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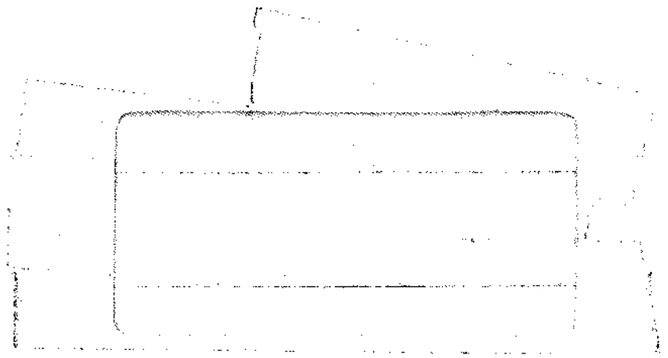
Digital Equipment Corporation
Maynard, Massachusetts

PDP-12 maintenance manual volume III system drawings

laboratory data products



DEC-12-HR1B-D

PDP-12
maintenance manual
volume III
system drawings

DIGITAL EQUIPMENT CORPORATION • MAYNARD, MASSACHUSETTS

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CONTENTS

ILLUSTRATIONS

ENGINEERING DRAWINGS

Number	Option
PDP-12-0	PDP-12 System
EP12-0	PDP-12 Processor
EM12-0	Basic 4K Memory
MC12-0	Memory Extension Control
TC12-0	LINC Tape Control
VC12-0	LINC Scope Control
KF12-0	Automatic Priority Interrupt
DM12-0	3 Channel Data Break MUX
KE12-0	Arithmetic Operation
XY12-0	Plotter Control
KT12-0	PDP-12 Time Sharing Option
DP12-A	TTY/Dataphone
DP12-B	TTY/Dataphone (EIA Level)
KP12-0	Power Fail/Restart
KW12-0	Real Time Clock
TC12-F	8 Tape Control
AD12-0	Analog to Digital Converter
AG12-0	A-D Additional Preamps
AM12-0	Expanded Multiplexer
DR12-0	Relays and Control
724-0-1	Power Supply 724
7005983-0-0	Fan Housing Assembly

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.

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.

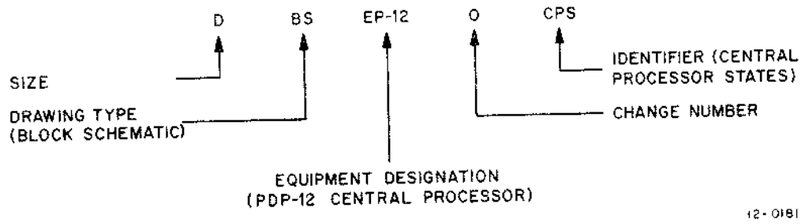


Figure 1 Drawing Identification Code

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: CY1 ADD NDX H
The origin of the signal ADD NDX is found on drawing D-BS-EP12-0-CY1. 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.

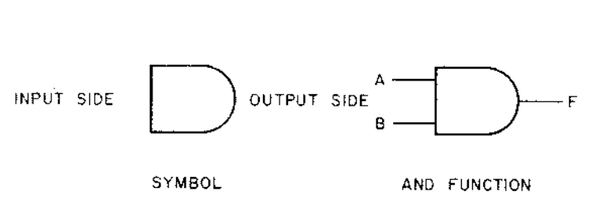
Assertion Levels

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.

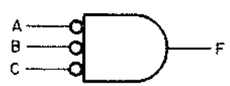


A	B	F
L	L	L
L	H	L
H	L	L
H	H	H

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.

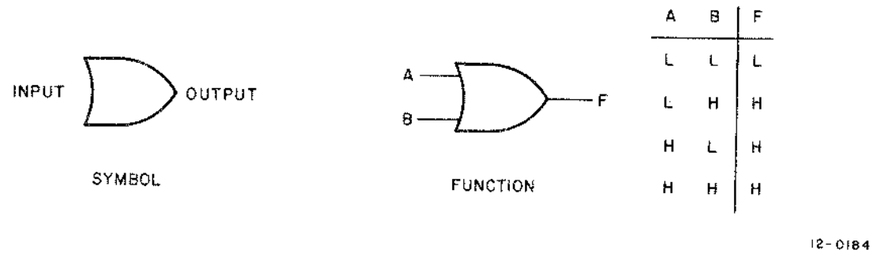


INPUT			OUTPUT
A	B	C	F
L	L	L	H
L	L	H	L
L	H	L	L
L	H	H	L
H	L	L	L
H	L	H	L
H	H	L	L
H	H	H	L

12-0183

Figure 3 NAND Gate

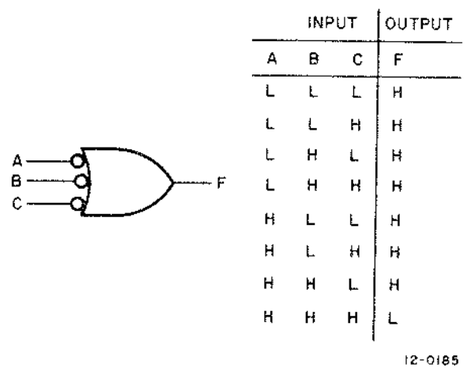
Figure 4 shows the symbol for an OR gate and the general form of a pure OR function. The output of an OR function is HIGH if any or all inputs are HIGH.



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

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.

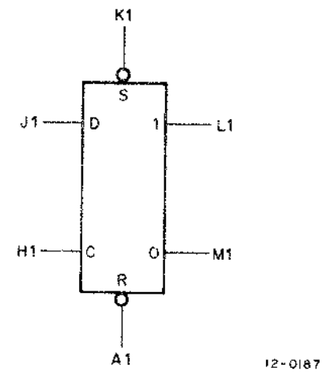


Figure 6 Flip-Flop

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).

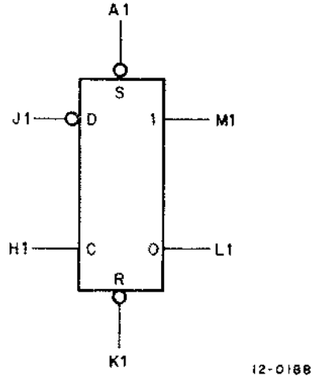


Figure 7 "Redefined" Flip-Flop

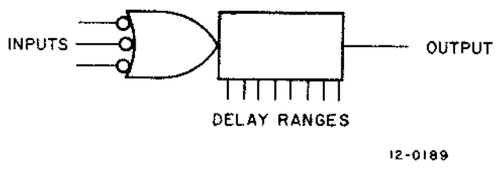


Figure 8 One-Shot Delay

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.

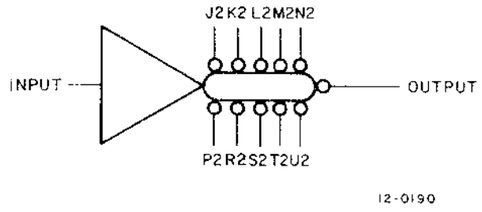


Figure 9 Delay Line

Schmitt Trigger

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

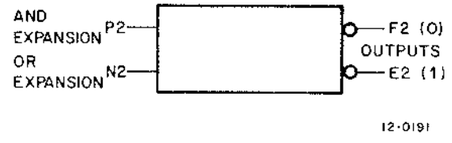


Figure 10 Schmitt Trigger

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.

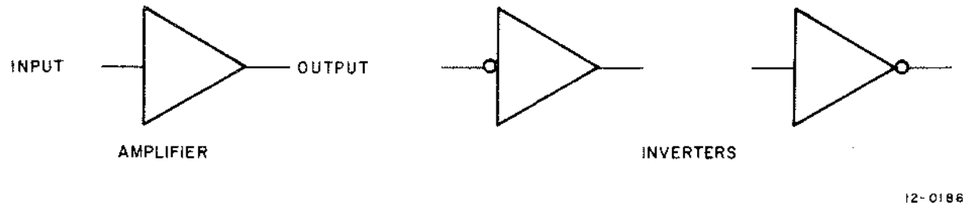


Figure 11 Amplifier and Inverters

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.

MASTER DRAWING LIST

DWG. NO.	REV. LET.	NO. OF SHEETS	TITLE
D-UA-PDP 12-0-0	M	4	PDP 12 SYSTEM
A-PL-PDP 12-0-0	M	4	PDP 12 SYSTEM (PARTS LIST)
D-DI-PDP 12-0-1	Y	3	DRAWING INDEX
D-AR-PDP 12-0-2	H	5	PDP 12 CONFIGURATION
D-IC-PDP 12-0-3	A	1	POWER WIRING & SIGNAL CABLES
~~A-SP-PDP 12-0-4~~	~~---~~		~~SHIPPING & INSTALLATION SPEC~~
A-SP-PDP 12-0-5	REF	23	ACCEPTANCE SPEC.
A-SP-PDP 12-0-6	REF	1	SYSTEM SPECIFICATIONS
A-AL-PDP 12-0-7	REF	1	HARDWARE KIT
A-SP-PDP 12-0-8	REF	1	SPARE PARTS
A-SL-PDP 12-0-9	REF	5	SOFTWARE KIT
D-FD-PDP 12-0-10	B	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	##	2	DISPLAY CONTROLS
A-ML-KE12-0	##	2	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	C.G.
AE	4/70	VR12-24	R.B.
AF	5/70	12-73	R.B.
AH	6/70	EP12-23	L.G.
AJ	6/70	12-76	L.G.
AK	7/70	12-79	L.G.
AL	8/70	12-83	L.G.
AM	9/70	12-85	L.G.

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

DEC FORM NO A

MASTER DRAWING LIST

DWG. NO.	REV. LET.	NO. OF SHEETS	TITLE
A-ML-DP12-A	##	1	TTY DATA PHONE
A-ML-DP12-B	##	1	TTY DATA PHONE EIA LEVELS
A-ML-KP12-0	##	1	POWER FAIL/RESTART
A-ML-KW12-0	##	2	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	#	1	724 P/S SCHEMATIC
D-AD-7005983-0-0	#	2	FAN HSG ASS'Y
C-CS-5408112-0-1	#	1	SWITCH BD. CIRCUIT SCHEMATIC
C-CS-5408114-0-1	#	1	LIGHT BD. CIRCUIT SCHEMATIC
C-CS-5408124-0-1	#	1	RELAY BD. CIRCUIT SCHEMATIC
D-CS-7005963-0-1	#	1	RELAY PANEL CIRCUIT SCHEMATIC
D-CS-7005964-0-1	#	1	ANALOG PANEL CIRCUIT SCHEMATIC
D-CS-7006046-0-1	#	1	ANALOG EXT. PANEL CKT SCHEMATIC
A-PL-SC12-0-0	REF	1	COLOR KITS FOR PDP-12
A-ML-TU56-0	##	1	TU56-0 50/60 HZ
A-ML-VR14-0	REF	1	VR14 50/60 HZ (ANY AC VOLTAGE)
~~A-ML-VC12-C~~	~~##~~	~~1~~	~~COLOR SCOPE CONTROL~~
A-ML-LT33-0	REF	2	ASR-33 TTY
A-ML-KF12-0	#	1	AUTO PRIORITY INTERRUPT
A-ML-AG12-A	REF	1	KNOB/PREAMPS
~~D-DS-AG12-A-03~~	~~REF~~		~~PREAMP/KNOB FOR A-D CHAN Ø-7~~
A-ML-FPP12-0	REF	4	FLOATING POINT PROCESSOR
A-ML-DM12-0	##	1	DATA BREAK MULTIPLEXER
~~A-ML-PDP12-10~~		~~1~~	~~PDP12-10 CONFIGURATION~~
~~A-ML-PDP12-20~~		~~1~~	~~PDP12-20 CONFIGURATION~~
~~A-ML-PDP12-30~~		~~1~~	~~PDP12-30 CONFIGURATION~~
~~A-ML-PDP12-40~~		~~1~~	~~PDP12-40 CONFIGURATION~~
A-SP-724-0-4	##	3	SPECIFICATIONS-724 POWER SUPPLY
A-ML-DR12-0	#	1	RELAY BUFFER

REVISIONS			
REV.	DATE	CHG. NO.	APP'D
AN	11/70	12-00088	D.M.
AP	3/71	12-00092	J.S.
AR	4/71	12-00093	J.S.
AS	7/71	12-00095	F.V.
AT	8/71	EM12-37	R.M.
AU	10/71	EP12-27	R.M.
AV	1/72	12-00096	R.M.

DRN. J.Aprea 3/	DATE 10/69	digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS
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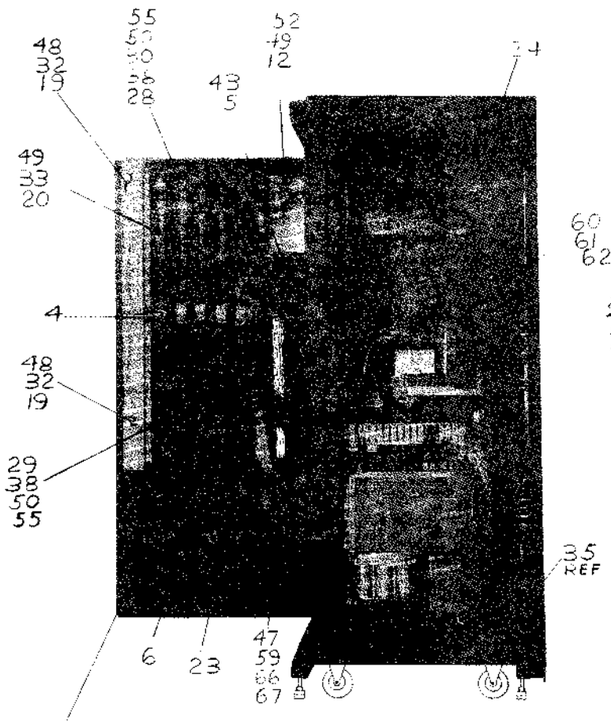
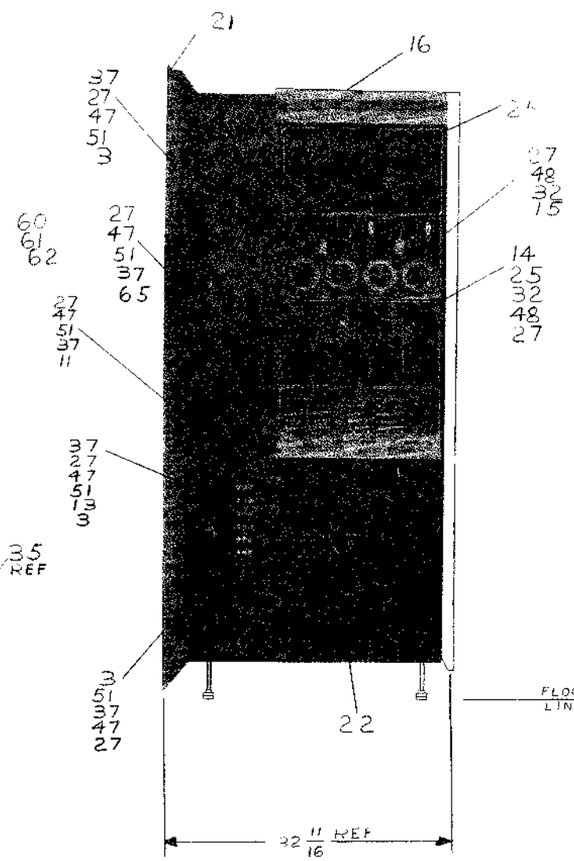
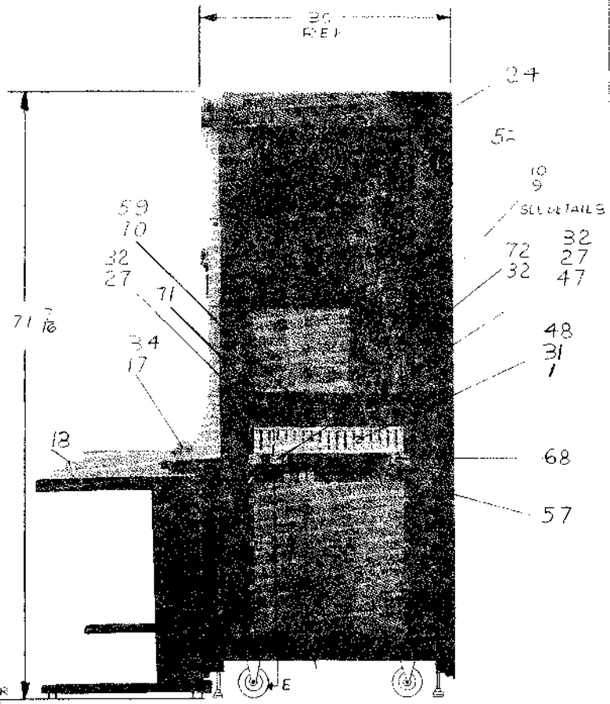
ENG. L.Gale 3	DATE 10/69	TITLE PDP-12 SYSTEM
PROJ. ENG. L.Gale 3	DATE 10/69	
PROD. L.Gale 3	DATE 10/69	
FIRST USED ON PDP-12		SIZE A / CODE ML / NUMBER PDP 12-0 / REV.
SCALE		
SHEET 2 OF 2		DIST.

DEC FORM NO A

NOTES:
1. FOR DRAWING INDEX LIST SEE DWG. NO. D-IC-PDP12-Ø-1.
2. FOR FINAL EQUIPMENT LAYOUT SEE DWG. NO. D-AR-PDP12-Ø-2.
3. ITEM #2 / & 3 ARE USED PLACES ON REAR PANEL ON UNITS ARE FOR SHIPPING PURPOSES ONLY.
4. FOR POWER WIRING & SIGNAL CABLE LOCATION SEE DWG. D-IC-PDP12-Ø 3.
5. ITEM #3 & 7 ARE USED FOR 240V OPTION ONLY.







26
17
12
27

QTY.	DESCRIPTION	PART NO.	ITEM NO.

PARTS LIST

REVISIONS			REV
DWN	CHARG NO.		
	12 C0094	J REDRAWN	K
		E. FLEMING 2-24-71	
		SCANLAN 2-24-71	
	12-C0095	Calvary 2-30-71	L
		R. MOORE	
	12-00099		M
		R. MOORE	

FIRST USED ON OPTION / MODEL	PDP12
DO NOT SCALE DRAWING	
UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES TOLERANCES DECIMALS ± .005 FRACTIONS ± 1/64 ANGLES ± 0°30' FINAL SURFACE QUALITY / REMOVE BURRS AND BREAK SHARP CORNERS	
MATERIAL	/
FINISH	/
DRN.	J FLEMING 2-26-69
CHK'D.	K-HU 3-5-69
ENG.	SCALE 3-11-69
PROJ. ENG.	PLL 3-11-69
PROD.	CALL 3-16-69
NEXT HIGHER ASSY	
SCALE	NONE
SHEET	1 OF 2

digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS

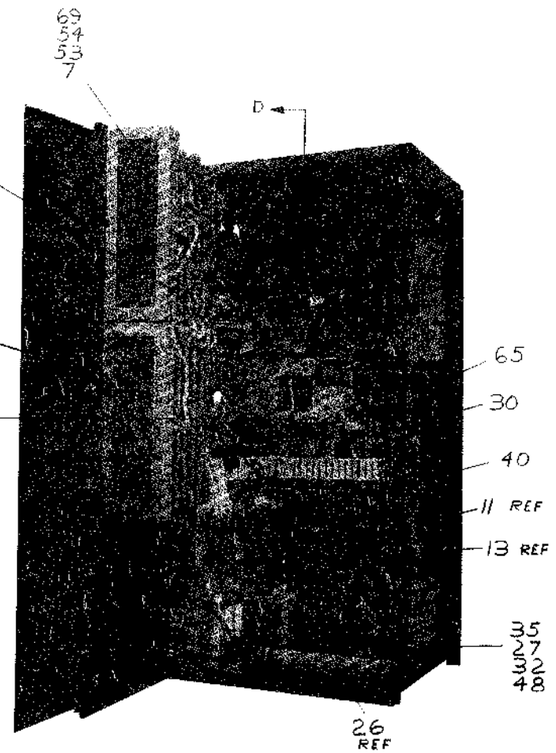
TITLE: PDP12 ASSEMBLY

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

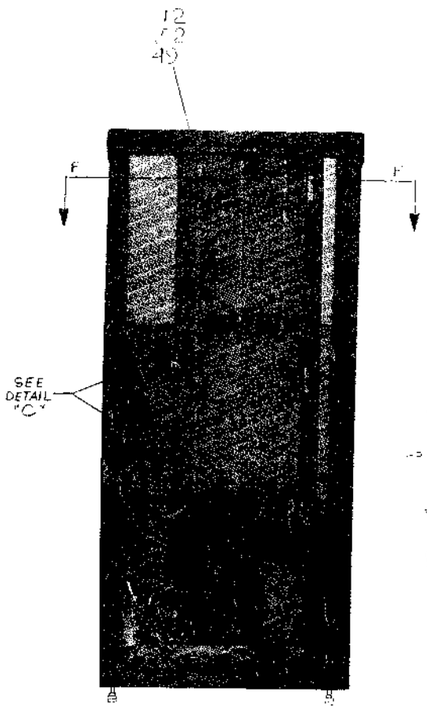
DIST.

DEC FORM NO 1-100

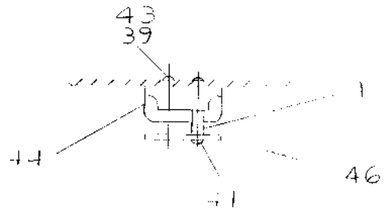
M
D-Ø-Ø
DUA-PDP12-Ø-Ø

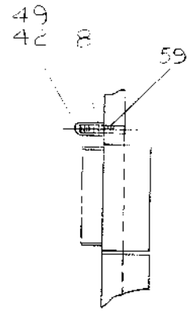


REAR VIEW DOOR & PLENUM OPEN

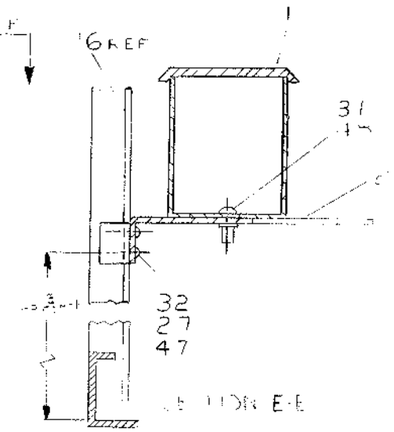


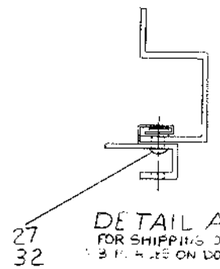
REAR VIEW DOOR REMOVED



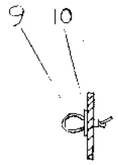


DETAIL C

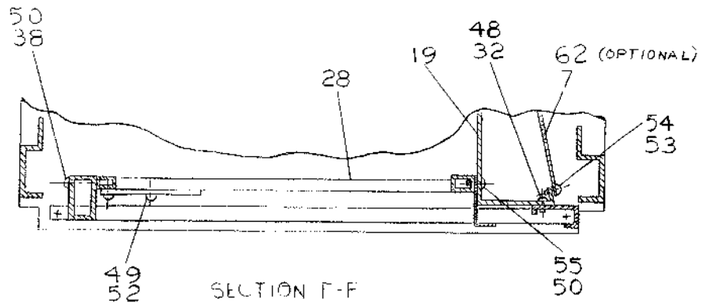




DETAIL A
(FOR SHIPPING ONLY - 3 PLACES ON DOOR)



DETAIL B



SECTION F-F

REVISIONS	REV	CHARGE NO	CHK

QTY	DESCRIPTION	PART NO.	ITEM NO

PARTS LIST

FIRST USED ON OPTION/MODEL: H7P12

DO NOT SCALE DRAWING

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

MATERIAL

FINISH

DRN	J FLEMING	DATE 8-5-69
CHK'D	K RUSS	DATE 8-5-69
ENG.	G GALE	DATE 8-11-69
PROJ. ENG.	G GALE	DATE 8-11-69
PROD.	D HALL	DATE 8-18-69

NEXT HIGHER ASSY

SCALE NONE

SHEET 2 OF 2

digital EQUIPMENT CORPORATION
MAYNARD MASSACHUSETTS

TITLE
H7P12
ASSEMBLY

SIZE	CODE	NUMBER	REV.
D		H7P12-0-0	M

DIST.

SEC FORM NO 1-00

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 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	PDP12-10	PDP12-20	PDP12-30	PDP12-40
1	C-MD-7406898-0-0	DUCT CABLE	2	2	2	2	2	2	2
2	C-IA-7406900-0-0	BRACKET, DUCT	2	2	2	2	2	2	2
3	C-MD-7406844-0-0	PANEL BLANK (NARROW)	4	5	5	4	4	3	3
4	C-IA-7006111-0-0	PDP 12 LOGIC CABLES	1	1	1	1	1	1	1
5	1203185-2	PRECISION POWER SUPPLY ±15V	1	1	0	1	1	1	1
6	D-IA-7006186-0-0	CABLE LOGIC POWER	2	2	2	2	2	2	2
7	D-IA-7407277-0-0	SCREEN, FAN	2	2	2	2	2	2	2
8	9008258	SPACER 1/4 AF X 1-3/8 LG #8-32	2	2	2	2	2	2	2
9	9007032	TIE WRAP SST-2-B (PANDUIT)	A/R	A/R	A/R	A/R	A/R	A/R	A/R
10	9006714	WASHER .250 X .500 X .062 THK	A/R	A/R	A/R	A/R	A/R	A/R	A/R
11	D-AD-7005964-0-0	ANALOG PANEL ASSY	1	1	1	1	1	1	1
12	C-IA-7406947-0-0	PANEL, CONN	2	2	2	2	2	2	2
13	D-AD-7005963-0-0	RELAY PANEL ASSY	1	-	-	1	1	1	1
14	D-UA-VR14-Ø-Ø	VR14 DISPLAY	1	1	-	-	1	1	1
15	D-UA-TU56-Ø-Ø	TAPE UNIT TU56	1	1	-	-	1	1	1
~~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	1	1	1	1
17	E-AD-7005955-0-0	CONSOLE ASSY	1	1	1	1	1	1	1
18	E-AD-7005958-0-0	TABLE ASSY	1	1	1	1	1	1	1
19	D-AD-7005983-0-0	FAN HOUSING ASSY	2	2	2	2	2	2	2
20	C-AD-7006045-0-0	POWER SUPPLY BRKT ASSY	1	1	-	1	1	1	1
21	D-UA-H951-TB-Ø	NARROW DOOR	1	1	1	1	1	1	1

TITLE	ASSY NO.	SIZE	CODE	NUMBER	REV	ECO NO.
PDP 12 ASSEMBLY	D-UA-PDP12-Ø-Ø	A	PL	PDP12-Ø-Ø	M	12-00099
	SHEET 1 OF 4	DIST.				

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 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	PDP12-10	PDP12-20	PDP12-30	PDP12-40
22	D-UA-H95Ø-HB-Ø	SHORT DOOR ASSY	1	1	1	1	1	1	1
23	D-UA-H951-BA-Ø	30" FULL DOOR ASSY	1	1	1	1	1	1	1
24	D-UA-H952-A-Ø	END PANEL	2	2	2	2	2	2	2
25	D-UA-H952-Q-Ø	COVER PANEL 10 1/2"	1	1	3	-	1	1	1
26	D-UA-724-Ø-Ø	POWER SUPPLY 724	1	1	1	1	1	1	1
27	9007786	SPEED NUT #10-32 TINNERMANN	69	69	69	69	71	71	71
28	EM12-Ø	BASIC 4K MEMORY	1	1	1	1	1	1	1
29	EP12-0	PDP12 PROCESSOR	1	1	1	1	1	1	1
30	D-IA-7006231-0-0	LINC TAPE D.C PWR HARNESS	1	1	1	1	1	1	1
31	9006071-3	SCR PHL HD TRUSS #10-32 X 3/8 LG	4	4	4	4	4	4	4
32	9006074-3	SCR PHL HD TRUSS #10-32 X 5/8 LG	49	49	49	49	54	54	54
33	9006039-1	SCR PHL HD PAN #8-32 X 1/2 SST	4	4	-	4	4	4	4
34	9006071-2	SCR PHL HD FLAT #10-32 X 3/8 LG	4	4	4	4	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	-	1	1	1	1
37	9006712	WASH .250 I.D X .375 OD X .032 THK	24	24	24	24	24	24	24
38	9006063-3	SCR PHL HD TRUSS 1/4-20 X 1 3/4 LG	6	6	6	6	6	6	6
39	9006026-1	SCR PHL HD PAN #6-32 X 3/4 LG	4	4	4	4	4	4	4
40	1201265	POWER CORD	2	2	-	2	2	2	2
41	9006020-1	SCR PHL HD PAN #6-32 X 1/4 LG	2	2	2	2	2	2	2
42	9008208	SCR PHL HD PAN #8-32 X 1/2 LG NYLON	2	2	2	2	2	2	2
43	9006560	NUT KEPS #6-32 SST	8	8	4	8	8	8	8

TITLE	ASSY NO.	SIZE	CODE	NUMBER	REV	ECO NO.
PDP 12 ASSEMBLY	D-UA-PDP12-Ø-Ø	A	PL	PDP12-Ø-Ø	M	
	SHEET 2 OF 4	DIST.				

DEC FORM NO
DRA 110

DIGITAL EQUIPMENT CORPORATION
MAYNARD, MASSACHUSETTS

PARTS LIST

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

ITEM NO.	DWG NO. / PART NO.	DESCRIPTION	PDP12-A	PDP12-B	PDP12-C	PDP12-10	PDP12-20	PDP12-30	PDP12-40
44	9006902	TERM STRIP #4-541 CINCH JONES	1	1	1	1	1	1	1
45	9006851	SPACER 1/4AF X 1/2 #6-32 AL	2	2	2	2	2	2	2
46	B-MD-7404721-0-0	PROTECTION COVER 541 (4 TERM)	1	1	1	1	1	1	1
47	9006635	WASH INT TOOTH #10	30	30	30	30	30	30	30
48	9007651	WASH EXT TOOTH #10	44	44	44	44	44	44	44
49	9006634	WASH INT TOOTH #8	11	11	11	11	11	11	11
50	9006724	WASH EXT TOOTH 1/4	12	12	12	12	12	12	12
51	9007630-3	SCR PHL HD TRUSS #10-32 X 3/4 BLK PASS	24	24	24	24	24	24	24
52	9006040-1	SCR PHL HD PAN #8-32 X 5/8 LG	9	9	9	9	9	9	9
53	9006022-1	SCR PHL HD PAN #6-32 X 3/8 LG	5	5	5	5	5	5	5
54	9006633	WASH INT TOOTH #6	5	5	5	5	5	5	5
55	9006058-3	SCR PHL HD TRUSS 1/4-20 X 3/4 LG	6	6	6	6	6	6	6
56	E-IA-7006037-0-0	MAIN FRAME HARNESS 120 VAC	1	1	1	1	1	1	1
57	E-IA-7006038-0-0	MAIN FRAME HARNESS DC	1	1	1	1	1	1	1
58	9107673-03	CORD #14/3 WIRE ~~GRY~~	2	2	-	2	2	2	2
59	9006077-3	SCR PHL HD TRUSS #10-32 X 1 LG	4	4	4	4	8	8	8
60	7408322	BRACKET MOUNTING BLOCK	2	2	-	-	2	2	2
61	7408321	MOUNTING BRACKET TU56	1	1	-	-	1	1	1
62	9006073-3	SCR PHL HD TRUSS #10-32 X 1/2 LG	2	2	-	-	2	2	2
~~63~~	~~C-UA-VP12-A-0~~	~~FILTER ASSY~~	~~1~~	~~1~~					
REF	D-IC-PDP12-Ø-3	POWER WIRING & SIGNAL CONN.							
~~64~~	~~1809804~~	~~LABEL, "O" WHITE, MYLAR~~	~~2~~	~~2~~	~~-~~	~~2~~	~~2~~	~~2~~	~~2~~

TITLE	ASSY NO.	SIZE	CODE	NUMBER	REV	ECO NO.
PDP 12 ASSEMBLY	D-UA-PDP12-Ø-Ø	A	PL	PDP12-Ø-Ø	M	
	SHEET 3 OF 4	DIST.				

DIGITAL EQUIPMENT CORPORATION
MAYNARD, MASSACHUSETTS

PARTS LIST

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

ITEM NO.	DWG NO. / PART NO.	DESCRIPTION	PDP12-A	PDP12-B	PDP12-C	PDP12-10	PDP12-20	PDP12-30	PDP12-40
~~65~~	~~D-AD-7006335-0-0~~	~~CLOCK CONTROL PANEL ASSY~~	~~-~~	~~-~~	~~1~~	~~-~~	~~-~~	~~1~~	~~1~~
66	C-IA-7408980-0-0	BRACKET, EXTRUSION	1	1	1	1	1	1	1
67	C-IA-7408981-0-0	BRACKET, HOLDOWN	2	2	2	2	2	2	2
68	7408983	BRACKET, SMALL DUCT	1	1	1	1	1	1	1
69	1205748	FILTER, MESH	2	2	2	2	2	2	2
70	9007772-13	PLASTIC CLAMP, DAKOTA	-	-	-	-	2	2	2
71	D-IA-7409121-0-0	BAR, CABLE MOUNTING	-	-	-	-	1	1	1
72	9007772-9	PLASTIC CLAMP, DAKOTA	-	-	-	-	1	1	1
73	TC12-Ø	LINC TAPE CONTROL	1	1	-	-	1	1	1
74	VC12-Ø	LINC SCOPE CONTROL	1	1	-	-	1	1	1
75	AD12-Ø	ANALOG TO DIGITAL CONVERTER	1	-	-	1	1	1	1
76	KF12-Ø	AUTOMATIC PRIORITY INTERRUPT	-	-	-	-	1	1	1
77	KW12-A	REAL TIME CLOCK	-	-	-	-	-	1	1
78	MC12-Ø	MEMORY EXTENSION CONTROL	-	-	-	-	-	1	1
79	DR12-Ø	RELAY BUFFER	1	-	-	1	1	1	1
80	LT33-DC	ASR33 TTY (115V 60HZ)	(1 per 115V 60Hz Systems)						
81	LT33-DD	ASR33 TTY (230V 50Hz)	(1 per 230V 50Hz Systems)						
82	LT33-DE	ASR33 TTY (100V 50Hz)	(1 per 100V 50Hz Systems)						
83	FPP12-O	FLOATING POINT PROCESSOR	-	-	-	-	-	-	1

TITLE	ASSY NO.	SIZE	CODE	NUMBER	REV	ECO NO
PDP 12 ASSEMBLY	D-UA-PDP12-Ø-Ø	A	PL	PDP12-Ø-Ø	M	
	SHEET 4 OF 4	DIST.				

DEC FORM NO.16-1031
DRA 110

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

(1) PDP 12-A
D-UA-PDP12-0-0

(2) A-D CONVERTER AD12
A-ML-AD12-0

(*3) EXP A-D AM12
A-ML-AM12-0

(4) ANALOG EXT PANEL ASSY (AD12)
D-AD-7006046-0-0

SPECIAL ANALOG EXT PANEL ASSY (AG12-A)
D-AD-7006581-0-0

(5) ANALOG EXT PANEL
D-IA-7406819-0-0

(6) RELAY BUFFER DR12
A-ML-DR12-0

(7) RELAY PANEL ASSY (DP12-C)
D-AD-7005963-0-0

(8) RELAY BOARD ASSY
D-AD-7006047-0-0

(9) ETCH BOARD ASSY
C-IA-5409124-0-0

(10) ETCH BOARD
C-IA-5009123-0-0

(11) RELAY PANEL
D IA-7108400

(16) PDP 12-B
D-UA-PDP12-0-0

(17) LINC TAPE CONTROL TC12
A-ML-TC12-0

(18) TAPE UNIT TU56
D-DI-TU56-0-1
D-UA-TU56-0-0

(*19) READ & WRITE OPT TC12-F
A-ML-TC12-F

(20) STEPDOWN XFMR H722
D-UA-H722-0-0

(12) LINC SCOPE CONTROL VC12
A-ML-VC12-0

(80) COLOR SCOPE CONTROL VC12-C
A-ML-VC12-Ø

(13) CRT DISPLAY VR14
D-DI-VR14-0-1
D-UA-VR14-0-0

(81) COLOR CRT DISPLAY VC12-C
D-DI-VR20-Ø-1
D-UA-VR20-Ø-0

(14) EXT SCOPE CABLE BC12A
D-UA-BC12A-0

(15) INT SCOPE CABLE
D-IA-7006238-0-0

P.S. BRACKET ASSY
C-AD-7006045-0-0

FOR PDP12-C
SEE SHEET #2

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.	J. F. Conroy	5-29-69
CHK'D.		DATE
ENG.	Gale	DATE 6/16/69
PROJ. ENG.	G	DATE 6/16/69
PROD.		DATE

NEXT HIGHER ASSY: A-ML-PDP12-D
SCALE
SHEET OF

digital EQUIPMENT CORPORATION
MAYNARD, MASSACHUSETTS

TITLE: DRAWING INDEX LIST (PDP12)

SIZE D | CODE DDI | NUMBER PDP12-D-0-1 | REV

DIST.

REVISIONS

LTR	CHANGE NO	
A	12-00031	D. NEVALA 10-27-69
B	12-00034	D. NEVALA 10-27-69
C	12-00036	D. NEVALA 10-27-69
D	12-00039	D. NEVALA 10-27-69
E	12-00040	D. NEVALA 10-27-69
F	12-00041	D. NEVALA 10-27-69
G	12-00042	D. NEVALA 10-27-69
H	12-00043	D. NEVALA 10-27-69
J	12-00050	GALE 11-10-69
K	12-00053	GALE 11-10-69
L	12-00055	GALE 11-10-69
M	12-00057	GALE 11-10-69
N	12-00058	GALE 11-10-69
P	12-00061	GALE 11-10-69
R	12-00062	GALE 11-10-69
S	12-00063	GALE 11-10-69
T	12-00064	GALE 11-10-69
U	12-00065	GALE 11-10-69
V	12-00066	GALE 11-10-69
W	12-00067	GALE 11-10-69

DEC FORM NO DPD 10C

(1) PDP 12-C
D-UA-PDP12-0-0

(21) CAB FRAME ASSY
E-AD-7005950-0-0

(23) H951 AA30" CAB
C-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-7406947-0-0

(2) 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-7406915-0-0

(34) LIGHT BOARD ASSY
D-AD-7006309-0-0

(35) LIGHT BOARD (CONSOLE)
D-1A-5408114-0-0

(36) ETCH BOARD LIGHT (CONSOLE)
E-1A-5008113-0-0

(37) TABLE ASSY
E-AD-7005858-0-0

(38) FAN HOUSING ASSY
D-AD-7005893-0-0

(39) H951-TB NARROW DOOR
D-UA-H951-TB-0
D-DI-H951-0-1

(51) LOGIC POWER CABLE
D-1A-7006166-0-0

(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

(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-U COVER PANEL
A-PL-H950-0-0
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

(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-7408100-00

(58) PDP12 PROCESSOR EP12
A-ML-EP12-0

(60) LOGIC FRAME ASSY EP12
D-AD-7005976-0-0

(57) MTG BAR ASSY
D-1A-7408100-0-0

(61) PLOTTER CONTROL XY12
A-ML-XY12-0-0

(62) REAL TIME CLOCK KW12A
A-ML-KW12-Ø

(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-J

(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-Ø

(74) SIMPLE CLOCK KW12-C
A-ML-KW12-Ø

(75) DATA BREAK MULTIPLEXER
A-ML-DM12-Ø

(76) I/O ACCESS PANEL
A-ML-H309-0

(80) COLOR DISPLAY CONTROL
A-ML-VC12-C

(81) COLOR DISPLAY
A-ML-VR20-0

(82) GT40/GT
SCOPE CONTROL
A-ML-VC12-S

(79) ANALYTICAL INSTRUMENTATION PACKAGE
A-ML-AIP12-0

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

NEXT HIGHER ASSY

SCALE —
SHEET 2 OF 5

digital EQUIPMENT CORPORATION
MAYNARD, MASSACHUSETTS

TITLE: DRAWING INDEX LIST (PDP12)

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

REVISIONS

REV	CHANGE NO.	CHK	
Y	12-00099	R. MOORE	6-11-69

DEC FORM NO 1012 '69

PDP12-40
A-ML-PDP12-40

77

PDP12-30
A-ML-PDP12-30

FPP12
A-ML-FPP12-0

62

KW12-A
REAL TIME CLOCK
A-ML-KW12-Ø

63

D-AD-7006335-0-0
CLOCK PANEL

65

MC12
EXT MEMORY CONTROL
A-ML-MC12-Ø

PDP12-20
A-ML-PDP12-20

18

TU56
DUAL TRANSPORT
D-DI-TU56-0-1
D-UA-TU56-0-0

17

TC12
LINE TAPE CONTROL
A-ML-TC12-Ø

PDP12-10
A-ML-PDP12-10

12

VC12
LINE SCOPE CONTROL
A-ML-VC12-Ø

73

VR14
CRT DISPLAY
D-DI-VR14-Ø-1
D-UA-VR14-Ø-Ø

75

KF12
AUTO PRIORITY
INTERRUPT
A-ML-KF12-Ø

2

A-D CONVERTOR
AD12
A-ML-AD12-Ø

4

ANALOG-EXT
PANEL (AG12)
D-AD-7006046-0-0

5

ANALOG-EXT
PANEL
D-IA-7406819-0-0

TO PDP12-C
PAGE 2 OF 5

6

DR12
RELAY BUFFER
A-ML-DR12-Ø

7

RELAY PANEL
ASSY (DR12)
D-AD-7005963-Ø-Ø

11

RELAY PANEL
D-IA-7406846-Ø-Ø

8

RELAY BOARD ASSY
C-AD-7006047-Ø-Ø

9

ETCH BOARD ASSY
C-IA-5108124-Ø-Ø

10

ETCH BOARD
C-IA-5008123-Ø-Ø

REVISIONS	REV	CHANGE NO	CHK

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

UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES. TOLERANCES
DECIMALS: XXX = .005, XX = .02, X = .1 — ANGLES: ±0° 30'
REMOVE BURRS AND BREAK SHARP CORNERS SURFACE QUALITY ✓
MATERIAL —
FINISH —

DRN J FLEMING	DATE 6-29-69	
CHK'D K RUSS	DATE 7-21-69	
ENG L GALE	DATE 8-11-69	
PROJ ENG L GALE	DATE 8-11-69	
PROD D CAIL	DATE 8-18-69	
NEXT HIGHER ASSY.		
SCALE NONE		
SHEET 3 OF 5		

digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS

TITLE: DRAWING INDEX LIST (PDP12)

SIZE	CODE	NUMBER	REV.
D	DI	PDP12-Ø-1	Y

DIST.

DEC FORM NO DND 102-B

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-7406899-0-0			
	BRACKET, DUCT	C-IA-7406900-0-0			
	PANEL BLANK (NARROW)	C-MD-7406944-0-0			
	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-7405947-0-0			
(A&B)	HARNESS MAIN FRAME 120 VAC	E-IA-7006037-0-0			
	HARNESS MAIN FRAME DC	E-IA-7006038-0-0			
(A&B)	HARNESS LINC TAPE DC PWR	D-IA-7006231-0-0			
	PROTECTION COVER 541 (4TERM)	B-MD-7404721-0-0			
	SHIPPING BRKT TU55	C-MD-7407759-0-0			
2	A-D CONVERTER (AD12)	A-ML-AD12-0			
* 3	EXPANDED A-D (AM12)	A-ML-AM12-0			
* 4	ANALOG EXT PANEL ASSY (AG12)	D-AD-7006066-0-0			
	ANALOG EXT PANEL ASSY (PL)	A-PL-7006066-0-0			
	LOGIC DECALS	A-DC-7407195-0-0			
	SPECIAL ANALOG EXT. PANEL ASSY (AG12-A)	D-AD-7006851-0-0			
	SPECIAL ANALOG EXT. PANEL ASSY (PL)	A-PL-7006851-0-0			
5	ANALOG EXT PANEL	D-IA-7406819-0-0			
	ANALOG EXT PANEL SILK SCREEN	C-SS-7406819-0-1			
	BRACKET, CABLE	B-MD-7406901-0-0			
6	RELAY BUFFER (DR12)	A-ML-DR12-0			
7	RELAY PANEL ASSY(DR12)	D-AD-7005963-0-0			
	RELAY PANEL ASSY (PL)	A-PL-7005963-0-0			
	BRACKET, CABLE	B-MD-7406901-0-0			
	CABLE ASSY (G783)	C-IA-7006028-1-0			
	LOGIC DECALS	A-DC-7407193-0-0			
	W828 CABLE ASSY	D-IA-7007005-0-0			
9	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-5008123			
11	RELAY PANEL	D-IA-7406846-0-0			
	RELAY PANEL, SILK SCREEN	C-SS-7406846-0-1			
12	LINC SCOPE CONTROL (VC12)	A-ML-VC12-0			
13	CRT DISPLAY	D-UA-VR14-0-0			
	CRT DISPLAY	A-PL-VR14-0-0			
	DRAWING INDEX LIST	D-DI-VR14-0-1			
14	EXT SCOPE CABLE (BC12A)	D-UA-BC12A-0-0			
15	INT SCOPE CABLE	D-IA-7006238-0-0			
	W828 CABLE ASSY	C-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 (TC12)	A-ML-TC12-0			

FIND NO	DESCRIPTION	DWG NUMBER	DEPT USAGE PROD	CUST	F C
18	TAPE UNIT (TU56)	D-UA-TU56-0-0			
	TAPE UNIT (TU56) (PL)	A-PL-TU56-0-0			
	DRAWING INDEX LIST	D-DI-TU56-0-1			
	~~TAPE UNIT (TU55-A) (PL)~~	~~D-UA-TU55-A-0~~			
	~~TAPE UNIT (TU55-A) (PL)~~	~~A-PL-TU55-A-0~~			
	~~DRAWING INDEX~~	~~D-DI-TU55-A-0~~			
* 19	READ WRITE OPT TC12-F	A-ML-TC12-F			
20	XFMR STEPDOWN	D-UA-H722-0-0			
	XFMR STEPDOWN (PL)	A-PL-H722-0-0			
	~~PANEL, EMIC (AT)~~	~~D-IA-7407203-0-0~~			
	~~COVER PROTECTION (541) 6 TERM~~	~~C-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 18"	D-IA-7406786-0-0			
	DOOR, PLENUM	E-IA-7407648-0-0			
	PIN, DOOR	B-MD-7406872-0-0			
	RETAINER, DOOR PIN	B-MD-7406870-0-0			
	BRACKET CONTROL PANEL R.H.	C-IA-7407093-2-0			
	BRACKET CONTROL PANEL L.H.	C-IA-7407093-1-0			
	PLENUM, SPACER	A-MD-7405268-0-0			
	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	PC5008111-0-0			
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-7006009-0-0			
	LIGHT BOARD ASSY (PL)	A-PL-7006009-0-0			
	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-7005158-0-0			
	TOP, TABLE	D-IA-7406836-0-0			
	FRAME, TABLE	E-IA-7406939-0-0			
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-7406948-0-0			
	FAN DECALS	A-DC-7406889-0-0			
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-5308247-0-0			
	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-5308410-0-0			
	SPECS. 724 P.S.	4-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-5408291-0-0			
48	ETCH BOARD, HEAT SINK	C-IA-5009293-0-0			
	ASSY DRILLING HOLE LAYOUT	C-AH-5408293-0-5			
	X-Y COORDINATE HOLE LOC	K-CO-5008284-0-4			

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-5008284-0-4			
51	CABLE LOGIC POWER	D-IA-7006186-0-0			
52	POWER CONN G780	C-UA-G780-0-0			
	TAB FASTON	A-MD-7407186-0-0			
	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-7407183-0-0			
	G783 CABLE ASSY	C-IA-7006029-1-0			
54	ANALOG PANEL	D-IA-7406845-0-0			
	ANALOG PANEL SILK SCREEN	C-SS-7406845-0-1			
55	BASIC 4K MEMORY (EM12)	A-ML-EM12-0			
56	LOGIC ASSY MEMORY(EM12)	D-AD-7005979-0-0			
	LOGIC ASSY MEMORY (PL)	A-PL-7005979-0-0			
	298 PIN CONN BLOCK	E-SC-1205348-0-0			
	LOGIC FRAME DECALS	A-DC-7406370-0-0			
	LOGIC FRAME	D-IA-7407207-0-0			
57	MTG BAR ASSY	D-IA-7406100-0-0			
	MTG BAR	C-MD-7405035-0-0			
63	KW12 CONTROL PANEL	D-AD-7006335-0-0			
80	COLOR SCOPE CONTROL (VC12-C)	A-ML-VC12-C-0			
81	CRT DISPLAY (COLOR)	D-UA-VR20-0-0			
	CRT DISPLAY (COLOR)	A-PL-VR20-0-0			
	DRAWING INDEX LIST	D-DI-VR20-0-1			

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	J.F. Gray	6-11-69
CHK'D	Richard	6-11-69
ENG	Hale	6/11/69
PROJ ENG	Hale	6/11/69
PROD	Virgil C	6/11/69

NEXT HIGHER ASSY

digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS

TITLE: DRAWING INDEX LIST (PDP12)

SIZE D | CODE DD1 | NUMBER PDP12 - Ø - 1 | REV Y

SCALE NONE

SHEET 4 OF 5

DIST. G

REVISIONS | REV. | CHANGE NO. | CHK

DEC FORM NO DPO 100

MECHANICAL FIND NO	DESCRIPTION	PART NO	DEPT USAGE PROD	CUST	F C
59	PDP12 PROCESSOR (EPI2)	A-ML-EPI2-0			
60	LOGIC ASSEMBLY (EPI2)	G-AD-7005976-0-0			
	LOGIC ASSEMBLY (PL)	A-PL-7005976-0-0			
	248 PIN CONN BLOCK	E-SC-1205348-00			
	LOGIC FRAME DECALS	A-DC-7408373-0-0			
	LOGIC FRAME	D-FA-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-FA-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			
	SYSTEM 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	B-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-VR14-0			
	CIRCUIT SCHEMATIC	D-CS-VR14-0-1			
17	LINC TAPE CONTROL	A-ML-TC12-0			
	TAPE PROCESSOR MUR. 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-LMD			
	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-LWN			

ELECTRICAL FIND NO	DESCRIPTION	PART NO	DEPT USAGE PROD	CUST	F C
18.	TAPE UNIT TU56	A-ML-TU56-0			
	~~TAPE UNIT 50 M2~~	~~A-ML-TU56-1~~			
*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 G790	C-UA-G790-0-0			
	CIRCUIT SCHEMATIC	B-CS-G790-0-1			
53.	ANALOG PANEL ASSY	D-AD-7005984-0-0			
	CIRCUIT SCHEMATIC	C-CS-7005984-0-1			
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			
	MOS SENSE AMPS & INHIBIT DRIVERS	D-BS-EM12-0-MOS			
	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-IPCW			
56	WIRED ASSY (EM12)	D-AD-7005979-0-0			
	WIRED ASSY 24	A-PL-7005979-0-0			
59.	POP12 PROCESSOR	A-ML-EPI2-0			
	MODULE UTILIZATION RACK ~~H-I~~	D-MU-EPI2-0-1			
	MODULE UTILIZATION (PL)	A-PL-EPI2-0-1			
	~~MODULE UTILIZATION RACK K-M~~	~~D-MU-EPI2-0-2~~			
	~~MODULE UTILIZATION (PL)~~	~~A-PL-EPI2-0-2~~			
	CONSOLE STARTS	D-BS-EPI2-0-CST			
	CONSOLE INDICATORS	D-BS-EPI2-0-CIN			
	CENTRAL PROCESSOR RUN	D-BS-EPI2-0-CPR			
	CENTRAL PROCESSOR STATES	D-BS-EPI2-0-CPS			
	CP TIME STATES	D-BS-EPI2-0-CPT			
	CENTRAL PROCESSOR TIME PULSES	D-BS-EPI2-0-CPTP			
	CONSOLE SWITCH INPUTS	D-BS-EPI2-0-DSI			
	CARRY INSERTS	D-BS-EPI2-0-DYI			
	FLOW & END SHIFT	D-BS-EPI2-0-FLE			
	LINK LOGIC	D-BS-EPI2-0-FLK			
	IO & EXT MEM CABLES	D-BS-EPI2-0-IOB			
	INSTRUCTION REGISTER	D-BS-EPI2-0-INR			
	INSTRUCTIONS	D-BS-EPI2-0-INS			
	INPUT TO PART A I/O	D-BS-EPI2-0-IOA			
	INPUT TO PART B I/O	D-BS-EPI2-0-IOB			
	IO CONTROL & TIMING	D-BS-EPI2-0-IOC			
	IO OUTPUT BUFFERS	D-BS-EPI2-0-IOO			
	RELAY BUFFER	D-BS-EPI2-0-IOR			
	INTER PROC CABLES	D-BS-EPI2-0-IPC			
	MEM EXTN AC INPUTS	D-BS-EPI2-0-MEA			
	MEM PAGE EXTN CONTROLS	D-BS-EPI2-0-MPG			
	PROCESSOR MISC A	D-BS-EPI2-0-PMA			
	PROCESSOR MISC B	D-BS-EPI2-0-PMB			
	PRA PROCESSOR BITS 0 & 1	D-BS-EPI2-0-PRA			
	PRB PROCESSOR BITS 2 & 3	D-BS-EPI2-0-PRB			
	PRC PROCESSOR BITS 4 & 5	D-BS-EPI2-0-PRC			
	PRD PROCESSOR BITS 6 & 7	D-BS-EPI2-0-PRD			
	PRE PROCESSOR BITS 8 & 9	D-BS-EPI2-0-PRE			
	PRF PROCESSOR BITS 10 & 11	D-BS-EPI2-0-PRF			
	REGISTER CONTROL A	D-BS-EPI2-0-RCA			
	REG IN ENABLE 2	D-BS-EPI2-0-RCB			
	REGISTER CONTROL C	D-BS-EPI2-0-RCC			
	REG ENABLE 4	D-BS-EPI2-0-RCD			
	REG SHIFT & MQ INPUTS	D-BS-EPI2-0-RCS			
	PROCESSOR REGISTER LOAD CONTROL	D-BS-EPI2-0-RCL			
	SKIP FF & H BITS	D-BS-EPI2-0-SKH			
	EPI2 BITS	D-BS-EPI2-0-SKI			
	MULQUOTIENT	D-BS-EPI2-0-MQR			
	PROCESSOR REGISTOR GATING	D-BS-EPI2-0-PRG			

ELECTRICAL FIND NO	DESCRIPTION	PART NO.	DEPT USAGE PROD	CUST	F C
59 (CONT)	SET/RESTORE FIELDS	D-BS-LPI2-0-SRF			
	SPECIAL LEVELS 1	D-BS-EPI2-0-SLA			
	TTI TELETYPE RECEIVER	D-BS-EPI2-0-TTI			
	TTO TELETYPE TRANSMITTER	D-BS-EPI2-0-TTO			
	WIRE LIST	K-WL-EPI2-0-3			
	D.C. POWER PROCESSOR LOGIC	A-WL-EPI2-0-4			
60	WIRED ASSY(EPI2)	D-AD-7005976-0-0			
* 61	WIRED ASSY(PL)	A-PL-7005976-0-0			
62 *	PLOTTER CONTROL (XY12)	A-ML-XY12-0			
	CLOCK (KW12-A)	A-ML-KW12-0			
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-B			
* 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-B			
73	CLOCK (KW12-B)	A-ML-KW12-0			
74	CLOCK (KW12-C)	A-ML-KW12-0			
* 75	AUTOMATIC PRIORITY INTERRUPT	A-ML-KF12-0			
* 76	DATA BREAK MULTIPLEXER	A-ML-DM12-0			
* 77	FLOATING POINT PROCESSOR	A-ML-FP12-0			
* 78	I/O ACCESS PANEL H309	A-ML-H309-0			
* 79.	ANALYTICAL INSTRUMENTATION - PACKAGE	A-ML-AIP12-0			
80.	COLOR DISPLAY CONTROL	A-ML-VC12-C-			
81.	COLOR DISPLAY	A-ML-VR20-0			
82	611/601 SCOPE CONTROL	A-ML-VC12-S			

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. Fleming	DATE 1-13-69
CHK'D	[illegible]	DATE 2-1-69
ENG	[illegible]	DATE 2/11/69
PROJ ENG	[illegible]	DATE 2/11/69
PROD	[illegible]	DATE 2/19/69

NEXT HIGHER ASSY.

