
M1 N1 A1 R1
M627 J14 S1
- PRA CARRY Ø2 L

REVISIONS			
CHK	CHANGE NO.	REV.	
JS	00002	A	J. SCANLON 5/31/65
JS	EP12-00004	B	L. GALE 7/6/65
JS	EP12-00015	C	L. GALE 10/11/65
FV	EP12-00023	D	GALE 3-30-70

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 12/17/64
CHK. DATE 2/15/65
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
PRA
PROCESSOR REG.
BITS Ø & 1

SIZE D | CODE 85 | NUMBER EP12-Ø-PRA | REV. D

DIST.

DEC FORM NO DRD 102A

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RCD EN DATA ADD H
IOA DATA ADD Ø2 H
JL2 HN1

RCB EN MEM Ø-5 H
MCS MEM Ø2 H
HV1 HL1

RCC EN PC 2-11 H
PRB PC Ø2 (1) H
HK1

RCD EN RSW Ø-5 H
CSI RSW Ø2 H
HD2 HE2

RCB EN MA Ø-9 H
PRB MA Ø2(1) H
HR1

RCB EN MB 2-9 H
PRB MB Ø2(1) H
HP1

PMA BMSC Ø2 H
HF2

PRB AC Ø2 (1) H
RCA SET AC H
HJ1

JT2

PRB PARTIAL SUM Ø2 L

RCC EN BCL H
PRB MB Ø2(Ø) H
PRB AC Ø2 (1) H
JD1

RCA EN AC Ø-5 H
PRB AC Ø2(1) H
HT2

RCC EN-AC H
PRB AC Ø2(Ø) H
JH1

RCC EN MQ H
MQR MQ Ø2(1) H
HS2 HR2

PMA TMSC Ø2 H
HU1

RCC EN BSE H
PRB MB Ø2(1) H
PRB AC Ø2(Ø) H
JE1

HP2

PRB CARRY Ø2 L

HH1

ADD

HH2 PRB ADDER Ø2 L

RCS EN SHIFT RIGHT H
-PRB ADDER Ø1 H
HE1 HB1

RCS EN NO SHIFT H
HJ2

RCS EN SHIFT LEFT H
-PRB ADDER Ø3 H
HF1

RCC EN LSW H
HC1

HD1

CSI LSW Ø2 H
HN2

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
HM2

RCD EN DATA ADD H
IOA DATA ADD Ø3 H
JL2 JP1

RCB EN MEM Ø-5 H
MCS MEM Ø3 H
HV1 JL1

RCC EN PC 2-11 H
PRB PC Ø3(1) H
HK1

RCD EN RSW Ø-5 H
CSI RSW Ø3 H
HD2 JM1

RCB EN MA Ø-9 H
PRB MA Ø3(1) H
JM2

RCB EN MB 2-9 H
PRB MB Ø3(1) H
JP2

PMA BMSC Ø3 H
JN1

PRB AC Ø3(1) H
RCA SET AC H
HJ1

JV2

RCC EN BCL H
PRB MB Ø3(Ø) H
PRB AC Ø3(1) H
JD1

RCA EN AC Ø-5 H
PRB AC Ø3 (1) H
HT2

RCC EN-AC H
PRB AC Ø3(Ø) H
JH1

RCC EN MQ H
MQR MQ Ø3(1) H
HS2 JJ1

PMA TMSC Ø3 H
JK1

RCC EN BSE H
PRB MB Ø3(1) H
PRB AC Ø3(Ø) H
JE1

JH2

ADD

HK2 PRB ADDER Ø3 L

RCS EN NO SHIFT H
HJ2

RCS EN SHIFT LEFT H
-PRB ADDER Ø4 H
HF1 HL2

RCS EN SHIFT RIGHT H
-PRB ADDER Ø2 H
HE1

HM1

PRC CARRY Ø4 L

PRB PARTIAL SUM Ø3 L

RCC EN LSW H
HC1

HV2

PRB REG BUS Ø2 H

RCL LOAD MA H
JF2

RCL LOAD PC H
JA1

RCL LOAD MB H
JC1

RCL LOAD AC H
HU2

D 1 PRB MA Ø2 C Ø
HS1 JV1

D 1 PRB PC Ø2 C Ø
JB1

D 1 PRB MB Ø2 C Ø
JF1 JS1

D 1 PRB AC Ø2 C Ø
HB2 JU1

D 1 PRB MA Ø3 C Ø
JN2 JK2

D 1 PRB PC Ø3 C Ø
JE2

D 1 PRB MB Ø3 C Ø
JR2 JR1

D 1 PRB AC Ø3 C Ø
JJ2 JD2

-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

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	REV.
CHK CHANGE NO.	
Sub 00002	A
J. SCANLON	
EP12-00015	B
L. GALE	
EP12-00023	C
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. Joe Cyr DATE 12/13/68
CHK. P Scanlon DATE 1/21/69
ENG. L Gale DATE 2/19/69
PROJ. ENG. L Gale DATE 2/19/69
PROD. M Hall DATE 2/19/69

FIRST USED ON EP12

SCALE

SHEET 1 OF 1

digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS

TITLE
PRB
PROCESSOR REG.
BITS 2 & 3

SIZE D | CODE 85 | NUMBER EP12-Ø-PRB | REV. C

DIST.

DEC FORM NO DRD 102A

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RCD EN DATA ADD H — JL2
IOA DATA ADD Ø4 H — HN1
RCB EN MEM Ø-5 H — HV1
MCS MEM Ø4 H — HL1
RCC EN PC 2-11 H — HK1
PRC PC Ø4 (1) H
RCD EN RSW Ø-5 H — HD2
CSI RSW Ø4 H — HE2
RCB EN MA Ø-4 H — HR1
PRC MA Ø4(1) H
RCB EN MB 2-4 H — HP1
PRC MB Ø4 (1) H
PMA BMSC Ø4 H — HF2
PRC AC Ø4 (1) H — HJ1
RCA SET AC H

JT2 — PRC PARTIAL SUM Ø4 L

RCC EN BCL H — JD1
PRC MB Ø4(Ø) H
PRC AC Ø4 (1) H
RCA EN AC Ø-5 H — HT2
PRC AC Ø4 (1) H
RCC EN-AC H — JH1
PRC AC Ø4 (Ø) H
RCC EN MQ H — HS2
MQR MQ Ø4(1) H — HR2
PMA TMSC Ø4 H — HU1
RCC EN BSE H — JE1
PRC MB Ø4 (1) H
PRC AC Ø4 (Ø) H

HP2

PRC CARRY Ø4 L — HH1

ADD — HH2 PRC ADDER Ø4 L

RCS EN SHIFT RIGHT H — HE1
-PRB ADDER Ø3 H — HB1
RCS EN NO SHIFT H — HJ2
RCS EN SHIFT LEFT H — HF1
-PRC ADDER Ø5 H
RCC EN LSW H — HC1

HD1

CSI LSW Ø4 H — HN2

PRC MA Ø4 (1) H
PRC MA Ø4 (Ø) H
PRC MA Ø5 (Ø) H
PRC MA Ø5 (1) H

HA1 PRC ADDRESS MATCH 4-5 H

CSI LSW Ø5 H — HM2

RCD EN DATA ADD H — JL2
IOA DATA ADD Ø5 H — JP1
RCB EN MEM Ø-5 H — HV1
MCS MEM Ø5 H — JL1
RCC EN PC 2-11 H — HK1
PRC PC Ø5 (1) H
RCD EN RSW Ø-5 H — HD2
CSI RSW Ø5 H — JM1
RCB EN MA 5-11 H — JM2
PRC MA Ø5 (1) H
RCB EN MB 5-11 H — JP2
PRC MB Ø5 (1) H
PMA BMSC Ø5 H — JN1
PRC AC Ø5 (1) H — HJ1
RCA SET AC H

JV2

RCC EN BCL H — JD1
PRC MB Ø5 (Ø) H
PRC AC Ø5 (1) H
RCA EN AC Ø-5 H — HT2
PRC AC Ø5 (1) H
RCC EN-AC H — JH1
PRC AC Ø5 (Ø) H
RCC EN MQ H — HS2
MQR MQ Ø5 (1) H — JJ1
PMA TMSC Ø5 H — JK1
RCC EN BSE H — JE1
PRC MB Ø5 (1) H
PRC AC Ø5 (Ø) H

JH2

ADD — HK2 PRC ADDER Ø5 L

PRD CARRY Ø6 L — HM1

PRC PARTIAL SUM Ø5 L

RCC EN LSW H — HC1
RCS EN NO SHIFT H — HJ2
RCS EN SHIFT LEFT H — HF1
-PRC ADDER Ø6 H — HL2
RCS EN SHIFT RIGHT H — HE1
-PRC ADDER Ø4 H

HV2

RCL LOAD MA H — JF2
RCL LOAD PC H — JA1
RCL LOAD MB H — JC1
RCL LOAD AC H — HU2

D 1 — PRC MA Ø4 — C Ø — HS1 JV1
D 1 — PRC PC Ø4 — C Ø — JA1 JB1
D 1 — PRC MB Ø4 — C Ø — JF1 JS1
D 1 — PRC AC Ø4 — C Ø — HB2 JU1
D 1 — PRC MA Ø5 — C Ø — JN2 JK2
D 1 — PRC PC Ø5 — C Ø — JA1 JE2
D 1 — PRC MB Ø5 — C Ø — JR2 JR1
D 1 — PRC AC Ø5 — C Ø — JJ2 JD2

- 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

JU2 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

JS2 PRC AC-EQ MB 4-5 L

M221
H17
J17

REVISIONS	CHK	CHANGE NO.	REV.
	SCB	00002	A
J. SCANLON 12-12-68		EP12-00015	B
L. GALE 1-7-69	FV	EP12-00023	C
GALE 7-3-70			

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		DATE 12/13/68
CHK'D	J. Scanlon	DATE 2/16/69
ENG	L. Gale	DATE 2/18/69
PROJ. ENG	L. Gale	DATE 2/19/69
PROD.	W. Cable	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	CODE	NUMBER	REV
D	BS	EP12-Ø-PRC	C

DIST.

QTY.	DESCRIPTION	PART NO.	ITEM NO.

PARTS LIST

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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

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 JE1 → HP2

PRD CARRY Ø6 L → HH1

HP2 → ADD (HH1)

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 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
RCL LOAD PC H — JA1
RCL LOAD MB H — JC1
RCL LOAD AC H — HU2

D 1 PRD MA Ø6 C Ø — HS1 JV1
D 1 PRD PC Ø6 C Ø — JB1
D 1 PRD MB Ø6 C Ø — JF1 JS1
D 1 PRD AC Ø6 C Ø — HB2 JU1

D 1 PRD MA Ø7 C Ø — JN2 JK2
D 1 PRD PC Ø7 C Ø — JE2
D 1 PRD MB Ø7 C Ø — JR2 JR1
D 1 PRD AC Ø7 C Ø — JJ2 JD2

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

M221
H18
J18

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 → JV2

JV2 → PRD PARTIAL SUM Ø7 L

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 JE1 → JH2

PRE CARRY Ø8 L → HM1

JH2 → ADD (HM2)

ADD → HK2 PRD ADDER Ø7 L

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

RCL LOAD AC H — HU2

REVISIONS	REV.
CHANGE NO. 00002	A
CHK Scott	
J. SCANLON	
Scott EP12-00015 Scott Make Ø/Ø 68 L. GALE	B
Fv EP12-00023 Fv Update to 50 ns GALE	C
L Marker 7-3-70	

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. [illegible] DATE 12/13/68
CHK. 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 BS | NUMBER EP12-Ø-PRD | 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 Ø8 H — JL2 HN1 — JT2

RCB EN MEM 6-11 H
MCS MEM Ø8 H — HV1 HL1

RCC EN PC 2-11 H
PRE PC Ø8(1) H — HK1

RCD EN RSW 6-11 H
CSI RSW Ø8 H — HD2 HE2

RCB EN MA 5-11 H
PRE MA Ø8(1) H — HR1

RCB EN MB 5-11 H
PRE MB Ø8(1) H — HP1

PMB BMSC Ø8 H — HF2

PRE AC Ø8(1) H
RCA SET AC H — HJ1

PRE PARTIAL SUM Ø8 L

RCC EN BCL H
PRE MB Ø8(Ø) H
PRE AC Ø8(1) H — JD1

RCA EN AC 6-11 H
PRE AC Ø8(1) H — HT2

RCC EN-AC H
PRE AC Ø8(Ø) H — JH1

RCC EN MQ H
MQR MQ Ø8(1) H — HS2 HR2

PMB TMSC Ø8 H — HU1

RCC EN BSE H
PRE MB Ø8(1) H
PRE AC Ø8(Ø) H — JE1

HP2

PRE CARRY Ø8 L

HH1

ADD

HH2 PRE ADDER Ø8 L

RCS EN SHIFT RIGHT H
-PRD ADDER Ø7 H — HE1 HB1

RCS EN NO SHIFT H — HJ2

RCS EN SHIFT LEFT H
-PRE ADDER Ø9 H — HF1

RCC EN LSW H — HC1

HD1 PRE REG BUS Ø8 H

CSI LSW Ø8 H — HN2

PRE MA Ø8(1) H

PRE MA Ø8(Ø) H

PRE MA Ø9(Ø) H

PRE MA Ø9(1) H

HA1 PRE ADDRESS MATCH 8-9 H

RCL LOAD MA H — JF2
RCL LOAD PC H — JA1
RCL LOAD MB H — JC1
RCL LOAD AC H — HU2

D 1 PRE MA Ø8 C Ø — HS1 JV1
D 1 PRE PC Ø8 C Ø — JB1
D 1 PRE MB Ø8 C Ø — JF1 JS1
D 1 PRE AC Ø8 C Ø — HB2 JU1
D 1 PRE MA Ø9 C Ø — JN2 JK2
D 1 PRE PC Ø9 C Ø — JE2
D 1 PRE MB Ø9 C Ø — JR2 JR1
D 1 PRE AC Ø9 C Ø — JJ2 JD2

RCD EN DATA ADD H
IOA DATA ADD Ø9 H — JL2 JP1

RCB EN MEM 6-11 H
MCS MEM Ø9 H — HV1 JL1

RCC EN PC 2-11 H
PRE PC Ø9(1) H — HK1

RCD EN RSW 6-11 H
CSI RSW Ø9 H — HD2 JM1

RCB EN MA 5-11 H
PRE MA Ø9(1) H — JM2

RCB EN MB 5-11 H
PRE MB Ø9(1) H — JP2

PMB BMSC Ø9 H — JN1

PRE AC Ø9(1) H
RCA SET AC H — HJ1

JV2

RCC EN BCL H
PRE MB Ø9(Ø) H
PRE AC Ø9(1) H — JD1

RCA EN AC 6-11 H
PRE AC Ø9(1) H — HT2

RCC EN-AC H
PRE AC Ø9(Ø) H — JH1

RCC EN MQ H
MQR MQ Ø9(1) H — HS2 JJ1

PMB TMSC Ø9 H — JK1

RCC EN BSE H
PRE MB Ø9(1) H
PRE AC Ø9(Ø) H — JE1

JH2

ADD

HK2 PRE ADDER Ø9 L

HM1

PRF CARRY 1Ø L

PRE PARTIAL SUM Ø9 L

CSI LSW Ø9 H — HM2

RCC EN LSW H — HC1

RCS EN NO SHIFT H — HJ2

RCS EN SHIFT LEFT H
-PRF ADDER 1Ø H — HF1 HL2

RCS EN SHIFT RIGHT H
-PRE ADDER Ø8 H — HE1

HV2 PRE REG BUS Ø9 H

RCL LOAD MA H — JF2
RCL LOAD PC H — JA1
RCL LOAD MB H — JC1
RCL LOAD AC H — HU2

D 1 PRE MA Ø9 C Ø — JN2 JK2
D 1 PRE PC Ø9 C Ø — JE2
D 1 PRE MB Ø9 C Ø — JR2 JR1
D 1 PRE AC Ø9 C Ø — JJ2 JD2

- 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 — JU2 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 — JS2 PRE AC-EQ MB 8-9 L

M221
H19
J19

REVISIONS	REV.	CHK	DATE	BY
CHANGE NO. 00002	A	Dreg	11/1/65	J. SCANLON
EP12-00015	B	Jrd	1/1/69	L. GALE
EP12-00023	C	Fv	1/15/69	L. GALE
			6-30-70	T. Sullivan
			7-2-70	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. C. Cino DATE 12/13/68
CHK'D J. Scanlan DATE 2/19/69
ENG. L. Gale DATE 2/19/69
PROJ. ENG. L. Gale DATE 2/19/69
PROD. M. Wall DATE 2/19/69
FIRST USED ON EP12
SCALE
SHEET 1 OF 1

digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS

TITLE
PRE
PROCESSOR REG.
BITS 8 & 9

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

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RCD EN DATA ADD H (JL2, HN1)
IOA DATA ADD 1Ø H
RCB EN MEM 6-11 H (HV1, HL1)
MCS MEM 1Ø H
RCC EN PC 2-11 H (HK1)
PRF PC 1Ø (1) H
RCD EN RSW 6-11 H (HD2, HE2)
CSI RSW 1Ø H
RCB EN MA 5-11 H (HR1)
PRF MA 1Ø(1) H
RCB EN MB 5-11 H (HP1)
PRF MB 1Ø(1) H
PMB BMSC 1Ø H (HF2)
PRF AC 1Ø (1) H
RCA SET AC H (HJ1)
→ JT2 PRF PARTIAL SUM 1Ø L

RCC EN BCL H (JD1)
PRF MB 1Ø(Ø) H
PRF AC 1Ø (1) H
RCA EN AC 6-11 H (HT2)
PRF AC 1Ø(1) H
RCC EN-AC H (JH1)
PRF AC 1Ø(Ø) H
RCC EN MQ H (HS2)
MQR MQ 1Ø(1) H (HR2)
PMB TMSC 1Ø H (HU1)
RCC EN BSE H (JE1)
PRF MB 1Ø (1) H
PRF AC 1Ø(Ø) H
→ HP2

PRF CARRY 1Ø L
HH1
ADD
HH2 PRF ADDER 1Ø L

RCS EN SHIFT RIGHT H (HE1)
-PRE ADDER Ø9 H (HB1)
RCS EN NO SHIFT H (HJ2)
RCS EN SHIFT LEFT H (HF1)
-PRF ADDER 11 H
RCC EN LSW H (HC1)
→ HD1 PRF REG BUS 1Ø H

CSI LSW 1Ø H → HN2
PRF MA 1Ø (1) H
PRF MA 1Ø(Ø) H
PRF MA 11 (Ø) H
PRF MA 11 (1) H
→ HA1 PRF ADDRESS MATCH 1Ø-11 H

CSI LSW 11 H → HM2

RCC EN BCL H (JD1)
PRF MB 11 (Ø) H
PRF AC 11 (1) H
RCA EN AC 6-11 H (HT2)
PRF AC 11 (1) H
RCC EN-AC H (JH1)
PRF AC 11 (Ø) H
RCC EN MQ H (HS2)
MQR MQ 11(1) H (JJ1)
PMB TMSC 11 H (JK1)
RCC EN BSE H (JE1)
PRF MB 11(1) H
PRF AC 11(Ø) H
→ JH2

RCD EN DATA ADD H (JL2, JP1)
IOA DATA ADD 11 H
RCB EN MEM 6-11 H (HV1, JL1)
MCS MEM 11 H
RCC EN PC 2-11 H (HK1)
PRF PC 11(1) H
RCD EN RSW 6-11 H (HD2, JM1)
CSI RSW 11 H
RCB EN MA 5-11 H (JM2)
PRF MA 11(1) H
RCB EN MB 5-11 H (JP2)
PRF MB 11(1) H
PMB BMSC 11 H (JN1)
PRF AC 11(1) H
RCA SET AC H (HJ1)
→ JV2 PRF PARTIAL SUM 11 L

ADD
HM1
CYI CARRY INSERT L

RCC EN LSW H (HC1)
RCS EN NO SHIFT H (HJ2)
RCS EN SHIFT LEFT H (HF1, HL2)
FLE LOW END SHIFT IN H
RCS EN SHIFT RIGHT H (HE1)
-PRF ADDER 1Ø H
→ HV2 PRF REG BUS 11 H

RCL LOAD MA H (JF2) → D 1 PRF MA 1Ø C Ø (JV1, HS1)
RCL LOAD PC H (JA1) → PRF PC 1Ø (JB1)
RCL LOAD MB H (JC1) → PRF MB 1Ø (JS1, JF1)
RCL LOAD AC H (HU2) → PRF AC 1Ø (JU1, HB2)
RCL LOAD MA H (JF2) → PRF MA 11 (JK2, JN2)
RCL LOAD PC H (JA1) → PRF PC 11 (JE2)
RCL LOAD MB H (JC1) → PRF MB 11 (JR1, JR2)
RCL LOAD AC H (HU2) → PRF AC 11 (JD2, JJ2)

- 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
→ JU2 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
→ JS2 PRF AC=EQ MB 1Ø-11 L

PRF ADDER 11 L → D1 M113 K28 E1 → F1 PRF ADDER 11 H

M221
H2Ø
J2Ø

REVISIONS	CHG NO.	REV	CHK
	00002	A	
	EP12 00015	B	
	EP12 00023	C	

J. SCANLON 12/3/68
EP12 00015 2/18/69
L. GALE 2/19/69
EP12 00023 6 30-70
GALE 2-2-70

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 12/3/68
CHK'D J. Scanlon DATE 2/18/69
ENG. L. Gale DATE 2/19/69
PROJ. ENG. L. Gale DATE 2/19/69
PROD. W Call DATE 2/19/69
FIRST USED ON EP12
SCALE
SHEET 1 OF 1

digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS

TITLE
PRF
PROCESSOR REG.
BITS 1Ø & 11

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

DEC FORM NO DRD 102A

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INS LJMP 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+YSK) L P2
INS (L INDEX ≠ 8 EQ 2) L R2
M113 K30 S2

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

J2 K2 L2
M115 K23 I2 RCA ENABLE IR 8-11 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 N1 P1 R1
RCA T3 ADDS L
M117 J22 S1 RCH EN AC 0-5 H

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

SLA OPR1 L M1
SLA L ROTATES L N1
SLA MUL ADD L P1 R1
M117 H38 S1

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

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
M1 J1 K1
M117 J22 L1 RCA EN AC 6-11 H

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

INS STM 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
SCALE
SHEET 1 OF 1

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

DIST.

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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
H2
CPS WC (1)H J2
CPT TS1 (1)H K2
L2
RCB (ST+FS EN MA) H 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
CPT TS1 (1)H H1
J1
EAEC EN MB H K1
L1
CPT TS4 (1)H M1
CPS EXECUTE B (1)H N1
P1
M160 J26 R1
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
INS INDEX CLASS L H V1
CPS DEFER B (1)H U2
M160 J26 V2
L2
M113 J25
M2
INS SET H P1
CPS DEFER B (1)H R1
M113 J25 S1

CPT TS1 (1)H L1
N2
M1
M113 J25
RCB MUL LOAD AC L N1
RCB TS1 EN MB L
CYI XSK TEST L
R2
S2
T2
U2
M117 H30 V2 RCB EN MB 2-4 H

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

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

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

INS L JMP H A1
RCD SAVE PC (1)H B1
M113 K33 C1 RCB (JMP*SAVE PC)L

CSI FILLS H A1
CST MFTSØ H B1
CST STEP EXAM (Ø)H C1
D1
IOB DATA IN H E1
CPS BREAK (1)H F1
M160 J27 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

INS JMS L F1
INS STH L H1
+3V L22V1 H J1
K1
M117 L22 L1
H1
CPS EXECUTE B (1)H J1

CPS T BREAK (1)H K1
LIP TAPE OUT H L1

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

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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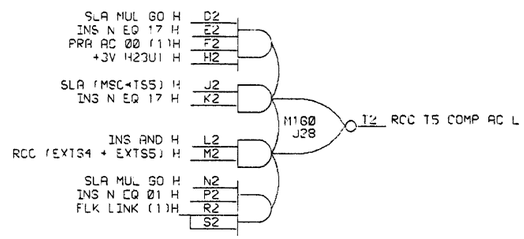

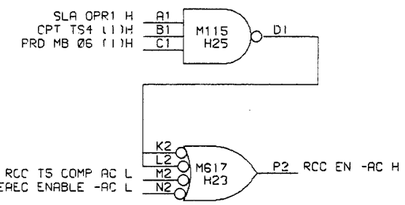

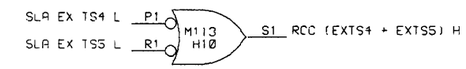

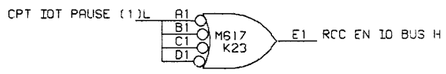

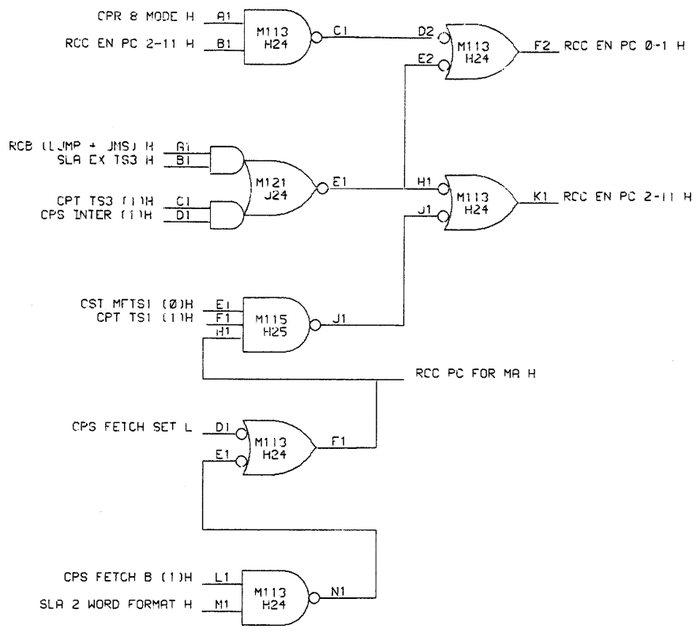

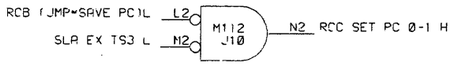

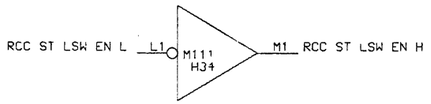

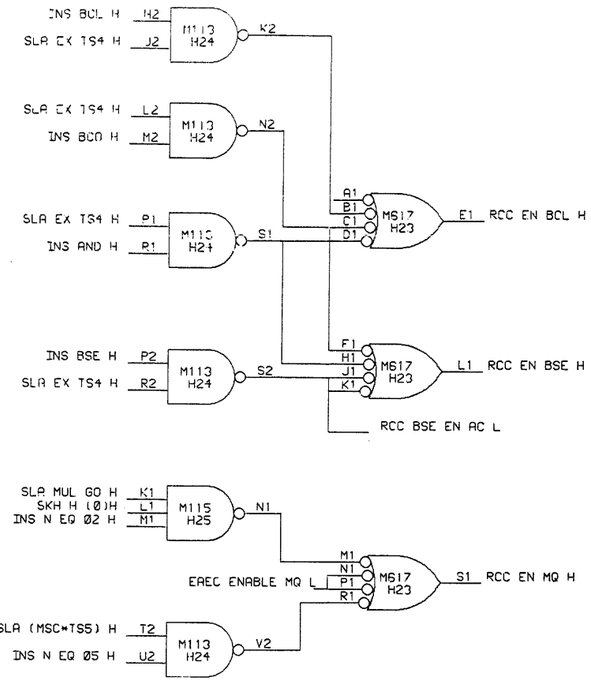

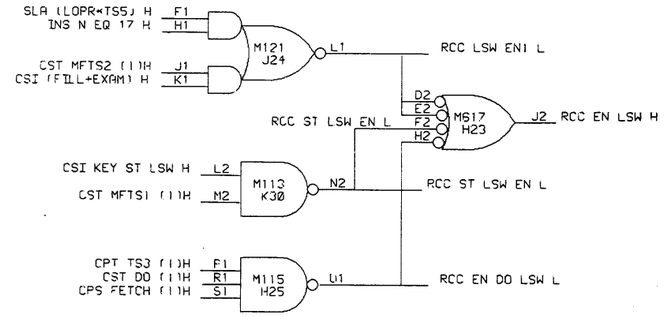

REVISIONS		
CHK	CHANGE NO.	REV.

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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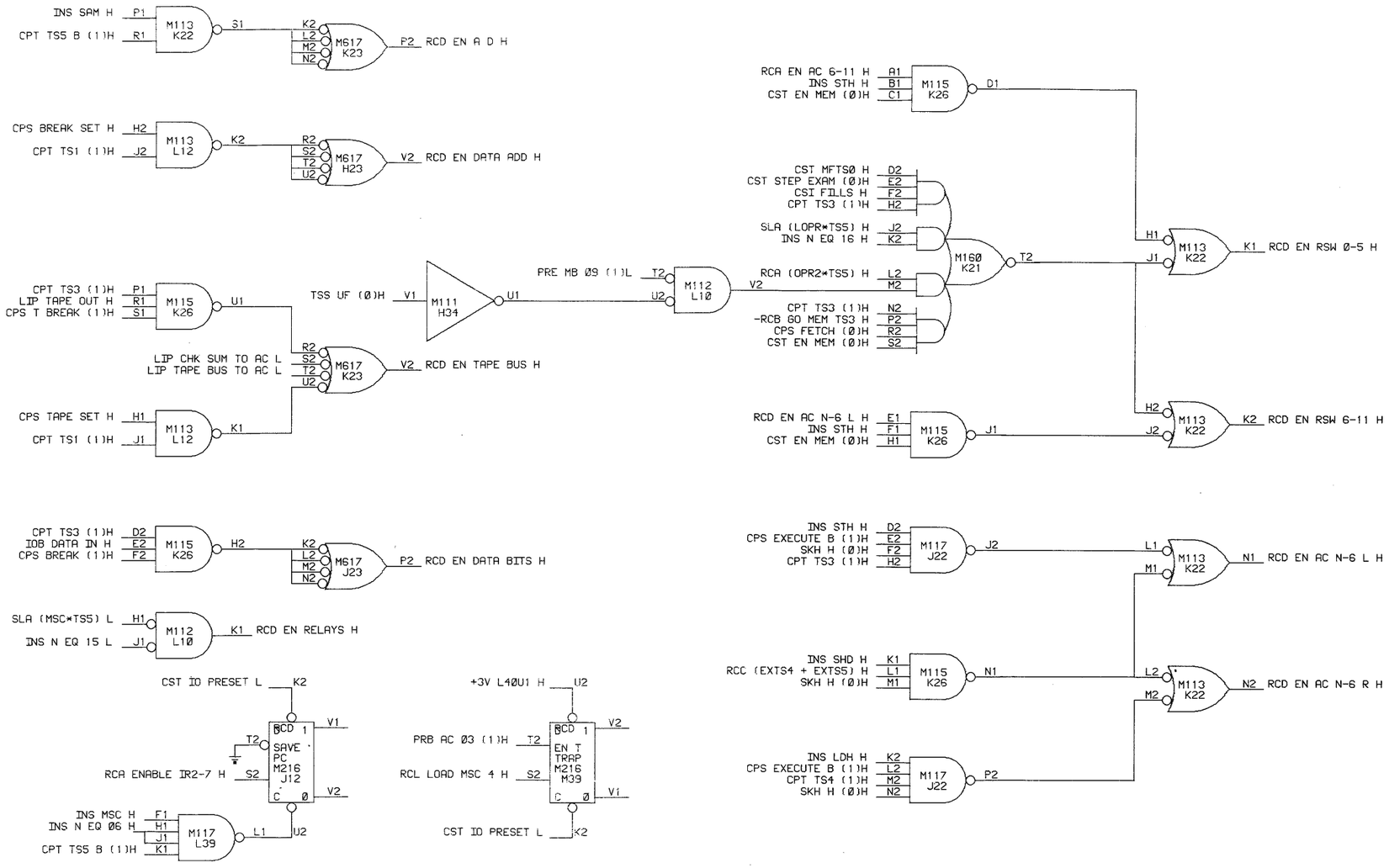

REVISIONS		
CHK	CHANGE NO.	REV.
JB	Ø0001	A
	ADS	
	J SCANLAN 3/13/69	
	EP12-00002	B

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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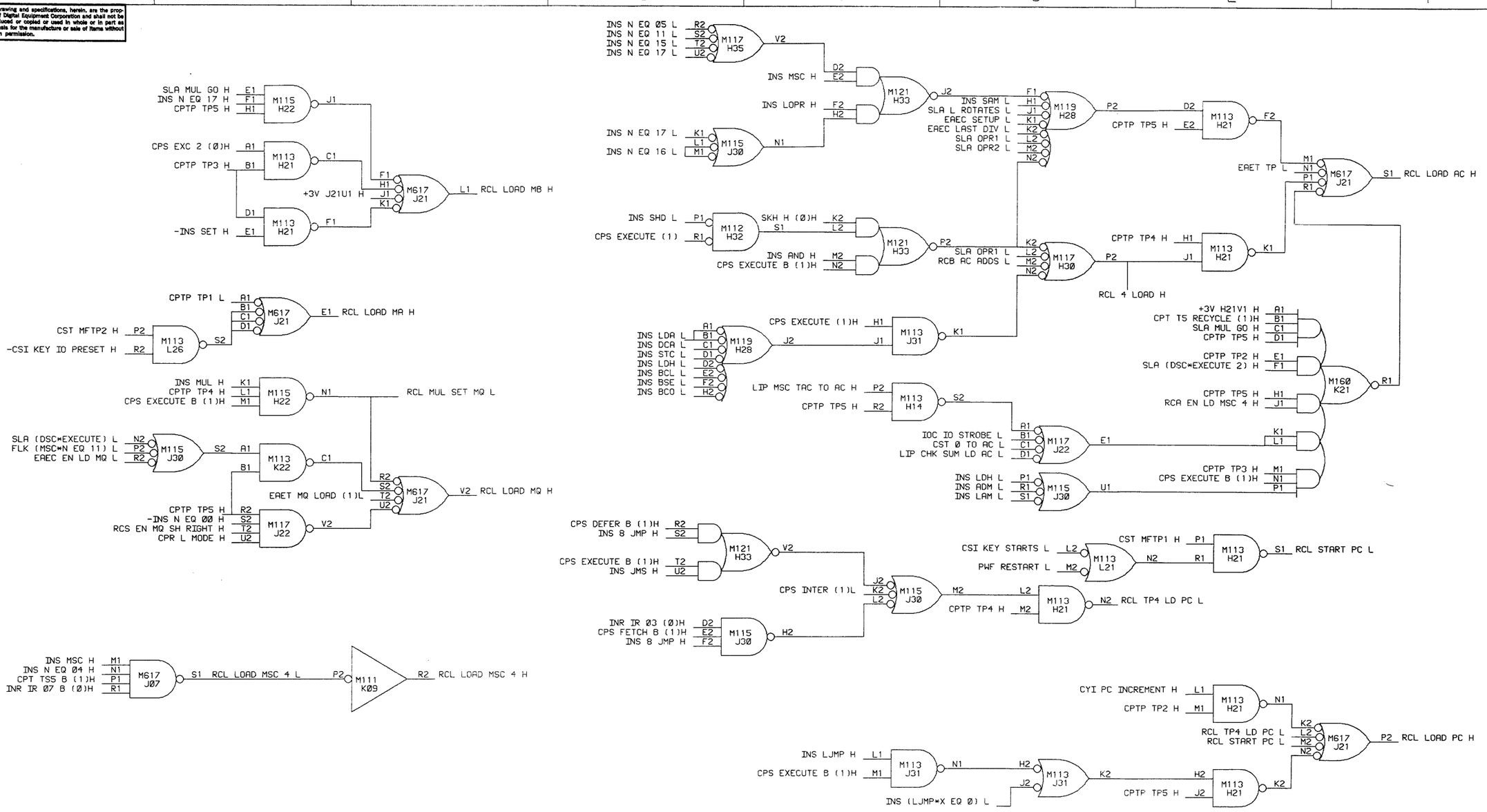

REVISIONS			REVISIONS		
CHK	CHANGE NO.	REV.	CHK	CHANGE NO.	REV.
	EP12-00001	A		EP12-00016	E
	ADS				
	J SCANLAN 3/13/69				
NR	EP12-00006	B			
	A WASHINGTON 8/17/69				
	L GALE 8/20/69				
NR	EP12-00007	C			
	A WASHINGTON 8/6/69				
	J SCANLAN 8/6/69				
	EP12-00015	D			
	K COTE 10/14/69				
	J SCANLAN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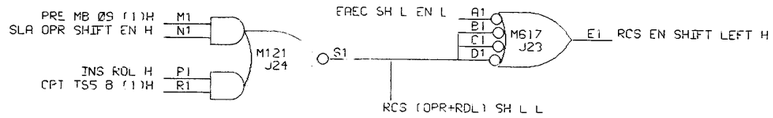

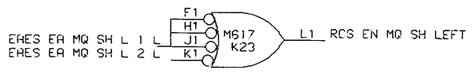

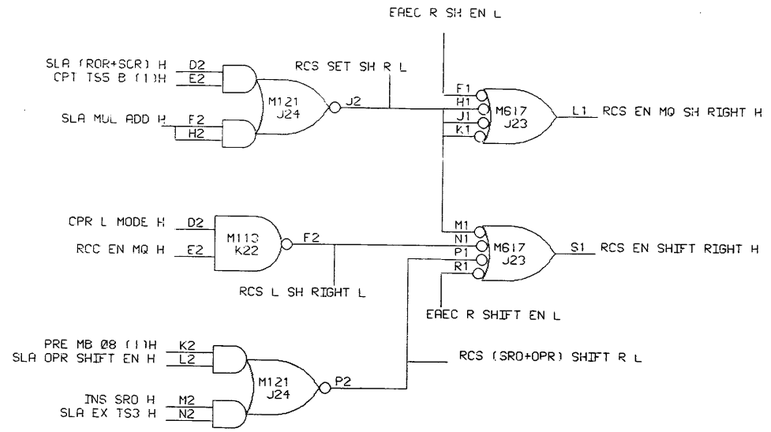

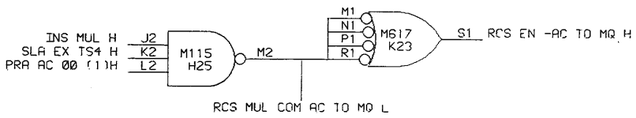

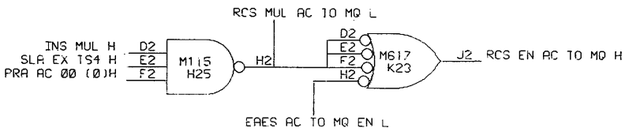

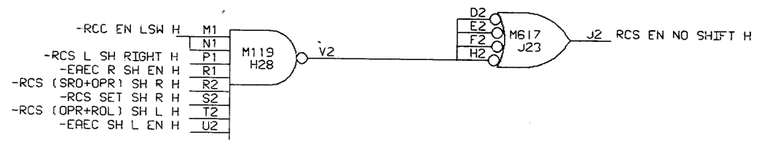

REVISIONS		
CHK	CHANGE NO.	REV.

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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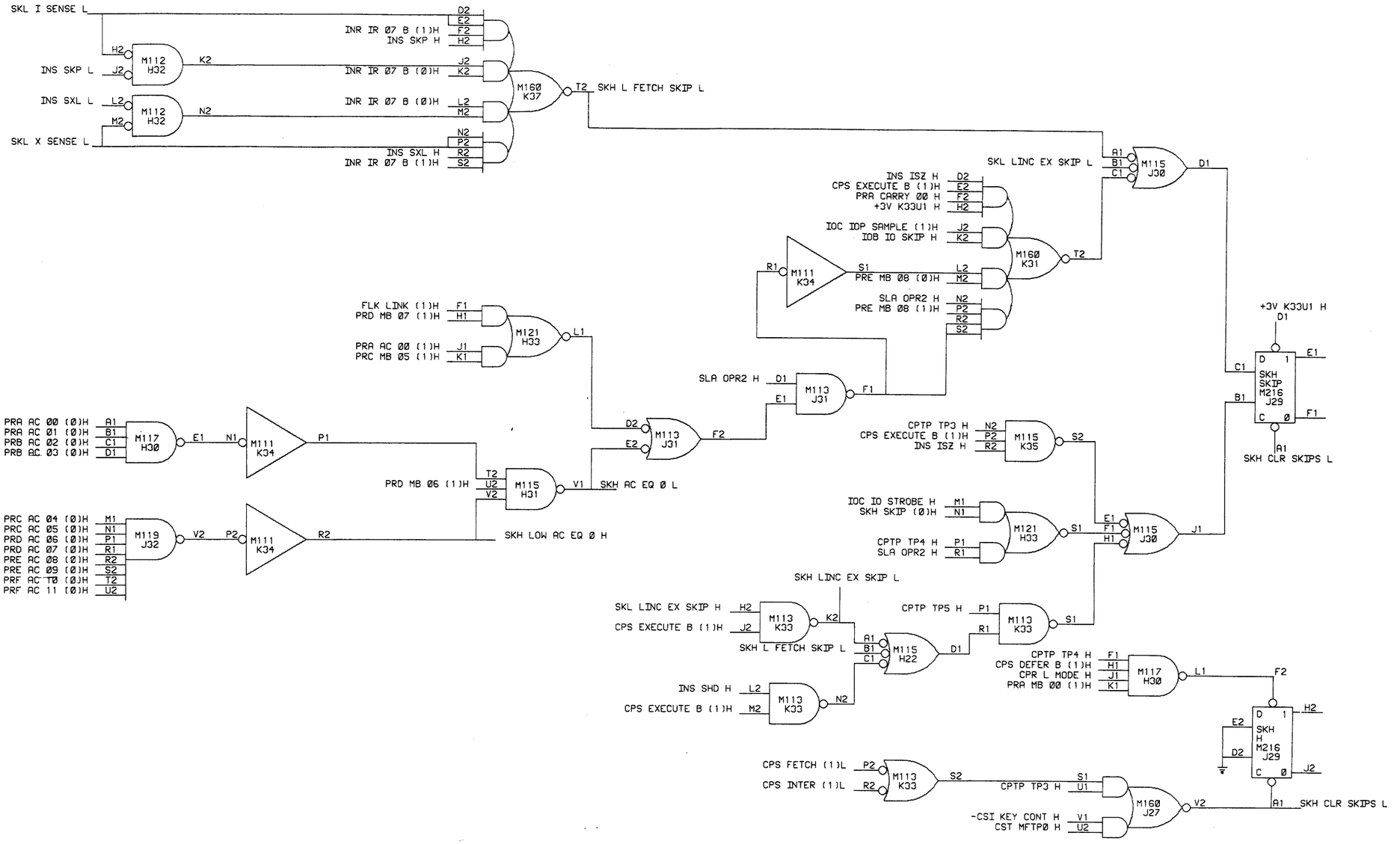

REVISIONS		
CHK	CHANGE NO.	REV.
JB	ØØØØ1	A
	ADS	
	J.SCANLAN 3-13-69	
	EP12-ØØØØ6	B
NR	A.WASHINGTON 8-5-69	
	L.GALE 8-15-69	

REVISIONS		
CHK	CHANGE NO.	REV.
T.C.	EP12-ØØØ23	C
	Linc 6-24-70	
	Dmead 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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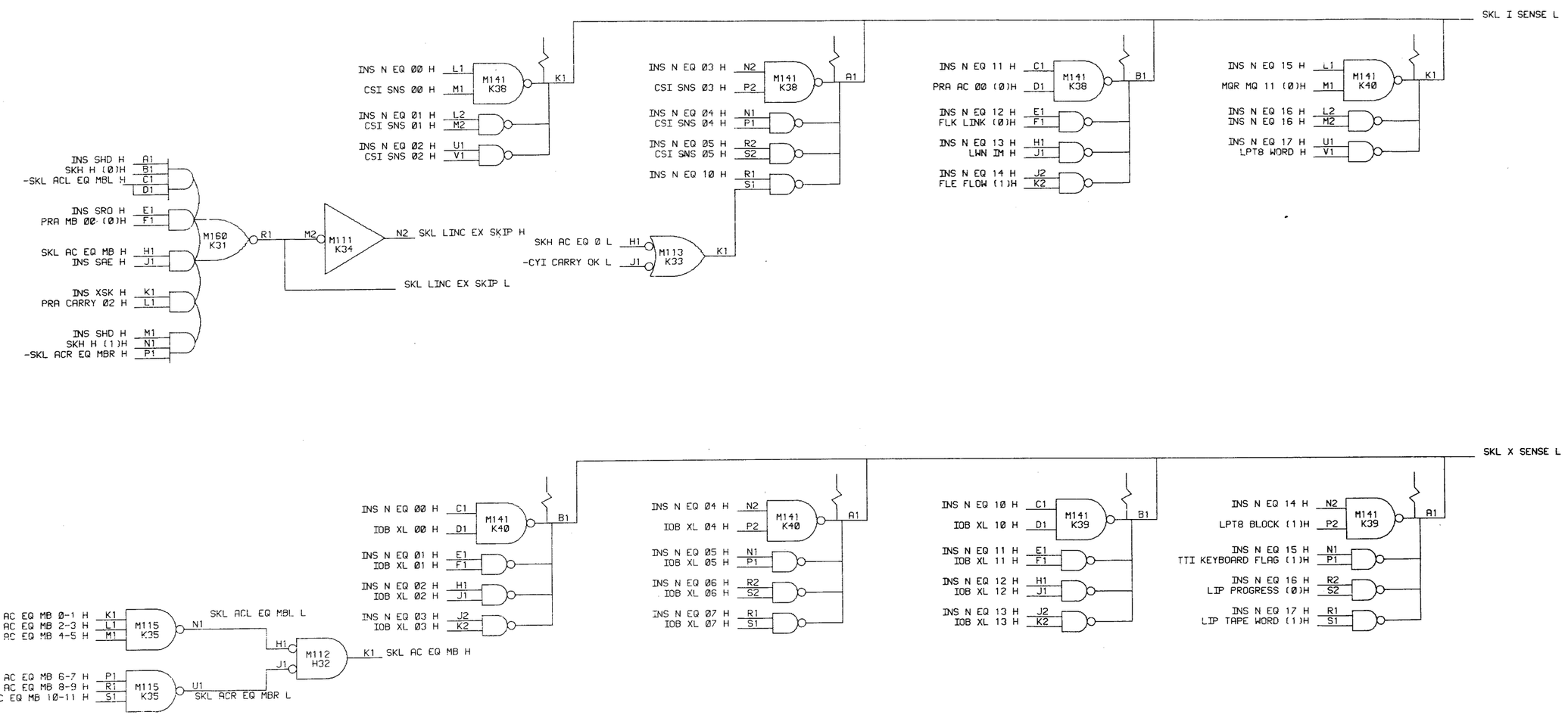

REVISIONS		
CHK	CHANGE NO.	REV.
JB	EP12-00001	A
	ADS	
	J SCANLAN 3/13/69	
	EP12-00003	B
	A WASHINGTON 6/17/69	
	L GALE 6/20/69	
MK	EP12-00015	C

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. C
SCALE		
SHEET 1 OF 1		DIST.

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INS INDEX CLASS L L L2
INS N EQ 00 L M2
M112 L38
N2
A1 M111 K34 B1 SLA INDEX CLASS IZ L
SLA INDEX CLASS IZ H

INS LOPR H T2
INS N EQ 00 H U2
M113 K36 V2

SLA INDEX CLASS IZ L M1
INS SET L N1
P1
R1
M117 H35 S1 C1 M111 K34 D2 SLA 2 WORD FORMAT L
SLA 2 WORD FORMAT H

EAEC LONG INST H D2
INS MTP H E2
M112 L38 F2

-INS INDEX CLASS L H K2
-SLA 2 WORD FORMAT H L2
-SLA (DIS+XSK) H M2
-SLA FULL ADD 2 CYCLE H N2
M117 H35 P2 SLA L 1 WORD FORMAT L

INS ADD L A1
INS STC L B1
INS (LJMP*-XEQ 0) L C1
M115 K35 D1 E2 M111 K34 F2 SLA FULL ADD 2 CYCLE L
SLA FULL ADD 2 CYCLE H
SLA L ROTATES H

INS ROR L D2
INS ROL L E2
INS SCR L F2
M115 K35 H2 T2
-INS N EQ 00 H U2
M113 J33 V2 SLA L ROTATES L

INS SET H S1
INR IR 07 B (0)H U1
M160 K37 V2 SLA INDIRECT 2 WORD
SLA INDEX CLASS IZ H V1
INR IR 07 B (0)H U2

EAEC MUL ADD L L1
M113 K33 N1 SLA MUL ADD H
M1
SLA MUL GO H F1
-INS N EQ 00 H H1
-INS N EQ 17 H J1
-INS N EQ 16 H K1
-INS N EQ 02 H K2
-INS N EQ 01 H L2
M2
+3V J32U1 H N2
M119 J32 P2
SLA MUL ADD L

INS MUL H E1
CPT TS5 (1)H F1
CPS EXECUTE B (1)H H1
M115 K35 J1 F1 M111 K34 H1 SLA MUL GO H
SLA MUL GO L

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

INS DSC H A1
CPS EXC 2 (1)H B1
M113 K36 C1
CPT TS3 (1)H G1
M112 H32 E1 F1 SLA DSC CNT MB H
SLA (DSC*EXECUTE 2) L D1
M111 K34 E1 SLA (DSC*EXECUTE 2) H

INS ADD L L1
INS STC L M1
M113 K36 N1 SLA (ADD+STC) H

INS ADA L D1
INS ADD L E1
M113 K36 F1 SLA (ADA+ADD) H

INS ADM L L2
INS LAM L M2
M113 K36 N2 SLA (ADM+LAM) H

INS ROR L D2
INS SCR L E2
M113 K36 F2 SLA (ROR+SCR) H

INS DSC L P1
INS SET L R1
M113 K36 S1 SLA (DSC+SET) H

INS DIS L H1
INS XSK L J1
M113 K36 K1 H2 M111 K34 J2 SLA (DIS+XSK) L
SLA (DIS+XSK) H

INS LOPR H P2
CPT TS5 B (1)H R2
M113 K36 S2 J1 M111 K34 K1 SLA (LOPR*TS5) H
SLA (LOPR*TS5) L

INS MUL L P2
CPS EXECUTE (1)L R2
M112 H32 S2 SLA (MUL*EXECUTE) H

INS MSC H D2
CPT TS5 B (1)H E2
M113 K33 F2 K2 M111 K34 L2 SLA (MSC*TS5) H
SLA (MSC*TS5) L

INS MUL H D1
SLA EX TS4 H E1
M113 H10 F1 SLA (MUL*EX TS4) L

+3V J08U1
M627 J08 A1 B1 C1 D1 E1 SLA EX TS3 H
F1 H1 J1 K1 L1 SLA EX TS3 L
CPT TS3 (1)H
CPS EXECUTE B (1)H
M1 N1 P1 R1 S1 SLA EX TS4 L
CPT TS4 (1)H
D2 E2 F2 H2 J2 SLA EX TS4 H
+3V J08U1

CPS EXECUTE B (1)H K2
CPT TS5 (1)H L2
+3V J08V1 H M2
+3V J08V1 H N2
M627 J08 P2 SLA EX TS5 L
M111 K09 L1 M1 SLA EX TS5 H

INS 8 OPR L D2
INR IR 03 (0)L E2
M112 H32 F2 U2 M111 H34 V2 SLA OPR1 L
SLA OPR 1 H

A1
CPT TS4 (1)H B1
M113 J04 C1 A1 M111 J09 B1 SLA (OPR1*TS4) H
SLA (OPR1*TS4) L

D1
SLA OPR1 H A1
CPT TS5 (1)H B1
PRF MB 10 (1)H C1
M115 J05 D1 E1 M113 J04 F1 SLA OPR SHIFT EN H

INS 8 OPR H J2
INR IR 03 (1)H K2
INR IR 11 (0)H L2
M115 K35 M2 L1 M111 K34 M1 SLA OPR2 H
SLA OPR2 L

DRN. C.L. SHEPARD	DATE 2-20-69	digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS
CHK'D. J.F. BISONETTE	DATE 2-20-69	TITLE SPECIAL LEVELS 1
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		SIZE D / CODE BS / NUMBER EP12-0-SLA / REV. A
SCALE		DIST.
SHEET 1 OF 1		

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TTI TTØ L
MK2
TTI TT1 L
MK2
TTI TT2 L
MS2
TTI TT3 L
ML1
TTI TT4 L
MM1
TTI TT5 L
MP2
TTI TT6 L
MT2
TTI TT7 L
MN2
TTI SKIP L
NH2
ND2
IOC IOP 1H
TTI KEYBOARD SELECT H
TTI STROBE H
TTI REC PRESET L
TTI DATA H
MR1
MK1
MJ2
TTI SHIFT H
+3V
TTI 1
TTI 2
TTI 3
TTI 4
TTI 5
TTI 6
TTI 7
KEYBOARD FLAG (1) H
MF2
KEYBOARD FLAG (Ø) H

TTI CLOCK SCALE 2(1)H
NU1
TTI IN ACTIVE (1) H
TTI SHIFT L
NK2
MS1
TTI SHIFT H
+3V
TTI START ENABLE L
+3V MØBU1H
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
+3V
ND1
ME2
TTI KCC L
IOC IO PRESET H
NF2
+3V
TTI SHIFT H
TTI SPIKE DETECTOR(1)H
TTI DATA H
+3V
TTI SETUP L

TTI KEYBOARD SELECT H
PL2
IOC IOP 4 H
+3V
TTI STROBE H
WØ76
NØ2
E2
NM2
ST
MM2

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 ØB(1) H
MJ1
+3V
MP1
+3V MØBU1H
TTI KEYBOARD SELECT H

TTI KEYBOARD FLAG (1)L
H2
J2
M113
MØ8
K2
TTI KEYBOARD FLAG (1) H

MTØ6
MØ6
NØ6

TTI IN ACTIVE (1) L
TTI IN LAST UNIT (1) L
TTI START ENABLE L
TTI TTI 7(Ø)H
TTI SHIFT H
TTI IN LAST UNIT
NR2
TTI IN STOP 2(1) L
TTOTTI CLOCK H
MN1
TTI CLOCK SCALE Ø
TTI CLOCK SCALE 1
TTI CLOCK SCALE 2
NS1
NT2
TTI START ENABLE L
NP2
TTI IN STOP 1
NU2
TTI IN STOP 2
NV2
TTI REC PRESET L
NS2
TTI IN ACTIVE
NN2
TTI SETUP L
-TTI SHIFT H
TTI SPIKE DETECTION (1) H
TTI SPIKE DETECTION (Ø) H
TTI KCC L
MV2
NL2
TTI READER RUN
MU2
WØ76
NØ2
M2

TTI SHIFT L
TTI IN LAST UNIT(1)H
+3V

REVISIONS	CHK	CHANGE NO.	REV.
		00002	A
	J.SCANLON	EP12-00015	B
	LGALE		

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 1-6-68
CHK. DATE 1/16/68
ENG. DATE 2/14/68
PROJ. ENG. DATE 2/14/68
PROD. DATE 2/14/68

FIRST USED ON EP12

SCALE

SHEET OF

digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS

TITLE
TTI TELETYPE RECEIVER

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

DIST.

DEC FORM NO. DRD 102A

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PRE MB Ø6(Ø)H ME3
PRC MB Ø4(Ø)H ME1
PRC MB Ø5(Ø)H ME2
PRT MB ØØ(1)H MF1
PRD MB Ø7(Ø)H MH2
PRE MB Ø3(Ø)H MJ2
+3V NJ1 H NJ1

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

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

TTO ENB — MK2, ML1
TTO Ø
TTO 1
TTO 2 — MJ1
TTO 3
TTO 4
TTO 5
TTO 6
TTO 7

TTO SHIFT H
TTO PRESET L

TTO OUT ACTIVE (Ø) L
TTO LINE — MD2
MV2 TTO MAGNET DRIVER H

TTO = Ø L
MH1

M7Ø7
MØ7
NØ7

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

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

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

TTO OUT ACTIVE — MD1
TTO = Ø L
TTO SHIFT H
TTO TPR FLG — NK2

+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 M113 MØ8 F2 A1 B1 C1 TTO TT SKIP L
E2
TTO SKIP L

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

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

DRN. Joe Ojeda DATE 12-27-68
CHK'D. DATE 2/18/69
ENG. DATE 2/19/69
PROJ. ENG. DATE
PROD. DATE
FIRST USED ON E1 1F
SCALE
SHEET OF

digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS

TITLE
TTO TELETYPE TRANSMITTER

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

REVISIONS | REV | CHANGE NO. | CHK

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. [illegible] DATE 3/11/69
CHK'D. [illegible] DATE 3/14/69
ENG. L. Gale DATE 3/10/69
PROJ. ENG. L. Gale DATE 3/10/69
PROD. [illegible] 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

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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	NO1P2	NO2V2	YELLOW	
-30v	NO1S2	NO3V2	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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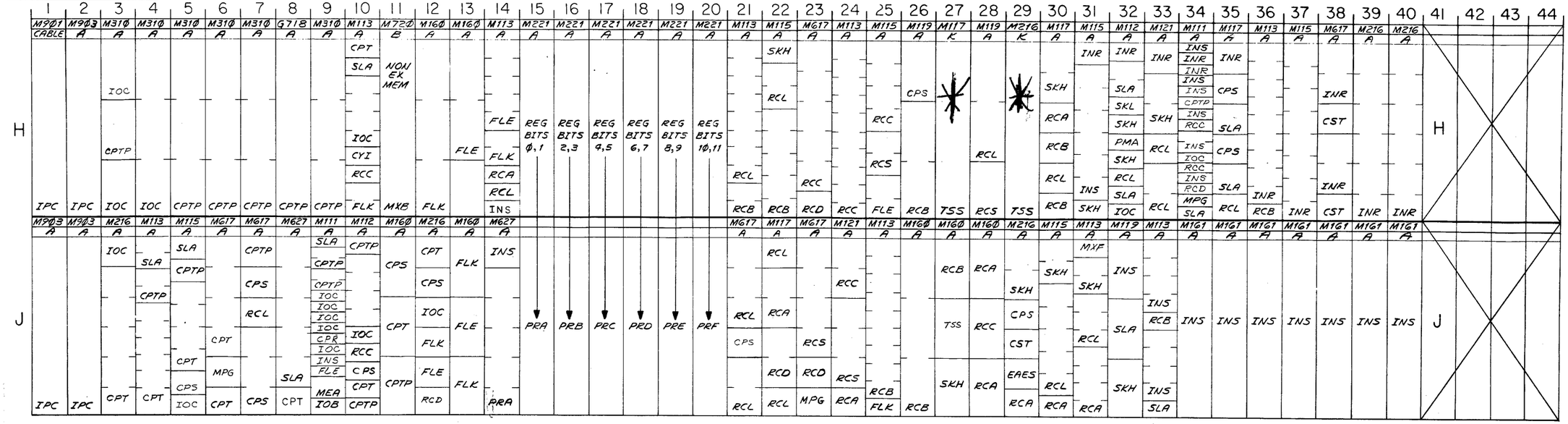

▭ USE ONLY IF KE12 IS NOT INSTALLED

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

REVISIONS	REV.	CHANGE NO.	CHK
	A	RELEASED UNDER REV "A" 3/11/69	
	B	00002	
J SCANLON 5/23/69			
	C	EP12-00003	
T Gauthier 6/20/69			
	D	EP12-00007	
T Gauthier 8-20-69			
	E	EP12-00016	
T Gauthier 11-6-69			
	F	EP12-00027	
T Gauthier 9-2-70			
	H	EP12-00030	
D MACKLIN 11-11-70			

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	
MATERIAL	
FIRST USED ON OPTION MODEL	FINISH
DRN. J. Scanlon	DATE 10-29-68
CHK. T. Gauthier	DATE 2/15/69
ENG. J. Scanlon	DATE 3/24/69
PROJ. ENG. T. Gauthier	DATE 2/19/69
PROD. D. MacKlin	DATE 2/4/69
NEXT HIGHER ASSY. PDP-12	
SCALE	
SHEET 1 OF 1	

digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS

TITLE: MODULE UTILIZATION PROCESSOR

SIZE	CODE	NUMBER	REV.
D	MU	EP12-Ø-1	H

DIST.

EC FORM NO. RD 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
	G78Ø	M9ØT	W681		M7Ø4	M7Ø6	M7Ø7	M113	M7Ø6	M7Ø7	MG6Ø	MG6Ø	MG6Ø	MG23	MG23	MG23	M516	M516	M516	MG23	MG23	MG17	MG17	MG17	MG17	MG17	M113	M121	M216	M216	M216	M216	M169	M113	M117	M16Ø	M16Ø	M216	M111	M216	M111				
	A	A	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/K	B	B	B	B	C	C	C	C	C	A	A	A				
M	PWR		SCOPE DRIVER					TTO TTI DTTI						IOO		IOO				MEA IOB MEA TSS						MXB MXF	MXR TSS TSS TSS						EAET		EAES EAET		EAES	CSI CSI EAEC MP2 CSI MP1 CST CSI CSI CSI CPR CSI IOB CPTP	CST RCD	CST CST IOB CSI MXF CSI MEG CSI TSS	M
		IPC	L.SC					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				M452			M9Ø5	M216	M9Ø3	M9Ø3	M9Ø3	M9Ø3	M9Ø3	M9Ø3	M9Ø3		W021	W021	W021	W021	W021	M3Ø3	W6Ø3	W512	M9ØØ	M9ØØ	M9ØØ	M9ØØ	M9ØØ	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	CONSOLE		LIGHTS		CONSOLE	SWITCHES		A			A				
N		TTY CABLE	DATA PHONE CABLE	PLOTTER CABLE				TTO CLOCK													MEMORY EXTN CABLES					AUTO CST DTTC CST	CST	CST DSC	RELAY & SPKR									PWR PROTECT LITE SW CAPS					CSI MXR CSI CST CSI CST MXR	N
	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							

	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

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

□ USE WØ76 FOR DP12A, M850 FOR DP12B. WHEN NET REF CARD INSTALLED USE G700YA.

△ = 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

REVISIONS			
CHK	CHANGE NO.		REV.
	RELEASED UNDER REV "A" 3/1/69		A
	00002		B
	EP12-00003		C
	EP12-00007		D
	EP12-00020		F
	EP12-00016		E
	EP12-00022		H
	EP12-00027		J
	EP12-00030		K

J. SCANLON 6-25-69
GALE 8-20-69
GALE 11-6-69
GALE 11-14-69
L. GALE 2-12-70
GALE 9/11/70
D. MACKLIN 11-11-70

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 2/18/69
	ENG.	DATE 2/19/69
	PROJ. ENG.	DATE 2/11/69
MATERIAL	PROD.	DATE 2/24/69
FINISH	FIRST USED ON PDP-12	
	SCALE	
	SHEET 1 OF 1	

digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS

TITLE: MODULE UTILIZATION PROCESSOR

SIZE D | CODE MU | NUMBER EP12-Ø-2 | REV K | DIST.

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								IOO					MEA					MXB	MXR	TSS											CSI		CST				
PWR							TTI																		MXF		TSS					EAET					CSI		CST				
													MEA							IOB							TSS						EAET				CST		IOB				
							IOO													MEA														EAES		EAES	CSI		CSI				
																				TSS																	CSR		MEG				
																																	EAET			CST		CSI				
	IPC	OSC					DTTI			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	IOB	RCD	TSS			
	W076	W076	W023				CSI			M905	M216	M903	M903	M903	M903	M903	M903	M903		W021	W021	W021	W021	W021	W023	N512	M900	M900	M900	M900	M900	G793	G793	G793	G793	G916	CPTP	CSI	M113				
	D	E	F				M952			△L	L	A	A	A	A	A	A	A		B	B	B	B	B	A	A	A	A	CONSOLE		LIGHTS		CONSOLE		SWITCHES		A		A				
							D																																	CSI				
																								AUTO			RELAY & SPKR													MXR				
		DATA PHONE CABLE	PLOTTER CABLE																					CST	CST	CST											PWR PROTECT			CSI				
	TTY CABLE						TTO CLOCK													MEMORY EXTN CABLES					DTTC		OSC									LTR							
																																					SW CAPS						
																								CST																			
IPC	TTI	DTTI	PCL	PCL	TTI	TTO		DTTI	DTTO	DTTC	DTTC	ICB	ICB	ICB	ICB	ICB	ICB	ICB	ICB	ICB	ICB	ICB	ICB	ICB			IOR	CIN	CIN	CIN	CIN	CSI	CSI	CSI	CSI	CSI			CST				
																																							MXR				

M

N

MEMORY EXTN CABLES

* WHEN THE MC12 IS NOT INSTALLED USE A W033 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

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

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 10-29-68
	CHK	DATE 2/19/65
	ENG	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	CODE	NUMBER	REV
D	MU	EP12-0-2	K

DIST.

DEC FORM NO DRD 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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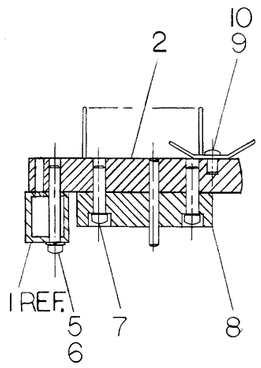
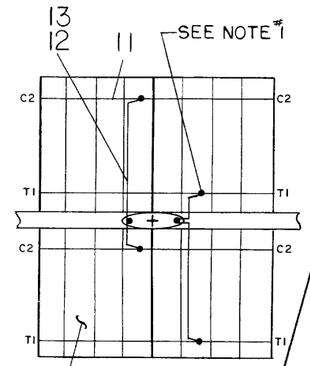


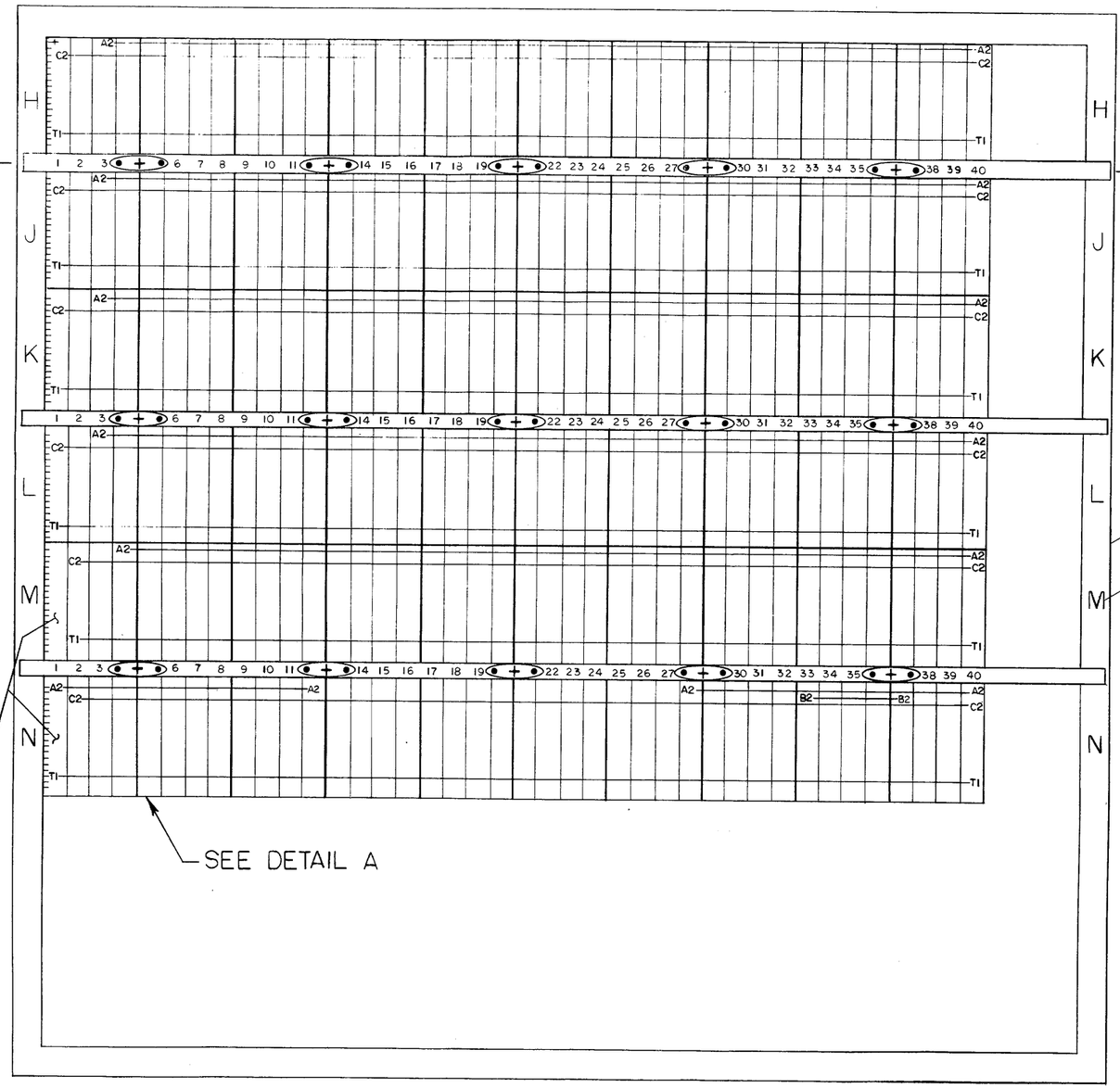
SECTION A-A
SCALE 1/1



DETAIL A
15 PLACES
SEE NOTE #2

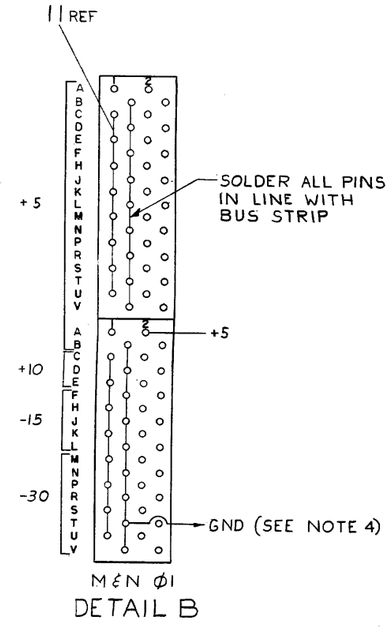
SEE DETAIL B

3
4



SEE DETAIL A

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.



MEN ØI
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.

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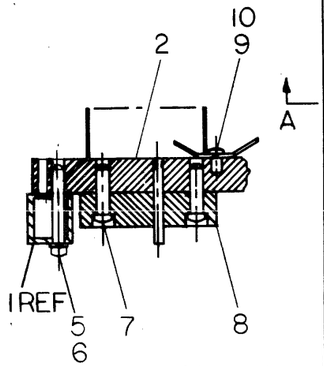
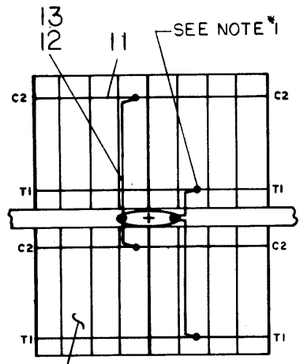
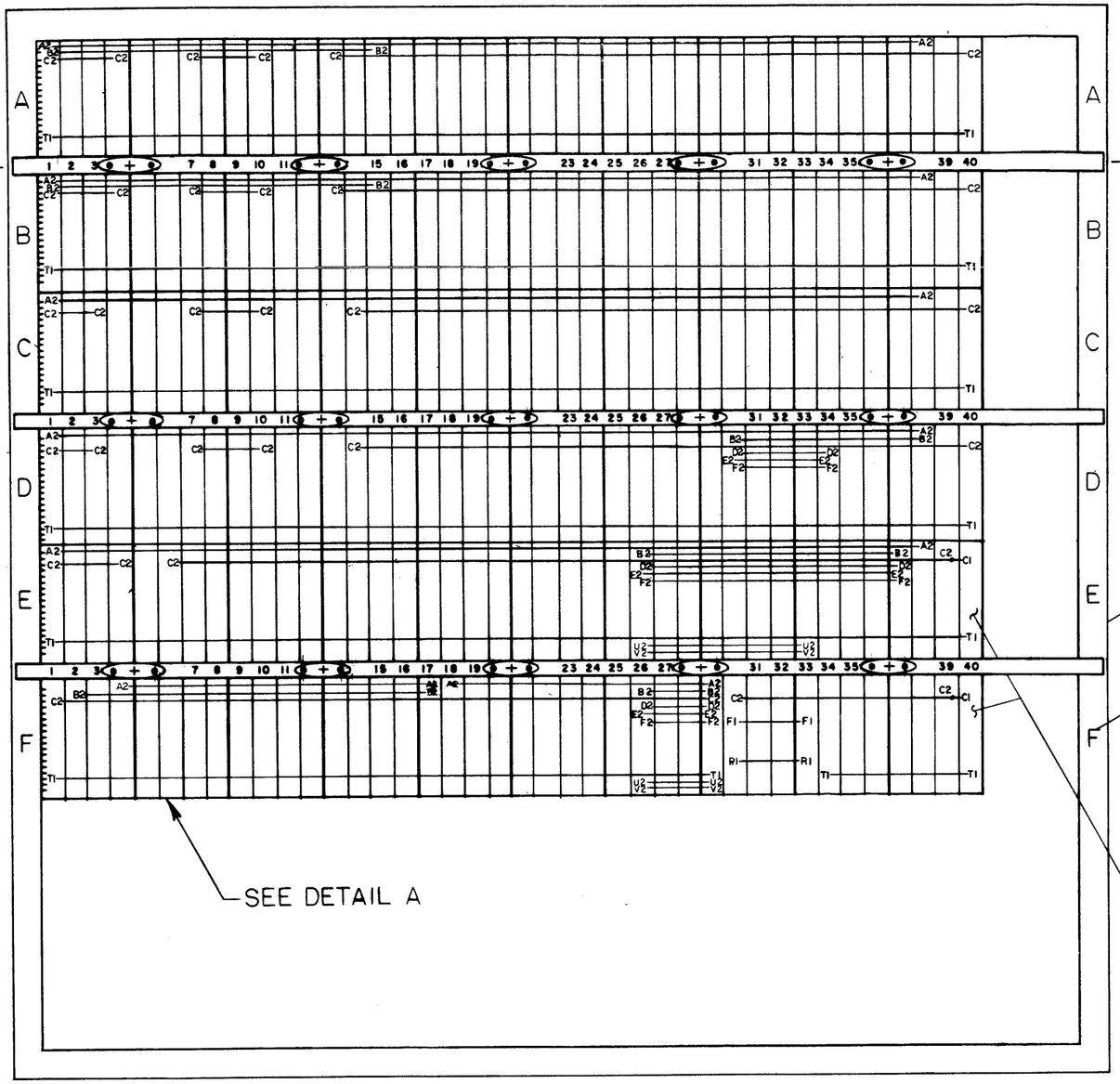
NOTES:
1. CONNECTIONS ON ITEMS #11 & #12 TO BE SOLDERED AND LOCATED AT MINIMUM PRACTICAL HEIGHT ABOVE BOARD.
2. ALL CONN BLOCKS TO BE GROUNDED TO GND LUGS AS SHOWN.
3. USE YELLOW WIRE (ITEM #3) FOR MACHINE WRAPPED & BLUE WIRE (ITEM #4) FOR HAND WRAPPED WIRE.
4. SIDE #1 PINS OF E4Ø & F4Ø ARE GND.

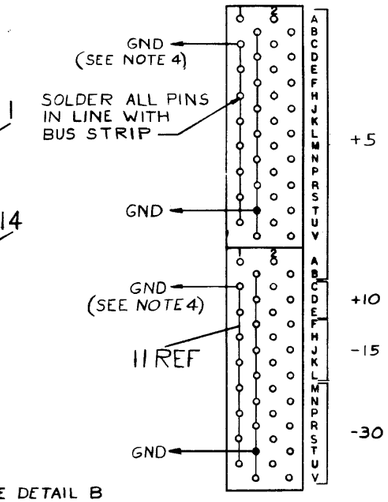


SECTION A-A
SCALE 1/1



DETAIL A
15 PLACES
SEE NOTE #2





E & F 4Ø
DETAIL B

REVISIONS				
CHK	CHANGE NO.	REV.		
[illegible]	12-00004	A		
Betty Welch 2-14-69				
S. ZNAMIEROWSKI				
[illegible] 2/17/69				
Dsgd 12-00006	B			
G. Paul 2/21/69				
Dsgd 12-00009	C			
R. Clayton				
Prod Manuf 3-7-69				
ZNAMIEROWSKI				
[illegible] 3/11/69				
Dsgd 12-00010	D			
Prod Manuf 3-11-69				
G. Gale 3/14/69				
Dsgd EMI2-00001	E			
J. Mercer				
GALE				
L. Gale 4/24/69				
Dsgd EMI2-00006	F			
I. Gwillim 7-30-69				
GALE				
L. Gale 8/15/69				
Dsgd EMI2-00008	H			
[illegible] 8-15-69				
L. GALE				
L. Gale 8-15-69				
Dsgd EMI2-00018	J			
T. Quaile 11-20-69				
GALE				
G. Gale 12-9-69				

QTY.	DESCRIPTION	PART NO.	ITEM NO.
	PARTS LIST		

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

DRN	B. Simonds	DATE 9-18-68
CHK'D	K. Russ	DATE 1-3-69
ENG	[illegible]	DATE 1/16/69
PROJ. ENG.	Kle	DATE 1-6-69
PROD.	W Call	DATE 1/16/69

NEXT HIGHER ASSY
A-ML-EMI2-0

SCALE NONE

SHEET 1 OF 1

digital EQUIPMENT CORPORATION
MAYNARD, MASSACHUSETTS

TITLE
LOGIC FRAME ASSY (EMI2)

SIZE	CODE	NUMBER	REV.
D	AD	7005979-0-0	J

DIST.

DWG 7005979-0-0

DIGITAL EQUIPMENT CORPORATION
MAYNARD, MASSACHUSETTS

PARTS LIST

MADE BY A. Whalen DATE 9/18/68	CHECKED [illegible] DATE [illegible]	SECTION 1
ENG D.C. Peterson DATE 10/2/69	PROD D.C. Peterson DATE 10/2/69	ISSUED SECT. 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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	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
	G629		G624	G228	W025	W025	G020	G020	G020		W025	W025	G228	G624	G624	M169	M222	M222	M222	M222	M222	M222	M617	M617	M117	M113	M115	M216	M161	M216	M119	M115	M112	M121	M111	M113	M117	M212	M903	M901				
	A		A	A	CONN	CONN	*	*	*		CONN	CONN	B	B	B	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	A	C				
	X RET		Y RET											MEM SUP+4	MEM SUP+5								LRL								LTMR		LWN											
	MEM SUP+3		MEM SUP+3																				LRE										LCS											
	MEM SUP+2		MEM SUP+2													LTRB																LWN			LWN									
				INH	INH	SENSE	SENSE AMP Ø,1	SENSE AMP 2,3	SENSE AMP 4,5		SENSE	INH	INH				TAPE REG Ø,1	TAPE REG 2,3	TAPE REG 4,5	TAPE REG 6,7	TAPE REG 8,9	TAPE REG 10,11			LRL										LCS											
A																															LTP8		LTMR	LWN										
			INH											INH	INH								LRL	LRE				LIN						LTP8											
																							LRE										LCX											
	MEM SUP		MEM SUP	MCS			MCS	MCS	MCS				MXI	MXI	MXI	LTRA							LRL	LRL	LRE	LRE	LRE	LCS	LIN	LCS	LIP	LCS	LIP	LTM	LWN	LGP	LWN	LWN	IPCM	IPCM				
	G624	G624	G228	G228			G020	G020	G020	M617			G228	G228	G624	M113							M617	M113	M121	M113	M115	M617	M160	M602	M216	M121	M117	M115	M117	M117	M216	M113	M903	M903				
	A	A	A	A			*	*	*	A			B	B	B	A							C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	A	A				
	X SOURCE	Y SOURCE													MEM SUP+6	LMU							LWN					LWN				LWN											
	MEM SUP-2	MEM SUP-2																					LTMR					LMU		LCS		LCS											
	MEM SUP-3	MEM SUP-3														MCT							LIP		LRL																		
B			INH	INH			SENSE AMP 6,7	SENSE AMP 8,9	SENSE AMP 10,11				INH	INH		LGP								LRL									LGP	LMU		LTM	LGP						
																LIP							LTM	LTM		LCS	LRL							LTM					LTM				
																LCS							LRE	LCS	LRE	LIN	LIP	LIP				LIP	LGP				LTMR		LMU				
	INH	INH													INH									LGP																			
	MEM SUP-3	MEM SUP-3	MCS	MCS		MCS	MCS	MCS	MCS	MCT	MCS	MXI	MXI	MXI	MXI	LTRE	LTRA	LTRB	LTRC	LTRD	LTRE	LTRF	LRL	LTS	LTT	LRE	LCX	LCX	LWN	LTMR	LGP	LGP	LMU	LIP	LTM	LTM	LGP	LGP	IPCM	IPCM				

	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
	G228	G221	G221				G221	G221	G221	G221				G221	G221	M113	M304	M304	M304	M304	M111	M119	M117	M112	M115	M121	M115	M307	M115	M307	M216	M216	M216	M111	A811	M760	M711	M101	M903	M903				
	A	A	A	A	A	A	A	A	B	B	B	B	B	B	B	C	C	C	C	C	C	C	C	C	A	C	C+F	C	C+L	C	D	E	E	D	D	D	L	L	A	A				
	R/W SOURCE			STACK Ø							STACK 1										LRE LRE LCS LRL LTM LRL LTP8 LTM LIP LIN LTP8 LTM LCS	LIN	LMU				LTRB	CLIO																						
																			LTP8			LIN		LRE		LMU	LTD	XLTK		ACIP															
																LIP LGP			LIP				LMU	LIP	LGP	LMU	LMU		LTD		LTD														
																							LTS			LTS	LMU	LCS		TAPE FAIL				YADC				DSI						
																LIP								LRE		LMU	LCS	LCXF	TTOK															
C																								LIN		LTRD		CLC																
																LTS					LRE			LCS		LTRF	LIP	LTD	LTP8	LTD	LIP	LTP8	LTP8	YADC										
	MCT	MCY	MCY	MCY		MCX	MCX	MCX	MXY	MXY	MXY		MXX	MXX	MXX	LMU	LTD	LTT	LTT	LTT	LCS		MCT			LTRF	LIP	LTD	LTP8	LTD	LIP	LTP8	LTP8	YADC YADC	YADC	A-D CONTROL	DSC	DSI	IPCM	IPCM				
	G228	G221	G221				G221	G221	G221	G221				G221	G221	M112	M617	M304	M216	M216	M111	M117	M115	M113	M103	M623	M304	M304	M113	A131	A131	A131	A131	A213		M117		M216	M901	M903				
	A	A	A				A	A	B	B				B	B	C	F	C	C	C	A	F	F	F	F+M	F	F	F	C+D+F+M	J	J	D	D	D				L	A	A				
	R/W RETURN															LIP			LIP		LIP LTT LRE LRE CLEA MCT MCT LTC CLR MCT LTD LTT			CLR	CLR	CLC	CLC	CLIO	CLIO	CLC																		
																			LMU				LTT			CLIO																		
D																LIP						CLR		CLC						YADC															
																LTT										CLIO	CLC																		
																LTM														LTP8															
																LCS										CLIO	CLR																		
	MCT	MCX	MCX	MCX		MCY	MCX	MCY	MCY	MXX	MXX		MXY	MXY	MXY	LTT	CLC	LTD	LTS	LTS	MCT	CLR	CLC		CLEA	CLIO	CLR	CLTB	CLC						AMP YAD	YAD	SPECIAL CARD FOR DIS-DSC DELAY SEE PAGE 144		DSI	IPCM	IPCM				

* USE G021 IF MC12 IS INSTALLED

REV.	CHANGE NO.	CHK	
A	00002		T Quillen 6/18/69 L GALE
B	00005		L GALE
C	EM12-00007		T Quillen 7-30-69 GALE
D	EM12-00009		L GALE
E	EM12-00017		T Quillen 11-5-69 GALE
F	EM12-00022		T Quillen 1-13-70 GALE
H	EM12-00030	FV	T Quillen 2-26-70 GALE
J	EM12-00035	FV	T Quillen 3-25-70 GALE
K	EM12-00037		GALE 7-16-70
L	EM12-00040	FV	7/29/70
M	EM12-00041	FV	10-30-70

A = EM12
B = MC12
C = TC12
D = AD12
E = TC128
F = KW12 A
H = KP12
J = AM12
K = AG12
L = VC12
M = KW12 B/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. Joe Ayer DATE 11-3-68
CHK'D. G Scanlon DATE 2/27/69
ENG. R J Clayton DATE 2-28-69
PROJ. ENG. R J Clayton DATE 2-18-69
PROD. J Wall DATE 3/4/69
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-1 REV M
DIST.

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.

SIZE D | CODE MU | NUMBER EM12-Ø-2 | REV K

	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
	G805	G826	M217	M217	WØ23	WØ32	M217	M210	M216	M310	M310	M310	M310	M360	M360	M117	M117	M216	M121	M216	M401	M121	M113	M216	M216	A214	A214	A214	A214	A214	A214	A214	A214	A404		A615	A615	M216	M227	375Ø				
	A	A	F	F	C	C	F	A	*F	F	F	F	A	A	E	C	C	C	C	C	C	E	E	B	C	K	K	K	K	L	L	L	L	E	L	L	L	A	A					
E	MCT	MCT		CLKA				MCT						STROBE Ø	STROBE 1		LTC		LTT			C	C		LCKF	OPT PREAMPS CHAN 20-21	OPT PREAMPS CHAN 22-23	OPT PREAMPS CHAN 24-25	OPT PREAMPS CHAN 26-27	PREAMPS CHAN 10-11	PREAMPS CHAN 12-13	PREAMPS CHAN 14-15	PREAMPS CHAN 16-17	SS HOLD	HQ PWR SUPPLY	Y AXIS	X AXIS			E				
				CLKB		TAPE HEAD CABLE		MCT									LTC		LTS			LCKF	LCKF		LCK																			
			CLKA		LTC		CLKB	LCX	CLR	MCT	MCT	MCT	MCT	MCT	MCT	LTC		LMU	LTS	LCX	LTS	DSC	LTRF	LCKF	LCK	YADB	YADB	YADB	YADB	YADA	YADA	YADA	YADA		YAD			DSI	IPCM					
	M703	G882	G882				G882	G882	G882	G853	W520	R107	W512	W512	W512	W603	R303	M405	M216	M719	M719	M719	M503	M503	M	A214	A214	A214	A214	G783	G783	G783	G783					W028	W028					
	H	C	C				C	C	C	C	C	C	C	C	C	C	A	FORM	F	*F	F	F	F	F	CABLE	K	K	K	K	J	J	D	D					L	L	A				
F			PWR FAIL	MARK LTR	TIME LTR		D1 LTR	D2 LTR	D3 LTR	RES. BD LTC	UNIT OK LTC		(MARK TIME) LTR (WRITE)			LTR	AUTO RESTART	**	CLC	CLTB	CLTB	CLTB	CLEA	CLEC	*** CLEA	OPT PREAMPS CHAN 30-31	OPT PREAMPS CHAN 32-33	OPT PREAMPS CHAN 34-35	OPT PREAMPS CHAN 36-37	ANALOG INPUTS CHAN 30-37	ANALOG INPUTS CHAN 20-27	ANALOG INPUTS CHAN 10-17	ANALOG INPUTS CHAN Ø-7					SCOPE CABLE VR12	SCOPE CABLE EØ5	POWER		F		
												LTR			LTC	LTR			CLR	CLC		CLIO		CLEB	CLEB																		
													(WRITE)						CLIO	CLC	CLC	CLR	CLEA		CLEB																		
												LTR				LTR			CLR	CLIO	CLK	CLR																					
															LTC					CLC	CLK	CLR	CLEB		CLEC																		
			PWF			LTR							LTR	LTC		LTC	CST	CLTB	CLTB	CLEA	CLEB	CLEC				YADB	YADB	YADB	YADB	YADB	YADB	YADA	YAD	YAD		DSY	DSX	DSX	DSX					

	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.
	DWB	3000	A
		L GALE 6/18/69	
	DWB	EM12-00009	B
		L GALE 6/26/69	
	DWB	EM12-00017	C
		T Quilter 11 5 69 GALE	
	FV	EM12-00035	D
		T Quilter 3-25-70 GALE	
		EM12-00037	E
		EM12-00039	F
		L GALE	
		EM12-000040	H
		C MACKLIN	
		EM12-00041	J
		C MACKLIN 9/30/70	
		EM12-00044	K
		2-2-71 SCANLON	

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

A = EM12
B = MC12
C = TC12
D = AD12
E = TC12B
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 ED AND WØ8 WITH PINS C2-E1 JUMPERED IN SLOT 2C WHEN KW12A IS NOT INSTALLED
*** USE M870 WITH KW12B OR KW12C

UNLESS OTHERWISE SPECIFIED	DRN.	DATE
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. Scanlon	11-2-68 / 2/27/69
	ENG.	2-28-69
	PROJ. ENG.	
	PROD. L. Stall	2/25/69
MATERIAL	FIRST USED ON PDP-12	
FINISH	SCALE	
	SHEET 1 OF 1	

digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS

TITLE: MODULE UTILIZATION (MEMORY)

SIZE D | CODE MU | NUMBER EM12-Ø-2 | DIST.

DEC FORM NO. DF-3 105

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	QUANTITY/VARIATION											
			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	DØ1T1		
	F4ØH1	DOIC2		
	F4ØF1	DIØC2		
	F4ØE1	DI4C2		
	F4ØD1	D4ØT1		
	F4ØC1	D4ØC2		
	F4ØB1	CØ1T1		
	E4ØV1	CØ1C2		
	E4ØU1	C1ØC2		
	E4ØT1	C14C2		
	E4ØS1	C4ØT1		
	E4ØR1	C4ØC2		
	E4ØP1	BØ1T1		
	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
PROD. 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: BS | NUMBER: EM12-0-IPCM | REV: H
SCALE		
SHEET 1 OF 1		DIST.

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W Ø25
A Ø5
B Ø5

AC2 AD2 AE2 AF2 AH2 AJ2 AK2 AL2 AM2 AN2 AP2 AR2 BC2 BD2 BE2 BF2 BH2 BJ2 BK2 BL2 BM2 BN2 BP2 BR2

INHIB DRIVER Ø · 1 · 2 · 3 · 4 · 5 · 6 · 7 · 8 · 9 · 1Ø · 11

MCT MEMORY SUPPLY +1
MCT MEMORY SUPPLY -1
MCT MEM SUPPLY +2
MCT MEM SUPPLY -2
MCT MEM SUPPLY +3
MCT MEM SUPPLY -3

G624 A Ø3 · G624 B Ø2 · G624 B Ø1

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 MBIØ (Ø) H · PRF MBI1 (Ø) H

G228 A Ø4 · G228 B Ø4 · G228 B Ø3

G Ø21 * A Ø7 · G Ø21 * A Ø8 · G Ø21 * A Ø9 · G Ø21 * B Ø7 · G Ø21 * B Ø8 · G Ø21 * B Ø9

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

W Ø25
A Ø6
B Ø6

W Ø25
A 11
B 11

✳ USE GØ2Ø ONLY IF MC12 IS NOT INSTALLED

REVISIONS				
	CHK	CHANGE NO.	REV
	Fred	EM12-00003	A
	T. GUILLON 6/21/68		
	L.GALE 8/15/69		

UNLESS OTHERWISE SPECIFIED	DRN Joe Ouva	DATE 1-17-68
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 J. Scanlon	DATE 2/27/69
	ENG R.J. Clayton	DATE 2-28-69
	PROJ. ENG. J. Webster	DATE 2-24-69
	PROD. W. Hall	DATE 2-24-69
MATERIAL	FIRST USED ON EM12	
FINISH	SCALE	
	SHEET 1 OF 1	

digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS

TITLE
MCS
SENSE AMPS &
INHIBIT DRIVERS

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

DIST.

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 EA2 H
.1Ø µS
.2Ø µS
.3 µS
.15 µS
.4 µS
M31Ø E1Ø
M31Ø E11
M31Ø E12
M36Ø E14
MCT MEM DONE L
MCT MEM FINISH H
M31Ø E13
-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 8/18/67	A	00002	
L. GALE 8-18-69	B	EM12-00004	
T. Quillin 11-5-69	C	EM12-00017	
L. GALE 11-14-69			

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

		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 1 OF 1

digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS

TITLE
MCT MEMORY CONTROL

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

REC FORM NO. ED 102A

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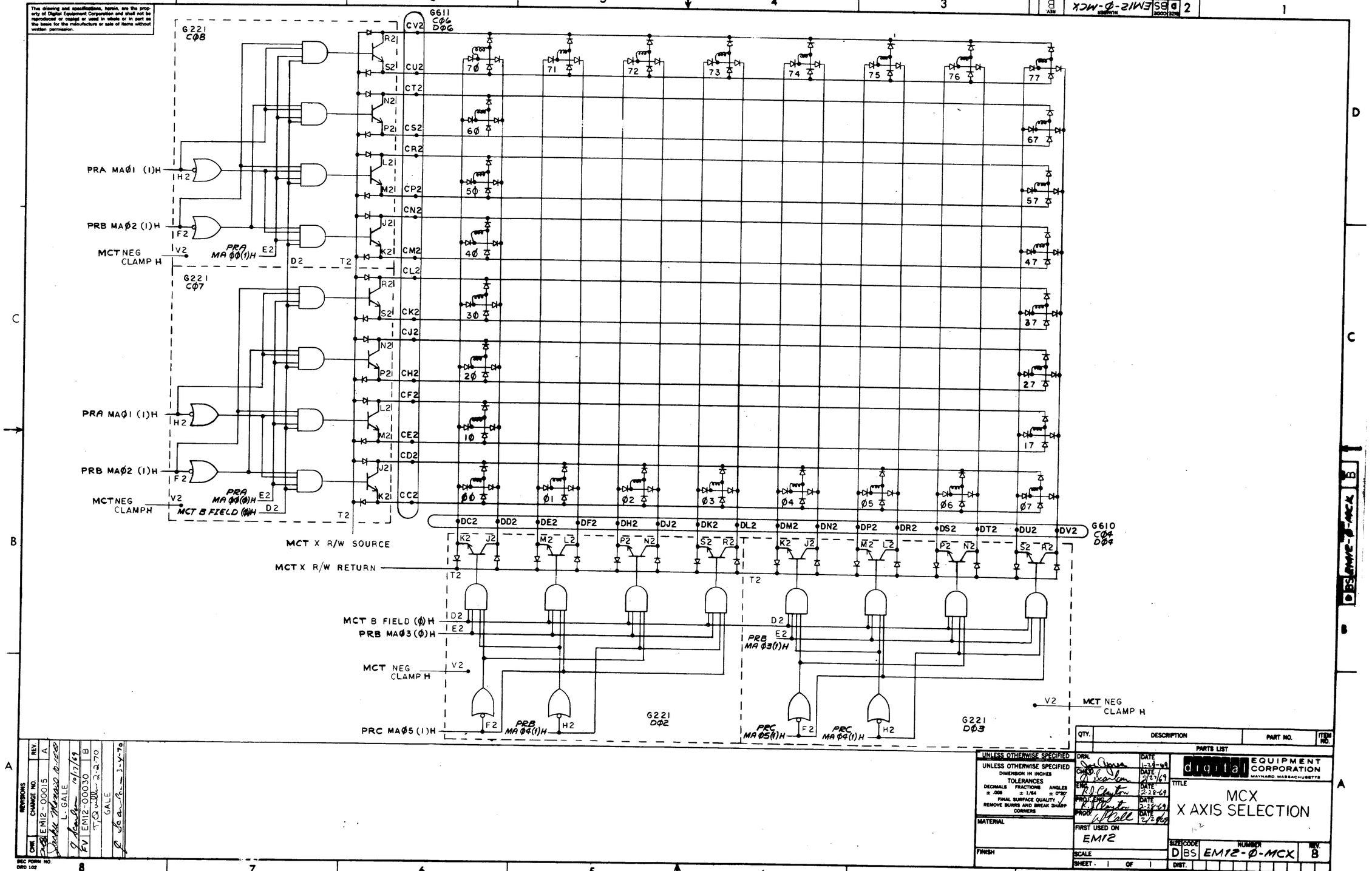

REVISIONS			
DWR	CHANGE NO.		REV.
JS	EM12-00015		A
FV	EM12-00030		B

Leslie Marasco 10-1269		
L. GALE		
Q. Gale 10/17/69		
T. Q. Gale 2-2-70		
GALE		
Q. Gale 3-4-70		

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 63
REMOVE BURRS AND BREAK SHARP CORNERS

MATERIAL

FINISH

DRN.		DATE 1-28-69
CHK.		DATE 2/27/69
ENG.	R.D. Clayton	DATE 2-28-69
PROJ. ENG.	R.J. Clayton	DATE 2-28-69
PROD.	W. Call	DATE 3/2/69

FIRST USED ON EM12

SCALE

SHEET 1 OF 1

digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS

TITLE
MCX
X AXIS SELECTION

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

DIST.

DEC FORM NO. DRD 102

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G22 CØ3

G610 CØØ DØ7

CV2 CU2 CT2 CS2 CR2 CP2 CN2 CM2 CL2 CK2 CJ2 CH2 CF2 CE2 CD2 CC2

R2 S2 N2 P2 L2 M2 J2 K2

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

PRD MAØ7 (1)H — H2
PRE MAØ8 (1)H — F2
MCT NEG CLAMP H — V2
PRD MA Ø6(1)H — E2
MCT B FIELD (Ø)H — D2
T2

G221 CØ2

PRD MAØ7 (1)H — H2
PRE MAØ8 (1)H — F2
PRD MA Ø6(Ø)H — E2
MCT B FIELD (Ø)H — D2
T2

G611 CØ6 DØ6

DC2 DD2 DE2 DF2 DH2 DJ2 DK2 DL2 DM2 DN2 DP2 DR2 DS2 DT2 DU2 DV2

MCT Y R/W SOURCE
MCT Y R/W RETURN

K2 J2 M2 L2 P2 N2 S2 R2

T2

MCT B FIELD(Ø)H — D2
PRE MAØ9(Ø)H — E2
MCT NEG CLAMP H — V2
PRF MA11 (1)H — F2
PRF MA1Ø (1)H — H2

G221 DØ7

D2
PRE MA Ø9(1)H — E2
PRF MA 11 (1)H — F2
PRF MA 1Ø(1)H — H2

G221 DØ8

V2 MCT NEG CLAMP H

QTY.	DESCRIPTION	PART NO.	ITEM NO.

PARTS LIST

REVISIONS	CHK	CHANGE NO.	REV.
		EM12-00015	A
	FV	EM12-00030	B

L GALE 11/1/69
T Gwin 3-2-70
GALE 3-4-70

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

		DATE
DRN	Jack Ogura	1-20-69
CHKD	J Scanlon	2/27/69
ENG	R J Clayton	2-28-69
PROJ ENGR	R J Clayton	2-28-69
PROD	W K Hall	2/4/69

FIRST USED ON EM12

SCALE

SHEET OF

digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS

TITLE
MCY
Y AXIS SELECTION

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

DIST.

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	TITLE MEMORY EXTENSION CONTROL	
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 MC12-0 / REV. P	
SCALE			
SHEET 1 OF 1		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

CPTP TP3 H, CST EN MEM (1)H — M113 L21 — F2 MXB MEM TP3 L

+3V M27V1 H — M617 M26 — L1 MXB MEM TP3 H

CST DO (1)H, CPS FETCH (1)H — M720 H11 — MXB DO FETCH L

CPT CYCLE DONE (Ø)H, CPT TS2 (1)H, MXB DO FETCH L, +3V LØ3U1 H — M119 LØ3 — V2

V2 — M113 L21 — K1, J2

M720 H11

CPTP START MEMORY H — V2

F2 — MCT STROBE L

5 USEC — D2 — MCT MEM DONE L

NON EXISTANT MEMORY DETECT

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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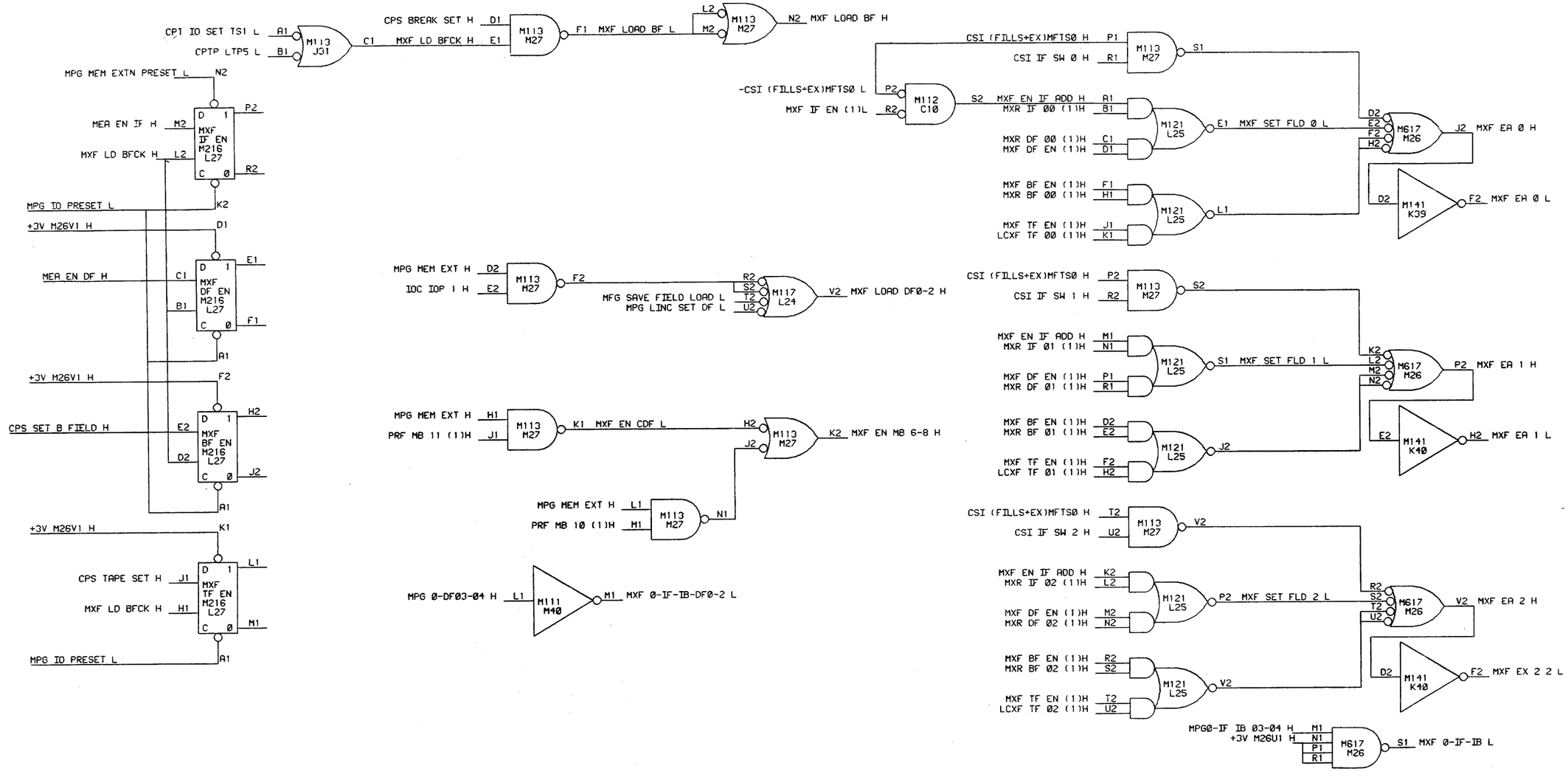

REVISIONS			REVISIONS			REVISIONS		
CHK	CHANGE NO.	REV.	CHK	CHANGE NO.	REV.	CHK	CHANGE NO.	REV.
	EM12-00001	A	NR	EP12-00007	E	GH	EP12-00026	K
	ADS			A.WASHINGTON 8/15/69			S. GOLDSBY 9-1-70	
	J. SCANLAN 3/13/69			L. GALE 8/20/69			D. MACKLIN 9-2-70	
	EP12-00003	B	NR	EP12-00009	F		EP12-00030	L
	A.WASHINGTON 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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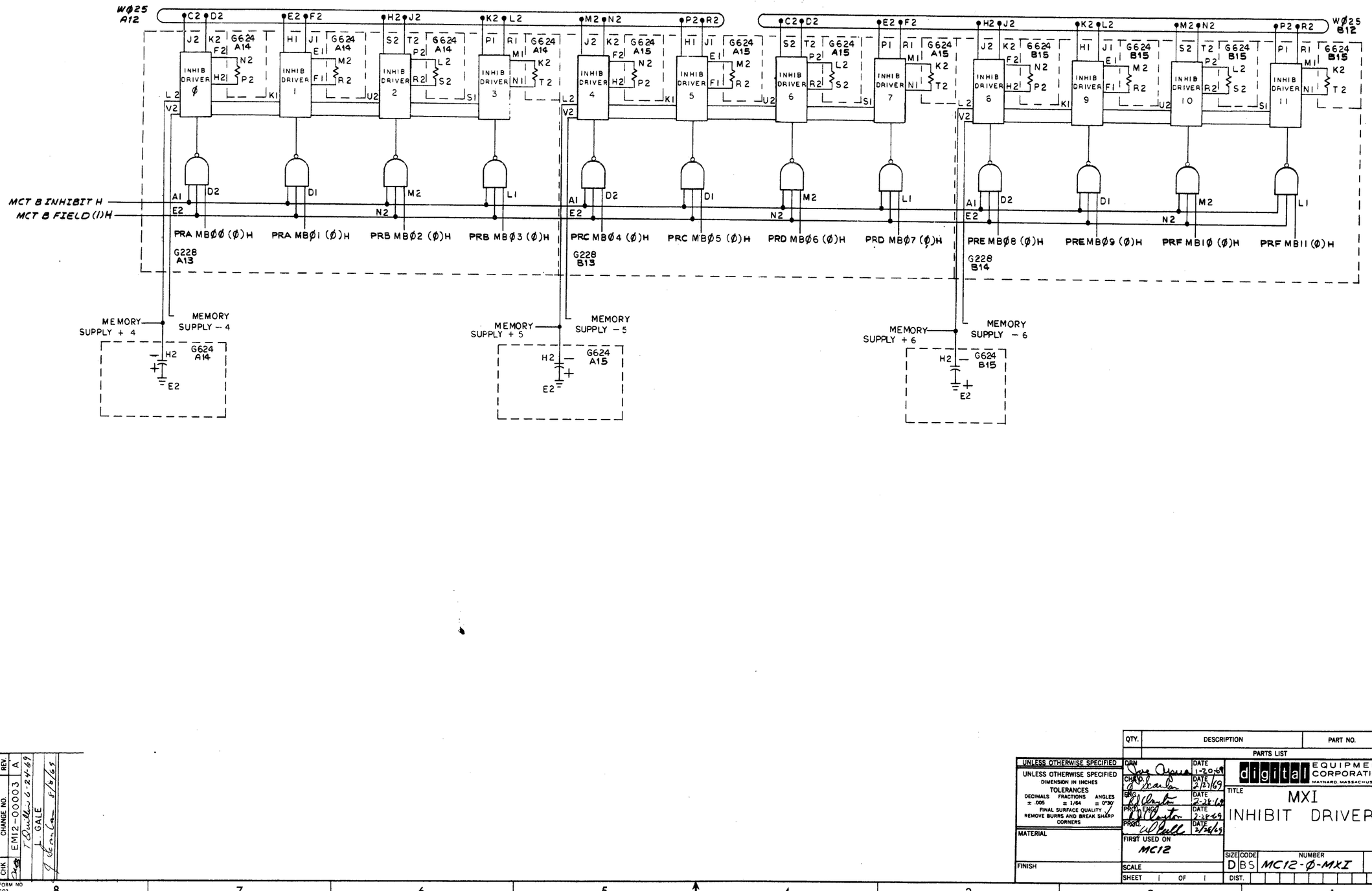

REVISIONS			
CHK.	CHANGE NO.	REV.	
[illegible]	EM12-00003	A	
T Bulle 6-24-69			
L GALE			
J Cox Lee 8/8/65			

DEC FORM NO DRD 102

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 Ayoub	DATE 1-20-69
CHKD	J Scanlon	DATE 2/27/69
ENG	D Clayton	DATE 2-28-69
PROJ ENGR	D Clayton	DATE 2-28-69
PROD	W Bulle	DATE 2/26/69

FIRST USED ON MC12

SCALE

SHEET 1 OF 1

QTY.	DESCRIPTION	PART NO.	ITEM NO.
	PARTS LIST		

digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS

TITLE
MXI
INHIBIT DRIVERS

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

DIST.