SCALE NONE

SHEET 5 OF 5

digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS

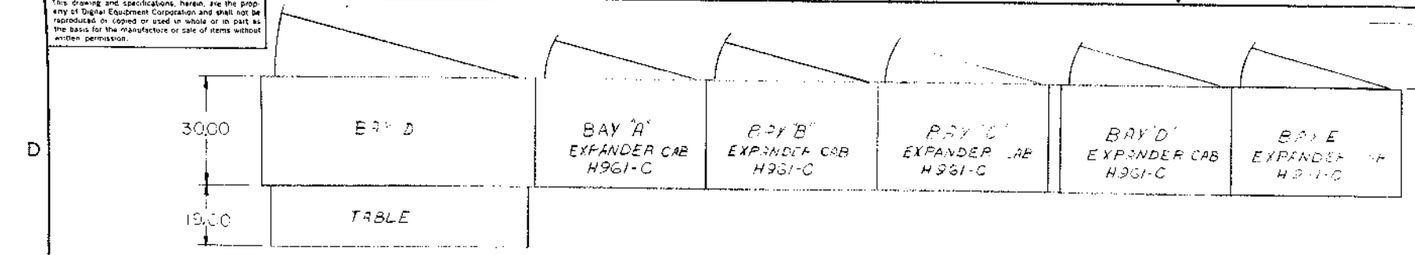
TITLE: DRAWING INDEX LIST (PDP 12)

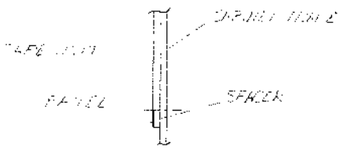
SIZE D | CODE DI | NUMBER PDP12-0-1 | REV Y

DIST.

REVISIONS REV	CHANGE NO.	CHK
A	1	

DEC FORM NO DRD 100

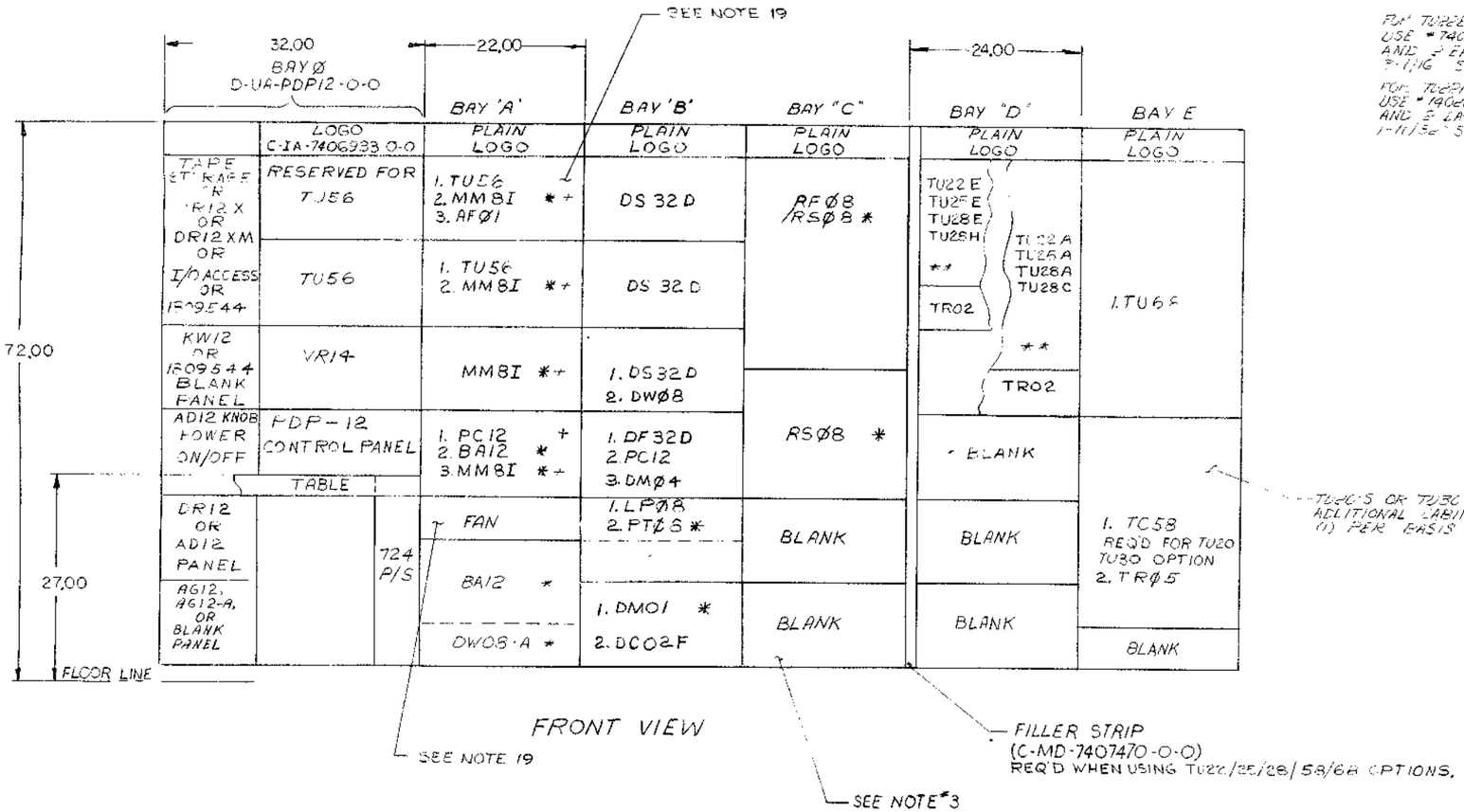




DETAIL A

FOR TU22E TU25E TU28E C TU28H USE "7406205 2-7/8 PANEL AND 2 EACH "7406676-2-C 2-1/16" STANDOFF (SPACER)

FOR TU22A, TU25A, TU28A OR TU28C USE "7406205 1-11/32" PANEL AND 2 EACH "7406676-1-C 1-11/32" STANDOFF (SPACER)



FRONT VIEW

SEE NOTE 19

FILLER STRIP (C-MD-7407470-0-0) REQ'D WHEN USING TU22/25/28/58/68 OPTIONS.

SEE NOTE 3

TU60'S OR TU30'S REQUIRE ADDITIONAL CABINETS ON A (1) PER BASIS

NOTES:

COVER PANELS AND DOORS

1. IF OPTION IS NOT REQUIRED IN PRIORITY AREA OR BLANK IS LISTED FOR CAB A THRU J USE PANEL H950-QA
2. * ASTERISK DESIGNATES OPTIONS THAT REQUIRE H950-QA COVER PANEL
3. A MAXIMUM OF (2) RS08 OPTIONS AND (1) RF08 OPTION CAN BE USED PER CABINET
4. TC58 OR DF/DS 32 OPTIONS IN ANY EXPANDER BAY REQUIRE "H960-E5-0-0 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. TU56'S SHOULD ALWAYS BE MID 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 854 PWR CONTROL SEPARATE 20 AMP SERVICE (ON SAME PHASE AS COMPUTER) IS USED FOR THE FIRST OPTION CAB AND WILL HANDLE AS WELL OTHER BAYS
16. THE RS/RF08 AND MAG TAPE CABS WHICH ARE COMPLETELY DEFINED IN OTHER PRINT SETS USE THEIR OWN POWER CONTROL AND WILL REQUIRE SEPARATE 20 AMP SERVICES.

OTHER CONSIDERATIONS

17. A FULL LENGTH DOOR MAY BE USED ON THE FRONT OF AN OPTION CABINET WHICH IS COMPLETELY FILLED WITH LOGIC AND WITHOUT OPERATOR CONTROLS
18. ALWAYS USE COVER PANELS FOR OPTION CABINETS WHICH MAY HAVE LOGIC ADDED AT A LATER TIME.
19. USE 7406915-1 OR 7005530-1 FAN ASSEMBLY FOR OPTION DESIGNATED BY SYSTEM LAYOUT.
20. USE (1) 5-1/4" * 7005509 AC SERVICE RECEPTACLE ASSEMBLY FOR SYSTEMS HAVING MORE THAN 2 TTY'S
21. ** DENOTES UNITS REQUIRING FILLER STRIPS. (SEE DETAIL A)
22. STRAIN GAGE WHEATSTONE BRIDGE, FM73-8793, SHOULD BE USED FOR [illegible]

QTY.	DESCRIPTION	PART NO	ITEM NO.

PARTS LIST

REVISIONS					
CTR	CHANGE NO.	REV	BY	DATE	CHK'D
	12-00051	A			
	12-00060	B	D. MACKLIN	11-27-72	
	12-00079	C	D. MACKLIN	11-27-72	
	12-00088	D	D. MACKLIN	11-27-72	
	12-00093	E	D. MACKLIN	11-27-72	
		F	D. MACKLIN	11-27-72	
		H	D. MACKLIN	11-27-72	

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. [illegible]	10-19-69
CHK'D	[illegible]	10-15-69
ENG	[illegible]	11-17-69
PROJ. ENG.	[illegible]	10-17-69
PROD.	[illegible]	10/17/69

NEXT HIGHER ASSY

SCALE

SHEET OF

digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS

TITLE: EQUIPMENT LAYOUT (PDP12)

SIZE	CODE	NUMBER	REV
D		PDP12-0-2	H

DIST.

CUST. NO. DEC AA-PDP12-0-2

REAR VIEW

BAY "E"	BAY "D"	BAY "C"	BAY "B"	BAY "A"	BAY "Ø"	
			PWR DIST PNL *7005909	PWR INST PNL *7005909	BASIC 4K MEMORY EM12	FAN ASSY
					CENTRAL PROCESSOR EP12	FAN ASSY
				854 PWR CONT		
783 P/S FOR TC58			734B P/S VARIABLE FOR RF/RS08	783 P/S		
			783 P/S	783 P/S		

FRONT VIEW (LAB-8 CONFIGURATION)

BAY Ø (D-UA-PDP12-0-0) BAY "A" (H-961-C CAB)

	LOGO	LOGO
TAPE STORAGE OR DR12X OR DR12YM OR I/O ACCESS OR IP09544	RESERVED FOR TU56	DS32D
	TU56	DS 32D
KW12 OR IP09544 BLANK PANEL	VR14	DS 32D
AD12 KNOBS POWER ON/OFF	PDP-12 CONTROL PANEL	DF 32D
	TABLE	
DR12 AND AD12 PANEL	724 P/S	DWØ8-A
		BLANK
AG12, AG12A OR BLANK PANEL		BLANK

FRONT VIEW

* 7005500 DOOR REQ'D.

DISK CONFIGURATION

BAY A	BAY Ø	
PWR DIST *7005909	MEMORY EM12	FAN ASSY
	PROCESSOR EP12	FAN ASSY
854 PWR CONT		
783 P/S		

REAR VIEW

(1) 783 P/S & 854 PWR CONT REQ'D ON BOTTOM OF REAR DOOR

ITEM NO.	PART NO.	DESCRIPTION	QTY.

PARTS LIST

FIRST USED ON OPTION/MODEL: PDP12

DO NOT SCALE DRAWING

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

MATERIAL

FINISH

DRN. DATE
CHK'D. DATE
ENG. DATE
PROJ. ENG. DATE
PROD. DATE
NEXT HIGHER ASSY

digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS

TITLE: EQUIPMENT LAYOUT PDP12

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

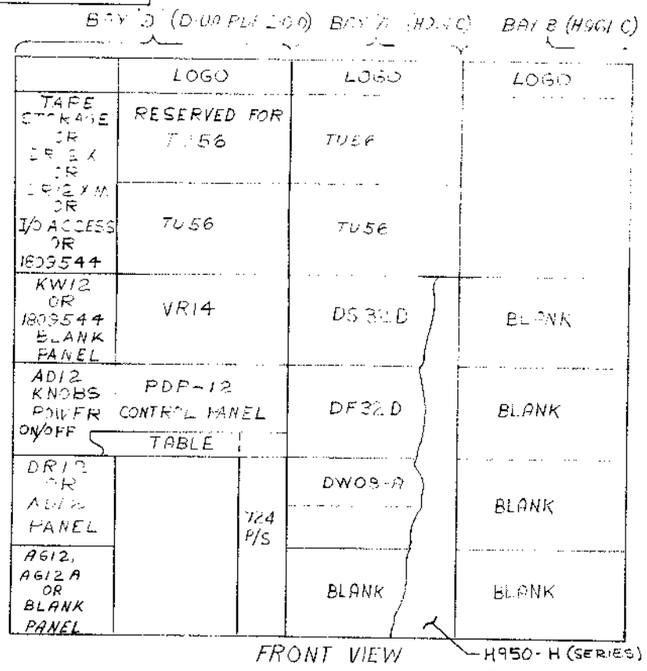
SCALE

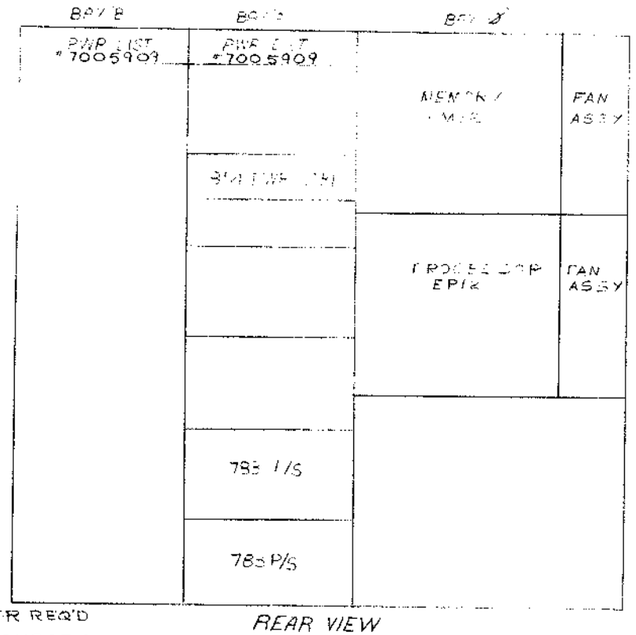
SHEET 2 OF

DIST.

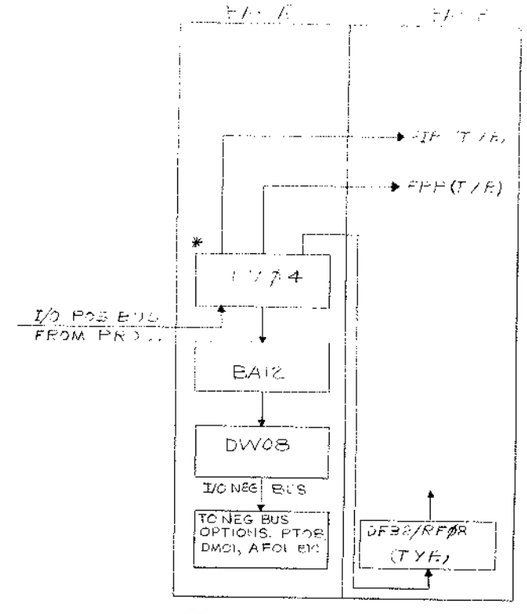
REVISIONS | REV | CHANGE NO | CHK

DEC FORM NO DRD 100





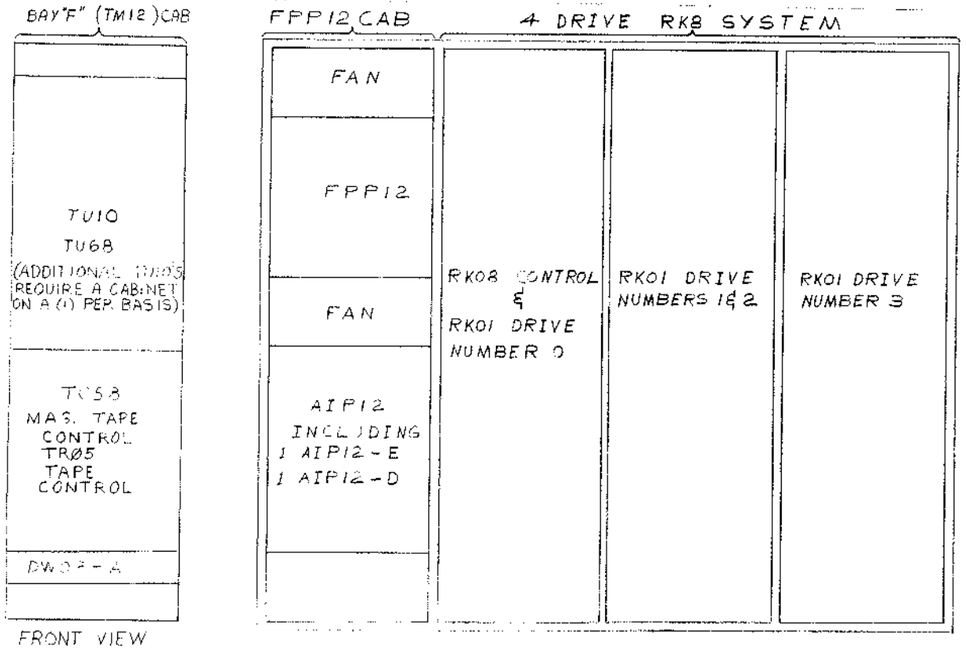
TAPE UNIT CONFIGURATION



DETAIL OF PREFERRED I/O BUS ROUTING

DETAIL-A

* DM04 MAY BE REPLACED BY DM12 IF INSTALLED.



QTY.	DESCRIPTION	PART NO.	ITEM NO.

PARTS LIST

FIRST USED ON OPTION/MODEL: PDP-12

DO NOT SCALE DRAWING

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

MATERIAL

FINISH

NEXT HIGHER ASSY

DRN		DATE
CHK'D		DATE
ENG		DATE
PROJ. ENG		DATE
PROD.		DATE

SCALE

SHEET 3 OF 5

digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS

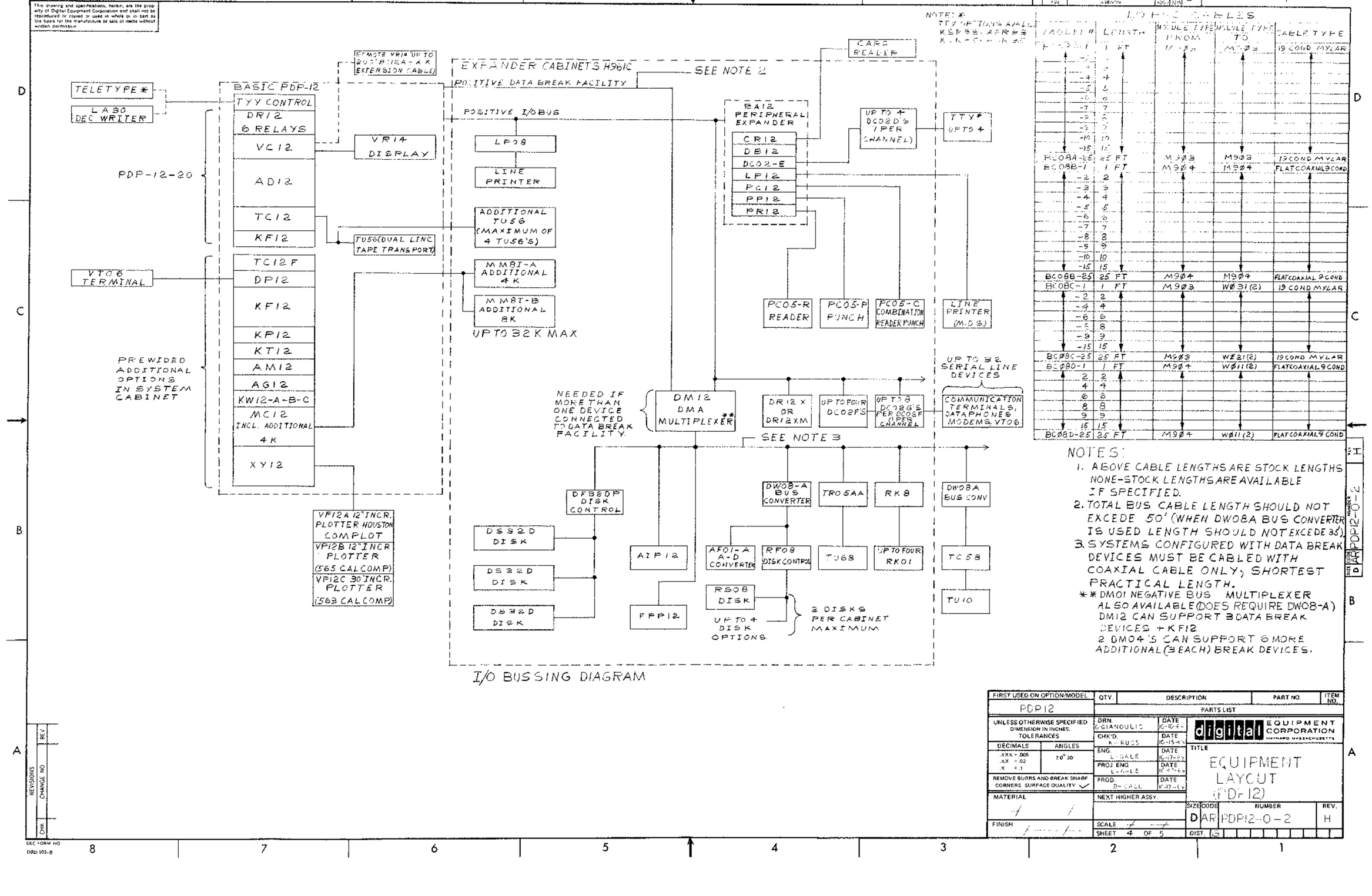
TITLE: EQUIPMENT LAYOUT PDP12

SIZE	CODE	NUMBER	REV.
D		MP-PDP12-0-2	H

DIST.

REVISIONS	REV.
CHANGE NO	
CHK	

DEC FORM NO DRD. 100



I/O BUSSING DIAGRAM

NOTE: * TTY OPTIONS AVAIL KSR35, ASR33 KSR37, ASR37

I/O CABLES

CABLE #	LENGTH	MODULE TYPE FROM	MODULE TYPE TO	CABLE TYPE
BC08A-25	25 FT	M9Ø3	M9Ø3	19 COND MYLAR
BC08B-1	1 FT	M9Ø4	M9Ø4	FLAT COAXIAL 9 COND
BC08B-25	25 FT	M9Ø4	M9Ø4	FLAT COAXIAL 9 COND
BC08C-1	1 FT	M9Ø3	W831(2)	19 COND MYLAR
BC08C-25	25 FT	M9Ø3	W831(2)	19 COND MYLAR
BC08D-1	1 FT	M9Ø4	W811(2)	FLAT COAXIAL 9 COND
BC08D-25	25 FT	M9Ø4	W811(2)	FLAT COAXIAL 9 COND

NOTES:
1. ABOVE CABLE LENGTHS ARE STOCK LENGTHS NONE-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').
3. SYSTEMS CONFIGURED WITH DATA BREAK DEVICES MUST BE CABLED WITH COAXIAL CABLE ONLY; SHORTEST PRACTICAL LENGTH.

** DM01 NEGATIVE BUS MULTIPLEXER ALSO AVAILABLE (DOES REQUIRE DW08-A) DM12 CAN SUPPORT 3 DATA BREAK DEVICES + KF12
2 DM04'S CAN SUPPORT 6 MORE ADDITIONAL (3 EACH) BREAK DEVICES.

REVISIONS			
REV	CHANGE NO	DWN	

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

UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES. TOLERANCES
DECIMALS .XXX ± .005, .XX ± .02, .X ± .1; ANGLES ±0° 30'
REMOVE BURRS AND BREAK SHARP CORNERS SURFACE QUALITY ✓
MATERIAL —
FINISH —

DRN.	G. GIANOULIS	DATE 10-10-69
CHK'D.	K. RUDIS	DATE 10-15-69
ENG.	L. SCALE	DATE 10-17-69
PROJ. ENG	L. SCALE	DATE 10-17-69
PROD.	D. CASEL	DATE 10-17-69

NEXT HIGHER ASSY. —
SCALE —
SHEET 4 OF 5

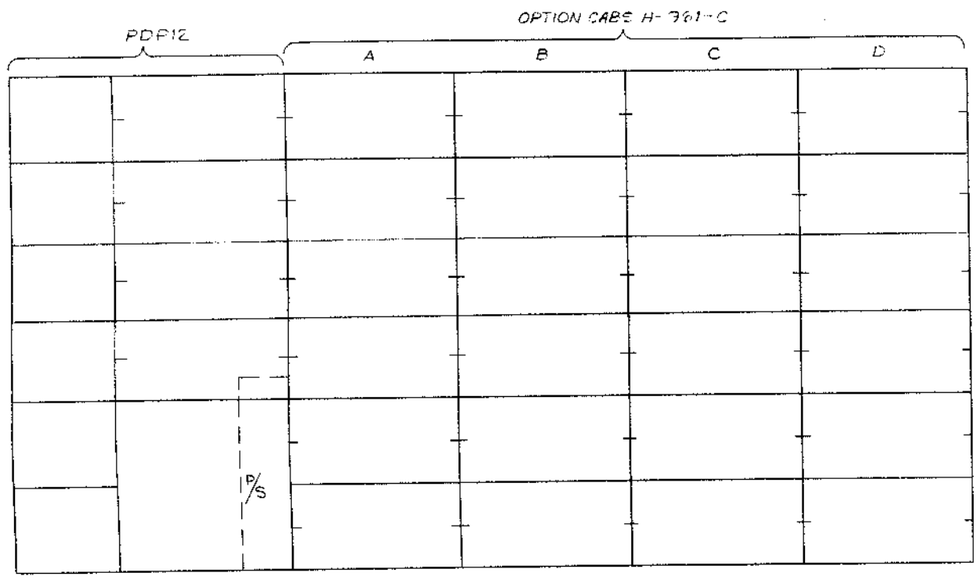
digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS

TITLE: EQUIPMENT LAYOUT (PDP12)

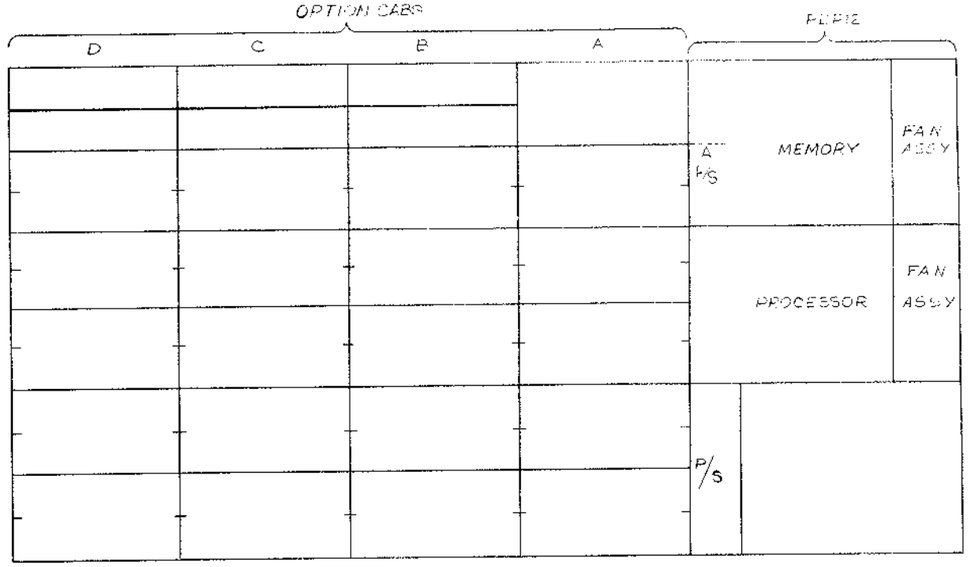
SIZE	CODE	NUMBER	REV.
D	AR	PDP12-0-2	H

DIST. 15

DEC FORM NO DRD 102-B



FRONT VIEW



REAR VIEW

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. RIFFIN DATE 10-22-69
CHK'D DATE
ENG. DATE
PROJ. ENG. DATE
PROD. DATE
NEXT HIGHER ASSY
SCALE
SHEET OF

digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS

TITLE
EQUIPMENT LAYOUT PDP12

SIZE/CODE D/AR
NUMBER PDP12-0-2
REV. H
DIST.

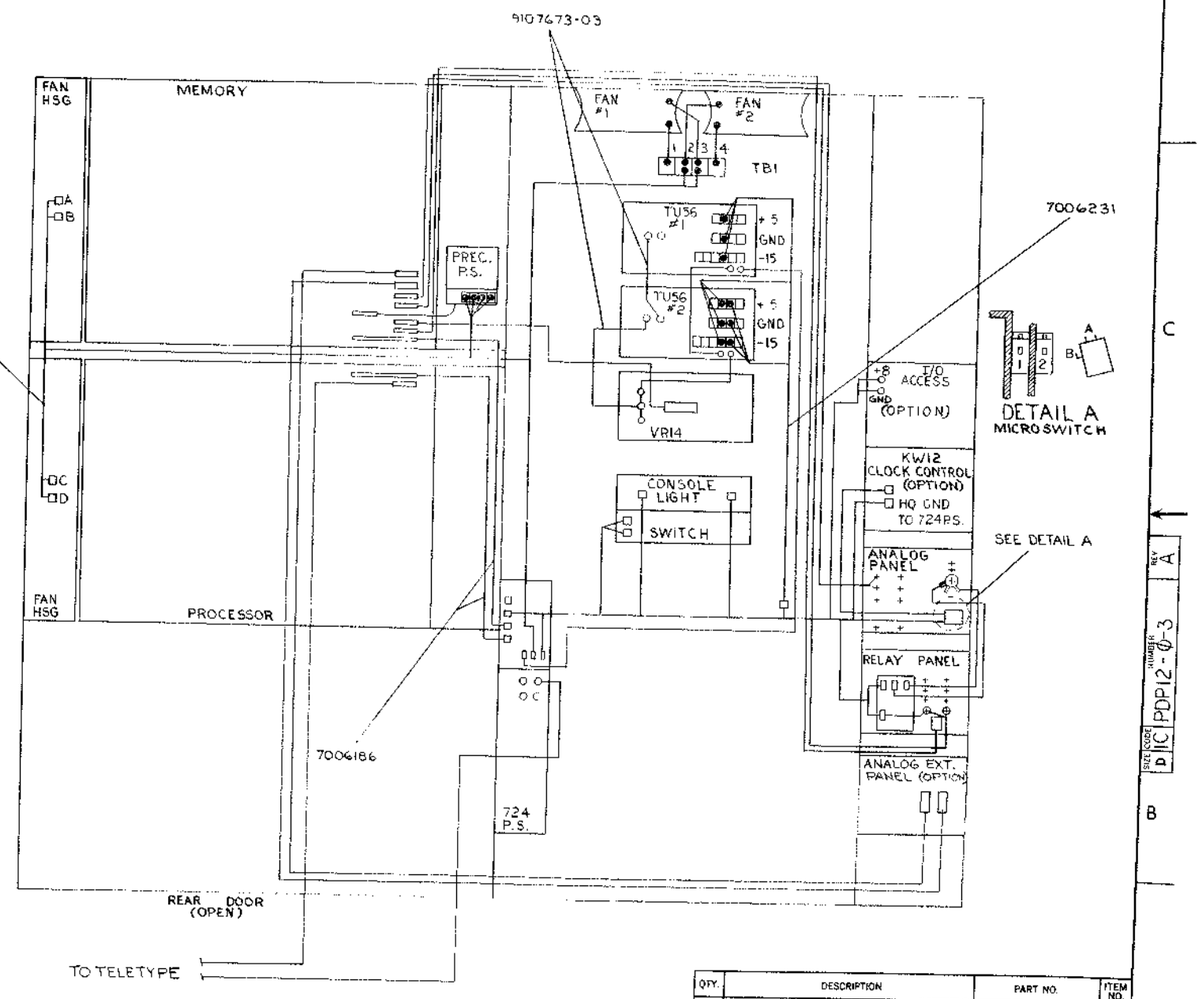
SIZE/CODE D/AR NUMBER PDP12-A-2 REV. H

POWER WIRING & CABLES

PART NO.	COLOR	FROM/HARNESS LEAD NO.	TO SYS. LOC.	REMARKS
7006039	—	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 LD	
	BLK	10	LIGHT BD GND TAB	
	BLK	11	" " GND TAB	
	GRN	12	" " +15V TAB	
	GRN	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.O.)	
	BLU	18	" " 1A(N.O.)	
	BLU	19	" " 1B(COM)	
7006038	—	P3	LINC TAPE D.C.	POWER CABLE D.C.
			CABLE 7006231-P1	
7006231		P1	PWR CABLE D.C. 7006038-P3	LINC TAPE D.C.
	BLK	1	TU55 (2) GND	
	RED	2	" +5	
	BLU	3	" -15	
	RED	7	" (1) +5	
	BLU	8	" -15	
	BLK	9	" GND	
	BLU	10	" (2) -15	
	RED	11	" +5	
7006231	BLK	12	" GND	LINC TAPE D.C.
7006037	—	P1	FAN HSG CONN B	MAIN FRAME 120 VAC
	—	P2	" " " A	
	—	P3	724 P S (15 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	
7006022	—	P5	" " " C	MAIN FRAME 120 VAC
7006196	—	724 P S MEMORY	LOGIC EF 40	LOGIC PWR CABLE
7006186	—	724 P S PROCESSOR	LOGIC MN 01	LOGIC PWR CABLE
REF	GRN	RELAY PANEL JAX	RELAY BD GND TAB	PANEL LEAD WIRE
REF	ORN	ANALOG PNL R10-1	RELAY BD SPKR #1	PANEL LEAD WIRE
REF	VIO	" R10-3	" " SPKR #3	PANEL LEAD WIRE
REF	—	PRECISION P'S	LOGIC E 35	LOGIC PWR CABLE
REF	BLK	FAN #1	TB1 - 1	
REF	BLK	FAN #1	TB1 - 3	
REF	BLK	FAN #2	TB1 - 2	
REF	BLK	FAN #2	TB1 - 4	
REF	—	TRIAD XMFR INPUT	724 P'S SERV. RECP.	240 VAC SYS. ONLY } SEE NOTE #1
1201265	—	TRIAD XMFR OUTPUT	TU55 (1) AC INPUT	240 VAC SYS. ONLY }
9107673-03	GRY	TU55 (1) AC OUTPUT	TU55 (2) AC INPUT	
9107673-03	GRY	TU55(2) AC OUTPUT	VR12 AC INPUT	
1201265	—	724 P'S SERV RECP	TU55(1) AC INPUT	115 VAC SYS. ONLY } SEE NOTE #1
REF	RED	KW12 CLOCK PNL	MICRO SW 2A (N.O.)	PANEL LEAD WIRE
REF		TELETYPE	724 PS SERV RECP	POWER CORD
REF	WHT	KW12 PNL	724 P.S.	HQ GND

SIGNAL CABLE CONNS.

PART	FROM	TO	REMARKS
7006239	VR12 ANP CONN	LOGIC F 38	INTERNAL SCOPE CABLE
ANALOG PNL	ANALOG PANEL CHAN 0-2	LOGIC F 33	
RELAY PNL	RELAY PNL CHAN 10-17	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) AB5	TU55(#2) AB5	COMMAND CONN
REF	TU55(#1) AB6	LOGIC E05	" "
CONSOLE	CONSOLE SWITCHES	LOGIC N 33	
	▲	N 34	
	▼	N 35	
	CONSOLE SWITCHES	N 36	
	CONSOLE LIGHT BD	N 28	
	▲	N 30	
	▼	N 31	
CONSOLE	CONSOLE LIGHT BD	LOGIC N 32	
RELAY PNL	RELAY BOARD	LOGIC N 29	
REF	TELETYPE	LOGIC N32	
ANALOG EXT	ANALOG EXT CHAN 20-29	LOGIC F 31	OPTION
ANALOG EXT	ANALOG EXT CHAN 30-37	LOGIC F 30	OPTION



REVISIONS	REV
CHANGE NO. 12-00093 per Service #8871 SEANAN 7-14-71	A

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. W Kaunla	DATE 6/27/69	digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS
CHK'D. [illegible]	DATE 7/8/69	
ENG. [illegible]	DATE 8/11/69	
PROJ. ENG. [illegible]	DATE 8/11/69	
PROD. A Call	DATE 7/11/69	
NEXT HIGHER ASSY	C-UA-PDP12-0-✓	
SCALE NONE		
SHEET OF		

TITLE: POWER WIRING & SIGNAL CABLES

SIZE	CODE	NUMBER	REV
D	IC	PDP12-0-3	A

DIST.

DEC FORM NO. DAD 1170

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

DO: 2 → 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
IFSW Ø-2 → IB, I-Ø>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

1 → RUN

PC → MA

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.			
	EP12-00003	A	T. Quilty 5-30-69	GALE	
	EP12-00004	B	L. Gale 7/25/69		
	EP12-00009	C	T. Quilty 7-28-69	GALE	
	EP12-00015	D	L. Gale 8-13-69		
	12-0085	E	T. Quilty 9-23-70	GALE	

UNLESS OTHERWISE SPECIFIED			
UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES TOLERANCES DECIMALS FRACTIONS ANGLES .005 ± 1/64 ± 0°30' FINAL SURFACE QUALITY / REMOVE BURRS AND BREAK SHARP CORNERS	DRN	Joe Ojeda	DATE 9-24-68
	CHK'D		DATE 2/26/69
	ENG		DATE 1/26/67
MATERIAL	PROJ ENG		DATE
	PROD		DATE
FINISH	FIRST USED ON PLP-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-1Ø	E

DIST

DEC FORM NO. DRG 102A

DO

START MEM
T1

PC → MA

STROBE
T2

MA → PC
Ø → IR

T3

LSW → IR
LSW → MB

T4

PERFORM INSTRUCTION
IF 2 WORD IN ST
DOES NOT START
MEM NEXT CYCLE, PSW → MB

T5

Ø → RUN
Ø → DO FF

Ø → AUTO FF IF
AUTO KEY = Ø

AUTO RESTART DELAY

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

AUTO FF = Ø

AUTO RESTART
1 → DO FF
1 → RUN

T1
DO

FILL + EXAM

LSW → MA

*

FILL STEP

MA → MA

*

STEP EXAM

MA+1 → MA

*

Ø → IR

FILL + FILLSTEP

EXAM + STEP EXAM

PSW → MB

MEM → MB

FILL

FILLSTEP

AUTO FF(1)

AUTO FF(Ø)

1 → INT PAUSE

PAUSE
WAIT FOR RELEASE OF
KEY FILL STEP

Ø → INT PAUSE

Ø → RUN
Ø → AUTO

WAIT FOR FURTHER
CONSOLE ACTION

Ø → FILL STEP FF
1 → STEP EXAM FF
SET STEP EXAM KEY
Ø → RUN
Ø → AUTO FF IF
AUTO KEY = Ø

AUTO FF(1)

AUTO FF(Ø)

AUTO RESTART DELAY

1 → RUN

TO T1
STEP EXAM

TO MFT Ø
STEP EXAM
FLOW 10

EXAM

STEPEXAM

Ø → RUN
Ø → AUTO

WAIT FOR FURTHER
CONSOLE ACTION

Ø → RUN
Ø → STEP EXAM

Ø → AUTO FF IF
AUTO KEY = Ø

AUTO(Ø)

AUTO(1)

AUTO RESTART DELAY

AUTO FF(Ø)

AUTO FF(1)

(AUTO KEY = 1 * FILLSTEP)

(AUTO KEY = 1 * STEP EXAM)

AUTO RESTART
1 → RUN
1 → FILLSTEP FF

TO T1
FILL STEP

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

B MODE PC Ø-11 → MA Ø-11

* GNI IS DISABLED THEREFORE NO MAJOR STATE

REVISIONS

REV	CHANGE NO	CHK
A	EP12-00015	
B	12-00085	

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 9-26-68
CHK'D	DATE 2/13/69
ENGR	DATE 2/14/69
PROJ. ENG.	DATE
PROD	DATE 2/14/69

FIRST USED ON
PDP-12

SCALE

SHEET 1 OF 1

digital EQUIPMENT CORPORATION
MAYNARD MASSACHUSETTS

TITLE
MANUAL TIMING
FUNCTIONS
PART 2

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

DIST.

SEE CODE IDENT NO 03000

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

SEC FORM NO 5PO 102A

ENTER HERE FROM END OF PREVIOUS INSTRUCTION (SNI TRUE)

EVENT TIME

START MEM T 1

NOT BRK OR INT / BRK OR INT

DO FF=Ø: PC+SKIP → MA 2-11; IF 5-4 → 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	CONTROL FLIP-FLOPS TO AC		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	MQN → AC N+1			
2	SELECT PDP-8 MODE	Ø → PC SAVE		1 → INT INHIBIT LOAD SAVE FIELD	
3	I=Ø TAC → AC; I=1 TAC → TMA SETUP				
4 I=Ø	AC BIT = 1 SET FF				
4 I=1	AC BIT = Ø CLEAR FF				
5	TRAP FLIP-FLOP	CLEAR → AC; CLEAR → LINK; CLEAR → MQ			
6	TAPE TRAP				
7	HALF SIZE CHARACTER				
10	FAST SAMPLE				
11	DISABLE TELETYPE INTERRUPT				
12	GENERATE IO PWR CLEAR		AC → AC		
13					
14			AC 6-11 → R Ø-5		
15			R Ø-5 → AC 6-11		
16			NO OPERATION		
17					

NEXT INSTRUCTION

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

REVISIONS					
CHK	CHANGE NO.	REV			
[illegible]	EP12-00002	A	J. SCANLON		
[illegible]	EP12-00003	B	T. Miller 5-30-69	GALE	
[illegible]	EP12-00015	C	L. GALE		
FV	12-00065	D	T. Miller 7-23-70	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 63
REMOVE BURRS AND BREAK SHARP CORNERS
MATERIAL
FINISH

DRN. [illegible] DATE 10/6
CHK'D. [illegible] DATE 2/10/69
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 FETCH 1.A

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

DIST.

PDP12-Ø-12 D FD

EVENT TIME

START MEM T1

STROBE T2

T3

T4

T5

JMP • X ≠ Ø
JMP • X = Ø • SAVE PC (Ø)

FROM 1A

ROR
SCR
ROL

N = Ø

N ≠ Ø

1 → RECYCLE SYNC
1 → T5 RECYCLE *

SKL
SNS
SKP

I = Ø + COND MET
I = 1 + NOT COND MET

1 → SKIP

JMP
X ≠ Ø
SAVE PC (1)

Ø → PC Ø-11

ADD, STC
DIS,
XSK

IB Ø - 4 → IF Ø - 4

Ø → INT INHIBIT
IF INHIBIT SYNC = 1

N = Ø

N ≠ Ø

ROR

SCR

ROL

Ø → RECYCLE SYNC
ONE MORE T5
Ø → T5 RECYCLE

AC_N → AC_N-1
MQ → MQ_N-1
AC11 → MQ Ø

AC_N → AC_N-1
MQ → MQ_N-1
AC11 → MQ Ø
ACØ → ACØ

AC_N → AC_N+1

INCLUDE LINK IN SHIFT PATH IF IR7 = 1

(N-1) → N

NEXT INSTRUCTION

1 → EXECUTE

* OCCURS AT OFF PAUSE

REVISIONS				REV
CHK	CHANGE NO.			
mcB	EP12-00002	J. SCANLON	1/2/69	A
mcB	EP12-00003		1/29/69	B
mcB	EP12-00016		11-6-69	C
EVT	EM12-00006		2-2-70	D
FV	IL-00085		2-23-70	E

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

QTY.	DESCRIPTION	PART NO.	ITEM NO.

PARTS LIST

DRN	Joe Devine	DATE 10/4/68
CHK	E. Scanlon	DATE 2/19/69
ENG	T.C.	DATE 5-21-69
PROJ ENG	T.C.	DATE 2/19/69
PROD	Hall	DATE 3/4/69

FIRST USED ON
PDP-12

SCALE

SHEET 1 OF 1

digital EQUIPMENT CORPORATION
MAYNARD MASSACHUSETTS

TITLE
LINC FETCH
15

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

DIST.

DEC FORM NO DPC-102A

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

N=17

RSW → AC

LSW → AC

TRAP EN (1)

TRAP EN (1)

TRAP EN(Ø)

1 → INT INH
Ø → INH SYNC

EXC NO INST

TRAP EN(Ø)

MTP

ENT TRAP(1) * EN TRAP(1)

ENT TRAP(Ø) + EN TRAP(Ø)

SET

I=Ø

I=1

(I=1 * B=Ø)

[IR Ø2(1) * IR Ø,1=(Ø)] (IB+HB)

SAM

NOT SAM PAUSE

SAM PAUSE

1 → RECYCLE SYNC

1 → T5 RECYCLE*

RECYCLE UNTIL SAM IS COMPLETE

A-D BUFFER → AC

NOT(I=1 * B=Ø)

1 → EXECUTE

NEXT INSTRUCTION

1 → INTERRUPT

NEXT INSTRUCTION

1 → INTERRUPT

1 → EXECUTE (SEE TAPE TIMING)

1 → DEFER

1 → EXECUTE

1 → DEFER

NEXT INSTRUCTION

* OCCURS AT OFF PAUSE

REVISIONS			
LTR	CHANGE NO.		REV
	EP12-00003		A
	EP12-00015		B
	12-00085		C

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

QTY.	DESCRIPTION	PART NO	ITEM NO

PARTS LIST

DRN.		DATE 10-5-68
CHK'D		DATE 2/13/69
ENG.		DATE 2/19/69
PROJ. ENG.		DATE 2/19/69
PROG.		DATE 2/19/69

digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS

TITLE: LINC FETCH 2

FIRST USED ON: FCP-12

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

SCALE

SHEET 1 OF 1

DIST

DEC FORM NO DRD 102 A

EVENT TIME

LINC DEFER

START MEM T1

IB+HB

DO FF = 1

DO NOT START MEMORY
PC 2-11 → MA 2-11
IF 3,9 → MA Ø,1

(I=Ø)(B=Ø)

DO FF = Ø

PC 2-11 → MA 2-11
IF 3,9 → MA Ø,1

B ≠ Ø

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

SET

DO FF = 1

DO NOT START MEMORY
PC 2-11 → MA 2-11
IF 3,9 → MA Ø,1

DO FF = Ø

PC 2-11 → MA 2-11
IF 3,9 → MA Ø,1

STROBE T2

MA → PC

MA+1 → PC

MA → PC

MA+1 → PC

IR Ø7(Ø)

IR Ø7(1)

NOT HALF WORD

HALF WORD

T3

RSW → MB

MEM → MB

MEM+1 → MB ▲

MEM+HDX → MB ◗

RSW → MB

MEM → MB

T4

MB ØØ → H

T5

1 → EXECUTE

▲ INDICATES 10 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 Ogrea DATE 24 AUG 68
CHK. G. Carlson DATE 2/6/69
ENG. DATE
PROJ. ENG. DATE
PROD. DATE

FIRST USED ON PDP-12

SCALE

SHEET OF

digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS

TITLE LINC DEFER

SIZE D CODE FD NUMBER PDP12-Ø-15 REV.

DIST.

REVISIONS REV. CHANGE NO.

REV. D NUMBER PDP12-Ø-15 SIZE D CODE FD

EXECUTE

EVENT TIME

START MEM T1

IB + HB

I=1 * B=Ø
DO FF=Ø

PC 2-11 → MA 2-11
IF 3-4 → MA 2-1

I=1 * E=Ø
CO FF=1

DO NOT START MEMORY

NOT(I=1 * B=Ø)

MB → MA 2-11 △

STROBE T2

MA+1 → PC ▲

USE RSW 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

CHK	CHANGE NO	REV
	EP12-00003	A
FV	12-00065	B

GALE

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 Ogren DATE 9-SEPT68
CHK. J. Scanlon DATE 2 Nov 67
ENG. DATE
PROJ. ENG. DATE
PROD. DATE

FIRST USED ON PDP-12

SCALE

SHEET 1 OF 1

digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS

TITLE: LINC EXECUTE

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

DIST.

FORM NO D 102A

EXECUTE (CONT.)

EVENT TIME

START MEM T1

STROBE T2

T3

T4

T5

IB+HB (CONT.)

SRO

$MEM_N \rightarrow MB_{N-1}$

LDH

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

STH

H=0: $AC_R \rightarrow MB_L$, $MEM_R \rightarrow MB_R$

H=1: $AC_R \rightarrow MB_R$, $MEM_L \rightarrow MB_L$

SHD

$MEM \rightarrow MB$

DSC

$MEM \rightarrow MB$

DISPLAY BUSY: $1 \rightarrow$ INT PAUSE

DISPLAY NOT BUSY

H=0: $AC_L \rightarrow AC_R$, $0 \rightarrow AC_L$

H=1: $AC_R \rightarrow AC_R$, $0 \rightarrow AC_L$

N=0: $AC_R \rightarrow AC_L$, $AC_L \rightarrow AC_R$

H=1

IF $MB\phi\phi=0$: $1 \rightarrow$ SKIP

IF AC_L & MB_L THEN $1 \rightarrow$ SKIP

IF AC_R & 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
$0 \rightarrow$ VAT-10
$1 \rightarrow$ HA9
$0 \rightarrow$ HA10

$1 \rightarrow$ EXECUTE 2

NEXT INSTRUCTION

REVISIONS			
CHK	CHANGE NO.	REV.	
[illegible]	EP12-00023	A	[illegible] DALE 4.6.70
EV	12-00085	B	T.S. Cudlip 8.27.70
			DALE 9-23-70

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	CHKD.	DATE
	ENGR.	DATE
	PROJ. ENG.	DATE
	PROD.	DATE
MATERIAL	FIRST USED ON PDP-12	
FINISH	SCALE	SHEET 1 OF 1

QTY. | DESCRIPTION | PART NO | ITEM NO.

PARTS LIST

digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS

TITLE: LINC EXECUTE

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

DIST.

DEC FORM NO 1-PD 102A

EXECUTE

EVENT TIME

START MEM T1

STROBE T2

T3

T4

T5

ENTER

ADD
STC

JMP

XSK
DIS

SET

MTP
IOT = [OPR * N = ØØ]

MB 2-11 → MA 2-11
IF 3,4 → MA Ø,1

Ø → MA 2-11
IF 3,4 → MA Ø,1

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

DO NOT START MEMORY
PC 2-11 → MA 2-11

I = 1
DO FF = Ø

PC 2-11 → MA 2-11

I = Ø

MB → MA

DO FF = (1)

DO NOT START MEMORY
PC 2-11 → MA 2-11

DO FF = (Ø)

PC 2-11 → MA 2-11
IF 3,4 → MA Ø,1

ADD

STC

SAVE PC (1)

SAVE PC (Ø)

MA → PC

MA+1 → PC

MA 2-11 → PC 2-11

MA+1 → PC

MEM → MB

AC → MB

PC → MB
1 → MB Ø,1

MEM → MB

I = Ø

I = 1

MEM → MB

MEM+1 → MB

RSW → MB

MEM → MB

RSW → MB

MEM → MB

[OPR * N = ØØ] = IOB

MTP [OPR * N = ØØ] = IOB

XSK

DIS

DISPLAY BUSY

DISPLAY NOT BUSY

NO PAUSE (Ø)

NO PAUSE (1)

1 → INT PAUSE

MB+AC → AC

Ø → AC

RESTART WHEN DISPLAY IS FINISHED

QN BN → TAPE CONTROL
START TAPE EXECUTION

1 → IOT PAUSE

OVERFLOW → FLOW

1 → SAVE PC

IR 2-11 → PC 2-11
IF 3-9 → PC Ø,1
1 → INHIBIT SYNC

MB 2-11 = 1777
1 → SKP

MB Ø → CHANNEL
1 → ACTIVE
AC → VERT
MB → HORZ
1 → IN 11
Ø → VA 7-10
1 → HA 9
Ø → HA 10

RESTART ON COMMAND FROM TAPE CONTROL

NOT MTB | MTB

TF → AC

IOT PAUSE

MB 11 (1) → IOP 1

MB 10 (1) → IOP 2

MB 09 (1) → IOP 4

Ø → IOT PAUSE

1 → TAPE BREAK

1 → EXECUTE 2

TO DISPLAY CONTROL FLOW DIAGRAM

NEXT INST

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

△ INDICATES LINC INDIRECT ADDRESS MB 2-11 → MA 2-11 { IF MB Ø1 = 1 IF 3-9 → MA Ø-1 ; IF MB Ø1 = Ø IF 3-9 → MA Ø-1 }

REVISIONS

CHK	CHANGE NO	REV
	EP12-00004	A
	EP12-00005	B
	12-00085	C

J. SCANLON

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 Quinn DATE 10/4/65
CHK DATE 2/15/69
ENG DATE 2/27/69
PROJ. ENG. DATE 3/11/69
PROD. DATE 3/19/69

FIRST USED ON PDP 12

SCALE

SHEET 1 OF 1

digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS

TITLE LINC EXECUTE

SIZE D | CODE FD | NUMBER PDP12-2-18 | REV C

DIST.

JACK CODE D FD PDP12-Ø-18 REV C

DEC FORM NO DPD 102A

START MEM T1

STROBE T2

T3

MUL

MEM → MB
Ø → N (IR 8-11)

T4

AC ØØ = Ø | AC ØØ = 1

AC → MQ
Ø → LINK

$\overline{AC}$ → MQ
1 → LINK

1 → RECYCLE SYNC

OFF PAUSE

1 → TS RECYCLE

T5

MB → AC

N = 17

AC ØØ = Ø | AC ØØ = 1

AC → MB
AC → AC
LINK → LINK

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

N = 16

Ø → AC

N ≠ 2

MQ 11 = Ø | MQ 11 = 1

AC_N → AC_{N-1}

Σ AC+MB → AC_{N-1}

Σ AC 11 → MQ ØØ
MQ_N → MQ_{N+1}

N = 2

H = 1 | H = Ø

AC → AC

MQ_N → AC_{N+1}

N = 1

LINK = Ø | LINK = 1

AC → AC

$\overline{AC}$ → AC

Ø → RECYCLE SYNC

T5D

(N-1) → N

N = 1

Ø → TS RECYCLE

NEXT INSTRUCTION

QTY.	DESCRIPTION	PART NO.	ITEM NO.

PARTS LIST

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

MATERIAL

FINISH

		DATE
DRN.	[illegible]	2/15/67
CHKD.	[illegible]	2/15/67
ENG.	[illegible]	2/17/67
PROJ. ENG.	[illegible]	2/17/67
PROD.	[illegible]	2/19/67

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.

REVISIONS
REV. | CHANGE NO | CHK. | DATE
1 | [illegible] | [illegible] | 9-27-67

C.P.C. FORM NO 1102A

EVENT TIME

START MEM T1

DSC

1 → MA 2-11
IF 3-4 → MA Ø-1

SET

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

STROBE T2

SIZE (1) (FULL SIZE)

AC Ø-6 → AC Ø-6
3Ø₈ → AC 7-11

SIZE (Ø) (HALF SIZE)

AC Ø-7 → AC Ø-7
1Ø₈ → AC 8-11

T3

Σ MEM ξ 1Ø₈ → MB

Σ MEM ξ Ø₈ → MB

T4

Ø → VB-11
MB → HORZ

T5

SIZE (Ø)

1 → HAIØ

SIZE (1) (FULL SIZE)

1 → V7

1 → ACTIVE

TO DISPLAY CONTROL FLOW DIAGRAM

TO NEXT INSTRUCTION

EXECUTE 2

TO NEXT INSTRUCTION

INTERRUPT

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

PDP-8 MODE

Ø → MA
Ø → INT EN

LINC MODE

NOT TRAP

ØØØØ → MA
Ø → INT EN

TRAP

Ø14Ø → MA
Ø → INT EN
Ø → TRAP

Ø → IR

PC + SKIP → MB

MA + 1 → PC

TO NEXT INSTRUCTION

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

▭ THESE FUNCTIONS OCCUR AT TP5D OF PREVIOUS CYCLE

REVISIONS			
CHK	CHANGE NO	REV	
	EP12-00015	A	Initial release L. GALE 7-Jan-65
FV	12-00085	B	Change per ECO L. GALE 9-Jan-70

DEC FORM NO SPD 162A

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 Upton DATE 6 SEPT 68
CHK L. Gale DATE 2/14/69
ENG L. G. DATE 2/19/69
PROJ. ENG. C. J. DATE 2/19/69
PROD. M. Callahan DATE 2/19/69

FIRST USED ON PDP-12

SCALE

SHEET OF

digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS

TITLE
EXECUTE 2 & INTERRUPT

SIZE D | CODE FD | NUMBER PDP12-Ø-2Ø | REV. B

DIST.

SIZE D | CODE FD | NUMBER PDP12-Ø-2Ø | REV. B

ENTER HERE FROM END OF PREVIOUS INSTRUCTION

NOT BREAK REQ
BREAK REQ
PROG
DATA
3 CYCLE
NOT 3 CYCLE
NOT TAPE
TAPE
1→INTERRUPT
1→WC
1→BREAK
1→TAPE BREAK

DO FF=Ø
DO FF=1

START MEM T1

PC+SKIP→MA
1→FETCH

PC→MA
1→FETCH

STROBE T2

MA+1→PC
Ø→IR

MA→PC

T3

Ø→SKIP
MEM→MB
MEM→IR
Ø→H

LSW→MB
LSW→IR

T4

AND
TAD
ISZ
DCA
JMS

JMP

OPR

IOT

IR Ø3=Ø
IR Ø3=1

IR Ø3=1
IR Ø3=Ø

IR Ø4=1
IR Ø4=Ø

MB 5-11→PC 5-11
MA Ø-4→PC Ø-4

MB 5-11→PC 5-11
Ø→PC Ø-4

IR Ø3=Ø
IR Ø3=1

IR 11=Ø
IR 11=1

EAE INST

*
1→IOT PAUSE

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

MB Ø8=Ø
SKIP IN→SKIP

MB Ø8=1
$\overline{SKIP\ IN}$→SKIP

MB Ø9=1
ROTATE AC & L LEFT 1

MB Ø8=MB Ø9=Ø
NO SHIFT

MB Ø8=1
ROTATE AC & 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

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

IOT PAUSE

MB 11=1
IOP 1

MB 1Ø=1
IOP 2

MB Ø9=1
IOP 4

Ø→IOT PAUSE

T5

EXECUTE

DEFER

FETCH

* OCCURS AT OFF PAUSE

REVISIONS			
REV	CHANGE NO	CHK	DATE
A	EP12-0002	J. SCANLON	9-24-71
B	12-00085	FV	9-24-71

DEC FORM NO DRD 102A

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

MATERIAL

FINISH

DRN. DATE 8-7-16
CHK'D DATE 8-16-16
ENG DATE
PROJ. ENG DATE 2/14/17
PROD. DATE

FIRST USED ON PDP 12

digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS

TITLE PDP-8 MODE FETCH

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

SCALE

SHEET 1 OF 1

DIST.

DEFER

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

STROBE T2

T3

AUTO INDEX: MEM + 1 → MB

NOT AUTO INDEX: MEM → MB

T4

JMP: MB → PC; 1 → FETCH; NEXT INST

NOT JMP: 1 → EXECUTE

T5

EXECUTE

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

AND, TAD: MEM → MB

AND: AC, BCL → AC; AC̄ → AC

TAD: Σ AC AND MB → L, AC

ISZ: MEM + 1 → MB; CARRY → SKP

DCA: AC → MB; Ø → AC

JMS: PC → MB; MA + 1 → PC

1 → FETCH; NEXT INST

REVISIONS			
REV	CHANGE NO		CHK
A	EP12-COOL	J SCANLON 1/27	
B	12-00085	9-23-70	

DEC FORM NO DRD 102A

UNLESS OTHERWISE SPECIFIED

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

MATERIAL

FINISH

QTY	DESCRIPTION	PART NO	ITEM NO.

PARTS LIST

DRN.	Joe Byrne	DATE 28 AUG68
CHKD	J Scanlon	DATE 9/18/69
ENG.		DATE
PROJ ENG		DATE
PROD.	A Cull	DATE

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.

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

WORD COUNT

START MEM T1

DATA ADD → MA
EXT DATA → BR Ø-2

STROBE T2

Ø → IR

T3

MEM + 1 → MB
CARRY → WC OVERFLOW

T4

T5

1 → CA

CURRENT ADDRESS

MA + 1 → MA

Ø → IR

INCREMENT CA

MEM + 1 → MB

NOT INCREMENT CA

MEM → MB

1 → BREAK

BREAK

ENTER FROM CA

MB → MA

ENTER SINGLE CYCLE BREAK

DATA ADD → MA
EXT DATA → BR Ø-2

Ø → IR

DATA OUT

MEM → MB

DATA IN

DATA IN → MB

INCR. MEM

MEM + 1 → MB
CARRY → W.CO

NEXT INST

TAPE BREAK INTERRUPT

TAPE ADD → MA

Ø → TAPE BREAK RQST

Ø → IR

IN MEM

TMA + 1 → TMA

TAPE BUF → MB

OUT MEM

MEM → MB

NO PAUSE (Ø)

1 → INT PAUSE

NO PAUSE (1)

NOT LAST WORD

PAUSE
WAIT FOR TAPE WORD

LAST WORD

*Ø → INT PAUSE

CHECKSUM → AC

TAPE BREAK

NEXT INST

* OCCURS AT OFF PAUSE

REVISIONS			
REV	CHANGE NO	CHK	
A	EP12-00009	JHS	2-Sept-69 GALE
B	EP12-00015		8-22-69 L. GALE
C	12-00085		18-MAR-70 GALE

QTY	DESCRIPTION	PART NO.	ITEM NO.

PARTS LIST

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

MATERIAL

FINISH

DRN.		DATE 23AUG68
CHK'D		DATE 2SEP69
ENG.		DATE
PROJ. ENG.		DATE
PROD.		DATE

FIRST USED ON
FDP-12

SCALE

SHEET 1 OF 1

digital EQUIPMENT CORPORATION
MAYNARD MASSACHUSETTS

TITLE
BREAK

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

DIST.

SIZE D | FD | PDP12-Ø-23 | REV C

MASTER DRAWING LIST

DWG. NO.	REV. LET.	NO. OF SHEETS	TITLE
A-ML-PDP12-0	REF		PDP-12 SYSTEM
D-BS-EP12-0-CIN	D	1	CONSOLE INDICATORS
D-BS-EP12-0-CPR	H	1	CENTRAL PROCESSOR RUN
D-BS-EP12-0-CPS	R	1	CENTRAL PROCESSOR STATES
D-BS-EP12-0-CPT	E	1	CP TIME STATES
D-BS-EP12-0-CPTP	F	1	CENTRAL PROCESSOR TIME PULSES
D-BS-EP12-0-CSI	C	1	CONSOLE SWITCH INPUTS
D-BS-EP12-0-CST	K	1	CONSOLE STARTS
D-BS-EP12-0-CYI	B	1	CARRY INSERTS
D-BS-EP12-0-FLE	C	1	FLOW & END SHIFT
D-BS-EP12-0-FLK	D	1	LINK LOGIC
D-BS-EP12-0-ICB	H	1	IO & EXT MEM CABLES
D-BS-EP12-0-INR	C	1	INSTRUCTION REGISTER
D-BS-EP12-0-INS	H	1	INSTRUCTIONS
D-BS-EP12-0-IOA	A	1	IO INPUT PART A
D-BS-EP12-0-IOB	F	1	IO INPUT PART B
D-BS-EP12-0-IOC	H	1	IO CONTROL & TIMING
D-BS-EP12-0-IOO	A	1	IO OUTPUT BUFFERS
D-BS-EP12-0-IOR	B	1	RELAY BUFFER
D-BS-EP12-0-IPC	K	1	INTER PROC CABLES
D-BS-EP12-0-MEA	H	1	MEM EXTN AC INPUTS
D-BS-EP12-0-MPG	L	1	MEM PAGE EXTN CONTROLS
D-BS-EP12-0-MOR	B	1	MUL QUOTIENT
D-BS-EP12-0-PMA	B	1	PROCESSOR MISCELLANEOUS A
D-BS-EP12-0-PMB	A	1	PROCESSOR MISCELLANEOUS B
D-BS-EP12-0-PRA	D	1	PRA PROCESSOR BITS 0 & 1
D-BS-EP12-0-PRB	C	1	PRB PROCESSOR BITS 2 & 3
D-BS-EP12-0-PRC	C	1	PRC PROCESSOR BITS 4 & 5
D-BS-EP12-0-PRD	C	1	PRD PROCESSOR BITS 6 & 7
D-BS-EP12-0-PRE	C	1	PRE PROCESSOR BITS 8 & 9
D-BS-EP12-0-PRF	C	1	PRF PROCESSOR BITS 10 & 11
D-BS-EP12-0-PRG	B	1	PROCESSOR REGISTER GATING

REVISIONS			
REV.	DATE	CHG. NO.	APP'D.
AM	6/71	00040	D.M.
AN	6/71	00041	R.M.
AP	8/71	00042	R.M.
AR	10/71	00043	R.M.
AS	1/72	00044	R.M.
AT	2/72	00045	R.M.
AU	7/72	00046	R.I.

DRN. J. Aprea	DATE 030769	digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS	
CHK'D. R.Hutnak	DATE 030769		
ENG. L.Gale	DATE 031069	TITLE PDP-12 PROCESSOR	
PROJ. ENG. L.Gale	DATE 031069		
PROD. D. Call	DATE 031069		
FIRST USED ON PDP-12		SIZE A	CODE ML
SCALE		NUMBER EP12-0	REV. AU
SHEET 1 OF 2		DIST.	

DEC FORM NO. DRA 103

MASTER DRAWING LIST

DWG. NO.	REV. LET.	NO. OF SHEETS	TITLE
D-BS-EP12-0-RCA	A	1	REGISTER CONTROL A
D-BS-EP12-0-RCB	D	1	REGISTER CONTROL B
D-BS-EP12-0-RCC	B	1	REGISTER CONTROL C
D-BS-EP12-0-RCD	D	1	REGISTER CONTROL D
D-BS-EP12-0-RCL	H	1	PROCESSOR REGISTER LOAD CONTROL
D-BS-EP12-0-RCS	B	1	REG SHIFT & MO INPUTS
D-BS-EP12-0-SKH	D	1	SKIP FF & H BITS
D-BS-EP12-0-SKL	C	1	EP12 SKIPS
D-BS-EP12-0-SLA	A	1	SPECIAL LEVELS 1
D-BS-EP12-0-TTI	B	1	TTI TELETYPE RECEIVER
D-BS-EP12-0-TTO		1	TTO TELETYPE TRANSMITTER
D-BS-EP12-0-SRF	A	1	SET & RESTORE FIELDS
A-WL-EP12-0-4	B	3	DC POWER PROCESSOR LOGIC
K-WL-EP12-0-3	AC		WIRE LIST
D-MU-EP12-0-1	M	2	MODULE UTILIZATION PROC
A-PL-EP12-0-1	M	3	MODULE UTILIZATION PROC (PARTS LIST)
D-AD-7005976-0-0	M	1	WIRED ASSY CP & IO (EP12)
A-PL-7005976-0-0	M	1	WIRED ASSY PL CP & IO (EP12)

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

DRN. J.Aprea	DATE 030769	digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS	
CHK'D. R.Hutnak	DATE 030769		
ENG. L.Gale	DATE 031069	TITLE PDP-12 PROCESSOR	
PROJ. ENG. L.Gale	DATE 031069		
PROD. D.Call	DATE 031069		
FIRST USED ON PDP-12		SIZE A	CODE ML
SCALE		NUMBER EP12-0	REV. AU
SHEET 2 OF 2		DIST.	

DEC FORM NO. DRA 103

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 10 (1)L
B1	PRE MA Ø9 (1)L
C1	LCS SEARCH (1)L
D1	PRF PC 11 (1)L
E1	PRF MA 10 (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 WRD (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 10 (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 10 (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 10 (1)L
E2	PRF MB 10 (1)L
F2	LIN TINR 10 (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

*NOTE: THIS SIGNAL IS CONNECTED TO THE "IP" LIGHT ON THE CONSOLE LIGHT PANEL.

REVISIONS		
CHK	CHANGE NO.	REV.
JB	EP12-00001	A
	ADS	
	J. SCANLAN 3/10/69	
NR	EP12-00015	B
	K COTE 10/14/69	
	J SCANLAN 10/17/69	
NR	EP12-00016	C
	K.COTE 11-12-69	
	J.SCANLAN 11-14-69	
TC	EP 2.00023	D
	[illegible]	
	TO Markko 7-2-70	

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 CONSOLE INDICATORS
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-CIN / REV. D
SCALE		
SHEET 1 OF 1		DIST.

CSI IF SW Ø H — L2 — M141 K38 — H2 — CPR IF SW Ø L

CSI IF SW 1 H — D2 — M141 K38 — F2 — CPR IF SW 1 L

CSI IF SW 2 H — E2 — M141 K39 — H2 — CPR IF SW 2 L

CST M7P2 L — D1
-CSI KEY IO PRESET L — E1 — M112 L10 — E1 — D2 — M112 L10 — F2 — CPR SET RUN L
CST AUTO INSTRUCT H — E2

CST AUTO Ø H

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

INS MSC H — A1
INS N EQ Ø0 H — B1
CPS FETCH B (1)H — C1 — M115 L08 — D1 — CPR L HALT L

SLA CPR2 H — E1
PRF MB 10 (1)H — F1
CPS FETCH B (1)H — H1 — M115 L08 — J1 — CPR 8 HALT L

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

CPS GNI H — A1
CST IO (1)H — B1
LIP PROGRESS (Ø)H — C1
CPT TO RECYCLE (Ø)H — D1
E1
F1 — M160 K08 — R1
CSI (FILLSHEXAM3) H — H1
CST M*TSW 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 — X2
T2
CPTP TPS H — S2 — D 1 CPR RUN M216 L07 C Ø — V2 — V1
K2
CST IO PRESET L

CPR IOT 6141 L

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

PRB 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 K10Ø1 H — U2 — M119 K10 — V2 — N1 — M111 J09 — P1

CPR IOT 6141 H
CPTP TP1 H — D2
E2 — M113 L09 — F2 — RES SET L MODE L — 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 — RES SET 8 MODE L — 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 — P1
R1 — M113 L09 — S1
CSI KEY E STOP H — L2
CPS FETCH (Ø)H — M2 — M113 L09 — N2

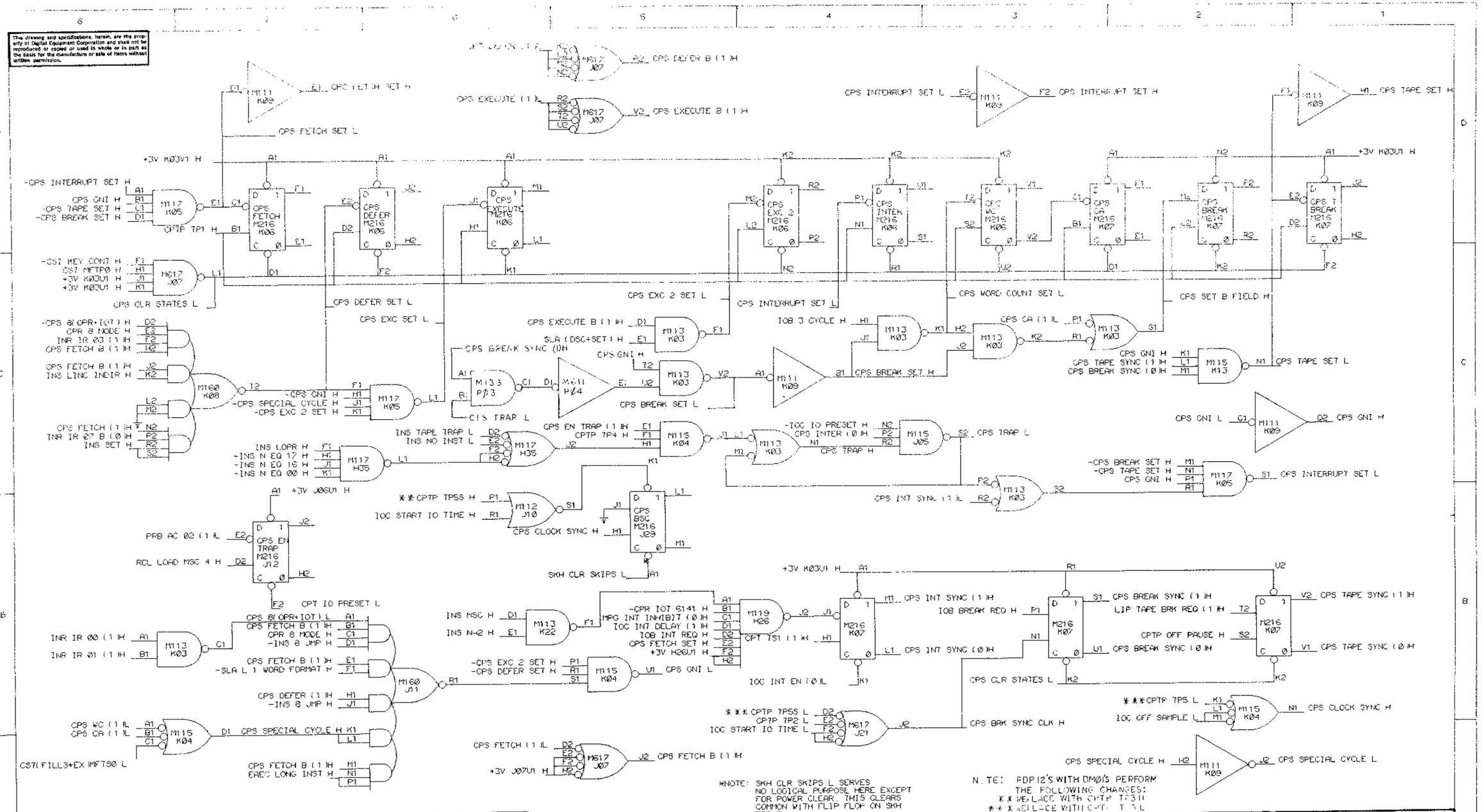
PRA ADDRESS MATCH Ø-1 H — H1
PRB ADDRESS MATCH 2-3 H — J1
PRC ADDRESS MATCH 4-5 H — K1
PRD ADDRESS MATCH 6-7 H — K2
PRE ADDRESS MATCH 8-9 H — L2
PRF ADDR MATCH 10-11 H — M2 — M119 K10 — P2 — CPR MATCH L
N2

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 — L3
-MXF EA 2 H — M3

-CPR IF SW Ø H — U2
MXF EA Ø H — V2 — M141 K36 — 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	GH	EP12-00026	E
	ACS			S GOLDSBY 9/1/70	
	J SCANLAN 3/13/69			D MACMINN 9/2/70	
	EP12-00003	B	GH	EP12-00030	F
	A WASHINGTON 6/12/69			R SOFKA 3/6/71	
	L GALE 6/20/69			J SCANLAN 6/20/71	
NP	EP12-00006	C		EP12-00034	G
	A WASHINGTON 8/8/69			" "	
	L GALE 8/13/69			" "	
NP	EP12-00016	D			
	R SOFKA 11/10/69				
	J SCANLAN 12/1/69				

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 CENTRAL PROCESSOR RUN
PROJ. ENG. L GALE	DATE 2/20/69	
PROD. D GALL	DATE 2/20/69	
FIRST USED ON EP12		SIZE D CODE 85 NUMBER EP12-Ø-CPR REV. H
SCALE		DIST.
SHEET 1 OF 1		



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

N.TE: PDP12'S WITH DM01'S PERFORM THE FOLLOWING CHANGES:
** RE/LACE WITH CPTP TPSH
*** RE/LACE WITH CPTP TPSL
H J05H2-J10P1 DEL
J10P1-J04K1 DEL
H [illegible] ADD
J04P1-J10E1 ADD
J21C2-H34K1 DEL
J21D2-J05E1 ADD
K04K1-J05H1 DEL
K04K1-L34B1 DEL
L34B1-J10H1 ADD
K/4K1-J10D2 ADD

REVISIONS			REVISIONS			REVISIONS			REVISIONS		
CHK	CHANGE NO.	REV.	CHK	CHANGE NO.	REV.	CHK	CHANGE NO.	REV.	CHK	CHANGE NO.	REV.
JB	EP12-00001	A	NR	EP12-00007	E	GH	EP12-00026	K		EP12-00044	P
	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	GH	EP12-00030	L		EP12-00045	R
	A WASHINGTON 5/20/69			A WASHINGTON 8/20/69			K WALSH 11/18/70				
	J SCANLAN 5/22/69			L GALE 8/22/69			D MACKLIN 11/9/70				
	EP12-00004	C	FV	EP12-00021	H	JH	EP12-00036	M			
	A WASHINGTON 7/9/69			D SOUTHER 6/6/70			R.SOEMA 5-18-71				
				J SCANLAN 6/17/70			J.SCANLON 5-20-71				
NR	EP12-00005	D	TC	EP12-00023	J	GH	EP12-00037	N			
	A WASHINGTON 8/6/69			D SOUTHER 6/30/70			C.WYATT 5-28-71				
	J SCANLAN 8/20/69			D MACKLIN 7/2/70			J.SCANLAN 6-2-71				

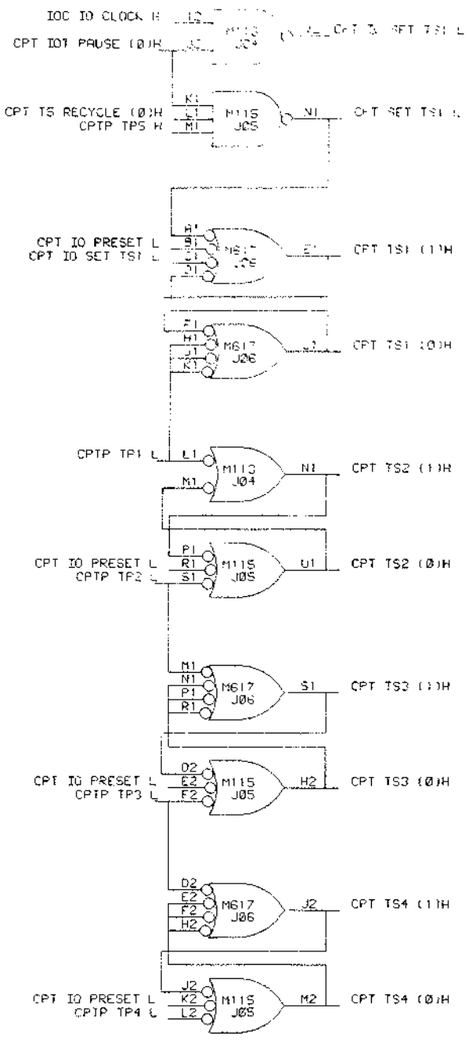
DRN	D SHEPARD	DATE 2/20/69
CHK'D	J BISONETE	DATE 2/20/69
ENG.	L GALE	DATE 2/20/69
PROJ. ENG.	L GALE	DATE 2/20/69
PROD.	D CRILL	DATE 2/20/69
FIRST USED ON	EP12	
SCALE		
SHEET 1 OF 1		

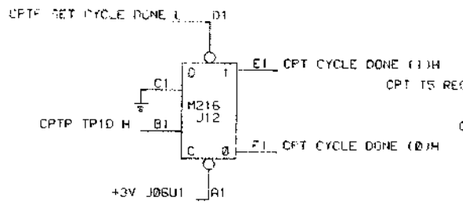
digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS

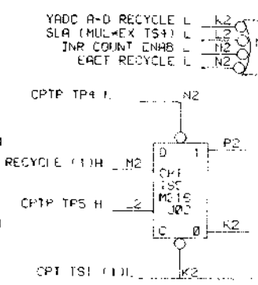
TITLE: CENTRAL PROCESSOR STATES

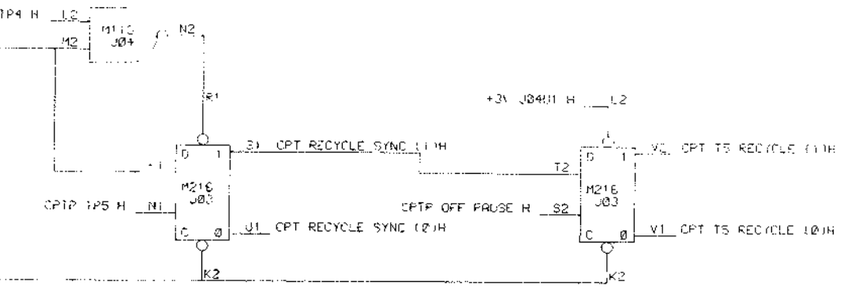
SIZE	CODE	NUMBER	REV.
D	BS	EP12-0-CPS	R

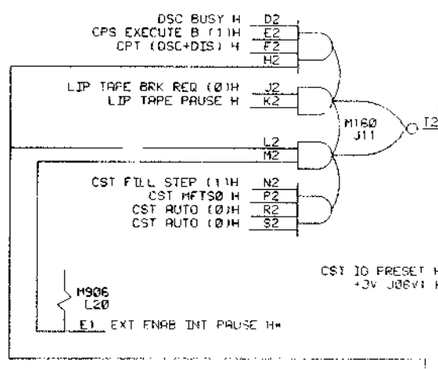
DIST.

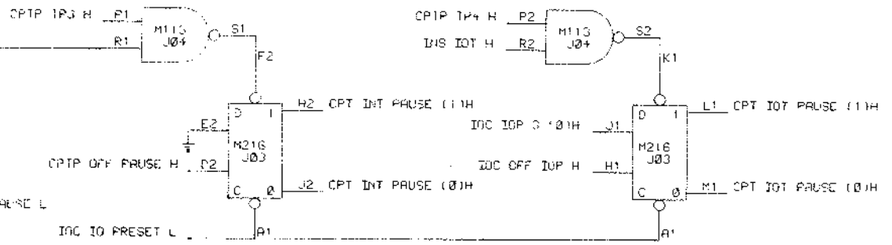


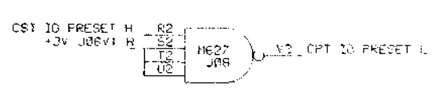


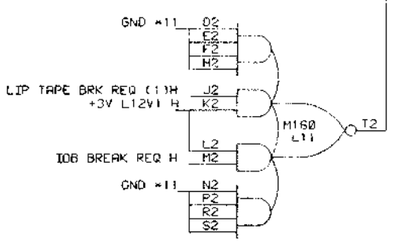


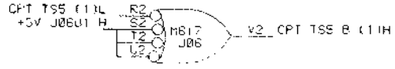


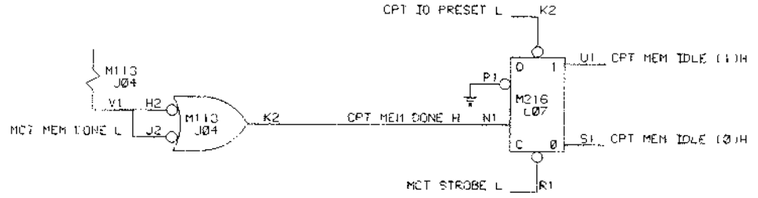


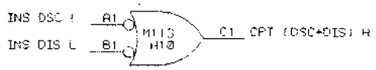








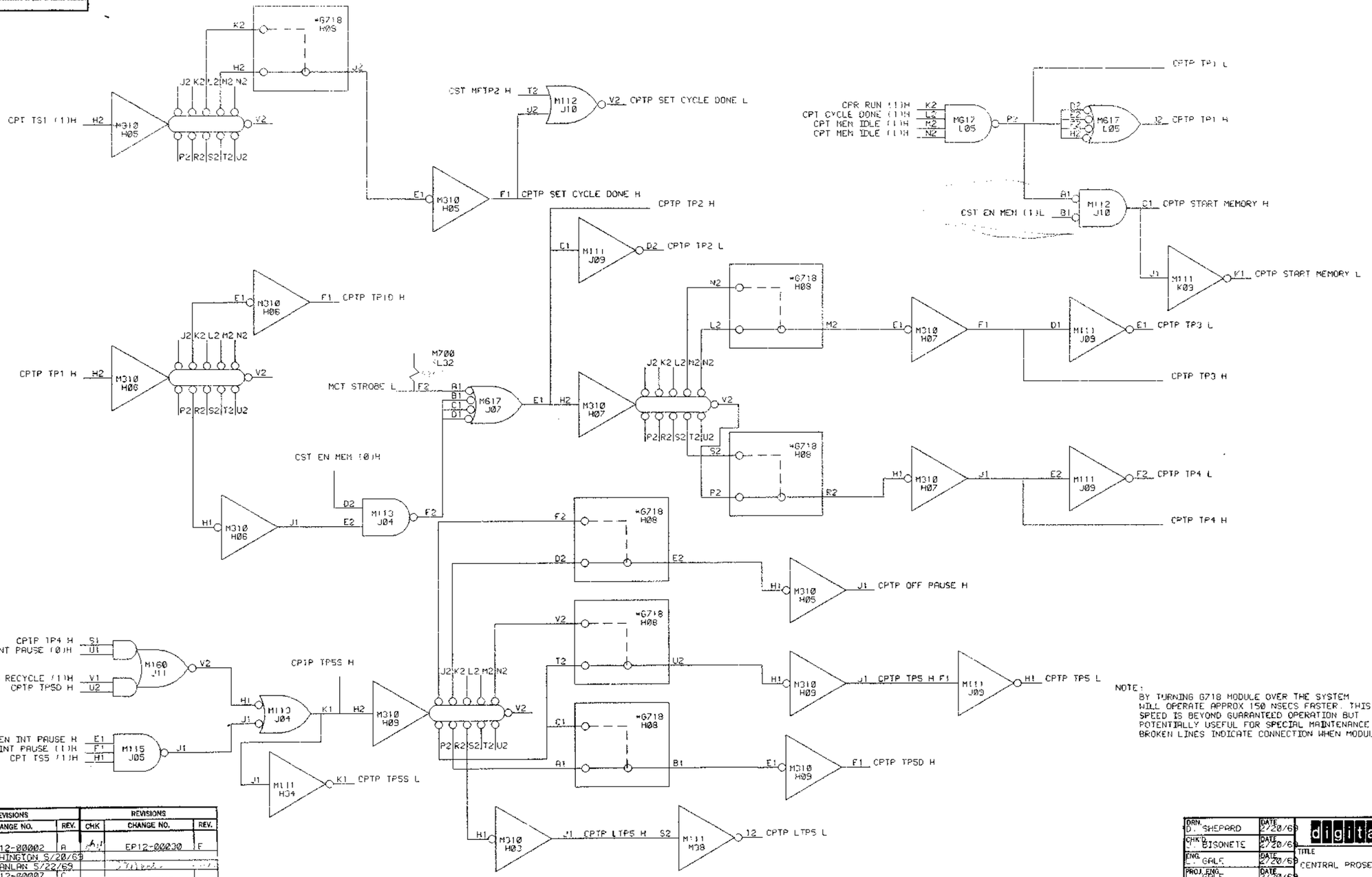




NOTE:
* THIS SIGNAL PERMITS AN I/O DEVICE TO PAUSE THE CPU IF GROUND WIRE IS REMOVED FROM N16V2. DATA BREAKS AND TAPE BREAKS ARE STILL PERMITTED.

REVISIONS			REVISIONS		
CHK	CHANGE NO.	REV.	CHK	CHANGE NO.	REV.
	EP12-00001	A		EP12-00022	E
	ADS				
	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	TITLE: CP TIME STATES
ENG. L. GALE	DATE 2/20/69	
PROJ. ENG. L. GALE	DATE 2/20/69	
PROD. J. CHU	DATE 2/20/69	
FIRST USED ON: EP12		SIZE D; CODE MS; NUMBER EP12-0-CPT; REV. E
SCALE		
SHEET 1 OF 1		DIST.



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	A.W.	EP12-00030	E
	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 8/15/70				
	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 L. BISONETTE	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 85 / NUMBER EP12-0-CPTP / REV. F
SCALE		DIST.
SHEET 1 OF 1		

CSI KEY FILL L K2
CSI KEY EXAM L L2
CSI KEY FILL STEP L M2
CSI KEY STEP EXAM L N2
M117 L39
P2
V1
M111 M40
U1 CSI (FILLS+EXAMS) L

CSI (FILLS+EXAMS) H

P2
CSI MFTSØ H R2
M113 L40
S2 CSI (FILLS+EX MFTSØ) L

CSI KEY FILL STEP L L1
CSI(KEY STEP EXAMFTSØ) L M1
M113 L40
N1 CSI (KEY FS+SE) H

CSI STEP EXAM ( ) L L2
CSI FILL STEP ( ) L M2
M113 L40
N2 CSI (FILL+EX STEP) H

CSI KEY CONT L P1
CSI KEY DO L R1
M113 L40
S1 CSI KEY (DO+CONT) H E2
M111 M40
F2 CSI KEY (DO+CONT) L

CSI KEY E STOP H H1
CSI KEY F STOP H J1
M112 L38
K1 CSI KEY (E+F STOP) L

CSI KEY FILL L D2
CSI KEY EXAM L E2
M113 N40
F2 CSI (FILL+EXAM) H

CSI (FILLS+EX MFTSØ) L K2
M111 M38
L2 CSI (FILLS+EX MFTSØ) H

CSI KEY ST LSW L T2
CSI KEY IO PRESET L U2
M113 M08
V2 CSI KEYS CLEAR H

CSI KEY ST 20 L K2
M111 M40
L2 CSI KEY ST 20 H

CSI KEY F STOP L U2
M111 M38
V2 CSI KEY F STOP H

CSI KEY ST 400 L M2
M111 M40
N2 CSI KEY ST 400 H

CSI KEY DO L P2
M111 M40
R2 CSI KEY DO H

CSI KEY STOP L N1
M111 M38
P1 CSI KEY STOP H

CSI KEY ST 20 L T2
CSI KEY ST 400 L U2
CSI KEY ST LSW L V2
M115 K13
V1 CSI KEY STARTS H H2
M111 M40
J2 CSI KEY STARTS L

CSI KEY STEP EXAM IN L M2
M111 M38
N2 CSI KEY STEP EXAM IN H

CSI KEY FILL L A1
CSI KEY FILL STEP L B1
M113 N40
C1 CSI FILLS H

CSI KEY STEP EXAM IN L T2
CST STEP EXAM ( ) L U2
M113 L40
V2
CSI KEY STEP EXAM H R2
M111 N40
S1 CSI KEY STEP EXAM L

H2
CSI MFTSØ H J2
M113 N40
K2 CSI(KEY STEP EXAMFTSØ) L

CSI KEY CLRS L R1
M111 M38
M1 CSI KEY CLRS H

CSI KEY AUTO L C1
M111 M38
L2 CSI KEY AUTO H

CSI (FILL+EX STEP) H S2
M111 M40
T2 CSI (FILL+EX STEP) L

CSI KEY FILL STEP L D1
M111 M38
E1 CSI KEY FILL STEP H

CSI KEY ST LSW L U2
M111 M40
V2 CSI KEY ST LSW H

CSI KEY IO PRESET L M1
M111 M38
K1 CSI KEY IO PRESET H

CSI KEY E STOP L P2
M111 M38
R2 CSI KEY E STOP H

G793 N33
G916 N37
M1 CSI LSW 10 H
L1 CSI LSW 09 H
K1 CSI LSW 08 H
J1 CSI LSW 07 H
H1 CSI LSW 06 H
F1 CSI LSW 05 H
E1 CSI LSW 04 H
D1 CSI LSW 03 H
C1 CSI LSW 02 H
B1 CSI LSW 01 H
A1 CSI LSW 00 H

G793 N34
G916 N37
M2
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
S1 CSI IF SW 2 H
R1 CSI IF SW 1 H
P1 CSI IF SW 0 H
N1 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
U1
V1
K2
L2
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 IO PRESET L
CSI KEY DO L
CSI SNS 05 H
CSI SNS 04 H

REVISIONS		
CHK	CHANGE NO.	REV.
JB	EP12-00001	A
	ADS	
	J SCANLAN 3/13/69	
JB	EP12-00002	B
	A WASHINGTON 5/20/69	
	J SCANLAN	
NR	EP12-00007	C
	A WASHINGTON 8/20/69	
	T GALE 8/20/69	

DRN D SHEPARD	DATE 2/20/69	digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS
CHK'D J STRONEYE	DATE 2/20/69	
ENG. T GALE	DATE 2/20/69	TITLE CONSOLE SWITCH INPUTS
PROJ ENG. T GALE	DATE 2/20/69	
PROD. D CALL	DATE 2/20/69	
FIRST USED ON EP12		SIZE D CODE BS NUMBER EP12-2-CS1 REV. C
SCALE		
SHEET 1 OF 1		DIST.

PWF RESTART L
CSI KEY IO PRESET L
M113 K22
-SLA 2 WORD FORMAT L
CST DO (Ø) L
CPS FETCH B (Ø) L
M115 K13
M111 M40
CST IO PRESET L
CPTP TP4 H
M216 M39 CST EN MEM
CST SET DO L
CSI MFTP1 L
CST AUTO RESTART L
M113 L40
CST SET KEYS H
CSI KEY DO H
CST SET DO L
CSI KEY FILL STEP H
CST STEP EXAM (Ø)H
CST SET KEYS H
M115 K13
CSI KEY STEP EXAM IN H
CST SET KEYS H
M113 L40
-CPR EN RUN L
CPTP TP5 L
M112 L38
M216 M39 CST DO
CST IO PRESET L
CPTP TP5D H
M216 M39
CST FILL STEP (1)
CST FILL STEP (Ø)
CST STEP EXAM (1)
CST STEP EXAM (Ø)
CST MFTP1 H
M113 L40
CST Ø TO AC L
M304 N25
POWER PROTECT D916 N37
MCT PWR CLR L
M617 H38
CST IO PRESET H
+3V H38V1 H
-CSI KEY AUTO L
CST FILL STEP (Ø L
M112 L38
M113 K30
CST (FILL ST+EX ST+DO) H
CSI KEY STARTS L
CPR HALT L
M117 L39
CSI KEY STOP H
CST FILL STEP (Ø H
M113 L40
CST MFTP1 H
CSI KEY AUTO H
M113 L09
CSI (FILL+EXAM) H
M112 L38
CPTP TP5D H
M216 M39
CST AUTO (1)
CST AUTO (Ø)
CST IO PRESET L
+3V L38U1 H
CST (FILL ST+EX ST+DO) H
CST MFTP1 H
CST A ENAB M216 J29
+3V M34U1 H
CST AUTO RESTART L
M111 M38
CST AUTO RESTART H
CSI KEY DO L
CSI KEY FILL STEP L
CSI KEY STEP EX MFTSØ) L
CSI KEY STEP EX MFTSØ) L
M117 L39
CPR RUN (Ø L
W512 N27
CST SET AUTO L
R303 F17
CST AUTO DEL L
W603 N26
PA M304 N25
CST +5V (B)
CST AUTO (1)H
M117 L39
CST AUTO RESTART L
CST MFTP2 H
M111 M40
CST MFTP2 L
CSI KEY STOP H
CST STEP EXAM (Ø)H
M113 N40
CSI KEY (E+F STOP) L
CSI KEY SS L
M113 N40
CST A ENAB (Ø H
M113 N40
M113 N40
CST (FILL ST+EX ST+DO) H
CST (FILL ST+EX ST+DO) H
M113 N40
CST MFTS 2 (1)L
+3V
CST MFTS1
CST MFTPØ H
KK2
+3V
CST MFTS2
CST MFTP1 H
KH2
CST MFTP1 H
M111 M40
CST MFTP1 L
LIP TAPE PAUSE H
LIP PROGRESS (1)H
CSI KEY IO PRESET H
M117 L24
CPR RUN (Ø)L
M113 K33
KM2 CST MFTSØ H
CSI KEY STARTS L
CSI KEY IO PRESET L
CSI KEY (DO+CONT) L
CSI (FILLS+EXAMS) L
M117 L22
KS2
FILTER
S1
PWF RESTART L
+3V K33V1 H
KP2
KN2
KT2
2 U SEC
KE2
2 U SEC
LD2 CST MFTP2 H
CST MFTSØ L
MCT PWR CLR L
CST MFTP2 L
KL2

B	EP12-00001 A		EP12-00007 E	RIE	EP12-00043 K
	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	NR	EP12-00030 J		
	A WASHINGTON 7/9/69		K WALSH 11/5/70		
	J SCANLAN 7/12/69		D MACKLIN 11/13/70		

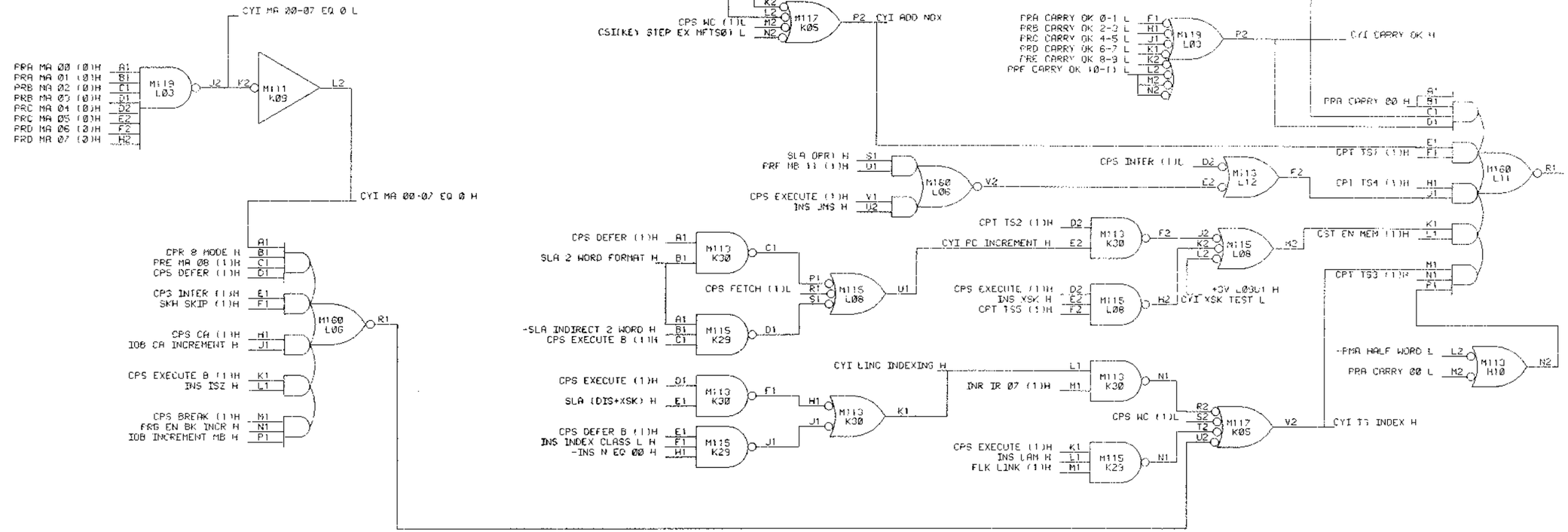
DWN. D SHEPARD	DATE 2/20/69
CHK'D. J BISCHETE	DATE 2/20/69
ENG. L GALE	DATE 2/20/69
PROJ. ENG. L GALE	DATE 2/20/69
PROD. D CALL	DATE 2/20/69
FIRST USED ON EP12	
SCALE	
SHEET 1 OF 1	

digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS

TITLE: CONSOLE STARTS

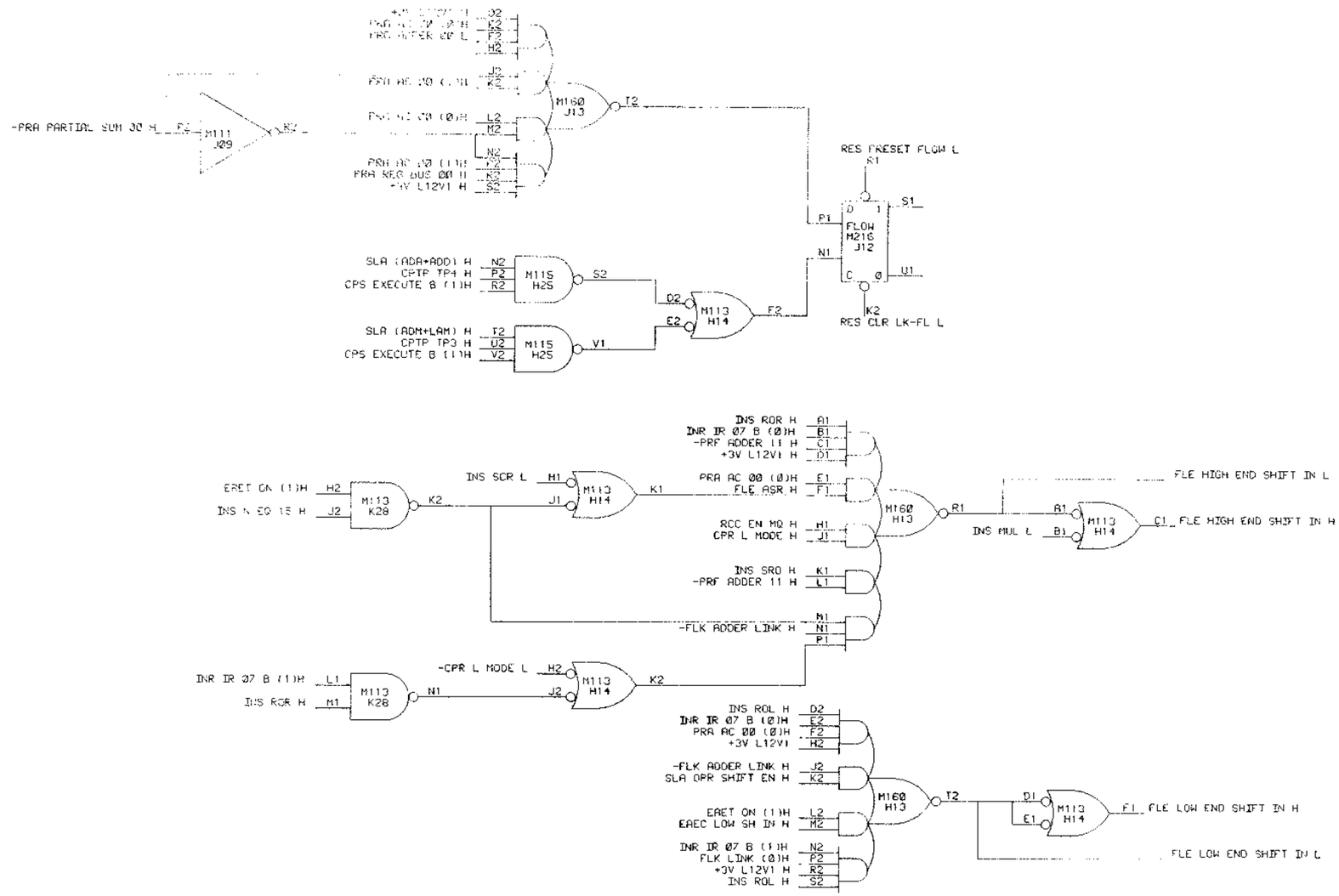
SIZE	CODE	NUMBER	REV.
D	BS	EP12-Ø-CST	K

DIST.



REVISIONS		
CHK	CHANGE NO.	REV.
JB	EP12-00001	A
	ADS J.SCANLON 3-17-69	
	EP12-00008	B
	George Wyatt 5-24-71	

DRN. D.SHEPPARD	DATE 2-20-69	digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS
CHK'D. J.BISSONETTE	DATE 2-20-69	
ENG. L.GALE	DATE 2-20-69	TITLE CARRY INSERT
PROJ. ENG. L.GALE	DATE 2-20-69	
PROD. W.CALL	DATE 2-20-69	
FIRST USED ON EP12		SIZE D / CODE BS / NUMBER EP12-B-CYI / REV. B
SCALE		
SHEET 1 OF 1		DIST.



REVISIONS		
CHK	CHANGE NO.	REV.
JB	EP12-00001	A
	ADS	
	J. SCANLAN 3/13/69	
NR	EP12-00003	B
	A WASHINGTON 6/17/69	
	L GALE 6/20/69	
	EP12-00036	C

DRN. D. SHEPARD	DATE 2/20/68	digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS
CHK'D. J. BISONETE	DATE 2/20/68	
ENG. L. GALE	DATE 2/20/68	TITLE FLOW & END SHIFT
PROJ. ENG. L. GALE	DATE 2/20/68	
PROD. D. CALL	DATE 2/20/68	
FIRST USED ON EP12		SIZE D | CODE BS | NUMBER EP12-0-FLE | REV. C
SCALE		
SHEET OF		DIST.

-SLA OPR1 H P2
RCC EN -AC H R2
M113 K28
S2
T2
M113 J25
PRD MB Ø7 (1)H T2
SLA (OPR1*TS41 H U2
M113 K28
V2
U2
V2
FLK COMP L H
FLK LINK (Ø)H S1 U1
FLK LINK (1)H V1
FLK LINK EN H U2
M160 K21
V2
R1
M111 KØ9
PRA CARRY ØØ H S1 U1
-PRA CARRY ØØ H V1 U2
S1
M160 J13
V2
-FLK ADDER LINK H A1
-RCS MUL COM AC TO MQ H B1
-RCS MUL AC TO MQ H C1
RCS EN NO SHIFT H D1
INS MUL H E1
RCS EN AC TO MQ H F1
PRA ADDER ØØ L H1
RCS EN SHIFT LEFT H J1
RCS EN SHIFT RIGHT H K1
L1
FLE ASR H M1
PRA AC ØØ (Ø)H N1
EAEC INST H P1
M160 J13
R1
-PRF ADDER 11 H L2
EAET ON (Ø)H M2
M113 H14
N2
L1
EAEC MUL ADD L M1
M113 H14
N1
RES PRESET LINK L
N2
RCL LOAD AC H L2
EAEC LINK LD EN H M2
M113 L12
N2
RCL MUL SET MQ L S1 U1
V1 U2
M160 H12
V2
M2
D 1 FLK LINK M216 J12 C Ø
L2
P2
R2
K2
RES CLR LK-FL L
+3V L12U1 H A1
+3V L12U1 H B1
SLA MUL GO H C1
INS N EQ 17 H D1
SLA L ROTATES H E1
INR IR Ø7 B (1)H F1
M160 H12
R1
INS LAM H H1
INS LAM H J1
INS MSC H K1
INS N EQ 11 H L1
CPR 3 MODE H M1
-INS AND H N1
-INS AND H P1

FLK (MSC*N EQ 11) L
INS MSC H L2
INS N EQ 11 H M2
M113 K28
N2
P1
EAEC LINK DISABLE L R1
M113 K28
S1
INS MUL H D2
FLK COMP L H E2
F2
H2
J2
K2
M160 H12
T2 -FLK LINK EN L
INS LAM H L2
M2
SLA (OPR1*TS41 H N2
P2
R2
S2
PRC MB Ø5 (Ø)H P2
PRD MB Ø7 (Ø)H R2
M113 H1Ø
S2
PRC MB Ø5 (1)H T2
PRD MB Ø7 (1)H U2
M113 H1Ø
V2

REVISIONS		
CHK	CHANGE NO.	REV.
JB	EP12-ØØØ1	A
	ADS	
	J. SCANLAN 3/13/69	
PD	EP12-ØØØ2	B
	A.WASHINGTON 6/20/69	
	J. SCANLAN 6/22/69	
GH	EP12-ØØØ3	C
	ADS	
	J.SCANLAN	
MN	EP12-ØØØ36	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 LINK LOGIC
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-Ø-F1,K REV. D
SCALE		SHEET 1 OF 1 DIST.