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

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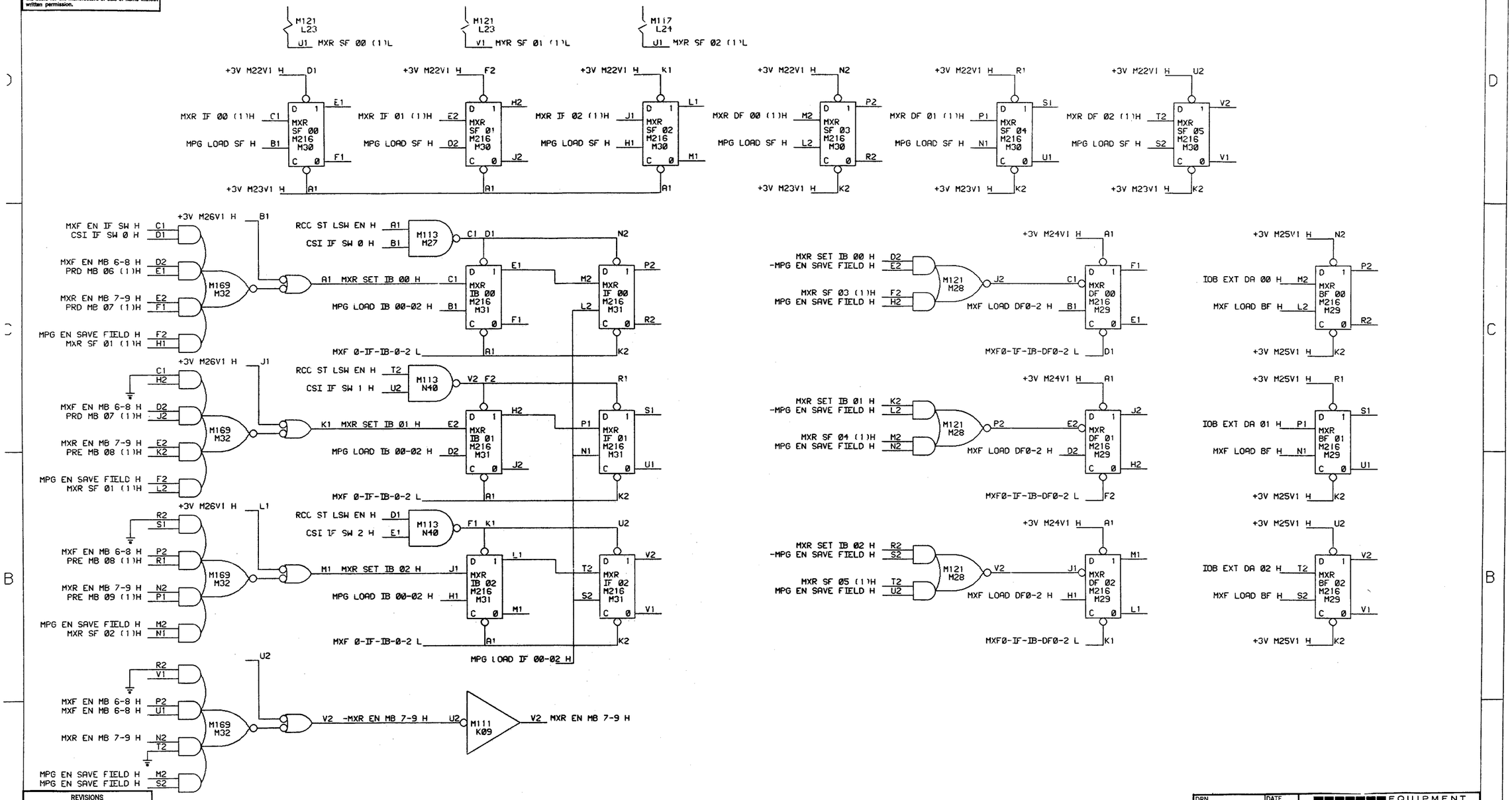

REVISIONS		
CHK	CHANGE NO.	REV.
JB	EP12-00001	A
	ADS	
	J. SCANLAN 3/13/69	
	EP12-00003	B
	A.WASHINGTON 6/18/69	
	L. GALE 6/20/69	
NR	EP12-00004	C
	A.WASHINGTON 7-9-69	
	L. GALE 7-15-69	
	EP12-00030	D

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

G611 C13 D13

CV2 CU2 CT2 CS2 CR2 CP2 CN2 CM2 CL2 CK2 CJ2 CH2 CF2 CE2 CD2 CC2

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

G610 C11 D11
DC2 DD2 DE2 DF2 DH2 DJ2 DK2 DL2 DM2 DN2 DP2 DR2 DS2 DT2 DU2 DV2

PRA MA Ø1(1)H
PRB MA Ø2(1)H
MCT NEG CLAMP H
PRA MA ØØ(1)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 Ø9(1)H
MCT NEG CLAMP H

G221 C15
G221 DØ9
G221 D1Ø

REVISIONS			
CHK	CHANGE NO.	REV.	
DRB	EM12-00015	A	L GALE 10/15/69
FV	EM12-00030	B	T Quelle 2-2-70
			GALE 3-4-70

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 1-20-69
CHKD	DATE 2/7/69
ENG	DATE 2/28/69
PROJ. ENG	DATE 2/28/69
PROD	DATE 2/24/69

FIRST USED ON MC12

SCALE

SHEET 1 OF 1

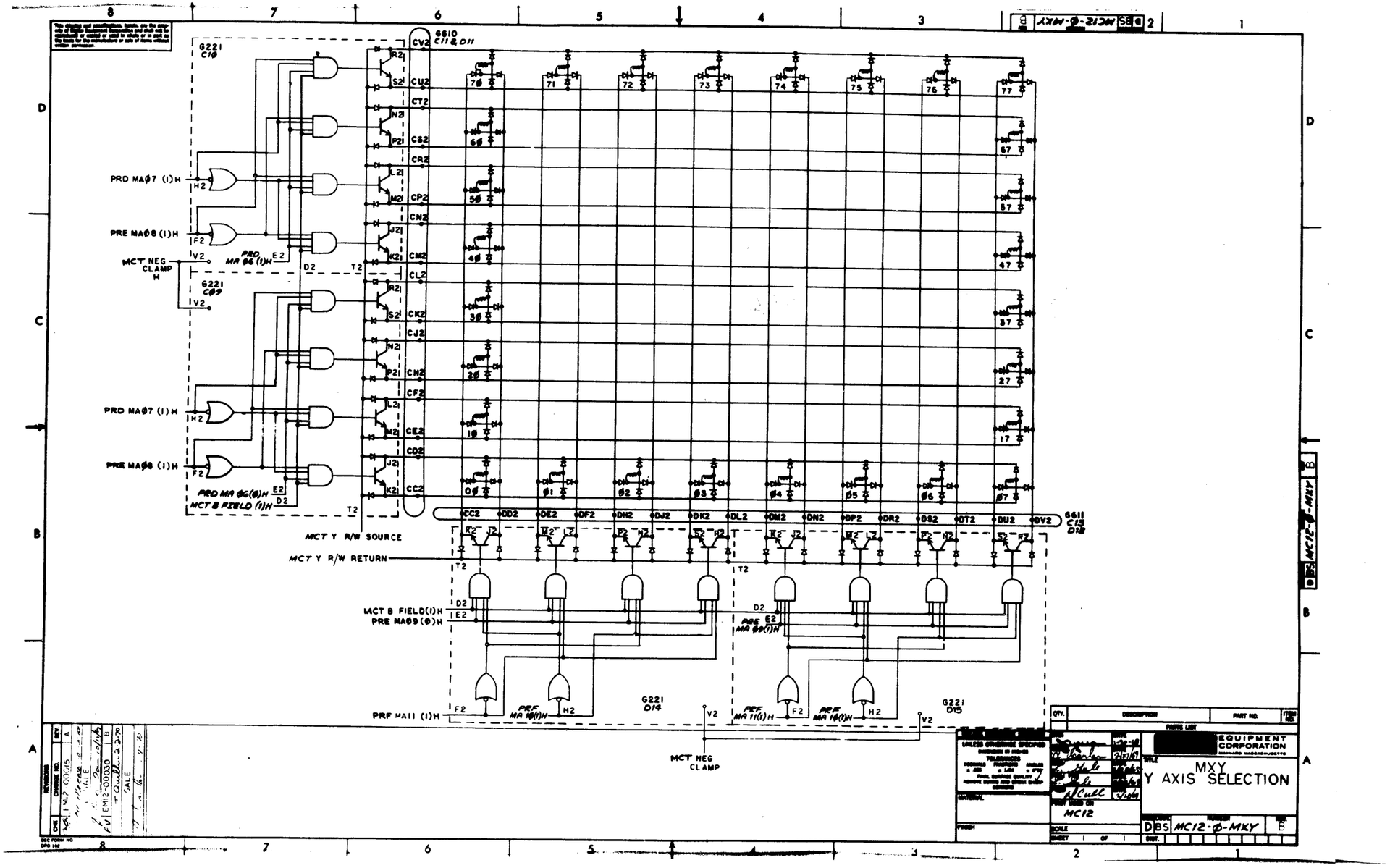
digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS

TITLE
MXX
X AXIS SELECTION

SIZE	CODE	NUMBER	REV.
D	BS	MC12-Ø-MXX	B

DIST.

DEC FORM NO DRD 102


G221 C10
G610 C11 & D11
CV2
CU2
CT2
CS2
CR2
CP2
CN2
CM2
CL2
CK2
CJ2
CH2
CF2
CE2
CD2
CC2
70
71
72
73
74
75
76
77
67
57
47
37
27
17
07
00
01
02
03
04
05
06
PRD MA07 (1)H
PRE MA08 (1)H
MCT NEG CLAMP H
PRD MA 06 (1)H
G221 C09
PRD MA07 (1)H
PRE MA00 (1)H
PRD MA 00 (0)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 MA09 (0)H
PRE MA 09(1)H
PRF MA11 (1)H
PRF MA 10(1)H
G221 D14
G221 D15
MCT NEG CLAMP
MXY
Y AXIS SELECTION
EQUIPMENT CORPORATION
DBS MC12-0-MXY
MC12

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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
CHK'D. R. HUTNAK DATE 3/7/69
ENG. L. Gale DATE 3/10/69
PROJ. ENG. L. Gale DATE 3/10/69
PROD. W Call DATE 3/10/69
FIRST USED ON PDP-12
SCALE
SHEET 1 OF 2

digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS

TITLE LINC TAPE CONTROL

SIZE A | CODE ML | NUMBER TC12-0 | REV V

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
CHK'D. R. Hutnak DATE 3/10/69
ENG. L. Gale DATE 3/10/69
PROJ. ENG. L. Gale DATE 3/10/69
PROD. W Call DATE 3/10/69
FIRST USED ON PDP-12
SCALE
SHEET 2 OF 2

digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS

TITLE LINC TAPE CONTROL

SIZE A | CODE ML | NUMBER TC12-0 | REV V

DIST.

DEC FORM NO. DRA 103

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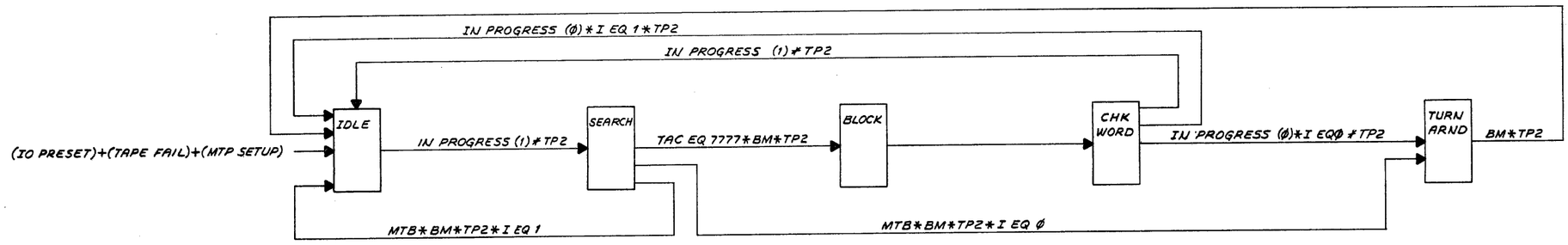

REVISIONS			
CHK	CHANGE NO.		REV.
[illegible]	00002		A
	T. Quillin		
	L. GALE		
[illegible]	[illegible]		
[illegible]	EM12-00015		B
[illegible]	[illegible]		
	L. GALE		
[illegible]	[illegible]		

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. Sea Aqua	DATE 6 SEPT 68	digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS
CHKD. D Scanlon	DATE 12/27/68	
ENG. E A Nault	DATE 2-28-69	
PROJ. ENG. [illegible]	DATE 2-18-69	
PROD. A Hall	DATE 1/22/69	

TITLE: TAPE PROCESSOR MJR. ST. FLOW

FIRST USED ON: TC12

SCALE

SHEET 1 OF 1

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

DIST.

DEC FORM NO. DRD 102A

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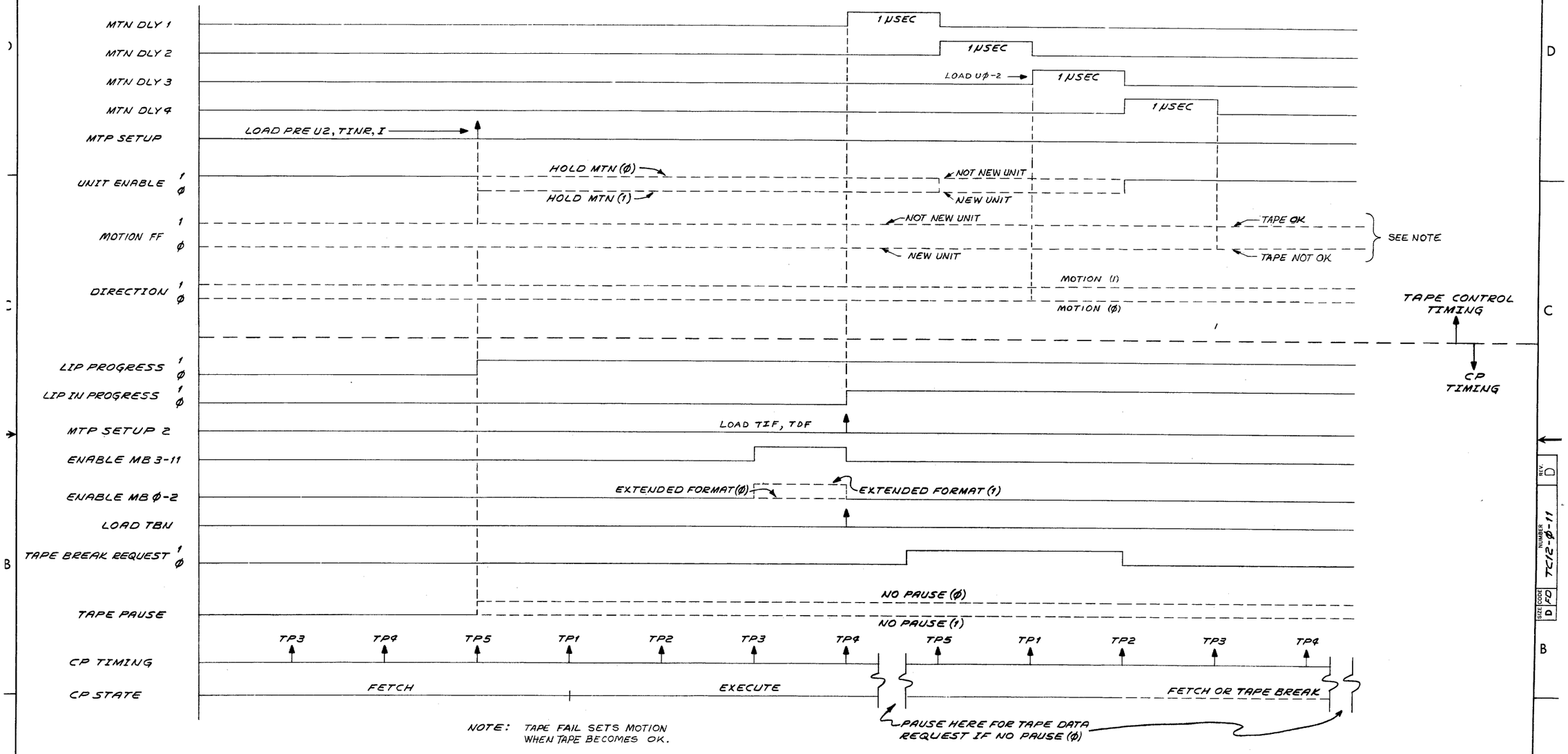

NOTE: TAPE FAIL SETS MOTION WHEN TAPE BECOMES OK.

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

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

FIRST USED ON: TC12

digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS

TITLE: LINC TAPE INST SETUP TIMING

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

SCALE
SHEET 1 OF 1
DIST.

DEC FORM NO. DRD 102A

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

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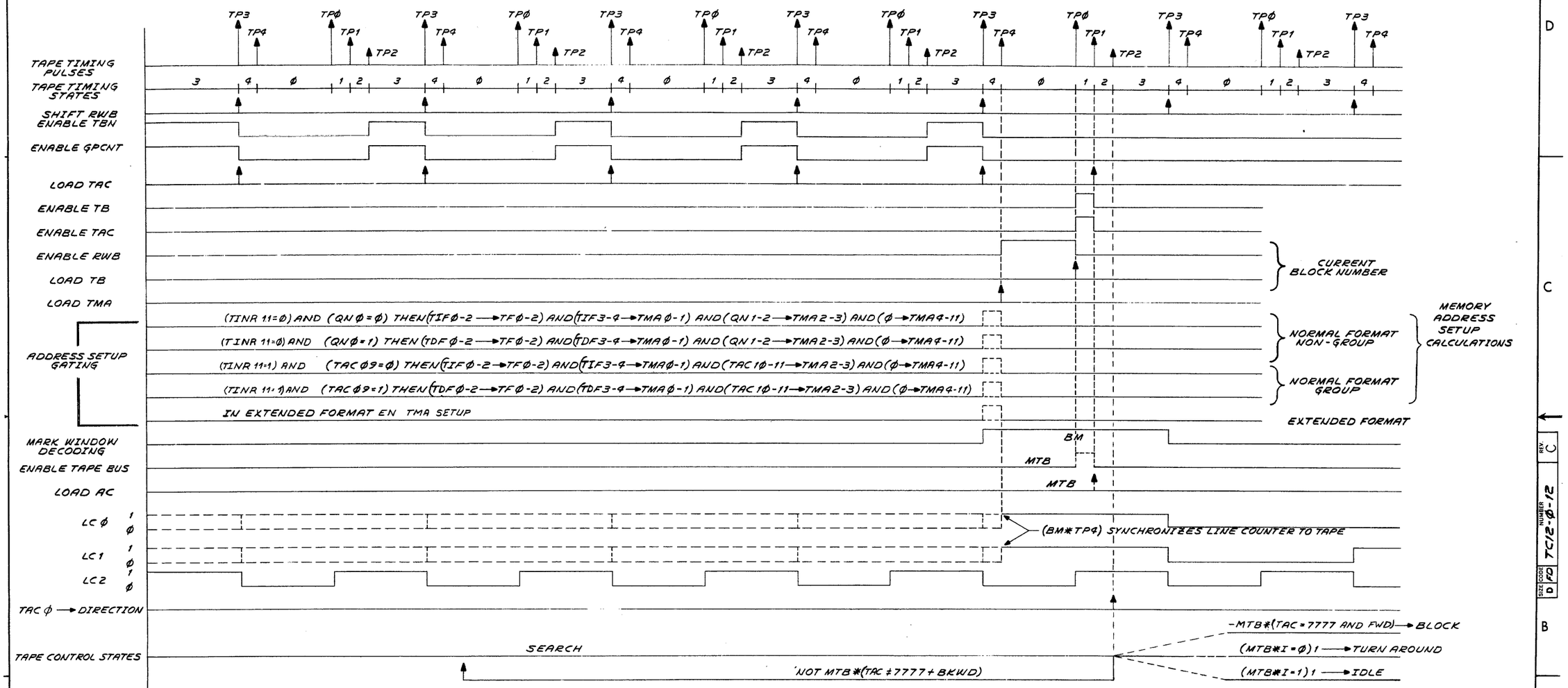


NOTE:
TIMING NOT SHOWN TO SCALE. TPØ & TP3 ARE DERIVED FROM ZERO CROSSINGS OF TAPE TIMING TRACK. TPØ & TP3 ARE SEPARATED BY APPROXIMATELY 15 μSEC. TTS1, TTS2, TTS4 ARE EACH 0.5 μSEC.

REVISIONS	REV.	CHK	
CHANGE NO. 00002 T QUILLIN L GALE 6/18/68	A		
EM12-00003 T QUILLIN & ZAKAY 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

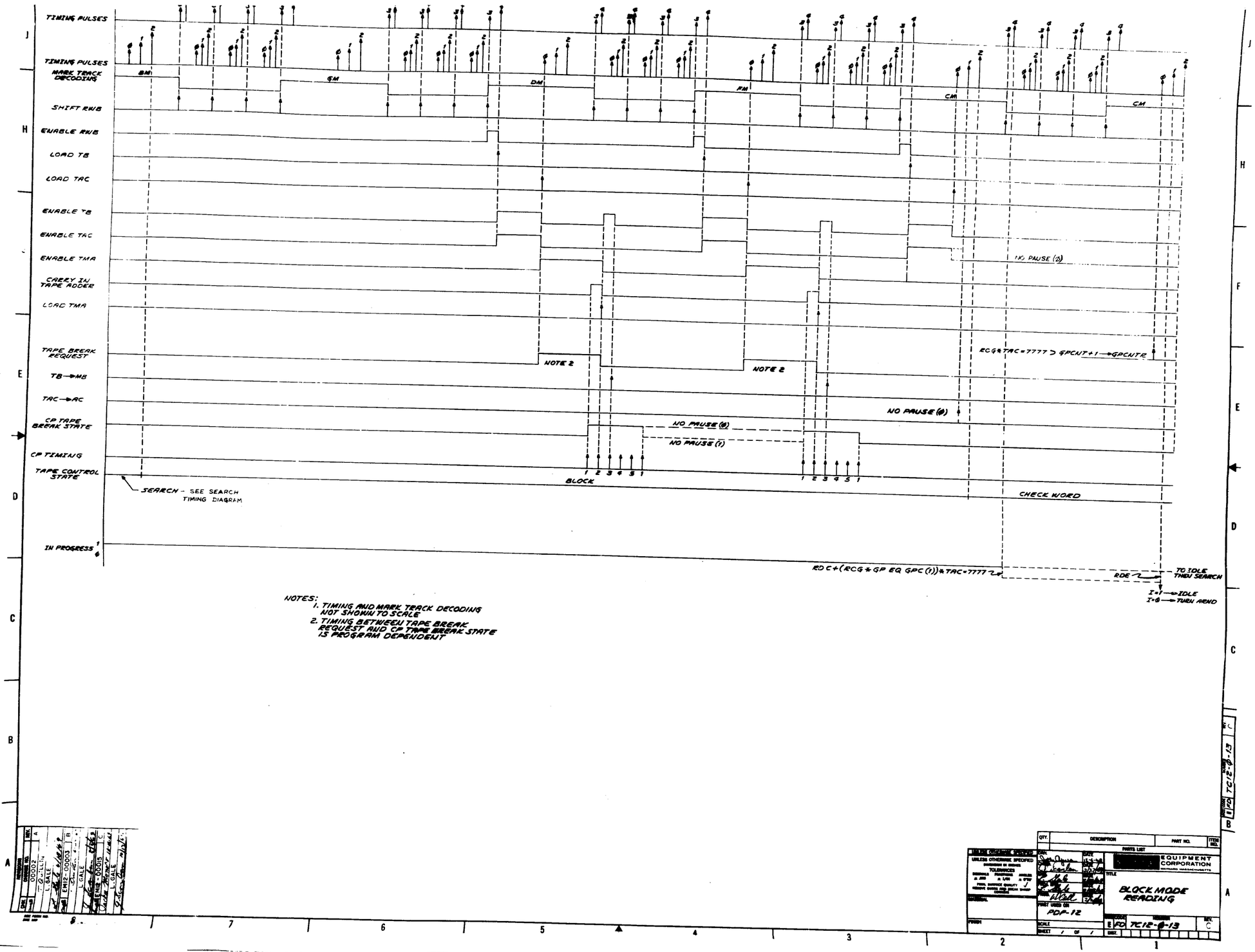
UNLESS OTHERWISE SPECIFIED		
DRN.	DATE 11-25-68	digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS
CHK'D.	DATE 12/2/69	
ENG.	DATE	
PROJ. ENG.	DATE	
PROD.	DATE 3/4/69	
FIRST USED ON TC12		
SCALE		
SHEET 1 OF 1		

TITLE: SEARCH TIMING

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

DIST.

DEC FORM NO. DRD 102A



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

QTY.	DESCRIPTION	PART NO.	ITEM NO.

PARTS LIST

UNLESS OTHERWISE SPECIFIED
TOLERANCES
FRACTIONS ± .005 DECIMALS ± .010 ANGLES ± 1°
FINISH
MATERIAL
NEXT ASSY
PDP-12

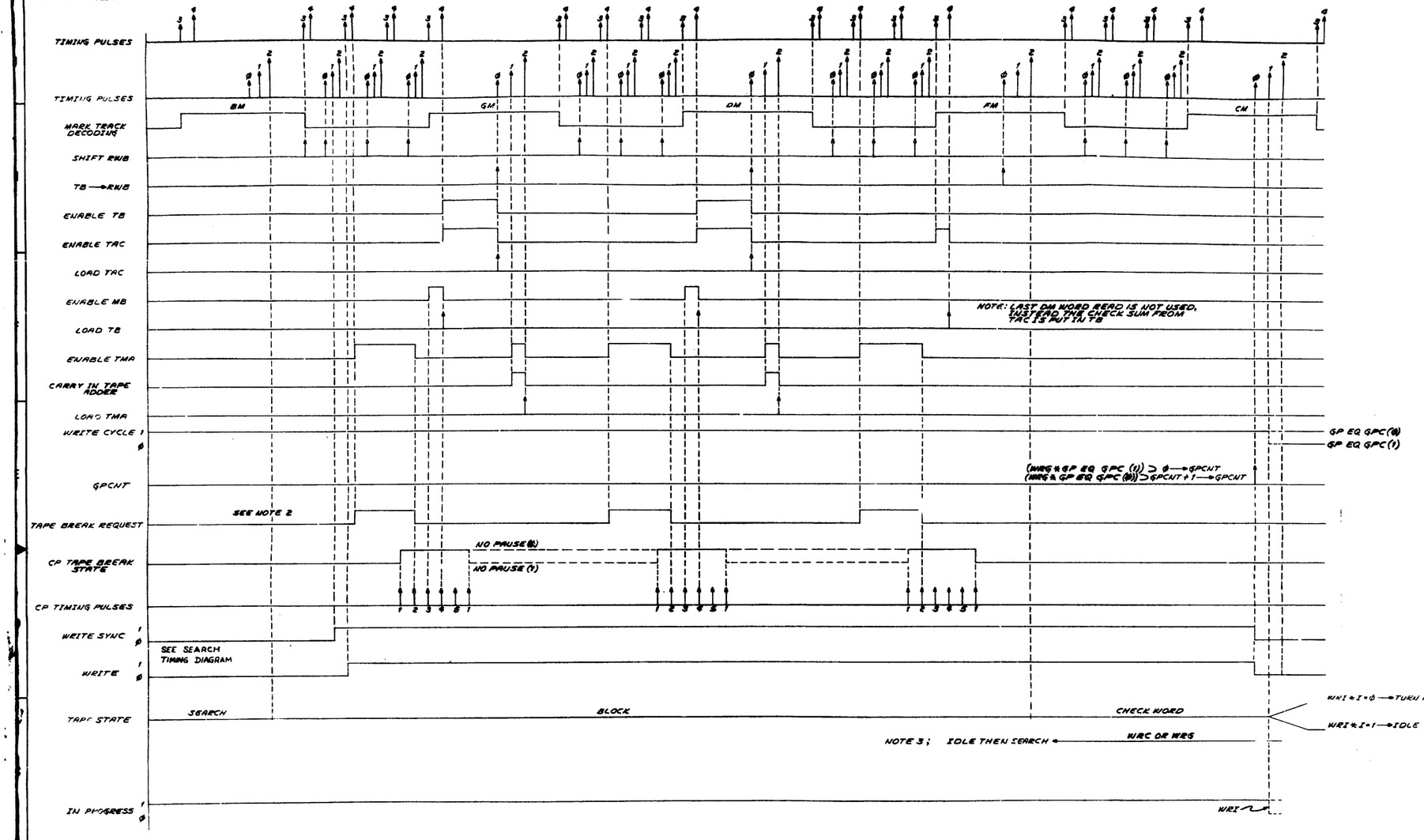
DRAWN L. GALE 11-4-74
CHECKED 11-22-74
ENGR 11-22-74
MFG 11-22-74
QA 11-22-74

DEC EQUIPMENT CORPORATION
MAYNARD, MASSACHUSETTS

TITLE
BLOCK MODE READING

SIZE E | DWG NO. FD 7C12-0-13 | REV. C
SCALE
SHEET 1 OF 1

REVISIONS			
REV.	DESCRIPTION	DATE	APPROVED
A	ECO 00002	11-4-74	L. GALE
B	ECO EMI2-00005	11-22-74	L. GALE
C	ECO EMR-00015	11-22-74	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.

REVISIONS				
ZONE	DRAWING NO.	REV.		
	00002	A	T. Smith	1/63
	EM12-00003	B	T. Mullin	4/63
	EM12-00005	C	T. Mullin	11/63

QTY.	DESCRIPTION	PART NO.	ITEM NO.

PARTS LIST

UNLESS OTHERWISE SPECIFIED
DIMENSIONS IN INCHES
TOLERANCES
DECIMALS ANGULAR
.XXX ± 1/64 ± 5°30'
FINISH, SURFACE QUALITY
REMOVE BURRS AND BREAK SHARP CORNERS
MATERIAL
FINISH

	NAME	DATE
DRAWN	[redacted]	11-4-63
CHK'D	[redacted]	11-7-63
ENG. APP.	[redacted]	11-7-63
MFG. APP.	[redacted]	11-7-63

FIRST USED ON
PDP-12

[redacted] EQUIPMENT CORPORATION
MAYNARD, MASSACHUSETTS

TITLE
BLOCK MODE WRITE

SIZE E | CODE | NUMBER TC12-D-10 | REV. C
SCALE
SHEET 1 OF 1

DEC FORM NO 09E 1...

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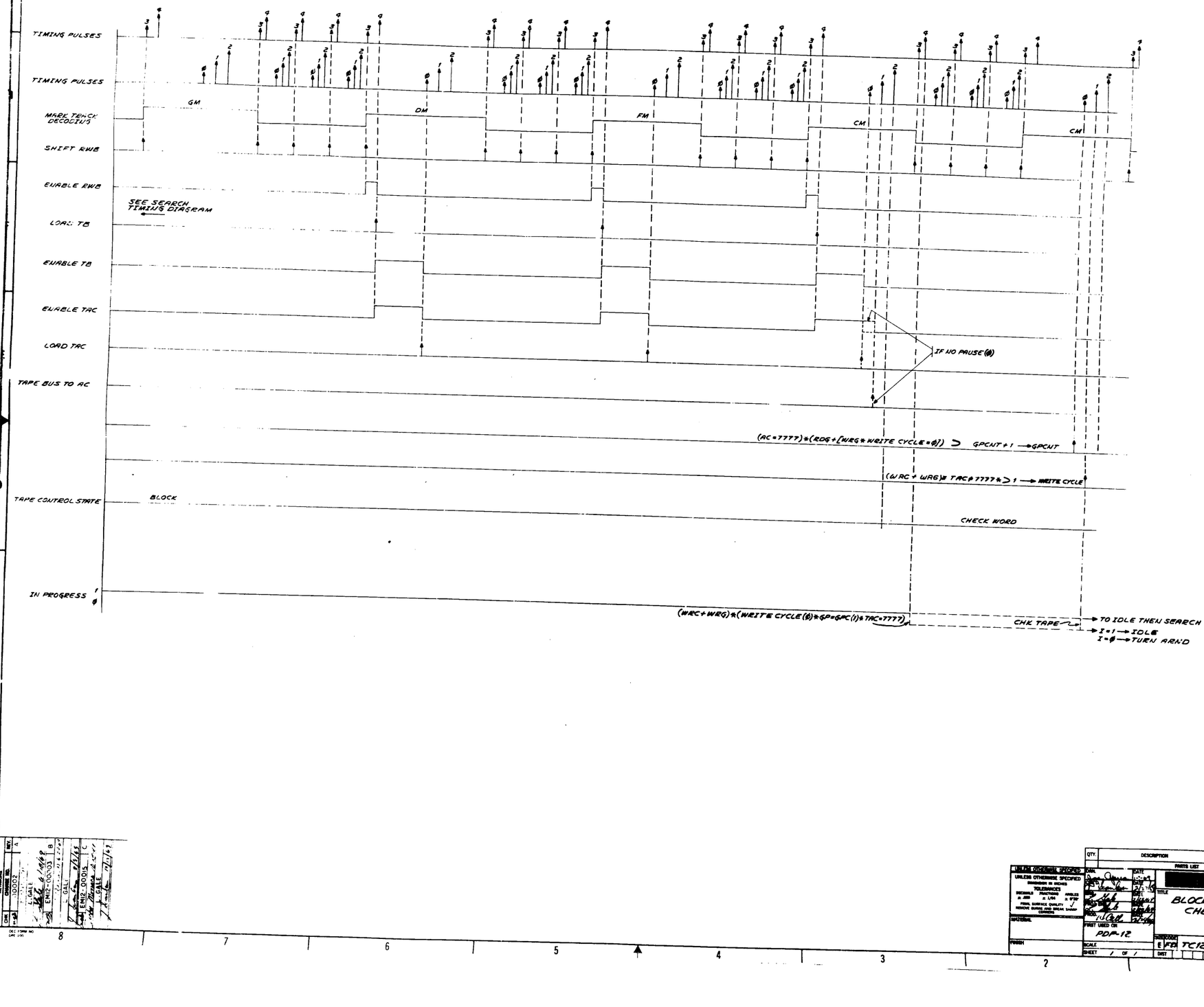

SYSTEM	REV.
DRAWING NO. 10002	A
CUST. P.O.#	B
DEC ITEM NO. (IPL 170)	C

E. GALE 8/1969 — EM12-00003
E. GALE 11/1969 — EM12-00005
A. Bernard 4-1971
T. Gale 12/1/71

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

QTY.	DESCRIPTION	PART NO.	ITEM NO.

PARTS LIST

DRN. E. GALE 8/1969
CHK. T. GALE 12/1/71
APP.
MFG.
ENG.

DATE 8/1969
DATE 12/1/71

EQUIPMENT CORPORATION
[redacted]

TITLE: BLOCK MODE CHECKING

FIRST USED ON: PDP-12
SCALE
SHEET 1 OF 1

DOCUMENT NUMBER: TC12-0-15
REV.
DIST

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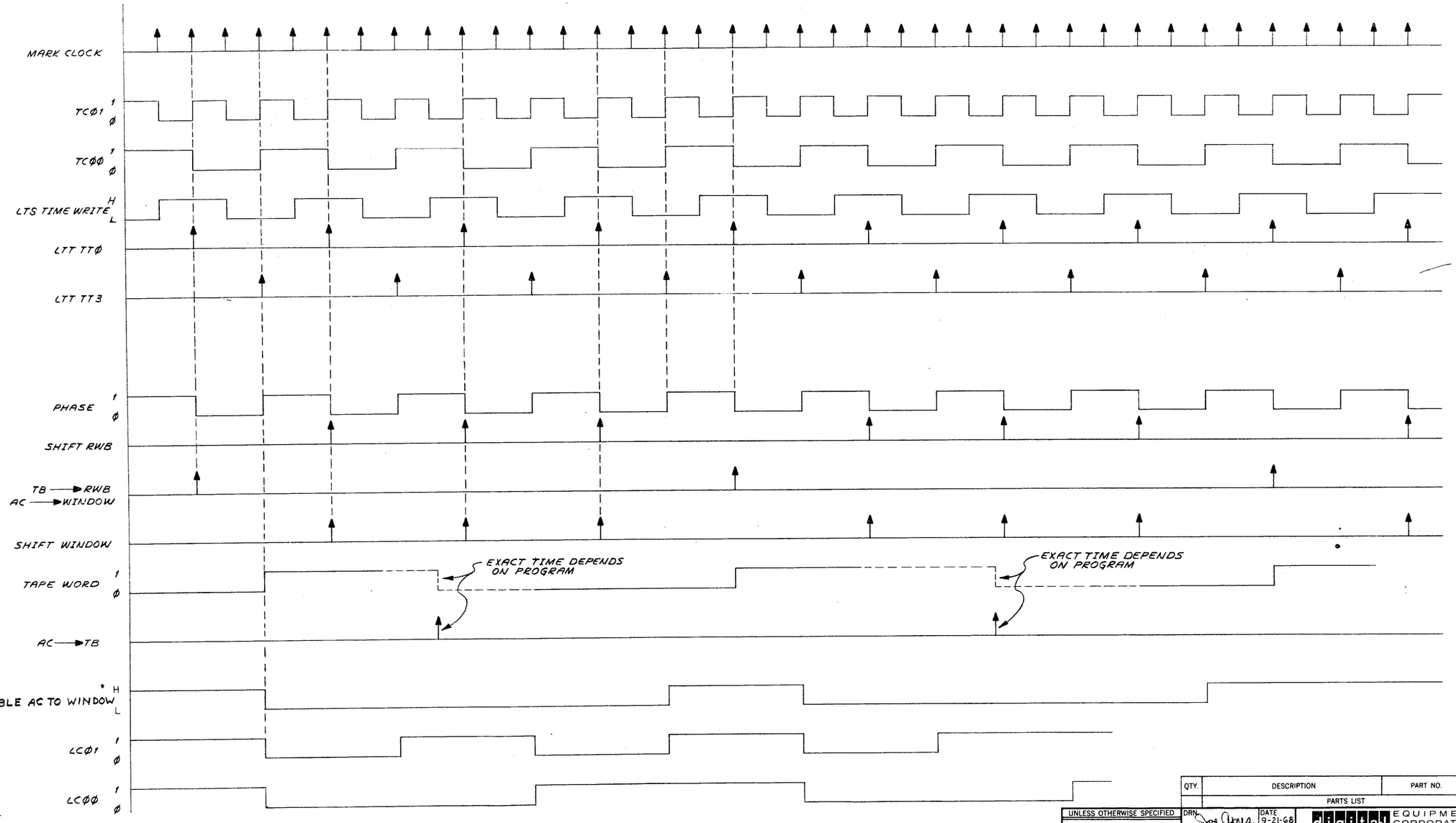

REVISIONS			
CHK	CHANGE NO.	REV.	
MG	EM12-00003	A	T. GUILLEMETTE 9-27-68
			LOALE 9 Jan. 20 8/8/69

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. Joe Ayer	DATE 9-21-68	
CHK'D	DATE	
ENG.	DATE 2-26	
PROJ. ENG.	DATE 2/26/69	
PROD.	DATE 2/26/69	

FIRST USED ON TC12

SCALE

SHEET 1 OF 1

QTY.	DESCRIPTION	PART NO.	ITEM NO.
	PARTS LIST		

digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS

TITLE

MARK TIMING

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

DIST.

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

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LCS TAPE OK L

LCS WRI TAPE H L2
-LTC WRITE EN H M2
LTC B UNIT SEL H D2
M113 B26 N2
E2 F2
M115 C27 H2
E2
M111 C21
F2 LCS TAPE OK H

LRL (BM*SEARCH) H A1
LIN MTB H B1
M113 B26 C1 LCS (MTB*BM*SEARCH) L
D2
M113 B26 F2 LCS MTP END H
E2
LIP IN PROGRESS (Ø)H D1
LCS CHK WRD (1)H E1
M113 B26 F1
H1
LIN I (Ø)H J1
M113 B26 K1 LCS SET TURN ARND L

+3V A34V1 H K2
K2
PRE AC Ø8 (1)H R2
LTMR IDT 6152 H S2
M121 A34 V2
LTT TP1 H T2
-LCS CLR WRITE H U2
P1
N1
D 1 U1 LCS WRITE SYNC (1)H
M216 A30
C Ø S1 LCS WRITE SYNC (Ø)H
T2
LTT TP3 H S2
LCS WRITE M216 A30
D 1 V1
C Ø V2
R1
U2

-LTP8 WRITE SEL L P2
LCX MARK (Ø)L R2
M112 D16 S2

LCS TAPE GO H
LTT CLOSE WINDOW L N2
LIP MTP SETUP L P2
LIP TAPE PRESET L R2
M115 A32 S2
H2
M111 A35
J2 LCS TAPE GO L
LCS BLOCK (1)L

LCS TURN ARND (1)H D2
LCS IDLE (1)L L2
LCS SEARCH (1)L M2
M113 B24 N2 E2
M112 A33 F2
F1
-LCS TAPE OK L H1
LCS WRITE CYCLE (Ø)L J1
K1
M117 B33 L1
LWN CM H R2
LTS TTS Ø1 (1)H S2
T2
U2
M121 B32 V2
LCS CLR WRITE L

LIN WRI L J2
LIN WRC L K2
LIN WRG L L2
M115 A32 M2 LCS WRI TAPE H

-LIN MTB H H2
LCS SEARCH (1)H J2
M113 B26 K2

LCS CHK WRD (1)H S1
LIP IN PROGRESS (1)H U1
M160 B29 V2
LIN I (1)H V1
LCS MTP END H U2

LGP GP EQ GPC (1)H K2
LCS WRITE CYCLE (1)H L2
LIN TAC EQ 7777 H M2
LCS WRITE CYCLE (Ø)H N2
M121 A34 P2
LIP MTP SETUP L
R1
P1
D 1 S1 LCS WRITE CYCLE (1)H
M216 A28
N1
C Ø U1 LCS WRITE CYCLE (Ø)H
LTT TP1 H P1
LCS (CM*CHK WRD) H R1
M113 B24 S1
K2
+3V A34V1 H

LWN FM H D2
LTT TP2 H E2
LCS BLOCK (1)H F2
LCS WRITE (1)H H2
LWN CM L H2
LCS BLOCK (1)L J2
M112 C24 K2
LCS (CM*BLOCK) H J2
LTT TP2 H K2
M160 B29 T2
LCS CHK WRD (1)L L1
LWN CM L M1
M112 C24 N1
LTT TP1 H L2
LCS (CM*CHK WRD) H M2
LRL (BM*SEARCH) H N2
LTT TP2 H P2
R2
S2
LIN MTB L L2
LIN TAC EQ (7777*FWD) L M2
M113 B16 N2

LTT TP1 H P1
LIP IN PROGRESS (1)H R1
LCS IDLE (1)H S1
M115 A32 U1
H2
J2
K2
M602 B30 F2
E2 D2

LTT TP1 H D2
LCS TURN ARND (1)H E2
LWN BM H F2
M115 A32 H2 LCS TA CHANGE STATE L

L1
LCS TURN ARND (1)L M1
M113 B26 N1

A1 +3V A34V1 H
F1 LCS TURN ARND (1)H
D 1
M216 A30
B1
C Ø E1 LCS TURN ARND (Ø)H
D1

A1 +3V A34V1 H
J2 LCS CHK WRD (1)H
E2
D 1
M216 A30
D2
C Ø H2 LCS CHK WRD (Ø)H
F2

A1 +3V A34V1 H
M1
J1
D 1
LCS BLOCK M216 A30
H1
C Ø L1
K1

K2 +3V A34V1 H
R2
LCS IDLE (1)L M2
D 1
LCS SEARCH M216 A30
L2
C Ø P2
N2
U2

V2
T2
D 1
LCS IDLE M216 A28
S2
C Ø V1
K2
+3V A34V1 H

NOTE:
STATE CHANGES ON TRAILING EDGE OF CHANGE STATE PULSE

REVISIONS			REVISIONS		
CHK	CHANGE NO.	REV.	CHK	CHANGE NO.	REV.
	EM12-00003	A	MR	EM12-00017	E
	L GALE			A. Wilson Hoss 11-13-69	
	EM12-00007	B		L. Gale 11-14-69	
	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				

DRN. D 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 CONT STATES + INST	
PROJ. ENG. L GALE	DATE 3-10-69		
PROD. D CALL	DATE 3-10-69		
FIRST USED ON TC12			
SCALE		SIZE D / CODE BS / NUMBER TC12-Ø-LCS / REV. E	
SHEET 1 OF 1		DIST.	