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
T2
U2
V2

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

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 TPJ H

* PLACE A M906 CABLE TERMINATOR MODULE AT THE END OF THIS BUS WHEN USING A MM8I. ADD +5V TO THE RESPECTIVE MODULE SLOT. (A32A2 OR D32A2)

REVISIONS			REVISIONS		
CHK	CHANGE NO.	REV.	CHK	CHANGE NO.	REV.
JB	EP12-00001	A		EP12-00032	E
	ADS			K ROSS 1/15/71	
	J SCANLAN 1/13/69			J SCANLAN 1/17/71	
PD	EP12-00002	B	MH	EP12-00034	F
	A WASHINGTON 5/20/69		MH	K Rossi 1/27/71	
	J SCANLAN 5/22/69			[illegible]	
FV	EP12-00021	C	FV	EP12-00042	H
	D SOUTHER 6/15/70			[illegible]	
	J SCANLAN 6/17/70			IKNAIAN	
GH	EP12-00026	D		[illegible]	
	S GOLDSBY 9/1/70				
	D MACKLIN 9/2/70				

DRN. D SHEPARD	DATE 2/20/68	digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS
CHK'D J BISONETE	DATE 2/20/68	TITLE IO & EXT MEM CABLES
ENG. L GALE	DATE 2/20/68	
PROJ. ENG. L GALE	DATE 2/20/68	
PROD. D CALL	DATE 2/20/68	
FIRST USED ON EP12		SIZE D CODE 85 NUMBER EP12-0-ICB REV. H
SCALE		
SHEET 1 OF 1		DIST.

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
+3V H36V1 H
+3V H36U1 H
IOR IO PRESET L

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

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

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
M113 H36 — S2

CPTP TP3 H
SLA (MUL+EXECUTE) H
M113 H36 — K2
M115 H31 — D1

CPTP TP3 H
-INS 32? H
CPT RECYCLE SYNC (1)H
CPR L MODE H
M117 H35 — E1

INS N EQ 00 H
M113 H36 — F2
M115 H37 — M2

INR COUNT ENAB H
INR IR 08 (1)H
-INS N EQ 10 H
M115 H37 — S2

PRE REG BUS 08 H
INR (FETCH*TS3. H
M113 H36 — S1

PRE REG BUS 09 H
M113 H36 — K1
M115 H37 — N1

INR CARRY 10 L
INR IR 09 (1)H
INR COUNT ENAB H
M115 H37 — U1

INR IR 09 (0)H
M115 H37 — V1
M111 H34

INR CARRY 10 L
INR IR 10 (0)H
INR IR 11 (0)H
M115 H37 — H2

INR COUNT ENAB H
INR IR 10 (1)H
INR IR 11 (1)H
M115 H37 — J1

PRE REG BUS 10 H
M113 H36 — N2

INR (FETCH*TS3) H
PRE 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 ADS J SCANLAN 3-13-69	A
GB	EP12-00003 B KORTELING 6-17-69 L GALE 6-20-69	B
REF	EP12-00023 1 C	

DRN.		DATE 2-22-69
CHK'D.		DATE 2-24-69
ENG. L. GALE		DATE 2-22-69
PROJ. ENG. L. GALE		DATE 2-24-69
PROG. L. CALI		DATE 2-24-69
FIRST USED ON EP12		
SCALE		
SHEET 1 OF 1		

digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS

TITLE: INSTRUCTION REGISTER

SIZE	CODE	NUMBER	REV.
D	85	EP12-0-INR	C

DIST.

+3V J33U1 H — M161 J36 — CPR 8 MODE H
INR IR 00 (1)H
INR IR 01 (1)H
INR IR 02 (1)H
INS 8IOT L
INS 8IOT H
INS 8 JMP L
INS 8 JMP H
INS JMS L
INS JMS H
INS DCA L
INS DCA H
INS ISZ L
INS ISZ H
INS TAD L
INS TAD H
INS AND L
INS AND H

INR IR 03 (1)H — M161 J37 — INR IR 02 (0)H — INS SGRP H
INR IR 04 (1)H
INR IR 05 (1)H
INR IR 06 (1)H
INS EXC L
INS EXC H
INS PRE MTP L
INS PRE MTP H
INS LDF L
INS LDF H
INS LIF L
INS LIF H
INS NO INST 1 L
INS NO INST 1 H
INS LOPR L
INS LOPR H
INS SKP L
INS SKP H
INS SXL L
INS SXL H

INR IR 03 (1)H — M161 J38 — INR IR 02 (1)H — INS SGRP H
INR IR 04 (1)H
INR IR 05 (1)H
INR IR 06 (1)H
INS DSC L
INS DSC H
INS NO INST 2 L
INS NO INST 2 H
INS BCO L
INS BCO H
INS BSE L
INS BSE H
INS BCL L
INS BCL H
INS SRO L
INS SRO H
INS SAE L
INS SAE H
INS SHD L
INS SHD H

+3V J33U1 H — M161 J39 — INR IR 08 (1)H
INR IR 09 (1)H
INR IR 10 (1)H
INR IR 11 (1)H
INS N EQ 17 L
INS N EQ 17 H
INS N EQ 16 L
INS N EQ 16 H
INS N EQ 15 L
INS N EQ 15 H
INS N EQ 14 L
INS N EQ 14 H
INS N EQ 13 L
INS N EQ 13 H
INS N EQ 12 L
INS N EQ 12 H
INS N EQ 11 L
INS N EQ 11 H
INS N EQ 10 L
INS N EQ 10 H

+3V J33U1 H — M161 J40 — INR IR 08 (0)H
INR IR 09 (1)H
INR IR 10 (1)H
INR IR 11 (1)H
INS N EQ 07 L
INS N EQ 07 H
INS N EQ 06 L
INS N EQ 06 H
INS N EQ 05 L
INS N EQ 05 H
INS N EQ 04 L
INS N EQ 04 H
INS N EQ 03 L
INS N EQ 03 H
INS N EQ 02 L
INS N EQ 02 H
INS N EQ 01 L
INS N EQ 01 H
INS N EQ 00 L
INS N EQ 00 H

CPR 8 MODE H
INR IR 00 (1)H
INR IR 01 (1)H
INR IR 02 (1)H
M627 J14 — E1 P2 — M111 H34 — R2 INS 8 OPR H
INS 8 OPR L

CPR L MODE H
INR IR 00 (0)H
INR IR 01 (0)H
M115 H31 — H2 — F1 — M111 H34 — H1 INS SGRP H
INS SGRP L

INR IR 03 (0)H
INR IR 02 (0)H
M161 J34
INS SCR L
INS SCR H
INS ROR L
INS ROR H
INS ROL L
INS ROL H
INS XSK L
INS XSK H
INS DIS L
INS DIS H
INS SAM L
INS SAM H
INS SET L
INS SET H
INS MSC L
INS MSC H
INR IR 04 (1)H
INR IR 05 (1)H
INR IR 06 (1)H

INR IR 03 (0)H
INR IR 02 (1)H
M161 J35
INS STH L
INS STH H
INS LDH L
INS LDH H
INS MUL L
INS MUL H
INS LAM L
INS LAM H
INS ADM L
INS ADM H
INS ADA L
INS ADA H
INS STA L
INS STA H
INS LDA L
INS LDA H
INR IR 04 (1)H
INR IR 05 (1)H
INR IR 06 (1)H

INR IR 00 (0)H
INR IR 01 (1)H
M115 H31 — J1 INS ADD L

INS SGRP H
INR IR 02 (1)H
M113 J33 — C1 INS INDEX CLASS L L — H2 — M111 H34 — J2 INS INDEX CLASS L H

INR IR 00 (1)H
M115 H31 — M2 INS LJMP L
K2 — M111 H34 — L2 INS LJMP H

INS EXC L
INS NO INST 1 L
INS NO INST 2 L
M115 H31 — U1 INS NO INST H
R1 — M111 J09 — S1 INS NO INST L

-INS N EQ 00 H
M113 J33 — F1 INS (L INDEX X B EQ 0) L

INR IR 01 (0)H
CPR L MODE H
M115 H31 — N1 INS STC L

INS N EQ 00 H
INR IR 07 B (1)H
M113 J33 — N1 INS (I EQ 1 XB EQ 0) L
INS INDEX CLASS L H — M113 J33 — N2 — E2 — M111 H34 — F2 INS LINC INDIR H

A1 — M111 H34 — B1 INS (I EQ 0XB EQ 0) H

INS 8 IOT H
TSS UF (0)H
M113 H14 — V2 — H1
INS LOPR H
INS N EQ 00 H
CPS EXECUTE (1)H
M115 H31 — S2 — J1
M113 J33 — K1 INS IOT H

INS LJMP H
INR IR 02 (0)H
INR IR 03 (0)H
INR IR 04 (0)H
INR IR 05 (0)
INR IR 06 (0)H
INS (I EQ 0XB EQ 0)H
KCD SAVE PC 0 H
M119 J32 — J2 INS (LJMPXX EQ 0) L
D2 — INS LJMP H — E2 — M113 J33 — F2 INS (LJMPX-XEQ 0) L

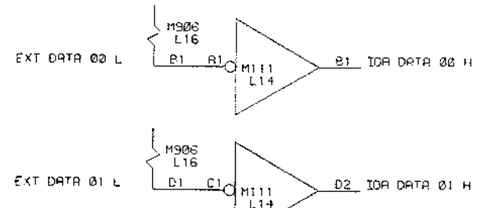
INS N EQ 00 H
INR IR 07 (0)H
M113 J33 — S1 INS I EQ 0 X B EQ 0 L

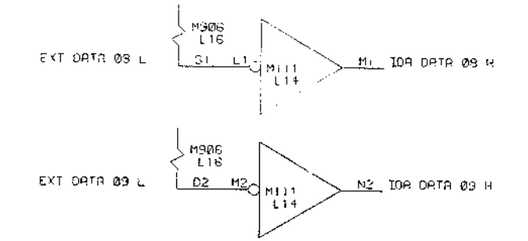
INS MSC L — M111 L15 — S1 INS 8 MSC H

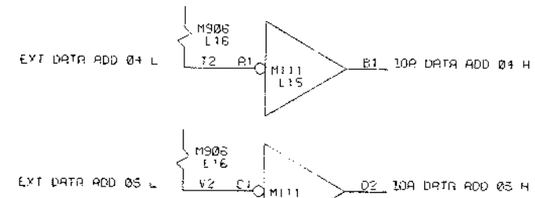
INS PRE MTP H
RCD EN T TRAP (1)H
CPS EN TRAP (1)H
M115 K29 — U1 INS TAPE TRAP LP2
INS PRE MTP H — M113 J33 — S2 — N1
INS MTP L
M111 H34 — P1 INS MTP H

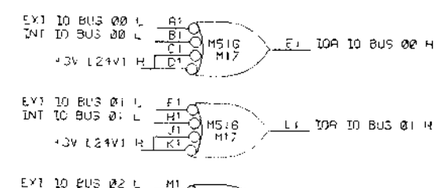
REVISIONS			REVISIONS		
CHK	CHANGE NO	REV	CHK	CHANGE NO.	REV.
NR	EP12-00001	A	NR	EP12-00030	E
	ADS			K WALSH 11/5/70	
	J SCANLAN 3/13/69			D MACKLIN 11/13/70	
NR	EP12-00007	B	ECE	EP12-00043	F
	ADS				
	L GALE 8/20/69				
NR	EP12-00016	C			H
	K. COTE 11-12-69				
	J. SCANLAN 11-14-69				
FV	EP12-00021	D			
	D. SOUTHER 6-15-70				
	J SCANLAN 6-17-70				

DRN C 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 BS · NUMBER EP12-0-INS · REV. H
SCALE		DIST.
SHEET OF		









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 MS16 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	

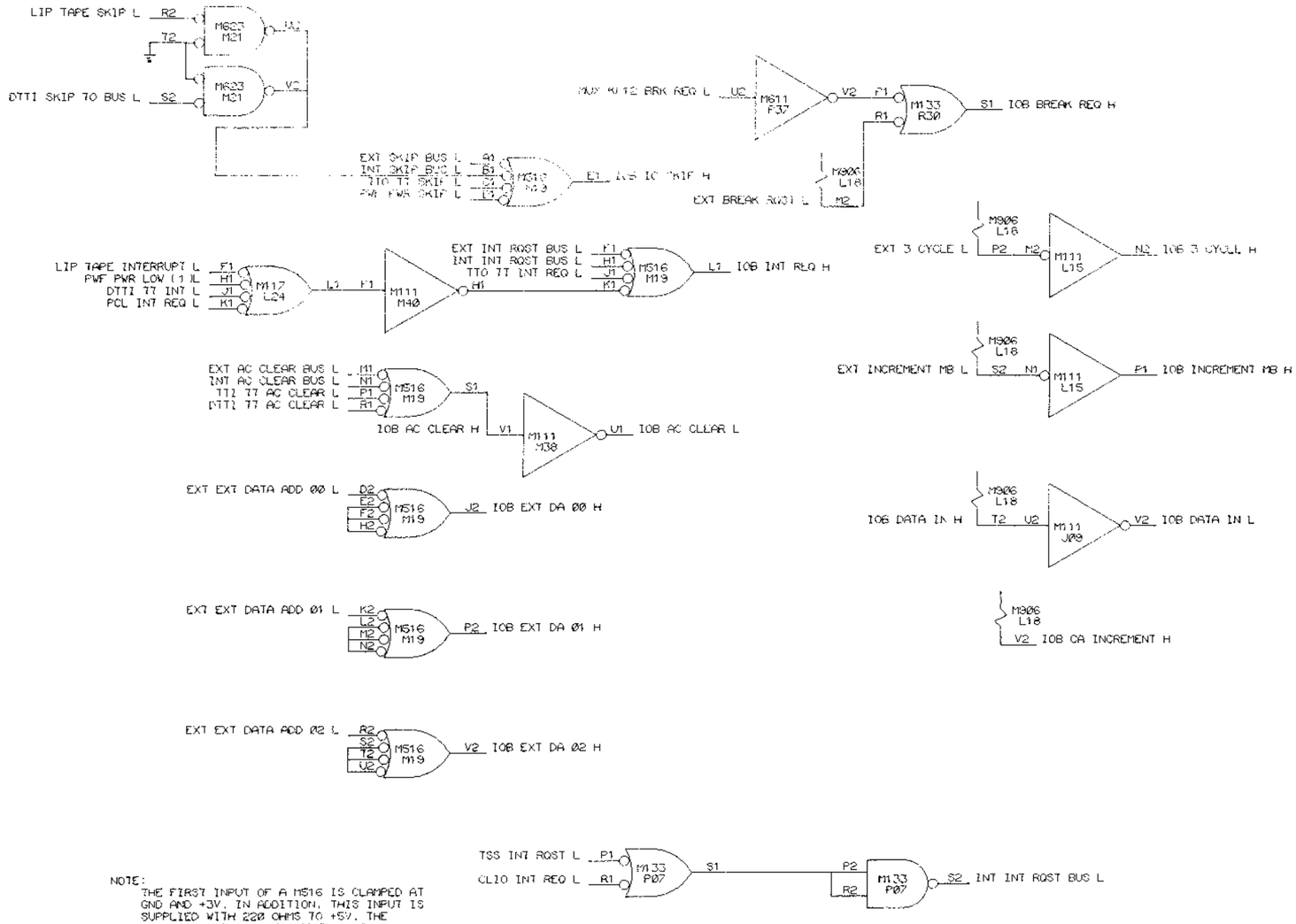
digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS

TITLE: IO INPUT PART A

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

DIST.

REV B SHOWS FILTERS FROM 120 to DTTI 1/19/75



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 ICB.

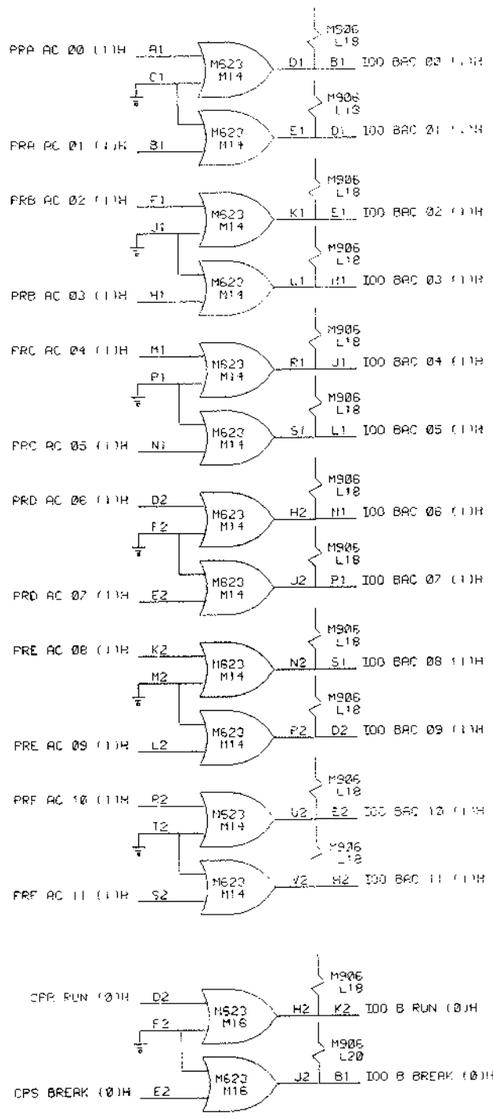
REVISIONS			REVISIONS		
CHK	CHANGE NO.	REV.	CHK	CHANGE NO.	REV.
JB	EP12-00001	A	GH	EP12-00036	E
	ADS			R SOFKA 5-6-71	
	J SCANLAN 3/13/69			J SCANLAN 5-20-71	
	EP12-00016	B		EP12-00044	F
	K.COTE 11/12/69				
	J.SCANLAN 11/14/69				
GH	EP12-00023	C			
	D. SOUTHER 6-30-70				
	D. MACKLIN 7-2-70				
GH	EP12-00030	D			
	K WALSH 11/5/70				
	D MACKLIN 11/19/70				

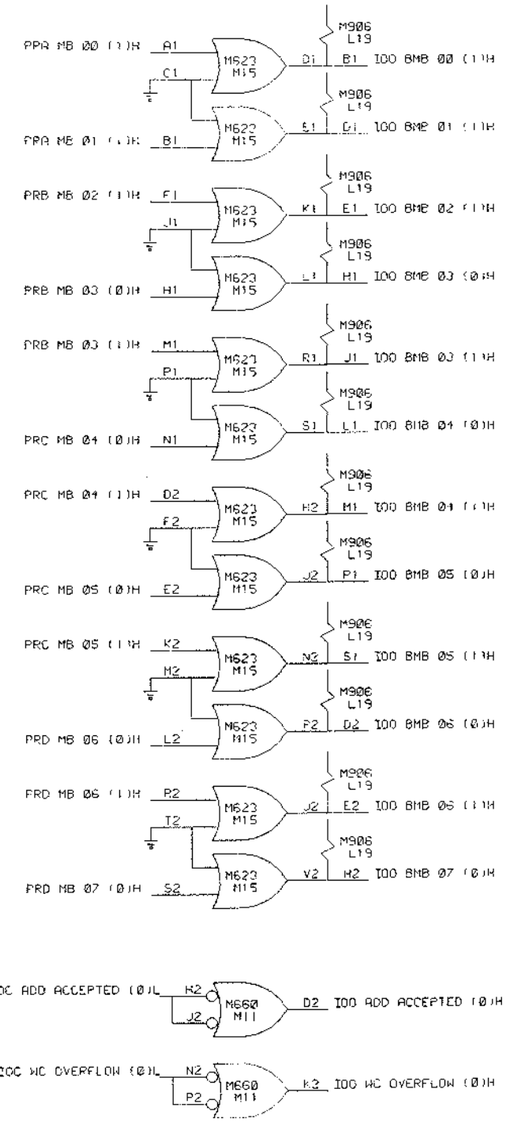
DRN. D SHEPARD	DATE 2/20/69	digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS
CHK'D. J BISONETE	DATE 2/20/69	
ENG. L GALE	DATE 2/20/69	TITLE IO INPUT PART B
PROJ. ENG. L GALE	DATE 2/20/69	
PROD. D CALL	DATE 2/20/69	
FIRST USED ON EP12		SIZE D CODE BS NUMBER EP12-0-10B REV. F
SCALE		
SHEET 1 OF 1		DIST.

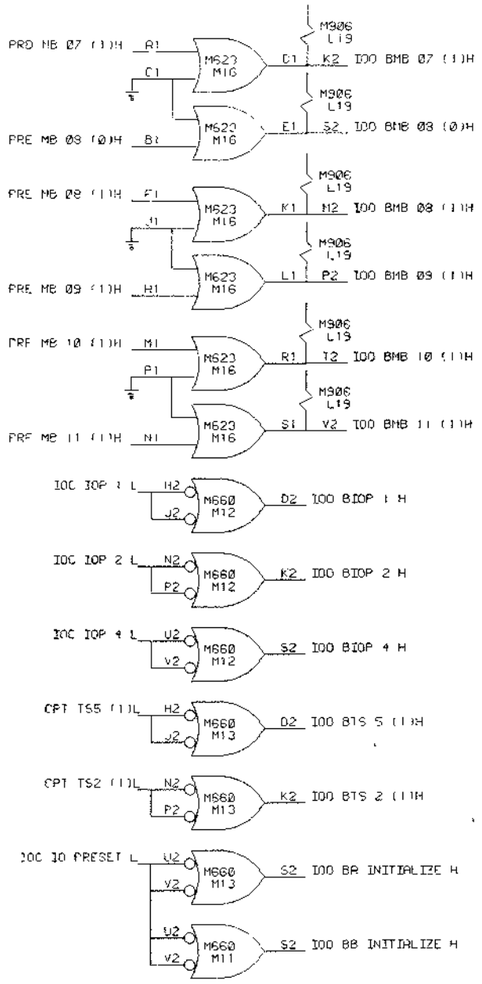
PRD AC Ø7 (1)H
RCL LOAD MSC 1 H
M113 L21
IOC MSC PRESET L
CSI IO PRESET L
M113 K11
IOC IO PRESET H
+3V K21Ø1 H
M812 K12
IOC IO PRESET L
+3V K05V1 H
PRA CARRY Ø0 H
CPS WC (1)L
M113 H10
CPTP TP3 H
M213 K11
IOC WC OVERFLOW (1)H
IOC WC OVERFLOW (Ø)H
CPS BREAK (1)H
IOB INCREMENT MB H
M113 H10
CPT TSI (1) L
+3V K05V1 H
CPS BREAK SET L
CPTP TP1 H
M213 K11
IOC ADD ACCEPTED (1)H
IOC ADD ACCEPTED (Ø)H
CST IO PRESET H
CPTP TP3 H
M112 J10
+3V K05V1
IOC INT EN (1)L
M211 DELAY M213 K11
IOC INT EN (Ø)L
CPS FETCH (1)L
CPTP TP2 L
M112 J10
+3V J06Ø1 H
IOC PROC IOI L
PRF MB 11 (1)H
PRF MB 10 (1)H
M112 J10
M112 J10
IOC INT EN M216 J12
CST IO PRESET H
M112 J10
CPS INTER (1)L
MPG INT INHIBIT (Ø)L
M112 H32
+3V K05V1 H
IOC IOP 1 (Ø)H
IOC IOP 2 (Ø)H
IOC IOP 3 (Ø)H
M115 J05
IOC IOP FF 1 M216 K11
IOC IOP 2 M216 J03
IOC IOP 3 M216 K11
IOC IO PRESET L
IOC IOP SHIFT H
CPT IOT PAUSE (Ø)L
+3V K05V1 H
IOC IOP SAMPLE M216 K11
IOC IOP SHIFT L
IOC IO PRESET H
IOC OFF IOP H
M112 L38
IOC OFF SAMPLE L
INS IOI H
PRB MB Ø3 (Ø)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
CPTP TP4 H
M119 K10
IOC PROC IOT L
M310 H04
IOC OFF IOP H
IOC IOP SHIFT L
IOC IOP SHIFT H
CPTP TP5 H
CPT IOT PAUSE (1)H
IOC IO CLOCK H
M1GØ KØ8
M111 J09
M310 H03
M310 H03
M310 H04
M310 H04
M310 H04
IOC IO CLOCK H
IOC START IO TIME H
M111 H34
IOC START IO TIME L
IOC START IO TIME H
IOC IOP SAMPLE (1)H
IOC IOP 1 (1)H
PRF MB 11 (1)H
M115 KØ4
IOC IOP 1 L
IOC IOP 2 (1)H
PRF MB 10 (1)H
M115 KØ4
IOC IOP 2 L
IOC IOP 3 (1)H
PRE MB Ø9 (1)H
M115 KØ4
IOC IOP 4 L
M113 H10
M111 J09
IOC IO STROBE H
IOC IO STROBE L
IOC IOP 1 L
IOC IOP 2 L
IOC IOP 4 L
M115 KØ4
M111 J09
IOC IOP 1 H
M111 J09
IOC IOP 2 H
M111 J03
IOC IOP 4 H

REVISIONS			REVISIONS		
CHK	CHANGE NO.	REV.	CHK	CHANGE NO.	REV.
JB	EP12-00001	A	GH	EP12-00026	E
	ADS			S. GOLDSBY 9-11-70	
	J. SCANLAN 3/13/69			D. MACKLIN 9-2-70	
PD	EP12-00002	B	JF	EP12-00030	F
	A.WASHINGTON 5/20/69			R.SOFKA 11-17-70	
	J. SCANLAN 5/22/69			D.MACKLIN 11-19-70	
NR	EP12-00013	C	GH	EP12-00039	H
	D. SOUTHER 10/1/69			George Wyatt 4-2-71	
	J. SCANLAN 10/6/69				
FV	EP12-00021	D			
	D. SOUTHER 6/15/70				
	J. SCANLAN 6/17/70				

DRN. D SHEPARD	DATE 2/20/69	digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS
CHK'D. J. BISONETTE	DATE 2/20/69	
ENG. L. GALE	DATE 2/20/69	TITLE IO CONTROL & TIMING
PROJ. ENG. L. GALE	DATE 2/20/69	
PROG. D. CALL	DATE 2/20/69	
FIRST USED ON EP12		SIZE D / CODE 85 / NUMBER EP12-0-IOC / REV. H
SCALE		DIST.
SHEET 1 OF 1		







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

REVISIONS		
CHK	CHANGE NO.	REV.
	~~EP12-00002~~	A

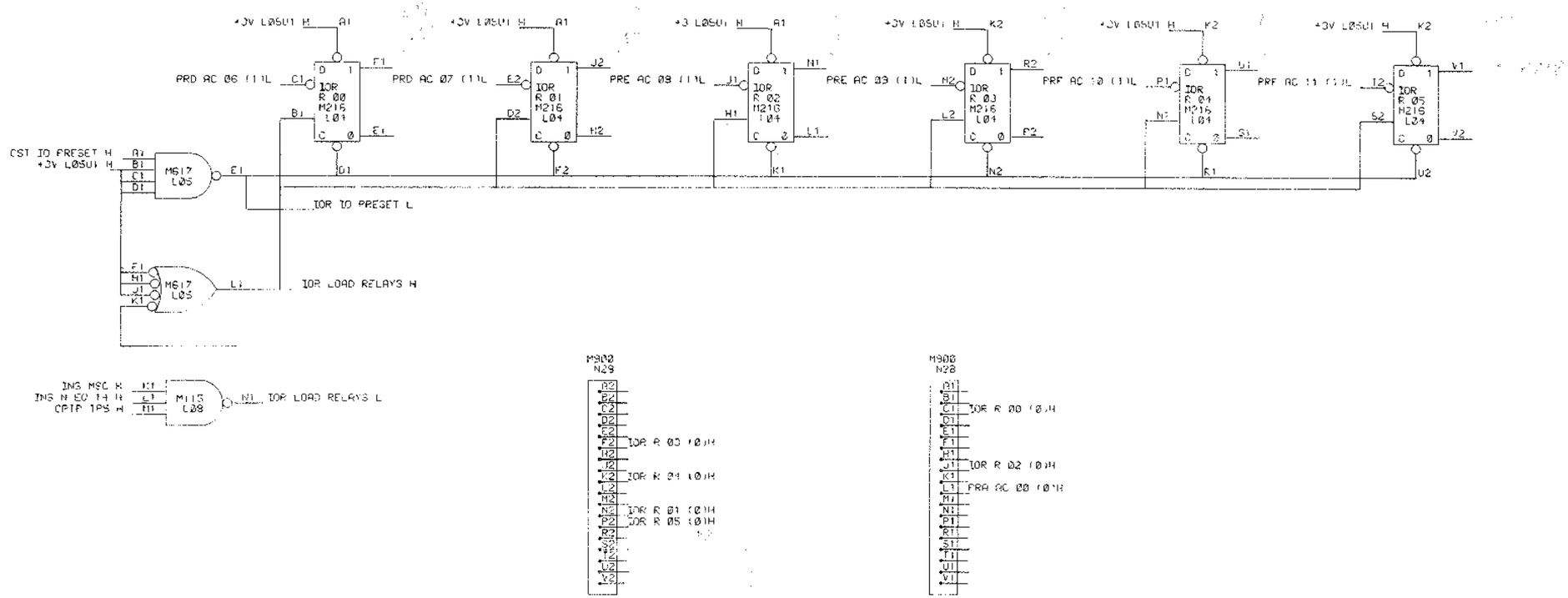
DRN.		DATE
CHK'D.		DATE
ENG.		DATE
PROJ. ENG.		DATE
PROD.		DATE
FIRST USED ON	EP12	
SCALE		
SHEET 1 OF 1		

digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS

TITLE: IO OUTPUT BUFFERS

SIZE	CODE	NUMBER	REV.
D	8S	EP12-0-100	A

DIST.



REVISIONS		
CHK	CHANGE NO.	REV.
	EP12-00001	A
	ADS	
	J.SCANLAN 6-2-63	
	EP12-00003	B

DRN. D.L. SHEPARD	DATE 2-20-63	digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS
CHK'D. J.BISONETTE	DATE 2-20-63	
ENG. L. GALE	DATE 2-20-63	TITLE RELAY BUFFER
PROJ. ENG. L. GALE	DATE 2-20-63	
PROD. L. GALE	DATE 2-20-63	
FIRST USED ON EP12		SIZE D / CODE 85 / NUMBER EP12-0-IOR / REV. B
SCALE		
SHEET 1 OF 1		DIST.

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 MSC TRN TO AC H
F1	LIP MSC TRN TO AC H
H1	LTP8 BLOCK (1)H
J1	LTPR TAPE WORD H
K1	LIP TAPE BRK REQ (1)H
L1	LCS TURN ARND (1)H
M1	LIP PROGRESS (0)H
N1	LTP TAPE OUT H
P1	LTR MARK ON L
R1	UNUSED
S1	LIP CHK SUM TO AC L
T1	GND
U1	LIP CHK SUM LD AC L
V1	GND

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
J02

A1	
B1	CPTP START MEMORY H
C1	
D1	IOC IO PRESET L
E1	CPTP TP2 H
F1	
H1	CPTP TPSD H
J1	CPTP TP4 H
K1	
L1	CPTP TP5 H
M1	IOC IOP 1 L
N1	
P1	IOC IOP 2 L
R1	
S1	IOC IOP 4 L
T1	
U1	
V1	

* USE M906 IF SYSTEM DOES NOT HAVE TAPES.

M903
J02

A2	
B2	
C2	
D2	MCT PWR CLR L
E2	CPT TS2 (1)H
F2	
H2	CPT TS3 (1)H
J2	
K2	CPT TS4 (1)H
L2	
M2	CPT TS5 B (1)H
N2	
P2	CPS EXECUTE B (1)H
R2	
S2	CPS FETCH B (1)H
T2	CST ID PRESET L
U2	
V2	PWF PWR SKIP L

M903
K02

A1	
B1	PRA AC 00 (1)H
C1	
D1	PRA AC 01 (1)H
E1	PRB AC 02 (1)H
F1	
H1	PRB AC 03 (1)H
J1	PRC AC 04 (0)H
K1	
L1	PRC AC 04 (1)H
M1	PRC AC 05 (1)H
N1	
P1	PRD AC 06 (1)H
R1	
S1	PRD AC 07 (1)H
T1	
U1	
V1	

M903
L02

A1	YAD AC 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 (OSC+DIS) H
N1	SLA (OSC+EXECUTE 2) L
P1	INS DIS L
R1	INS OSC L
S1	CPR RUN (1)H
T1	GND
U1	OSC BUSY H
V1	YADC A-D RECYCLE L

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

M903
H02

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

M903
H02

A2	
B2	
C2	
D2	INT IO BUS 09 L
E2	INT IO BUS 10 L
F2	
H2	INT IO BUS 11 L
J2	
K2	INT SKIP BUS L
L2	
M2	INT AC CLEAR BUS L
N2	
P2	DSC 2 DRIVER H
R2	
S2	MXF EA 2 H
T2	IOC IO STROBE H
U2	
V2	INS SAM H

M901
M02

A1	PWF POWER LOW (0)H
B1	DSC SET AUTO L
C1	PRC AC 02 (0)H
D1	PRC AC 03 (0)H
E1	PRC AC 09 (0)H
F1	CPT TS RECYCLE (0)H
H1	CST AUTO DEL L
J1	INR IR 07 (2)H
K1	INR IR 07 B (1)H
L1	INR IR 08 (1)H
M1	INR IR 10 (1)H
N1	INR IR 11 (1)H
P1	INS N E) 01 H
R1	INS N E0 02 H
S1	CST 00 (1)H
T1	GND
U1	DSC SIZE (0)H
V1	PWF RESTART L

M901
M02

A2	CLKD INT ROST L
B2	DSC 50J 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 8 MSC H
U2	CS1 KEY MARK L
V2	LIP TAPE WORD (1)H

M901
L02

A2	MXF EA 0 L
B2	MXF EA 1 L
C2	
D2	MXR DF 00 (1)H
E2	MXR DF 01 (1)H
F2	MXR DF 02 (1)H
H2	MPBDF 03 (1)H
J2	MPB DF 04 (1)H
K2	MXR IF 00 (1)H
L2	MXR IF 01 (1)H
M2	MXR IF 02 (1)H
N2	MPB IF 03 (1)H
P2	MPB 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

M903
J01

A2	
B2	
C2	
D2	MCS MEM 09 H
E2	MCS MEM 10 H
F2	
H2	MCS MEM 11 H
J2	
K2	PRA MB 00 (0)H
L2	
M2	PRA MB 00 (1)H
N2	
P2	PRA MB 01 (0)H
R2	
S2	PRA MB 01 (1)H
T2	PRB MB 02 (0)H
U2	
V2	PRB MB 02 (1)H

M903
K01

A2	
B2	
C2	
D2	PRD MB 07 (1)H
E2	PRE MB 08 (0)H
F2	
H2	PRE MB 08 (1)H
J2	
K2	PRE MB 09 (0)H
L2	
M2	PRE MB 09 (1)H
N2	
P2	PRF MB 10 (0)H
R2	
S2	PRF MB 10 (1)H
T2	PRF MB 11 (0)H
U2	
V2	PRF MB 11 (1)H

M903
L01

A2	
B2	
C2	
D2	PRD MA 06 (1)H
E2	PRD MA 07 (1)H
F2	
H2	PRE MA 08 (1)H
J2	
K2	PRE MA 09 (0)H
L2	
M2	PRE MA 09 (1)H
N2	
P2	PRF MA 10 (1)H
R2	
S2	PRF MA 11 (1)H
T2	MCT STROBE L
U2	
V2	MCT MEM DONE L

M903
K02

A2	
B2	
C2	
D2	PRE AC 08 (1)H
E2	PRE AC 09 (1)H
F2	
H2	PRF AC 10 (0)H
J2	
K2	PRF AC 10 (1)H
L2	
M2	PRF AC 11 (0)H
N2	
P2	PRF AC 11 (1)H
R2	
S2	RCL LOAD MSC 4 H
T2	PRB AC 03 (0)H
U2	
V2	CPS T BREAK (1)H

M901
M01

A1	
B1	MCS MEM 00 H
C1	
D1	MCS MEM 01 H
E1	MCS MEM 02 H
F1	
H1	MCS MEM 03 H
J1	MCS MEM 04 H
K1	
L1	MCS MEM 05 H
M1	MCS MEM 06 H
N1	
P1	MCS MEM 07 H
R1	
S1	PLS MEM 08 H
T1	
U1	
V1	

M903
J00

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

M903
K00

A1	
B1	PRB MB 05 (0)H
C1	
D1	PRB MB 05 (1)H
E1	PRB MB 06 (0)H
F1	
H1	PRB MB 06 (1)H
J1	PRB MB 07 (0)H
K1	
L1	PRB MB 07 (1)H
M1	PRC MB 08 (0)H
N1	
P1	PRC MB 08 (1)H
R1	
S1	PRC MB 09 (0)H
T1	
U1	
V1	

M903
L00

A1	
B1	PRA MA 00 (0)H
C1	
D1	PRA MA 00 (1)H
E1	PRA MA 01 (1)H
F1	
H1	PRB MA 02 (1)H
J1	PRB MA 03 (0)H
K1	
L1	PRB MA 03 (1)H
M1	PRB MA 04 (1)H
N1	
P1	PRC MA 05 (1)H
R1	
S1	PRC MA 06 (0)H
T1	
U1	
V1	

M903
H00

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

M903
H00

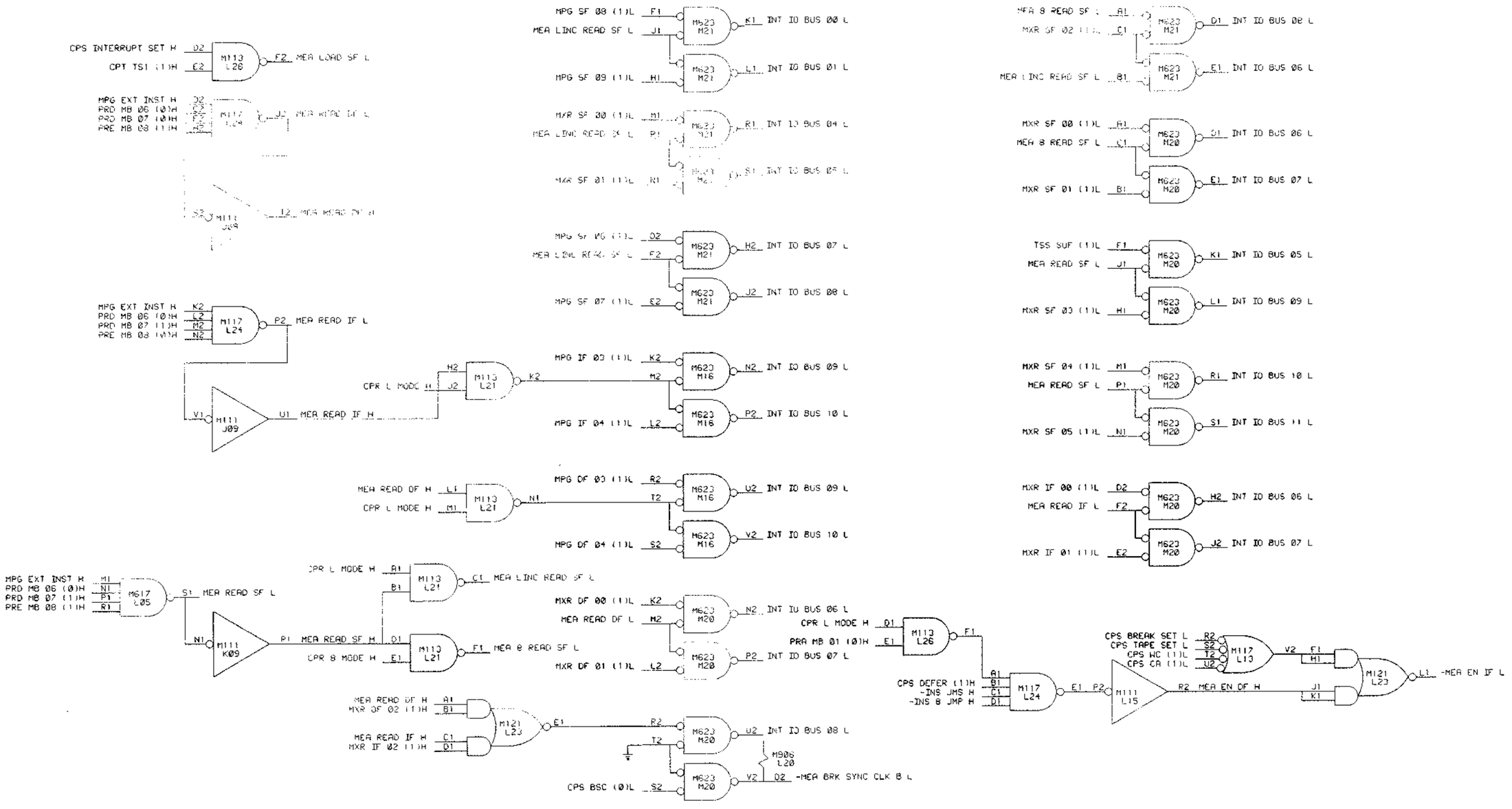
A2	
B2	
C2	
D2	INT IO BUS 09 H
E2	INT IO BUS 10 H
F2	
H2	INT IO BUS 11 H
J2	
K2	INT SKIP BUS H
L2	
M2	INT AC CLEAR BUS H
N2	
P2	DSC 2 DRIVER L
R2	
S2	MXF EA 2 L
T2	IOC IO STROBE L
U2	
V2	INS SAM L

M901
M00

A2	CLKD INT ROST H
B2	DSC 50J INTEN H
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 H
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 L
T2	INS 8 MSC L
U2	CS1 KEY MARK H
V2	LIP TAPE WORD (1)H

REVISIONS			REVISIONS			REVISIONS		
CHK	CHANGE NO.	REV.	CHK	CHANGE NO.	REV.	CHK	CHANGE NO.	REV.
JB	EP12-00001	A	NR	EP12-00007	E	[illegible]	EP12-00036	K
	ADS			A WASHINGTON				
	J SCANLAN 3/13/69			J SCANLAN				
	EP12-00002	B	NR	EP12-00011	F			
	A WASHINGTON 5/20/69			PEIJE KORTE-DE				
	J SCANLAN 5/22/69			J SCANLAN				
NR	EP12-00004	C		EP12-00016	H			
	A WASHINGTON 7/8/69			ADS				
	J SCANLAN 7/9/69			J SCANLAN				
	EP12-00006	D	GH	EP12-00022	J			
	A WASHINGTON			N CLE 9/22/69				
	J SCANLAN			J SCANLAN 10/14/69				

DRN. D SHEPARD	DATE 2/20/69	digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS	
CHK'D. J BISCHETE	DATE 2/20/69		
ENG. L GALE	DATE 2/20/69	TITLE INTER PROC CABLES	
PROJ. ENG. L GALE	DATE 2/20/69		
PROG. D CALL	DATE 2/20/69		
FIRST USED ON EP12		SIZE D	CODE 85
SCALE		NUMBER EP12-0-IPC	REV. K
SHEET 1 OF 1		DIST.	



REVISIONS			REVISIONS		
CHK	CHANGE NO.	REV.	CHK	CHANGE NO.	REV.
JB	EP12-00001	A	FV	EP12-00021	E
	ADS			D. SOUTHER 6-16-70	
	J SCANLAN 1/13/69			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				
	L GALE 7/15/69				
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 G BISONETTE	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		
SHEET 1 OF 1		DIST.

IOC OFF IOP H
CPR IOT S141 H
INS L JMP H
CPTP TP4 H
-INS (L JMPMX EQ Ø) H
CPS FETCH (1) H
CPTP TP4 H
-CPS DEFER SET H
RCB (JMP+JMS) H
MPG TP4 JMP2 L
+3V K36U1 H
MPG LOAD IF ØØ-Ø2 H
MPG START CLEAR L
CST MFTPØ H
CSI KEYS CLEAR H
+3V K12U1 H
MPG Ø-IF-IBØ3-Ø4 H
MPG Ø-IF-IBØ3-Ø4 L
MPG IO PRESET L
MEA LOAD SF L
MPG LINC SET L
MPG LOAD SF H
MPG Ø-DFØ3-Ø4 H
MPG Ø-DFØ3-Ø4 L
PRE MB Ø9 (1) L
MPG EXT INST H
INS IOT H
PRB MB Ø3 (Ø) H
PRC MB Ø4 (1) H
PRC MB Ø5 (2) H
MPG MEM EXT H
MPG MEM EXT L
CPS TRAP H
SRF SET INT INH H
MPG SET INHIBIT L
MPG INT INHIBIT (1) H
MPG Ø -INT INHIBIT H
MPG INT INHIBIT (Ø) H
MPG IO PRESET L
MPG LMODE LD IF L
INS LIF H
CPTP TP4 H
SRF LD IB Ø-4 L
MPG LINC SET L
+3V K36U1 H
MPG LOAD IB ØØ-Ø2 H
CSI LSW Ø1 H
RCC ST LSW EN H
MPG MEM EXT H
IOC IOP 2 H
MPG SLM GO L
MPG SLM GO H
INS LIF H
PRF MB 11 (1) H
+3V L22U1 H
SRF IF Ø4 H
CPR IOT S141 H
PRA PC Ø1 (1) L
CPR IOT S141 H
SRF IF Ø3 H
PRA PC Ø2 (1) L
CSI LSW Ø2 H
RCC ST LSW EN H
CSI KEY IO PRESET H
CST MFTP2 H
MPG MEM EXTN PRESET L
MPG EN SAVE FIELD H
MPG SF Ø8 (1) H
SRF X EN H
PRF MB 10 (1) H
MPG SAVE INST H
PRD MB Ø7 (Ø) H
PRE MB Ø8 (Ø) H
MPG EN SAVE FIELD L
MPG SF Ø9 (1) H
PRF MB 11 (1) H
MPG EN SAVE FIELD H
CPTP TPSD H
MPG EN SAVE FIELD H
SRF LD DF 3-4 L
MPG SAVE FIELD LOAD L
INS LDF H
CPS FETCH (1) H
CPTP TPS H
MPG LINC SET DF L
CSI IO PRESET H
+3V K12U1 H
+3V K12U1 H
+3V K12U1 H
MPG IO PRESET L
MPG TP4 JMPS L
MPG INH SYNC (1) H
MPG SLM GO H
MPG Ø -INT INHIBIT H
MPG Ø -IF-IB Ø3-Ø4 L
MPG LOAD IF Ø3-Ø4 H
MPG SET IB-IF Ø3 L
MPG LOAD SF H
MPG IB Ø3 M216 L28
MPG IF Ø3 M216 L07
MPG SF Ø6 M216 L28
MPG IB Ø4 M216 L28
MPG IF Ø4 M216 L28
MPG SF Ø7 M216 L07
MPG DF Ø3 M216 L28
MPG SF Ø8 M216 L07
MPG DF Ø4 M216 L28
MPG SF Ø9 M216 L07
MPG INH SYNC M216 L27
+3V L26V1 H
CPT IO PRESET L

REVISIONS			REVISIONS			REVISIONS		
CHK	CHANGE NO.	REV.	CHK	CHANGE NO.	REV.	CHK	CHANGE NO.	REV.
JB	EP12-00001	A	NR	EP12-00002	E	GH	EP12-00036	K
	ADS			A WASHINGTON 8/20/69			R SOFKA 5-6-71	
	J SCANLAN 9/13/69			L GALE 8/22/69			J SCANLAN 5-20-71	
PD	EP12-00002	B	NR	EP12-00015	F		EP12-00044	L
	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	G			
	A WASHINGTON 6/18/69			D. SOUTHER 12-2-69				
	L GALE 6/20/69			J. SCANLAN 12-4-69				
NR	EP12-00004	D	GH	EP12-00030	J			
	A WASHINGTON 7/9/69			K WALSH 11/16/70				
				S MACKLIN 11/19/70				

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: MEM PAGE EXTN CONTROL
PROJ. ENG. L GALE	DATE 2/20/69	
PROD. D CALL	DATE 2/20/69	
FIRST USED ON: EP12		SIZE D / CODE 85 / NUMBER EP12-0-MPG / REV. L
SCALE		DIST.
SHEET 1 OF 1		

RCS EN -AC TO MQ H U2 PRA AC 00 (0)H P2
RCS EN MQ SH RIGHT H L1 PPF ADDER 11 H M1
RCS EN AC TO MQ H N1 PRA AC 00 (1)H L2
RCS EN MQ SH LEFT H P1 MQR MQ 01 (1)H F1
M212 K24
D MQR I M212 K24 MQ 00 C 0 C1 D1 D2 B1
+3V K23U1 H

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

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

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

RCL LOAD MQ H

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

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

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

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

RCL LOAD MQ H

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

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

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

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

RCL LOAD MQ H

REVISIONS		
CHK	CHANGE NO.	REV.
PD	EP12-00002	A
	A.WASHINGTON 5-20-69	
	J. SCANLAN 5-22-69	
09/4	EP12-00030	B
	11-17-70	

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		
SCALE		SIZE D / CODE 85 / NUMBER EP12-0-MQR / REV. B
SHEET 1 OF 1		DIST.