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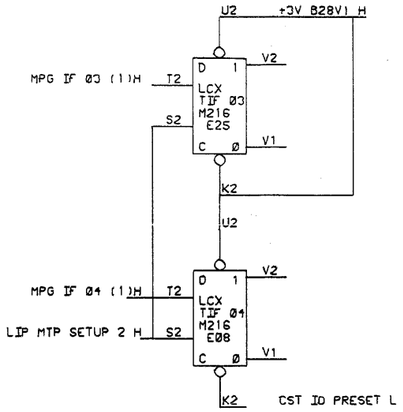
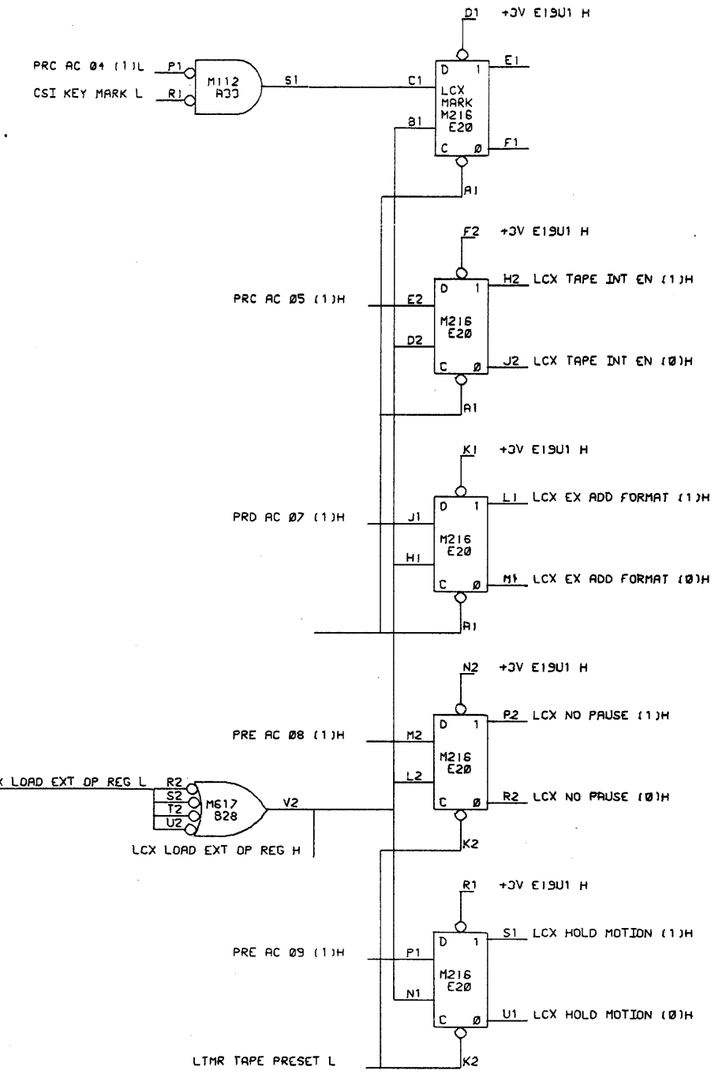
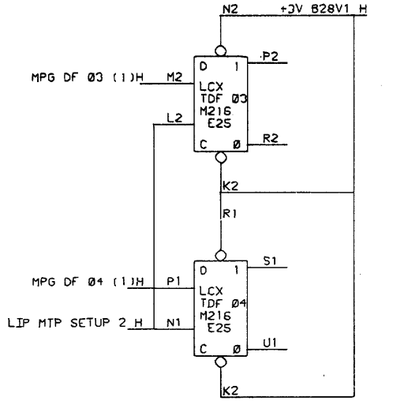
LIP TAPE PRESET L







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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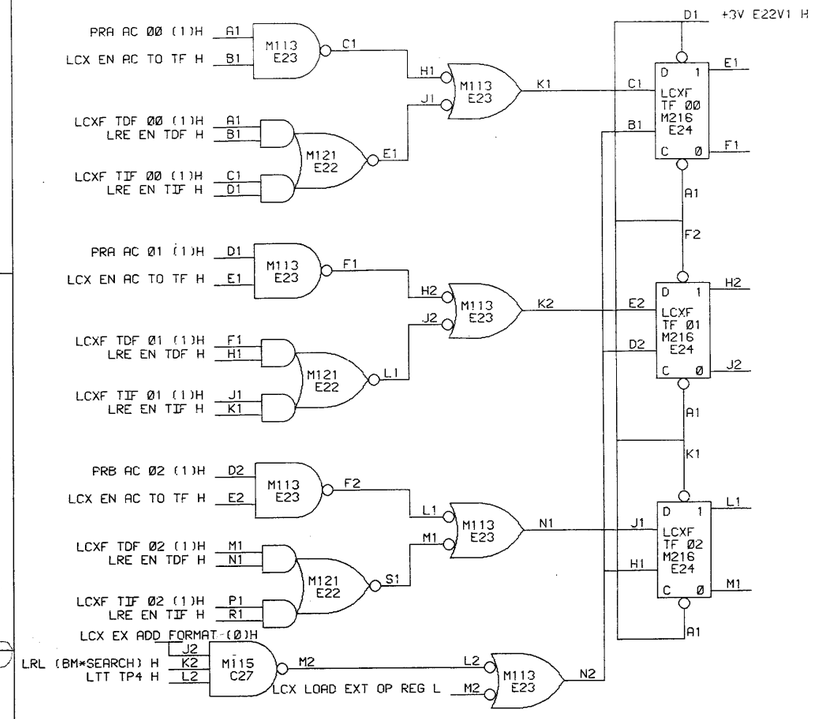

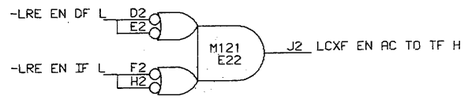

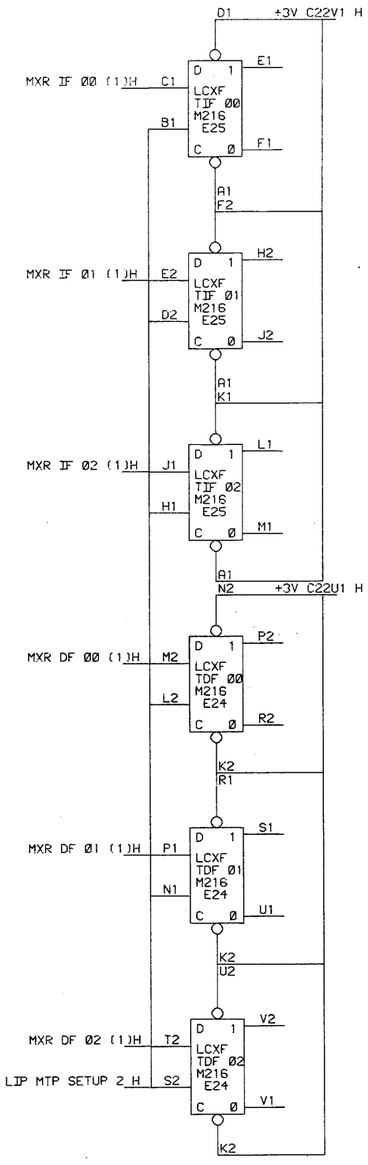

REVISIONS		
CHK	CHANGE NO.	REV.
	EM12-ØØØØ2	

DRN. D.I.SHEPARD	DATE 8-9-69	digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS	
CHK'D. J.K.BISONETE	DATE 8-9-69		
ENG. L.GALE	DATE 8-9-69	TITLE TAPE EXTENDED FIELDS	
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			
SHEET 1 OF 1		DIST.	

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LGP GPCNT 2 (1)H K1
LGP GPCNT 1 (1)H L1
LGP GPCNT 0 (0)H M1
M115 C25
N1
L2
M2
M113 A36
N2
LGP GPCNT 0 (1)H L1
M113 A36
N1
M1
LGP GPCNT 1 (0)L H2
LGP GPCNT 2 (0)L J2
M113 A36
K2

D1 +3V B32U1 H
C1
LGP GPCNT0 M216 B31
B1
A1
E1
F1
LGP GP 00 (0)H A1 B1
LGP GP 00 (1)H C1 D1
M121 B32
E1

LGP GPCNT 1 (0)H D2
LGP GPCNT 2 (0)H E2
LGP GPCNT 1 (1)H F2
LGP GPCNT 2 (1)H H2
M121 B32
J2
F2 +3V B32U1 H
E2
D2
LGP GPCNT1 M216 B31
H2
J2
A1
F1
H1
LGP GP 01 (0)H
LGP GP 01 (1)H J1 K1
M121 B32
L1

A1 B1 C1
M115 C25
D1
LIN TINR 11 (0)L P2
R2
M113 A36
S2
T2
LTT TP2 H S2
LGP GP EQ GPC M216 B37
V2
V1
+3V A31U1 H
U2
LIP TAPE PRESET L K2

K1 +3V B32U1 H
LGP GPCNT 2 (0)H J1
LGP COUNT GPCNT H H1
LGP GPCNT2 M216 B31
L1
M1
A1
LGP GP 02 (0)H M1 N1
LGP GP 02 (1)H P1 R1
M121 B32
S1

U2
M111 A35
V2 LGP 0 TO GPCNT L

LCS WRITE CYCLE (0)H H2
LIN WRG H J2
M113 C16
K2

LGP GPCNT STROBE H E1
LIN TAC EQ 7777 H F1
K2
M115 C25
H1
J1
H2
LIN RDC L J2
M113 B16
T2
U2
M113 B38
V2 LGP COUNT GPCNT H

LIN WRG H K2
LGP GPCNT STROBE H L2
LCS WRITE CYCLE (1)H M2
LGP GP EQ GPC (0)H N2
M117 B33
P2

N2
PRA MB 00 (1)H M2
LGP GP 0 M216 B31
P2
L2
R2
R1
K2
PRA MB 01 (1)H P1
LGP GP 1 M216 B31
S1
N1
U1
U2
K2
PRA MB 02 (1)H T2
LGP GP 2 M216 B31
V2
LIP MTP SETUP 2 H S2
V1
+3V B32V1 H K2

LIP MTP SETUP L P1
R1
M113 A36
S1

LIN WRG H D2
LCS WRITE CYCLE (1)H E2
LGP GP EQ GPC (1)H F2
LGP GPCNT STROBE H H2
M117 B35
J2

LCS (CM=CHK WRD) H P2
LTT TP0 H R2
M113 B24
S2 LGP GPCNT STROBE L
P2
M111 A35
R2 LGP GPCNT STROBE H

REVISIONS		
CHK	CHANGE NO.	REV.
NR	EM12-00015	A
	K BOGGS 10-14-69	
	J SCANLAN 10-17-69	
AC	EM12-00037	B
	K KRYSIAK 7-29-70	
	G GALE 7-29-70	
MV	EM12-00041	C
	[illegible] 10/30/70	

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 TC12-0-LGP | REV. C
SCALE		
SHEET 1 OF 1		DIST.

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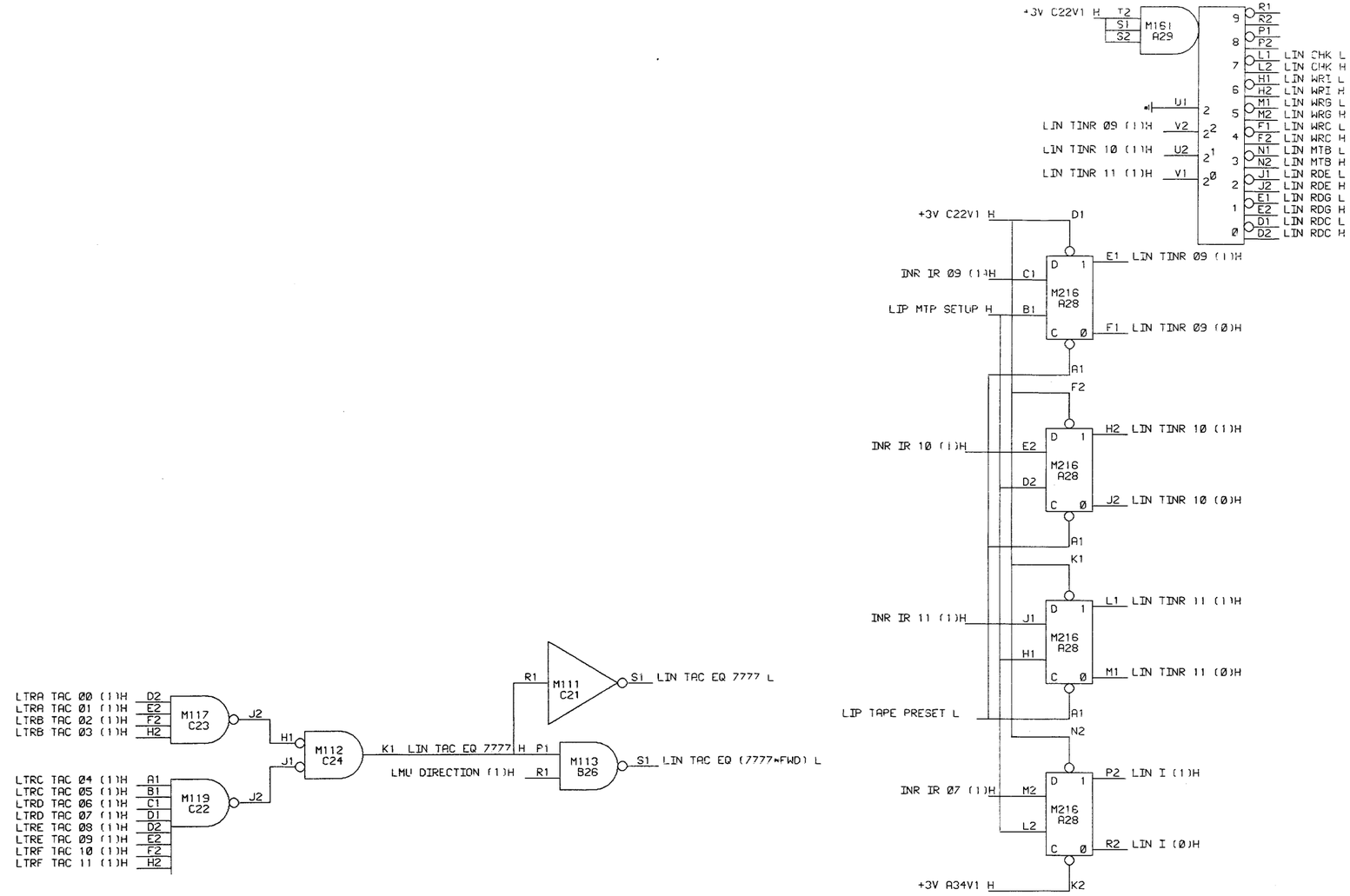

REVISIONS		
CHK	CHANGE NO.	REV.

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

digital EQUIPMENT CORPORATION
MAYNARD, MASSACHUSETTS

TITLE
TAPE INSTR

SIZE	CODE	NUMBER	REV.
D	BS	TC12-0-LIN	00

DIST.

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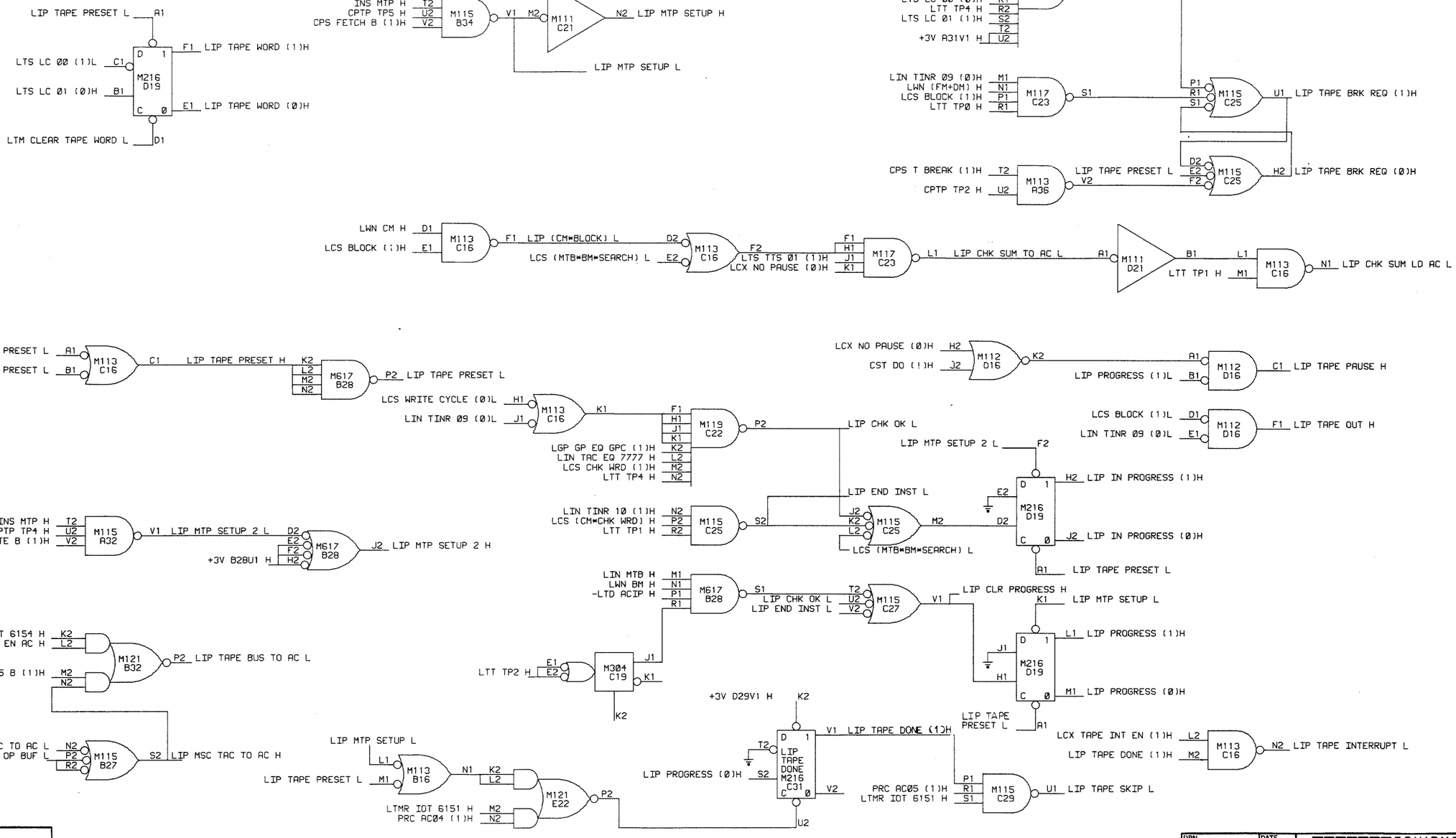

REVISIONS		
CHK	CHANGE NO.	REV.
PD	EM12-00002	A
	J FASSHAUER 4-15-69	
	L GALE 4-24-69	
	EM12-00003	B
	ADS	
	L GALE	
NR	EM12-00007	C
	B KORTELING 8-25-69	
	L GALE 8-26-69	
	EM12-00017	D

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 TC12-0-LIP; REV. D
SCALE		
SHEET 1 OF 1		DIST.

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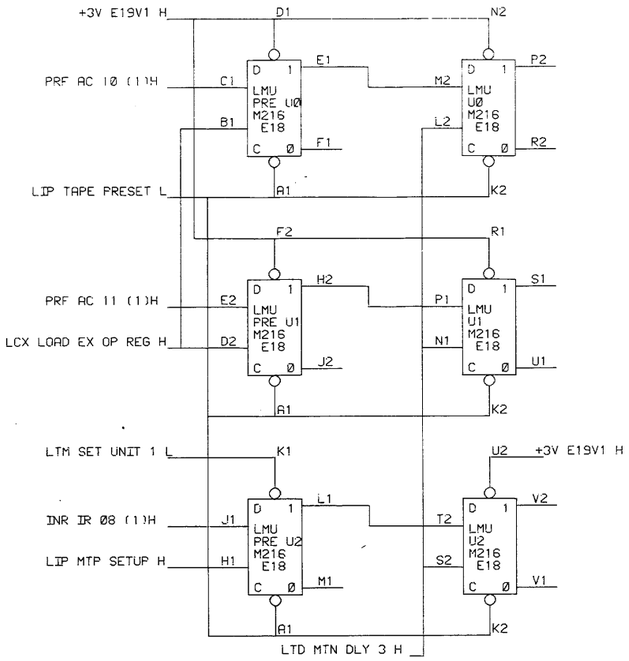

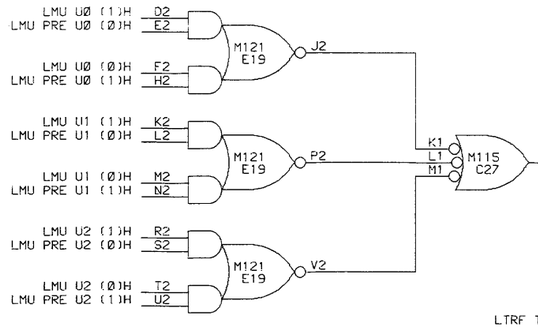

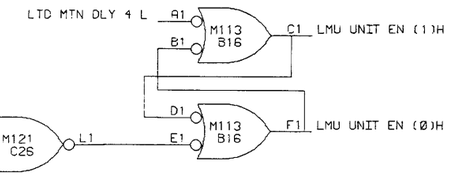

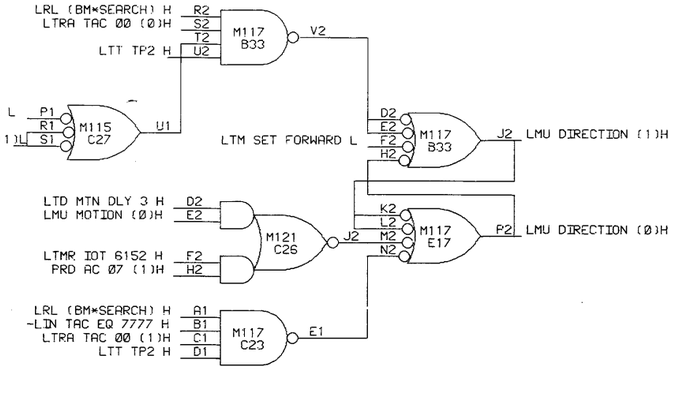

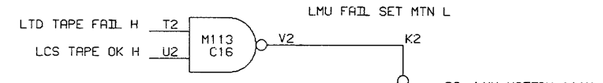

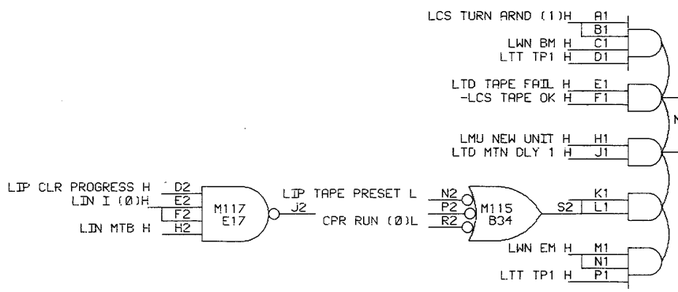

REVISIONS		
CHK	CHANGE NO.	REV.
NR	EM12-00003	A
	ADS	
	J SCANLAN 8/7/69	
	EM12-00017	B

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		
SHEET 1 OF 1		DIST.

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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

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

CPT TS3 (1)H
LRE READ IN MEM H

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
D1
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
	DMack 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		DIST.
SHEET 1 OF 1		

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LTM LOAD TMA L

LWN (GM+DM) H — P1
LTT TP2 H — R1
LCS WRITE (1)H — S1
M115 B27 — U1

LRE READ IN MEM H — A1
CPTP TP2 H — B1
M113 B24 — C1

LRL (BM*SEARCH) H — D1
LTT TP4 H — E1
M113 B24 — F1

C1, U1, F1 → M617 A23 (R2, S2, T2, U2) — V2 LRL LOAD TMA H

F1 → LRL SEARCH SET MA L

INS B MSC H — A1
INS N EQ Ø3 H — B1
INR IR Ø7 B (1)H — C1
CPTP TP5 H — D1
M117 A25 — E1

E1 → M617 A23 (D2, E2, F2, H2) — J2 LRL LOAD TMA SET UP H

LIP MTP SETUP 2 L — R2
LTM LOAD TBN L — U2
M617 A24 — V2 LRL LOAD TBN H

LRL EN WRITE LD RWB H — J1
M111 C21 — K1

LCS WRITE (1)H — J2
LTT TPØ H — L2
M115 B27 — M2 LRL WRITE SHIFT RWB H

LTT TP3 H — D2
LCS WRITE (Ø)H — E2
M113 B24 — F2

F2 → M617 A24 (K2, L2, M2, N2) — P2 LRL SHIFT RWB H

LTM SHIFT RWB L — N2

LRL (BM*SEARCH)L

LCS SEARCH (1)H — H1
LWN BM H — J1
M113 B24 — K1
K1 → M111 C21 — L1
L1 → M1 LRL (BM*SEARCH)H

LCS WRITE (1)H — A1
CPS T BREAK (1)H — B1
CPTP TP4 H — C1
M115 B27 — D1

LTT TPØ H — A1
LTT TP4 H — B1
M121 B25 — E1

LTT TP4 H — C1
LRE (WRITE * FM)H — D1

LTM LOAD TB L

D1, E1 → M617 B23 (R2, S2, T2, U2) — V2 LRL LOAD TB H

LTT TP4 H — M1
LCS BLOCK (1)H — N1
LCS WRITE (Ø)H — P1
M117 A25 — R1
S1 → M617 B23

LWN DM L — H2
J2
M113 B24 — K2 LRL BLOCK EN TAC LD H

LWN GM H — M1
LCS WRITE SYNC (1)H — N1
LCS WRITE SYNC (Ø)H — P1
LWN (FM+CM) H — R1
M121 B25 — S1 → J2

LRL BLK LD TAC L — A1
LTP8 LD TAC L — B1
M617 A23 — E1 LRL LOAD TAC H

LTT TPØ H — F1
LCS BLOCK (1)H — H1
M115 B27 — J1 → C1

LCS SEARCH (1)H — D2
LTT TP1 H — E2
LWN BM H — F2
M115 B27 — H2 → D1

LCS SEARCH (1)H — F1
LTT TP3 H — H1
M121 B25 — L1

LTM LOAD TAC H — J1
LTM LOAD TAC H — K1

LTT TPØ H — K1
LCS WRITE (1)H — L1
M115 B27 — N1 LRL LOAD RWB L

N1 → M617 A23 (M1, N1, P1, R1) — S1 LRL TB TO RWB H

LTM TB TO RWB L — R1

LWN (GM+DM)L — F1
LWN FM L — H1
LWN MARK WORD L — J1
LTP8 WORD L — K1
M117 A25 — L1 LRL EN WRITE LD RWB H

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

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

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 → LTC SINGLE UNIT H
L2 → LTC WRITE ON H

G853 F10: K2, D2, L2
D2 → W520 F11.1 (+) E2 (−) → H2
L2 → W520 F11 (+) K2 (−) → N2
H2, N2 → W603 F16 U2 → T2 LTC B UNIT SEL H — V2

W603 F16 S2 → R2 LTC WRITE EN L → L1 M111 D21 → M1 LTC WRITE EN H
+3V B22U2 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	digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS
CHK'D. L.K. BISONETTE	DATE 3-9-69	
ENG. L. GALE	DATE 3-9-69	TITLE: TRANSPORT CONTROL
PROJ. ENG. L. GALE	DATE 3-9-69	
PROD. R.E. CARL	DATE 3-9-69	
FIRST USED ON: TC12		SIZE D; CODE 85; NUMBER TC12-Ø-LTC; REV. C
SCALE		DIST.
SHEET 1 OF 1		

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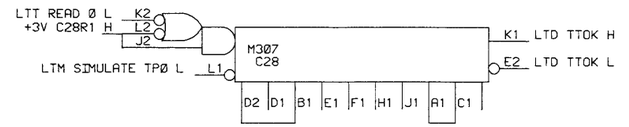
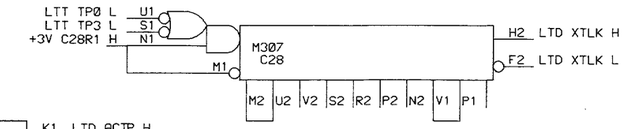
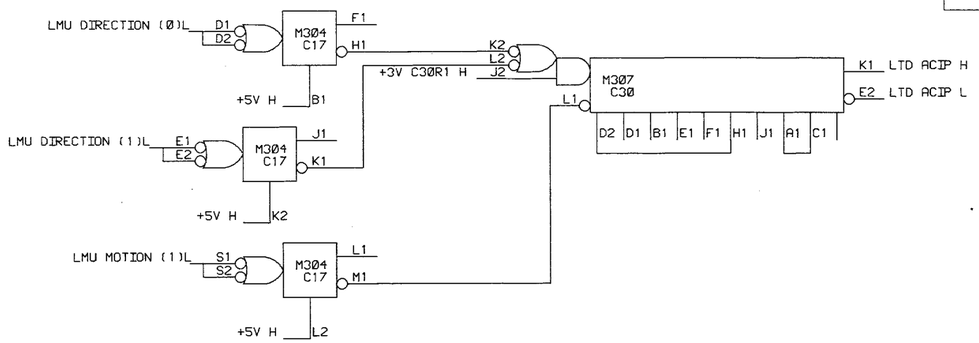
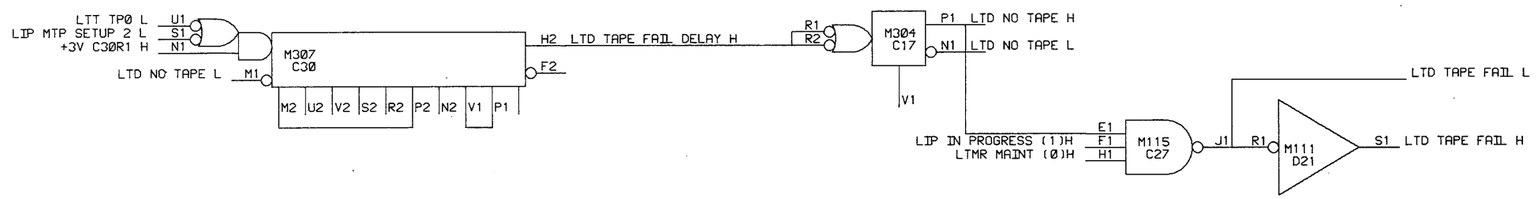
DELAY SETTINGS			
DELAY	TU55	TOLL.	SWITCH SET *
TTOK	48 USEC	± 4	5
ACIP	180 MSEC	± 20	1
XTLX	7 USEC	± 1	5
TAPE FAIL	300 MSEC	± 50	1
MARK CLOCK	7.5 USEC	± 0.3	5

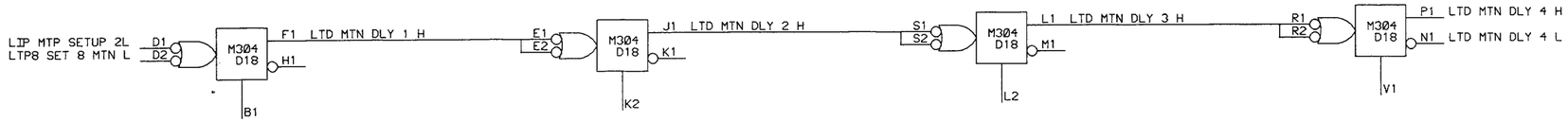
* ON M307 REV.B AND GREATER-SEE B-CS-M307-0-† FOR DETAILS.











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			[signature] 8-13-70	
	J SCANLAN			[signature] 8-17-70	
	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 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 MAINT IR ØØ (Ø)L I2
LTMR MAINT IR Ø1 (1)L U2
M112 A33
V2

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

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

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

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

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

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

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

LTMR MAINT IR Ø1 (1)H K2
LTMR MAINT IR Ø2 (1)H L2
LTMR MAINT IR Ø3 (Ø)H M2
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		SHEET 1 OF 1 DIST.

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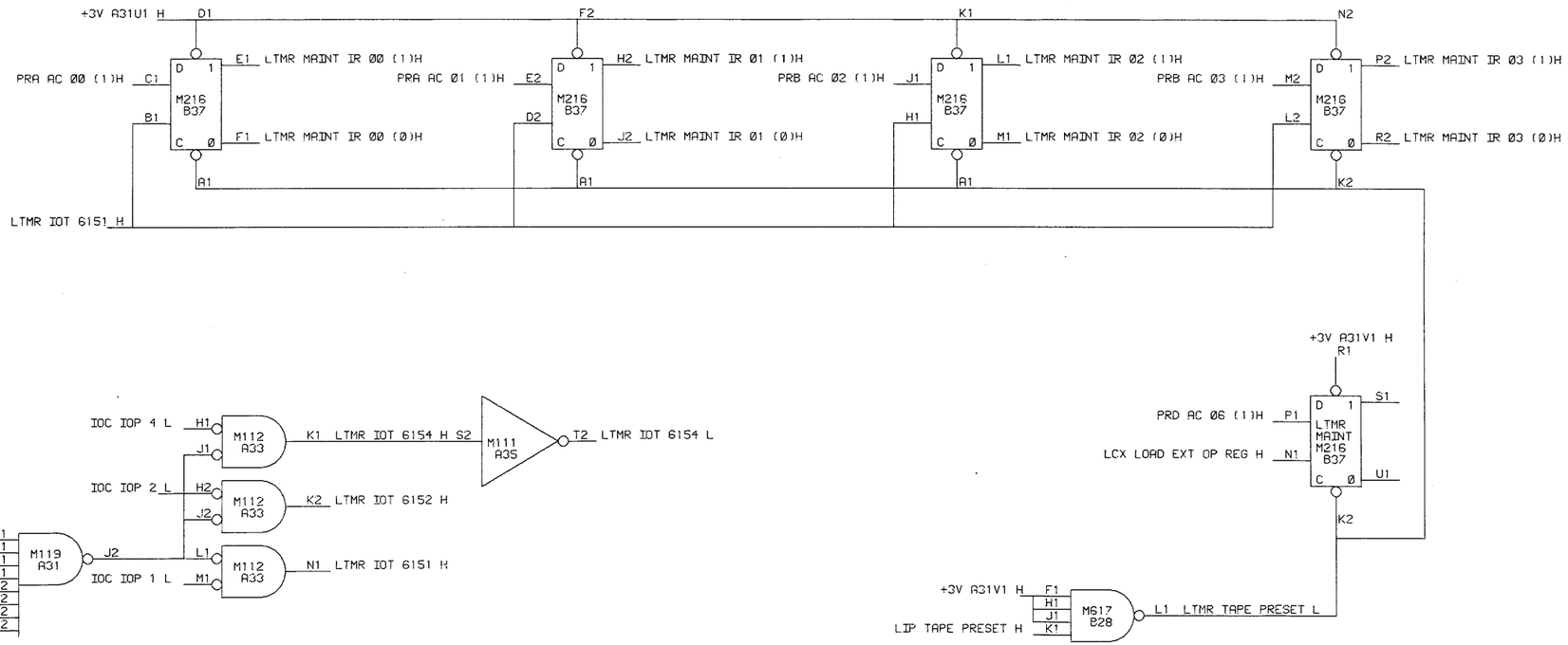
MSC 3 TAC TO AC
MSC I 3 AC TO TMA SETUP

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

W032 TAPE TRANSPORT A02, B02 — AF2 AJ2 AH2 AK2 | AN2 AR2 AP2 AS2 | BD2 AU2 AV2 AT2 | BJ2 BF2 BH2 BE2 | BP2 BM2 BN2 BT2

W032 E06, F06 — 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

G882 F05 / G882 F08 / G882 F07 / G882 F08 / G882 F09

T WRITE | M WRITE | D1 WRITE | D2 WRITE | D3 WRITE

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

W603 F16 (E2) — LTR T READ H

W603 F16 (H2) — LTR M READ H

W603 F16 (K2) — LTR D1 READ H

W603 F16 (M2) — LTR D2 READ H

W603 F16 (P2) — LTR D3 READ H

R107 F12 (E2) — LTR TIME WRITE -3 H

R107 F12 (H2) — LTR MARK WRITE -3 H

R107 F12 (K2) — LTR DATA 1 WRITE -3 H

R107 F12 (M2) — LTR DATA 2 WRITE -3 H

R107 F12 (P2)

LTR MARK ON L — W512 F13 (E2) — LCS MARK (1)H

W512 F13 (H2) — LTS TIME WRITE L

N37 POWER PROTECT G916

W512 F13 (K2) — LWN MARK WRITE L

LTR WRITE ON L — W512 F13 (M2) — LCS WRITE (1)H

W512 F13 (P2) — LTRA RWB 00 OUT H

N37 POWER PROTECT G916

W512 F13 (S2) — LTRC RWB 04 OUT H

W512 F13 (U2) — LTRE RWB 08 OUT H

REVISIONS	REV.	CHANGE NO.	CHK
	A	00002	T. Griffin 6/18/68 L. GALE
	B	EM12-00003	T. Griffin 6/21/68 L GALE T. Griffin 8/6/68

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 Ogren DATE 21 AUG 68
CHK'D J. Ogren DATE 2/27/69
ENG. DATE
PROJ. ENG. DATE
PROG. DATE 2/28/69
FIRST USED ON TC12
SCALE
SHEET 1 OF 1

digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS

TITLE: LTR TAPE READER-WRITERS

SIZE D | CODE BS | NUMBER TC12-0-LTR | REV. 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 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

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
LTPB WRITE SEL H
M2 N1

M169 A16

L1 M1

+3V B16 U1 H

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

AF1

LTRA TAC Ø1 (1) H
LRE EN TAC H
AL2

BB1 BB2

LTRB CARRY OUT Ø2 L
BA1

LRL LOAD TMA SET UP H
AK1

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

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

M222
A17
B17

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
LTP8 TAPE SEL H
M2 S2

M169 A16

U2 V2

+3V B16 U1 H

LTRA MSC IN ØØ H

REVISIONS	REV	CHK	
CHANGE NO. 00002	A		T. Quillin 4/15/68 L GALE
EM12-00004	B		T. Quillin 8-18-68 L GALE
EM12-00009	C		L GALE
EM12-00015	D		L. GALE
EM12-00032	E		T. Quillin 3-5-70 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
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
SCALE
SHEET 1 OF 1

digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS

TITLE
LTRA
BITS Ø & 1

SIZE D | CODE 85 | NUMBER TC12-Ø-LTRA | REV E
DIST.

DEC FORM NO DRD 102A

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+3V C26U1 H — BS2 — BV1 — LTRB RWB Ø2 OUT H

LTRB CARRY OUT Ø2 L — AV2

PRB AC Ø2(1) H — BN2, BM2
LRE EN AC H — BP2, BU1
LWN WIND Ø1(1) H — BK2, BL2
LTM EN MARK WIND H
LCS SEARCH (1) H — BJ2, BS1
LTM EN STATES H
-LTC UNIT 2 H — BR1, BF1
LTM EN UNITS H
LCXF TF Ø2(1) H — BM1, BL1
LRE EN EX OP BUF H
LTRB TB Ø2(1) H — BK1
LRE EN TB H

BN1, AN2

PRB MB Ø2(1) H — AS1, AR2
LRE EN MB Ø-2 H
LTS LC ØØ(1) H — AM2, AE2
LTM EN STATUS 1 H
LTRA RWB Ø2(1) H — AD2
LRE EN RWB H
LTRA TBN Ø2(1) H — AM1, AL1
LRE EN TBN H
LTRA TMA Ø2(1) H — AS2
LRE EN TMA H
LTR TMA SET UP Ø2(1) H — AP1
LRE EN TMA SET UP H
LTRB MSC IN Ø2 H — AP2
LTRA TAC Ø2(1) H — AL2
LRE EN TAC H

BV2 — LTRB TAPE BUS Ø2 H

LTRB TMA SETUP Ø2	AE1	LTRB TMA Ø2	AT2
LTRB TBN Ø2	AU1	LTRB TAC Ø2	AN1, AJ2
LTRB TB Ø2	BP1	LTRB RWB Ø2	AV1, BD2

PRB AC Ø3(1) H — BH2, BU1
LPE EN AC H
LWN WIND Ø2(1) H — BJ1, BL2
LTM EN MARK WIND H
LCS BLOCK (1) H — BC1, BS1
LTM EN STATES H
-LTC UNIT 3 H — BH1, BF1
LTM EN UNITS H
BE1, BL1
LRE EN EX OP BUS H
LTRA TB Ø3(1) H — BK1
LRE EN TB H
LRE EN GP 1-2 H — C1, D1
LGP GP Ø2(1) H
LRE EN TAC 1Ø-11 H — D2, E1
LTRF TAC 11(1) H
LTM EN INSTR H — E2, F1
LIN MTB H
LTM EN STATUS 2 H — F2, H1
M169 A1G

B1 — A1 — AF1
+3V B1GU1 H

BB1, BB2

PRB MB Ø3(1) H — AB2, AC1
LRE EN MB 3-11 H
LTS LC Ø1(1) H — AE1, AE2
LTM EN STATUS 1 H
LTRA RWB Ø3(1) H — AD2
LRE EN RWB H
LTRA TBN Ø3(1) H — AF2, AL1
LRE EN TBN H
LTRA TMA Ø3(1) H — AS2
LRE EN TMA H
LTR TMA SET UP Ø3(1) H — AP1
LRE EN TMA SET UP H
LTRA TAC Ø3(1) H — AL2
LRE EN TAC H
LTRC CARRY OUT Ø4L — BA1
LRL LOAD TMA SET UP H — AK1

BR2 — LTRB TAPE BUS Ø3 H

LTRB TMA SETUP Ø3	AH1	LTRB TMA Ø3	AD1
LTRB TBN Ø3	AK2	LTRB TAC Ø3	AH2, AB1
LTRB TB Ø3	BD1	LTRB RWB Ø3	AV1, BD2

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

LRE EN GP 1-2 H — C1, H2
LGP GP Ø1(1) H
LRE EN TAC 1Ø-11 H — D2, J2
LTRF TAC 1Ø(1) H
LTRF EN INSTR H — E2, K2
LIN RDE H
LTM EN STATUS 2 H — F2, L2
M169 A1G

J1 — K1 — LTRB MSC IN Ø2 H
+3V B1GU1 H

LTMR MAINT (1) H — A1, B1
PRE AC Ø9(1) H
LTMR MAINT (Ø) H — C1, D1
LTR D1 READ H
M121 C26 — E1

M222
A18
B18

REVISIONS	CHK	CHANGE NO.	REV
T.QUILLIN 6/18/68	CHS	00002	A
L.GALE T.Quillin 8/26/69	CHS	EM12-00003	B
L.GALE T.Quillin 8/6/65	CHS	EM12-00009	C
L.GALE T.Quillin 8/26/69	CHS	EM12-00015	D

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 Agosta	DATE 12-8-68
CHK	T. Quillin	DATE 2/27/69
ENG.	L. Clayton	DATE 2-28-69
PROJ. ENG.	L. Clayton	DATE 2-28-69
PROB.	W. Cole	DATE 2/28/69

FIRST USED ON TC12
SCALE
SHEET / OF /

digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS

TITLE
LTRB
BITS 2&3

SIZE	CODE	NUMBER	REV
D	85	TC12-Ø-LTRB	D

DIST.

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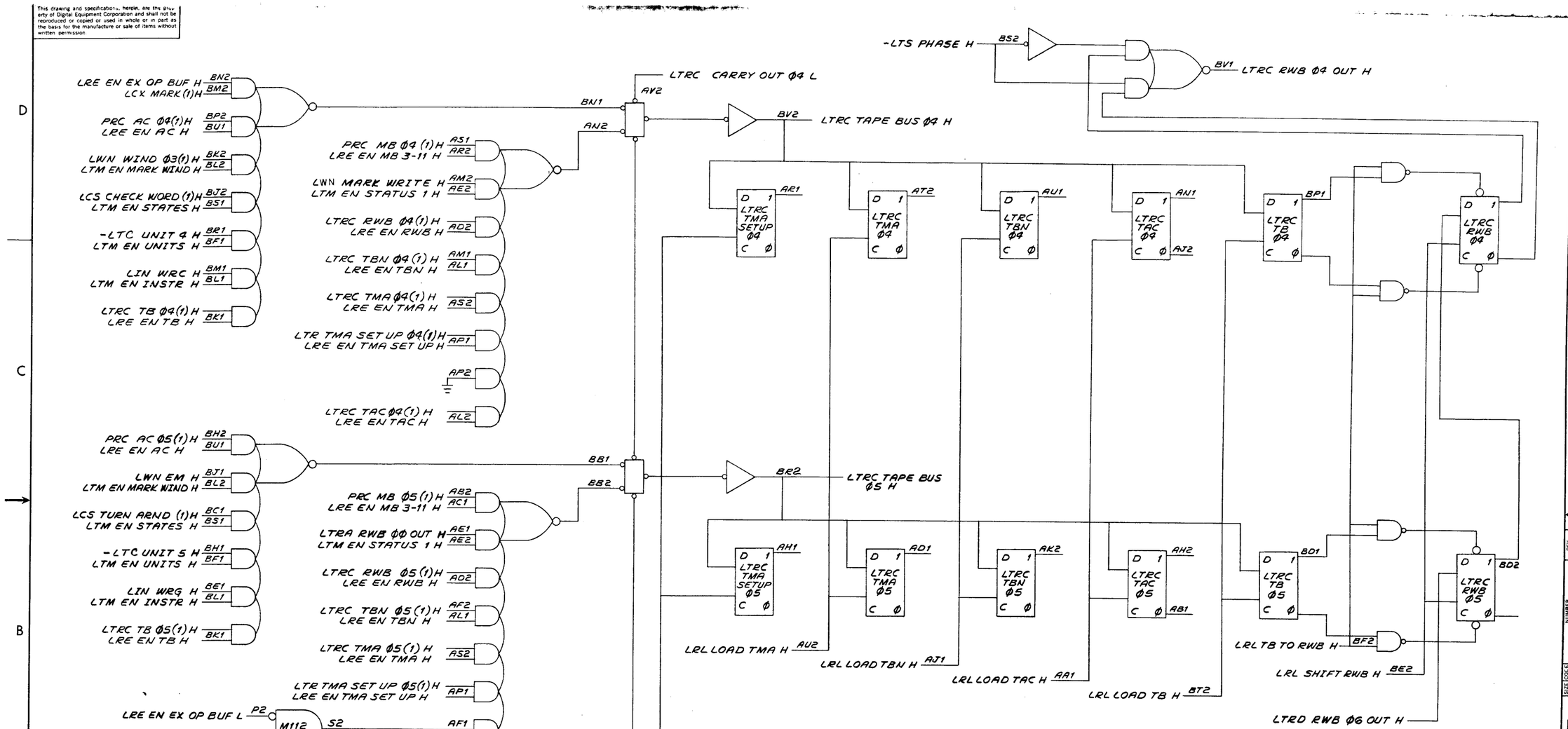

M222
A19
B19

REVISIONS			
REV	CHANGE NO	CHK	
A	00002		T.Quilling L.GALE
B	EM12-00030	EV	TQuilling 2-2-70 GALE
C	EM12-00037		D.Moore 7-16-70 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 12-5-68
CHK		DATE 2/27/69
ENG		DATE 2-28-69
PROJ. ENGR		DATE 2-28-69
PROG		DATE 2/28/69

FIRST USED ON TC12
SCALE
SHEET 1 OF 1

digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS

TITLE
LTRC
BITS 4&5

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

DIST.

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

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LTM MAINT (1) H — BN2
LRE EN EX OP BUF H — BM2
PRD AC Ø6(1) H — BP2
LRE EN AC H — BU1
LWN CM H — BK2
LTM EN MARK WIND H — BL2
LCS WRITE (1) H — BJ2
LTM EN STATES H — BS1
-LTC UNIT 6 H — BR1
LTM EN UNITS H — BF1
LIN WRI H — BM1
LTM EN INSTR H — BL1
LTRD TB Ø6(1) H — BK1
LRE EN TB H

PRD MB Ø6(1) H — AS1
LRE EN MB 3-11 H — AR2
LTRC RWB Ø9 OUT H — AM2
LTM EN STATUS 1 H — AE2
LTRD RWB Ø6(1) H — AD2
LRE EN RWB H
LTRD TBN Ø6(1) H — AM1
LRE EN TBN H — AL1
LTRD TMA Ø6(1) H — AS2
LRE EN TMA H
LTR TMA SET UP Ø6(1) H — AP1
LRE EN TMA SET UP H
AP2
LTRD TAC Ø6(1) H — AL2
LRE EN TAC H

BN1
AN2
AV2
LTRD CARRY OUT Ø6 L

BV2 — LTRD TAPE BUS Ø6 H

+3V C26U1 H — BS2
BV1 — LTRD RWB Ø6 OUT H

D 1 LTRD TMA SETUP Ø6 C Ø — AR1
D 1 LTRD TMA Ø6 C Ø — AT2
D 1 LTRD TBN Ø6 C Ø — AU1
D 1 LTRD TAC Ø6 C Ø — AN1 — AJ2
D 1 LTRD TB Ø6 C Ø — BP1
D 1 LTRD RWB Ø6 C Ø

PRD AC Ø7(1) H — BH2
LRE EN AC H — BU1
LWN GM H — BJ1
LTM EN MARK WIND H — BL2
LCS WRITE CYCLE H — BC1
LTM EN STATES H — BS1
-LTC UNIT 7 H — BH1
LTM EN UNITS H — BF1
LIN CHK H — BE1
LTM EN INSTR H — BL1
LTRD TB Ø7(1) H — BK1
LRE EN TB H

PRD MB Ø7(1) H — AB2
LRE EN MB 3-11 H — AC1
LTRE RWB Ø8 OUT H — AE1
LTM EN STATUS 1 H — AE2
LTRD RWB Ø7(1) H — AD2
LRE EN RWB H
LTRD TBN Ø7(1) H — AF2
LRE EN TBN H — AL1
LTRD TMA Ø7(1) H — AS
LRE EN TMA H
LTR TMA SET UP Ø7(1) H — AP1
LRE EN TMA SET UP H
LRE EN EX OP BUF L — T2
LCX EX ADD FORMAT (1) L — U2
M112 C29 — V2 — AF1
LTRD TAC Ø7(1) H — AL2
LRE EN TAC H

BB1
BB2
BA1
LTRE CARRY OUT Ø8 L

BR2 — LTRD TAPE BUS Ø7 H

D 1 LTRD TMA SETUP Ø7 C Ø — AH1
D 1 LTRD TMA Ø7 C Ø — AD1
D 1 LTRD TBN Ø7 C Ø — AK2
D 1 LTRD TAC Ø7 C Ø — AH2 — AB1
D 1 LTRD TB Ø7 C Ø — BD1
D 1 LTRD RWB Ø7 C Ø — BD2

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

LTMR MAINT (1) H — K2
PRF AC 1Ø(1) H — L2
LTMR MAINT (Ø) H — M2
LTR D2 READ H — N2
M121 C26 — P2

LRL LOAD TMA SET UP H — AK1

M222
A2Ø
B2Ø

REVISIONS

REV	CHANGE NO	CHK	
A	30002		T QUILLIN I GALE
B	EM12-000330	FV	QUILLIN 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

		DATE
DRN.		12-8-68
CHK'D		2/27/69
ENG.		2-28-69
PROJ. ENGR.		2-28-69
PROD.		2/28/69

FIRST USED ON TC12

SCALE

SHEET 1 OF 1

digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS

TITLE
LTRD
BITS 6 & 7

SIZE	CODE	NUMBER	REV.
D	85	TC12-Ø-LTRD	B

DIST.

DEC FORM NO DRD 102A

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LTM EN INSTR H — BN2
LIN I H — BM2
PRE AC ØB(1) H — BP2
LRE EN AC H — BU1
LWN DM H — BK2
LTM EN MARK WIND H — BL2
LTD ACIP H — BJ2
LTM EN STATES H — BS1
LMU MOTION (1) H — BR1
LTM EN UNITS H — BF1
LRE EN CPCNT H — BM1 / BL1
LTRE TB ØB(1) H — BK1
LRE EN TB H

LRE EN EX OP BUF L — P1
LCX NO PAUSE (1) L — R1
M112 C24 — S1 — AP2

PRE MB ØB(1) H — AS1
LRE EN MB 3-11 H — AR2
LGP GP EQ GPC (1) H — AM2
LTM EN STATUS 1 H — AE2
LTRE RWB ØB(1) H — AD2
LRE EN RWB H
LTRE TBN ØB(1) H — AM1
LRE EN TBN H — AL1
LTRE TMA ØB(1) H — AS2
LRE EN TMA H
LTR TMA SET UP ØB(1) H — AP1
LRE EN TMA SET UP H
LTRE TAC ØB(1) H — AL2
LRE EN TAC H

BN1, AN2 → AV2 — LTRE CARRY OUT Ø8 L

BV2 — LTRE TAPE BUS Ø8 H

-LTS PHASE H — BS2
BV1 — LTRE RWB Ø8 OUT H

D 1 LTRE TMA SETUP Ø8 C Ø — AR1
D 1 LTRE TMA Ø8 C Ø — AT2
D 1 LTRE TBN Ø8 C Ø — AU1
D 1 LTRE TAC Ø8 C Ø — AN1 — AJ2
D 1 LTRE TB Ø8 C Ø — BP1
D 1 LTRE RWB Ø8 C Ø

PRE AC Ø9(1) H — BH2
LRE EN AC H — BU1
LWN FM H — BJ1
LTM EN MARK WIND H — BL2
LTS TTOK H — BC1
LTM EN STATES H — BS1
LMU DIRECTION (1) H — BH1
LTM EN UNITS H — BF1
LGP GPCNT Ø(1) H — BE1
LRE EN GPCNT H — BL1
LTRE TB Ø9(1) H — BK1
LRE EN TB H

LTM EN INSTR H — T2
LGP GP Ø(1) H — U2
M113 B16 — V2
LRE EN EX OP BUF H — P2
LCX HOLD MOTION (1) H — R2
M113 B16 — S2
M113 B16 — P1 / R1 — S1 — AF1

PRE MB Ø9(1) H — AB2
LRE EN MB 3-11 H — AC1
LGP GPCNT Ø(1) H — AE1
LTM EN STATUS 1 H — AE2
LTRE RWB Ø9(1) H — AD2
LRE EN RWB H
LTRE TBN Ø9(1) H — AF2
LRE EN TBN H — AL1
LTRE TMA Ø9(1) H — AS2
LRE EN TMA H
LTR TMA SET UP Ø9(1) H — AP1
LRE EN TMA SET UP H
LTRE TAC Ø9(1) H — AL2
LRE EN TAC H

BB1, BB2 → BA1 — LTRF CARRY OUT 1Ø L

BR2 — LTRE TAPE BUS Ø9 H

LRL LOAD TMA SET UP H — AK1

D 1 LTRE TMA SETUP Ø9 C Ø — AH1
D 1 LTRE TMA Ø9 C Ø — AD1
D 1 LTRE TBN Ø9 C Ø — AK2
D 1 LTRE TAC Ø9 C Ø — AH2 — AB1
D 1 LTRE TB Ø9 C Ø — BD1
D 1 LTRE RWB Ø9 C Ø — BD2

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

LTRF RWB 1Ø OUT H

M222
A21
B21

REVISIONS	REV.	CHK	CHANGE NO.
	A		00002
	B		EM12-50017

SALE
T QUILLIN
6/18/68
11-5-68

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 — 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
LTRE
BITS 8&9

SIZE D | CODE BS | NUMBER TC12-Ø-LTRE | REV B
DIST.

DEC FORM NO DRD 102A

SIZE D | CODE BS | NUMBER TC12-Ø-LTRE | REV B

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+3V C26U1 H — BS2

BV1 LTRF RWB 1Ø OUT H

LTRF CARRY OUT 1ØL — AV2

BN1

AN2

BV2 LTRF TAPE BUS 1Ø H

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

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

LRE EN EX OP BUF L — L2
LMU PRE U Ø (1) L — M2
M112 C24 — N2 — AP2

LTRF TAC 1Ø(1) H — AL2
LRE EN TAC 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 — AN2
D 1 LTRF TB 1Ø C Ø — BP1
D 1 LTRF RWB 1Ø C Ø

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

BB1

BB2

BE2 LTRF TABE BUS 11 H

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

LTM EN INSTR H — P2
LGP GP Ø2 (1) H — R2
M113 E23 — S2 — T2

LRE EN EX OP BUF H — P1
LMU PRE U1 (1) H — R1
M113 E23 — S1 — U2
M113 E23 — V2 — AF1

LTRF TAC 11(1) H — AL2
LRE EN TAC H

LRE TAPE CARRY IN L — BA1

LRL LOAD TMA SET UP H — AK1

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
D 1 LTRF TB 11 C Ø — BO1
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 — BF2
LRL SHIFT RWB H — BE2

LTMR MAINT (1) H — R2
PRF AC 11(1) H — S2
LTMR MAINT (Ø) H — T2
LTR D3 READ H — U2
M121 C26 — V2

M222
A22
B22

REVISIONS	CHK	CHANGE NO.	REV
		00002	A
		EM12-00003	B
		FM12-00015	C
		EM12-00017	D
		EM12-00009	E

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.		12-8-68
DSGN.		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
LTRF
BITS 1Ø&11

SIZE	CODE	NUMBER	REV
D	BS	TC12-Ø-LTRF	E

DIST.

DEC FORM NO DRD 102A

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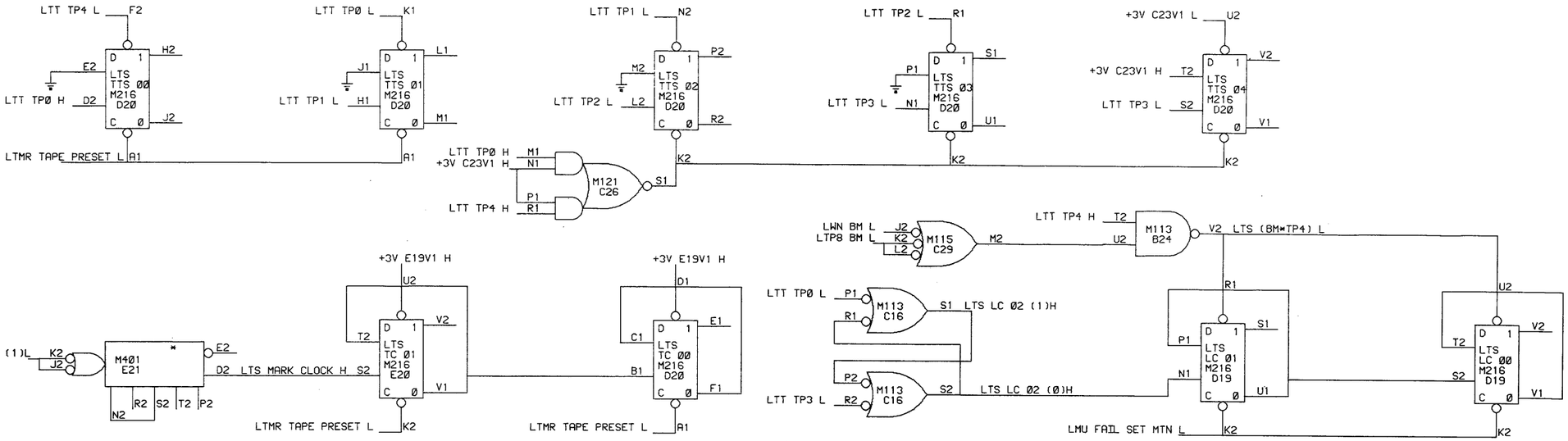

* SEE DWG LTD FOR FREQUENCY

NOTE:
LMU FAIL SET MTN SERVES NO LOGICAL FUNCTION FOR LC Ø1 AND LC Ø0

REVISIONS		
CHK	CHANGE NO.	REV.
	EM12-00002	A
	J SCANLAN 6-18-69	
	A WASHINGTON 6-5-69	
NR	EM12-00003	B
	A WASHINGTON 7-69	
	J SCANLAN 7-8-69	
MR	EM12-00015	C
	K BOGGS	
	J SCANLAN	
MR	EM12-00022	D
	K Gale 11-4-70	
	Ellen Lum 11-4-70	

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-Ø-LTS; REV: D
SCALE		DIST.
SHEET 1 OF 1		

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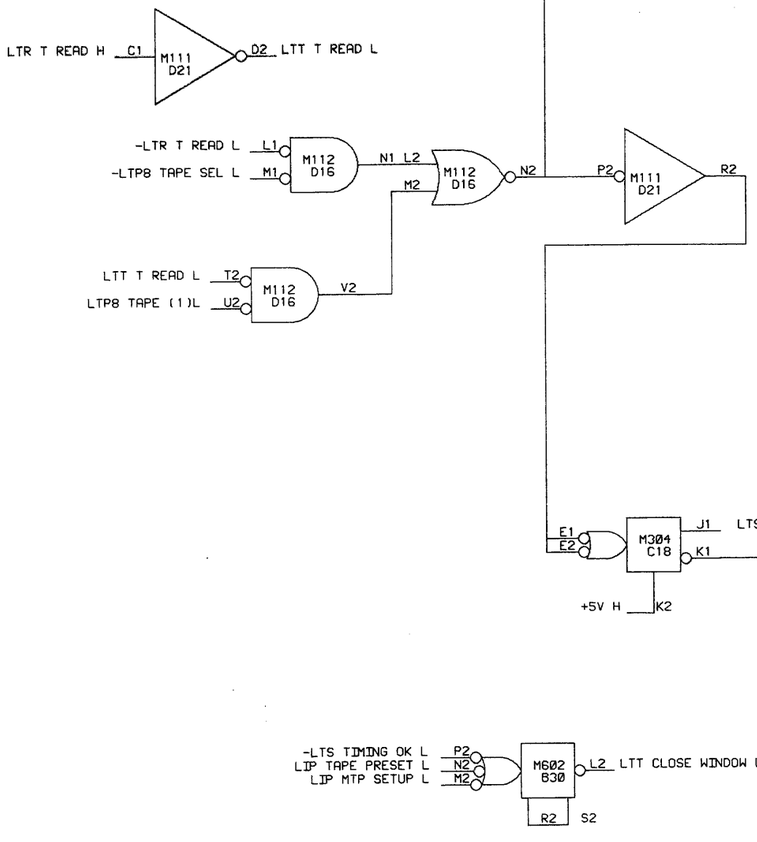

REVISIONS		
CHK	CHANGE NO.	REV.
PD	EM12-00001	A
	J FASSHAUER 4-15-69	
	L GALE 4-24-69	
NR	EM12-00005	B
	A WASHINGTON 7-18-69	
	L GALE 7-18-69	
	EM12-00015	C

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

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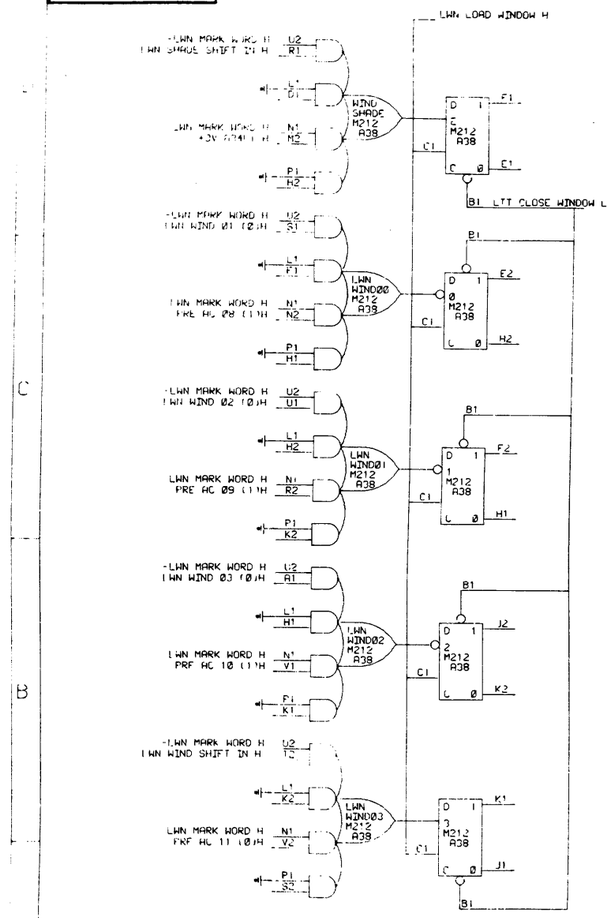

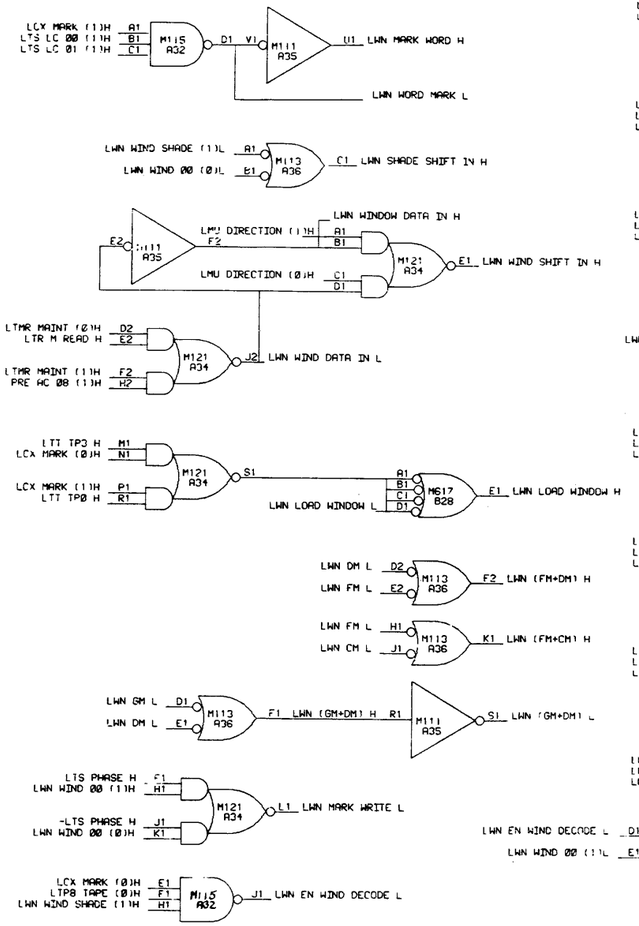

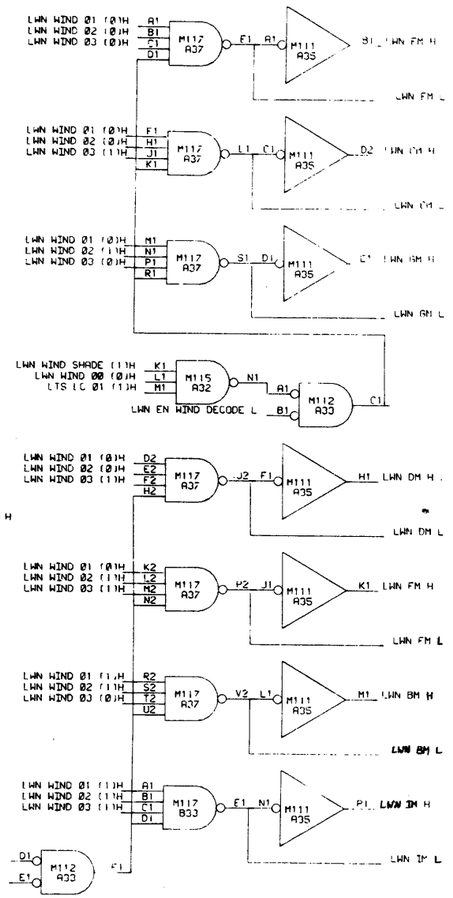

REVISIONS		
CHK	CHANGE NO.	REV.
NR	EM12-00005	A
	J FASSHAUER 4-15-69	
	L GALE 4-29-69	
	EM12-00015	B
	KEN BOGGS 10-14-69	
	J SCANLAN 10-17-69	
NR	EM12-00032	C
	A.WASHINGTON 3-13-70	
	J SCANLAN 3-16-70	
	EM12-00041	D

DRWN 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.

DRN. J. APREA	DATE 3/7/69	digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS
CHK'D. R. HUTNAK	DATE 3/7/69	
ENG. L. Hale	DATE 3/10/69	
PROJ. ENG. L. Hale	DATE 3/10/69	
PROD. [illegible]	DATE 3/10/69	
FIRST USED ON PDP-12		
SCALE		
SHEET 1 OF 1		

TITLE: LINC SCOPE CONTROL

SIZE	CODE	NUMBER	REV.
A	ML	VC12-0	J

DIST.

DEC FORM NO. DRA 103

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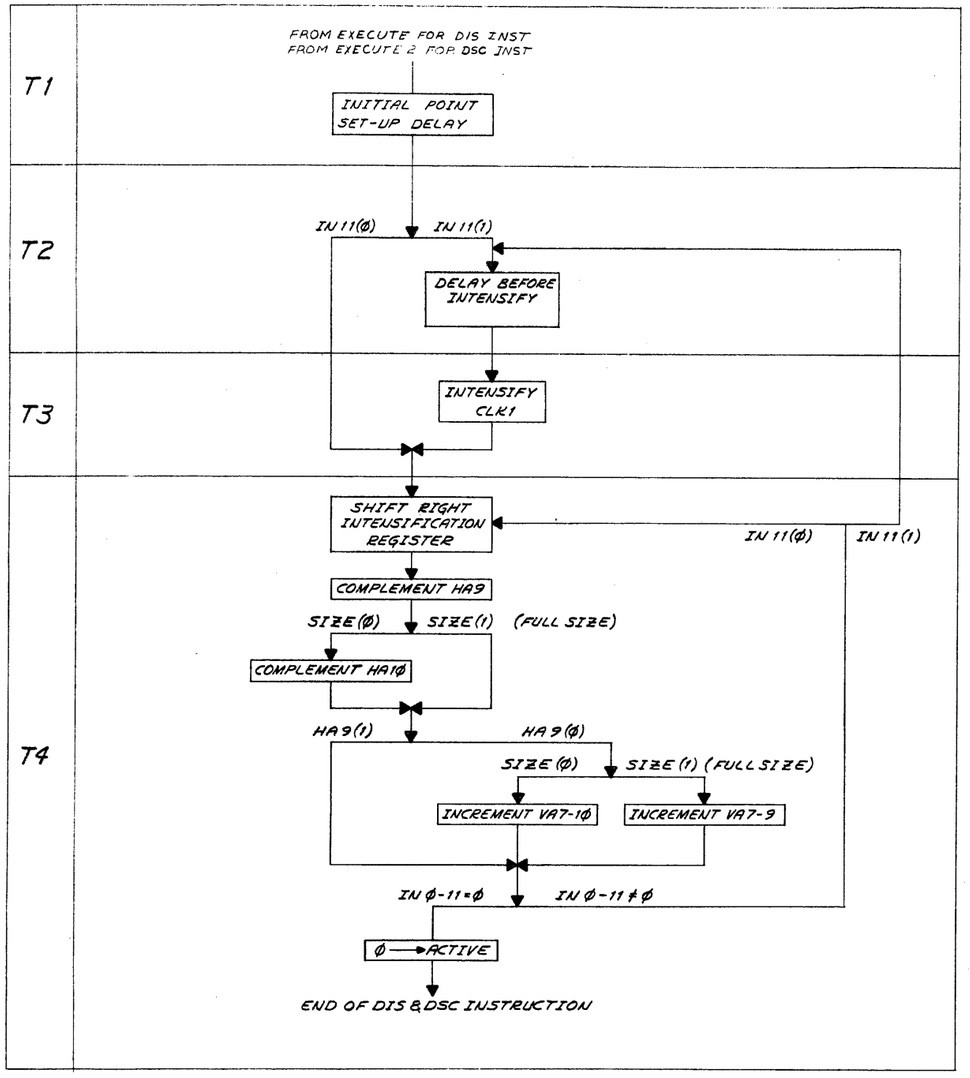
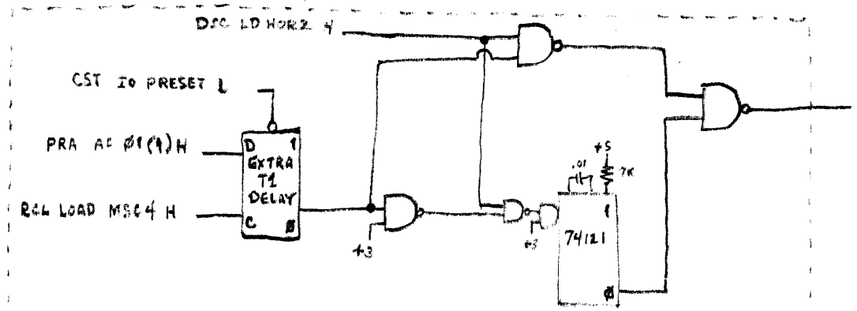


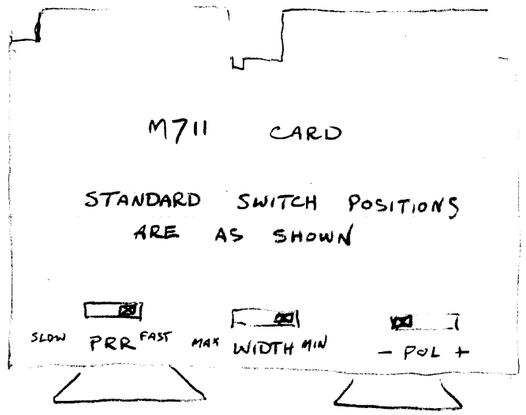


TIMING TABLE (μSECS)

	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 DETERMIVED 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 AC₁₁ = 1



REVISIONS				
CHK	CHANGE NO.	REV.		
	00002	A	T. Quigley L. GALE	6/18/68
	EM12-00008	B	L. GALE	8-15-68
	EM12-00033	C	L. GALE	2-9-70

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 Aspra	DATE 2/27/69
CHKD.	Jim Lee	DATE 2/27/69
ENG.	Ron Hoyle	DATE 2-27-69
PROJ. ENG.	Tom Hall	DATE 2-27-69
PROD.	Tom Hall	DATE 3/3/69

FIRST USED ON: VC12
SCALE
SHEET / OF /

digital EQUIPMENT CORPORATION
MAYNARD, MASSACHUSETTS

TITLE: LINC-8 SCOPE DISPLAY DIS & DSC

SIZE	CODE	NUMBER	REV.
D	FD	VC12-Ø-9	C

DIST.

DEC FORM NO. DRD 102A

N

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PRC MB5 (1)H
DSC LD IN H
A1 B1 C1 — M115 C29 — D1 — DSC LD MB5 L

DSC BUSY L — DM2 — DN2 — DSC BUSY H

DSC LD HORZ H — D 1 DSC ACTIVE C Ø

DSI IN 11(Ø)H DP1
DSI IN 10(Ø)H DD2
DSI IN 9(Ø)H DE1

DSI IN 8(Ø)H DJ1
DSI IN 7(Ø)H DF2
DSI IN 6(Ø)H DH1

DSI IN 5(Ø)H DK1
DSI IN 4(Ø)H DH2
DSI IN 3(Ø)H DJ2

DSI IN 2(Ø)H DL2
DSI IN 1(Ø)H DL1
DSI IN Ø(Ø)H DK2

DSC CLK 1 OUTPUT

DSC SHFT H — DN1 — CD2 CE2 — (CD2, CE2 OPTIONAL INPUTS CLAMPED AT +3V)

DSC SHFT L

DSI IN 11(Ø)H DP1

DSI IN 11 (1) H CF1 — CLK 1 OUTPUT — CLK 2 — LONG CLK 1 INPUT — START — SHORT CLK 2 — CF1 — DSI IN 11 (1) H

DT2 — DSC INTEN L
DV1 — DSC INTEN H
DU1

DSC Z DRIVER H — H2 — W512 N27 — F2

J2 K2 L2 — W681 MØ3 — N2 — DSC 5Ø3 INTEN L
A2 — +1Ø
B2 — -15

SLA (DSC * EXECUTE 2) L — R2 S2
- DSC BUSY L — T2 U2
M127 E22 — V2 — DSC START DSC H

SEE PAGE 144

DSC ACTIVE (1) H

DSC LD HORZ H — DLY = 25 µSEC — DSC INITIAL DELAY L

CPT TS5 B(1) H — CV2
DSC START DSC H — CT2
CD1 — DSC CLR V8-11 L
CU2 — DSC CLR V7 L

CST IO PRESET L — CR2
PRC AC Ø9(1)H — DD1 — D 1 DSC SIZE C Ø — DU2
RCL LOAD MSC4 H — CV1

DSX HA 9 (1) L — DV2 — DF1 — DSC VA 1ØH

DE2 — DSC HA 1ØH

DSC SHFT L

DSX HA 9 (1) H — DM1
DSY VA 1Ø (Ø) H — DP2
DSC SIZE (Ø) H
DR2 — DSC VA 9 H

CPT TS5 B(1) H — CP2
CPT (DIS+DSC) H — CE1
CPS EXECUTE B(1) H — CH1
-DSC BUSY H — DM2
CJ2 — DSC INITIALIZE L

-INS DIS H — CL2
CM2 — DSC LD IN H
CK2 — DSC LD VERT H
CR2 CD1 — DS2 — DSC LD HORZ H
DSC LD MB5 L — CH2
CF2 — DSC SET IN 11 L
-INS DSC H — CL1

DSY V8 (1) H — CS1 — CU1 — DSC 8 L
DSY V7 (1) H — CS2 — CW2 — DSC 7 L

DSC INITIALIZE L

D 1 VA8 C Ø — CJ1 — DSY VA 9 (Ø) H
D 1 VA7 C Ø

M711
C37
D37

REVISIONS			
CHK	CHANGE NO.	REV.	
	00002	A	T. GUILLIN L. GALE
	EM12-00033	B	L. GALE 3-5-70
FV	EM12-00037	C	GALE 7-29-70
	EM12-00044	D	SCANLON 4-7-71

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

QTY.	DESCRIPTION	PART NO.	ITEM NO.

PARTS LIST

DRN		DATE 4-SEPT-68
CHK		DATE 2/27/69
ENG		DATE 2-28-69
PROJ. ENG		DATE 2-28-69
PROD		DATE 3/28/69

FIRST USED ON VC12

digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS

TITLE
DSC
DISPLAY CONTROL

SIZE D | CODE BS | NUMBER VC12-Ø-DSC | REV. D
SCALE
SHEET 1 OF 1
DIST.

REV. D | SIZE CODE D BS | NUMBER VC12-Ø-DSC

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DSX X OUT L

DSX X DEF L — EH2 — EJ 2

DSC LD HORZ H

	FU2	FV2	FS2	FT2	EH2	FD2	EP1	EU1	EV1	ES2	ET2	EU2	ER2	FH1	FF1	FE1
	CHAN				H3		H4	H5	H6	H7			H8			
				PRA MB Ø(1) H		PRB MB 3(1) H		PRC MB 4(1) H	PRC MB 5(1) H	PRD MB 6(1) H		PRD MB 7(1) L				PRE MB 8(1) L

EV2 — FK1 — +3V

EH2 — EJ2 — OUTPUT

+5V	EA2
-15V	EB2
-15V H.Q.	EE2
+15V H.Q.	ED2
HQ GND	EF2
+5V	FA2

A615

G783 F38	G783 F39		*W028 F38	*W028 F39	
A1	A1	DSX CHAN (1) H	A2	A2	GND
B1	B1	GND	B2	B2	DSX CHAN (1) H
C1	C1	DSC Z DRIVER L	C2	C2	DSX X OUT L
D1	D1		D2	D2	GND
E1	E1	HQ GND 37	E2	E2	HQ GND 37
F1	F1	GND	F2	F2	GND
H1	H1	DSX X DEF L	H2	H2	GND
J1	J1	HQ GND 36	J2	J2	DSC Z DRIVER H
K1	K1	DSY Y DEF L	K2	K2	GND
L1	L1		L2	L2	DSY Y OUT L
M1	M1		M2	M2	GND
N1	N1		N2	N2	HQ GND 36
P1	P1		P2	P2	GND
R1	R1	GND	R2	R2	
S1	S1	DSC 503 INTEN L	S2	S2	
T1	T1	GND	T2	T2	
U1	U1		U2	U2	GND
V1	V1		V2	V2	DSC 503 INTINL

GND

DSC INTIALIZE L — FL2 — HA 9 — FR2 — FM2 — DSC SHIFT H — FN2 — FP2 — +3V

+3V — FK2 — HA 1Ø — FJ2 — DSC HA 1Ø H — FF2 — FH2 — DSC INTIALIZE L

FJ1	H9	PRE MB 9(1) L
FL1	H1Ø	PRF MB 1Ø (1) L
FE2	H11	PRF MB 11(1) L

FK1 — +3V — FD2 — DSC LD HORZ H

A615
E37
F37

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.

REVISIONS	REV.	CHANGE NO.	CHK	
	A	00002	DJB	L. QUILLIN 6/15/67
	B	EM12-00008	DJB	L. GALE 2/15/67
FV	C	EM12-00039		L. GALE 8-25-70

QTY.	DESCRIPTION	PART NO.	REV

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 2-16-67
CHK'D		DATE 2/27/67
ENG.		DATE 2-27-67
PROJ ENG.		DATE
PROD.		DATE 3/31/67
FIRST USED ON	VC12	
SCALE		
SHEET	1 OF 1	

digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS

TITLE
DSX
HORIZONTAL D-A

SIZE	CODE	NUMBER	REV.
D	BS	VC12-Ø-DSX	C

DIST.

DEC FORM NO. DRD 102A

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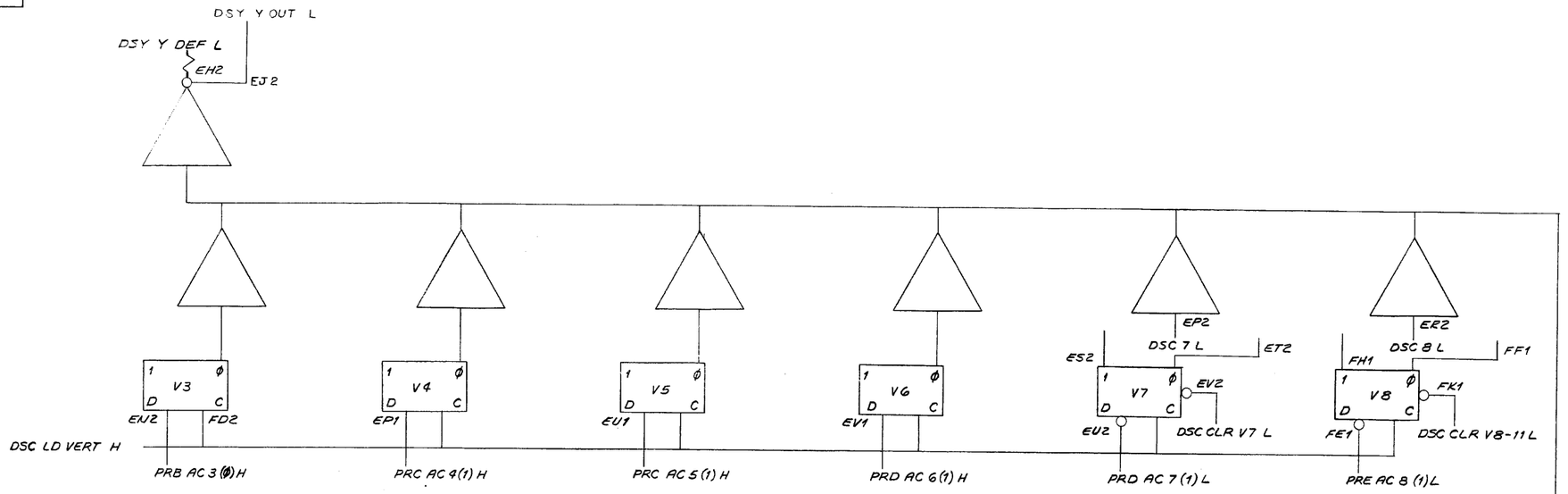

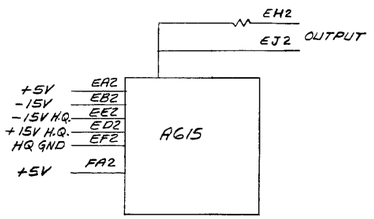

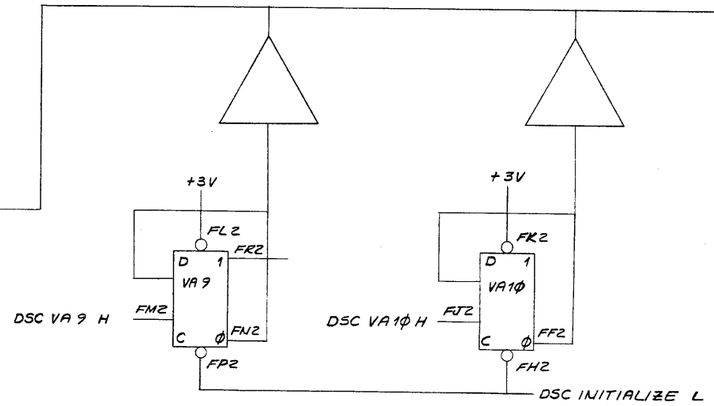

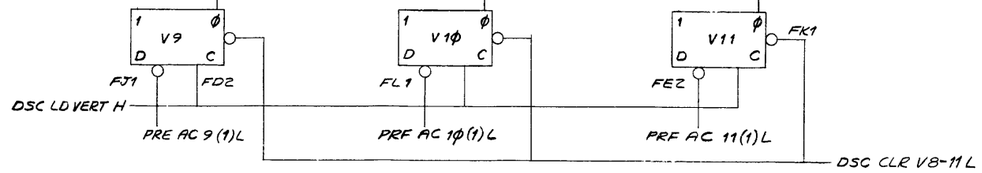

REVISIONS	REV.	CHK
CHANGE NO. 0000 2	A	DB
T. QUILLIN L. GALE 6/16/69		
EM1200039	B	FV
L. GALE 8-20-70		
S. Mack 8-25-70		

AG15
E36
F36

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 Jones	DATE 6-2-68	digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS
CHKD. Jean-Lu	DATE 2/27/69	
ENG. [illegible]	DATE 2-8-6	
PROJ. ENG. [illegible]	DATE 2-17-69	
PROD. [illegible]	DATE 3/24/69	

FIRST USED ON VC12
SCALE
SHEET OF

TITLE
DSY
VERTICAL D-A

SIZE	CODE	NUMBER	REV.
D	85	VC12-Ø-DSY	B

DIST.

FORM NO. 102A

8 7 6 5 4 3 2 1

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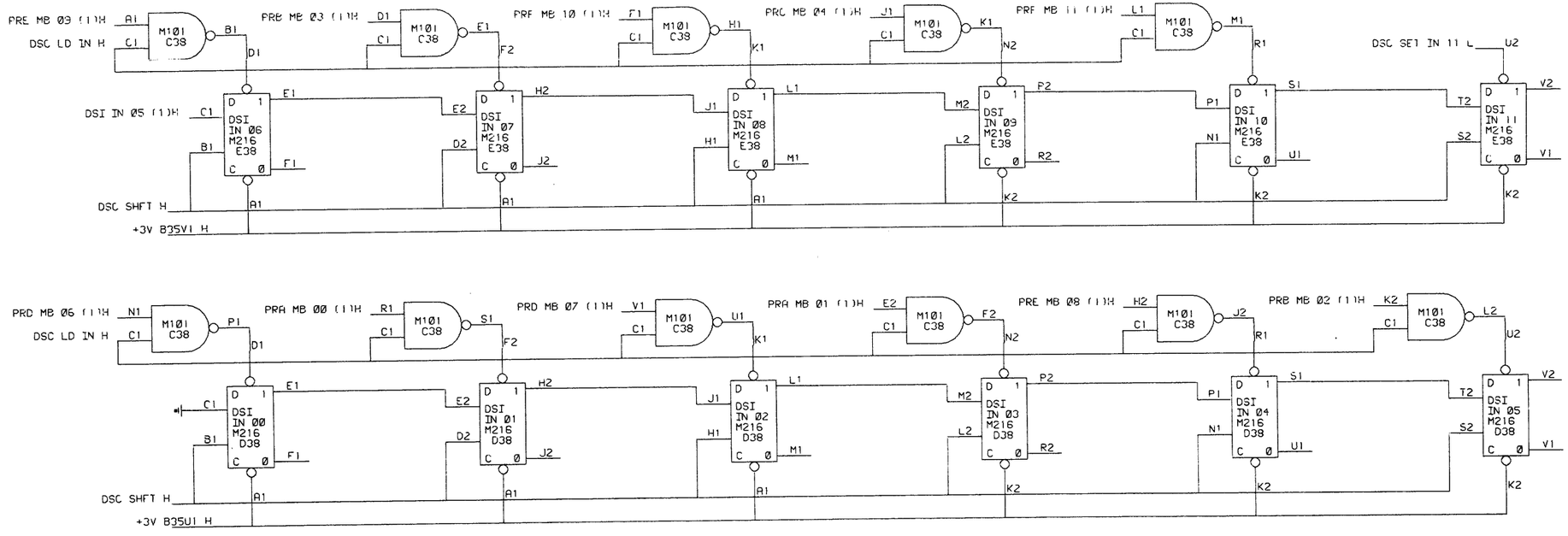

REVISIONS		
CHK	CHANGE NO.	REV.

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. [illegible]	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: $<27 + a\,\mu sec$ 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.

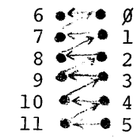
POINT INCREMENT SIZE

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 a digital 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

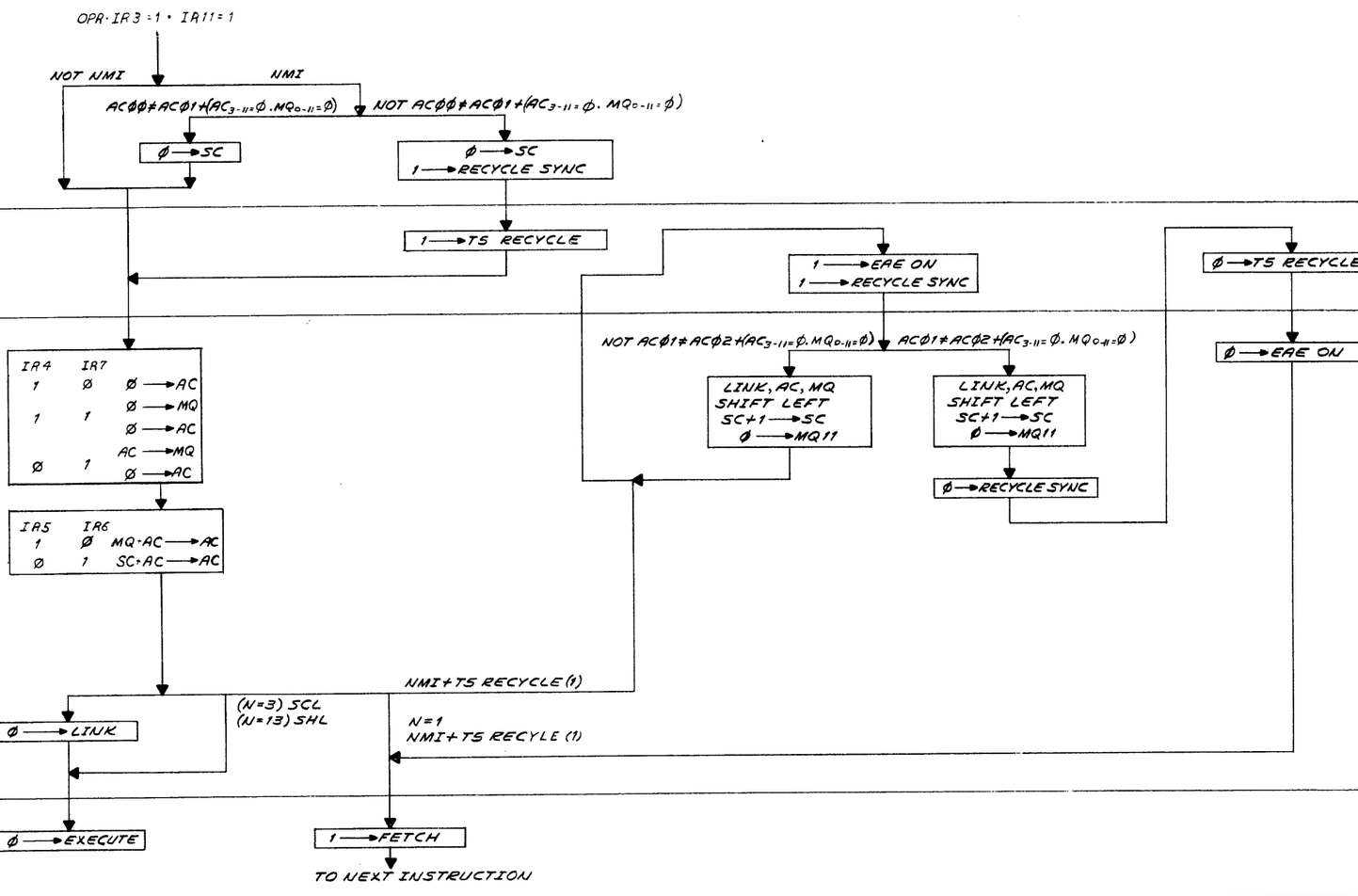
T2

T3

T4

OFF PAUSE

T5



REVISIONS			
CHK	CHANGE NO.	REV.	
FV	EP12-00030	A	
	D MACKLIN	11/19/79	

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 Aqua	DATE 11-22-78
CHK'D	Gary Scanlan	DATE 8/16/79
ENG.		DATE 2/14/79
PROJ. ENG.		DATE 2/19/79
PROD.		DATE 2/19/79

FIRST USED ON KE12

SCALE

SHEET 1 OF 1

digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS

TITLE: EAE FETCH

SIZE	CODE	NUMBER	REV.
D	FD	KE12-0-2	A

DIST.

DEC FORM NO. DRD 102A

REV A
SIZE D CODE FD NUMBER KE12-0-2

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EAE EXECUTE (PART 1)

T1: PC → MA

T2: DO=Ø: MA+1 → PC; DO=1: MA → PC

T3: MEM → MB; RSW → MB

T4: NOT MUY+DIV: MEM → SC

N=3 (SCL): 1 → RECYCLE SYNC

N≠B: 1 → T5 RECYCLE

MUY+DIV

OFF PAUSE

T5:

1 → EAE ON T5 RECYCLE

SHL (N=13): LINK, AC, MQ SHIFT LEFT; Ø → MQ11

ASR (N=15): AC, MQ SHIFT RIGHT; AC ØØ → LINK, AC ØØ, AC Ø1

LSR (N=17): AC, MQ SHIFT RIGHT; Ø → AC ØØ

SC≠17: SC+1 → SC

SC=17: Ø → RECYCLE SYNC; SC+1 → SC

Ø → T5 RECYCLE

Ø → EAE ON

DIV

MUY

Ø → SC

1 → RECYCLE SYNC

1 → T5 RECYCLE

1 → T5 RECYCLE

1 → EAE ON

MQ11=Ø: LINK, AC, MQ SHIFT RIGHT

MQ11=1: LINK, Σ(AC+MB) MQ SHIFT RIGHT

SC=13: Ø → RECYCLE SYNC; SC+1 → SC

SC≠13: SC+1 → SC

MUY (N=5)

1 → FETCH

TO NEXT INSTRUCTION

REVISIONS	REV.	CHANGE NO.	CHK

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 Ogna	11-20-68
CHK'D	D Scanlon	2/18/69
ENG.	J. Ha C.	2/19/69
PROJ. ENG.	J. Ha C.	2/19/69
PROD.	D Gall	2/19/69

FIRST USED ON: KE12

SCALE

SHEET OF

digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS

TITLE: EAE EXECUTE PART 1

SIZE	CODE	NUMBER	REV.
D	FD	KE12-Ø-3	

DIST.

NUMBER KE12-Ø-3 SIZE D CODE FD REV.

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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

EN
Σ (MB) AND $\overline{\text{LINK}}$ AND $\overline{\text{AC}}$

(SC≠∅)+(SC≠1)+MQ1∅=MQ11

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

MQ1∅(∅) MQ11(∅)

MQ1∅(∅) MQ11(1)

MQ1∅(1) MQ11(∅)

MQ1∅(1) MQ11(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 ± .005 FRACTIONS ± 1/64 ANGLES ± 0°30'
FINAL SURFACE QUALITY √
REMOVE BURRS AND BREAK SHARP CORNERS

MATERIAL

FINISH

DRN.		DATE 11-22-68
CHKD		DATE 3/11/69
ENG		DATE 2/10/69
PROJ. ENG.		DATE 2/10/69
PROD.		DATE 2/10/69

FIRST USED ON
KE12

SCALE

SHEET OF

digital EQUIPMENT CORPORATION
MAYNARD, MASSACHUSETTS

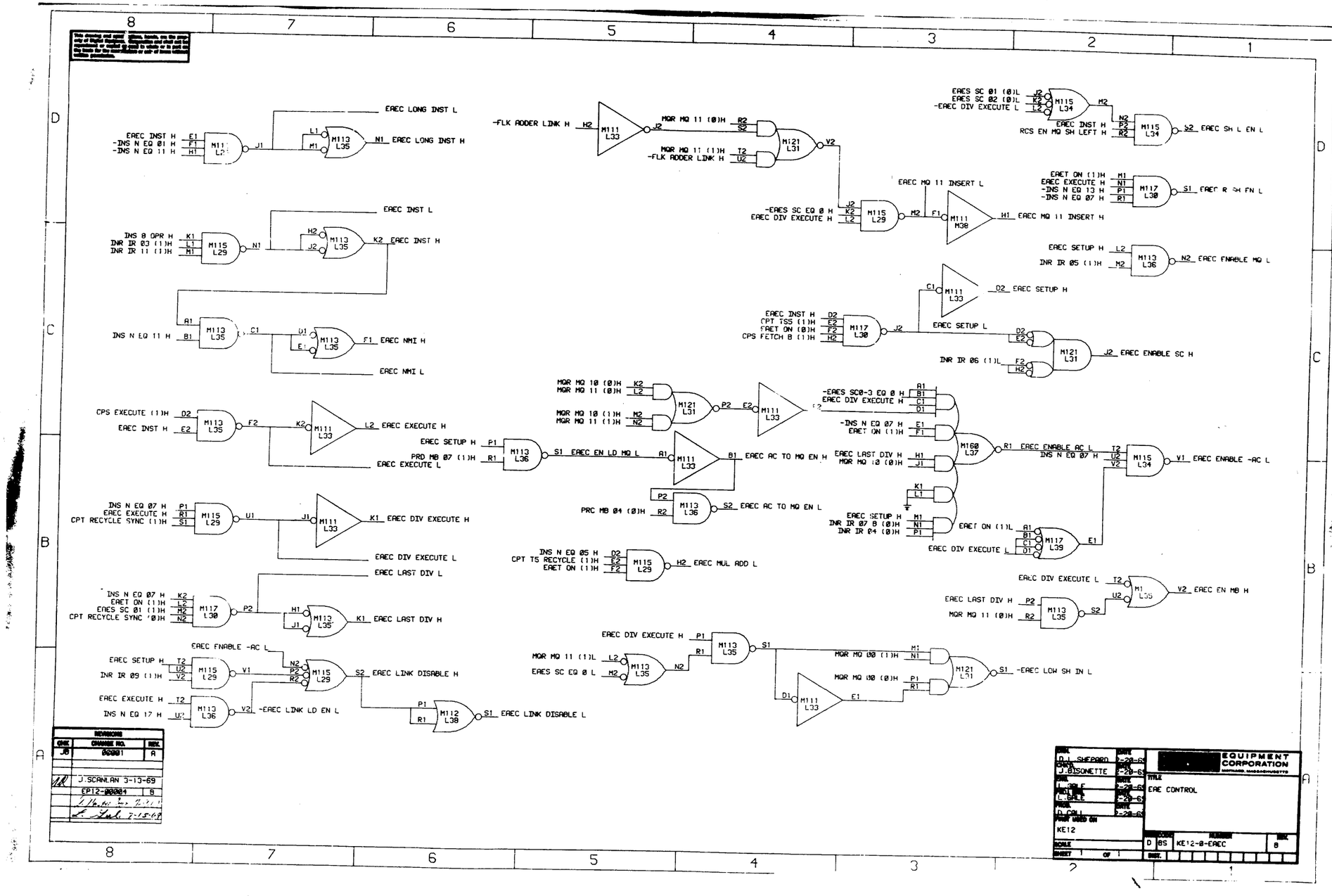
TITLE
EAE EXECUTE
PART 2

SIZE	CODE	NUMBER	REV.
D	FD	KE12-∅-4	

DIST.

DEC FORM NO.
DRD 102A

SIZE D FD CODE NUMBER KE12-∅-4 REV.


EAEC LONG INST L
EAEC INST H
-INS N EQ 01 H
-INS N EQ 11 H
M113 L35
N1 EAEC LONG INST H
-FLK ADDER LINK H
MQR MQ 11 (0)H
MQR MQ 11 (1)H
-FLK ADDER LINK H
M121 L31
V2
EAES SC 01 (0)L
EAES SC 02 (0)L
-EAEC DIV EXECUTE L
M115 L34
EAEC INST H
RCS EN MQ SH LEFT H
S2 EAEC SH L EN L
EAEC INST L
INS 0 OPR H
INR IR 03 (1)H
INR IR 11 (1)H
M115 L29
K2 EAEC INST H
EAEC MQ 11 INSERT L
-EAES SC EQ 0 H
EAEC DIV EXECUTE H
M115 L29
M111 M38
H1 EAEC MQ 11 INSERT H
EAET ON (1)H
EAEC EXECUTE H
-INS N EQ 13 H
-INS N EQ 07 H
M117 L30
S1 EAEC R SH EN L
EAEC SETUP H
INR IR 05 (1)H
M113 L36
N2 EAEC ENABLE MQ L
M111 L33
D2 EAEC SETUP H
EAEC INST H
CPT TSS (1)H
EAET ON (0)H
CPS FETCH B (1)H
M117 L30
EAEC SETUP L
INR IR 06 (1)L
M121 L31
J2 EAEC ENABLE SC H
INS N EQ 11 H
M113 L35
F1 EAEC NMI H
EAEC NMI L
CPS EXECUTE (1)H
EAEC INST H
M113 L35
M111 L33
L2 EAEC EXECUTE H
MQR MQ 10 (0)H
MQR MQ 11 (0)H
MQR MQ 10 (1)H
MQR MQ 11 (1)H
M121 L31
M111 L33
-EAES SC0-3 EQ 0 H
EAEC DIV EXECUTE H
-INS N EQ 07 H
EAET ON (1)H
EAEC SETUP H
PRD MB 07 (1)H
EAEC EXECUTE L
M113 L36
S1 EAEC EN LD MQ L
M111 L33
B1 EAEC AC TO MQ EN H
P2
PRC MB 04 (0)H
M113 L36
S2 EAEC AC TO MQ EN L
EAEC LAST DIV H
MQR MQ 10 (0)H
M160 L37
R1 EAEC ENABLE AC L
INS N EQ 07 H
M115 L34
V1 EAEC ENABLE -AC L
EAEC SETUP H
INR IR 07 B (0)H
INR IR 04 (0)H
EAET ON (1)L
EAEC DIV EXECUTE L
M117 L39
E1
INS N EQ 07 H
EAEC EXECUTE H
CPT RECYCLE SYNC (1)H
M115 L29
U1
M111 L33
K1 EAEC DIV EXECUTE H
EAEC DIV EXECUTE L
INS N EQ 05 H
CPT TS RECYCLE (1)H
EAET ON (1)H
M115 L29
H2 EAEC MUL ADD L
EAEC LAST DIV L
INS N EQ 07 H
EAET ON (1)H
EAES SC 01 (1)H
CPT RECYCLE SYNC (0)H
M117 L30
M113 L35
K1 EAEC LAST DIV H
EAEC DIV EXECUTE L
EAEC LAST DIV H
MQR MQ 11 (0)H
M113 L35
M111 L35
V2 EAEC EN MB H
EAEC ENABLE -AC L
EAEC SETUP H
INR IR 09 (1)H
M115 L29
M115 L29
S2 EAEC LINK DISABLE H
EAEC EXECUTE H
INS N EQ 17 H
M113 L36
V2 -EAEC LINK LD EN L
P1
R1
M112 L38
S1 EAEC LINK DISABLE L
EAEC DIV EXECUTE H
MQR MQ 11 (1)L
EAES SC EQ 0 L
M113 L35
M113 L35
S1
MQR MQ 00 (1)H
MQR MQ 00 (0)H
M121 L31
S1 -EAEC LOW SH IN L
M111 L33
REVISIONS
CHK
CHANGE NO.
REV.
JB
02001
A
J.SCANLAN 3-13-69
EP12-00001
B
EQUIPMENT CORPORATION
TITLE
EAE CONTROL
KE12-B-EAEC
REV.
B
SHEET 1 OF 1

M906
K27
B1 EAEC EN LD MQ L *M906 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 — EAEC 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.