INS LOH L A1
INS STH L B1
INS SNO L C1
M115 K13
D1
LOW HALF WORD H P1
CYC TO INDEX H R1
CPT TSO (1)H S1
M113 K13
U1
B1

RCB EN OF ADDRESS H C1
MPG OF 03 (1)H D1
RCD EN DATA BITS H D2
IOA DATA 00 H E1
RCC EN IO BUS H E2
IOA IO BUS 00 H F1
RCD EN AC N-6L H F2
PRD AC 06 (1)H H1
M169 K15
A1 PMA TMSC 00 H

+3V K14U1 H
CSI MFISL (1)H C1
D1
RCD EN DATA BITS H D2
IOA DATA 02 H E1
RCC EN IO BUS H E2
IOA IO BUS 02 H F1
RCD EN AC N-6 L H F2
PRE AC 08 (1)H H1
M169 K16
B1
A1 PMA TMSC 02 H

+3V K14U1 H
C1
D1
RCD EN DATA BITS H D2
IOA DATA 04 H E1
RCC EN IO BUS H E2
IOA IO BUS 04 H F1
RCD EN AC N-6 L H F2
PRE AC 10 (1)H H1
M169 K17
B1
A1 PMA TMSC 04 H

+3V K14U1 H
L1
RCD EN A D H R2
YADC AD 00 (1)H S1
RCD EN TAPE BUS H P2
LTRA TAPE BUS 00 H R1
RCC SET PC 0-1 H N2
RCC SET PC 0-1 H P1
RCB EN IF ADDRESS H M2
MPG IF 02 (1)H N1
M169 K15
M1 PMA BMSC 00 H

+3V K14U1 H
L1
RCD EN A D H R2
YADC AD 02 (1)H S1
RCD EN TAPE BUS H P2
LTRB TAPE BUS 02 H P1
RCA ENABLE IR 2-7 H N2
INR IR 02 (1)H P1
RCA EN MSC 4 H M2
CPS EN TRAP (1)H N1
M169 K16
M1 PMA BMSC 02 H

+3V K14U1 H
L1
RCD EN A D H R2
YADC AD 04 (0)H S1
RCD EN TAPE BUS H P2
LTRC TAPE BUS 04 H R1
RCA ENABLE IR 2-7 H N2
INR IR 04 (1)H P1
RCA EN MSC 4 H M2
PMA SIZE (1)H N1
M169 K17
X1 PMA BMSC 04 H

DSC SIZE (1)L S2
M111 L15
T2
CPS TRAP L L1
PMA SET INT ADD L M1
M112 H32
N1 C1
N2

+3V K14U1 H
J1
CST MFISL (1)H C1
CSI KEY ST 400 H H2
RCD EN DATA BITS H D2
IOA DATA 01 H J2
RCC EN IO BUS H E2
IOA IO BUS 01 H K2
RCD EN AC N-6 L H F2
PRD AC 07 (1)H L2
M169 K15
K1 PMA TMSC 01 H

+3V K14U1 H
J1
CST MFISL (1)H C1
CSI KEY ST 400 H H2
RCD EN DATA BITS H D2
IOA DATA 03 H J2
RCC EN IO BUS H E2
IOA IO BUS 03 H K2
RCD EN AC N-6 L H F2
PRE AC 09 (1)H L2
M169 K16
K1 PMA TMSC 03 H

+3V K14U1 H
J1
RCD EN DATA BITS H D2
IOA DATA 05 H J2
RCC EN IO BUS H E2
IOA IO BUS 05 H K2
RCD EN AC N-6 L H F2
PRE AC 11 (1)H L2
M169 K17
K1 PMA TMSC 05 H

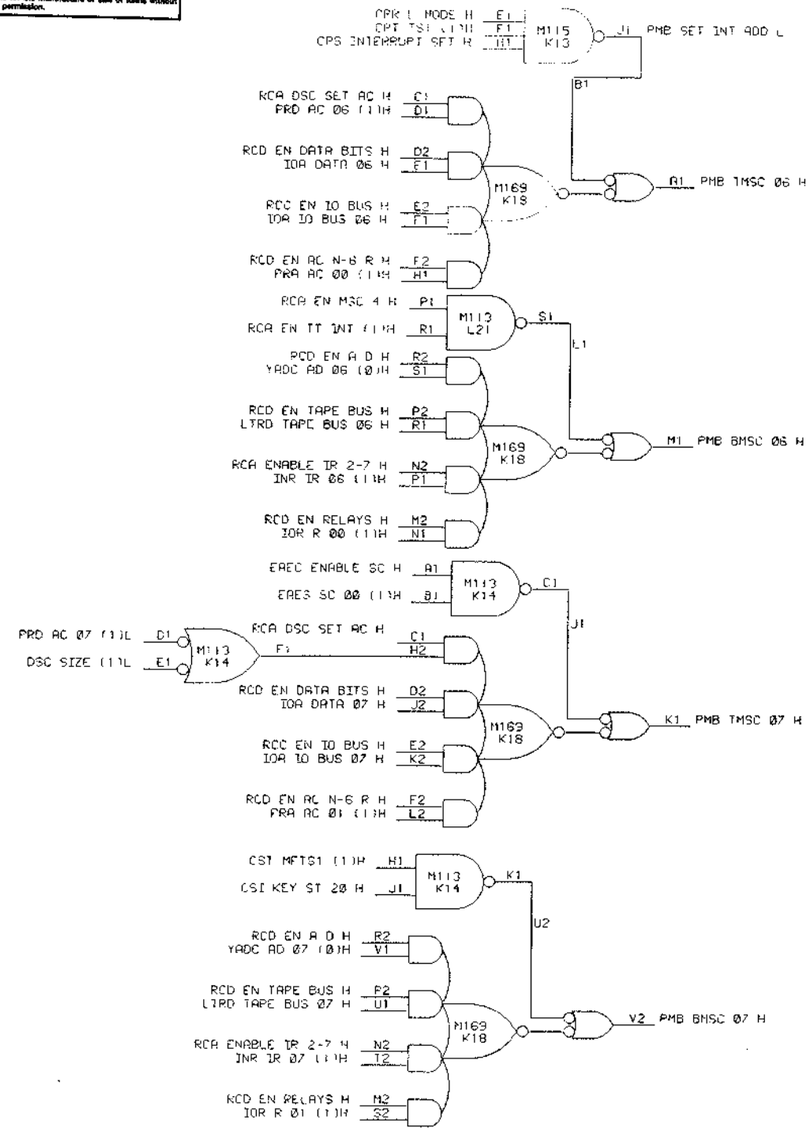
+3V K14U1 H
U2
RCD EN A D H R2
YAD AD 02 (1)H V1
RCD EN TAPE BUS H P2
LTRA TAPE BUS 01 H U1
RCC SET PC 0-1 H N2
RCC SET PC 0-1 H T2
RCB EN IF ADDRESS H M2
MPG IF 04 (1)H S2
M169 K15
V2 PMA BMSC 01 H

+3V K14U1 H
U2
RCD EN A D H R2
YADC AD 03 (0)H V1
RCD EN TAPE BUS H P2
LTRB TAPE BUS 03 H U1
RCA ENABLE IR 2-7 H N2
INR IR 03 (1)H T2
RCA EN MSC 4 H M2
RCD EN 1 TRAP (1)H S2
M169 K16
V2 PMA BMSC 03 H

+3V K14U1 H
U2
RCD EN A D H R2
YADC AD 05 (0)H V1
RCD EN TAPE BUS H P2
LTRC TAPE BUS 05 H U1
RCA ENABLE IR 2-7 H N2
INR IR 05 (1)H T2
RCA EN MSC 4 H M2
YADC FAST SAM (1)H S2
M169 K17
V2 PMA BMSC 05 H

REVISIONS		
CHK	CHANGE NO.	REV.
JB	EP12-00001	A
	ADS	
	J SCANLAN 2/13/69	
	EP12-00015	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 85 / NUMBER EP12-0-PMA / REV. B
SCALE		
SHEET 1 OF 1		DIST.



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: PROCESSOR MISCELLANEOUS B

SIZE	CODE	NUMBER	REV.
D	85	EP12-0-PMB	A

DIST.

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
HJ2

RCS EN SHIFT LEFT H
- PRA ADDER Ø1 H
HF1

RCC EN LSW H
HC1

HD1

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

CSI LSW Ø1 H
HM2

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

ADD

HK2 PRA ADDER Ø1 L

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

HM1

PRA CARRY IN Ø1 L

HV2

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

PRA PARTIAL SUM Ø1 L

RCL LOAD MA H
JF2

RCL LOAD PC H
JA1

RCL LOAD MB H
JC1

RCL LOAD AC H
HU2

D 1 C Ø

PRA MA ØØ HS1 JV1

PRA PC ØØ JB1

PRA MB ØØ JF1 JS1

PRA AC ØØ HB2 JU1

PRA MA Ø1 JN2 JK2

PRA PC Ø1 JE2

PRA MB Ø1 JR2 JR1

PRA AC Ø1 JJ2 JD2

PRA REG BUS ØØ H

PRA REG BUS Ø1 H

- 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

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 C2 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

SLA (DSC * EXECUTE 2) H
CPT TS 3(1) H
S1 U1 V1 U2
M660 H13 V2

PRA LINC COUNT L

CYI LINC INDEXING H

- PRB CARRY Ø2 H
M1 N1 P1 R1
M627 J14 S1

- PRA CARRY Ø2 L

+3V J14 U1

M221
H15
J15

REVISIONS			
CHK	CHANGE NO	REV	
	00002	A	J. SCANLON 12/1/65
	EP12-00004	B	L. GALE 2/15/68
	EP12-00015	C	L. GALE 2/15/68
	EP12-00023	D	L. GALE 10/11/68
			L. GALE 6/30/70
			L. GALE 7-1-70

DEC FORM NO DRO 108A

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 12/3/68
CHK J. Scanlon DATE 2/15/68
ENG. [illegible] DATE 2/15/69
PROG ENG [illegible] DATE 2/24/69
PROD [illegible] DATE 2/24/69

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.

SPACE CODE D 85 | NUMBER EP12-Ø-PRA | REV D

RCD EN DATA ADD H — JL2
IOA DATA ADD Ø2 H — HN1
RCB EN MEM Ø-5 H — HV1
MCS MEM Ø2 H — HL1
RCC EN PC 2-11 H — HK1
PRB PC Ø2 (1) H
RCD EN RSW Ø-5 H — HD2
CSI RSW Ø2 H — HE2
RCB EN MA Ø-4 H — HR1
PRB MA Ø2(1) H
RCB EN MB 2-4 H — HP1
PRB MB Ø2(1) H
PMA BMSC Ø2 H — HF2
PRB AC Ø2 (1) H — HJ1
RCA SET AC H
JT2 — PRB PARTIAL SUM Ø2 L

RCC EN BCL H — JD1
PRB MB Ø2(Ø) H
PRB AC Ø2(1) H
RCA EN AC Ø-5 H — HT2
PRB AC Ø2(1) H
RCC EN-AC H — JH1
PRB AC Ø2(Ø) H
RCC EN MQ H — HS2
MQR MQ Ø2(1) H — HR2
PMA TMSC Ø2 H — HU1
RCC EN BSE H — JE1
PRB MB Ø2(1) H
PRB AC Ø2(Ø) H
HP2

PRB CARRY Ø2 L
HH1
ADD
HH2 PRB ADDER Ø2 L

RCS EN SHIFT RIGHT H — HE1
-PRB ADDER Ø1 H — HB1
RCS EN NO SHIFT H — HJ2
RCS EN SHIFT LEFT H — HF1
-PRB ADDER Ø3 H
RCC EN LSW H — HC1
HD1
PRB REG BUS Ø2 H

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

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 — JA1 / 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 — JA1 / 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

RCD EN DATA ADD H — JL2
IOA DATA ADD Ø3 H — JP1
RCB EN MEM Ø-5 H — HV1
MCS MEM Ø3 H — JL1
RCC EN PC 2-11 H — HK1
PRB PC Ø3(1) H
RCD EN RSW Ø-5 H — HD2
CSI RSW Ø3 H — JM1
RCB EN MA Ø-4 H — JM2
PRB MA Ø3(1) H
RCB EN MB 2-4 H — JP2
PRB MB Ø3(1) H
PMA BMSC Ø3 H — JN1
PRB AC Ø3(1) H — HJ1
RCA SET AC H
JV2 — PRB PARTIAL SUM Ø3 L

RCC EN BCL H — JD1
PRB MB Ø3(Ø) H
PRB AC Ø3(1) H
RCA EN AC Ø-5 H — HT2
PRB AC Ø3(1) H
RCC EN-AC H — JH1
PRB AC Ø3(Ø) H
RCC EN MQ H — HS2
MQR MQ Ø3(1) H — JJ1
PMA TMSC Ø3 H — JK1
RCC EN BSE H — JE1
PRB MB Ø3(1) H
PRB AC Ø3(Ø) H
JH2

PRC CARRY Ø4 L
ADD
HK2 PRB ADDER Ø3 L
HM1

CSI LSW Ø3 H — HM2
RCC EN LSW H — HC1
RCS EN NO SHIFT H — HJ2
RCS EN SHIFT LEFT H — HF1
-PRB ADDER Ø4 H — HL2
RCS EN SHIFT RIGHT H — HE1
-PRB ADDER Ø2 H
HV2
PRB REG BUS Ø3 H

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

M221
H16
J16

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

J. SCANLON 12-15-69
L. GALE 12-17-69
L. GALE 2-20-70
J. SCANLON 2-21-70

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

QTY.	DESCRIPTION	PART NO.	ITEM NO.

PARTS LIST

		DATE
DRN	[illegible]	12/13/68
CHK	J. Scanlon	2/14/69
ENG	L. Gale	2/14/69
PROJ ENG	[illegible]	2/17/69
PROD	[illegible]	3/1/69

FIRST USED ON: EP12
SCALE
SHEET 1 OF 1

digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS

TITLE: PRB PROCESSOR REG. BITS 2 & 3

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

DIST.

EP12-Ø-PRB C
D 85 3715

RCD EN DATA ADD H
IOA DATA ADD Ø4 H
JL2 HN1 → JT2

RCB EN MEM Ø-5 H
MCS MEM Ø4 H
HV1 HL1

RCC EN PC 2-11 H
PRC PC Ø4 (1) H
HK1

RCD EN RSW Ø-5 H
CSI RSW Ø4 H
HD2 HE2

RCB EN MA Ø-4 H
PRC MA Ø4 (1) H
HR1

RCB EN MB 2-4 H
PRC MB Ø4 (1) H
HP1

PMA BMSC Ø4 H
HF2

PRC AC Ø4 (1) H
RCA SET AC H
HJ1

PRC PARTIAL SUM Ø4 L

PRC CARRY Ø4 L

RCC EN BCL H
PRC MB Ø4 (Ø) H
PRC AC Ø4 (1) H
JD1

RCA EN AC Ø-5 H
PRC AC Ø4 (1) H
HT2

RCC EN-AC H
PRC AC Ø4 (Ø) H
JH1

RCC EN MQ H
MQR MQ Ø4 (1) H
HS2 HR2

PMA TMSC Ø4 H
HU1

RCC EN BSE H
PRC MB Ø4 (1) H
PRC AC Ø4 (Ø) H
JE1

HP2 → HH1 ADD HH2 → PRC ADDER Ø4 L

RCS EN SHIFT RIGHT H
-PRB ADDER Ø3 H
HE1 HB1

RCS EN NO SHIFT H
HJ2

RCS EN SHIFT LEFT H
-PRC ADDER Ø5 H
HF1

RCC EN LSW H
HC1

HD1 → PRC REG BUS Ø4 H

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

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 → JC1 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

RCC EN BCL H
PRC MB Ø5 (Ø) H
PRC AC Ø5 (1) H
JD1

RCD EN DATA ADD H
IOA DATA ADD Ø5 H
JL2 JP1 → JT2

RCA EN AC Ø-5 H
PRC AC Ø5 (1) H
HT2

RCB EN MEM Ø-5 H
MCS MEM Ø5 H
HV1 JL1

RCC EN-AC H
PRC AC Ø5 (Ø) H
JH1

RCC EN PC 2-11 H
PRC PC Ø5 (1) H
HK1

RCC EN MQ H
MQR MQ Ø5 (1) H
HS2 JJ1

RCD EN RSW Ø-5 H
CSI RSW Ø5 H
HD2 JM1

PMA TMSC Ø5 H
JK1

RCB EN MA 5-11 H
PRC MA Ø5 (1) H
JM2

RCC EN BSE H
PRC MB Ø5 (1) H
PRC AC Ø5 (Ø) H
JE1

RCB EN MB 5-11 H
PRC MB Ø5 (1) H
JP2

JH2 → ADD HM1 → PRD CARRY Ø6 L
HM2 → PRC PARTIAL SUM Ø5 L

PMA BMSC Ø5 H
JN1

PRC AC Ø5 (1) H
RCA SET AC H
HJ1 → JV2

CSI LSW Ø5 H
HM2

RCC EN LSW H
HC1

HK2 → PRC ADDER Ø5 L

RCS EN NO SHIFT H
HJ2

RCS EN SHIFT LEFT H
-PRC ADDER Ø6 H
HF1 HL2

RCS EN SHIFT RIGHT H
-PRC ADDER Ø4 H
HE1

HV2 → PRC REG BUS Ø5 H

RCL LOAD AC H
HU2

M221
H17
J17

REVISIONS		
CHK	CHANGE NO	REV
DCB	00002	A
	EP12-00015	B
	EP12-00023	C

DEC FORM NO DRO 102A

QTY	DESCRIPTION	PART NO.	ITEM NO.

PARTS LIST

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

MATERIAL

FINISH

DRN — DATE 12/13/68
CHK — DATE 2/18/69
ENG — DATE 2/19/69
PROJ ENG — DATE 2/19/69
PROD — DATE 2/19/69

FIRST USED ON EP12

SCALE

SHEET 1 OF 1

digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS

TITLE
PRC
PROCESSOR REG.
BITS 4 & 5

SIZE D | CODE 85 | NUMBER EP12-Ø-PRC | REV C

DIST.

RCD EN DATA ADD H (JL2) / IOA DATA ADD Ø6 H (HN1)
RCB EN MEM 6-11 H (HV1) / MCS MEM Ø6 H (HL1)
RCC EN PC 2-11 H (HK1) / PRD PC Ø6(1) H
RCD EN RSW 6-11 H (HO2) / CSI RSW Ø6 H (HE2)
RCB EN MA 5-11 H (HR1) / PRD MA Ø5(1) H
RCB EN MB 5-11 H (HP1) / PRD MB Ø6(1) H
PMB BMSC Ø6 H (HF2)
PRD AC Ø6(1) H / RCA SET AC H (HJ1)
→ JT2 PRD PARTIAL SUM Ø6 L

RCC EN BCL H (JD1) / PRD MB Ø6(Ø) H / PRD AC Ø6(1) H
RCA EN AC 6-11 H (HT2) / PRD AC Ø6(1) H
RCC EN-AC H (JH1) / PRD AC Ø6(Ø) H
RCC EN MQ H (HS2) / MQR MQ Ø6(1) H
PMB TMSC Ø6 H (HU1)
RCC EN BSE H (JE1) / PRD MB Ø6(1) H / PRD AC Ø6(Ø) H
→ HP2

PRD CARRY Ø6 L → HH1

ADD
HH2 PRD ADDER Ø6 L

RCS EN SHIFT RIGHT H (HE1) / -PRC ADDER Ø5 H (HB1)
RCS EN NO SHIFT H (HJ2)
RCS EN SHIFT LEFT H (HF1) / -PRD ADDER Ø7 H
RCC EN LSW H (HC1)
→ 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 PRD ADDRESS MATCH 6-7 H

CSI LSW Ø7 H (HM2)

RCL LOAD MA H (JF2) → D 1 PRD MA Ø6 C Ø (HS1 / JV1)
RCL LOAD PC H (JA1) → D 1 PRD PC Ø6 C Ø (JB1)
RCL LOAD MB H (JC1) → D 1 PRD MB Ø6 C Ø (JF1 / JS1)
RCL LOAD AC H (HU2) → D 1 PRD AC Ø6 C Ø (HB2 / JU1)

RCL LOAD MA H (JF2) → D 1 PRD MA Ø7 C Ø (JN2 / JK2)
RCL LOAD PC H (JA1) → D 1 PRD PC Ø7 C Ø (JE2)
RCL LOAD MB H (JC1) → D 1 PRD MB Ø7 C Ø (JR2 / JR1)
RCL LOAD AC H (HU2) → D 1 PRD AC Ø7 C Ø (JJ2 / JO2)

RCC EN BCL H (JD1) / PRD MB Ø7(Ø) H / PRD AC Ø7(1) H
RCA EN AC 6-11 H (HT2) / PRD AC Ø7(1) H
RCC EN-AC H (JH1) / PRD AC Ø7(Ø) H
RCC EN MQ H (HS2) / MQR MQ Ø7(1) H (JJ1)
PMB TMSC Ø7 H (JK1)
RCC EN BSE H (JE1) / PRD MB Ø7(1) H / PRD AC Ø7(Ø) H
→ JH2

ADD
HK2 PRD ADDER Ø7 L
HM1 PRE CARRY Ø8 L

RCC EN LSW H (HC1)
RCS EN NO SHIFT H (HJ2)
RCS EN SHIFT LEFT H (HF1 / HL2) / -PRE ADDER Ø8 H
RCS EN SHIFT RIGHT H (HE1) / -PRD ADDER Ø6 H
→ HV2 PRD REG BUS Ø7 H

RCD EN DATA ADD H (JL2) / IOA DATA ADD Ø7 H (JP1)
RCB EN MEM 6-11 H (HV1) / MCS MEM Ø7 H (JL1)
RCC EN PC 2-11 H (HK1) / PRD PC Ø7(1) H
RCD EN RSW 6-11 H (HO2) / CSI RSW Ø7 H (JM1)
RCB EN MA 5-11 H (JM2) / PRD MA Ø7(1) H
RCB EN MB 5-11 H (JP2) / PRD MB Ø7(1) H
PMB BMSC Ø7 H (JN1)
PRD AC Ø7(1) H / RCA SET AC H (HJ1)
→ JV2 PRD PARTIAL SUM Ø7 L

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

PRD AC Ø6(1) H / PRD MB Ø6(Ø) H
PRD AC Ø6(Ø) H / PRD MB Ø6(1) H
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

REVISIONS	CHANGE NO	REV.
CHK	00002	A
Eng	EP12-00015	B
Fv	EP12-00023	C

D Maguire 10/27/67 J SCANLON
D Adams 10/27/67 L GALE
D Adams 10/27/67 Linda Moore 4/16/68
D Adams 10/27/67 L GALE
D Maguire 4 JAN 70
D Maguire 7-2-70 GALE

DEC FORM AO DRD 102A

QTY.	DESCRIPTION	PART NO.	ITEM NO.

PARTS LIST

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

DRN	Joe Ogura	DATE 12/13/68
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
PRD
PROCESSOR REG.
BITS 6 & 7

SIZE	CODE	NUMBER	REV.
D	08S	EP12-Ø-PRD	C

DIST.

RCD EN DATA ADD H (JL2)
IOA DATA ADD Ø8 H (HN1)
RCB EN MEM 6-11 H (HV1)
MCS MEM Ø8 H (HL1)
RCC EN PC 2-11 H (HK1)
PRE PC Ø8 (1) H
RCD EN RSW 6-11 H (HD2)
CSI RSW Ø8 H (HE2)
RCB EN MA 5-11 H (HR1)
PRE MA Ø8 (1) H
RCB EN MB 5-11 H (HP1)
PRE MB Ø8 (1) H
PMB BMSC Ø8 H (HF2)
PRE AC Ø8 (1) H (HJ1)
RCA SET AC H
→ JT2
PRE PARTIAL SUM Ø8 L
RCC EN BCL H (JD1)
PRE MB Ø8 (Ø) H
PRE AC Ø8 (1) H
RCA EN AC 6-11 H (HT2)
PRE AC Ø8 (1) H
RCC EN-AC H (JH1)
PRE AC Ø8 (Ø) H
RCC EN MQ H (HS2)
MQR MQ Ø8 (1) H (HR2)
PMB TMSC Ø8 H (HU1)
RCC EN BSE H (JE1)
PRE MB Ø8 (1) H
PRE AC Ø8 (Ø) H
→ HP2
PRE CARRY Ø8 L
HH1
ADD
HH2 PRE ADDER Ø8 L
RCS EN SHIFT RIGHT H (HE1)
-PRD ADDER Ø7 H (HB1)
RCS EN NO SHIFT H (HJ2)
RCS EN SHIFT LEFT H (HF1)
-PRE ADDER Ø9 H
RCC EN LSW H (HC1)
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
HD1
PRE REG BUS Ø8 H
RCL LOAD MA H (JF2)
RCL LOAD PC H (JA1)
RCL LOAD MB H (JC1)
RCL LOAD AC H (HU2)
D 1 PRE MAØ8 C Ø (HS1 / JV1)
D 1 PRE PCØ8 C Ø (JB1)
D 1 PRE MBØ8 C Ø (JF1 / JS1)
D 1 PRE ACØ8 C Ø (HB2 / JU1)
D 1 PRE MAØ9 C Ø (JN2 / JK2)
D 1 PRE PCØ9 C Ø (JE2)
D 1 PRE MBØ9 C Ø (JR2 / JR1)
D 1 PRE ACØ9 C Ø (JJ2 / JD2)

RCD EN DATA ADD H (JL2)
IOA DATA ADD Ø9 H (JP1)
RCB EN MEM 6-11 H (HV1)
MCS MEM Ø9 H (JL1)
RCC EN PC 2-11 H (HK1)
PRE PC Ø9 (1) H
RCD EN RSW 6-11 H (HD2)
CSI RSW Ø9 H (JM1)
RCB EN MA 5-11 H (JM2)
PRE MA Ø9 (1) H
RCB EN MB 5-11 H (JP2)
PRE MB Ø9 (1) H
PMB BMSC Ø9 H (JN1)
PRE AC Ø9 (1) H
RCA SET AC H
→ JV2
RCC EN BCL H (JD1)
PRE MB Ø9 (Ø) H
PRE AC Ø9 (1) H
RCA EN AC 6-11 H (HT2)
PRE AC Ø9 (1) H
RCC EN-AC H (JH1)
PRE AC Ø9 (Ø) H
RCC EN MQ H (HS2)
MQR MQ Ø9 (1) H (JJ1)
PMB TMSC Ø9 H (JK1)
RCC EN BSE H (JE1)
PRE MB Ø9 (1) H
PRE AC Ø9 (Ø) H
→ JH2
PRF CARRY 1Ø L
ADD
HK2 PRE ADDER Ø9 L
RCS EN NO SHIFT H (HJ2)
RCS EN SHIFT LEFT H (HL2)
-PRF ADDER 1Ø H
RCS EN SHIFT RIGHT H (HE1)
-PRE ADDER Ø8 H
CSI LSW Ø9 H (HM2)
HM1
RCC EN LSW H (HC1)
PRE PARTIAL SUM Ø9 L
HV2
PRE REG BUS Ø9 H
RCL LOAD MB H (JC1)
RCL LOAD AC H (HU2)

-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
JS2 PRE AC-EQ MB 8-9 L
PRE AC Ø9 (1) H
PRE MB Ø9 (Ø) H
PRE AC Ø9 (Ø) H
PRE MB Ø9 (1) H

M221
H19
J19

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

DEC FORM NO. ORD 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. J. Monroe DATE 12/13/68
CHK. J. Scanlon DATE 1/19/69
ENG. L. Gale DATE 2/19/69
PROG. ENG. L. Gale DATE 2/19/69
PROD. D. Hall 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 85 | NUMBER EP12-Ø-PRE | REV. C | DIST

EP12-Ø-PRE REV C

RCD EN DATA ADD H JL2
IOA DATA ADD 1Ø H HN1
RCB EN MEM 6-11 H HV1
MCS MEM 1Ø H HL1
RCC EN PC 2-11 H HK1
PRF PC 1Ø (1) H
RCD EN RSW 6-11 H HO2
CSI RSW 1Ø H HE2
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 HJ1
RCA SET AC H
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
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
HD1
PRF REG BUS 1Ø H
RCL LOAD MA H JF2
RCL LOAD PC H JA1
RCL LOAD MB H JC1
RCL LOAD AC H HU2
D 1
PRF MA 1Ø
C Ø
HS1 JV1
PRF PC 1Ø
JB1
PRF MB 1Ø
JF1 JS1
PRF AC 1Ø
HB2 JU1
- 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 (1) H
JU2 PRF CARRY OK 1Ø-11 L
- PRF PARTIAL SUM 11 H

RCD EN DATA ADD H JL2
IOA DATA ADD 11 H JP1
RCB EN MEM 6-11 H HV1
MCS MEM 11 H JL1
RCC EN PC 2-11 H HK1
PRF PC 11(1) H
RCD EN RSW 6-11 H HO2
CSI RSW 11 H JM1
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 HJ1
RCA SET AC H
JV2
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
CYI CARRY INSERT L
ADD
HK2 PRF ADDER 11 L
RCS EN NO SHIFT H HJ2
RCS EN SHIFT LEFT H HF1
FLE LOW END SHIFT IN H HL2
RCS EN SHIFT RIGHT H HE1
-PRF ADDER 1Ø H
HM1
CSI LSW 11 H
HM2
RCC EN LSW H HC1
PRF REG BUS 11 H
HV2
RCL LOAD MB H JC1
RCL LOAD AC H HU2
PRF MB 11
JR2 JR1
PRF AC 11
JJ2 JD2
PRF PARTIAL SUM 11 L
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
D1
M113
K28
E1
F1
PRF ADDER 11 H
PRF ADDER 11 L

M221
H2Ø
J2Ø

REVISIONS	REV	CHK	CHANGE NO.	
	A	2-8	00002	D Munro J. SCANLON
	B	2-8	EP12-00015	D Scanlon 12-12-69 L. GALE
	C	F.V.	EP12-00023	D Scanlon 4-30-70 GALE D Maddix 7-2-70

DEC FORM NO DRD 102A

QTY.	DESCRIPTION	PART NO.	ITEM NO.

PARTS LIST

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

DRN. Joe Coyne DATE 12/3/68
CHKD. D Scanlon DATE 2/18/69
ENG. D Scanlon DATE 2/19/69
PROJ ENG. D Scanlon DATE 2/19/69
PROD. W Call DATE 2/19/69
FIRST USED ON EP12

digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS

TITLE
PRF
PROCESSOR REG. BITS 1Ø&11

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

EP12-Ø-PRF C

RES MB TO AC L
PUSH GET JUMP ADD L
M133 P38
M611 P34
RES MB TO AC MD LK L
RES MB TO AC L
RES MB TO ACT L
M627 RØ2
CON ADV (1) H
M133 PØ3
M133 P32
PRG EN MB H
EAEC EN MB H
M611 P34
PRG EN MB L
PUSH GET JUMP ADD H
MUX API ACID ACC (1) H
CON ADV (0) H
M135 R40
PRG FETCH PJUMP L
PRG CLK MD FL LK MQ H
CON CLOCK PULSE L
M112 R29
RES MB TO AC MD FL LK L
M611 PØ8
EAET MQ LOAD (1) L
PRG CLK MD FL LK MQ L
PRG MQ LOAD H
M133 P32
M611 P34
PRG MQ LOAD L
RCS L SH RIGHT L
M611 R32
*M906 P28
MUXI API BREAK (1) L
M133 R3Ø
PRG L SH RIGHT L

PRG LOAD AC H
CON CLOCK PULSE H
EAET TP L
M133 P32
M133 PØ6
RES MB TO AC L
RES MB TO AC MQ FL L
RES MB TO ACT L
M133 P32
M611 P34
PRG LOAD AC L

PRG EN AC H
MUX API BREAK(1) H
PUSH AC TO MB L
M611 P34
PUSH AC TO MB H
M133 P32
EAEC ENABLE AC L
M133 P33
M611 P34
PRG EN AC L

CON CLOCK PULSE H
RCL STATE PC L
RES MB TO PC L
PUSH VECTOR TO PC L
PUSH GET JUMP ADD L
M135 R46
M133 P32
M133 P32
M611 P34
PRG LOAD PC L

PUSH CARRY INSERT
NUOB DATA IN L
M133 PØ3
PRG EN SK INCREMENT H

*M906
P28
CPS FETCH (1) L
CPS INTER (1) L
CON ENAB S L
M627 RØ2
PRG CLEAR SKIPS H

PUSH PC TO MB L
PRG FETCH PJUMP L
M133 P33
MUX PRI API (1) H
M133 P33
RCL STATE L
M133 P33
M611 P34
PRG EN PC L

*M906 INSTALLED IN P28 WHEN KF12 NOT INSTALLED

MUXI API BREAK (1) H
PUSH MQ TO MB H
M133 P33
PRG LOAD MQ L

REVISIONS	REV
CHANGE NO. EP12-00044	A
CHK MOORE 2-11-72	
THIS DWG WAS ORIGINALLY D-BS-KF12-0-RPG	
2/16 EP12-00046 IKNAIAN	B

DEC FORM NO. DRD 102A

PDP 2

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 3-7-72
CHK'D. DATE
ENG. DATE
PROJ ENG. DATE
PROD. DATE 3-7-72

digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS

TITLE PROCESSOR [illegible] GATING

SIZE D | CODE DBS | NUMBER EP12-0-PRG | REV. B

SCALE

SHEET 1 OF 1

DIST.

SIZE D | CODE DBS | NUMBER EP12-0-PRG | REV. B

INS L JMP H P1
SLA EX TS3 H R1
M113 K30
S1 RCA ENABLE IR 1-7 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+XSK) L P2
INS IL INDEX * 8 EQ 0) L R2
M113 K30 S2

J2 K2 L2 M115 K29 M2 RCA ENABLE IR 8-11 H

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

SLA OPR*EXECUTE 2) H P1
CPT TS2 (1)H R1
M113 H14 S1

V1 M111 K34 U1 RCA DISC SET AC H

PRG EN AC L M1 N1 P1 R1 M117 J22 S1 RCA EN AC 0-5 H

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

P1 SLA OPR1 H R1 M113 J31 S1

RCB BSE EN AC L T2
RCB AC ADDS L U2 V2
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
RCC EN IO BUS H H1
-IOB AC CLEAR H J1
CPT TS5 (1)H K1 L1
SLA MUL GO H M1
-RCC TS COMP AC H N1 P1
M160 J28 R1

SLA OPR1 L M1
SLA L ROTATES L N1
SLA MUL ADD L P1 R1
M117 H30 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 PRC MB 04 (0)L M2
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

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

INS LDH S1
SLA EX TS4 H U1
INS STH H V1
SLA EX TS3 H U2
M160 J28 V2

U2 M111 K34 V2

SKH H (1)H A1
B1 M113 K28 C1

+3V M34U1 H K2

INS MSC H D2
INR IR 07 B (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

PRD AC 06 (1)L T2
RCL LOAD MSC 4 H S2
D 1 RCA EN TT INT M216 J29 C 0
V1 V2
CST IO PRESET L U2

SLA (ADM+LAM) H L2
SLA EX TS3 H M2
M113 J31 N2 RCA T3 ADDS L

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

REVISIONS		
CHK	CHANGE NO.	REV.
	EP12-00036	A

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 REGISTER CONTROL A
PROJ. ENG. D CALL	DATE 2/20/69	
PROD.	DATE	
FIRST USED ON EP12		SIZE D CODE BS NUMBER EP12-0-RCA REV. A
SCALE		
SHEET 1 OF 1		DIST.

RCB 8 ADDRESS L
RCB 8 JMP ADDRESS L
M113 J25
F1
-RCB EN MB H
INR IR Ø4 (1)H
M115 H22
V1
D2
M113 K28
F2 RCB EN MA Ø-4 H
E2
CYI PC INCREMENT H
-CPTP TP2 H
CPT TS2 (1)H
CPS AC (1)H
CPT TS1 (1)H
M160 J26
T2
H1
M113 K28
K1 RCB EN MA 5-11 H
J1
RCB (ST+FS EN MA) H
CPT TS4 (1)H
CPS EXECUTE B (1)H
INS JMS H
CPS INTER (1)H
CPT TS4 (1)H
M113 J25
F2
CSI (FILL+EX STEP) L
M113 K14
V2 RCB (ST+FS EN MA) H
CSI (KEY FS+SET) H
CST AUTO (1)H
M113 K14
S2
INS 8 JMP L
INS JMS L
M113 J33
K2 RCB (JMP+JMS) H
CPS DEFER (1)H
CPR 8 MODE H
-INS 8 JMP H
M115 H22
S2
CPS CA (1)L
M113 J25
K2
INS ADD L
INS ADA L
INS TAD L
M115 K25
S2
RCB AC ADDS H
INS DSC L
INS LDA L
M115 H22
M2
CPS EXECUTE B (1)H
M113 J25
S2 RCB AC ADDS L
SLA (ADD+STO) H
CPS FETCH B (1)H
INS INDEX CLASS L H
CPS DEFER B (1)H
M160 J26
V2
INS SET H
CPS DEFER B (1)H
M113 J25
S1
CPS DEFER SET L
CPS EXC SET L
M113 L12
N1
CPT TS1 (1)H
CPS DEFER (Ø)H
M117 L13
-CPR L MODE L
-EXEC INST L
M112 L10
K2
CPT TS1 (1)H
M113 J25
RCB MUL LOAD AC L
N1 RCB TS1 EN MB L
CYI XSK TEST L
M117 H30
V2 RCB EN MB 2-4 H
INS 8 JMP H
CPS DEFER B (1)H
CPT TS4 (1)H
SLA MUL ADD H
MQR MQ 11 (1)H
M160 J26
V1
R1
M113 J26
C1 RCB EN MB Ø-1 H
B1
RCB EN MB L
CPT TS1 (1)H
M113 J25
PRG EN MB H
K1
L1
CPT TS4 (1)H
PRG EN MB H (1)H
M1
N1
P1
RCB 8 ADDRESS
S1
RCB EN MB L
CYI XSK TEST L
RCB MUL LOAD AC L
RCB TS1 EN MB L
M117 L13
M119 H26
V2 RCB EN MB 5-11 H
R2
S2
T2
U2
RCB 8 JMP ADDRESS L
RCA ENABLE IR 2-7 L
-CSI (FILLS+EX)MFTSØ H
CPR L MODE H
CPT TS1 (1)H
MEA EN IF H
M117 L13
E1
M113 KØØ
N2 RCB EN IF ADDRESS H
M2
RCB EN IF ADDRESS L
CPS DEFER (1)H
PRA MB Ø1 (1)H
CPT TS1 (1)H
CPR L MODE H
M117 L13
L1
M111 KØ9
N2 RCB EN DF ADDRESS H
M2
RCB EN DF ADDRESS L
RCB (JMP*SAVE PC)L
INS JMS L
M113 H36
V2 RCB (LJMP + JMS) H
INR IR ØØ (1)H
INR IR Ø1 (Ø)H
INR IR Ø2 (1)H
INR IR Ø3 (Ø)H
CPT TS4 (1)H
+3V H24V1 H
CPR 8 MODE H
M119 H26
P2 RCB 8 JMP ADDRESS L
INS L JMP H
RCD SAVE PC (1)H
M113 K33
C1 RCB (JMP*SAVE PC)L
INS JMS L
INS STH L
+3V L22V1 H
M117 L22
L1
CSI FILLS H
CST MFTSØ H
CST STEP EXAM (Ø)H
IOB DATA IN H
CPS BREAK (1)H
CPS T BREAK (1)H
LIP TAPE OUT H
M160 J27
R1 RCB GO MEM TS3 L
CPS INTER (Ø)H
CPT TS3 (1)H
CST EN MEM (1)H
M117 H30
J2
INS STA L
INS DCA L
INS STC L
M115 K26
M2 RCB (STC+DCA+STA) H
CPS EXECUTE B (1)H
M1
N1
P1
RCD EN AC N-6 L H
CST EN MEM (1)H
INS STH H
M115 H22
U1
P2
M113 H21
S2 RCB EN MEM 6-11 H
R2
RCA EN AC 6-11 H
CST EN MEM (1)H
INS STH H
M115 H22
H2
T2
M113 H21
V2 RCB EN MEM Ø-5 H
U2

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	
TC	EP12-00022	C
	D SOUTHER 6/20/70	
	D MACKLIN 7/2/70	
ZD	EP12-00035	D

DRN D SHEPARD	DATE 2/20/69	digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS
CHKD J BISONETTE	DATE 2/20/69	
ENG L GALE	DATE 2/20/69	TITLE REGISTER CONTROL B
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-Ø-RCB / REV. D
SCALE		
SHEET 1 OF 1		DIST.

SLA MUL GO H D2
INS N EQ 17 H E2
PRA AC 00 (1)H F2
SLA (MSC*TS5) H H2
INS N EQ 17 H J2
INS AND H K2
RCC (EXTS4 + EXTS5) H L2
SLA MUL GO H M2
INS N EQ 01 H N2
FLK LINK (1)H P2
R2
S2
M160 J28
I2 RCC TS COMP AC L

SLA OPR1 H A1
CPT TS4 (1)H B1
PRO MB 06 (1)H C1
M115 H25
D1
K2
RCC TS COMP AC L L2
EAEC ENABLE -AC L M2
N2
M617 H23
P2 RCC EN -AC H

SLA EX TS4 L P1
SLA EC TS5 L R1
M113 H10
S1 RCC (EXTS4 + EXTS5) H

CPT IOT PAUSE (1)L A1
B1
C1
D1
M617 K23
E1 RCC EN IO BUS H

RCB (LJMP + JMS) H A1
SLA EX TS3 H B1
M121 J24
E1 RCC TS3 JMPS+INTER L
CPT TS3 (1)H C1
CPS INTER (1)H D1

CPR 9 MODE H A1
RCC EN PC 2-11 H B1
M113 H24
C1
D2
E2
F2 RCC EN PC 0-1 H

PRG EN PC L
H1
M113 H24
K1 RCC EN PC 2-11 H
J1

CST MFTS1 (0)H E1
CPT TS1 (1)H F1
H1
M115 H25
J1
RCC PC FOR MA H

CPS FETCH SET L D1
E1
M113 H24
F1

CPS FETCH 8 (1)H L1
SLA 2 WORD FORMAT H M1
M113 H24
N1

RCB (JMP*SAVE PC) L L2
SLA EX TS3 L M2
M112 J10
N2 RCC SET PC 0-1 H

RCC ST LSW EN L L1
M111 H34
M1 RCC ST LSW EN H

RCC EN LSW H R1
M111 H34
S1 RCC EN LSW L

INS BCL H H2
J2
M113 H24
K2

SLA EX TS4 H L2
INS BCG H M2
M113 H24
N2

SLA EX TS4 H P1
INS AND H R1
M113 H24
S1

A1
B1
C1
D1
M617 H23
E1 RCC EN BCL H

INS BSE H P2
SLA EX TS4 H R2
M113 H24
S2

F1
H1
J1
K1
M617 H23
L1 RCC EN BSE H
RCC BSE EN AC L

SLA MUL GO H K1
SKH H (0)H L1
INS N EQ 02 H M1
M115 H25
N1

M1
PRG EN MQ L N1
EAEC ENABLE MQ L P1
R1
M617 H23
S1 RCC EN MQ H

SLA (MSC*TS5) H T2
INS N EQ 05 H U2
M113 H24
V2

SLA (LOPR*TS5) H F1
INS N EQ 17 H H1
M121 J24
L1 RCC LSW EN L

CST MFTS2 (1)H J1
CSI (FILL+EXAM) H K1

D2
E2
F2
H2
M617 H23
J2 RCC EN LSW H
RCC ST LSW EN L

CSI KEY ST LSW H L2
CST MFTS1 (1)H M2
M113 K30
N2

CPT TS3 (1)H P1
CST DO (1)H R1
CPS FETCH (1)H S1
M115 H25
U1
RCC EN DO LSW L

REVISIONS		
CHK	CHANGE NO.	REV.
	EP12-0000	A
	RDS	
	J SCANLON	
	EP12-00036	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 REGISTER CONTROL C
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-RCC / REV. B
SCALE		DIST.
SHEET 1 OF 1		

INS SAM H P1
CPT TS5 B (1)H R1
M113 K22
S1
M617 K23
P2 RCD EN H D H

CPS BREAK SET H H2
CPT TS1 (1)H J2
M113 L12
K2
M617 H23
V2 RCD EN DATA ADD H

CPT TS3 (1)H P1
LIP TAPE OUT H R1
CPS T BREAK (1)H S1
M115 K26
U1
LIP CHK SUM TO AC L
LIP TAPE BUS TO AC L
M617 K23
V2 RCD EN TAPE BUS H

CPS TAPE SET H H1
CPT TS1 (1)H J1
M113 L12
K1

TSS UF (0)H V1
M111 H34
U1
PRE MB 09 (1)L T2
M112 L10
U2

RCA EN AC 6-11 H A1
INS STH H B1
CST EN MEM (0)H C1
M115 K26
D1

CST MFTS0 H D2
CST STEP EXAM (0)H E2
CSI FILLS H F2
CPT TS3 (1)H H2
SLA (LOPR*TS5) H J2
INS N EQ 16 H K2
RCA (OPR2*TS5) H L2
CPT TS3 (1)H N2
-RCB GG MEM TS3 H P2
CPS FETCH (0)H R2
CST EN MEM (0)H S2
M160 K21
T2

H1
J1
M113 K22
K1 RCD EN RSW 0-5 H

RCD EN AC N-6 L H E1
INS STH H F1
CST EN MEM (0)H H1
M115 K26
J1

H2
J2
M113 K22
K2 RCD EN RSW 6-11 H

CPT TS3 (1)H D2
IOB DATA IN H E2
CPS BREAK (1)H F2
M115 K26
H2
PUSH VECTOR TO PC L
M617 J23
P2 RCD EN DATA BITS H

SLA (MSC*TS5) L H1
INS N EQ 15 L J1
M112 L10
K1 RCD EN RELAYS H

CPT ID PRESET L K2
RCD SAVE PC M216 J12
T2
S2
V1
V2
RCA ENABLE IR2-7 H

INS MSC H F1
INS N EQ 06 H H1
CPT TS5 B (1)H K1
M117 L39
L1
U2

+3V L40U1 H U2
PRB AC 03 (1)H T2
RCL LOAD MSC 4 H S2
RCD EN T TRAP M216 M39
V2
V1
CST TO PRESET L K2

INS STH H D2
CPS EXECUTE B (1)H E2
SKH H (0)H F2
CPT TS3 (1)H H2
M117 J22
J2

H1
M1
M113 K22
N1 RCD EN AC N-6 L H

INS SHD H K1
RCC (EXTS4 * EXTS5) H L1
SKH H (0)H N1
M115 K26
N1

L2
M2
M113 K22
N2 RCD EN AC N-6 R H

INS LDH H K2
CPS EXECUTE B (1)H L2
CPT TS4 (1)H M2
SKH H (0)H N2
M117 J22
P2

REVISIONS		
CHK	CHANGE NO.	REV.
JB	EP12-00001	A
	ADS	
	J. SCANLAN 3/13/69	
PD	EP12-00002	B
	A WASHINGTON 6/20/69	
	J. SCANLAN 6/22/69	
	EP12-00003	C
	A WASHINGTON 6/19/69	
	L GALE 6/20/69	
JB	EP12-00036	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 REGISTER CONTROL D
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-RCD / REV. D
SCALE		DIST.
SHEET OF		

SLA MUL GO H
INS N EQ 17 H
CPTP TP5 H
M115 H22
J1
CPS EXC 2 (0)H
CPTP TP3 H
M113 H21
C1
+3V J21U1 H
M617 J21
L1 RCL LOAD MB H
-INS SET H
M113 H2
F1

CPTP TP1 L
M617 J21
E1 RCL LOAD MA H
CST MFTP2 H
-CSI KEY IO PRESET H
M113 L26
S2

INS MUL H
CPTP TP4 H
CPS EXECUTE B (1)H
M115 H22
N1
RCL MUL SET MQ L

+3V J32U1 H
FLK (MSC*N EQ 11) L
EAEC EN LD MQ L
M115 J30
S2
M113 K22
C1
PRG MQ LD L
M617 J21
V2 RCL LOAD MQ H
CPTP TP5 H
-INS N EQ 00 H
RCS EN MQ SH RIGHT H
CPR L MODE H
M117 J22
V2

INS MSC H
INS N EQ 04 H
CPT TS5 B (1)H
INR IR 07 B (0)H
M617 J07
S1 RCL LOAD MSC 4 L
M111 K09
R2 RCL LOAD MSC 4 H

INS N EQ 05 L
INS N EQ 11 L
INS N EQ 15 L
INS N EQ 17 L
M117 H35
V2
INS MSC H
INS LOPR H
M121 H33
J2
INS N EQ 17 L
INS N EQ 16 L
M115 J30
N1
INS SAM L
SLA L ROTATES L
EAEC SETUP
EAEC LAST DIV L
SLA OPR1 L
SLA OPR2 L
M119 H26
P2
CPTP TP5 H
M113 H21
D2
F2

INS SHD L
CPS EXECUTE (1)
M112 H32
SKH H (0)H
S1
INS AND H
CPS EXECUTE B (1)H
M121 H33
P2
SLA OPR1 L
RCS AC ADDS L
M117 H30
CPTP TP4 H
M113 H21
RCL 4 LOAD H
PRG LD AC L
M617 J21
S1 RCL LOAD AC H

INS LDA L
INS DCA L
INS STC L
INS LDM L
INS BCL L
INS BSE L
INS BCO L
M119 H28
J2
CPS EXECUTE (1)H
M113 J31
K1
LIP MSC TAC TO AC H
CPTP TP5 H
M113 H14
S2
IOC IO STROBE L
CST 0 TO AC L
LIP CHK SUM LD AC L
M117 J22
E1
INS LDM L
INS ADM L
INS IAM L
M115 J30
U1
+3V H21V1 H
CPT TS RECYCLE (1)H
SLA MUL GO H
CPTP TP5 H
CPTP TP2 H
SLA (DSC*EXECUTE 2) H
M160 K21
R1
CPTP TP5 H
RCA EN LD MSC 4 H
CPTP TP3 H
CPS EXECUTE B (1)H

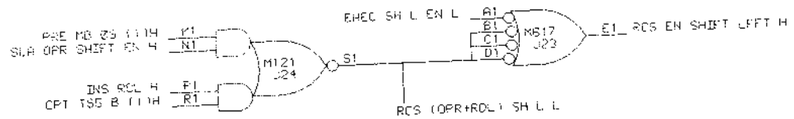
CPS DEFER B (1)H
INS 8 JMP H
CPS EXECUTE B (1)H
INS JMS H
M121 H33
V2
INR IR 03 (0)H
CPS FETCH B (1)H
INS 8 JMP H
M115 J30
H2
CPS INTER (1)L
M115 J30
M2
CPTP TP4 H
M113 H21
N2 RCL TP4 LD PC L
CSI KEY STARTS L
PWF RESTART L
M113 L21
N2
CST MFTP1 H
M113 H21
S1 RCL START PC L

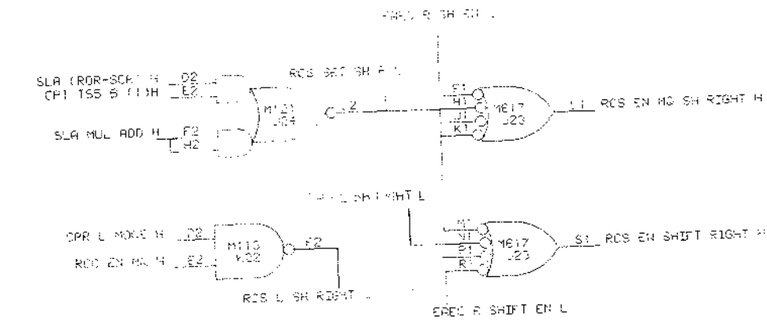
CYI PC INCREMENT H
CPTP TP2 H
M113 H21
N1
RCL TP4 LD PC L
PRG LD PC L
M617 J21
P2 RCL LOAD PC H
INS LJMP H
CPS EXECUTE B (1)H
M113 J31
N1
INS (LJMP*X EQ 0) L
M113 J31
H2
CPTP TPS H
M113 H21
K2

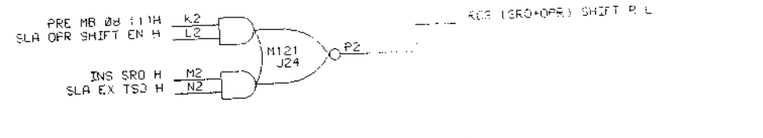
REVISIONS		
CHK	CHANGE NO.	REV.
	EP12-00001	A
	ADS	
	J SCANLAN 3/13/69	
NR	EP12-00006	B
	A WASHINGTON 8/17/69	
	L GALE 8/20/69	
NR	EP12-00007	C
	A WASHINGTON 8/6/69	
	J SCANLAN 8/6/69	
	EP12-00015	D
	K COTE 10/14/69	
	J SCANLAN 10/17/69	

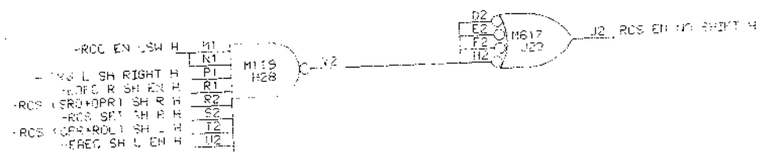
REVISIONS		
CHK	CHANGE NO.	REV.
NR	EP12-00016	E
	K COTE 11-12-69	
	J SCANLAN 11-14-69	
TC	EP12-00023	F
	D SOUTHER 6/23/70	
	D MACKLIN 7/2/70	
	EP12-00036	H

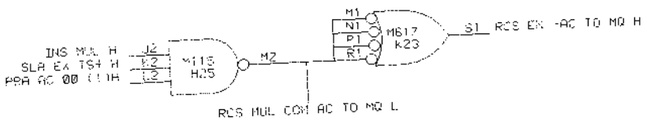
DRN D SHEPARD	DATE 2/20/69	digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS
CHK'D J BISONETE	DATE 2/20/69	
ENG L GALE	DATE 2/20/69	TITLE PROCESSOR REGISTER LOAD CONTROL
PROJ ENG L GALE	DATE 2/20/69	
PROG D CALL	DATE 2/20/69	
FIRST USED ON EP12		SIZE D CODE BS NUMBER EP12-0-RCL REV. H
SCALE		DIST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

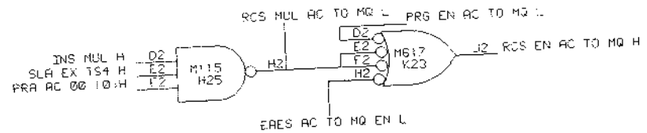






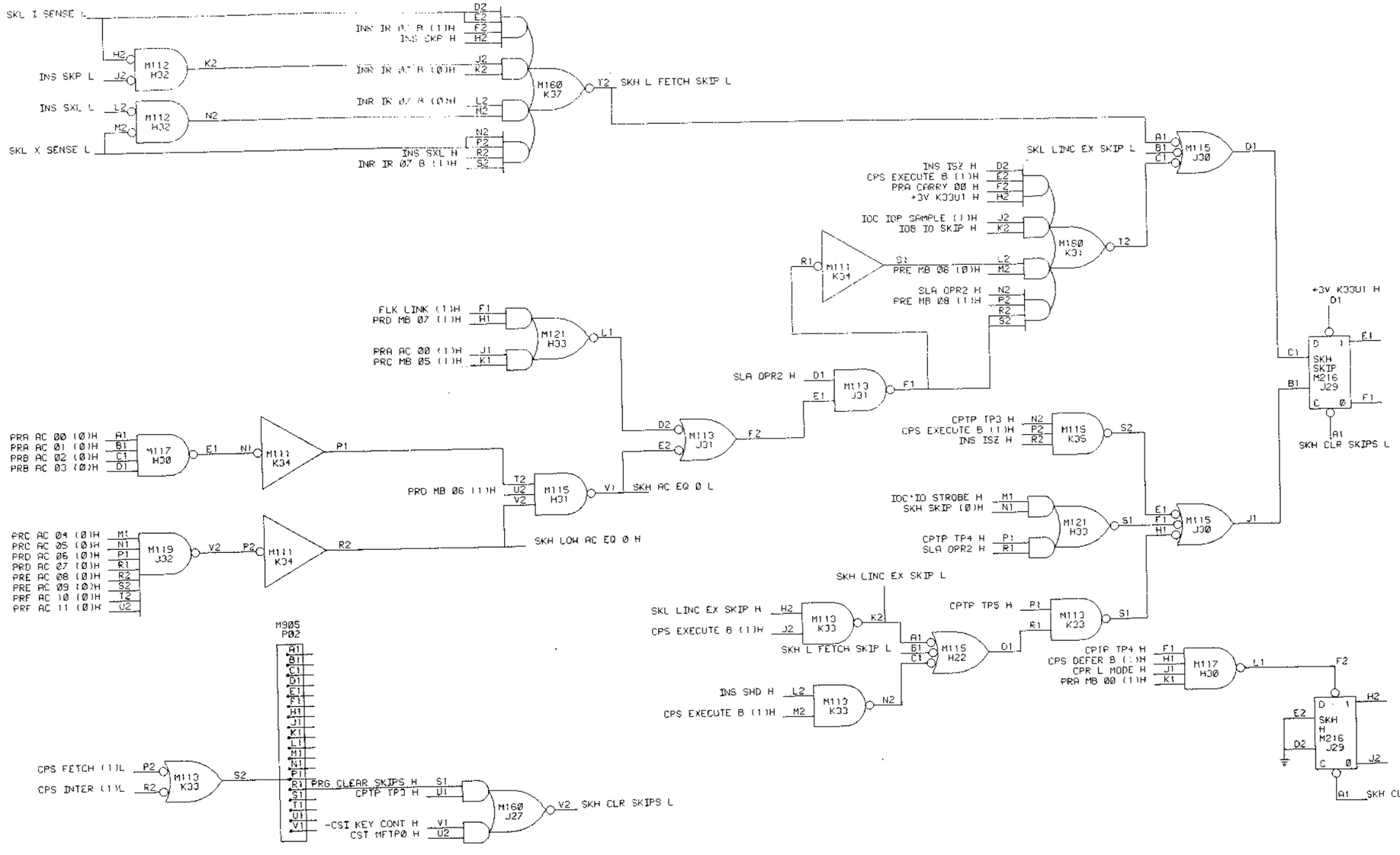






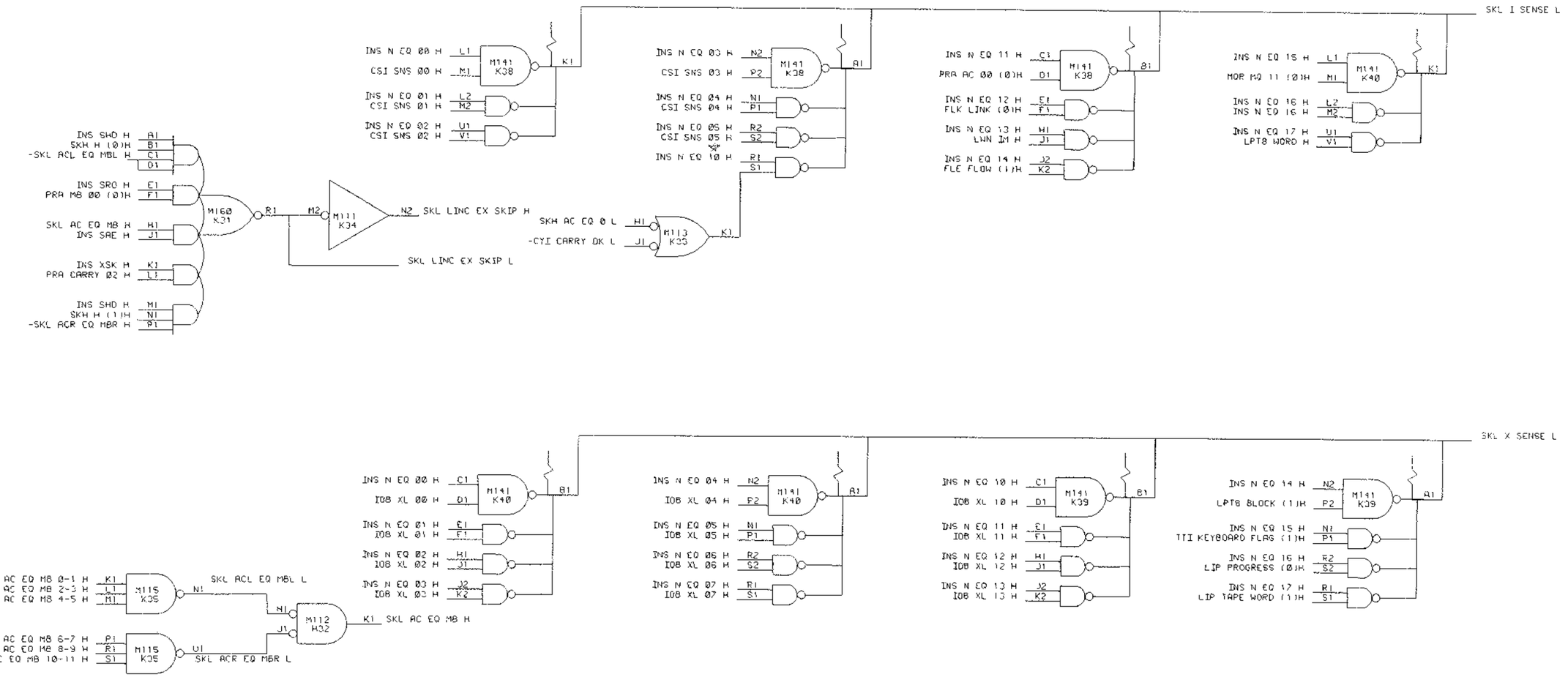
REVISIONS		
CHK	CHANGE NO.	REV.
	EP12-00036	A
	EP12-	B
	[illegible]	

DRN. D SHEPARD	DATE 2/20/69	digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS
CHK'D T BISONETTE	DATE 2/20/69	
ENG. L GALE	DATE 2/20/69	TITLE RCS SHIFT & MQ INPUTS
PROJ. ENG. L GALE	DATE 2/20/69	
PROD.	DATE	
FIRST USED ON EP12		SIZE D / CODE 83 / NUMBER EP12-B-RCS / REV. A
SCALE		
SHEET 1 OF 1		DIST.