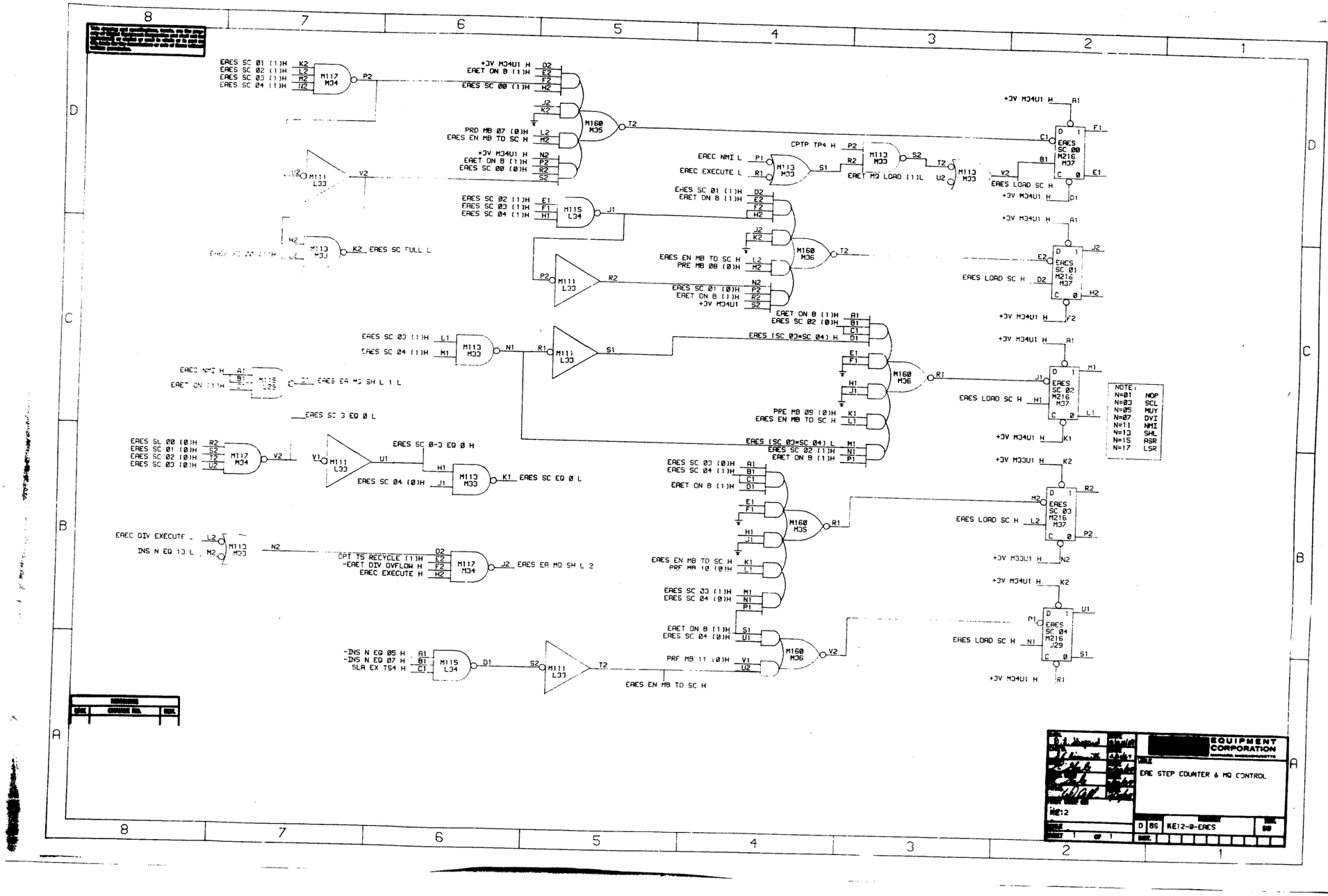
ADS

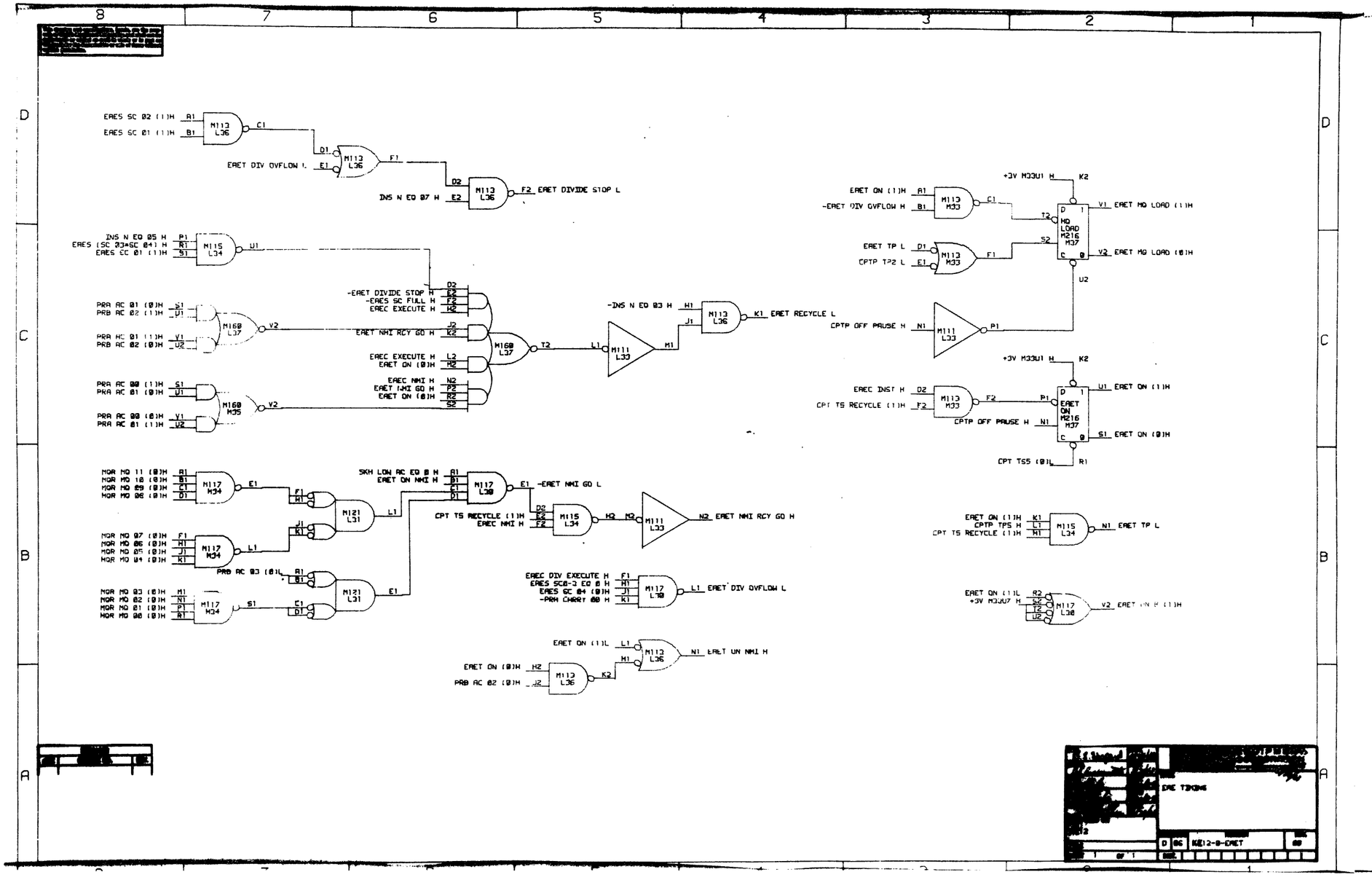
W. Scanlon 3/13/69

EQUIPMENT CORPORATION

TITLE
EAE DISABLE

KE12-B-EAED


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 Ø2 (1)H
EAES SC Ø3 (1)H
EAES SC Ø4 (1)H
M115 L34
EAES SC FULL L
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 Ø3*SC Ø4) H
EAET ON B (1)H
EAES SC Ø2 (Ø)H
M160 M36
PRE MB Ø9 (Ø)H
EAES EN MB TO SC H
EAES (SC Ø3*SC Ø4) L
EAES SC Ø2 (1)H
EAET ON B (1)H
EAES SC Ø3 (Ø)H
EAES SC Ø4 (1)H
EAET ON B (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
M160 M35
M160 M36
CPTP TP4 H
EAEC NMI L
EAEC EXECUTE L
M113 M33
EAET M9 LOAD (1)L
EAES LOAD SC H
+3V M34U1 H
EAES SC Ø0 M216 M37
EAES SC Ø1 M216 J29
EAES SC Ø2 M216 M37
EAES SC Ø3 M216 M37
EAES SC Ø4 M216 J29
+3V M33U1 H
NOTE:
N=Ø1 NOP
N=Ø3 SCL
N=Ø5 MUY
N=Ø7 DVI
N=11 NMI
N=13 SML
N=15 ASR
N=17 LSR
EAES SC 3 EQ Ø L
EAES SC Ø-3 EQ Ø H
EAES SC Ø4 (Ø)H
K1 EAES SC EQ Ø L
EAEC DIV EXECUTE L
INS N EQ 13 L
CPT TS RECYCLE (1)H
-EAET DIV OVFLOW H
EAEC EXECUTE H
J2 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
EQUIPMENT CORPORATION
EAE STEP COUNTER & MQ CONTROL
KE12
D BS KE12-B-EAES
SHEET 1 OF 1


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
EAET TP L
CPTP TP2 L
M113 M33
M0 LOAD M216 M37
V1 EAET M0 LOAD (1)H
V2 EAET M0 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
-PRH 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 TP5 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		1	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 3/7/68	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		
SCALE		
SHEET 1 OF 1		

SIZE	CODE	NUMBER	REV.
A	ML	XY12-0	B

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
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
PRE MB ϕ8 (ϕ)H
NV1
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
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

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

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

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.

DEC FORM NO. DRD 102A

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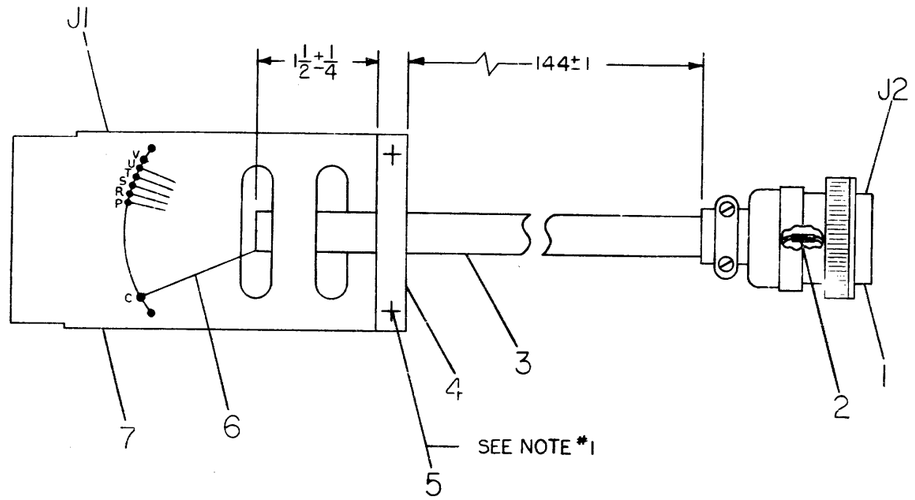
WIRE TABLE	
CONNECTION	
FROM	TO
J1 - C	J2 - 15
P	4
R	3
S	1
T	2
U	9
J1 - V	J2 - 10



NOTES:

1. ASSEMBLE CABLE CLAMP #4 WITH EYELETS #5 AFTER WIRE #6 IS SOLDERED TO BOARD.

QTY.	DESCRIPTION	PART NO.	ITEM NO.
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

PARTS LIST

REVISIONS				
CHK	CHANGE NO.	REV.		
	ECO #101	A		
	CHANGED DIM FROM 120±1 TO 144±1		10/16/67	
	W023-00003	B	3-5-68	

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

MATERIAL //

FINISH //

DRN.		DATE 6-30-67
CHK'D.		DATE 7-21-67
ENG.		DATE 7-22-67
QUALITY		DATE 7-22-67
MGR.		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
C IA

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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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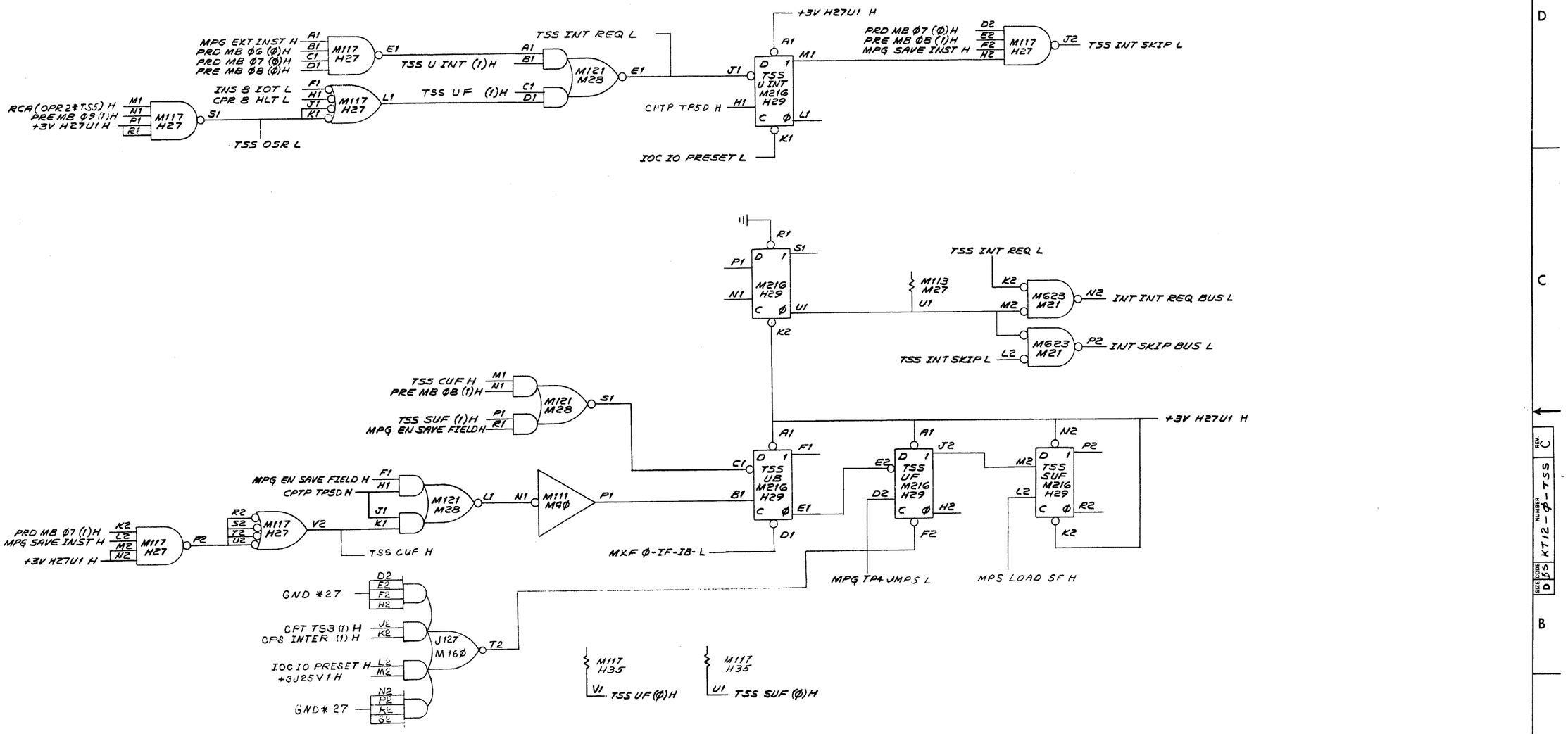

REVISIONS			
CHK	CHANGE NO.	REV.	
D-BS	EP12-00002	A	J. SCANLON 5/12/69
D-BS	EP12-00026	B	D. MACKLIN 8/18/70
FV	EP12-00030	C	D. MACKLIN 11-19-70

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.	J. Scanlon	DATE 3/1/69
CHK'D.	D. MacKlin	DATE 3/1/69
ENG.	[illegible]	DATE 3/1/69
PROJ. ENG.	[illegible]	DATE 3/1/69
PROD.	D. Call	DATE 3/1/69

FIRST USED ON KT12
SCALE
SHEET 1 OF 1

digital EQUIPMENT CORPORATION
MAYNARD, MASSACHUSETTS

TITLE
PDP-12 TIME SHARING OPTION

SIZE	CODE	NUMBER	REV.
D	BS	KT12-ϕ-TSS	C

DIST.

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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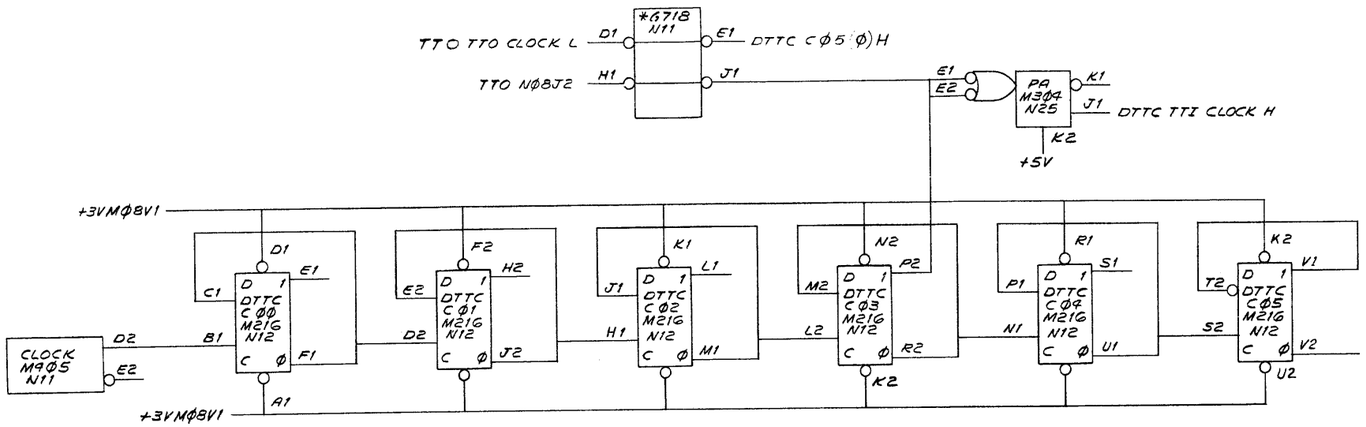

DP12-A

WHEN THE DP12 IS USED TO DRIVE A TELETYPE AT 11Ø BAUD, THE M9Ø5 (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 (M9Ø5, 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.

REVISIONS			
CHK	CHANGE NO.	REV.	
[illegible]	EP12-00003	A	1 Digital [illegible] GALE 2 Feb 6 1/20/69
K	EP12-00020	B	add Tixcas 8 12A L. GALE [illegible]

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 2-23-69
CHK'D.	[signature]	DATE 2/27/69
ENG.	[signature]	DATE 2-28-69
PROJ. ENG.	[signature]	DATE 2-24-69
PROD.	[signature]	DATE 2/25/69

FIRST USED ON D12

SCALE NONE

SHEET OF

digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS

TITLE
DTTC
DATAPHONE CLOCK

SIZE	CODE	NUMBER	REV.
D	BS	DP12-Ø-DTTC	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
MK2
MR2
MS2
ML1
MM1
MP2
MT2
MN2
NH2
U1
M117 L13
ND2
IOC IOP 1 H
DTTI KEYBOARD SELECT H
+3V
DTTI KEYBOARD FLAG (1)H
MF2
DTTI KEYBOARD FLAG (Ø)H
DTTI STROBE H
DTTI REC PRESET L
DTTI DATA H
DTTI SHIFT H
MR1
MK1
MJ2
DTTI Ø
DTTI 1
DTTI 2
DTTI 3
DTTI 4
DTTI 5
DTTI 6
DTTI 7
D 1
C Ø

+3V
DTTI START ENABLE L
+3V MØBV1 H
DTTO TTI CLOCK H
NR1
NS2
DTTI REC PRESET L

DTTI KEYBOARD SELECT H
IOC IOP 2 H
NJ2
NE2
DTTI TT AC CLEAR L
V1
M113 L21
+3V
ND1
ME2
DTTI KCC L
IOC IO PRESET H
NF2
+3V
DTTI SHIFT H
DTTI SPIKE DETECTOR (1)H
DTTI DATA H
+3V
DTTI SETUP L

DTTI CLOCK SCALE 2 (1)H
DTTI IN ACTIVE (1)H
NU1
DTTI SHIFT L
NK2
MS1
DTTI SHIFT H

✳ SEE NOTE NØ3
E2
NM2
ST
MM2
DTTI DATA L

DTTI KEYBOARD SELECT H
IOC IOP 4 H
ML2
+3V
DTTI STROBE H

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
MD2
ME1
MF1
MH1
MH2
MJ1
+3V
MP1
+3V MØ8V1 H
DTTI KEYBOARD SELECT H

DTTI SKIP L
DTTO SKIP L
L1
M1
M113 MØB
N1
L2
M2
N2
DTTI SKIP TO BUS L

M113 K22
U1
DTTO TPR FLG (1)L
DTTI KEYBOARD FLAG (1)L
P1
R1
S1
P2
R2
S2
DTTI TT INT L
RCA EN TT INT (Ø)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 SHIFT H
DTTI IN LAST UNIT
NR2
DTTC TTI CLOCK H
NN1
DTTI CLOCK SCALE Ø
DTTI CLOCK SCALE 1
DTTI CLOCK SCALE 2
NT2
NS1
NP2
DTTI IN STOP 1
NU2
DTTI IN STOP 2
NV2
DTTI IN ACTIVE
NN2
-DTTI SHIFT H
DTTI SPIKE DETECTOR (1)H
DTTI SPIKE DETECTOR (Ø)H
DTTI KCC L
MV2
NL2
DTTI READER RUN
✳ SEE NOTE NØ3
MU2
M2
DTTI B READER RUN H
DTTI SETUP L
DTTI START ENABLE L
DTTI REC PRESET L
NS2

~~DTTI IN STOP 2 (1)L~~
NV2 → DTTI IN STOP 2 (1)L
NU2 → DTTI IN STOP 1 (1)L

STOP BIT SELECTOR SWITCH
1 stop bit : NR2 → NU2
2 stop bits : NR2 → NV2

DTTI SHIFT H
DTTI IN LAST UNIT (1)H
+3V

NOTE: USE A WØ76 TELETYPE MODULE WITH DPI2-A OPTION. WITH DPI2-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.

REVISIONS		
CHK	CHANGE NO.	REV.
	EP12-00004	A
	EP12-00022	B

L. GALE 11/15/68
F.V. 11 Fri. 69
K. Caulfield 5-8-70
CLAYTON 7/21/70

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 2-12-69
CH'D. DATE 2/27/69
ENG. DATE 2-28-69
PROJ. ENG. DATE 2-28-69
PROD. DATE 2/28/69
FIRST USED ON DP12
SCALE
SHEET 1 OF 1

digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS

TITLE: DTTI TELETYPE RECEIVER

SIZE D | CODE 85 | NUMBER DP12-Ø-DTTI | REV B
DIST.

DEC FORM NO. DRD 102A

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* 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.

PRE MB Ø3 (1)H — ME2
PRC MB Ø4 (Ø)H — ME1
PRC MP Ø5 (Ø)H — MF2
PRD MB Ø6 (Ø)H — MF1
PRD MB Ø7 (Ø)H — MH2
PRE MB Ø8 (1)H — MJ2
+3V NJ1 H — NJ1

MN1 — +3V MØBV1 H
DTTO SELECT H
MS1 — IOC IOP 4 H
MR1

+3V MØBV1 H — MN2
MP2 — PRC AC Ø4 (1)H
MR2 — PRC AC Ø5 (1)H
ML2 — PRD AC Ø6 (1)H
MM2 — PRD AC Ø7 (1)H
MU2 — PRE AC Ø8 (1)H
MS2 — PRE AC Ø9 (1)H
MT2 — PRF AC 1Ø (1)H
MU1 — PRF AC 11 (1)H

DTTO ENB — MK2 — ML1
DTTO Ø
DTTO 1
DTTO 2
DTTO 3
DTTO 4
DTTO 5
DTTO 6
DTTO 7

DTTO SHIFT H
DTTO PRESET L

DTTO OUT ACTIVE (Ø)L
DTTO LINE — MD2 — MV2 — DTTO B MAGNET DRIVER H

MH1 — DTTO = Ø L

M7Ø7
M1Ø
N1Ø

+3V
DTTO OUT ACTIVE (1)L

DTTO OUT ACTIVE (1)L
+3V MØBV1 H
DTTO OUT ACTIVE (1)H — DTTO FREQ DIV — NP2
DTTC CØ5(Ø) H

-DTTO SHIFT L
DTTO OUT STOP 1 (Ø)H
DTTO OUT STOP 2 (Ø)H
DTTO OUT STOP 1 — NR2
DTTO OUT STOP 1.5 — NP1
DTTO OUT STOP 2 — NN1
+3V — DTTO SHIFT H

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

DTTO OUT ACTIVE — MD1
DTTO = Ø L
DTTO SHIFT H — DTTO TPR FLG — NK2

IOC IOP 1 H — NH2 — NJ2 — DTTO SKIP L
DTTO SELECT H
M113 L13 — V1

IOC IO PRESET H — NE2 — +3V — DTTO PRESET L
+3V MØBV1 H — NF2
+3V — DTTO SELECT H / IOC IOP 2 H — ND2
+3V

A2 — +5V
B2 — -15V
C2
D2
E2 — DTTI DATA L
F2 — DTTO B MAGNET DRIVER H
H2
J2
K2
L2
M2 — DTTI B READER RUN H
N2
P2
R2
S2
T2
U2
V2 — -3ØV

*SEE NOTE NØ3

STOP BIT SELECTOR SWITCH
1 stop bit: NN2 → NR2
2 stop bits: NN2 → NN1

REVISIONS	REV.	CHK	
CHANGE NO. EP12-00003	A	Cmb	T. Quillin GALE 1/20/68
EP12-00004	B	DRB	L. GALE 4/15/69
EP12-00022	C	FV	L. GALE 2/15/68 TR under 5-18-70 CLAYTON 5/18/70

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.	DATE 2-22-69	digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS
CHKD.	DATE 2/27/69	
ENG.	DATE 2-4-69	TITLE DTTO TELETYPE TRANSMITTER
PROJ. ENG.	DATE 2-19-69	
PROD.	DATE 3/28/69	
FIRST USED ON DP12		SIZE D CODE BS NUMBER DP12-Ø-DTTO REV C
SCALE NONE		DIST.
SHEET 1 OF 1		

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
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	LENGTH	TOLERANCE
BC01A-05	5 FT	± 2 IN
BC01A-10	10 FT	± 3 IN
BC01A-15	15 FT	± 4 IN
BC01A-20	20 FT	± 5 IN
BC01A-25	25FT	± 6 IN
BC01A-30	30 FT	± 7 IN
BC01A-35	35 FT	± 8IN
BC01A-40	40 FT	± 10 IN
BC01A-45	45 FT	± 11 IN
BC01A-50	50 FT	± 12IN

WIRE TABLE

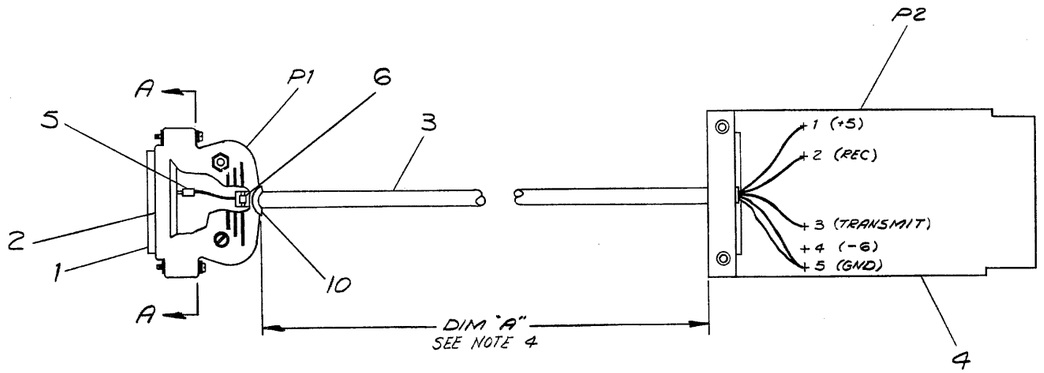
ITEM NO	DESCRIPTION AWG	COLOR	FROM CONNECTION	FROM WITH	TO CONNECTION	TO WITH
3	#22	BLK	P1-1	5-SOLDER	P2-5	SOLDER
3	#22	RED	P1-2	5-SOLDER	P2-3	SOLDER
3	#22	GRN	P1-3	5-SOLDER	P2-2	SOLDER
3	#22	ORN	P1-7	5-SOLDER	P2-5	SOLDER
3	#22	WHT	P1-20	5-SOLDER	P2-1	SOLDER

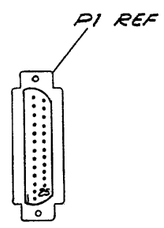
NOTES:

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.~~

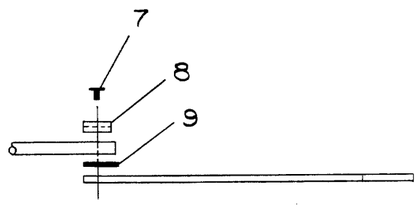
   ~~A = 1" G = 7"~~
   ~~B = 2" H = 8"~~
   ~~C = 3" J = 9"~~
   ~~D = 4" K = 10"~~
   ~~E = 5" L = 11"~~
   ~~F = 6"~~

   ~~EXAMPLE: BC02X-30 = 5'6"~~
   ~~LENGTHS WILL BE IN FOOT INCREMENTS FROM TEN (10) FEET ON. AND WILL BE SPECIFIED BY THE CORRESPONDING NUMERICAL DESIGNATION~~
   ~~EXAMPLE: BC02X-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



ITEM NO.	QTY.	DESCRIPTION	PART NO.
10	1	GROMMET # 809 A.I.R.	9007668
9	A/R	TAPE #4032 1/2 x 1 3/4 LG (3M CO)	9007834-0-0
8	1	CABLE CLAMP	1202704
7	2	EYELET #GS-4-7 STIMPSON	9006732
6	1	TIE WRAP PANDUIT #SST-1B	9007031
5	4	HEAT SHRINK TUBING 1/8 DIA	9107255
4	1	M850 CABLE CONN	M850
3	A/R	CABLE, BELDEN 5 COND	9107680
2	1	PLUG CINCH HOOD #DB51226-1	1205885
1	1	PLUG CINCH DB-25P	1205886

PARTS LIST

REVISIONS	REV.	CHANGE NO.	CHK	
	A	BC01A-00001	Dec 68	Corrected Wire Table per ECO LKL 01Z
	B	BC01A-00003	Apr 69	Added Item 10 per ECO L. KLOTZ

FIRST USED ON OPTION / MODEL: BC01A

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.	—	DATE
PROJ. ENG.	—	DATE
PROD	—	DATE

NEXT HIGHER ASSY —

SCALE —

SHEET 1 OF 1

digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS

TITLE
LEVEL CONVERTER
(BI POLAR)

SIZE	CODE	NUMBER	REV
D	IA	BC01A-0-0	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	
CHK'D. R. Hutnak	DATE 030769	
ENG. L.Gale	DATE 031069	
PROJ. ENG. L.Gale	DATE 031069	
PROD. D.Call	DATE	
FIRST USED ON PDP-12		
SCALE		
SHEET 1 OF 1		

digital EQUIPMENT CORPORATION
MAYNARD, MASSACHUSETTS

TITLE

POWER FAIL/RESTART

SIZE	CODE	NUMBER	REV.
A	ML	KP12-0	

DIST.

DEC FORM NO. 16-1033
DRA 103

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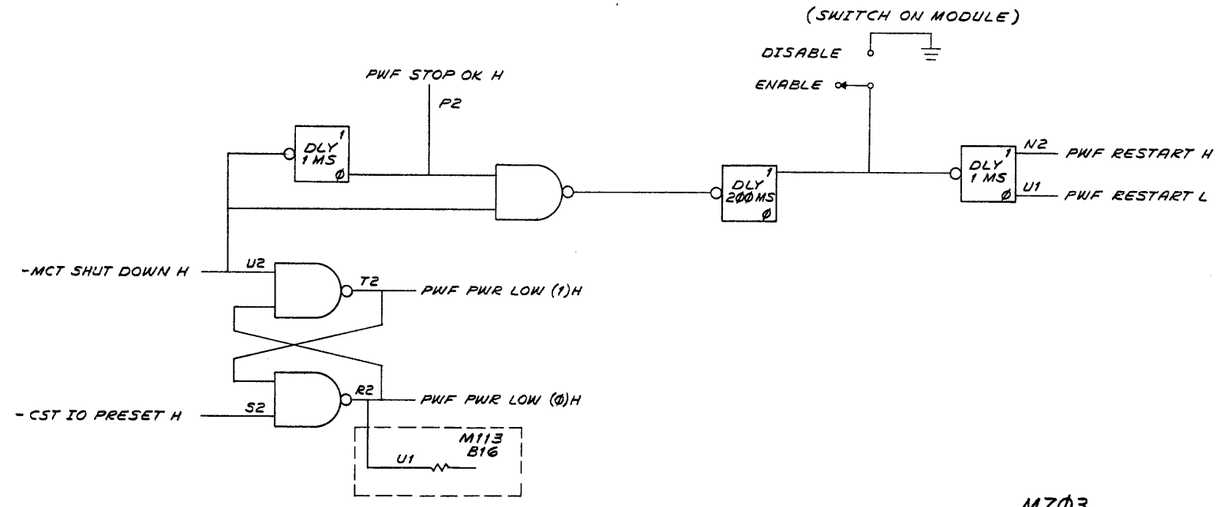

QTY.	DESCRIPTION	PART NO.	ITEM NO.

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 2-11-69
CHKD.		DATE 2/27/69
ENG.		DATE
PROJ. ENG.		DATE
PROD.		DATE 3/4/69

FIRST USED ON KP12

SCALE

SHEET 1 OF 1

digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS

TITLE
POWER FAILURE / RESTART

SIZE	CODE	NUMBER	REV.
D	BS	KP12-Ø-PWF	

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	digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS
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		TITLE REAL TIME CLOCK
SCALE		SIZE A · CODE ML · NUMBER KW12-A · REV. U
SHEET OF		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 — M113 D29 — S2 → CLC IOC IOP 1 H
+3V D29U1 H
IOC IOP 2 L — M113 D29 — V2 → CLC IOC IOP 2 H
IOC IOP 4 L — M113 D29 — K2 → CLC IOC IOP 4 H

CLC IOC IOP 1 H — M1Ø3 D25 → B1 CLC IOP 1 L, A1 CLC IOP 1 H
CLC IOC IOP 2 H — M1Ø3 D25 → D1 CLC IOP 2 L, C1 CLC IOP 2 H
CLC IOC IOP 4 H — M1Ø3 D25 → F1 CLC IOP 4 L, E1 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
→ M1Ø3 D25 → V2 CLC IOT SELECT H
U2
V1 M113 D29

CLC IOP 1 H
PRE MB Ø9 (1)H
PRF MB 1Ø (Ø)H
→ M115 C27 → S2 CLC EN STATUS TO AC L

CLC IOP 4 H
PRF MB 1Ø (Ø)H
PRF MB 11 (1)H
→ M115 D23 → V1 CLC CLR STATUS L

CLC IOP 1 H
PRE MB Ø9 (Ø)H
PRF MB 1Ø (Ø)H
→ MG17 D17 → E1 CLC CLR BUF L

CLC IOP 4 H
PRF MB 1Ø (Ø)H
PRF MB 11 (Ø)H
→ M115 D23 → N1
→ MG17 D17 → L1 CLC LD CTRL 2 H

CLC IOP 2 H
PRE MB Ø9 (Ø)H
PRF MB 11 (1)H
→ M115 D23 → U1
→ MG17 D17 → S1 CLC AC TO BUF H

CLC IOP 4 H
PRF MB 1Ø (1)H
→ M113 D24 → F2
→ MG17 D17 → J2 CLC BUF TO AC H

IOC IO PRESET L → MT19 F2Ø → E1 CLC CLOCK PRESET H
+3 D29U1 H
→ MG17 D17 → P2 CLC CLOCK PRESET L

PRE MB Ø9 (1)H
CLC IOP 2 H
→ M113 D24 → S2
→ D1 CLC IO SYNC M216 F19 (C1 ← CLC IOP 4 H (B1), C Ø → A1 CLC CLOCK PRESET L, F1 → E1)

CLC IOP 2 H
PRE MB Ø9 (Ø)H
PRF MB 11 (Ø)H
→ M115 D23 → H2
→ PA M3Ø4 D28 (D1, D2) → F1 CLC LD CTRL 1 H, H1 CLC LD CTRL 1 L
B1 +5V D28 H

CLC IOP 4 H
PRF MB 1Ø (1)H
PRF MB 11 (1)H
→ M115 D23 → M2
CLEA CNT TO BUF L
CLEB CNT TO BUF L
CLEC CNT TO BUF L
→ MG17 D17 → V2 CLC CNT TO BUF H

- CLC SYNC STROBE 2 H
P1, R1 → M113 D24 → S1
D2, D1 → PA M3Ø4 D27 → F1, H1
CLC CLOCK PRESET L → L1, M1 → M113 D29 → N1
N1 → E2 → M719 F2Ø → D2 → D1 → M719 F21 → E1 CLC SYNC STROBE 1 H
B1
M719 F2Ø U1 — 18K — +5V
B2

CLC SYNC STROBE 1 L
CLR MODE 2 (1)H
M2 → M113 D24 → N2
S1, S2 → PA M3Ø4 D27 → L1 CLC CLR CNT H, M1 CLC CLR CNT L
L2 +5V D27 H

CLC SYNC STROBE 2 L
CLR MODE 1 (1)L
→ M719 F2Ø → T2 CLC STROBE EVENTS H

E1, E2 → PA M3Ø4 D27 → J1 CLC SYNC STROBE 2 H, K1 CLC SYNC STROBE 2 L
K2 +5V D27 H

REVISIONS	REV.	CHK	CHANGE NO.		
	A		00001	L. GALE	11-4-68
	B		EM12-00017	T. Gaulke	11-5-68
	C		EM12-00019	L. GALE	11-14-68
	D	FV	EM12-00041	D. MACKLIN	12-27-68

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 1-28-69
CHK'D — DATE 2/7/69
ENG. — DATE 2/28/69
PROJ. ENG. — DATE 2/28/69
PROD. — DATE 3/5/69
FIRST USED ON KW12
SCALE
SHEET / OF /

digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS

TITLE
CLC
CLOCK IO CONTROL

SIZE D | CODE BS | NUMBER KW12-Ø-CLC | REV D
DIST.

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M5Ø3 F23

G783 F25

F2 — HQ GND
E2 — +15 HQ
A2 — +5
D2 — -15 HQ

CLEA EN INPUT 1 (1)H

CLC LD CTRL 1 H — F2
CLC STROBE EVENTS H — K2
PRD AC Ø7 (1)H — H2
CLEA PRE EVENT 1 (Ø)H
CLEA EVENT 1 (1)H
CLEA STROBE EVENT 1 L — L2

CLR RATE Ø (Ø)L — H1
CLR RATE 1 (Ø)L — J1
M1Ø3 D25 — K1 — -CLEA EXT RATE H — N1

E2 M111 D21 F2 — L1 M1 M1Ø3 D25 — N1 — CLEA CNT TO BUF L

CLEA INPUT 1 — R1
CLEA PRE EVENT 1 (1)H
CLEA PRE EVENT 1 (Ø)H — R2
CLEA EVENT 3 — M1

CLC SYNC STROBE 1 H — J2
CLC CLR STATUS L — S1
PRD AC Ø6 (1)H — K1
CLC LD CTRL 2 H — J1
CLC CLOCK PRESET H — P1

CLEA EN INPUT 1 (1)H
CLEA EN INPUT 1 (Ø)H — L1
CLEA EN EV 1 INT (1)H — V2
CLEA EN EV 1 INT (Ø)H

U2 CLEA INT REQ L

M719 F2Ø

REVISIONS	CHANGE NO.	REV.
CHK	00001	A
	00002	B
	EM12-00015	C
	EM12-00030	D

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

FIRST USED ON KW12

		DATE
DRN.		2-1-69
CHK'D		2/7/69
ENG.		2/20/69
PROD. ENG.		2/20/69
PROD.		2/26/69

digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS

TITLE: CLEA INPUT CHAN 1

SIZE D | CODE BS | NUMBER KW12-Ø-CLEA | REV. D | DIST.

SCALE

SHEET 1 OF 1

DEC FORM NO. DRD 102A

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G783 F25

H1 E1 M1 — K1 K2 — ST — R2 L2 — U2 PA R1 V2

M5Ø3 F23

D2 — +15V HQ
A2 — +5
E2 — -15V HQ
F2 — HQ GND

CLC LD CTRL 1 H — F2
CLC STROBE EVENTS H — K2
PRE AC Ø9 (1)H — H2
CLEB PRE EVENT 2 (Ø)H
CLEB EVENT 2 (1)H
CLC SYNC STROBE 1 H — J2
CLC CLR STATUS L — S1
PRE AC Ø8 (1)H — K1
CLC LD CTRL 2 H — J1
CLC CLOCK PRESET H — P1

F1

L2 CLEB CNT TO BUF L

CLEA EN INPUT 2 (1)H

+3V D24V1 H — N1

D 1 CLEB INPUT 2 C Ø R1

D 1 CLEB PRE EVENT 2 (1)H
C Ø R2 CLEB PRE EVENT 2 (Ø)H

D 1 CLEB EVENT 2 C Ø M1

U2 CLEB INT REQ L

D 1 CLEB EN INPUT 2 (1)H
C Ø L1 CLEB EN INPUT 2 (Ø)H

D 1 V2 CLEA EN EV 2 INT (1)H
C Ø CLEA EN EV 2 INT (Ø)H

M719 F21

REVISIONS	REV	CHANGE NO.	CHK
	A	C0001	
	B	00002	
	C	EM12-00015	

L GALE 4/24/69
L GALE 11/26/68
L GALE 10/1/68

DEC FORM NO. DRD 102 A

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 1-31-69
CHK'D.		DATE 2/27/69
ENG.		DATE 2/28/69
PROJ. ENG.		DATE 2/28/69
PROD.		DATE 4/2/69

FIRST USED ON KW12

digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS

TITLE
CLEB
INPUT CHAN 2

SIZE	CODE	NUMBER	REV
D	BS	KW12-Ø-CLEB	C

SCALE
SHEET 1 OF 1
DIST.

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G783 F25

K1 J1 N1 C1 D1 — H1 H2 J2 D1 +6.2V E1 -6.2V — ST — P2 S2 — FA — S1 T2

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 (Φ)H
CLEC EVENT 3 (1)H
CLC SYNC STROBE 1 H J2
CLC CLR STATUS L S1
PRF AC 1Φ (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

CLEC INPUT 3 — D 1, C Φ, R1
CLEC PRE EVENT 3 (1)H
CLEC PRE EVENT 3 (Φ)H R2

+3V 024V1 H N1

CLEC EVENT 3 — D 1, C Φ, M1

U2 CLEC INT REQ L

CLEC EN INPUT 3 (1)H
CLEC EN INPUT 3 (Φ)H L1

CLEC EN EV 3 INT (1)H V2
CLEC EN EV 3 INT (Φ)H

M719 F22

REVISIONS	REV.	CHK.	CHANGE NO.
L. GALE 4/24/69	A	CHB	00001
L. GALE 6/18/69	B	CHB	00002
L. GALE 10/10/69	C	CHB	EM12-00015

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 Hanna	2-1-69
CHK'D	Hanlon	2/7/69
ENG.	Y. L.	2/28/69
PROJ. ENG.	Y. L.	2/28/69
PROD.	W. Call	2/28/69

FIRST USED ON KW12

SCALE

SHEET / OF /

digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS

TITLE
CLEC
INPUT CHAN 3

SIZE	CODE	NUMBER	REV.
D	B5	KW12-Φ-CLEC	C

DIST.

SIZE D CODE B5 NUMBER KW12-Φ-CLEC REV C

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CLC EN STATUS TO AC L — C1
CLR OVERFLOW (1) L — A1
M623 D26 — D1 — INT IO BUS ØØ L

CLEA EVENT 1 (1) L — B1
M623 D26 — E1 — INT IO BUS Ø6 L

CLEA PRE EVENT 1 (1) L — J1, F1
M623 D26 — K1 — INT IO BUS Ø7 L

CLEB EVENT 2 (1) L — H1
M623 — L1 — INT IO BUS Ø8 L

CLEB PRE EVENT 2 (1) L — P1, M1
M623 D26 — R1 — INT IO BUS Ø9 L

CLEC EVENT 3 (1) L — N1
M623 D26 — S1 — INT IO BUS 1Ø L

CLEC PRE EVENT 3 (1) L — F2, D2
M623 D26 — H2 — INT IO BUS 11 L

M623 D26 — J2 — E2

+3V D22U1 H — F2
PRF AC Ø5 (1) H — E2
CLC LD CONTROL 2 H — D2
M216 F19 (D, C, 1, Ø)
CLIO EN OVF INT (1) H — H2
CLIO EN OVF INT (Ø) H — J2
CLC CLOCK PRESET L — A1

CLC IOP 2 H — L1
PRE MB Ø9 (1) H — M1
M113 D24 — N1
M623 D26 (M2, K2) — N2 — INT AC CLR BUS L
M623 D26 (L2) — P2

CLEA INT REQ L — A1
CLEB INT REQ L — B1
CLEC INT REQ L — C1
M115 C27 — D1
P2, N2
M719 F2Ø — M2
R2, T2
MG23 D26 — U2 — INT INT RQST BUS L
MG23 D26 — V2 — INT SKIP BUS L
S2

CLIO EN OVF INT (1) H — H1
CLR OVERFLOW (1) H — J1
M113 D24 — K1 — E2
M719 F22 — D2

CLC IOP 1 H — N2
PRE MB Ø9 (Ø) H — P2
PRF MB 1Ø (Ø) H — R2
M115 D23 — S2

REVISIONS		
CHK	CHANGE NO.	REV.
	00002	A

T. QUILLIN
L. GALE
Ø 6/18/69

DEC FORM NO. DPD 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. [signature] DATE 1-24-69
CHK. [signature] DATE 2/27/69
ENG. [signature] DATE 2/28/69
PROJ. ENG. [signature] DATE 2/28/69
PROD. [signature] DATE 2/28/69
FIRST USED ON KW12
SCALE
SHEET 1 OF 1

digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS

TITLE
CLIO
CLOCK IO INPUT

SIZE	CODE	NUMBER	REV.
D	85	KW12-Ø-CLIO	A

DIST.

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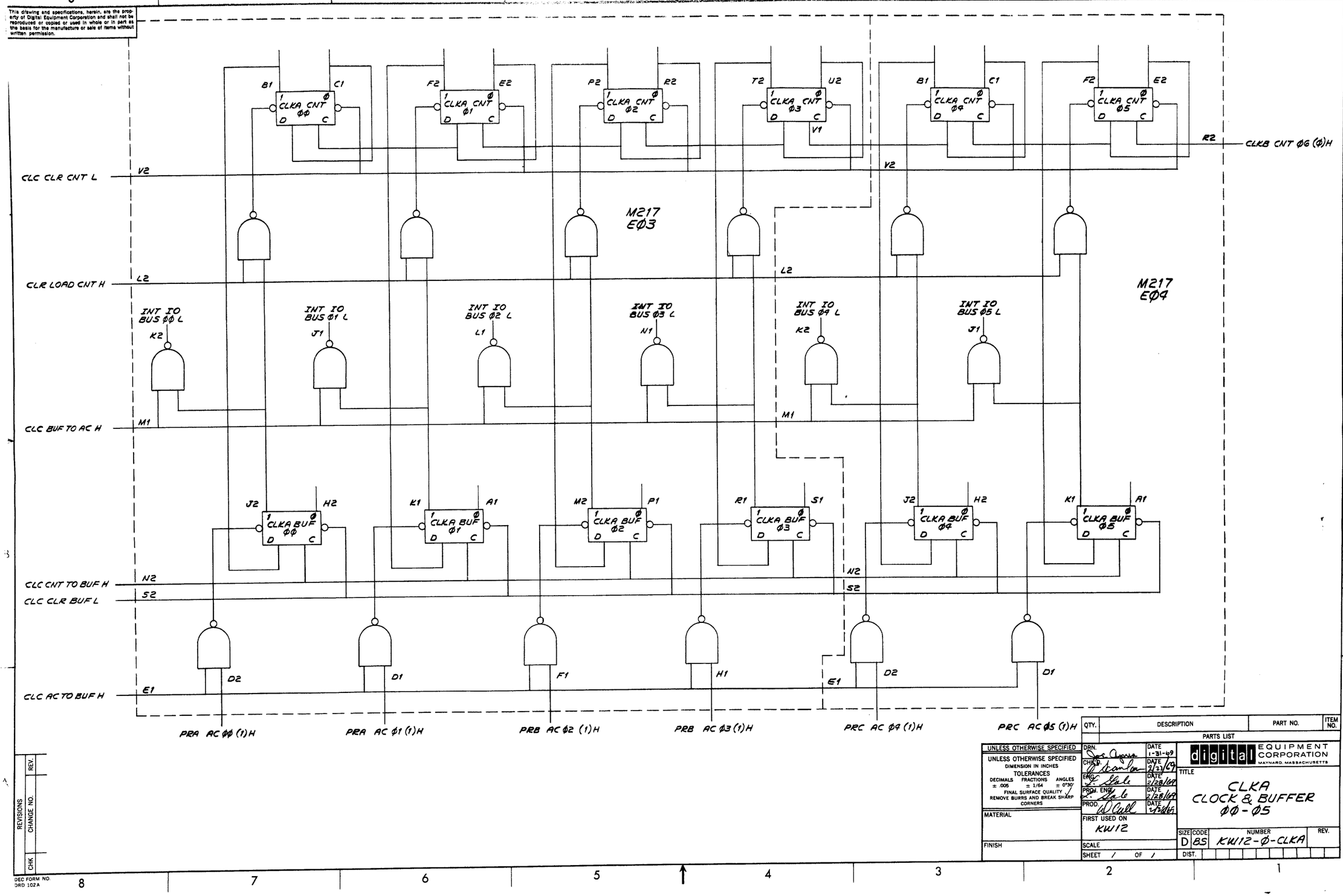

QTY.	DESCRIPTION	PART NO.	ITEM NO.

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 1-31-69
CHK'D		DATE 2/23/69
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
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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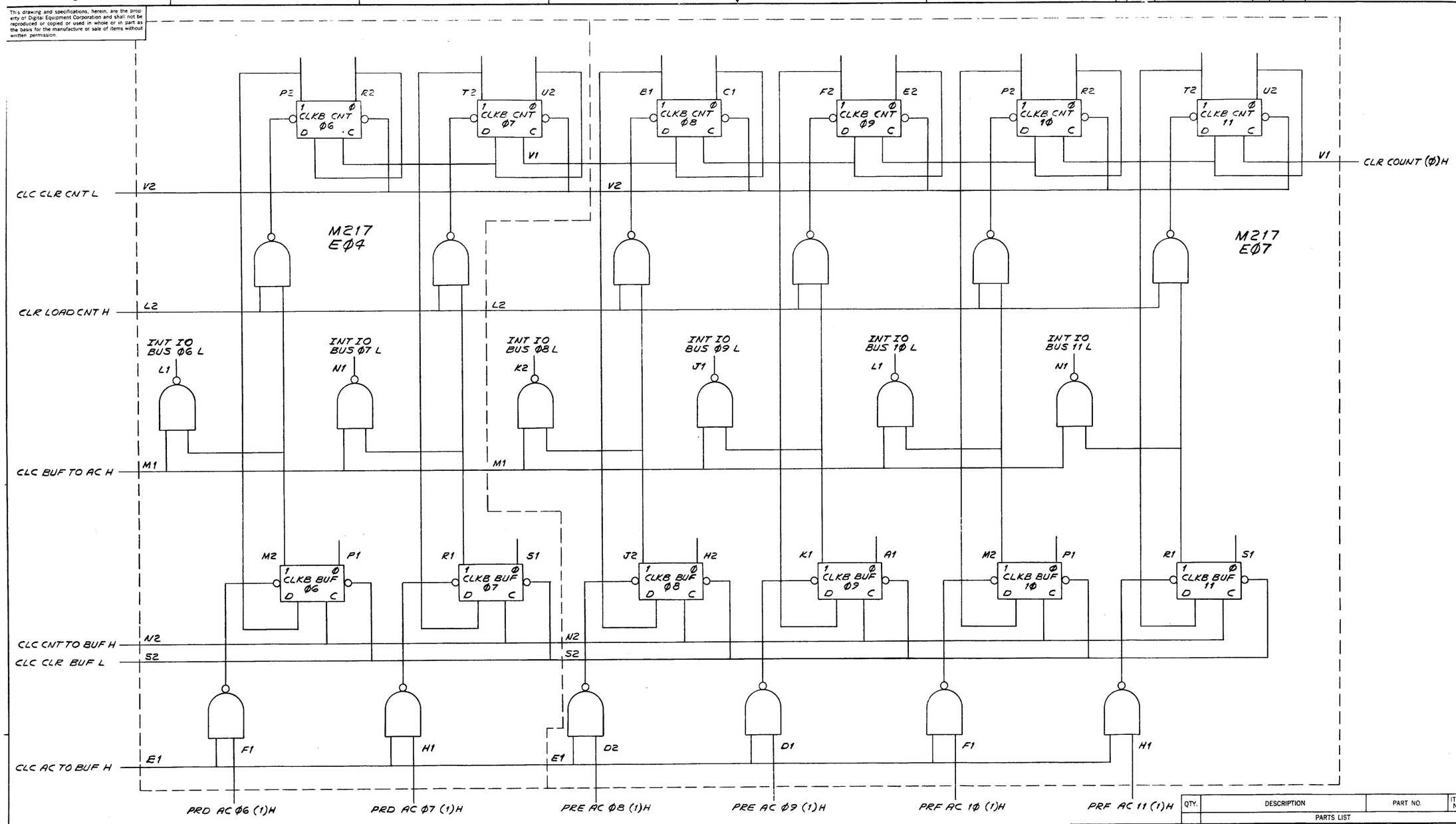

QTY.	DESCRIPTION	PART NO.	ITEM NO.