REVISIONS			REVISIONS		
CHK	CHANGE NO.	REV.	CHK	CHANGE NO.	REV.
JG	ØØØØ1	H	TC	EP12-00023	C
	ADS			D SOUTHER 6/30/70	
				D MACKLIN 7/2/70	
	J.SCANLAN 3-13-69			EP12-00036	D
	EP12-00006	B			

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 85 NUMBER EP12-Ø-SKH REV. D
SCALE		
SHEET 1 OF 1		DIST.



REVISIONS		
CHK	CHANGE NO.	REV.
JG	EP12-00001	A
	ADS	
	J SCANLAN 1/13/69	
	EP12-00003	B
	A WASHINGTON 6/17/69	
	L GALE 8/28/69	
	EP12-00016	C

DRN. D SHEPARD	DATE 2/20/69
CHKD. J BISONETTE	DATE 2/20/69
ENG. L GALE	DATE 2/20/69
PROJ. ENG. L GALE	DATE 2/20/69
PROG. D CALL	DATE 2/20/69
FIRST USED ON EP12	
SCALE	
SHEET 1 OF 1	

digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS

TITLE: EP12 SKIPS

SIZE	CODE	NUMBER	REV.
D	65	EP12-0-SKL	C

DIST.

INS INDEX CLASS L L L2
INS N EQ Ø0 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 Ø0 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

EXEC 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 Ø) 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
-INS N EQ Ø0 H U2
T2 M113 J33 V2 SLA L ROTATES L

INS SET H S1
INR IR Ø7 B (Ø)H U1
M160 K37 V2 SLA INDIRECT 2 WORD
SLA INDEX CLASS IZ H V1
INR IR Ø7 B (Ø)H U2

EXEC MUL ADD L L1
M1
M113 K33 N1 SLA MUL ADD H
SLA MUL ADD L

SLA MUL GO H F1
-INS N EQ Ø0 H H1
-INS N EQ 17 H J1
-INS N EQ 16 H K1
-INS N EQ Ø2 H K2
-INS N EQ Ø1 H L2
M2
+3V J32U1 H N2
M119 J32 P2
F1 M111 K34 H1 SLA MUL GO H
INS MUL H E1
CPT TS5 (1)H F1
CPS EXECUTE B (1)H H1
M115 K35 J1
SLA MUL GO L

INS DSC H A1
CPS EXC 2 (1)H B1
M113 K36 C1
CPT TS3 (1)L D1
E1 M112 H32 F1 SLA DSC CNT M6 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
A1
B1
C1
D1
M627 J08 E1 SLA EX TS3 H
F1
H1
CPT TS3 (1)H J1
CPS EXECUTE B (1)H K1
M627 J08 L1
SLA EX TS3 L

M1
CPT TS4 (1)H N1
P1
R1
M627 J08 S1
SLA EX TS4 L
D2
C2
B2
A2
M627 J08 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
L1 M111 K09 M1 SLA EX TS5 H

INS 8 OPR L D2
INR IR Ø3 (Ø)L E2
M112 H32 F2
U2 M111 H34 V2 SLA OPR1 L
SLA OPR 1 H

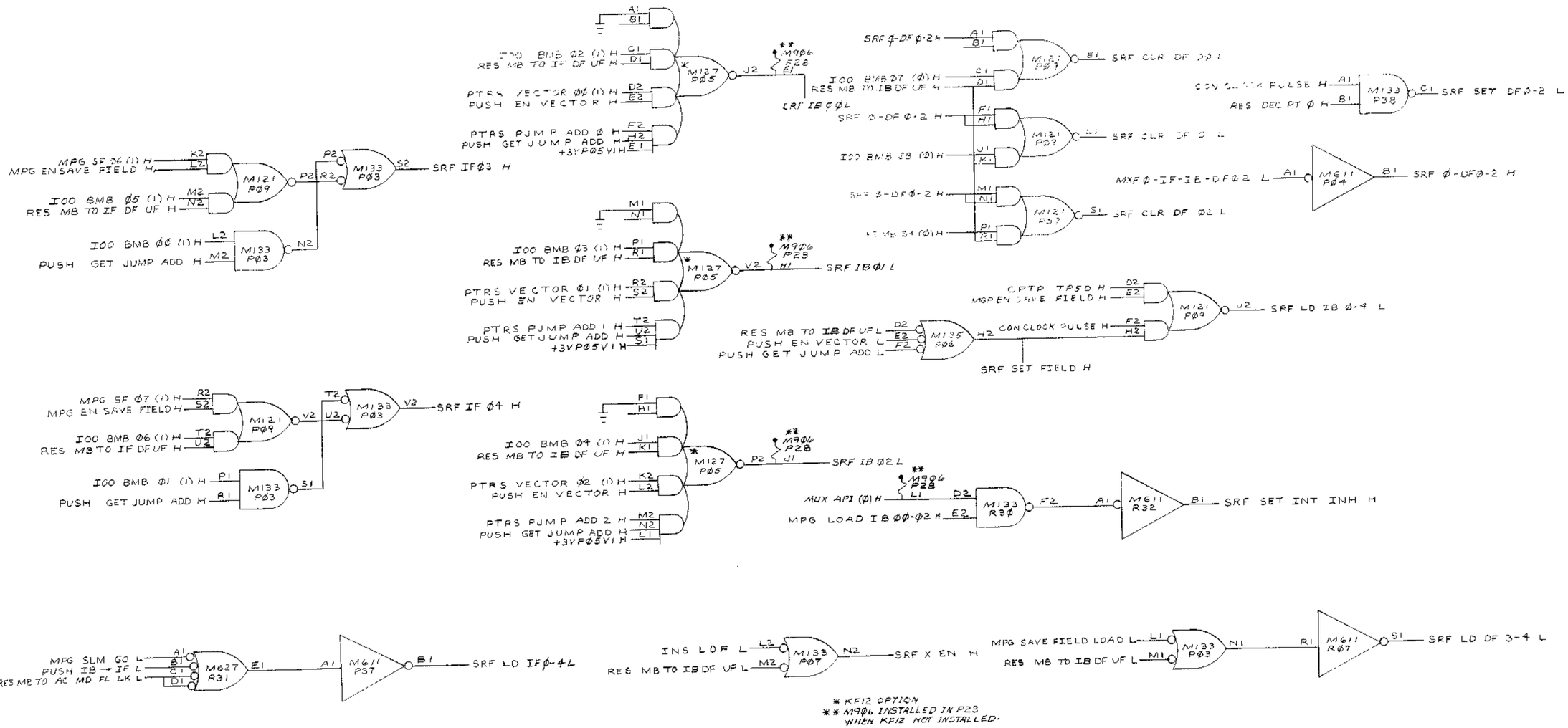
A1
CPT TS4 (1)H B1
M113 J04 C1
A1 M111 J09 B1 SLA (OPR1*TS4) H
SLA (OPR1*TS4) L

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 Ø3 (1)H K2
INR IR 11 (Ø)H L2
M115 K35 M2
L1 M111 K34 M1 SLA OPR2 H
SLA OPR2 L

REVISIONS		
CHK	CHANGE NO.	REV.
TC	EP12-00023	A
	Norma Swisher 6-26-70	
	D Mack 7-9-70	

DRN. L.L. SHAJAR	DATE 2/20/69	digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS
CHK'D. J.F. BISCHETTE	DATE 2/20/69	TITLE SPECIAL LEVELS I
ENG. L. GALE	DATE 2/20/69	
PROJ. ENG. L. GALE	DATE 2/20/69	
PROD. L. CALI	DATE 2/20/69	
FIRST USED ON EP12		SIZE D CODE BS NUMBER EP12-0-SLA REV. A
SCALE		
SHEET 1 OF 1		DIST.



* KF12 OPTION
** M9Ø6 INSTALLED IN P23 WHEN KF12 NOT INSTALLED.

REVISIONS	REV	CHANGE NO.	CHK
	A	EP12-00044	MOORE

THIS DWG WAS ORIGINALLY D-BS-KF12-0-SRF

DEC FORM NO. DRD 102-B

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

UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES. TOLERANCES

DECIMALS	ANGLES
XXX = .005	±0° 30'
XX = .02	
X = .1	

REMOVE BURRS AND BREAK SHARP CORNERS SURFACE QUALITY ✓

MATERIAL

FINISH

DRN.		DATE 3-5-71
CHK'D.		DATE
ENG.		DATE
PROJ. ENG.		DATE
PROD		DATE

digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS

TITLE: SET & RESTORE FIELDS

NEXT HIGHER ASSY.: A-ML-EP12-0

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

SCALE

SHEET 1 OF 1

DIST

TTI TT∅ L
TTI TT1 L
TTI TT2 L
TTI TT3 L
TTI TT4 L
TTI TT5 L
TTI TT6 L
TTI TT7 L
TTI SKIP L
MK2
MR2
MS2
ML1
MM1
MP2
MT2
MN2
NH2
ND2
IOC IOP 1H
TTI KEYBOARD SELECT H
+3V
KEYBOARD FLAG (1) H
KEYBOARD FLAG (∅) H
MF2
TTI STROBE H
TTI REC PRESET L
TTI DATA H
TTI SHIFT H
+3V
MR1
MK1
MJ2
TTI ∅
TTI 1
TTI 2
TTI 3
TTI 4
TTI 5
TTI 6
TTI 7
D 1
C ∅

+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 SETUP L
TTI SHIFT H
TTI SPIKE DETECTOR(1) H
TTI DATA H
+3V
MM2

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

TTI KEYBOARD SELECT H
PLE2
IOC IOP 4 H
+3V
TTI STROBE H

W∅76
N∅2
E2
NM2
ST

PRB MB ∅3(∅) H
PRC MB ∅4(∅) H
PRC MB ∅5(∅) H
PRD MB ∅6(∅) H
PRD MB ∅7(1) H
PRE MB ∅8(1) H
MD2
ME1
MF1
MH1
MH2
MJ1
+3V
MP1
+3V MØBU1H
TTI KEYBOARD SELECT H

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

M7∅6
MØ6
NØ6

TTI IN ACTIVE(1) L
TTI IN LAST UNIT(1) L
TTI START ENABLE L
TTI TTI 7(∅) H
TTI SHIFT H
TTI IN LAST UNIT
NR2
TTI IN STOP 2(1) L
TTO TTI CLOCK H
MN1
TTI CLOCK SCALE ∅
TTI CLOCK SCALE 1
TTI CLOCK SCALE 2
NT2
NS1
TTI START ENABLE L
NP2
TTI IN STOP 1
NU2
TTI IN STOP 2
NV2
NS2
TTI REC PRESET L
TTI IN ACTIVE
NN2
TTI SETUP L
-TTI SHIFT H
TTI SPIKE DETECTOR (1) H
TTI SPIKE DETECTOR (∅) H
TTI KCC L
MV2
TTI READER RUN
NL2
MU2
W∅76
N∅2
M2

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

REVISIONS	REV.	CHANGE NO.	CHK	
	A	00002	2468	J. Mason 5/24/67
	B	EP12-00015	2468	J. SCANLON 5/24/67
			2468	Keith Munroe 11/17/69
				L GALE

DEC FORM NO. DRD 702A

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

DRN.		DATE 1-16-68
CHK.		DATE 2/16/67
ENG.		DATE 2/16/67
PROJ. ENG.		DATE 2/16/67
PROD.		DATE 2/16/67

MATERIAL
FINISH
FIRST USED ON EP12
SCALE
SHEET OF

digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS

TITLE
TTI TELETYPE RECEIVER

SIZE	CODE	NUMBER	REV.
D	85	EP12-∅-TTI	B

DIST.

EP12-∅-TTI B

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

MN1
+3V MØBU1
TTO SELECT H
MS1
IOC IOP4 H
MR1

+3V MØBU1 MN2
PRC AC Ø4(1) H MP2
PRC AC Ø5(1) H MR2
PRD AC Ø6(1) H ML2
PRD AC Ø7(1) H MM2
PRE AC Ø8(1) H MU2
PRE AC Ø9(1) H MS2
PRF AC 1Ø(1) H MT2
PRF AC 11(1) H MU1

TTO ENB (MK2, ML1)
TTO Ø
TTO 1
TTO 2 (MJ1)
TTO 3
TTO 4
TTO 5
TTO 6
TTO 7
TTO SHIFT H
TTO PRESET L
NH1

TTO OUT ACTIVE Ø L
TTO LINE (MD2)
MV2 TTO MAGNET DRIVER H
M7Ø7 MØ7 NØ7

TTO = Ø L
+3V
TTO OUT ACTIVE (1) L

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

TTO OUT ACTIVE (1) L
+3V MØBU1 NS2
- TTO SHIFT L
TTO OUT ACTIVE (1) H
TTO FREQ DIV (NP2)
TTO OUT STOP 1 (NR2)
TTO OUT STOP 1.5 (NP1)
TTO OUT STOP 2 (NN1)
- TTO CLOCK H
+3V
TTO SHIFT H

TTO OUT ACTIVE
MD1

IOC IOP1 H
NH2
NJ2 TTO SKIP L
TTO SELECT H
TTO = Ø L
TTO SHIFT H
TTO TPR FLG (NK2)

A2 +5V
B2 -15V
TTO MAGNET DRIVER H
-30V
W107G NØ2

IOC IO PRESET H NE2
+3V
TTO PRESET L
+3V MØBU1 NF2
+3V
+3V
TTO SELECT H
IOC IOP 2 H ND2

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

TTI SKIP L
M113 MØ8 (D2, E2, F2, A1, B1, C1)
TTO SKIP L
TTO TT SKIP L

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

QTY.	DESCRIPTION	PART NO.	ITEM NO.

PARTS LIST

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

MATERIAL
FINISH

DRN. DATE 12-27-68
CHK'D DATE 2-18-69
ENG. DATE 3/1/69
PROJ. ENG. DATE 3/14/69
PROG. DATE 3/15/69

FIRST USED ON EP12

digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS

TITLE
TTO TELETYPE TRANSMITTER

SIZE D | CODE 85 | NUMBER EP12-Ø-TTO | REV.
SCALE
SHEET OF | DIST.

REVISIONS | REV. | CHANGE NO. | CHK

DEC FORM NO. GRD 102A

EP12-Ø-TTO | 85 | D | REV

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	J.S.
B	6-22-71	EP12-00041	RM

DRN.		DATE 3/11/69
CHK'D.		DATE 3/11/69
ENG.		DATE 3/10/69
PROJ. ENG.		DATE 3/10/69
PROD.		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	B

DIST.

DEC FORM NO. DRA 104

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	B

DIST.

DEC FORM NO. DRA 104

SIGNAL NAME	FROM PIN	TO PIN	COLOR	REMARKS
-30v	NO1P2	NO2V2	YELLOW	
-30v	NO1S2	NO3V2	YELLOW	
				WIRE IS
+5 VOLTS	MØ1T2	PØ3A2	RED	#24 AWG
	MØ1N2	P27A2		
	MØ1F2	R4ØA2		
	MØ1R2	R21A2		
	MØ1V2	RØ1A2		
GND	NØ1H1	P22C2	BLACK	
	NØ1P1	P4ØC2		
	NØ1T1	RØ1T1		
	NØ1M1	R2ØT1		
	M4ØT1	P4ØT1		

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

DRN.	KINGSBURY	DATE 3/69
CHK'D.	KINGSBURY	DATE 3/69
ENG.	L. GALE	DATE 3/69
PROJ. ENG.	L. GALE	DATE 3/69
PROD.	D. CALL	DATE 3/69
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	B

DIST.

DEC FORM NO.
DRA 104

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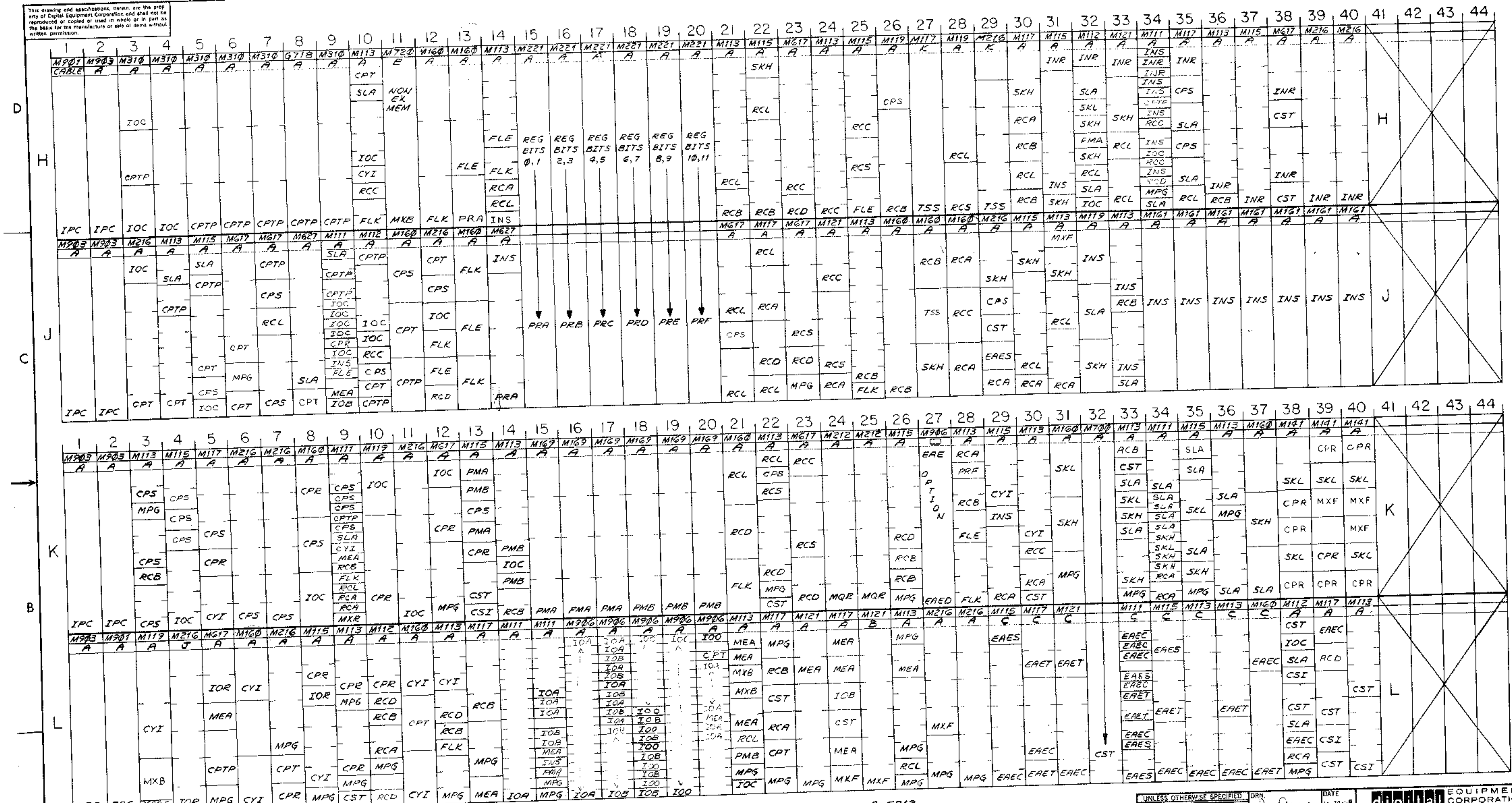


Slot	H	J	K	L
1	M901 CABLE	M903 A	M903 A	M903 A
2	M903 A	M903 A	M903 A	M901 A
3	M310 A	M216 A	M113 A	M119 A
4	M310 A	M113 A	M115 A	M216 J
5	M310 A	M115 A	M117 A	M617 A
6	M310 A	M617 A	M216 A	M160 A
7	M310 A	M617 A	M216 A	M216 A
8	G718 A	M627 A	M160 A	M115 A
9	M310 A	M111 A	M111 A	M113 A
10	M113 A	M112 A	M119 A	M112 A
11	M720 E	M160 A	M216 A	M160 A
12	M160 A	M216 A	M617 A	M113 A
13	M160 A	M160 A	M115 A	M117 A
14	M113 A	M627 A	M113 A	M111 A
15	M221 A		M169 A	M111 A
16	M221 A		M169 A	M906 A
17	M221 A		M169 A	M906 A
18	M221 A		M169 A	M906 A
19	M221 A		M169 A	M906 A
20	M221 A		M169 A	M906 A
21	M113 A	M617 A	M160 A	M113 A
22	M115 A	M117 A	M113 A	M117 A
23	M617 A	M617 A	M617 A	M121 A
24	M113 A	M121 A	M212 A	M117 A
25	M115 A	M113 A	M212 A	M121 B
26	M119 A	M160 A	M115 A	M113 A
27	M117 K	M160 A	M906 ▭	M216 A
28	M119 A	M160 A	M113 A	M216 A
29	M216 K	M216 A	M115 A	M115 C
30	M117 A	M115 A	M113 A	M117 C
31	M115 A	M113 A	M160 A	M121 C
32	M112 A	M119 A	M700 A	
33	M121 A	M113 A	M113 A	M111 C
34	M111 A	M161 A	M111 A	M115 C
35	M117 A	M161 A	M115 A	M113 C
36	M113 A	M161 A	M113 A	M113 C
37	M115 A	M161 A	M160 A	M160 C
38	M617 A	M161 A	M141 A	M112 A
39	M216 A	M161 A	M141 A	M117 A
40	M216 A	M161 A	M141 A	M113 A
41				
42				
43				
44				

REG BITS 0,1 → PRA
REG BITS 2,3 → PRB
REG BITS 4,5 → PRC
REG BITS 6,7 → PRD
REG BITS 8,9 → PRE
REG BITS 10,11 → PRF

K27: EAE OPTION

H11: NON EX MEM

▭ 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

REV.	CHANGE NO.	CHK
A	RELEASED UNDER REV 'A' 3/11/69	
B	00002 J SCANLON 5/22/69	
C	EP12-00003 GALE 6/20/69	
D	EP12-00007 GALE 8-20-69	
E	EP12-00016 GALE 11-14-69	
F	EP12-00027 GALE 9/9/70	
H	EP12-00030 D MACKLIN 11-19-70	FV
J	EP12-00043 R IKNAIAN 11-4-71	
K	EP12-00044 MOORE	
L	EP12-00045 R MOORE 7-25-72	
N	EP12-00046 IKNAIAN	

DEC FORM NO. DRD 105

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 OPTION MODEL

DRN. DATE 10-29-68
CHK'D J Scanlon DATE 3/11/69
ENG. DATE 3/19/69
PROJ. ENG. DATE 3/19/69
PROD. DATE
NEXT HIGHER ASSY. PDP-12
SCALE
SHEET 1 OF 2

digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS

TITLE
MODULE
UTILIZATION
PROCESSOR

SIZE D CODE MU NUMBER EP12-0-1 REV. M
DIST.

MEMORY EXTN CABLES

PWR
SCOPE DRIVER
TTY CABLE
DATA PHONE CABLE
PLOTTER CABLE
TTO CLOCK
IPC TTI DTTI PCL PCL TTI TTO DTTI DTTO DTTC DTTC ICB ICB ICB ICB ICB ICB ICB ICB ICB ICB ICB TOR CIN CIN CIN CIN CSI CSI CSI CSI CSI MXR

* WHEN THE MC12 IS NOT INSTALLED USE A W823 WITH PINS J2, P2, V2, GROUNDED.

□ USE W876 FOR DP12A, W810 FOR DP12B. WHEN DP12B IS NOT INSTALLED USE 6700YA.

△ = USE A 6716 FOR DP12A

\+ INSERT M906 WHEN KP12/50 INSTALLED.

A = EP12
B = MC12
C = KE12
D = ASR33
E = DP12A
F = KY12
H = VC12
J = DM12
K = KT12
L = DP12B
M = KF12
N = DM12

REVISIONS	REV
CHANGE NO.	
ORIGINALLY RELEASED TWS 1-NOV-67	
CHK	

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

		DATE
DRN	Joe Pyser	10-29-67
CHK	[illegible]	DATE 11/9/67
ENG	[illegible]	DATE 11/10/67
PROJ. ENG.	[illegible]	DATE 11/10/67
PROD	[illegible]	DATE 11/14/67

FIRST USED ON PDP-12

SCALE

SHEET 2 OF 2

digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS

TITLE
MODULE UTILIZATION PROCESSOR

SIZE	CODE	NUMBER	REV
D	MU	EP12-Ø-1	M

DIST.

DEC FORM NO DRO 105

DIGITAL EQUIPMENT CORPORATION
MAYNARD, MASSACHUSETTS

PARTS LIST

MADE BY	J. APREA	CHECKED J. SCANLON	SECTION
DATE	10/29/68	DATE 2/18/69	
ENG	L. GALE	PROD D. CALL	ISSUED SECT.
DATE	2/19/69	DATE 2/10/69	

ITEM NO.	DWG NO. / PART NO.	DESCRIPTION	EP12	MC12	KE12	DP12A	DP12B	XY12	VC12N	DR12	KT12	KF12	DM12
	G700YA	DATAPHONE DISABLE				1	1						
	G718	TIMING JUMPER	1			1							
	G780	CONTROL FOR 739 POWER SUPPLY	1										
	M002	15 LOADS	1										
	M101	BUS DATA INTERFACE										1	
	M103	DEVICE SELECTOR										1	
	M107	DEVICE SELECTOR										1	
	M111	INVERTER	8		1								
	M112	NOR GATE	5										
	M113	NAND GATE	23										
	M115	NAND GATE	11		2								
	M117	NAND GATE	9		2						1		
	M119	NAND GATE	5										
	M121	AND/NOR GATE	4	2	1							1	
	M127	2-2-2-3 AND/NOR GATE										1	
	M133	10-2 INPUT NAND GATES	7									1	
	M135	8-3 INPUT NAND GATES	2										
	M139	3-8 INPUT NAND GATES										1	
	M141	NAND/OR GATES	3										
	M155	4 TO 16 LINE DECODER										1	
	M159	ADDER										1	

QUANTITY / VARIATION

TITLE	ASSY NO.	SIZE	CODE	NUMBER	REV.	ECO NO.
MODULE COUNT	D-MU-EP12-Ø-1	A	PL	EP12-Ø-1	M	EP12-00016
	SHEET 1 OF 3	DIST.				

DIGITAL EQUIPMENT CORPORATION
MAYNARD, MASSACHUSETTS

PARTS LIST

MADE BY	J. APREA	CHECKED J. SCANLON	SECTION
DATE	10/29/68	DATE 2/18/69	
ENG	L. GALE	PROD D. CALL	ISSUED SECT.
DATE	2/19/69	DATE 2/10/69	

ITEM NO.	DWG NO. / PART NO.	DESCRIPTION	EP12	MC12	KE12	DP12A	DP12B	XY12	VC12N	DR12	KT12	KF12	DM12
	M160	AND/NOR GATE	12		3								
	M161	BINARY TO OCTAL/DECIMAL DECODER	7										
	M169	GATING MODULE	6		1								
	M192	2-8 BIT PRIORITY ENCODERS										1	
	M205	5 "D" FLIP-FLOPS										4	
	M207	J-K FLIP-FLOPS										1	
	M212	SHIFT REGISTER	2										
	M216	FLIP FLOP	14	3	1		1			1	1	1	
	M221	PROC. REGISTER	6										
	M238	SYNCHRONOUS 4 BIT UP/DN COUNTER										5	
	M304	PULSE AMPLIFIER	1										
	M310	DELAY LINE	6										
	M401	VARIABLE CLOCK										1	
	M405	CRYSTAL CLOCK					1						
	M452	VARIABLE CLOCK	1										
	M516	POSITIVE BUS RECEIVER	3										
	M611	HIGH SPEED POWER INVERTER	6										
	M617	FOUR-INPUT POWER NAND GATE	8	5									
	M623	BUS DRIVER	5									7	4
	M627	NAND POWER AMPLIFIER	4										
	M660	POSITIVE LEVEL DRIVER	3										

QUANTITY / VARIATION

TITLE	ASSY NO.	SIZE	CODE	NUMBER	REV.	ECO NO.
MODULE COUNT	D-MU-EP12-Ø-1	A	PL	EP12-Ø-1	M	
	SHEET 2 OF 3	DIST.				

DIGITAL EQUIPMENT CORPORATION
MAYNARD, MASSACHUSETTS

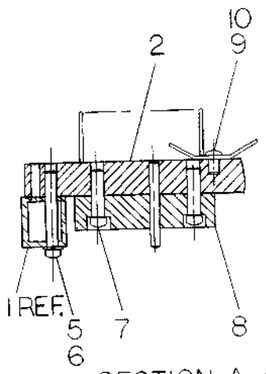
PARTS LIST

MADE BY	J. APREA	CHECKED J. SCANLON	SECTION
DATE	10/29/68	DATE 2/18/69	
ENG	L. GALE	PROD D. CALL	ISSUED SECT.
DATE	2/19/69	DATE 2/10/69	

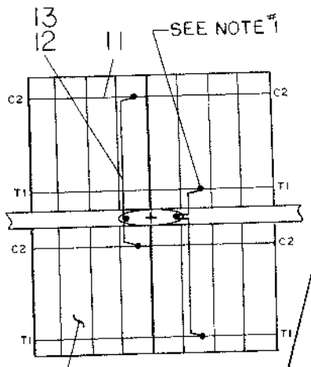
ITEM NO.	DWG NO./PART NO.	DESCRIPTION	QUANTITY/VARIATION											
			EP12	MC12	KE12	DP12A	DP12B	XY12	VC12N	DR12	KT12	KF12	DM12	
	M700	MANUAL FUNCTION TIMING	1											
	M704	PLOTTER CONTROL						1						
	M706	TELETYPE RECEIVER	1			1	1							
	M707	TELETYPE TRANSMITTER	1			1	1							
	M720	NON EXISTANT MEM.		1										
	M734	I/O BUS INPUT MULTIPLEXER										1		
	M906	CABLE TERMINATOR	5									2	2	
	M908	RIBBON CONNECTOR	1											
	W023	I/O CABLE CONNECTOR	1											
	W078	TTY INTERFACE	1											
	W512	POSITIVE LEVEL CONVERTER	1											
	W603	POSITIVE LEVEL AMP							1					
	W681	SCOPE INTENSIFIER	1											
	G916	POWER PROTECT	1											
	M905	SELECTOR BOARD												

TITLE	ASSY NO.	SIZE	CODE	NUMBER	REV.	FCO NO.
MODULE COUNT	D-MU-EP12-Ø-1	A	PL	EP12-Ø-1	M	
	SHEET 3 OF 3	DIST.				

DEC FORM DEC 16-(325)-1031-N870
DRA 110



SECTION A-A
SCALE 1/1

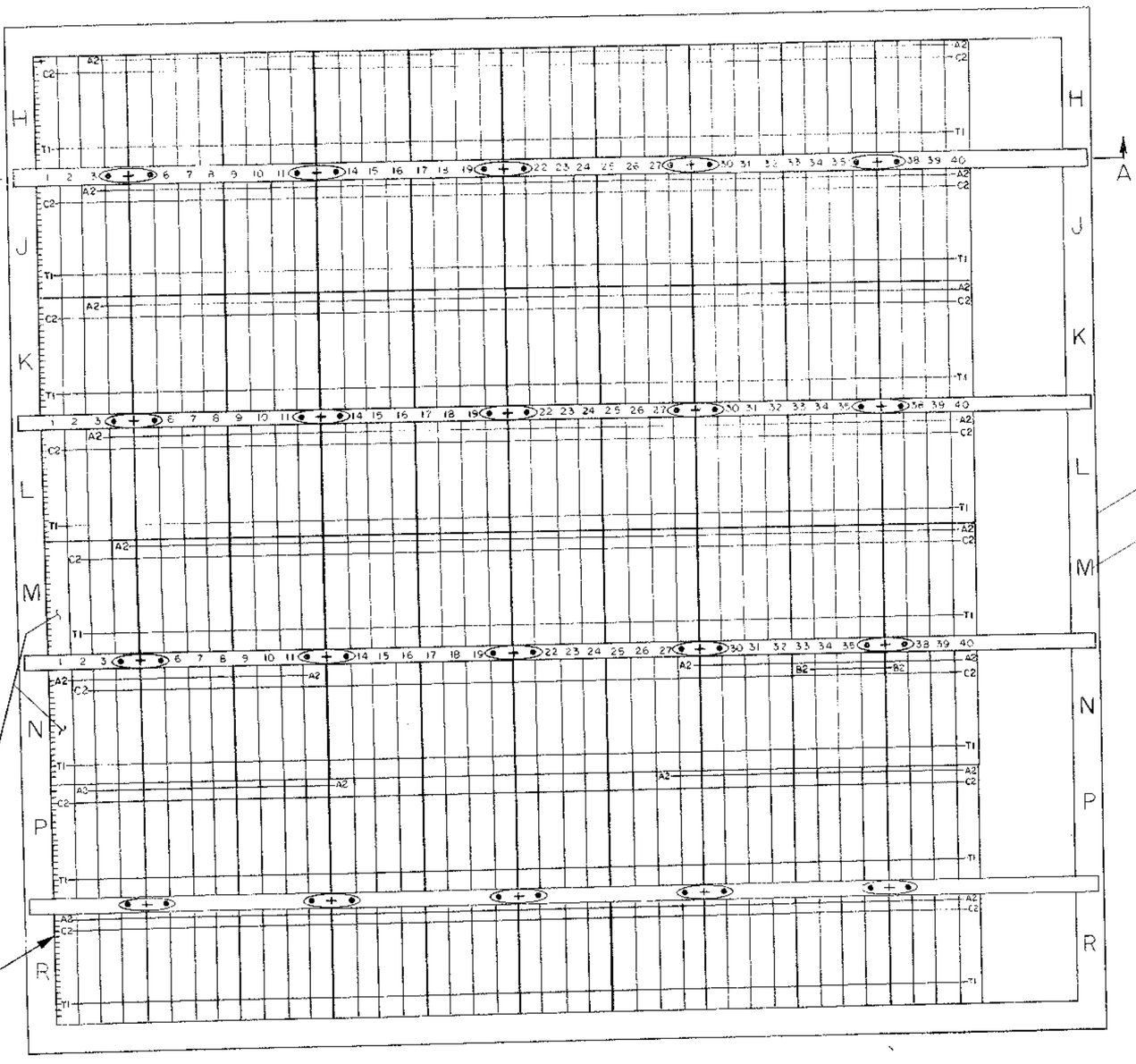


DETAIL A
15 PLACES
SEE NOTE 2

SEE DETAIL B

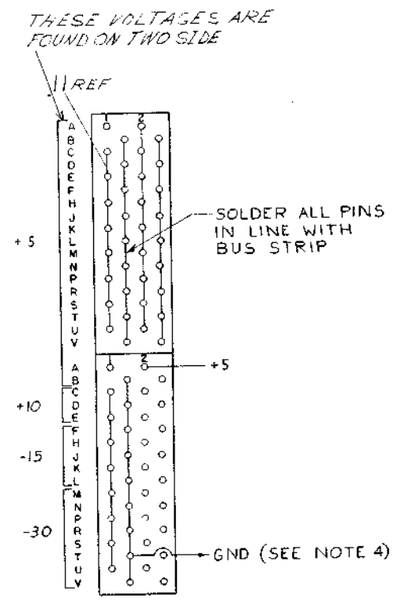
SEE NOTE 3

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.

THESE VOLTAGES ARE FOUND ON TWO SIDE



MEN Ø1
DETAIL B

REVISIONS	REV	CHANGE NO.	CHK
	A	12-00004	
	B	12-00007	
	C	12-00009	
	D	12-00010	
	E	EP12-00002	
	F	EP12-00008	
	H	EP12-00014	
	J	EP12-00017	
	K	EP12-00036	
	L	EP12-00041	
	M	EP12-00046	

DEC FORM NO DRD 100

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

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

DRN		DATE 1-3-69
CHK'D		DATE 1-3-69
ENG		DATE
PROJ. ENG		DATE 1-6-69
PROD		DATE 1/23/69

MATERIAL —
FINISH —
NEXT HIGHER ASSY. A-ML-EP12-0
SCALE NONE
SHEET 1 OF 1

digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS

TITLE LOGIC FRAME ASSY (EP12)

SIZE D | CODE AD | NUMBER 7005976-0-0 | REV M
DIST.

DIGITAL EQUIPMENT CORPORATION
MAYNARD, MASSACHUSETTS

PARTS LIST

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

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	1
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	8
6	9006634	WASHER INT TOOTH #8	8
7	9006120	SCR PHL HD FIL POSI DRIVE #8-32 x 5/8 CPS	80
8	E-SC-1205348-0-0	288 PIN CONN BLOCK	40
9	9006121	SCR PHL HD FIL POSI DRIVE #8-32 x 3/8 CPS	20
10	9007597	TERMINAL #2116-08-00 SHAKIPROOF	20
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: LOGIC FRAME ASSY (EP12)	ASSY NO. D-AD-7005976-0-0	SIZE A	CODE PL	NUMBER 7005976-0-0	REV M	EP12-00046
	SHEET 1 OF 1	DIST. G				

DEC FORM NO.
DRA 110

MASTER DRAWING LIST

DWG. NO.	REV. LET.	NO. OF SHEETS	TITLE
D-AD-7005979-0-0	J	1	WIRED ASSY MEMORY (EM12)
A-PL-7005979-0-0	J	1	WIRED ASSY MEMORY (PARTS LIST) EM12
D-MU-EM12-0-1	S	1	MODULE UTILIZATION RACK A-D
D-MU-EM12-0-2	M	1	MODULE UTILIZATION RACK E-F
A-PL-EM12-0-1	S	1	MODULE UTILIZATION RACK A-D (PARTS LIST)
A-PL-EM12-0-2	M	1	MODULE UTILIZATION RACK E-F (PARTS LIST)
K-WL-EM12-0-3	AA		WIRE LIST
A-WL-EM12-0-4	B	3	POWER WIRE LIST
D-BS-EM12-0-IPCM	J	1	INTER PROC CABLES
D-BS-EM12-0-MCS	A	1	MCS SENSE AMPS & INHIBIT DRIVERS
D-BS-EM12-0-MCT	C	1	MEMORY CONTROL
D-BS-EM12-0-MCX	B	1	X-AXIS SELECTION
D-BS-EM12-0-MCY	B	1	Y-AXIS SELECTION
A-ML-PDP12-0	REF.		PDP-12 SYSTEM

REVISIONS			
REV.	DATE	CHG. NO.	APP'D.
AK	10/71	00054	R.M.
AL	12/71	00055	R.M.
AM	6/72	00057	D.M.
AN	8/72	00058	R.I.

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

digital EQUIPMENT CORPORATION
MAYNARD, MASSACHUSETTS

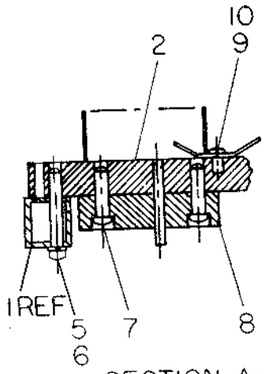
TITLE
BASIC 4K MEMORY

SIZE	CODE	NUMBER	REV.
A	ML	EM12-0	AN

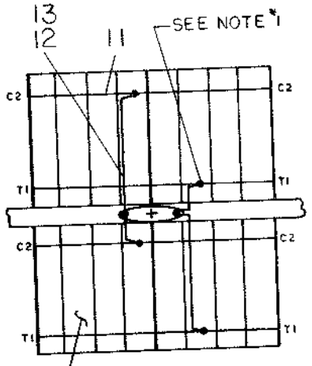
DIST.

DEC FORM NO. DRA 103

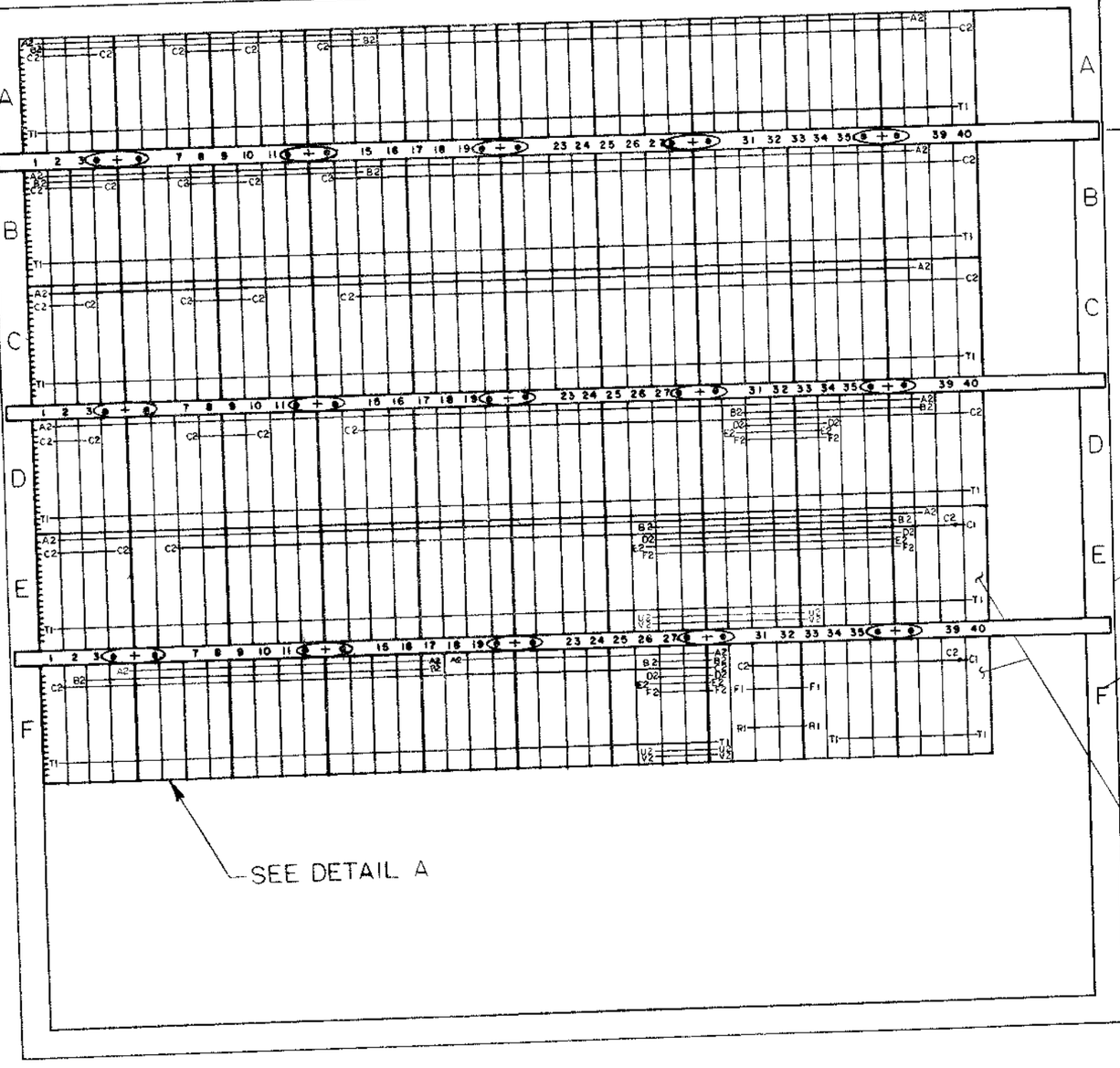
NOTES:
1. CONNECTIONS ON ITEMS #11 & #12 TO BE SOLDERED AND LOCATED AT MINIMUM PRACTICAL HEIGHT ABOVE BOARD.
2. ALL CONN BLOCKS TO BE GROUNDED TO GND LUGS AS SHOWN.
3. USE YELLOW WIRE (ITEM #3) FOR MACHINE WRAPPED & BLUE WIRE (ITEM #4) FOR HAND WRAPPED WIRE.
4. SIDE #1 PINS OF E4Ø & F4Ø ARE GND.

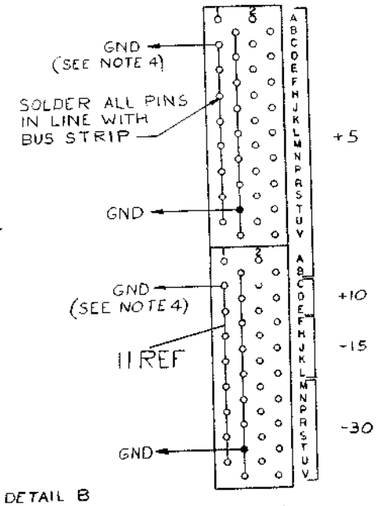


SECTION A-A
SCALE 1/1



DETAIL A
15 PLACES
SEE NOTE #2





E&F 4Ø
DETAIL B

REVISIONS												
CHK	ECO	REV										
	12-00004	A										
	Betty Updated 2-1-69											
	S.ZNAMIEROWSKI											
	Maintenance update 2/1/69	B										
	12-00006											
	C. CLAYTON	C										
	12-00009											
	Min Timing 3-7-69											
	S.ZNAMIEROWSKI											
	Maintenance update 3/1/69	D										
	12-00010											
	Timing 3-31-69											
	GALE											
	EMI2-00001	E										
	Minor											
	GALE											
	EMI2-00006	F										
	S. Bldr. 7-30-69											
	WALF											
	EMI2-00008	H										
	GALE											
	EMI2-00018	J										
	GALE											

FIRST USED ON OPTION MODEL: PDP12	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 9-18-68
CHK'D		DATE 1-3-69
ENG		DATE 1/16/69
PROJ. ENG.		DATE 1-6-69
PROD.		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 D | CODE AD | NUMBER 7005979-0-0 | REV. J
DIST.

DIGITAL EQUIPMENT CORPORATION
MAYNARD, MASSACHUSETTS

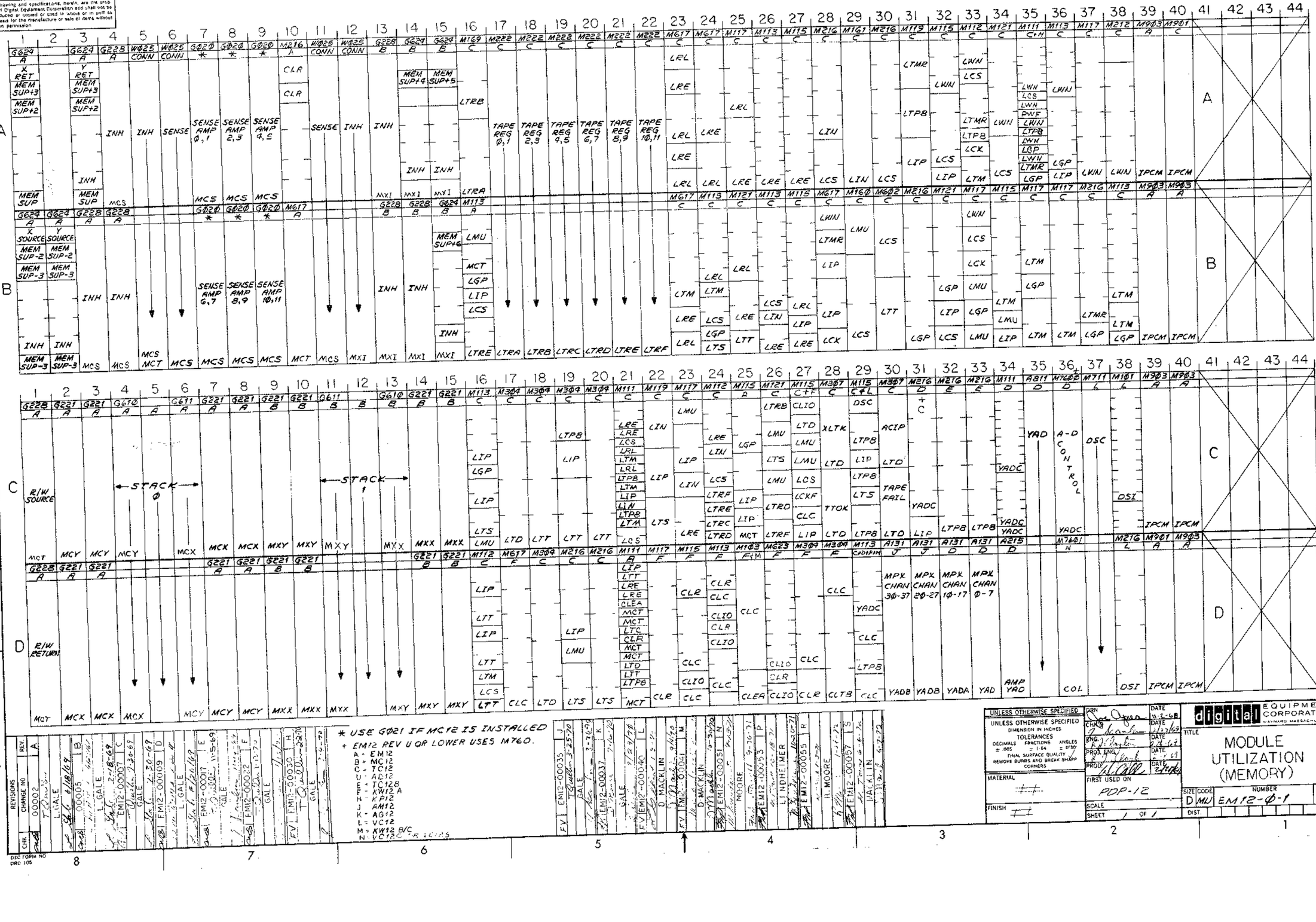
PARTS LIST

MADE BY G. GIANOULIS	CHECKED K.RUSS	SECTION 1
DATE 9/17/68	DATE 12/30/68	
ENG [illegible]	PROD [illegible]	ISSUED SECT. 1
DATE 1/7/69	DATE 1/7/69	

ITEM NO.	DWG NO. / PART NO.	DESCRIPTION	QUANTITY / VARIATION
1	D-1A-7407207-0-0	DOOR FRAME REWORK	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	9006043-1	SCR PH HD PAN #8-32 x 1 SST	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 SHAKEPROOF	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-WL-EM12-0-4	WIRE LIST	

TITLE: LOGIC FRAME ASSY (EM12)	ASSY NO. D-AD-7005979-0-0	SIZE A	CODE PL	NUMBER 7005979-0-0	REV. J	ECO NO. EM12-00018
	SHEET 1 OF 1	DIST. G				

DEC FORM NO.
DRA 110



* USE G021 IF MC12 IS INSTALLED
+ EM12 REV U OR LOWER USES M760.