PARTS LIST

REVISIONS	REV.	CHANGE NO.	CHK

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 1-31-69
CHK'D.	Jim Scanlon	DATE 2/27/69
ENG.	Jim Cole	DATE 2/28/69
PROJ. ENG.	Jim Cole	DATE 2/28/69
PROD.	Al Cole	DATE 2/28/69

digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS

TITLE
CLKB
CLOCK & BUFFER
Ø6-11

FIRST USED ON KW12

SCALE

SHEET / OF /

SIZE	CODE	NUMBER	REV.
D	85	KW12-Ø-CLKB	

DIST.

DEC FORM NO DRD 102A

KW12-Ø-CLKB D 85 3000

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+3V D22V1 H

PRA AC ØØ (1)H — CLR RATE Ø M216 E09 — CLC LD CTRL 1 H — CLC CLOCK PRESET L

PRA AC Ø1 (1)H — CLR RATE 1 M216 E09

PRB AC Ø2 (1)H — CLR RATE 2 M216 E09

PRB AC Ø3 (1)H — CLR MODE Ø M216 E09

PRC AC Ø4 (1)H — CLR MODE 1 M216 E09

PRC AC Ø5 (1)H — CLR MODE 2 M216 E09

M117 D22 — +3V D22U1 H

M117 D22 — +3V D22V1 H

CLR RATE Ø (Ø)H
CLR RATE 1 (Ø)H
CLR RATE 2 (1)H
-CLTB ØØØK HERTZ H
→ M117 D22 → E1

CLR RATE Ø (Ø)H
CLR RATE 1 (1)H
CLR RATE 2 (Ø)H
- CLTB 1ØØK HERTZ (Ø)H
→ M117 D22 → L1

CLR RATE Ø (Ø)H
CLR RATE 1 (1)H
CLR RATE 2 (1)H
-CLTB ØK HERTZ H
→ M117 D22 → S1

CLR RATE Ø (1)H
CLR RATE 1 (Ø)H
CLR RATE 2 (Ø)H
-CLTB 1K HERTZ H
→ M117 D22 → J2

CLR RATE Ø (1)H
CLR RATE 1 (Ø)H
CLR RATE 2 (1)H
-CLTB 1ØØ HERTZ H
→ M117 D22 → P2

CLR RATE Ø (1)H
CLR RATE 1 (1)H
CLR RATE 2 (Ø)H
CLEA PRE EVENT 1 (Ø)H
→ M117 D22 → V2

E1, L1, S1, J2 → M115 D23 → D1

P2, N2 → M719 F22 → M2

FRA AC ØØ (1)H → M111 D21 → L2

P2, N2 → M719 F21 → M2

CLC CLR STATUS L

+3V D22U1 H → K2

M2, L2 → M216 F19 → R2 CLR OVERFLOW (1)H, P2 CLR OVERFLOW (Ø)H, N2

CLKA CNT ØØ (Ø)H

S2, V1 → M719 F21 → T2

CLC CLOCK PRESET H

CLC CLOCK PRESET L → A1

J1, H1 → CLR COUNT M216 F19 → M1, L1, K1

CLC SYNC STROBE 1 H → D1 → M113 D24 → E1 → F1

D1 → M719 F22 → E1 → B2 → M719 F22

CLKA CNT ØØ (Ø)H → U2 → PA MS03 F24 → R1, V2

R1, R2 → PA M309 D27 → P1 CLR EXT A-D START H A1, N1, V1

CLC LD CTRL 2 H → H2

PRC AC Ø4 (1) H → J2

M113 D24 → K2

CLR MODE 1 (Ø) H → B1

C1, S2 → M719 F22 → V1

CLR MODE 2 (1)L → M2, T2, L2

M623 D26 → P2 → M117 D17 U1 → CLR LOAD CNT H

REVISIONS			
CHK	CHANGE NO.	REV.	
DHB	00001	A	L GALE 1/24/68
DHB	EM12-00003	B	L GALE 7/16/68
DHB	EM12-00009	C	L GALE 8/26/68
DHB	EM12-00034	D	T Quible 3-19-70
			GALE 3/13/70

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.	Jos Amea	DATE 1-24-69
CHKD	G Gaulan	DATE 2/27/69
ENG.		DATE 6/25/69
PROJ. ENG.		DATE 6/25/69
PROD.	M Call	DATE 7/1/69

FIRST USED ON KW12

digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS

TITLE: CLR CLOCK RATE

SIZE	CODE	NUMBER	REV.
D	BS	KW12-Ø-CLR	D

SCALE

SHEET 1 OF 1

DIST.

DEC FORM NO. DRD 102A

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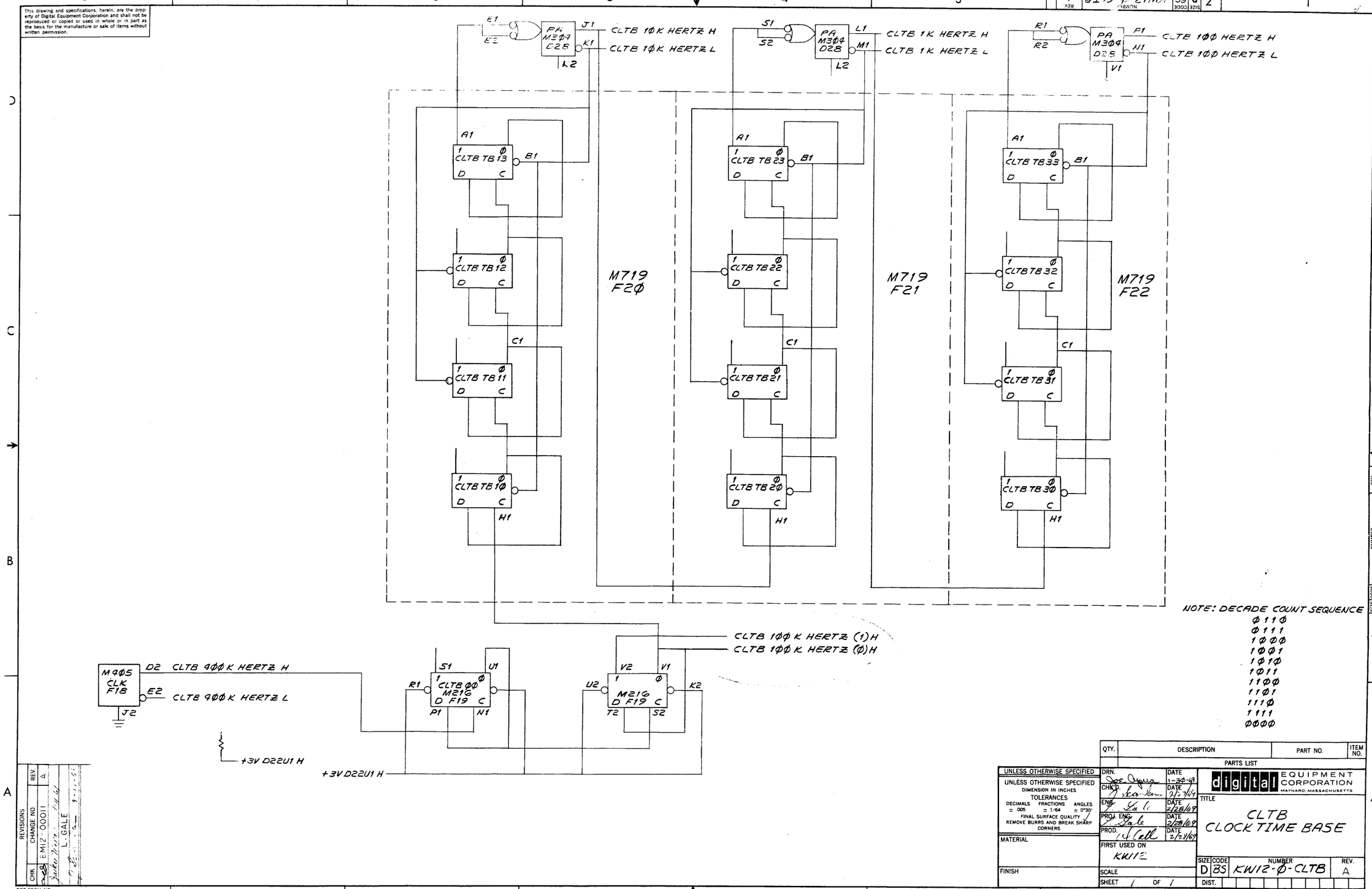

NOTE: DECADE COUNT SEQUENCE

Ø 11Ø
Ø 111
1 ØØØ
1 ØØ1
1 Ø1Ø
1 Ø11
11ØØ
11Ø1
111Ø
1111
ØØØØ

REVISIONS			
REV	CHANGE NO		CHK
A	EM12-0001	L. GALE 9-15-69	

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 1-30-69
CHKD. DATE 2/7/69
ENG. DATE 2/28/69
PROJ. ENG. DATE 2/28/69
PROD. DATE 2/21/69
FIRST USED ON KW11E
SCALE
SHEET 1 OF 1

digital EQUIPMENT CORPORATION
MAYNARD, MASSACHUSETTS

TITLE
CLTB
CLOCK TIME BASE

SIZE	CODE	NUMBER	REV.
D	BS	KW12-Ø-CLTB	A

DIST.

DEC FORM NO. ORD 102 A

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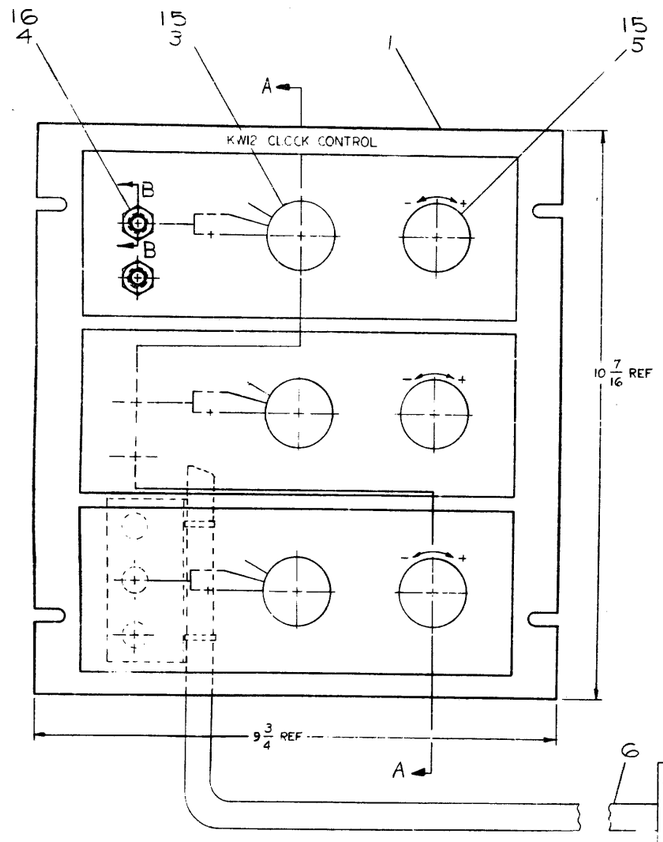
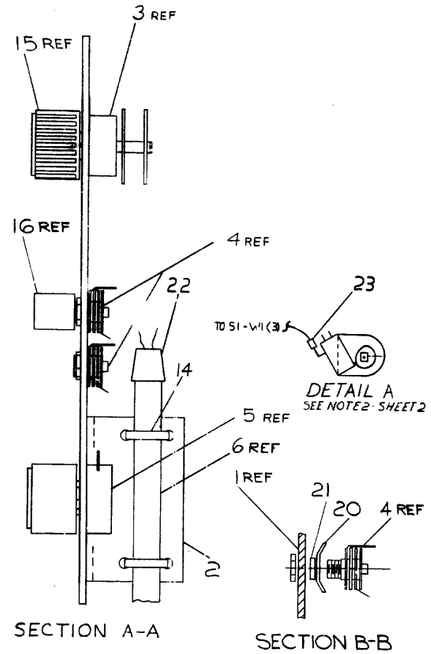
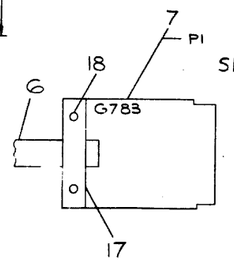
NOTES
1. TWIST DRAIN WIRES OF PAIR #2,5, AND 6 TOGETHER AND SOLDER TO GND LUG.







REVISIONS					
CHK	CHANGE NO	REV			
[illegible]	EM12-00013	A			
[illegible]	EM12-00018	B			
[illegible]	EM12-00020	C			

DEC PUBS NO
DEC SW

FIRST USED ON OPTION/MODEL: KW12

UNLESS OTHERWISE SPECIFIED
DIMENSIONS IN INCHES
TOLERANCES
DECIMALS ± .005 FRACTIONS ± 1/64 ANGLES ± 1°
FINAL SURFACE QUALITY 63
REMOVE BURRS AND BREAK SHARP CORNERS

MATERIAL

FINISH

QTY.	DESCRIPTION	PART NO.	ITEM NO.

PARTS LIST

ORIG	QUADROS	DATE 12-30-68
CHKD	[illegible]	DATE 2/11/69
ENG	[illegible]	DATE 2/26/69
PROJ ENG	[illegible]	DATE 3/11/69
MOD	[illegible]	DATE 3/11/69

NEXT HIGHER ASSY: A-ML-KW12-0
SCALE: NONE
SHEET 1 OF 2

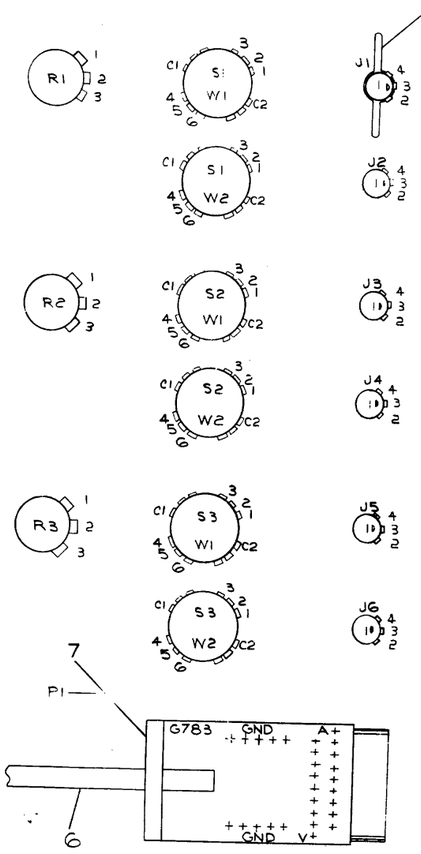
EQUIPMENT CORPORATION
MAYNARD MASSACHUSETTS

TITLE: (KW12) CLOCK CONTROL PANEL

SIZE D | CODE | NUMBER: AD7006335-0-0 | REV

DIST. E

PART CODE D | NUMBER: AD7006335-0-0 | REV C



WIRING DIAGRAM
VIEW FROM REAR OF PANEL

WIRE TABLE

ITEM NO	AWG	COLOR	CONNECTIONS FROM	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(G)		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(G)		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(G)		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
		DRAIN	P1-GND	GND TAB		SYS GND
		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(5)	S3-W2(1)		+6.2V
			S3-W2(1)	S3-W2(5)		+6.2V
			S1-W1(1)	R1-1		+6.2V
			R1-1	R1-3		VCLK1
			R2-1	R2-3		+6.2V
8		BLK	R3-1	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	
9		RED	S1-W1(3)	S2-W1(3)		
			S2-W1(3)	S3-W1(3)		
10		BRN	S1-W1(6)	J1-1		CLK1HQGND
			J1-1	J2-1		CLK1HQGND
			S2-W1(6)	J3-1		CLK2HQGND
			J3-1	J4-1		CLK2HQGND
			S3-W1(6)	J5-1		CLK3HQGND
			J5-1	J6-1		CLK3HQGND
			J1-2(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
12		GRN	S2-W1(2)	S2-W1(4)		+CLK2
13		GRN	S2-W1(2)	J3-3		+CLK2
13		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(1)		-6.2V
19	22	YEL	R2-3	S2-W2(2)		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	AWG	COLOR	CONNECTIONS FROM	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

NEXT HIGHER ASSY

DRN
CHK'D D. Wass 8-2-67
ENG Gale 8/16/67
MGR ENG Gale 8/16/67
PROD A.D.Call 8/16/67

digital EQUIPMENT CORPORATION
MAYNARD MASSACHUSETTS

TITLE: KW12 CLOCK CONTROL PANEL

SIZE D | CODE AD | NUMBER 7005335-0-0 | REV C

SCALE NONE
SHEET 2 OF 2
DIST.

REVISIONS | REV. | CHANGE NO | CHK.

DEC FORM NO DRD 100

DIGITAL EQUIPMENT CORPORATION
MAYNARD, MASSACHUSETTS

PARTS LIST

MADE BY FRANK E. SOUSA	CHECKED K. RUSS	SECTION 1
DATE 7/15/69	DATE 7/16/69	
ENG DATE L. Gale 8/11/69	PROD DATE W Cahill 8/18/69	ISSUED SECT. 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	KM12-00020
	SHEET 1 OF 2	DIST.				

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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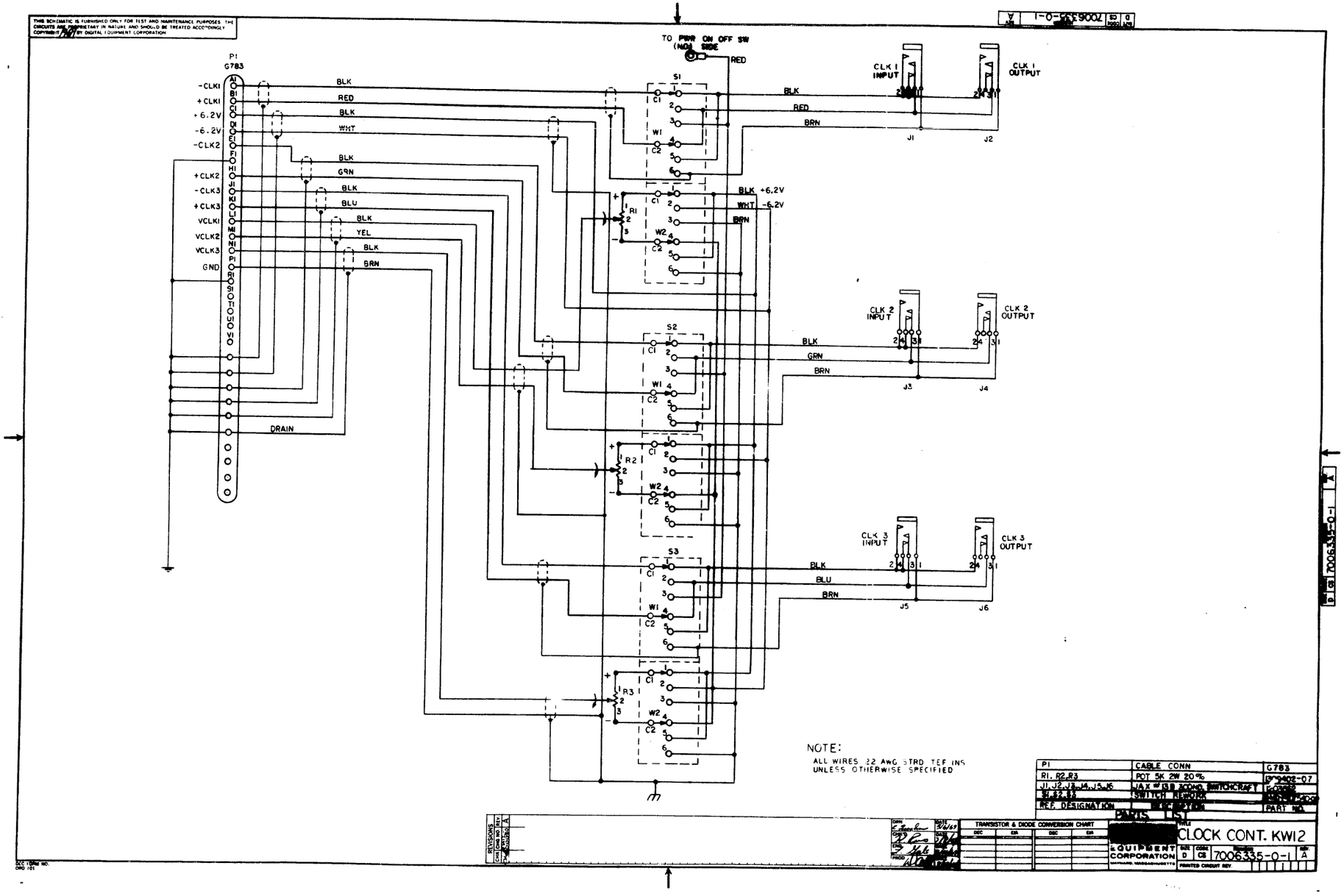

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DIGITAL EQUIPMENT CORPORATION
MAYNARD, MASSACHUSETTS

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	

DEC FORM NO. DRA 107

ENGINEERING SPECIFICATION digital CONTINUATION SHEET

TITLE KW-12 Real Time Clock

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	

DEC FORM NO DRA 108

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:

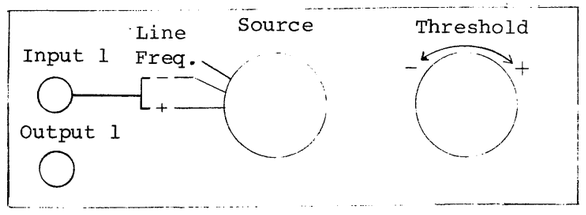
1) Channel 1

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	

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)
101) When M0 is a (1) the occurrence of overflow is used to trigger the A/D Converter if A-D Control also has FAST-SAMPLE flip-flop set. The remaining two mode control bits are decoded exactly as above. *
110)
111)

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

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	digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS
CHK'D.	DATE 3/5/70	
ENG.	DATE 3/5/70	TITLE SIMPLE CLOCK
PROJ. ENG.	DATE 3/9/70	
PROD.	DATE 3/9/70	
FIRST USED ON A-ML-PDP12-Ø		SIZE A · CODE ML · NUMBER KW12-B · REV. C
SCALE		
SHEET \ OF \		DIST.

DEC FORM NO.16-1033
DRA 103

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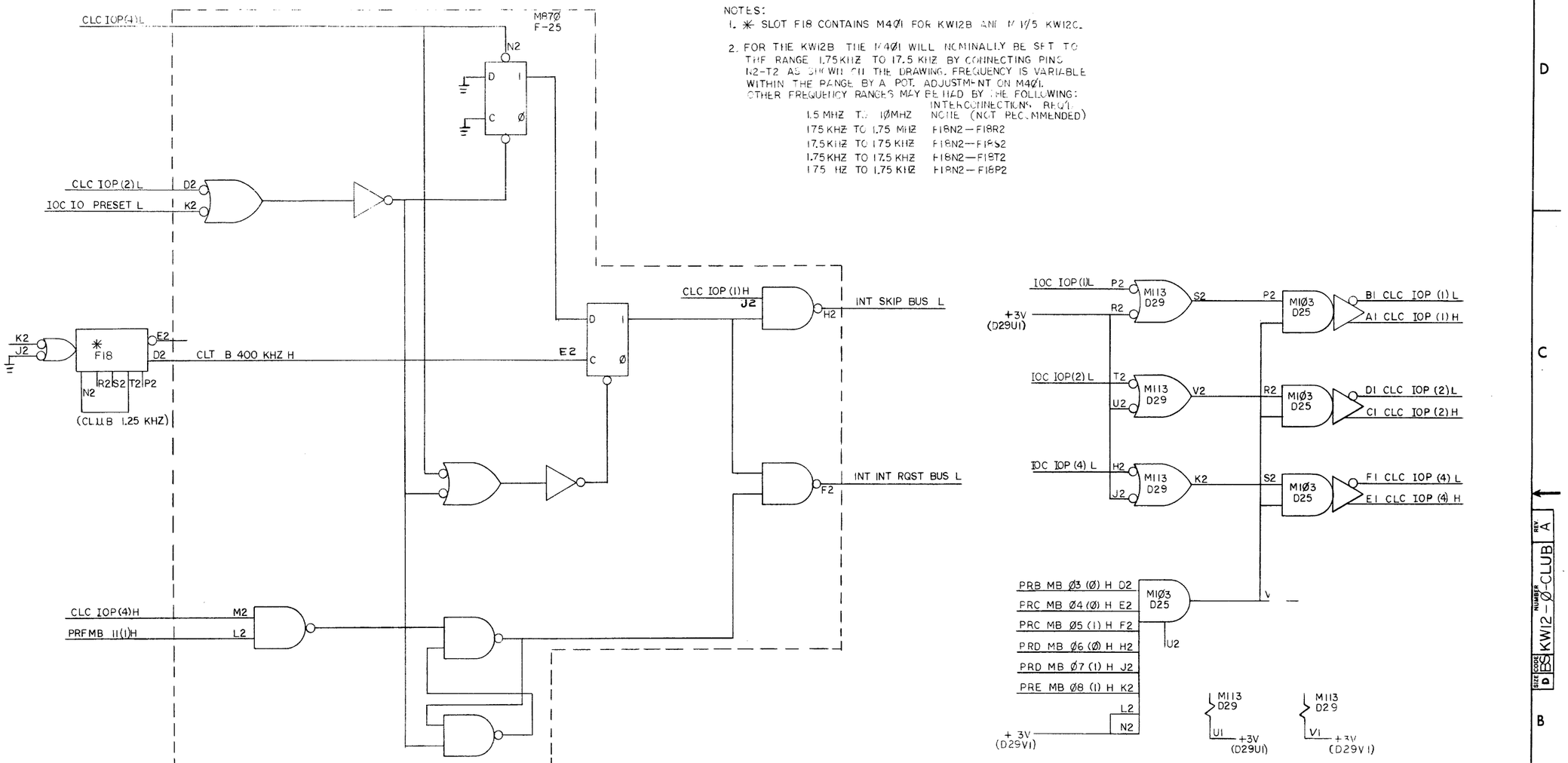
NOTES:
1. ✳ SLOT F18 CONTAINS M4Ø1 FOR KW12B AND M 1Ø/5 KW12C.
2. FOR THE KW12B THE M4Ø1 WILL NOMINALLY BE SET TO THE RANGE 1.75KHZ TO 17.5 KHZ BY CONNECTING PINS N2-T2 AS SHOWN ON THE DRAWING. FREQUENCY IS VARIABLE WITHIN THE RANGE BY A POT. ADJUSTMENT ON M4Ø1. OTHER FREQUENCY RANGES MAY BE HAD BY THE 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	DM3442	10/30/70		

FIRST USED ON OPTION/MODEL: KW12	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.	J. Fontaine	DATE 7/28/70
CHK'D.	[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

REV A
SIZE CODE D BS NUMBER KW12—Ø—CLUB

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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.

DEC FORM NO 16-1033
DRA 103

DRN.		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-PDP12-0	
SCALE		
SHEET	OF	

digital EQUIPMENT CORPORATION
MAYNARD, MASSACHUSETTS

TITLE
SIMPLE CLOCK

SIZE	CODE	NUMBER	REV
A	ML	KW12-C	C

DIST.

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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	A	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
CHK'D.		DATE	3/10/69
ENG.		DATE	3/10/69
PROJ. ENG.		DATE	3/10/69
PROD.		DATE	3/10/69
FIRST USED ON	PDP-12		
SCALE			
SHEET	OF		

digital EQUIPMENT CORPORATION
MAYNARD, MASSACHUSETTS

TITLE: 8 TAPE CONTROL

SIZE	CODE	NUMBER	REV.
A	ML	TC12-F	

DIST.

DEC FORM NO. DRA 103

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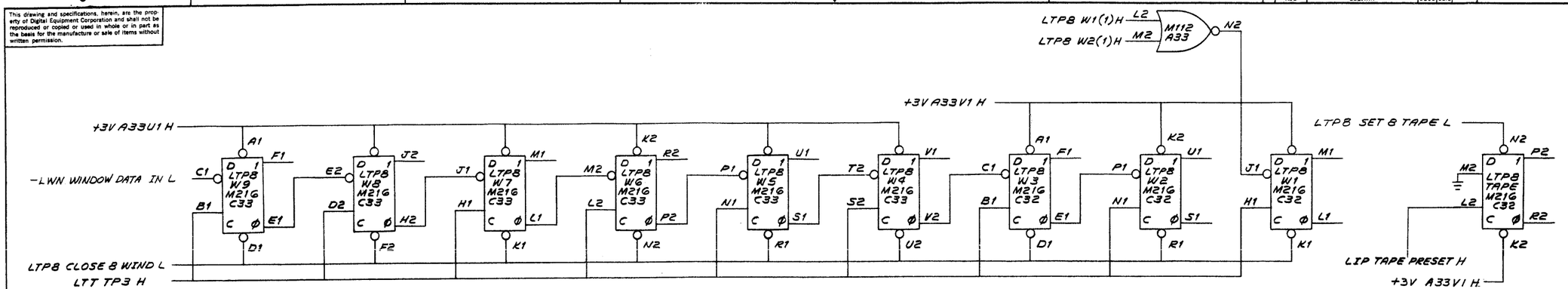

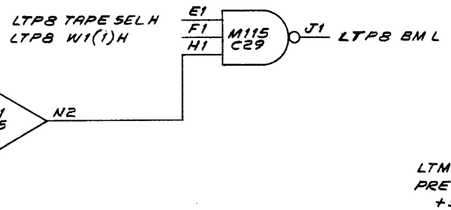

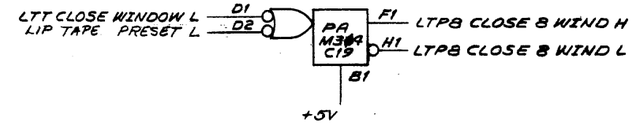

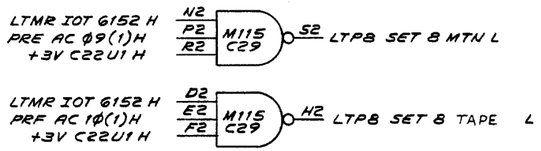

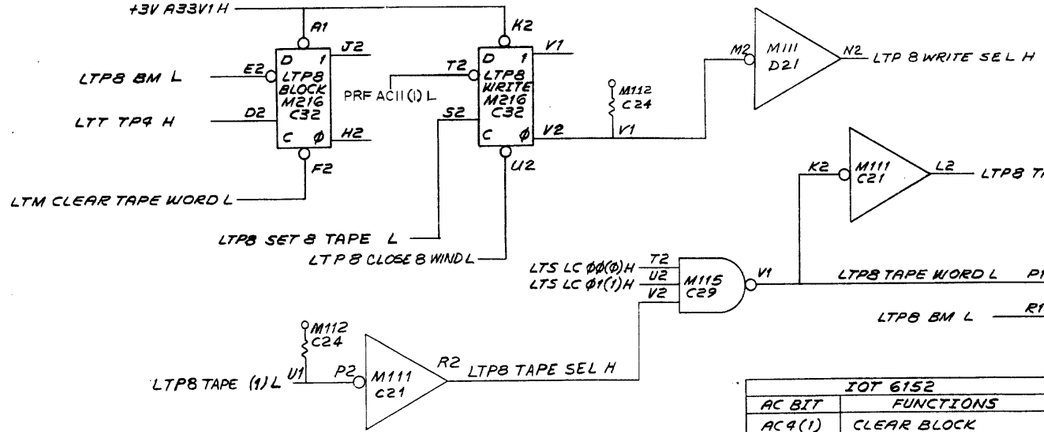

IOT 6152	
AC BIT	FUNCTIONS
AC 9(1)	CLEAR BLOCK
AC 5(1)	SET BACKWARD
AC 6(1)	SELECT UNIT 1
AC 7(1)	SET FORWARD
AC 9(1)	SET 8 MOTION & FORWARD IF MOTION= Ø
AC 1Ø(1)	SEL 8 TAPE AND AC 11→WRITE
SKL 14 = SKIP ON 8 BLOCK	
SKL 17 = SKIP ON 8 WORD	
TAPE PRESET = Ø→WRITE	
Ø→MOTION	
DESELECT 8 TAPE	

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. DATE 1-29-69
CHKD. DATE 2/7/69
ENG. DATE 2-28-69
PROJ. ENG. DATE 2-28-69
PROD. 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

W Ø23 E35
F2 BLK
H2 BLK
J2 BLK
K2 BLK
L2 ORG
D2 RED
E2 BLU
M2 GRN
12-03185-2
120 VAC (47-420 CPS)

-7V -15V J2 H2 +7V +15V
F1 R1 GRD
D2 +15V REG
E2 -15V REG
F2 HQ GRD

V2
A2 +5V
B2 -15V
C2 GRD
D2 +15V REG
E2 -15V REG
F2 HQ GND

YADC IR 11 (1) H
YADC IR 1Ø (1) H
YADC IR 11 (Ø) H
YADC IR 11 (1) H
C1 YADC IR 1Ø (Ø) H
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

U1
D33 MULTIPLEX A131
H1 YADC N EQ ØØ L
YAD MPX RTN H

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
CH2
YADC START H
DU2
+15V REG
CV2
-15V REG
DN2
HQ GRD
CA2
+5V
29 CE2 YAD AD 2 (1) H
28 CD2 YAD AD 3 (1) H
27 CN2 YAD AD 4 (1) H
26 CM2 YAD AD 5 (1) H
25 DL2 YAD AD 6 (1) H
24 DR2 YAD AD 7 (1) H
23 DK2 YAD AD 8 (1) H
22 DP2 YAD AD 9 (1) H
21 DS2 YAD AD 1Ø (1) H
20 DT2 YAD AD 11 (1) H
DM2
YAD DONE H

REVISIONS	CHK	CHANGE NO.	REV.
	DRS	00001	A
		EM12-00008	B
	DRS	12-00076	C

L. GALE 4/24/68
L. GALE 8-15-69
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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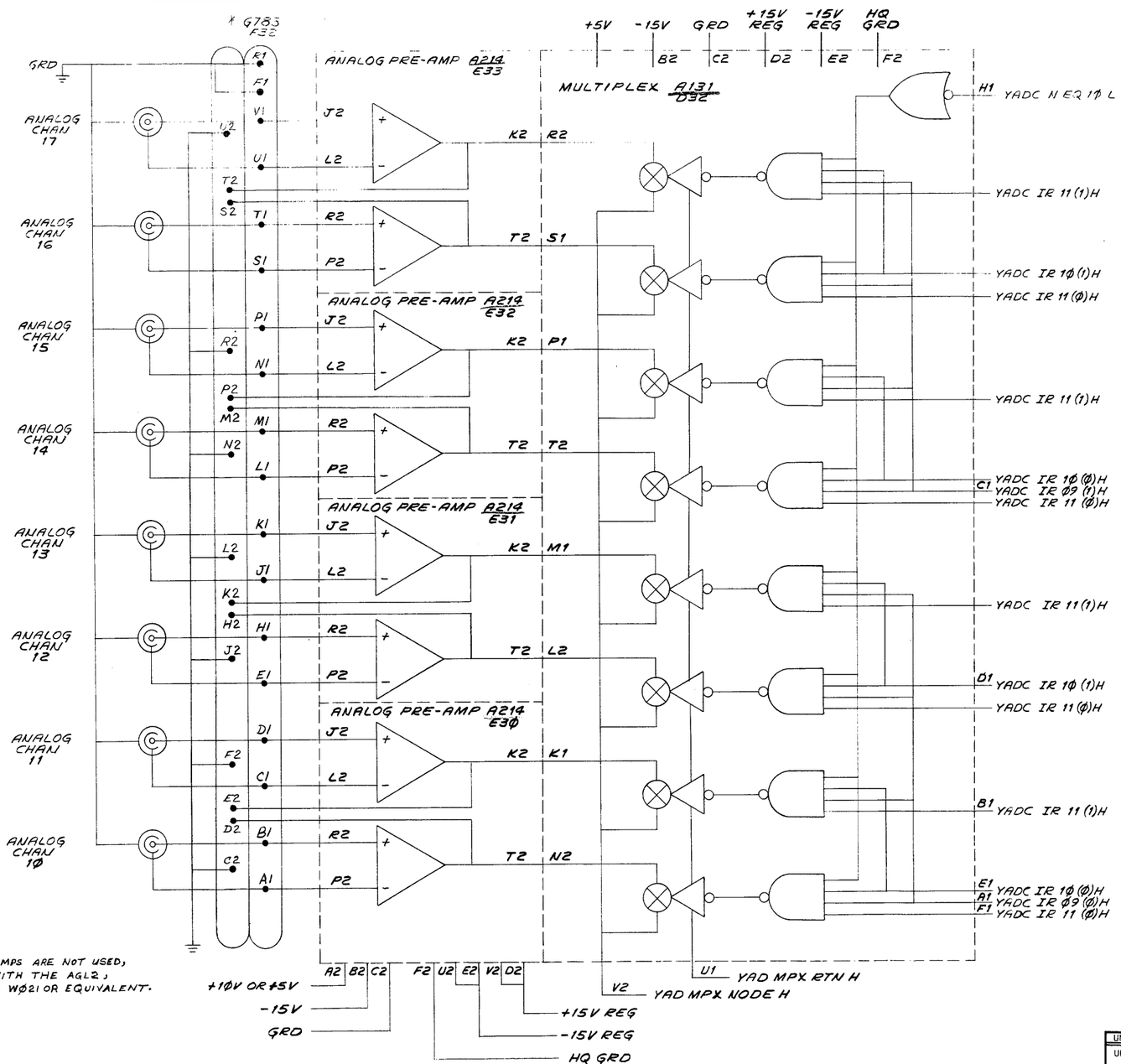

* WHEN PREAMPS ARE NOT USED, SUCH AS WITH THE AGL2, CABLE IS A W021 OR EQUIVALENT.

REVISIONS			
REV.	CHANGE NO.	CHK	
A	00002	Fmb	T. QUILLIN 6/18/68
			I. GALE 6/18/68

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 1-4-69
CHK'D		DATE 2/27/69
ENG.		DATE 3/26/69
PROJ. ENG.		DATE 3/11/69
PROG.		DATE 3/6/69

digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS

TITLE: YAD A CHAN 1Ø-17

FIRST USED ON: AD12

SCALE

SHEET / OF /

SIZE	CODE	NUMBER	REV.
D	BS	AD12-Ø-YADA	A

DIST.

DEC FORM NO. DRD 102A

SIZE D CODE BS NUMBER AD12-Ø-YADA REV. A

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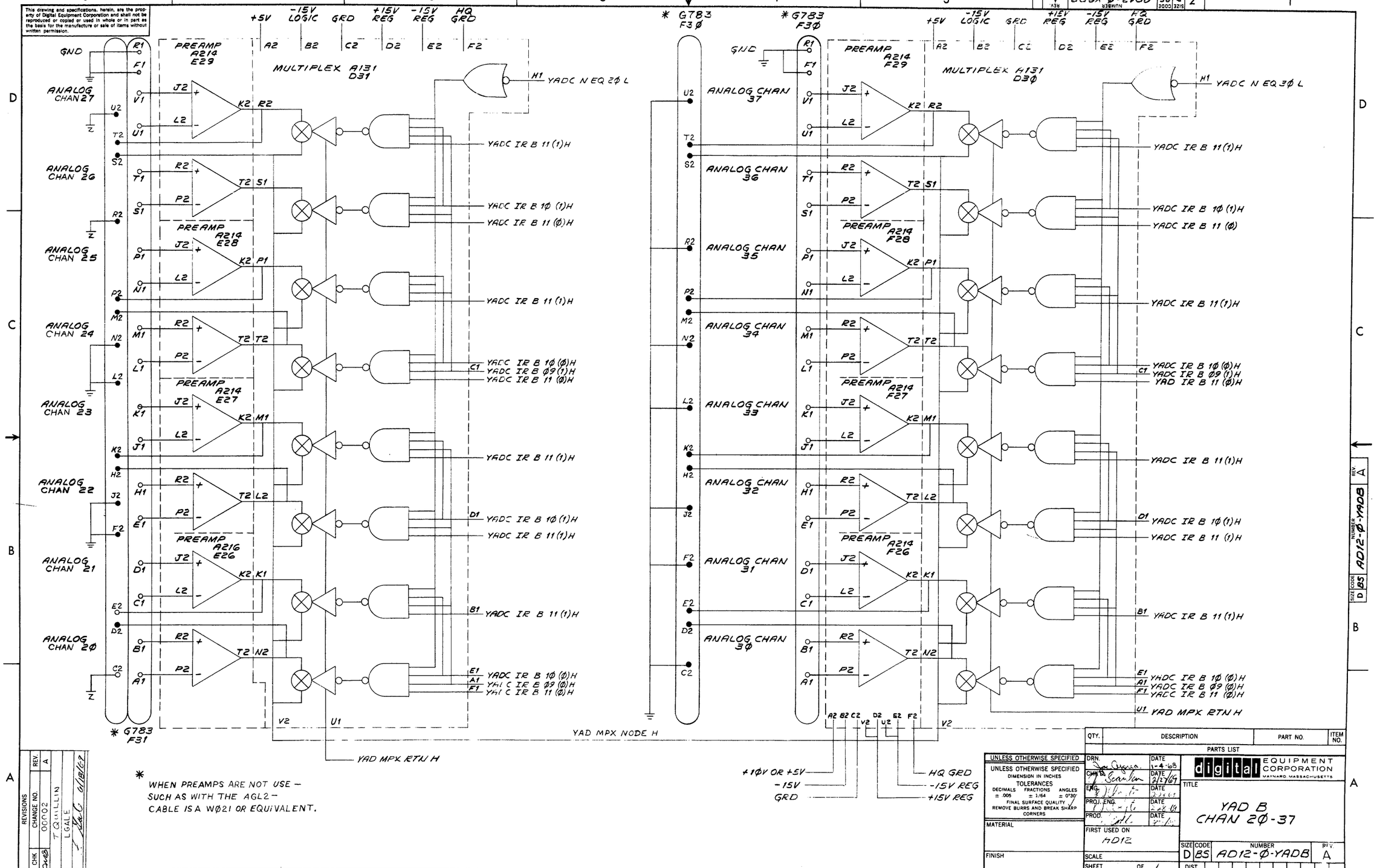

* WHEN PREAMPS ARE NOT USE — SUCH AS WITH THE AGL2 — CABLE IS A WØ21 OR EQUIVALENT.

REVISIONS			
REV	CHANGE NO.	CHK	
A	007102	DWB	T QUILLIN LGALE

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	Jon Sievers	1-4-68
CHK	Scanlon	2/27/69
ENG		DATE
PROJ. ENG.		DATE
PROD.		DATE

FIRST USED ON
AD12

SCALE

SHEET OF 1

digital EQUIPMENT CORPORATION
MAYNARD, MASSACHUSETTS

TITLE
YAD B
CHAN 2Ø-37

SIZE	CODE	NUMBER	REV.
D	BS	AD12-Ø-YADB	A

DIST.

DEC FORM NO DRD 102A

AD12-Ø-YADB REV A

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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
+3V D29V1 H
YADC LOAD A-D IR H
YADC IR Ø7 (Ø)
YADC IR Ø8 (Ø)
YADC IR Ø9 (Ø)
YADC IR 1Ø (Ø)
YADC IR 11 (Ø)
YADC IR Ø7 (1)
YADC IR Ø8 (1)
YADC IR Ø9 (1)
YADC IR 1Ø (1)
YADC IR 11 (1)
YADC IR B Ø7 (Ø)
YADC IR B Ø8 (Ø)
YADC IR B Ø9 (Ø)
YADC IR B 1Ø (Ø)
YADC IR B 11 (Ø)
YADC IR B Ø7 (1)
YADC IR B Ø8 (1)
YADC IR B Ø9 (1)
YADC IR B 1Ø (1)
YADC IR B 11 (1)

PRC AC Ø5 (1) H
YAD AD Ø3 (1)H
YAD AD Ø4 (1)H
YAD AD Ø5 (1)H
YAD AD Ø6 (1)H
YAD AD Ø7 (1)H
YAD AD Ø8 (1)H
YAD AD Ø9 (1)H
YAD AD 1Ø (1)H
YAD AD 11 (1)H
YADC AC Ø5 (1)L
YADC AC Ø3 (1)L
YADC AD Ø4 (1)L
YADC AD Ø5 (1)L
YADC AD Ø6 (1)L
YADC AD Ø7 (1)L
YADC AD Ø8 (1)L
YADC AD Ø9 (1)L
YADC AD 1Ø (1)L
YADC AD 11 (1)L

YADC FAST SAM (Ø)H
CPTP TP9 H
INS SAM H
INS SAM H
CPTP TP5D H
YADC A-D PAUSE (1)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
YADC LOAD A-D IR H
DELAY 5 µSEC
DELAY 1 µSEC
CLC CLOCK PRESET H
YAD DONE H
YADC START H
YADC A-D BUSY
YADC HOLD
+3V

IOC IO PRESET L
CPT T5 RECYCLE (Ø)H
CPTP TP5 H
INS SAM H
RCL LOAD MSC Ø9 H
YADC AC Ø5 (Ø)H
YAD DONE H
YADC FAST SAM
YADC A-D PAUSE
PRC AC Ø5 (1)H
RCL LOAD MSC Ø9 H
M76Ø C36

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

YADC N EQ ØØ L
YADC N EQ 1Ø L
YADC N EQ 2Ø L
YADC N EQ 3Ø L
M113 D29

REVISIONS			
CHK	CHANGE NO.		REV.
DMS	00001	L.GALE	A
DMS	EM12-00009	L.GALE 8/26/68	B
FV	EM12-0004H	D.MACKLIN 10/30/70	C
FV	EP12-0030	D.MACKLIN 11/30/70	D

UNLESS OTHERWISE SPECIFIED	DRN.	DATE 2-12-69
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 4.28.69
	PROJ. ENG.	DATE
	PROD.	DATE
MATERIAL	FIRST USED ON 1.312	
FINISH	SCALE	
	SHEET 1 OF 1	

digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS

TITLE: YADC A-D CONTROL

SIZE	CODE	NUMBER	REV
D	BS	AD12-Ø-YADC	D

DIST.

QTY.	DESCRIPTION	PART NO.	ITEM NO.

PARTS LIST

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 pot-entiometers 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

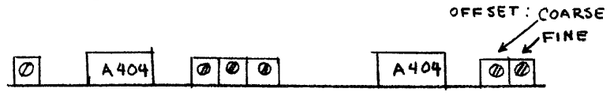
Qty.	Part #	Use in AG12	Location	Print Ref.
8	A214	Analog Preamplifiers	E26-E29	AD12-Ø-YADB
			F26-F29	
		Input, Relay Panel	F30-F31	AD-700-6046
				AD12-Ø-YADB

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.

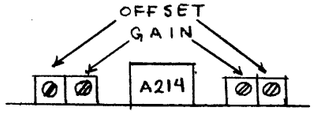
4) Adjust A404 Sample and Hold offset until Ch. Ø reaches the threshold point of +Ø and -Ø volts.



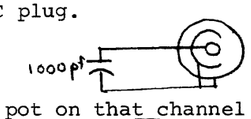
5) Remove D34N2 to D34F2 connection.

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.)

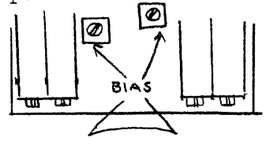
7) Insert EDC Prec. Voltage source in channel to be tested; set to Ø volts, then adjust offset pots on respective A214 to the switching point of +Ø and -Ø volts.



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 re-adjust 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.

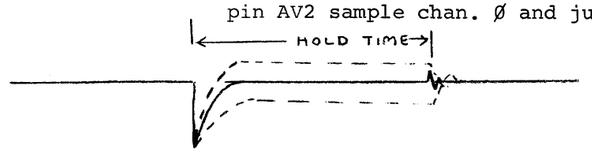
13) A note about the other pots on the A404: Only the offset pot should be adjusted in the normal set-up procedure of the PDP-12 analog-to-digital converter.

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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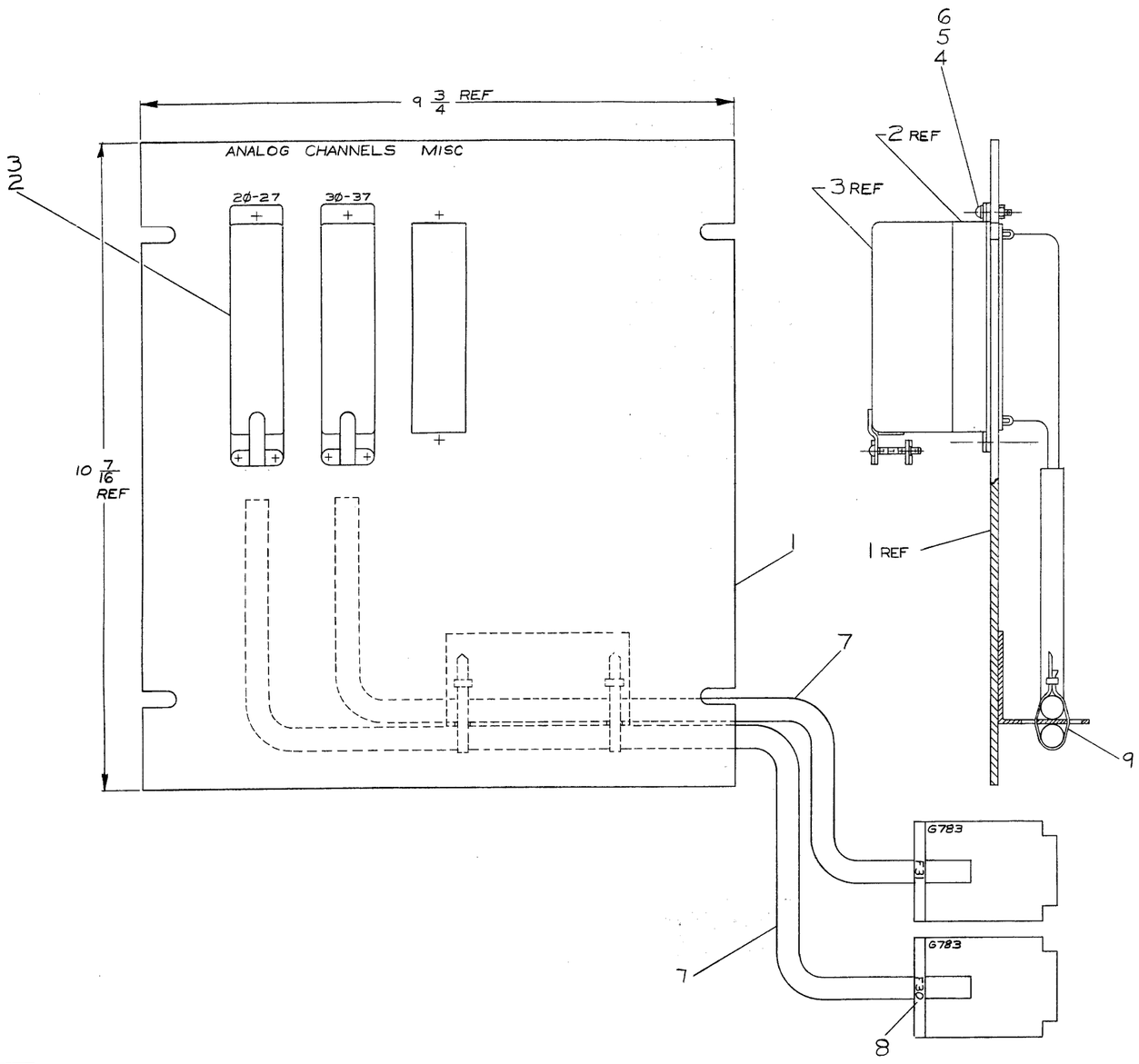

REVISIONS		
CHK	CHANGE NO.	REV.
[illegible]	AM12-00001	A
T. Quillen 8-1-69		
GALE		
[illegible] 8/15/69		

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.	A. Cook	DATE 2/28/67
CHK'D.	R. Kuus	DATE 2/20/67
ENG.	[illegible]	DATE 2/4/67
PROJ. ENG.	[illegible]	DATE 3/3/67
PROD.	W. Call	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	CODE	NUMBER	REV.
D	AD	7006046-0-0	A

DIST.

DEC FORM NO. DRD 100

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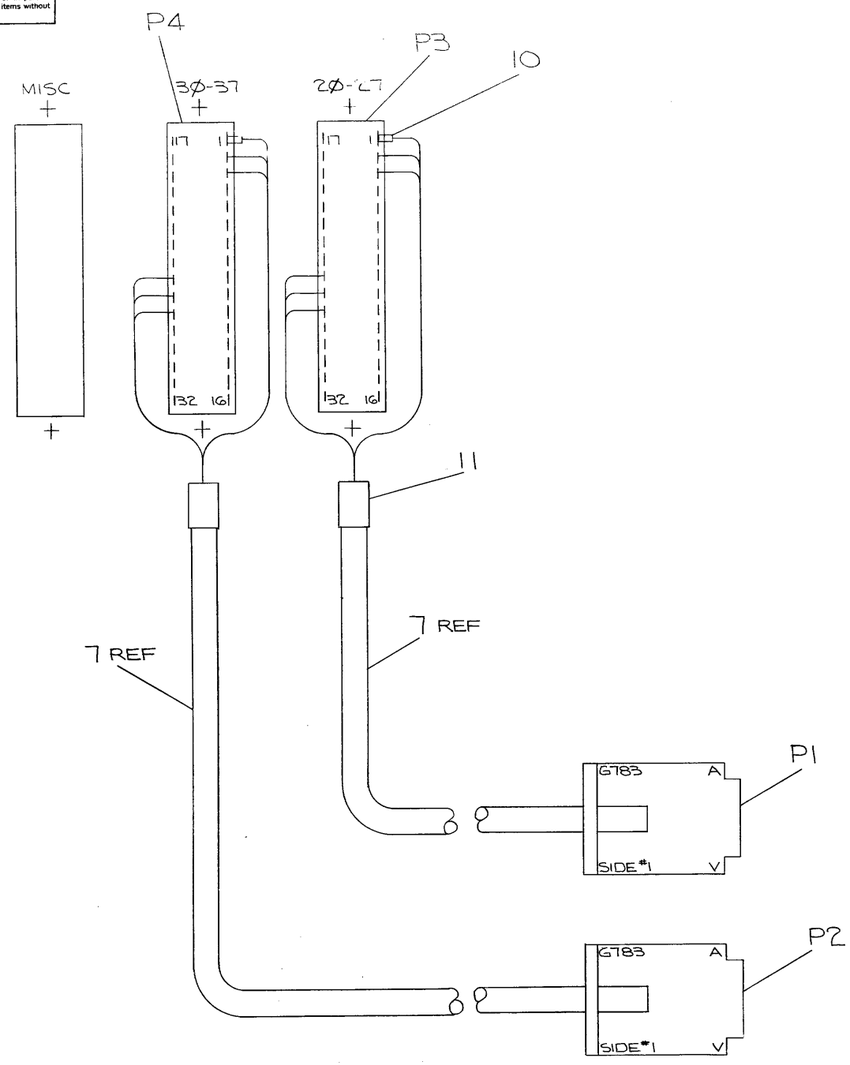

WIRING DIAGRAM
VIEW TAKEN FROM REAR OF PANEL

WIRE TABLE

ITEM NO.	AWG	DESCRIPTION COLOR	CONNECTIONS 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		

REVISIONS	REV.	CHANGE NO	CHK

FIRST USED ON OPTION/MOD

QTY.	DESCRIPTION	PART NO.	ITEM NO.
	PARTS LIST		

UNLESS OTHERWISE SPECIFIED

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

MATERIAL —//—

FINISH —//—

DRN.	DATE 2/28/69	digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS
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

TITLE: ANALOG EXT PANEL ASSY (AG12)

SIZE D | CODE AD | NUMBER 7006046-0-0 | REV. A

SCALE —//— | SHEET 2 OF 2 | DIST.

DEC FORM NO. DRD 100

SIZE D | CODE AD | NUMBER 7006046-0-0 | REV. A

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.

DRN.	K. RUSS	DATE 8/1/69
CHK'D.	K. RUSS	DATE 8/1/69
ENG.	[signature]	DATE 8/14/69
PROJ. ENG.	[signature]	DATE 8/14/69
PROD.	[signature]	DATE 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

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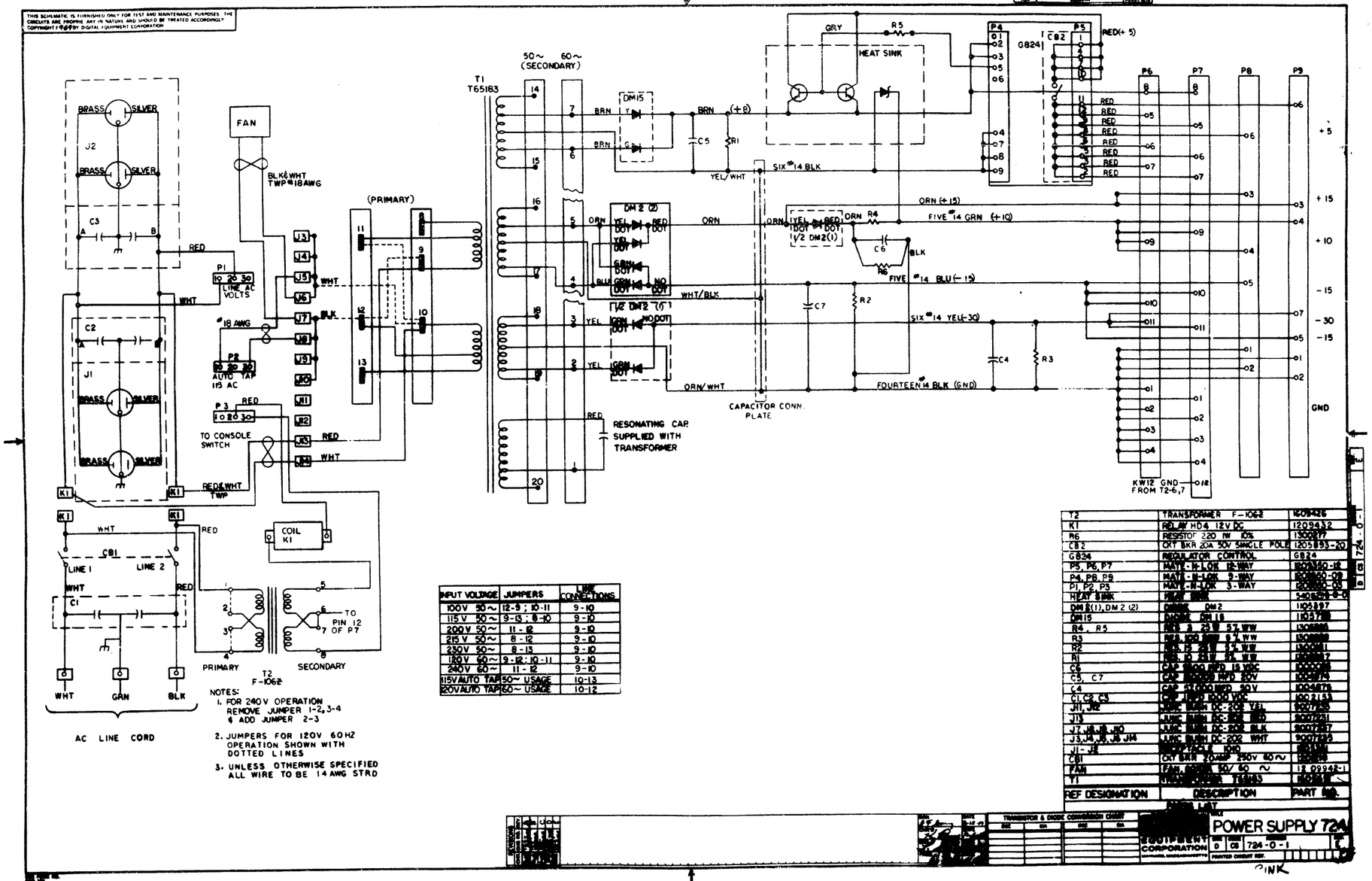

INPUT VOLTAGE	JUMPERS	LINE CONNECTIONS
100V 50~	12-9 ; 10-11	9-10
115V 50~	9-13 ; 8-10	9-10
200V 50~	11-12	9-10
215V 50~	8-12	9-10
230V 50~	8-13	9-10
120V 60~	9-12 ; 10-11	9-10
240V 60~	11-12	9-10
115V AUTO TAP	50~ USAGE	10-13
220V AUTO TAP	60~ USAGE	10-12

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

REF DESIGNATION	DESCRIPTION	PART NO.
T2	TRANSFORMER F-1062	1609426
K1	RELAY HD4 12V DC	1209432
R6	RESISTOR 220 1W 10%	1300177
CB2	CKT BKR 20A 50V SINGLE POLE	1205893-20
G824	REGULATOR CONTROL	G824
P5, P6, P7	MATE-N-LOK 12-WAY	1209430-12
P4, P8, P9	MATE-N-LOK 9-WAY	1209430-09
P1, P2, P3	MATE-N-LOK 3-WAY	1209430-03
HEAT SINK		5401531-0-0
DM2(1), DM 2 (2)	DIODE DM2	1103397
DM15	DIODE DM15	1103398
R4, R5	RES 5.23 1W 5% WW	1300284
R3	RES 100 1W 5% WW	1300288
R2	RES 2.49 1W 1% WW	1300311
R1	RES 10 5W 5% WW	1300317
C6	CAP 1000 MFD 15 VDC	1000298
C5, C7	CAP 10000 MFD 50V	1000175
C4	CAP .47000 MFD 50V	1004873
C1,C2,C3	CAP .1 MFD 1000 VDC	1002153
J11, J12	JUNC BLOCK DC-202 YEL	9007255
J13	JUNC BLOCK DC-202 RED	9007251
J7, J8, J9, J10	JUNC BLOCK DC-202 BLK	9007257
J3, J4, J5, J6, J14	JUNC BLOCK DC-202 WHT	9007253
J1 - J2	RECEPTACLE 10PIN	1209431
CB1	CKT BKR 20 AMP 250V 60~	1205893
FAN	FAN, AXIAL 50/60 ~	12 09242-1
Y1	CRYSTAL 7.68685	1609427

TRANSISTOR & DIODE CONVERSION CHART

DEC	DIA	DEC	DIA

DIGITAL EQUIPMENT CORPORATION

POWER SUPPLY 724

SIZE D | CB | 724-0-1 | REV E

PRINTED CIRCUIT REF.

PINK

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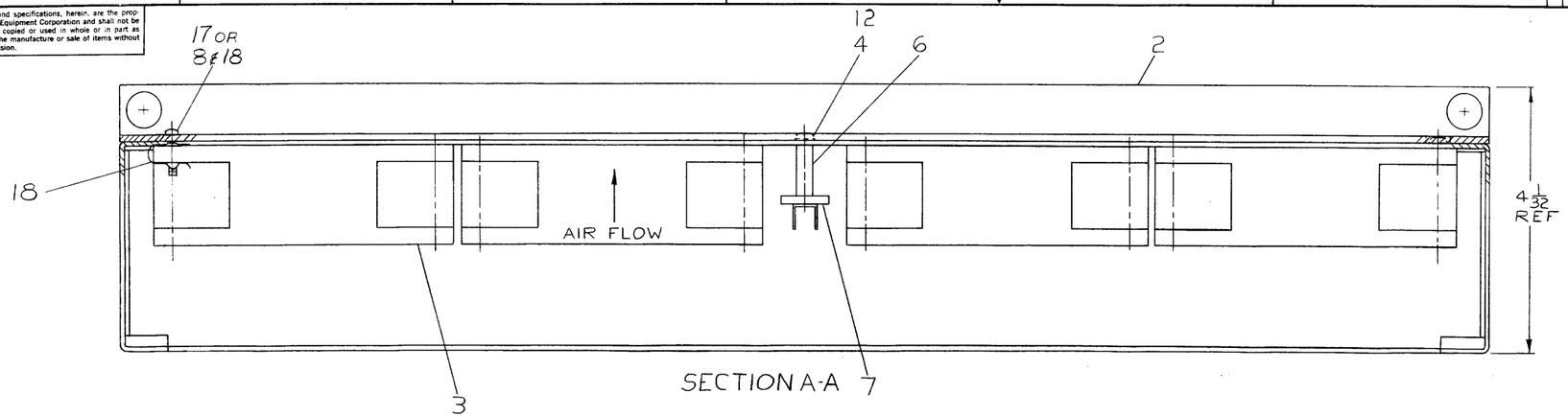
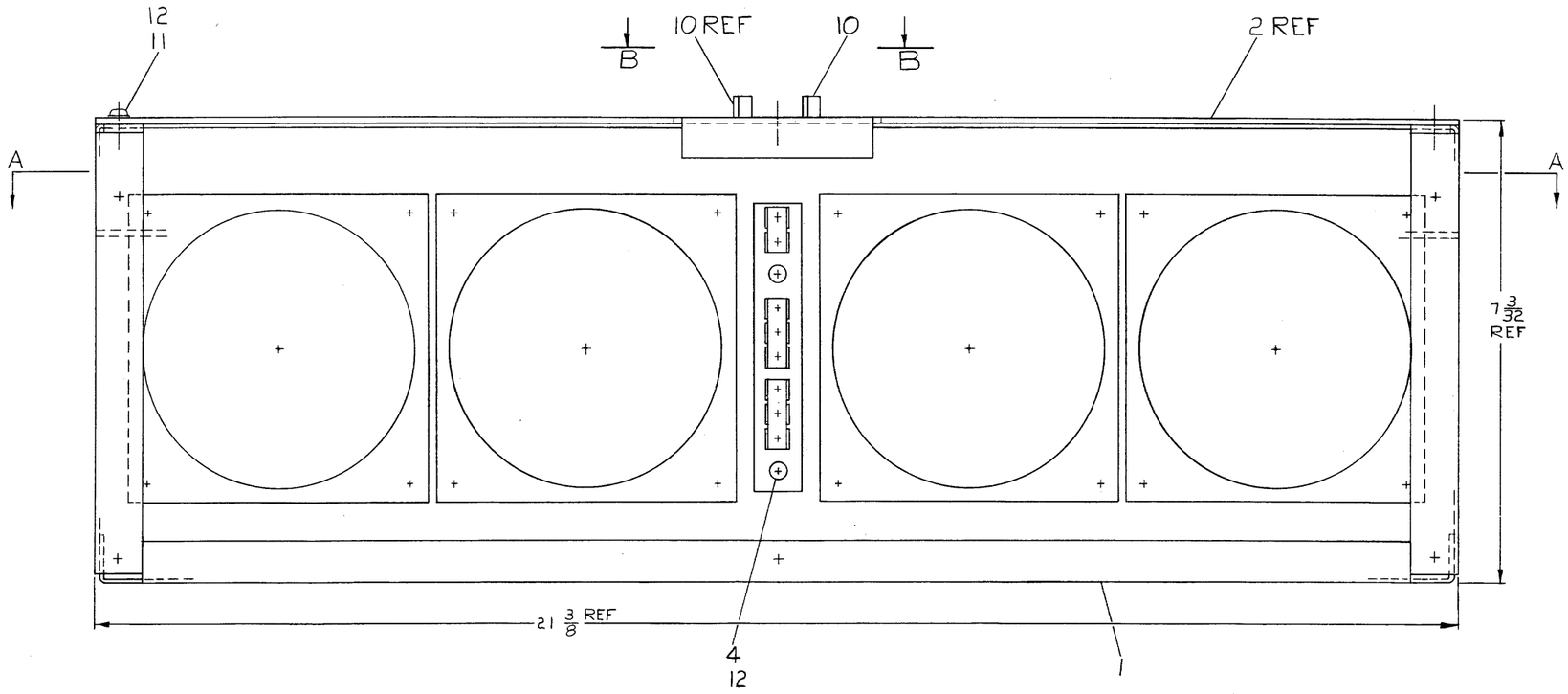
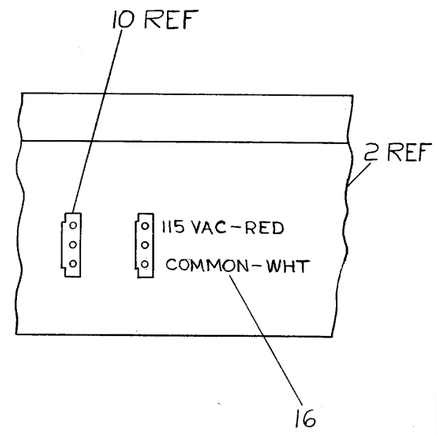
NOTES:
1. USE ITEM 17 WITH # 1209942 FAN, AND ITEM 8 & 18 WITH # 1209942-1 FAN.







VIEW B-B

REVISIONS	REV.	CHK	CHANGE NO.	
	A	[illegible]	12-00014	REVISED & REDRAWN T. Quinlan 4-30-69 S. ZNAMIEROWSKI
	B	[illegible]	12-00028	D. NEVALA
	C	[illegible]	12-00041	T. QUINLAN 12-10-69 GALE
	D	[illegible]	12-00074	L. GALE

DEC FORM NO. DRD 100

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 3-21-69	
CHK'D. [illegible]	DATE 4/5/69	
ENG. [illegible]	DATE 4/2/69	
PROJ. ENG. [illegible]	DATE 4/2/69	
PROD. [illegible]	DATE 4/11/69	

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

SCALE 1/1
SHEET 1 OF 2

digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS

TITLE
FAN HOUSING ASSY

SIZE	CODE	NUMBER	REV.
D	AD	7005983-0-0	D

DIST.

SIZE CODE D AD NUMBER 7005983-0-0 REV. D

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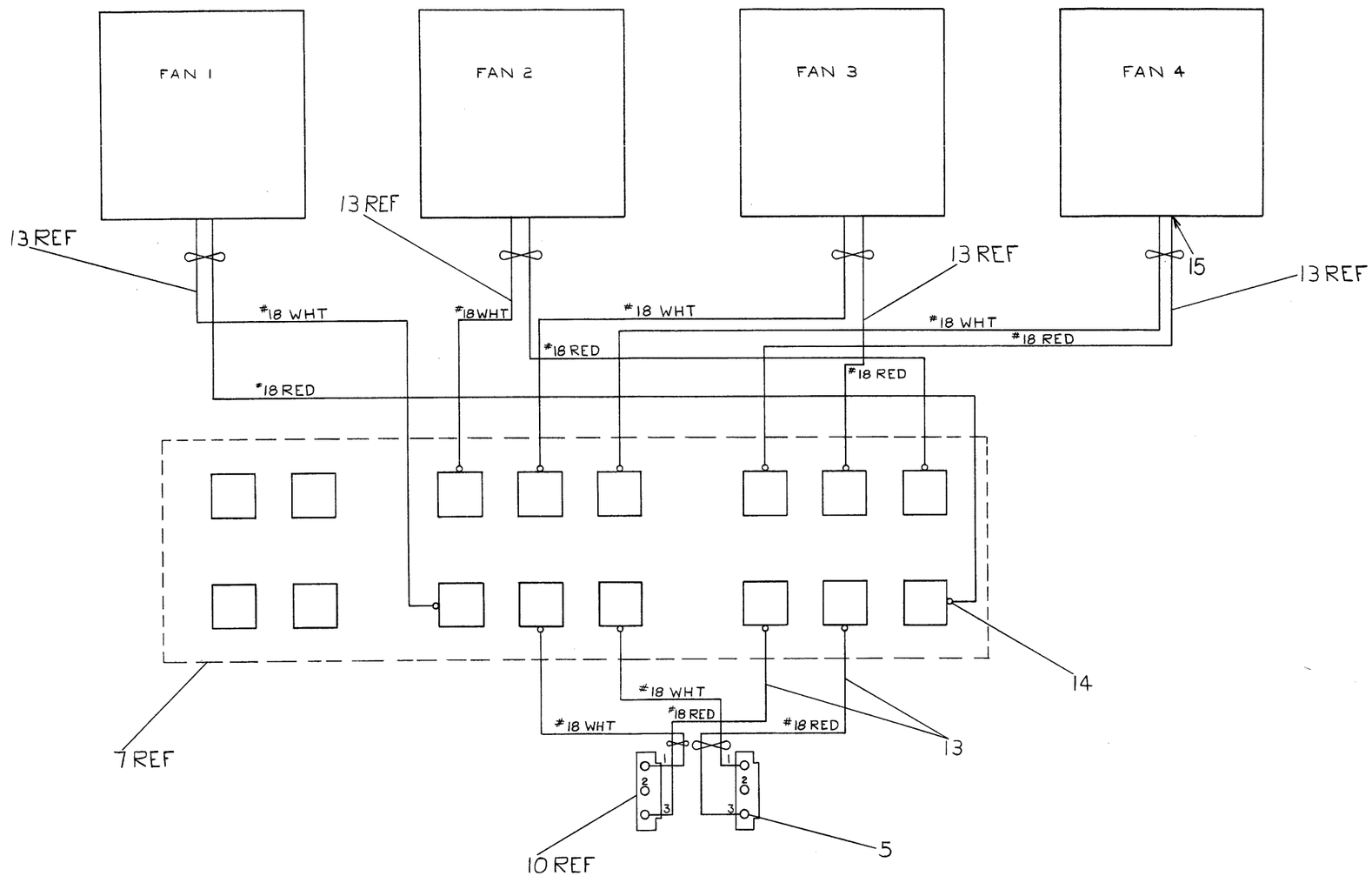

WIRING DIAGRAM

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	T. Flemming	DATE 2-27-69
CHK'D	Tom Ross	DATE 4/2/69
ENG		DATE 4/3/69
PROJ. ENG	Lee G	DATE 4/9/69
PROD	Wall	DATE 4/7/69

NEXT HIGHER ASSY

SCALE NONE

SHEET 2 OF 2

digital EQUIPMENT CORPORATION
MAYNARD, MASSACHUSETTS

TITLE
FAN HOUSING
ASSY

SIZE	CODE	NUMBER	REV.
D	AD	7005983-0-0	D

DIST. G

DEC FORM NO. DRD 100

DIGITAL EQUIPMENT CORPORATION
MAYNARD, MASSACHUSETTS

PARTS LIST

MADE BY J. FLEMING DATE 3/21/69	CHECKED K. RUSS DATE 4/2/69	SECTION 1
ENG A Bramerich DATE 4/2/69	PROD W Cole DATE 4/11/69	ISSUED SECT. 1

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	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-IB PANDUIT	5

TITLE	ASSY NO.	SIZE	CODE	NUMBER	REV.	ECO NO.
FAN HOUSING ASSY	D-AD-7005983-0-0	A	PL	7005983-0-0	D	12-00074
	SHEET 1 OF 1	DIST. 6				

DEC FORM NO.
DRA 110

K

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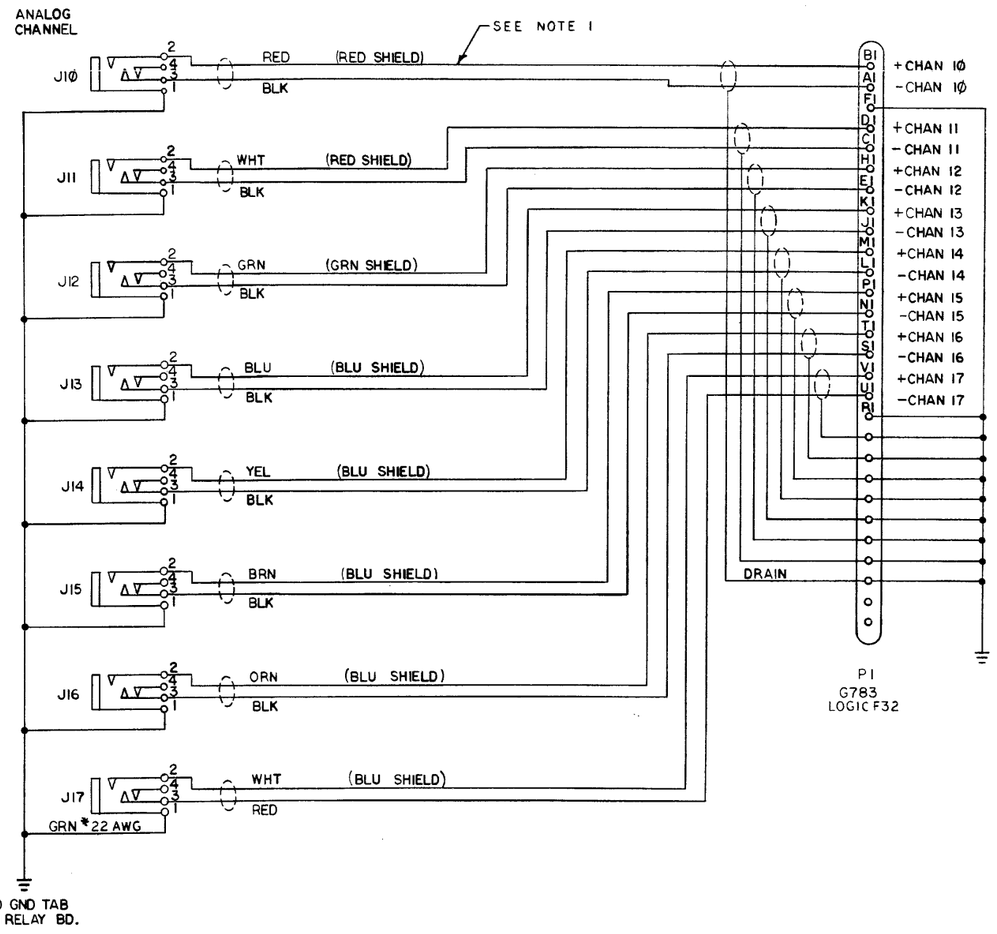
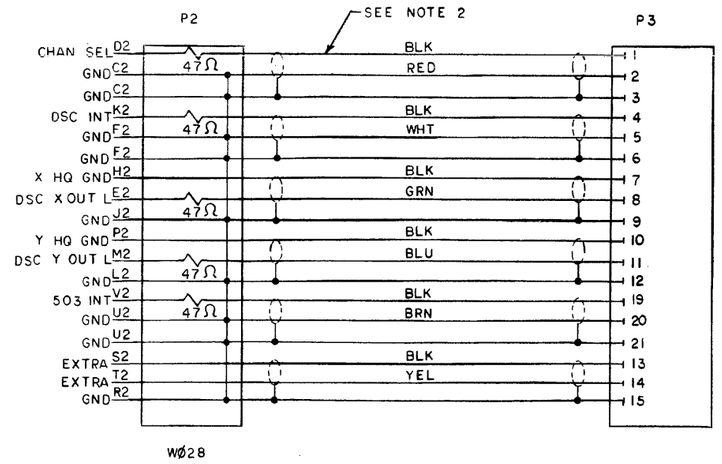
SIZE D | CODE CS | NUMBER 7005963 - 0 - 1 | REV A

NOTES:
1. WIRE IS BELDEN CABLE #8774
2. WIRE IS BELDEN CABLE #8778





REF. DESIGNATION	DESCRIPTION	PART NO.
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

PARTS LIST

REVISIONS: ECM ORIG NO. 0000682 REV A

DRN A. Flory 8/13/69
CHK D. Kress 8-19-69
ENG. Gil 8/16/69
PROD. Call 8/15/69

TRANSISTOR & DIODE CONVERSION CHART

DEC	EIA	DEC	EIA

digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS

TITLE: RELAY PANEL PDP 12

SIZE D | CODE CS | NUMBER 7005963-0-1 | REV A

PRINTED CIRCUIT REV.

DEC FORM NO. DRD 101

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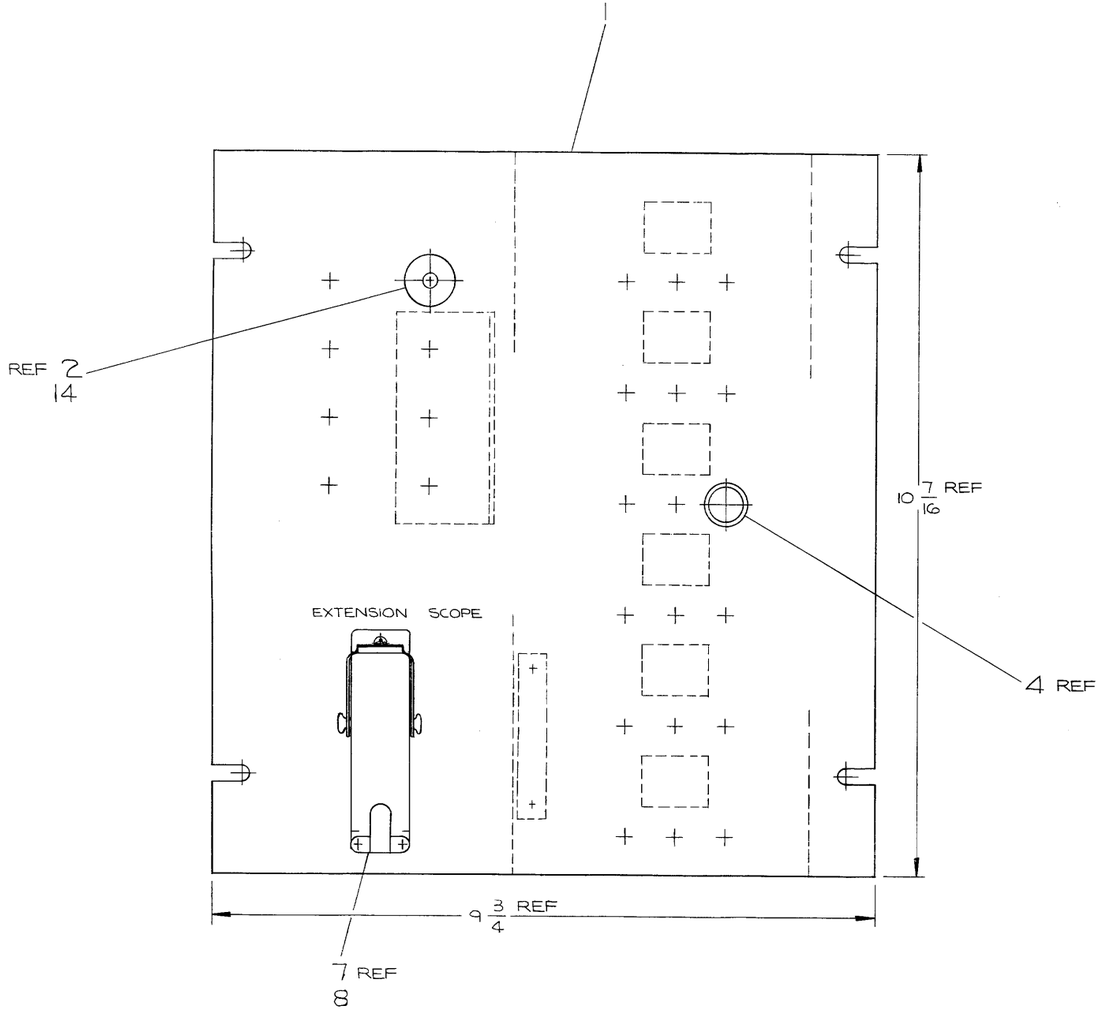
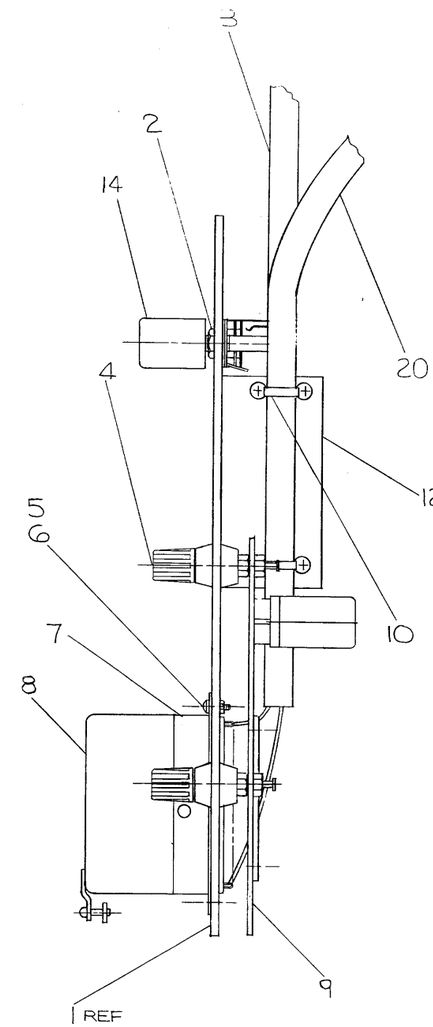
NOTES:
1. ALL WIRES FROM ITEM #3 NOT USED ARE TO BE CUT OFF AT CASING.





REVISIONS					
REV	CHANGE NO.	CHK			
A	DRI2-00001				
			GALE		
B	12-00026		L. GALE	8/26/69	
C	12-00062		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.	DATE	11-21-68
CHK'D.	DATE	11-22-68
ENG.	DATE	3-3-69
PROJ. ENG.	DATE	3-3-69
PROD.	DATE	3/3/69

digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS

TITLE: RELAY PANEL ASSY (DRI2)

NEXT HIGHER ASSY: A-ML-DRI2-Ø

SIZE D | CODE AD | NUMBER 7005963-0-0 | REV C

SCALE —//—

SHEET 1 OF 2

DIST.

DEC FORM DRD 100

SIZE D | CODE AD | NUMBER 7005963-0-0 | REV C

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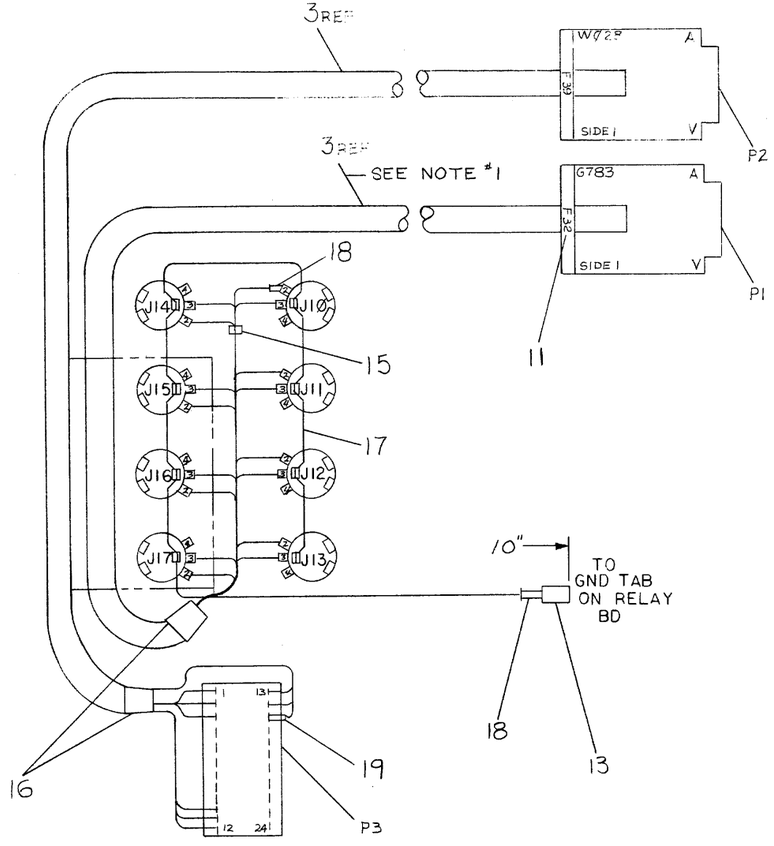

WIRING DIAGRAM
VIEW LOOKING AT REAR OF PANEL

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

DEC FORM NO. DRD 100

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.

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
DATE 10/8/68	DATE 11/11/68	1
ENG L. Gale DATE 3/3/69	PROD W. 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 WC2E	1

TITLE	ASSY NO.	SIZE	CODE	NUMBER	REV.	ECO NO.
RELAY PANEL ASSY (DRI2)	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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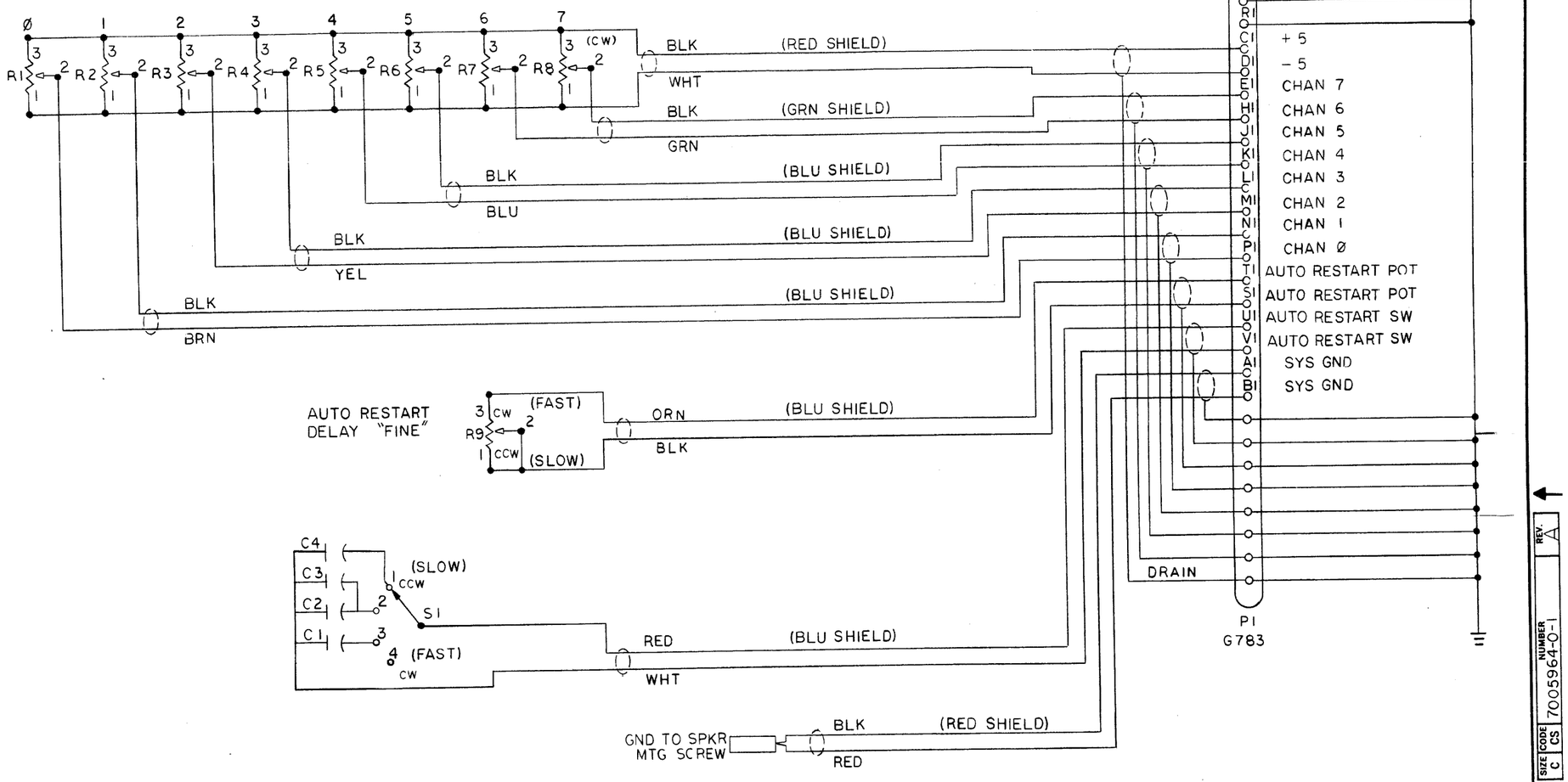
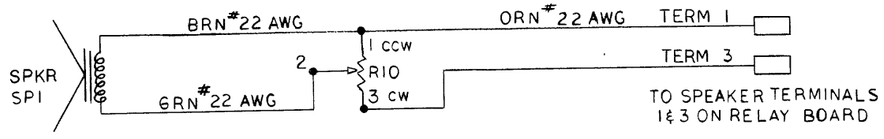
ANALOG CHANNELS Ø THRU 7





NOTE: WIRE IS BELDEN CABLE #8774 EXCEPT AS NOTED

REF DESIG	DESCRIRTION	PART NO
	PARTS LIST	
C4	CAPICITOR 10 MFD 20V	1004813
SP1	SPEAKER 4 BMS-45 45Ω 3W	1204880
P1	CABLE CONN	G783
C1	CAPACITOR .033MFD 100 V	1000050
C2	CAPACITOR .15MFD 35 V	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

REVISIONS: CHK | CHG NO. 10054 | REV. A

DRN T.C. Lewis DATE 10 JUN 69
CHKD A. Rose DATE 25 JUN 69
ENG D. Gale DATE 8/11/69
PROD L. Dell DATE 8/11/69

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

SIZE C | CODE CS | NUMBER 7005964-0-1 | REV. A

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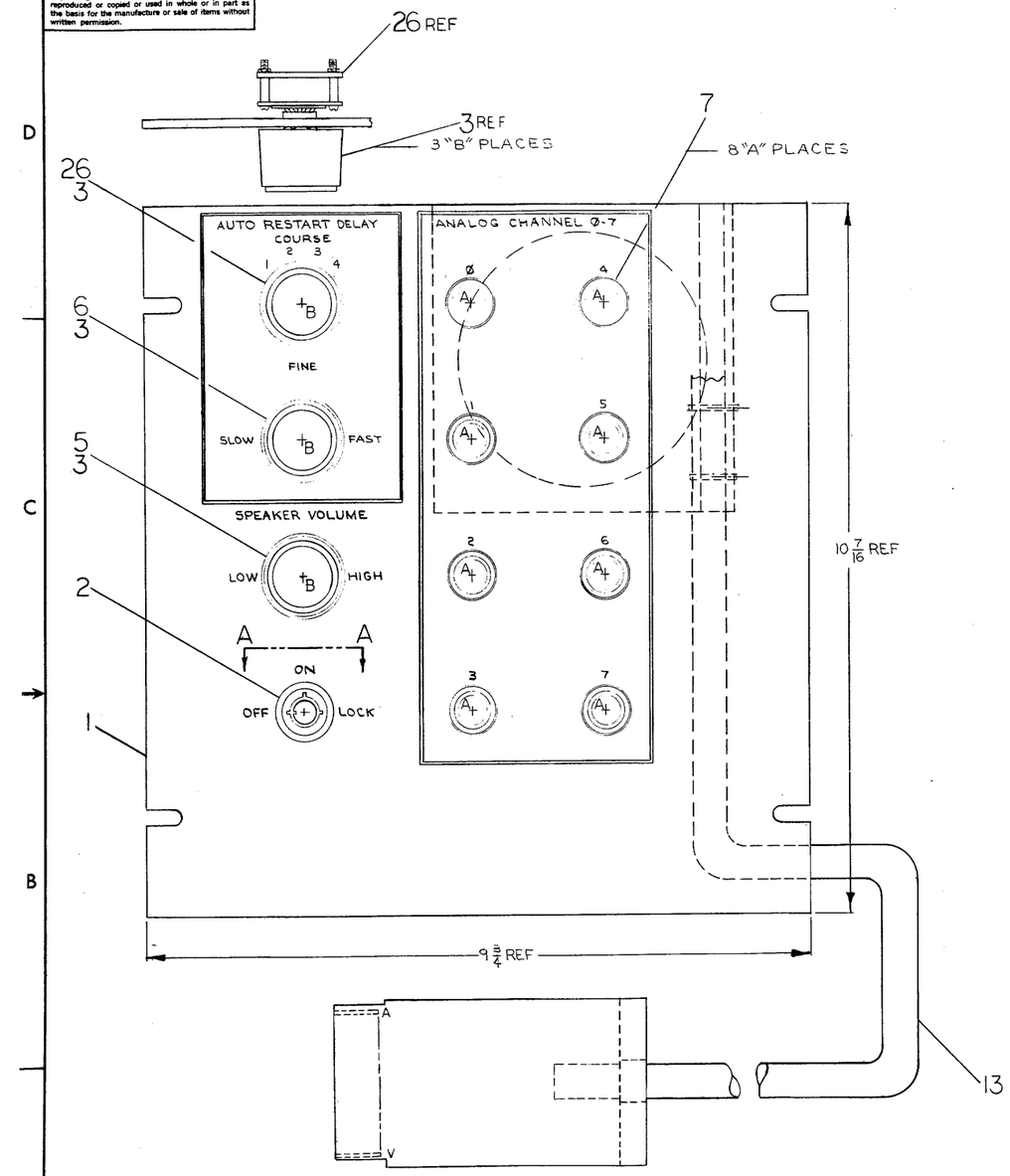
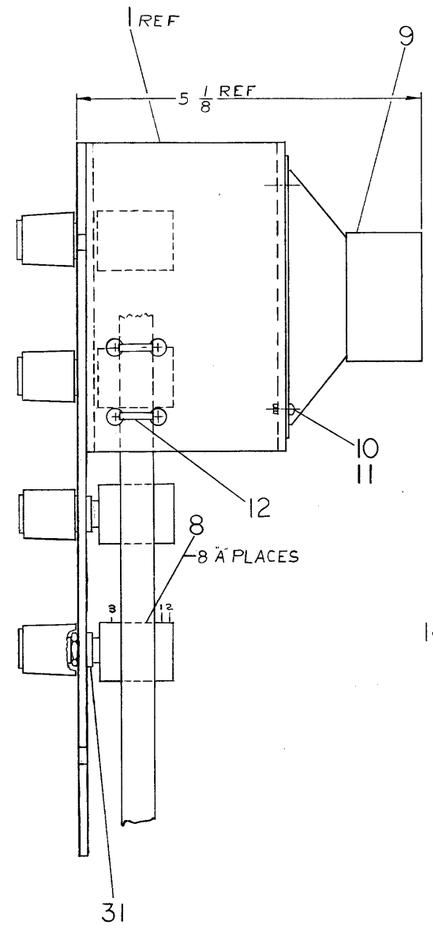
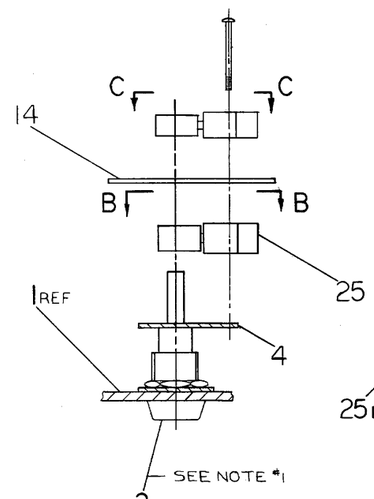
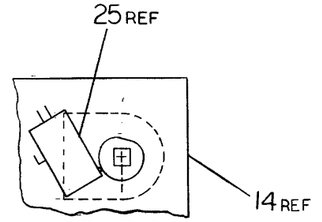


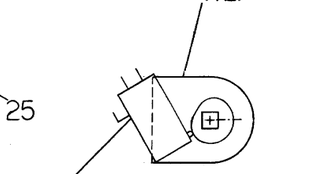




SECTION A-A
(SHOWING ASSY OF LOCK)



VIEW C-C
SHOWING POSITION OF SECOND CAM



VIEW B-B
SHOWING POSITION OF FIRST CAM

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

REVISIONS			
CHK	CHANGE NO.	REV.	
[illegible]	12-00011	A	L. GALE 5/21/68
[illegible]	12-00054	B	T. Quinn 2-5-70 GALE
[illegible]	12-00067	C	GALE 2/16/70
[illegible]			L. GALE 4-7-70

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. Stan Patrick	DATE 10/2/68	digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS
CHK'D. K. Russ	DATE 2/25/69	
ENG. [illegible]	DATE 3-3-69	
PROJ. ENG. [illegible]	DATE 3-3-69	
PROD. W Call	DATE 3/3/69	

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

SCALE: NONE

SHEET 1 OF 2

TITLE: ANALOG PANEL ASSY

SIZE D | CODE AD | NUMBER 7005964-0-0 | REV. C

DIST. G

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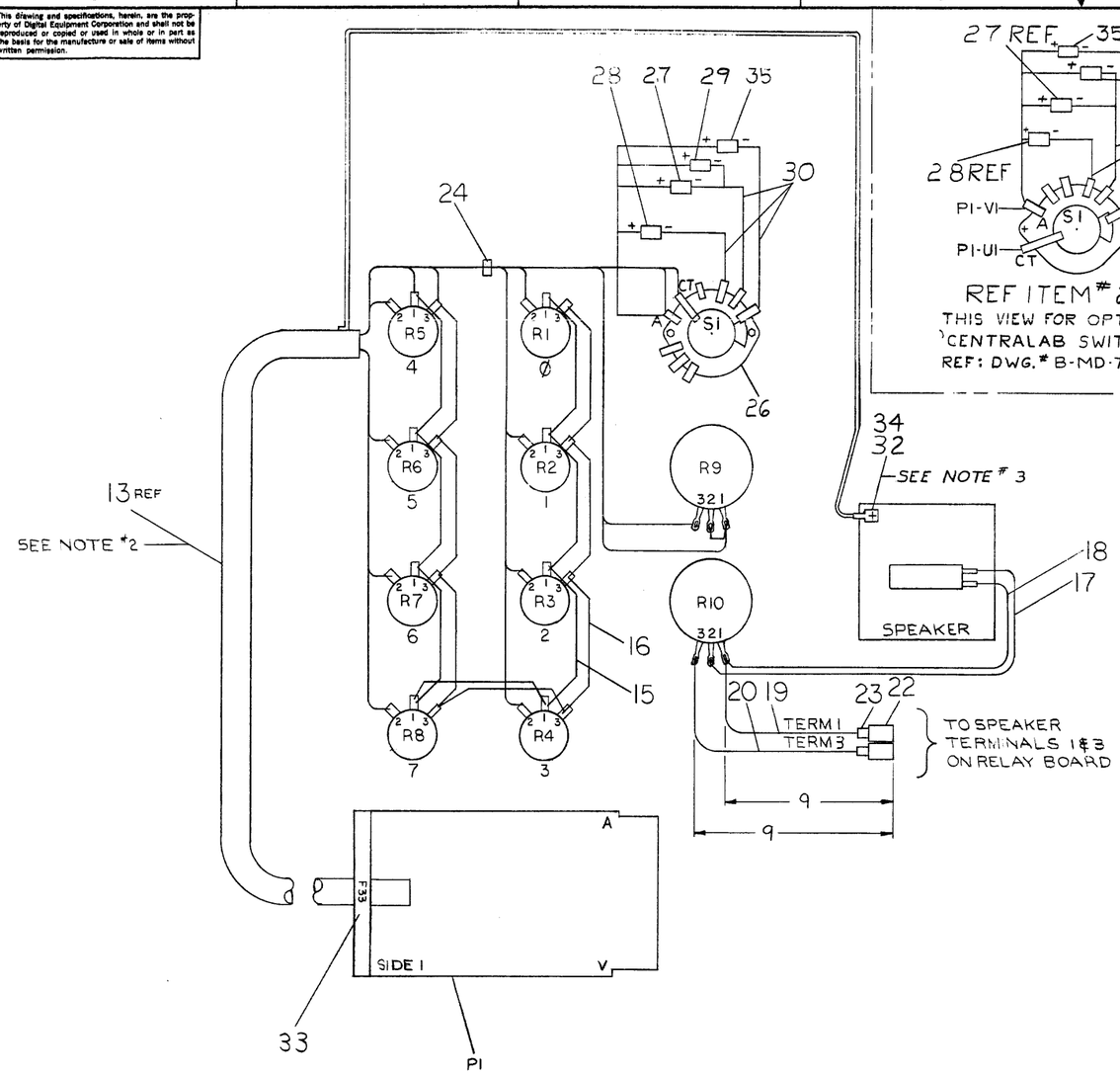

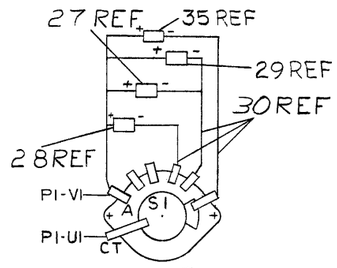

REF ITEM # 26
THIS VIEW FOR OPTIONAL REWORKED CENTRALAB SWITCH ONLY
REF: DWG.* B-MD-7407195-0-0

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	VIO	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 Peters	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.	[illegible]	DATE 5/5/69

NEXT HIGHER ASSY
SCALE NONE
SHEET 2 OF 2

digital EQUIPMENT CORPORATION
MAYNARD, MASSACHUSETTS

TITLE
ANALOG PANEL ASSY

SIZE D | CODE AD | NUMBER 7005964-0-0 | REV. C
DIST.

DEC FORM NO. DRD 100

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. Lia C. 3-3-69	PROD allCall 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 Cadd DATE 3/3/69	ISSUED SECT. 1

ITEM NO.	DWG NO./PART NO.	DESCRIPTION	QUANTITY/VARIATION
23	~~9107255~~	~~TUBING WIR SURINGABLE 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