A = EM12
B = MC12
C = TC12
U = AD12
E = TC128
F = KW12A
H = KP12
J = AM12
K = AG12
L = VC12
M = KW12 B/C
N = VC12 C-R LOADS

REVISIONS			
CHK	CHANGE NO	REV	
	00002	A	
	00005	B	
	EM12-00007	C	
	EM12-00009	D	
	EM12-00017	E	
	EM12-00022	F	
	EM12-00030	H	
	EM12-00035	J	
	EM12-00037	K	
	EM12-00040	L	
	EM12-00047	M	
	EM12-00051	N	
	EM12-00053	P	
	EM12-00055	R	
	EM12-00057	S	

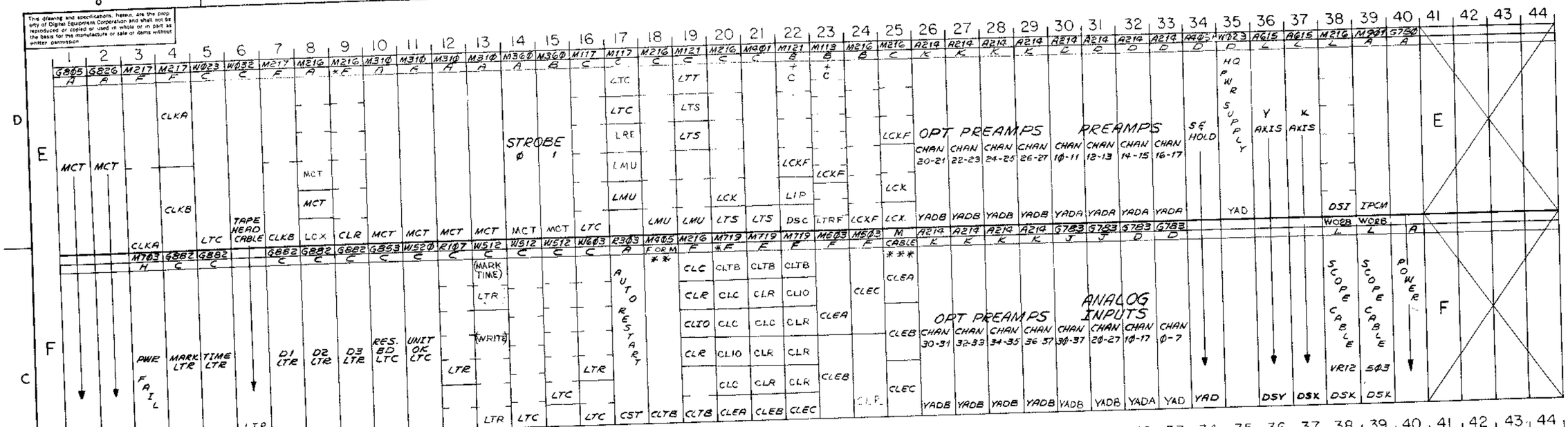
DEC FORM NO DRO 105

UNLESS OTHERWISE SPECIFIED	DRN	DATE 11-2-68
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 11-7-68
	ENG.	DATE 11-7-68
	PROJ. ENG.	DATE 2-6-69
MATERIAL —	PROD	DATE 2-6-69
FINISH —	FIRST USED ON PDP-12	
	SCALE	
	SHEET 1 OF 1	

digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS

TITLE: MODULE UTILIZATION (MEMORY)

SIZE D | CODE MU | NUMBER EM12-Ø-1 | REV S | DIST.



** USE MØ1 WITH KW12-B
USE MØ5 WITH KW12-A
OR KW12-C
+ EM12 REV U OR LOWER USES R4Ø4.

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

* USE WØ23 WITH PINS C2-P2 JUMPERED IN SLOT EØ AND MØ8 WITH PINS C2-E1 JUMPERED IN SLOT F20 WHEN KW12A IS NOT INSTALLED
*** USE M870 WITH KW12B OR KW12C

REVISIONS			
CHK	CHANGE NO	REV.	
DHB	00002	A	T. Quinlan
DHB	EM12-00009	B	L. GALE
DHB	EM12-00011	C	T. Quinlan
	EM12-00037	D	T. Quinlan 3-25-70 SELE
	EM12-00039	E	GALE
	EM12-00040	F	L. GALE
	EM12-00044	H	D. MACKLIN
	EM12-00051	J	D. MACKLIN
	EM12-00055	K	SCANLON
	EM12-00057	L	L. NEHEIMER
		M	R. MOORE

DEC FORM NO D1 J 105

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 11-2-69
CHK	DATE 2/25/69
ENG	DATE 2-26-69
PROJ ENG	DATE 2-27-69
PROD	DATE 3/28/69
FIRST USED ON	PDP-12
SCALE	
SHEET	1 OF 1

digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS

TITLE: MODULE UTILIZATION (MEMORY)

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

NUMBER EM12-Ø-2 | SIZE/CODE D MU | REV M

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 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											
	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	1		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			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: MODULE COUNT
ASSY NO. D-MU-EM12-0-1
SHEET 1 OF 2
SIZE A | CODE PL | NUMBER EM12-0-1 | REV S | ECO EM12-00057
DIST.

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 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-C* VC12	KW12-B	KW12-C
	M304	PULSE AMPLIFIER			5			2						
	M307	ONE SHOT			2									
	A811	A-D CONVERTER				1								
*	M7600	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								
	M7601	611/COLOR CONTROL										1*		
*	AD12'S PRE-WIRED TO	EM12 REV. U OR LOWER												
	USE M760 INSTEAD OF	M7600.												

TITLE: MODULE COUNT
ASSY NO. D-MU-EM12-0-1
SHEET 2 OF 2
SIZE A | CODE PL | NUMBER EM12-0-1 | REV S | ECO NO
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 Orell	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-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			
*	A405	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	M	EMI2-00055
	SHEET 1 OF 2	DIST.				

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 Orell	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-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
*	AD12'S PRE-WIRED TO EM12 REV. U OR LOWER USE A404 INSTEAD OF A405.													

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

DEC FORM NO.
DRA 110

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	D01C2		
	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. J. Scanlon DATE 3/10/69
CHK'D. J. Scanlon DATE 3/10/69
ENG. L. Gale DATE 3/11/69
PROJ. ENG. L. Gale DATE 3/11/69
PROD. D Call 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

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. J. Scanlon DATE 3/10/69
CHK'D. J. Scanlon DATE 3/10/69
ENG. L. Gale DATE 3/11/69
PROJ. ENG. L. Gale DATE 3/11/69
PROD. D Call 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

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.
	F4ØF2	AØ1B2		
-30V	F4ØN2	F4ØP2	Yellow	
	F4ØM2	F4ØN2		
	F4ØP2	EØ1E2		
	F4ØR2	F4ØS2		
	F4ØS2	E01F2		
	E4042	E4ØV2		
	F4ØT2	F4Ø42		
	F4ØV2	EØ1H2		
+5V	E4ØF2	C19A2		
	E4ØE2	D19A2		
MCT X R/W SOURCE	CØ1K1	CØ7T2	GREEN	
MCT Y R/W SOURCE	CØ1S1	CØ2T2	GREEN	

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

DRN. J. Scanlon	DATE	3/10/69
CHK'D. J. Scanlon	DATE	3/10/69
ENG. L. Gale	DATE	3/10/69
PROG. ENG. L. Gale	DATE	3/10/69
PROD. D. Cole	DATE	3/10/69
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

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 LTPB BLOCK (1)H
J1 LTPB 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
A1
S1 MCS MEM 00 H
MCS MEM 01 H
MCS MEM 02 H
MCS MEM 03 H
MCS MEM 04 H
L1 MCS MEM 05 H
N1 MCS MEM 06 H
P1 MCS MEM 07 H
R1
S1 MCS MEM 08 H
T1
U1
V1

M903 C40
A1
B1 PRB MB 03 (0)H
C1
D1 PRB MB 02 (0)H
E1 PRC MB 04 (0)H
F1
H1 PRC MB 04 (1)H
J1 PRC MB 05 (0)H
K1
L1 PRC MB 05 (1)H
M1 PRD MB 06 (0)H
N1
P1 PRD MB 06 (1)H
R1
S1 PRD MB 07 (0)H
T1
U1
V1

M903 D40
A1
B1 PRA MA 00 (0)H
C1
D1 PRA MA 00 (1)H
E1 PRA MA 01 (1)H
F1
H1 PRB MA 02 (1)H
J1 PRB MA 03 (0)H
K1
L1 PRB MA 03 (1)H
M1 PRC MA 04 (1)H
N1
P1 PRC MA 05 (1)H
R1
S1 PRD MA 06 (0)H
T1
U1
V1

M903 A39
A2
B2
C2
D2 INT IO BUS 00 L
E2 INT IO BUS 01 L
F2
H2 INT IO BUS 02 L
J2
K2 INT IO BUS 03 L
L2 INT IO BUS 04 L
M2 INT IO BUS 05 L
N2 INT IO BUS 06 L
P2 INT IO BUS 07 L
R2
S2 INT IO BUS 08 L
T2
U2
V2

M901 E39
A2 CLIO INT POST L
B2 DSC 503 INTEN L
C2
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 8 MSC H
U2 CSI KEY MARK L
V2 LIP TAPE WORD (1)H

M901 A40
A2
B2 SLA EX TS4 H
C2
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
A2
B2
C2
D2 MCS MEM 09 H
E2 MCS MEM 10 H
F2
H2 MCS MEM 11 H
J2
K2 PRA MB 00 (0)H
L2
M2 PRA MB 00 (1)H
N2
P2 PRA MB 01 (1)H
R2
S2 PRA MB 01 (1)H
T2 PRA MB 02 (0)H
U2
V2 PRA MB 02 (1)H

M903 C40
A2
B2
C2
D2 PRD MB 07 (1)H
E2 PRE MB 08 (0)H
F2
H2 PRE MB 08 (1)H
J2
K2 PRE MB 09 (0)H
L2
M2 PRE MB 09 (1)H
N2
P2 PRF MB 10 (0)H
R2
S2 PRF MB 10 (1)H
T2 PRF MB 11 (0)H
U2
V2 PRF MB 11 (1)H

M903 D40
A2
B2
C2
D2 PRD MA 06 (1)H
E2 PRD MA 07 (1)H
F2
H2 PRE MA 08 (1)H
J2
K2 PRE MA 09 (0)H
L2
M2 PRE MA 09 (1)H
N2
P2 PRF MA 10 (1)H
R2
S2 PRF MA 11 (1)H
T2 MCT STROBE L
U2
V2 MCT MEM DONE L

M903 A39
A2
B2
C2
D2 INT IO BUS 09 L
E2 INT IO BUS 10 L
F2
H2 INT IO BUS 11 L
J2
K2 INT SKIP BUS L
L2
M2 INT AC CLEAR BUS L
N2
P2 DSC Z DRIVER
R2
S2 MXF EA 2 H
T2 IOC IO STROBE L
U2
V2 INS SAM H

M903 B39
A1
B1 CPTP START MEMORY H
C1
D1 IOC IO PRESET L
E1 CPTP TP2 H
F1
H1 CPTP TPSC H
J1 CPTP TP4 H
K1
L1 CPTP TP5 H
M1 IOC IOP 1 L
N1
P1 IOC IOP 2 L
R1
S1 IOC IOP 4 L
T1
U1
V1

M903 B39
A2
B2
C2
D2 MCT PWR CLR L
E2 CPT TS2 (1)H
F2
H2 CPT TS3 (1)H
J2
K2 CPT TS4 (1)H
L2
M2 CPT TS5 B (1)H
N2
P2 CPS EXECUTE B (1)H
R2
S2 CPS FETCH B (1)H
T2 CST IO PRESET H
U2
V2 PWF PWR SKIP L

M903 C39
A1
B1 PRA AC 00 (1)H
C1
D1 PRA AC 01 (1)H
E1 PRB AC 02 (1)H
F1
H1 PRB AC 03 (1)H
J1 PRC AC 04 (0)H
K1
L1 PRC AC 04 (1)H
M1 PRC AC 05 (1)H
N1
P1 PRD AC 06 (1)H
R1
S1 PRD AC 07 (1)H
T1
U1
V1

M903 C39
A2
B2
C2
D2 PRE AC 08 (1)H
E2 PRE AC 09 (1)H
F2
H2 PRF AC 10 (0)H
J2
K2 PRF AC 10 (1)H
L2
M2 PRF AC 11 (0)H
N2
P2 PRF AC 11 (1)H
R2
S2 RCL LOAD MSC 4 H
T2 PRB AC 03 (0)H
U2
V2 LIP TAPE BRK REQ (0)H

M901 D39
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 (DIS+DSC) 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

M901 D39
A2 MXF EA (0)L
B2 MXF EA (1)L
C2
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	NR	EM12-00017	F
	A WASHINGTON 6-15-69			A WASHINGTON 11-13-69	
	L GALE			J SCANLAN 11-19-69	
	EM12-00004	C		EM12-00044	H
	B KORTLANG 9-12-69			ADS	
	L GALE 9-12-69			J SCANLAN	
NR	EM12-00007	D		EM12-00047	J
	B KORTLANG 9-26-69				
	L GALE 9-26-69				

DRN. D.L. SHEPARD	DATE 9-9-69	digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS	
CHK'D J.P. BISONETTE	DATE 9-9-69	TITLE INTER PROC CABLES	
ENG. L. GALE	DATE 9-9-69		
PROJ. ENG. L. GALE	DATE 9-9-69		
PROD. D. DALL	DATE 9-9-69		
FIRST USED ON EM12		SIZE D	CODE BS
SCALE		NUMBER EM12-0-IPCM	REV. J
SHEET OF		DIST.	

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

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 MB1Ø (Ø) H · PRF MB11 (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 Ø Ø · 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

G Ø22 and G23 M.C.

W Ø25 A Ø6 B Ø6

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

W Ø25 A11 B11

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

* USE 6Ø2Ø ONLY IF MC12 IS NOT INSTALLED

REVISIONS			
CHK	CHANGE NO	REV	
[illegible]	EM12-00003	A	T. Quillan 6-3-69
			L. Gale 8/6/68

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	Joe Ouva	DATE 1-17-68
CHK	A. Scanlon	DATE 2/12/69
ENG	R. Clayton	DATE 2-28-69
PROJ LDR	R. Clayton	DATE 2-28-69
PROD	[illegible]	DATE 3/7/69

FIRST USED ON: EM12

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

REV A · MCS · SIZE CODE D BS EM12-Ø-MCS

MCT B MEM ENABLE H
+3V B1ØV1 H
MCT B FIELD (Ø)H
MCT B FIELD (1)H
MCT B INHIBIT H
MCT MEM BEGIN L
M21G EØB
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
M31Ø E1Ø
M31Ø E11
M31Ø E12
M31Ø E13
M36Ø E14
M36Ø * E15
MCT MEM DONE L
MCT MEM FINISH H
.1Ø µS
.2Ø µS
.3 µS
.4 µS
.15 µS
-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
MCT STROBE L
PWF STOP OK H
-MCT POWER OK H
MCT PWR STOP L
G624 AØ3
G624 AØ1
G624 BØ2
G625 BØ1
G826 E2 F2
W Ø25 BØ5
MCT MEMORY SUPPLY +Ø
MCT MEMORY SUPPLY -Ø
MCT NEG CLAMP H
-MCT POWER CLEAR H
REGULATOR AND POWER DETECTOR
THERMISTOR
PWF STOP OK H
-MCT SHUTDOWN H
G805 EØ1 FØ1
MCT X R/W SOURCE
MCT Y R/W SOURCE
MCT X R/W RETURN
MCT Y R/W RETURN
G228 CØ1
G228 DØ1
+3V B1ØU1H
MCT READ(1) H
MCT WRITE(1) H
* USE ONLY IF MC12 IS INSTALLED

REVISIONS								
CHK	CHANGE NO.	REV						
	00002	A	T. Quillin	L. GALE	Feb 8-18-69			
	EM12-00004	B	L. GALE	T. Quillin	L. GALE	Feb 8-18-69		
	EM12-00017	C	T. Quillin 11-5-69	GALE	T. Scanlon 11-14-69			

DEC FORM NO DRD 102A

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

DRN	J. Quillin	DATE 2-13-69
CHK	D. Hamilton	DATE 2/13/69
ENG	W. Gale	DATE 2-14-69
PROJ. ENG		DATE
PROG	M. Hall	DATE 2/14/69
FIRST USED ON	EM12	
SCALE		
SHEET	/ OF /	

digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS

TITLE
MCT MEMORY CONTROL

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

DIST.

G221 CØ8

G611 CØ6 DØ6

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

R2I S2I N2I P2I L2I M2I J2I K2I

7Ø 71 72 73 74 75 76 77 67 57 47 37 27 17 1Ø

6Ø 5Ø 4Ø 3Ø 2Ø

ØØ Ø1 Ø2 Ø3 Ø4 Ø5 Ø6 Ø7

PRA MAØI (I)H — H2

PRB MAØ2 (I)H — F2

MCT NEG CLAMP H — V2

PRA MAØØ(Ø)H — E2

D2

T2

G221 CØ7

PRA MAØI (I)H — H2

PRB MAØ2 (I)H — F2

MCT NEG CLAMP H — V2

PRA MAØØ(Ø)H — E2

MCT B FIELD (Ø)H — D2

T2

MCT X R/W SOURCE

MCT X R/W RETURN

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

G610 CØ4 DØ4

K2 J2 M2 L2 P2 N2 S2 R2

T2

MCT B FIELD (Ø)H — D2

PRB MAØ3(Ø)H — E2

MCT NEG CLAMP H — V2

PRC MAØ5 (I)H — F2

PRC MAØØ(Ø)H — PRB MAØØ(I)H — H2

G221 DØ2

PRB MAØ3(I)H — D2, E2

PRC MAØ5(Ø)H — F2

PRC MAØØ(I)H — H2

G221 DØ3

V2 MCT NEG CLAMP H

REVISIONS			
CHK	CHANGE NO.	REV.	
DB	EM12-00015	A	Jackie Monroe 10/7/69
FV	EM12-00030	B	T.G.W. 2-2-70

L. GALE

GALE

J.a. 2-3-70

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.	Jack Ogren	DATE 1-28-69
CHKD.	R. Scanlon	DATE 2/12/69
ENG.	R. Clayton	DATE 2-13-69
PROJ. ENG.	R. Clayton	DATE 2-25-69
PROJ.	J. Hall	DATE 2-26-69

FIRST USED ON EMI2

SCALE

SHEET 1 OF 1

digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS

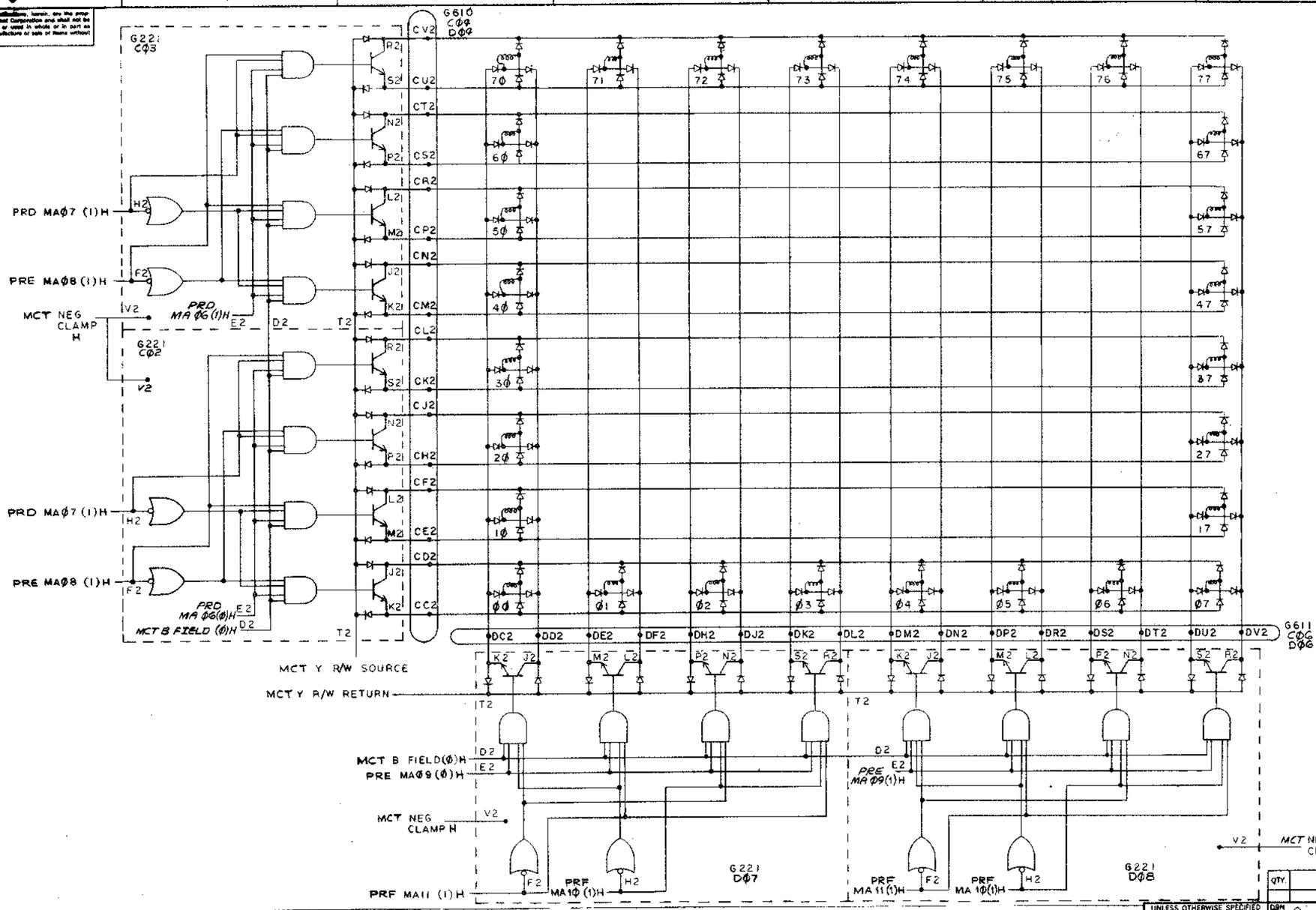
TITLE

MCX
X AXIS SELECTION

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

DIST.

DEC FORM NO DRD 102



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

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

MATERIAL

FINISH

QTY.	DESCRIPTION	PART NO.	ITEM NO.

PARTS LIST

DBM		DATE 1-20-69
CHK		DATE 2/27/69
ENG		DATE 2-28-69
PROJ ENG		DATE 2-28-69
PROD		DATE 3/4/69

FIRST USED ON EM12

SCALE

SHEET 1 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 109

Orig. Lost
Retyped 10/6/70

MASTER DRAWING LIST

DWG. NO.	REV. LET.	NO. OF SHEETS	TITLE
D-MU-EP12-0-1	REF	2	MODULE UTILIZATION PROC
D-MU-EM12-0-1	REF		MODULE UTILIZATION (MEMORY)
D-MU-EM12-0-2	REF		MODULE UTILIZATION (MEMORY)
A-ML-EP12-0	REF	2	PROCESSOR
A-ML-EM12-0	REF	1	MEMORY
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	F	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	3	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.
R	3/71	EP12-36	J.S.
S	1/72	EP12-44	R.M.
T	7/72	EP12-46	R.T.

DEC FORM NO.
DRA 103

DRN. J. Aprea	DATE 3/7/69	digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS
CHK'D. R.Hutnak	DATE 3/7/69	
ENG. L. Gale 3	DATE /10/69	TITLE MEMORY EXTENSION CONTROL
PROJ. ENG. L. Gale 3	DATE /10/69	
PROD. D. Call 3	DATE /10/69	
FIRST USED ON PDP-12		SIZE A / CODE ML / NUMBER MC12-0 / REV. T
SCALE		
SHEET 1 OF 1		DIST.

PRA MA Ø0 (1)L — A1 — M617 M22 — E1 — MXB BMA Ø0 (1)H

PRA MA Ø1 (1)L — F1 — M617 M22 — L1 — MXB BMA Ø1 (1)H

PRB MA Ø2 (1)L — M1 — M617 M22 — S1 — MXB BMA Ø2 (1)H

PRB MA Ø3 (1)L — D2 — M617 M22 — J2 — MXB BMA Ø3 (1)H

PRC MA Ø4 (1)L — K2 — M617 M22 — P2 — MXB BMA Ø4 (1)H

PRC MA Ø5 (1)L — R2 — M617 M22 — V2 — MXB BMA Ø5 (1)H

+3V M22U1 H — U2

PRD MA Ø6 (1)L — A1 — M617 M23 — E1 — MXB BMA Ø6 (1)H

PRD MA Ø7 (1)L — F1 — M617 M23 — L1 — MXB BMA Ø7 (1)H

PRE MA Ø8 (1)L — M1 — M617 M23 — S1 — MXB BMA Ø8 (1)H

PRE MA Ø9 (1)L — D2 — M617 M23 — J2 — MXB BMA Ø9 (1)H

PRF MA 10 (1)L — K2 — M617 M23 — P2 — MXB BMA 10 (1)H

PRF MA 11 (1)L — R2 — M617 M23 — V2 — MXB BMA 11 (1)H

+3V M23U1 H — U2

PRA MB Ø0 (Ø)L — A1 — M617 M24 — E1 — MXB MCBMB Ø0 (Ø)H

PRA MB Ø1 (Ø)L — F1 — M617 M24 — L1 — MXB MCBMB Ø1 (Ø)H

PRB MB Ø2 (Ø)L — M1 — M617 M24 — S1 — MXB MCBMB Ø2 (Ø)H

PRB MB Ø3 (Ø)L — D2 — M617 M24 — J2 — MXB MCBMB Ø3 (Ø)H

PRC MB Ø4 (Ø)L — K2 — M617 M24 — P2 — MXB MCBMB Ø4 (Ø)H

PRC MB Ø5 (Ø)L — P2 — M617 M24 — V2 — MXB MCBMB Ø5 (Ø)H

+3V M24U1 H — U2

PRC MB Ø6 (Ø)L — A1 — M617 M25 — E1 — MXB MCBMB Ø6 (Ø)H

PRD MB Ø7 (Ø)L — F1 — M617 M25 — L1 — MXB MCBMB Ø7 (Ø)H

PRE MB Ø8 (Ø)L — M1 — M617 M25 — S1 — MXB MCBMB Ø8 (Ø)H

PRE MB Ø9 (Ø)L — D2 — M617 M25 — J2 — MXB MCBMB Ø9 (Ø)H

PRF MB 10 (Ø)L — K2 — M617 M25 — P2 — MXB MCBMB 10 (Ø)H

PRF MB 11 (Ø)L — R2 — M617 M25 — V2 — MXB MCBMB 11 (Ø)H

+3V M25U1 H — U2

CPTP START MEMORY L — A1 — M617 M26 — E1 — MXB START MEMORY H

+3V M26U1 H — U2

CPTP TP3 H — D2 — M113 L21 — F2 — MXB MEM TP3 L

CST EN MEM (1)H — E2

+3V M27V1 H — F1 — M617 M26 — L1 — MXB MEM TP3 H

CST DO (1)H — S2 — M720 H11 — U2

CPS FETCH (1)H — T2

CPT CYCLE DONE (Ø)H — M1

CPT TS2 (1)H — N1

MXB DO FETCH L — P1

M119 LØ3 — V2 — H1 — M113 L21 — K1

J1 — J2

+3V L03U1 H — U2

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	
RJ	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	
PROD D CALL	DATE 2/20/69	
FIRST USED ON MC12		SIZE D | CODE 85 | NUMBER MC12-0-MXB | REV. D
SCALE		
SHEET OF		DIST.

CPT IO SET TS1 L — A1
CPTP LTP5 L — B1
M113 J31
C1 — MXF LD BFCK H — E1
M113 M27
CPS BREAK SET H — D1
F1 — MXF LOAD BF L — L2
M113 M27
M2
N2 — MXF LOAD BF H

MPG MEM EXTN PRESET L — N2
MEA EN IF H — M2
MXF LD BFCK H — L2
MXF IF EN M216 L27
P2
R2
MPG IO PRESET L — K2
+3V M26V1 H — D1
MEA EN DF H — C1
MXF DF EN M216 L27
E1
B1
F1
A1
+3V M26V1 H — F2
CPS SET B FIELD H — E2
MXF BF EN M216 L27
H2
D2
J2
A1
+3V M26V1 H — K1
CPS TAPE SET H — J1
MXF TF EN M216 L27
L1
MXF LD BFCK H — H1
M1
MPG IO PRESET L — A1

CSI (FILLS+EX)MFTS0 H — P1
CSI IF SW 0 H — R1
M113 M27
S1
-CSI (FILLS+EX)MFTS0 L — P2
MXF IF EN (1)L — R2
M112 C10
S2 — MXF EN IF ADD H
MXR IF 00 (1)H — A1
MXR DF 00 (1)H — C1
MXF DF EN (1)H — D1
M121 L25
E1 — MXF SET FLD 0 L
MXF BF EN (1)H — F1
MXR BF 00 (1)H — H1
MXF TF EN (1)H — J1
LCXF TF 00 (1)H — K1
M121 L25
L1
D2
E2
F2
H2
M617 M26
J2 — MXF EA 0 H
D2
M141 K39
F2 — MXF EA 0 L

MPG MEM EXT H — D2
IOC IOP 1 H — E2
M113 M27
F2 — MFG SAVE FIELD LOAD L
MPG LINC SET DF L
R2
S2
T2
U2
M117 L24
V2 — MXF LOAD DF0-2 H

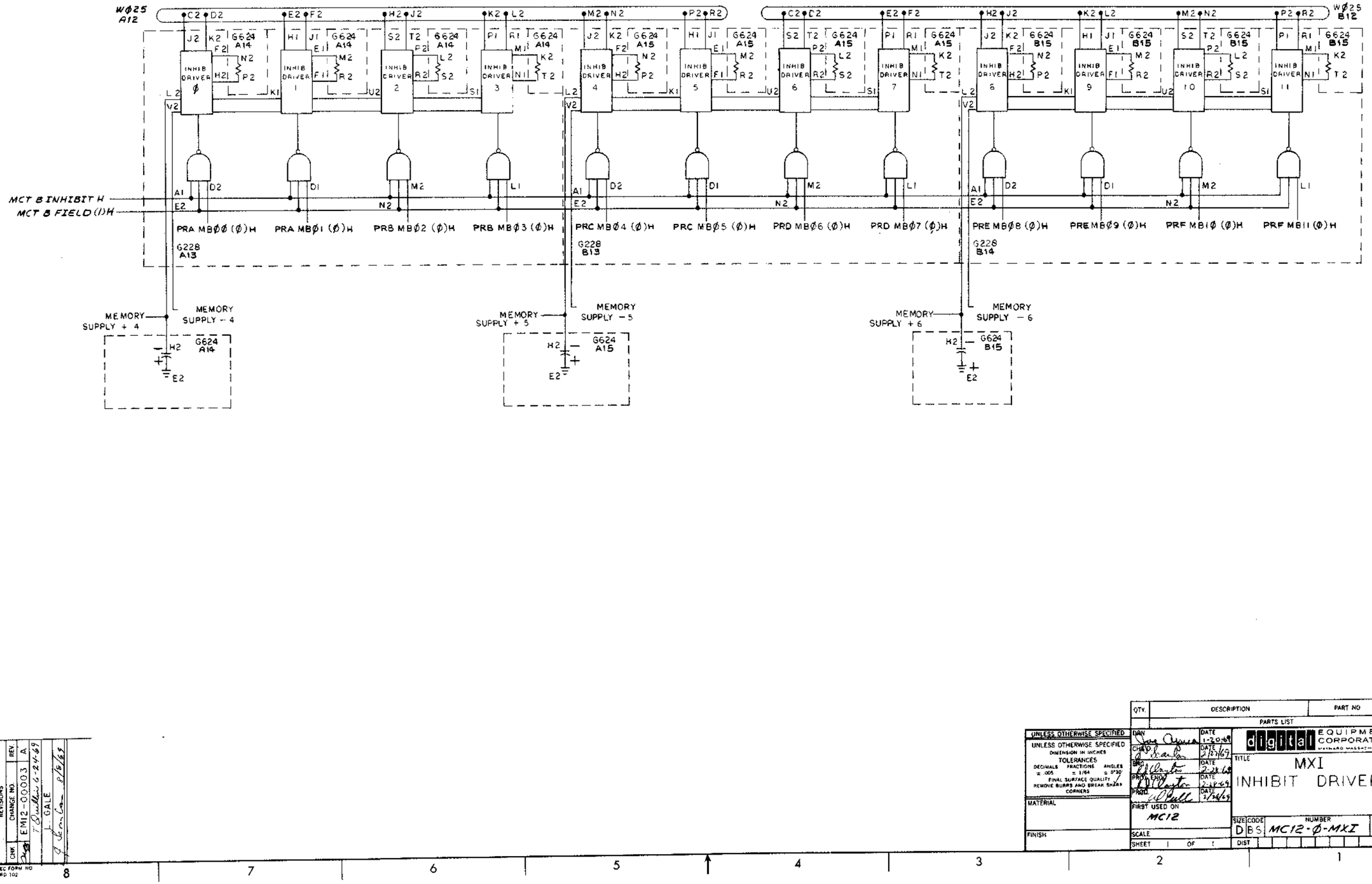
MPG MEM EXT H — H1
PRF MB 11 (1)H — J1
M113 M27
K1 — MXF EN CDF L
H2
J2
M113 M27
K2 — MXF EN MB 6-8 H
MPG MEM EXT H — L1
PRF MB 10 (1)H — M1
M113 M27
N1
MPG Ø-DFØ3-04 H — L1
M111 M40
M1 — MXF Ø-IF-IB-DFØ-2 L

CSI (FILLS+EX)MFTS0 H — P2
CSI IF SW 1 H — R2
M113 M27
S2
MXF EN IF ADD H
MXR IF Ø1 (1)H — M1
MXF DF EN (1)H
MXR DF Ø1 (1)H — P1
R1
M121 L25
S1 — MXF SET FLD 1 L
K2
L2
M2
N2
M617 M26
P2 — MXF EA 1 H
MXF BF EN (1)H — D2
MXR BF Ø1 (1)H — E2
MXF TF EN (1)H — F2
LCXF TF Ø1 (1)H — H2
M121 L25
J2
E2
M141 K40
H2 — MXF EA 1 L

CSI (FILLS+EX)MFTS0 H — T2
CSI IF SW 2 H — U2
M113 M27
V2
MXF EN IF ADD H
MXR IF Ø2 (1)H — K2
L2
MXF DF EN (1)H
MXR DF Ø2 (1)H — N2
M121 L25
P2 — MXF SET FLD 2 L
R2
S2
T2
U2
M617 M26
V2 — MXF EA 2 H
MXF BF EN (1)H — R2
MXR BF Ø2 (1)H — S2
MXF TF EN (1)H — T2
LCXF TF Ø2 (1)H — U2
M121 L25
V2
D2
M141 K40
F2 — MXF EX 2 2 L
MPGØ-IF IB Ø3-Ø4 H — M1
+3V M26U1 H — N1
P1
R1
M617 M26
S1 — MXF Ø-IF-IB L

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
	AOS			A.WASHINGTON 8/15/69			S. GOLDSBY 9-1-70	
	J. SCANLAN 7/13/69			L. GALE 8/20/69			D. MACKLIN 9-2-70	
	EP12-00003	B	NR	EP12-00009	F	JLW	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 2/20/68	digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS
CHK'D. J. BISONETE	DATE 2/20/68	TITLE: MEM EXTN FIELD
ENG. L. GALE	DATE 2/20/68	
PROJ. ENG. L. GALE	DATE 2/20/68	
PROD. D. CALL	DATE 2/20/68	
FIRST USED ON MC12		SIZE D / CODE 85 / NUMBER MC12-0-MXF / REV. L
SCALE		DIST.
SHEET 1 OF 1		



REVISIONS			
	CHANGE NO.	REV.	
CHK	EM12-00003	A	
T. Bullen 6-2-69			
J. GALE			
J. Sarka 6/6/69			

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

	NAME	DATE
DRN	Jay Amara	1-20-69
CHK'D	G Sarka	2/12/69
ENG	D Wagner	2-28-69
PROJ ENGR	D Wagner	2-28-69
PROJ	W Ball	2/24/69

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

DEC FORM NO DRD 102

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

M121 L23 U1 MXR SF 00 (1)L

M121 L23 V1 MXR SF 01 (1)L

M117 L21 U1 MXR SF 02 (1)L

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

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

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

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

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

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

SRF IBØ0 L — B1

MXF EN IF SW H C1 — CSI IF SW Ø H D1 — MXF EN MB 6-8 H D2 — PRD MB Ø6 (1)H E1 — MXR EN MB 7-9 H E2 — PRD MB Ø7 (1)H F1 — MPG EN SAVE FIELD H F2 — MXR SF Ø1 (1)H H1 — M169 M32

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

A1 MXR SET IB 00 H — MPG LOAD IB 00-02 H B1 — MXR IB 00 M216 M31 — C1 E1 F1 — MXR IF 00 M216 M31 — M2 L2 P2 R2

MXF Ø-IF-IB-Ø-2 L A1 — K2

SRF IBØ1 L — J1

C1 H2 — MXF EN MB 6-8 H D2 — PRD MB Ø7 (1)H J2 — MXR EN MB 7-9 H E2 — PRE MB Ø8 (1)H K2 — MPG EN SAVE FIELD H F2 — MXR SF Ø1 (1)H L2 — M169 M32

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

K1 MXR SET IB Ø1 H — MPG LOAD IB 00-02 H D2 — MXR IB Ø1 M216 M31 — E2 H2 J2 — MXR IF Ø1 M216 M31 — P1 S1 N1 U1

MXF Ø-IF-IB-Ø-2 L A1 — K2

SRF IBØ2 L — L1

R2 S1 — MXF EN MB 6-8 H P2 — PRE MB Ø8 (1)H R1 — MXR EN MB 7-9 H N2 — PRE MB Ø9 (1)H P1 — MPG EN SAVE FIELD H M2 — MXR SF Ø2 (1)H N1 — M169 M32

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

M1 MXR SET IB 02 H — MPG LOAD IB 00-02 H H1 — MXR IB 02 M216 M31 — J1 L1 M1 — MXR IF 02 M216 M31 — T2 V2 S2 V1

MXF Ø-IF-IB-Ø-2 L A1 — K2

MPG LOAD IF 00-02 H

CON AFI REQ OK L — U2

M121 L25 U1

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

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

SRF SET DF Ø-2 L — A1

MXR SET IB 00 H D2 — -MPG EN SAVE FIELD H E2 — MXR SF 03 (1)H F2 — MPG EN SAVE FIELD H H2 — M121 M28 — J2

MXF LOAD DFØ-2 H B1 — MXR DF 00 M216 M29 — C1 F1 — E1

SRF CLR DF Ø0 L D1

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

SRF SET DF Ø-2 L — A1

MXR SET IB Ø1 H K2 — -MPG EN SAVE FIELD H L2 — MXR SF 04 (1)H M2 — MPG EN SAVE FIELD H N2 — M121 M28 — P2

MXF LOAD DFØ-2 H D2 — MXR DF 01 M216 M29 — E2 J2 — H2

SRF CLR DF Ø1 L F2

+3V M25V1 H — P1 — IOB EXT DA Ø1 H P1 — MXF LOAD BF H N1 — MXR BF 01 M216 M29 — S1 — U1 — +3V M25V1 H K2

SRF SET DF Ø-2 L — A1

MXR SET IB Ø2 H R2 — -MPG EN SAVE FIELD H S2 — MXR SF Ø5 (1)H T2 — MPG EN SAVE FIELD H U2 — M121 M28 — V2

MXF LOAD DFØ-2 H H1 — MXR DF Ø2 M216 M29 — J1 M1 — L1

SRF CLR DF Ø2 L K1

+3V M25V1 H — U2 — IOB EXT DA Ø2 H T2 — MXF LOAD BF H S2 — MXR BF Ø2 M216 M29 — V2 — V1 — +3V M25V1 H K2

REVISIONS

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

CHK	CHANGE NO.	REV.
JS	EP12-00026	E
	SCANLAN	
	EP12-00028	F
	KANAIAN	

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-Ø-MXR	REV. F
SCALE		SHEET 1 OF 1	DIST.		

6221 C14

6611 C13 D13

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

7ϕ 71 72 73 74 75 76 77 67 57 47 37 27 17 1ϕ ØØ Ø1 Ø2 Ø3 Ø4 Ø5 Ø6 Ø7 6ϕ 5ϕ 4ϕ 3ϕ 2ϕ

PRA MA ϕ1(1)H — H2
PRB MA ϕ2(1)H — F2
MCT NEG CLAMP H — V2
PRA MA ØØ(1)H — E2, D2, T2
6221 C15
PRA MA ϕ1(1)H — H2
PRB MA ϕ2(1)H — F2
PRA MA ØØ(Ø)H — E2, D2
MCT B FIELD(1)H — T2
MCT X R/W SOURCE

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

6610 C11 D11

MCT X R/W RETURN — T2
MCT B FIELD (1)H — D2, E2
PRB MA ϕ3(Ø)H — E2
PRB MA ϕ3(1)H — D2
PRC MA ϕ5(1)H — F2
PRC MA ϕϕ(1)H — H2
6221 DØ9
PRC MA ϕ5(1)H — F2
PRC MA ϕϕ(1)H — H2
6221 D1Ø
V2
MCT NEG CLAMP H

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

L. GALE 10/16/69
T. Quiller 2-3-70
GALE
F. Beach 3-4-70

DEC FORM NO DRO 102

QTY.	DESCRIPTION	PART NO.	ITEM NO.
	PARTS LIST		

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

MATERIAL

FINISH

		DATE
DRN		1-20-69
CHKD		2/3/69
ENG		2/20/69
PROJ ENG		2/28/69
PROD		3/26/69

FIRST USED ON: MC12

SCALE

SHEET 1 of 1

digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS

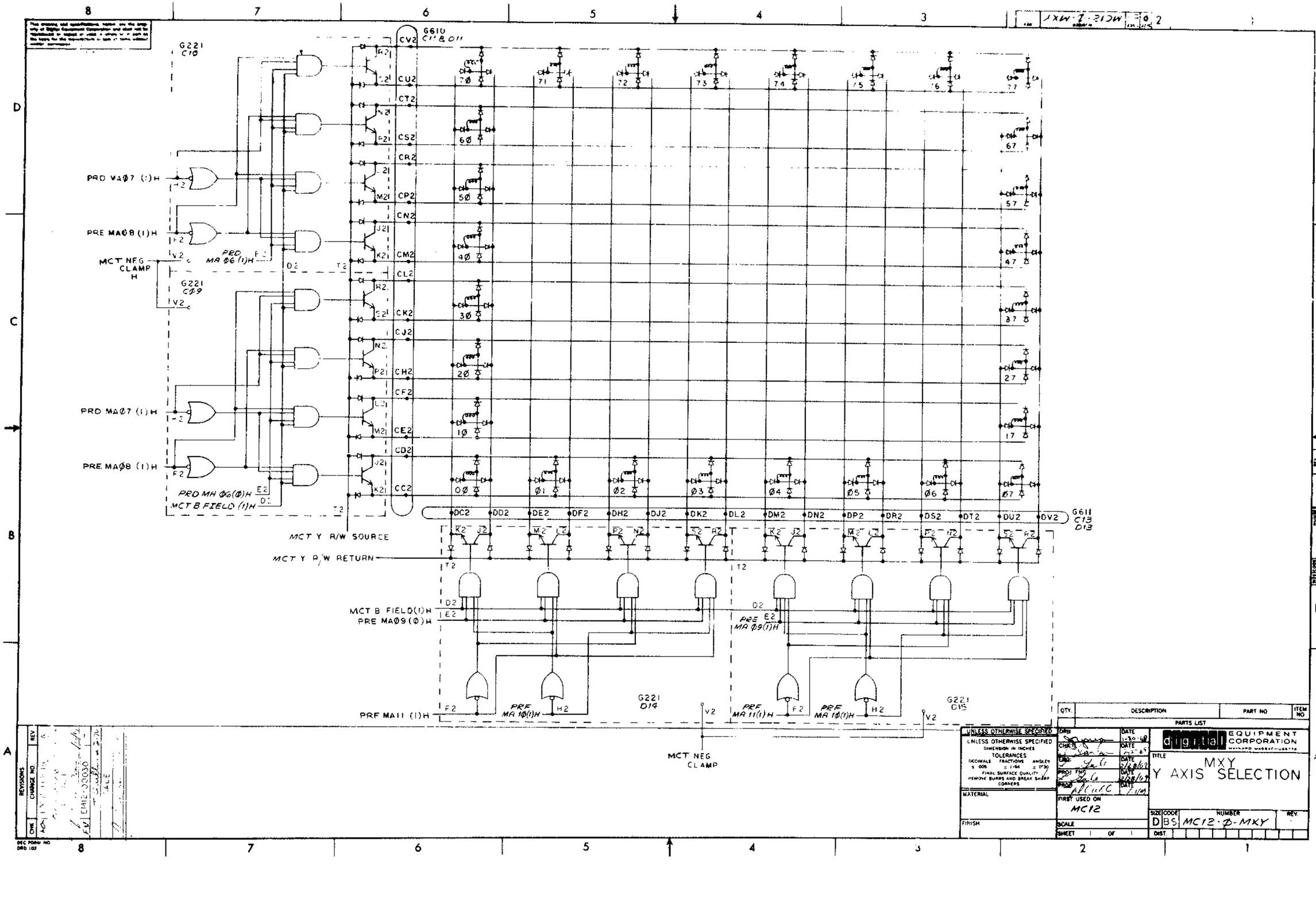
TITLE: MXX
X AXIS SELECTION

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

DIST.

MXX-Ø-2ICW SB a 2

D BS MC12-Ø-MXX B



REVISIONS			
REV.	CHANGE NO.	CHK.	ACO
A	EMF-20030	FJP	

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 1-30-68
CHK'D		DATE 2-2-68
ENG		DATE 2/8/68
PROJ ENG		DATE 2/28/68
PROG	APPROVED	DATE 7/1/68

FIRST USED ON
MC12

digital EQUIPMENT CORPORATION
MAYNARD, MASSACHUSETTS

TITLE
MXY
Y AXIS SELECTION

SIZE	CODE	NUMBER	REV.
D	BS	MC12-Ø-MXY	

SCALE

SHEET 1 OF 1

DIST.

DEC PDBU NO
DBD 102

MASTER DRAWING LIST

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

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

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

DEC FORM NO. DRA 103

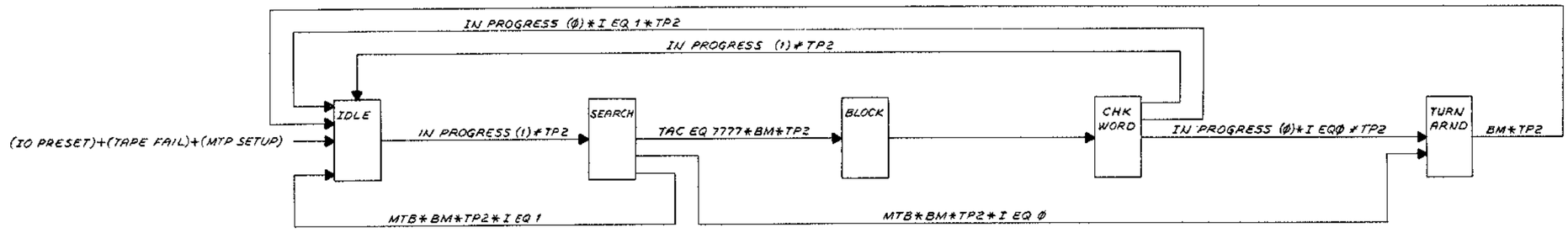
MASTER DRAWING LIST

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.
V	10/70	EM12-41	L.G.

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

DEC FORM NO. DRA 103



REVISIONS			
CHK	CHANGE NO	REV	
[illegible]	00002	A	T. Quillin L. Gale
[illegible]	EM12-00015	B	L. Gale 10-Feb-65
			15/17/65

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	Joe Arena	DATE 6 SEPT 66
CHK	E. Kaplan	DATE 6/27/67
ENG	E. Kaplan	DATE 2-28-64
PROJ. ENG.	L. Gale	DATE 2-28-64
PROD.	[illegible]	DATE 6/27/67
FIRST USED ON	TC12	
SCALE		
SHEET 1 OF 1		

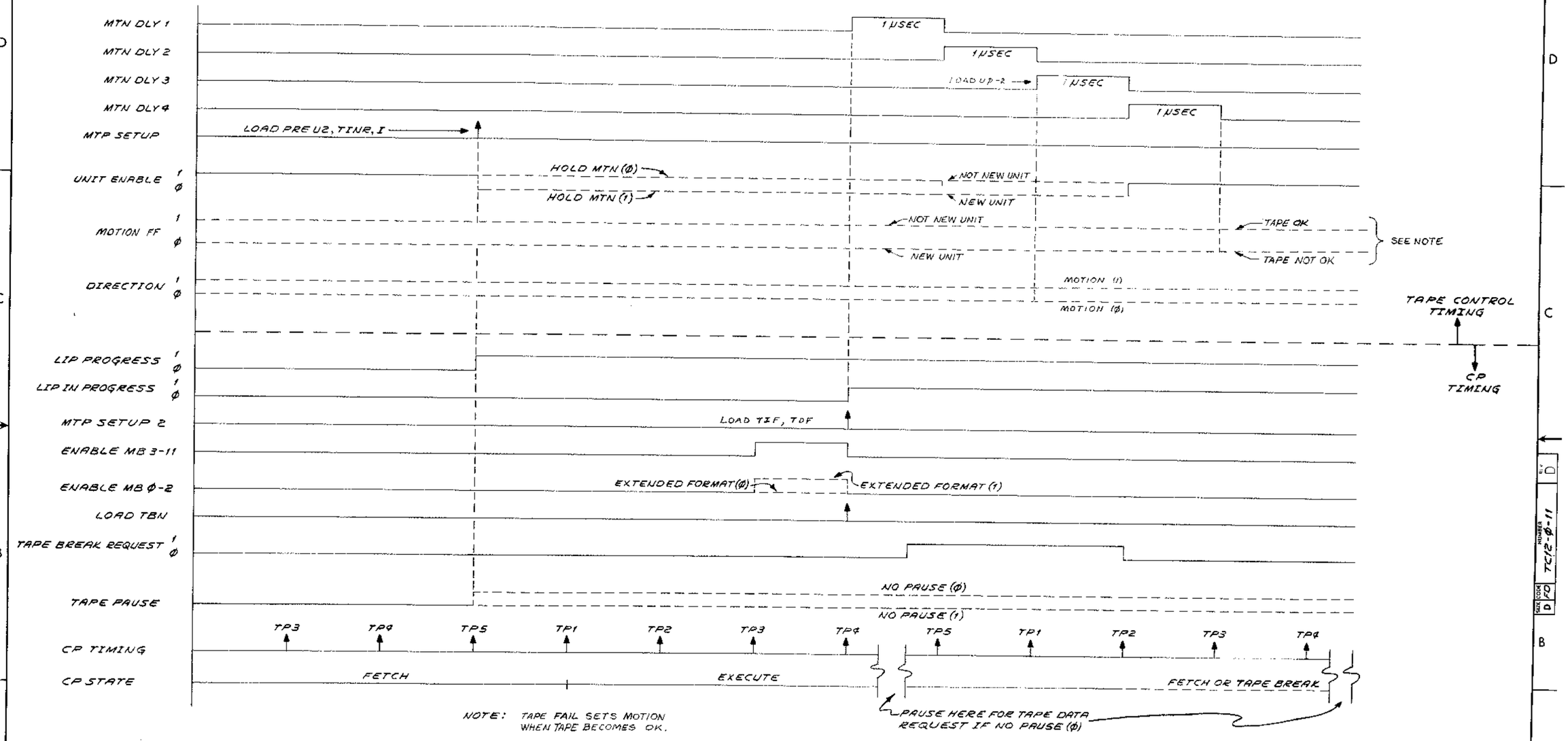
digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS

TITLE: TAPE PROCESSOR MJR. ST. FLOW

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

SIZE D CODE FD NUMBER TC12-Ø-1Ø REV B

DEC FORM NO. DRD 102A



NOTE: TAPE FAIL SETS MOTION WHEN TAPE BECOMES OK.

REVISIONS	CHK	CHANGE NO.	REV
		00002	A
T. Burke 6/18/69			
L GALE		EM12-00003	B
T. Burke 6-24-69			
L GALE		EM12-00015	C
L. GALE 8/5/69		EM12-00017	D
T. Burke 9/17/69			
L. GALE 11-5-69			
T. Burke 11-14-69			

DEC FORM NO DRD 102A

QTY.	DESCRIPTION	PART NO.	ITEM NO

PARTS LIST

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

MATERIAL

FINISH

		DATE
DRN		11-24-68
CHK'D		12/2/68
ENG		2-25-69
PROJ. ENG.		2-26-69
PROD.		2/4/69

FIRST USED ON TC12

SCALE

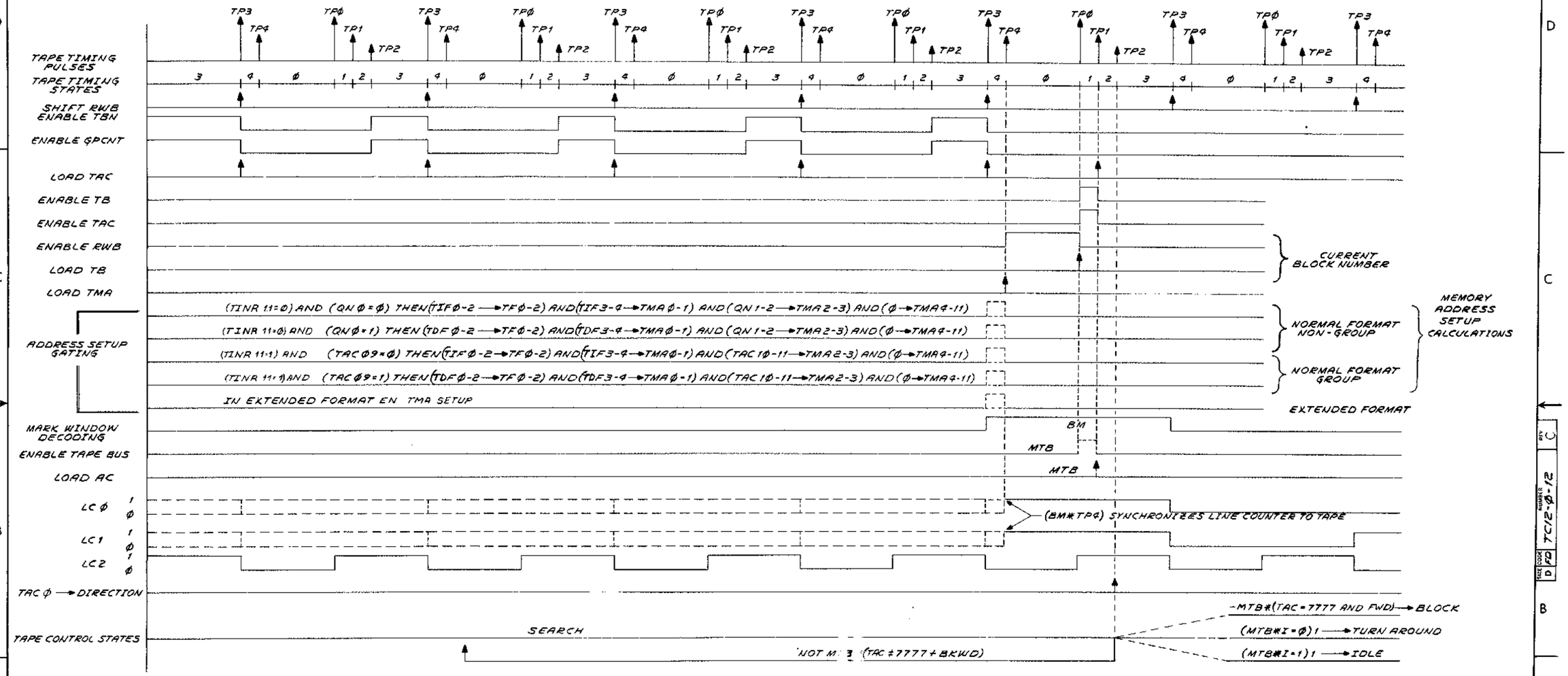
SHEET 1 OF 1

digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS

TITLE: LINC TAPE INST SETUP TIMING

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

DIST:



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

REVISIONS	CHANGE NO.	REV.
CHK	00002 T.QUILLIN L.GALE 6/18/68	A
CHK	EM12-00003 T.QUILLIN 6/24/69 L.GALE 7/15/69	B
CHK	EM12-00015 L.GALE 10/17/69	C

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

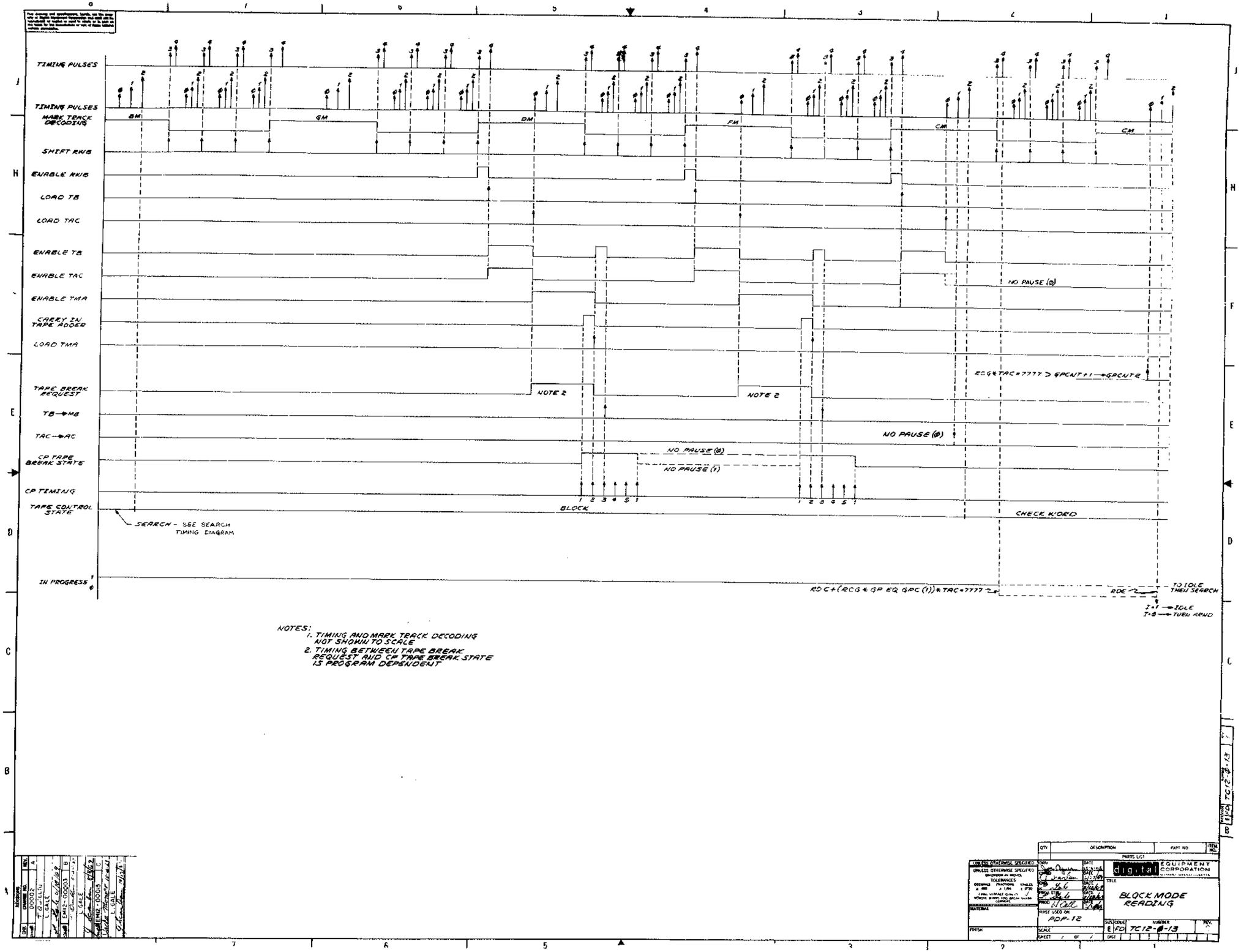
DRN. DATE 11-17-69
CHK DATE 11/17/69
ENG DATE 11-17-69
PROJ. ENG. DATE 11-17-69
PROD DATE 11/17/69
FIRST USED ON TC12
SCALE
SHEET / OF /

digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS

TITLE
SEARCH TIMING

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

DIST.



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

DWG	REV	CHANGE NO.
	A	00002
	B	EM12-00003
	C	

TOLLING
L SCALE
SIZE
DRAWING 1005
L SCALE

QTY	DESCRIPTION	PART NO	ITEM NO.

PARTS LIST

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES
FRACTIONS
DECIMALS
ANGLES
MATERIAL
FINISH

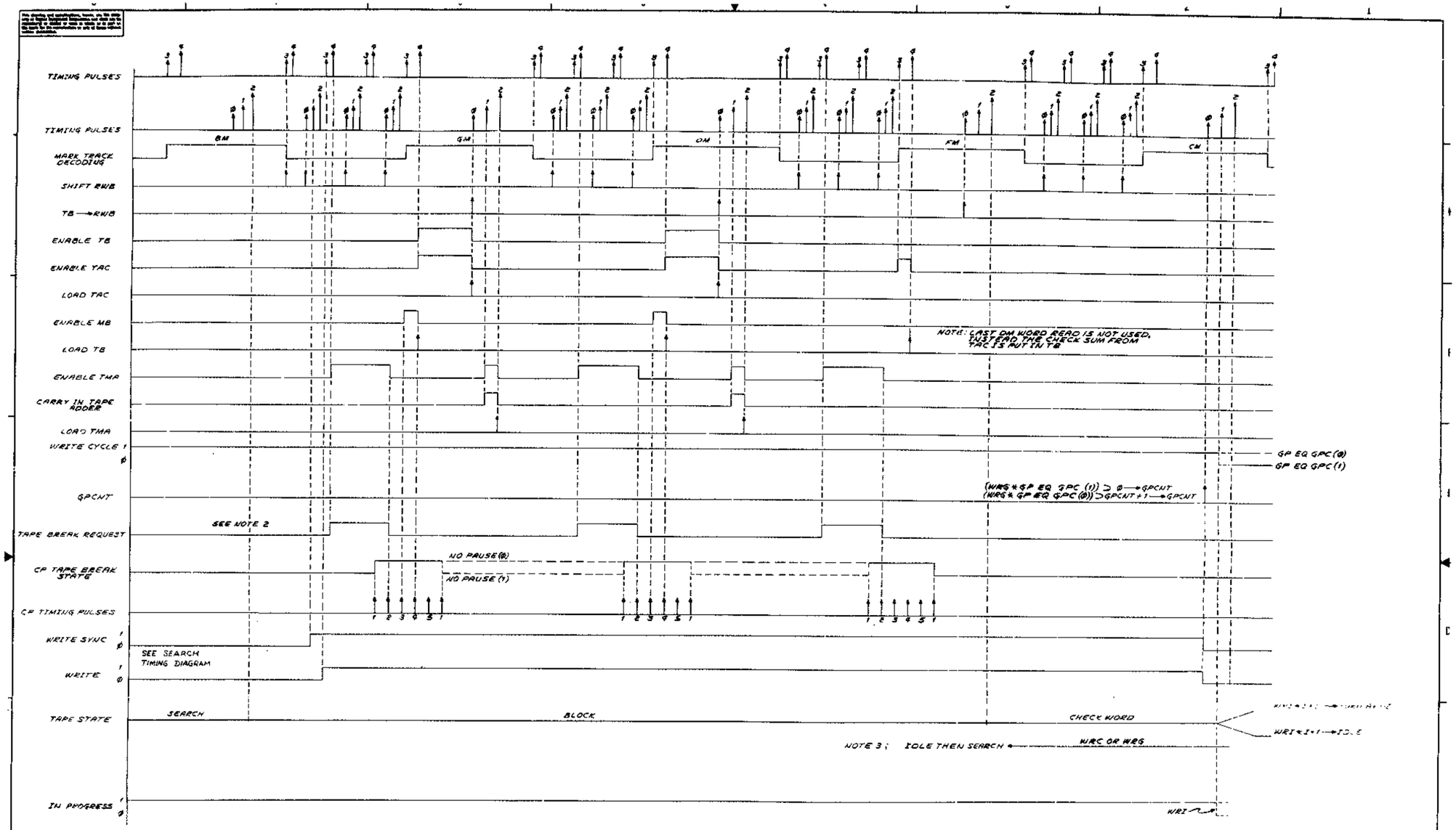
DRWN		DATE
ENG		DATE
PROJ		DATE
FIRST USED ON	PDP-12	

digital EQUIPMENT CORPORATION

TITLE: BLOCK MODE READING

SIZE/CODE: E | FD
NUMBER: TC12-B-13
REV:
SCALE:
SHEET 1 OF 1
DIST

TC12-B-13



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 PURSE WHEN WRITE CYCLE GOES TO ZERO.

REVISIONS				
ZONE	REV.	DESCRIPTION	DATE	APPROVED
	A	ECO 1-741	11/1/63	L. GALE
	B	EM12-00003 TO AGREE W/ 12-10	11/1/63	L. GALE
	C	EM12-00005	11/1/63	L. GALE

UNLESS OTHERWISE SPECIFIED
DIMENSIONS IN INCHES
TOLERANCES
DECIMALS ± .005 FRACTIONS ± 1/64 ANGLES ± 0°30'
SURFACE FINISH 125 MICRO-INCHES
MATERIAL
FINISH

QTY	DESCRIPTION	PART NO	NO
PARTS LIST			

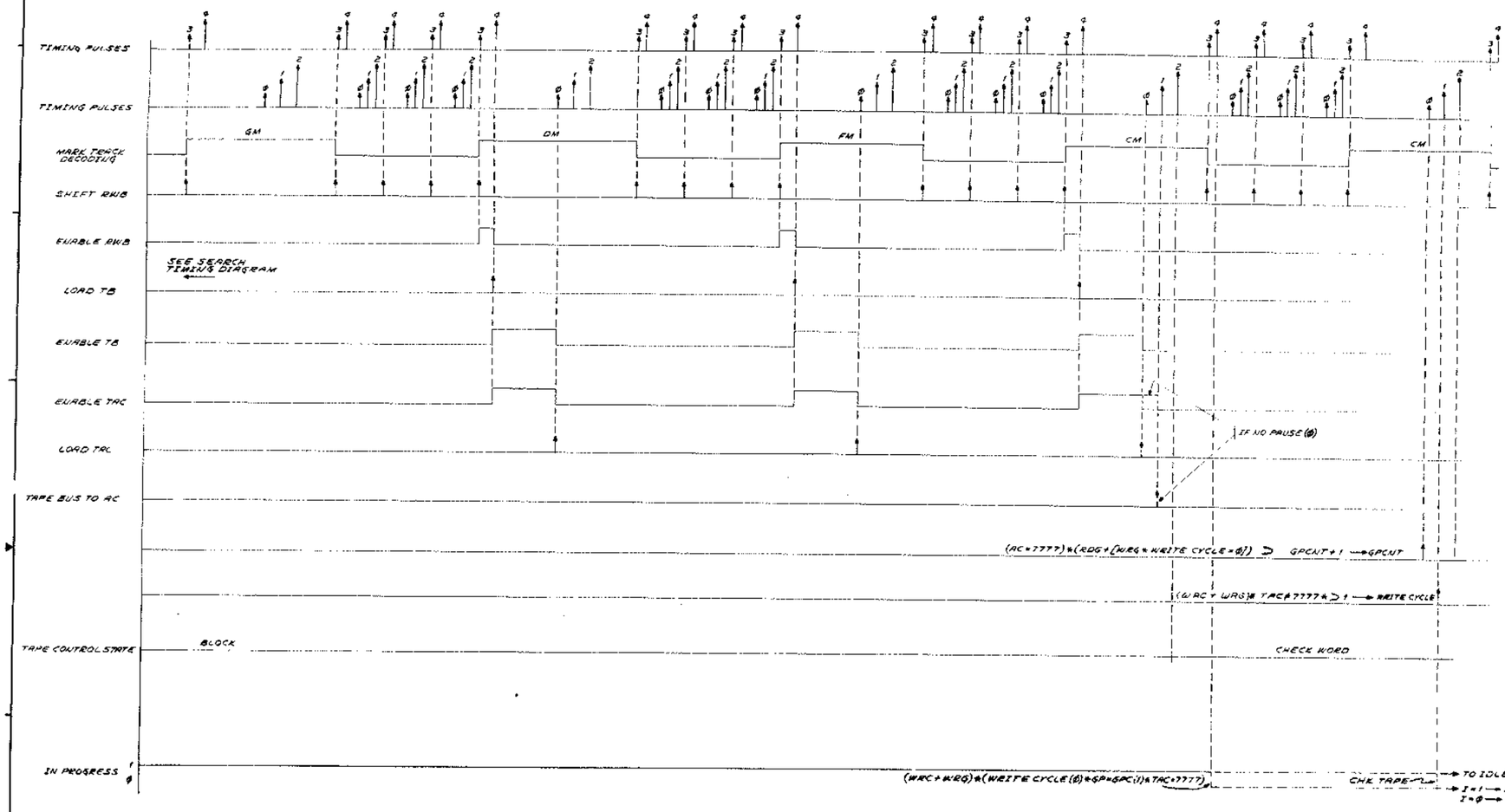
DRN		DATE 11-4-63
CHKD		DATE 11/4/63
ENGR		DATE 11-5-63
PROJ ENGR		DATE 11/6/63
APPD		DATE 11/6/63

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

digital EQUIPMENT CORPORATION

TITLE: BLOCK MODE WRITE

SIZE C | CODE | NUMBER: F07TC12-0-19 | REV. -
DRG.



QTY	DESCRIPTION	PART NO	ITEM NO.

PARTS LIST

UNLESS OTHERWISE SPECIFIED
DIMENSION IN INCHES
TOLERANCES
DECIMALS ± FRACTIONS ± ANGLES ±
MATERIAL
FINISH
NEXT ASSY
USED ON
FIRST USED ON PDP-12
APPLICATION
DO NOT SCALE DRAWING

	DATE
DRN	
DES	
ENGR	
PROJ MGR	
QUAL	

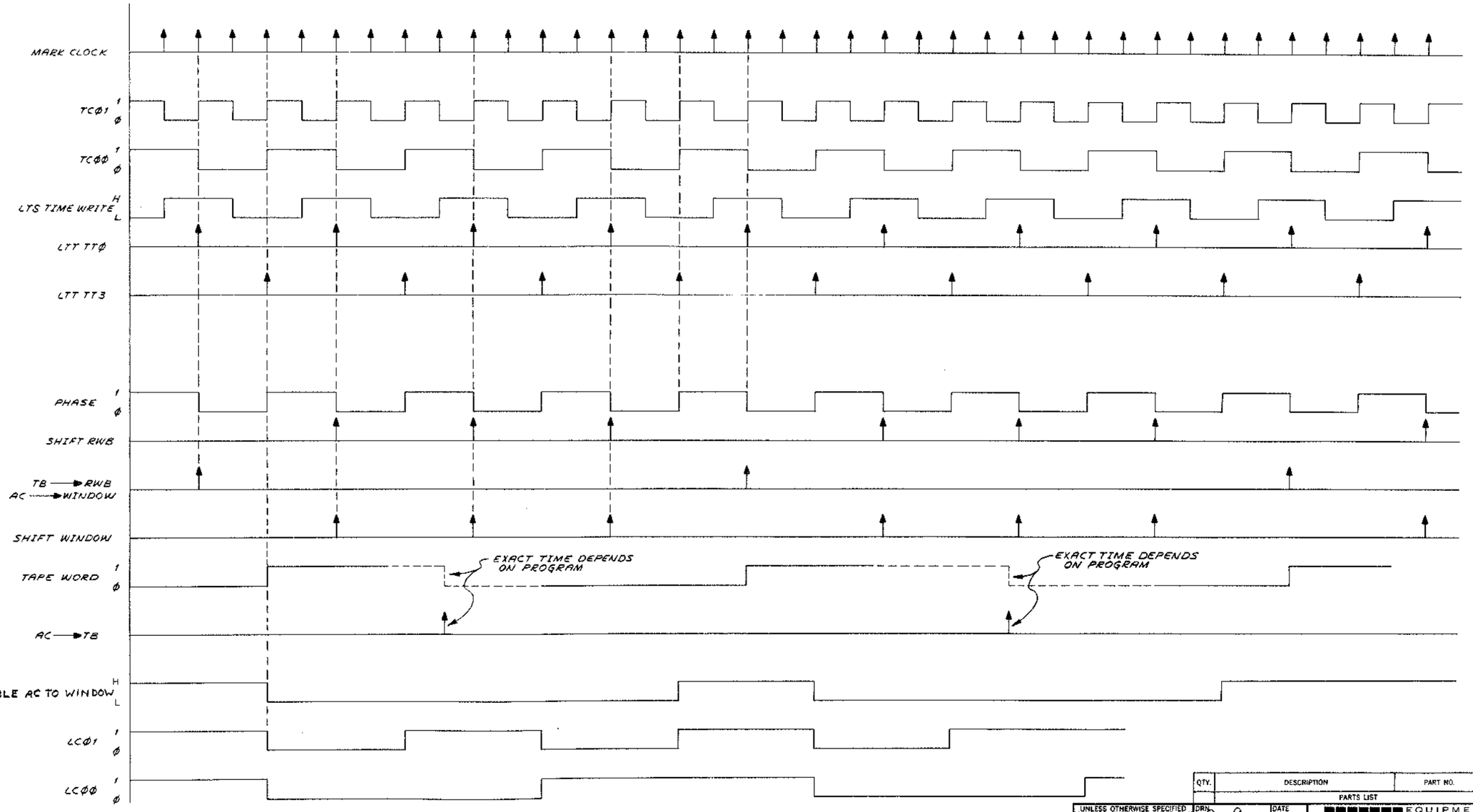
digital EQUIPMENT CORPORATION

TITLE: BLOCK MODE CHECKING

SIZE: E | CODE: FD | NUMBER: TC12-Ø-15 | REV:

SCALE: | SHEET 1 OF 1 | DIST:

REVISIONS			
LTR	DESCRIPTION	DATE	APPROVED
A	ECO 10302	6/14/68	
B	EM12-0003	8/16/68	
C	EM12-0003	11/1/68	
D	EM12-0003	11/15/68	



REVISIONS

REV	CHANGE NO	CHK
A	EM12-00003	

TC12-0-16 A
SCALE
8/6/69

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

MATERIAL

FINISH

DRN		DATE 9-21-68
CHK'D		DATE 2/2/69
ENG		DATE 5-28-69
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	TC12-0-16	A

DIST.

DEC FORM NO DRD 102A

REV. A
NUMBER TC12-0-16
SIZE CODE D FD

LCS TAPE OK L

LCS WRI TAPE H
-LTC WRITE EN H
LTC B UNIT SEL H
M113 B26
M115 C27
M111 C21
LCS TAPE OK H

+3V A34V1 H
PRE AC Ø8 (1)H
LTMR IDT 6152 H
LFT TP1 H
-LCS CLR WRITE H
M121 A34
M216 A30
LCS WRITE SYNC (1)H
LTT TP3 H
LCS WRITE SYNC (Ø)H
LCS WRITE M216 A30

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

LCS IDLE (1)L
LCS SEARCH (1)L
LCS TURN ARND (1)H
M113 B24
M112 A33

LWN CM H
LTS TTS Ø1 (1)H
M121 B32
LCS CLR WRITE L

-LCS TAPE OK L
LCS WRITE CYCLE (Ø)L
M117 B33

LIN WRI L
LIN WRC L
LIN WRG L
M115 A32
LCS WRI TAPE H

LRL (BM*SEARCH) H
LIN MTB H
M113 B26
LCS (MTB*BM*SEARCH) L

LIP IN PROGRESS (Ø)H
LCS CHK WRD (1)H
LCS MTP END H

LIN I (Ø)H
LCS SET TURN ARND L
+3V A34V1 H
LCS TURN ARND (1)H
LCS TURN ARND (Ø)H
M216 A30

LCS TAPE GO H
LTT CLOSE WINDOW L
LIP MTP SETUP L
LIP TAPE PRESET L
M115 A32
M111 A35
LCS BLOCK (1)L
LCS TAPE GO L
LCS CHK WRD (1)H
LCS CHK WRD (Ø)H

-LIN MTB H
LCS SEARCH (1)H
LCS BLOCK M216 A30

LCS CHK WRD (1)H
LIP IN PROGRESS (1)H
LIN I (1)H
LCS MTP END H
M160 B29

LCS SEARCH M216 A30
LCS IDLE (1)L

LCS TURN ARND (1)L
LCS IDLE M216 A28

LGP GP EQ GPC (1)H
LCS WRITE CYCLE (1)H
LIN TAC EQ 7777 H
LCS WRITE CYCLE (Ø)H
LIP MTP SETUP L
M121 A34
M216 A28
LCS WRITE CYCLE (1)H
LCS WRITE CYCLE (Ø)H
LTT TP1 H
LCS (CM*CHK WRD) H
M113 B24
+3V A34V1 H

LWN FM H
LTT TP2 H
LCS BLOCK (1)H
LCS WRITE (1)H
LWN CM L
LCS BLOCK (1)L
LCS CHK WRD (1)L
LWN CM L
LIN MTB L
LIN TAC EQ (7777*FWD) L
M112 C24
M112 C24
M113 B16
LCS (CM*BLOCK) H
LTT TP2 H
LTT TP1 H
LCS (CM*CHK WRD) H
LRL (BM*SEARCH) H
LTT TP2 H
M160 B29

LTT TP1 H
LIP IN PROGRESS (1)H
LCS IDLE (1)H
M115 A32
M602 B30

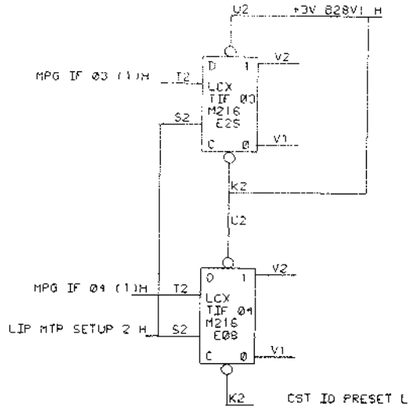
LTT TP1 H
LCS TURN ARND (1)H
LWN BM H
M115 A32
LCS TA CHANGE STATE L

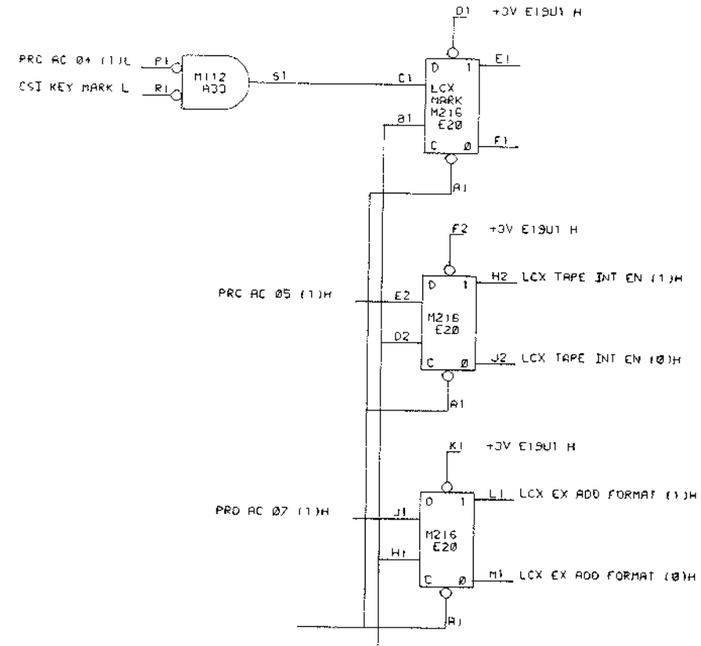
NOTE:
STATE CHANGES ON TRAILING EDGE OF CHANGE STATE PULSE

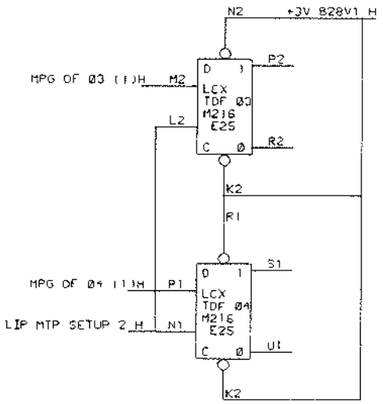
REVISIONS				REVISIONS	
CHK	CHANGE NO.	REV.	CHK	CHANGE NO.	REV.
	EM12-00003	A		EM12-00017	E
	L GALE				
	EM12-00007	B			
	B KORTLING 8-5-69				
	L GALE				
NR	EM12-00009	C			
	B KORTLING				
	L GALE 8-26-69				
NR	EM12-00015	D			
	K BOGGS 10-14-69				
	J SCANLAN 10-17-69				

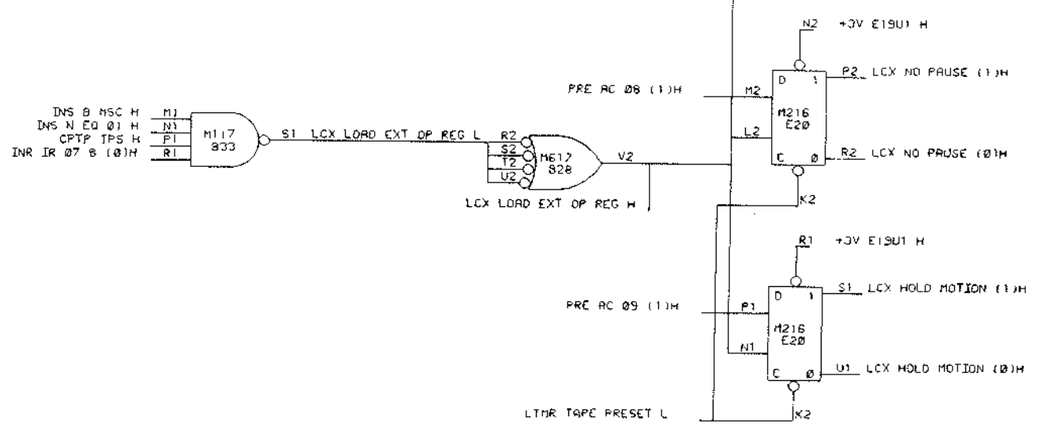
DRN. D SHEPARD	DATE 3-10-69	digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS
CHK'D. J BISCHETS	DATE 3-10-69	
ENG. L GALE	DATE 3-10-69	TITLE: TAPE CONT STATES + INST
PROJ. ENG. L GALE	DATE 3-10-69	
PROD. D CALL	DATE 3-10-69	
FIRST USED ON: TC12		SIZE: D; CODE: BS; NUMBER: TC12-0-LCS; REV: E
SCALE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

LIP TAPE PRESET L



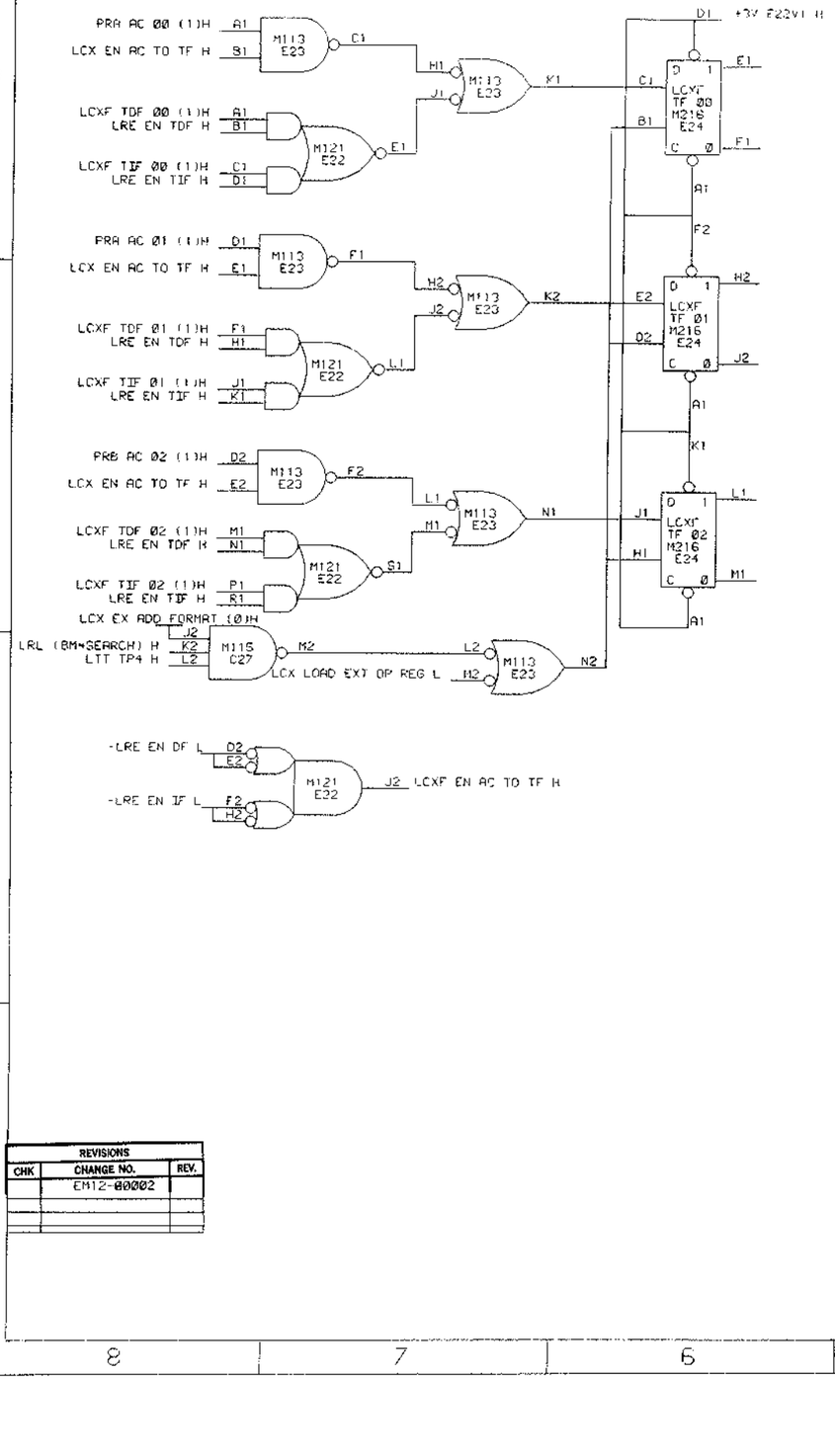


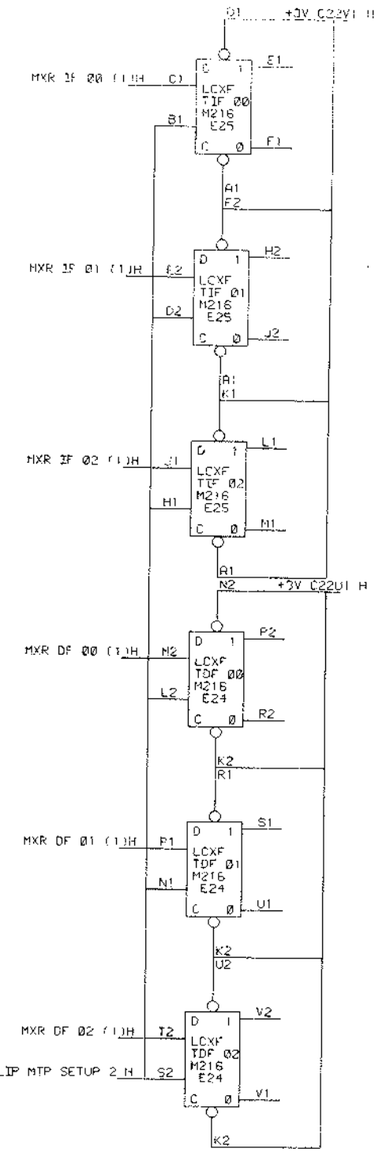




REVISIONS		
CHK	CHANGE NO.	REV.
	EM12-00002	A
	A. WASHINGTON	
	L. GALE	
	EM12-00007	B
	BRUCE KORTELING	
	L. GALE	

DRN. D.L. SHEPARD	DATE 3-9-69	digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS
CHK'D. J.R. BISONETE	DATE 3-9-69	
ENG. L. GALE	DATE 3-9-69	TITLE TAPE EXTENDED OPERATIONS
PROJ. ENG. L. GALE	DATE 3-9-69	
PROD. D. CALL	DATE 3-9-69	
FIRST USED ON TC12		SIZE D / CODE 65 / NUMBER TC12-0-LCX / REV. B
SCALE		
SHEET 1 OF 1		DIST.





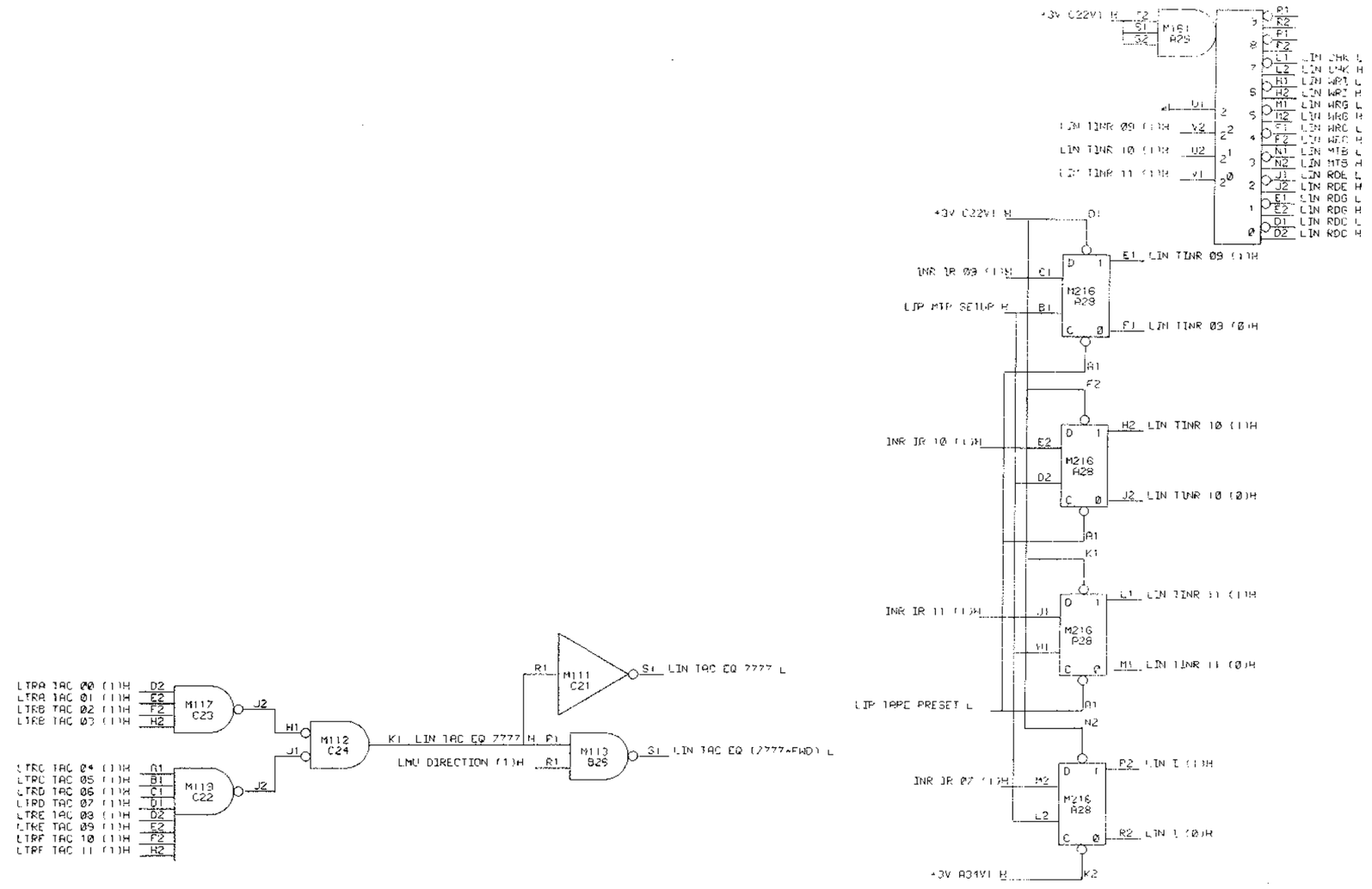
REVISIONS		
CHK	CHANGE NO.	REV.
	EM12-00002	

DRN. D.J. SHEPARD	DATE 3-9-69	digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS	
CHK'D. J.K.BISONETE	DATE 3-9-69	TITLE TAPE EXTENDED FIELDS	
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 85
SCALE		NUMBER TC12-0-LCXF	REV. A
SHEET 1 OF 1		DIST.	

LGP GPCNT 2 (0)H
LGP GPCNT 1 (0)H
LGP GPCNT 0 (0)H
M115 C25
M113 A36
LGP GPCNT 0 (1)H
M113 A36
LGP GPCNT 1 (0)L
LGP GPCNT 2 (0)L
M113 A36
LGP GPCNT 1 (0)H
LGP GPCNT 2 (0)H
LGP GPCNT 1 (1)H
LGP GPCNT 2 (1)H
M121 B32
+3V B32U1 H
LGP GPCNT0 M216 B31
LGP GP 00 (0)H
LGP GP 00 (1)H
M121 B32
+3V B32U1 H
LGP GPCNT1 M216 B31
LGP GP 01 (0)H
LGP GP 01 (1)H
M121 B32
+3V B32U1 H
LGP GPCNT2 M216 B31
LGP GP 02 (0)H
LGP GP 02 (1)H
M121 B32
LGP COUNT GPCNT H
LGP 0 TO GPCNT L
M111 A35
LIN TINR 11 (0)L
M113 A36
M115 C25
+3V A31U1 H
LGP GP EQ GPC M216 B37
LTT TP2 H
LIP TAPE PRESET L
LCS WRITE CYCLE (0)H
LIN WRG H
M113 C16
LGP GPCNT STROBE H
LIN TAC 20 7777 H
M115 C25
LIN RDC L
M113 B16
M113 B38
LGP COUNT GPCNT H
LIN WRG H
LGP GPCNT STROBE H
LCS WRITE CYCLE (1)H
LGP GP EQ GPC (0)H
M117 B33
LIP MTP SETUP L
M113 A36
LIN WRG H
LCS WRITE CYCLE (1)H
LGP GP EQ GPC (1)H
LGP GPCNT STROBE H
M117 A35
PRA MB 00 (1)H
PRA MB 01 (1)H
PRA MB 02 (1)H
LIP MTP SETUP 2 H
LGP GP 0 M216 B31
LGP GP 1 M216 B31
LGP GP 2 M216 B31
+3V B32V1 H
LCS (CM-CHK WRD) H
LTT TP0 H
M113 B24
LGP GPCNT STROBE L
M111 A35
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 7-23-70	
	G GALE 7-23-70	
JL	EM12-00041	C
	Drafted 10/30/72	

DRN. D SHEPHARD	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 GROUP COUNTER
PROJ. ENG. L GALE	DATE 3-10-69	
PROD. D CALL	DATE 3-10-69	
FIRST USED ON: TC12		SIZE D · CODE 85 · NUMBER TC12-0-LGP · REV. C
SCALE		DIST.
SHEET 1 OF 1		



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.

LIP TAPE PRESET L — A1
LTS LC 00 (1)L — C1
LTS LC 01 (0)H — B1
M216 D19
F1 LIP TAPE WORD (1)H
E1 LIP TAPE WORD (0)H
LTM CLEAR TAPE WORD L — D1

INS MTP H — T2
CPT TSSB (1)H — U2
CPS FETCH B (1)H — V2
M115 B34
V1 — M2
M111 C21
N2 LIP MTP SETUP H
LIP MTP SETUP L

LCS WRI TAPE H — M1
LCS WRITE CYCLE (1)H — N1
LCS BLOCK (1)H — P1
LTS LC 00 (0)H — R1
LTT TP4 H — R2
LTS LC 01 (1)H — S2
+3V A31V1 H — T2 U2
M119 A31
V2

LIN TINR 09 (0)H — M1
LWN (FM+DM) H — N1
LCS BLOCK (1)H — P1
LTT TP0 H — R1
M117 C23
S1
M115 C25
U1 LIP TAPE BRK REQ (1)H

CPS T BREAK (1)H — T2
CPTP TP2 H — U2
M113 A36
V2
LIP TAPE PRESET L
D2 E2 F2
M115 C25
H2 LIP TAPE BRK REQ (0)H

LWN CM H — D1
LCS BLOCK (1)H — E1
M113 C16
F1 LIP (CM*BLOCK) L
D2
LCS (MTB*BM*SEARCH) L — E2
M113 C16
F2
LTS TTS 01 (1)H
LCX NO PAUSE (0)H
F1 H1 J1 K1
M117 C23
L1 LIP CHK SUM TO AC L
A1
M111 D21
B1
LTT TP1 H — M1
M113 C16
N1 LIP CHK SUM LD AC L

LTM TAPE PRESET L — A1
IOC IO PRESET L — B1
M113 C16
C1 LIP TAPE PRESET H
K2 L2 M2 N2
M617 B28
P2 LIP TAPE PRESET L

LCS WRITE CYCLE (0)L — H1
LIN TINR 09 (0)L — J1
M113 C16
K1
LGP GP EQ GPC (1)H
LIN TAC EQ 7777 H
LCS CHK WRD (1)H
LTT TP4 H
F1 H1 J1 K1 K2 L2 M2 N2
M119 C22
P2 LIP CHK OK L

LCX NO PAUSE (0)H — H2
CST DO (1)H — J2
M112 D16
K2
LIP PROGRESS (1)L — A1 B1
M112 D16
C1 LIP TAPE PAUSE H

LCS BLOCK (1)L — D1
LIN TINR 09 (0)L — E1
M112 D16
F1 LIP TAPE CUT H

LIP MTP SETUP 2 L — F2
LIP END INST L — J2
LIN TINR 10 (1)H — N2
LCS (CM*CHK WRD) H — P2
LTT TP1 H — R2
M115 C25
S2
M115 C25
M2
LCS (MTB*BM*SEARCH) L — K2 L2
M216 D19
E2 D2
H2 LIP IN PROGRESS (1)H
J2 LIP IN PROGRESS (0)H
R1 LIP TAPE PRESET L

INS MTP H — T2
CPTP TP4 H — U2
CPS EXECUTE B (1)H — V2
M115 A32
V1 LIP MTP SETUP 2 L
D2 E2 F2 H2
M617 B28
+3V B28U1 H
J2 LIP MTP SETUP 2 H

LIN MTB H — M1
LWN BM H — N1
-LTD ACIP H — P1
R1
M617 B28
S1
LIP CHK OK L — T2
LIP END INST L — U2 V2
M115 C27
V1
LIP CLR PROGRESS H
K1 LIP MTP SETUP L

E1
LTT TP2 H — E2
M304 C19
J1
K1
K2
D J1 H1 K1 M216 D19 C
L1 LIP PROGRESS (1)H
M1 LIP PROGRESS (0)H
A1
LIP TAPE PRESET L

LTMR IOT 6154 H — K2
-LTM EN AC H — L2
M121 B32
P2 LIP TAPE BUS TO AC L
CPT TSS B (1)H — M2 N2

LRE MSC TAC TO AC L — N2
LRE EN EX OP BUF L — P2 R2
M115 B27
S2 LIP MSC TAC TO AC H

LIP MTP SETUP L — L1
LIP TAPE PRESET L — M1
M113 B16
N1 K2 L2
LTMR IOT 6151 H — M2
PRC AC04 (1)H — N2
M121 E22
P2

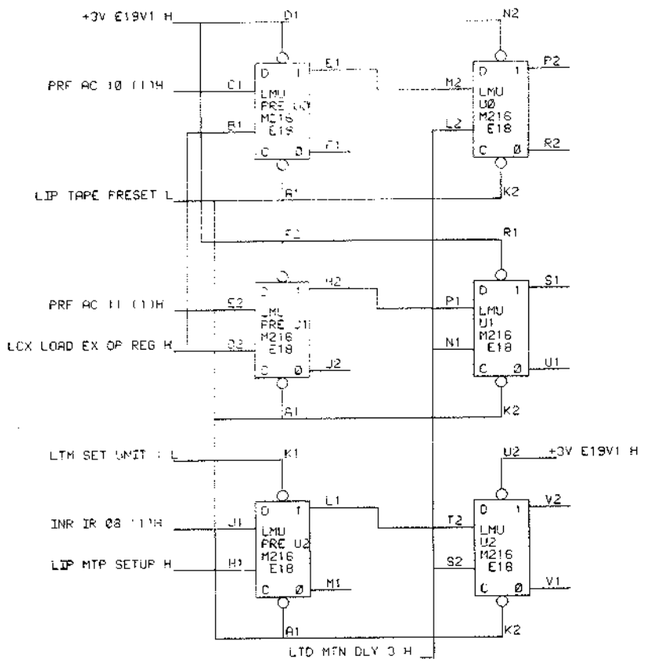
+3V D29V1 H — K2
T2
D LIP TAPE DONE M216 C31 C
V1 LIP TAPE DONE (1)H
V2
U2
LIP PROGRESS (0)H — S2
LIP TAPE PRESET L — A1
PRC AC05 (1)H — P1
LTMR IOT 6151 H — S1
M115 C29
U1 LIP TAPE SKIP L

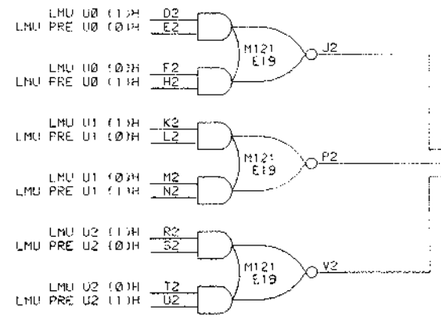
LCX TAPE INT EN (1)H — L2
LIP TAPE DONE (1)H — M2
M113 C16
N2 LIP TAPE INTERRUPT L

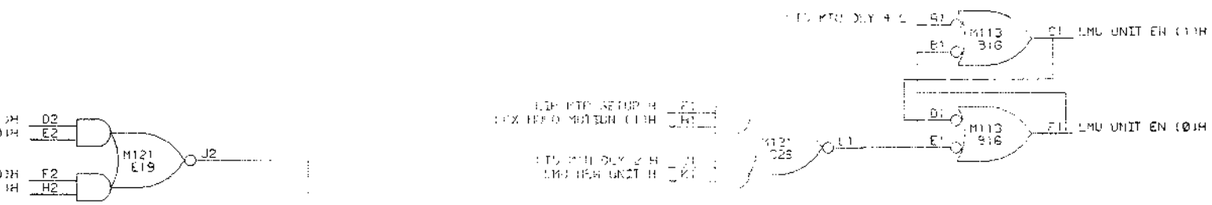
REVISIONS			REVISIONS		
CHK	CHANGE NO.	REV.	CHK	CHANGE NO.	REV.
CD	EM12-00002	A		EM12-00032	E
	J FASSHAUER 1-15-69				
	L GALE 4-24-69				
	EM12-00003	B			
	ADS				
	L GALE				
NR	EM12-00007	C			
	B KORTELING 8-25-69				
	L GALE 8-26-69				
	EM12-00017	D			

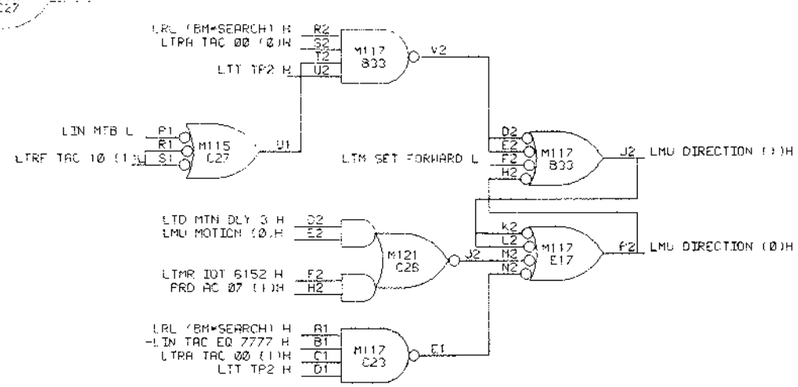
DRN D SHEPARD	DATE 3-9-69	digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS	
CHK'D J BISONETE	DATE 3-9-69		
ENG L GALE	DATE 3-9-69	TITLE INTERPROCESSOR SIGNALS	
PROJ. ENG L GALE	DATE 3-9-69		
PROD D CALL	DATE 3-9-69		
FIRST USED ON TC12		SIZE D	CODE 85
SCALE		SHEET OF	DIST.

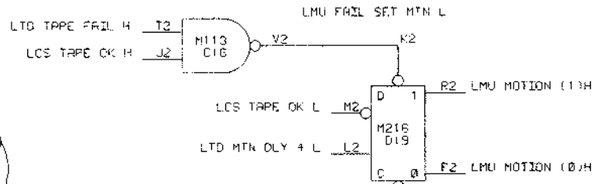
NUMBER TC12-0-LIP — REV. E

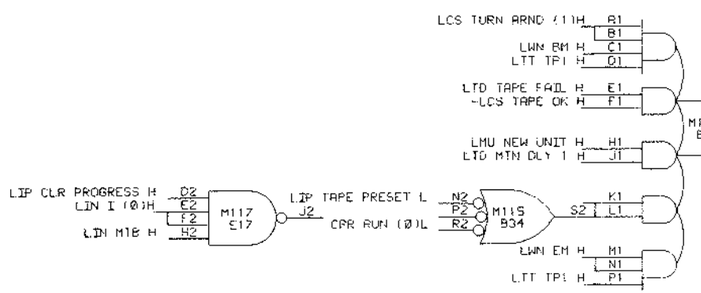












REVISIONS		
CHK	CHANGE NO.	REV.
NR	EM12-00003	A
	RDS	
	J SCANLAN 8/7/69	
	EM12-0017	B

DRN. D SHEPARD	DATE 5-10-69	digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS
CHK'D. J BISONETTE	DATE 5-10-69	
ENG. L GALE	DATE 5-10-69	TITLE: TAPE UNIT AND MOTION
PROJ. ENG. L GALE	DATE 5-10-69	
PROD. D CALL	DATE 5-10-69	
FIRST USED ON: TC12		SIZE D · CODE BS · NUMBER TC12-0-LMU · REV. B
SCALE		SHEET 1 OF 1 · DIST.

CPT TS5 B (1)H
LIP IN PROGRESS (0)H
M117 E17
M111 D21
H1 LRE (TS5 * INPRG (0)) H

INS B MSC H
INR IR 07 B (0)H
INS N EQ 03 H
M117 A25
LRE MSC TAC TO AC L

INS B MSC H
INR IR 07 B (1)H
CPT TS5 B (1)H
INS N EQ 03 H
LTM EN AC L
M117 A25
M617 A24
J2 LRE EN AC H

LIP CHK SUM TO AC L
LRL (BM*SEARCH)L
M113 B26
LTS TTS 01 (1)H
LCS WRITE (1)L
LWN FM L
M112 C24
LTS TTS 04 (1)H
LRE (WRITE * FM)H
M121 B25
LTM TEST SUM L
M617 A24
E1 LRE EN TAC H

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

LRL BLOCK EN TAC LD H
LCS BLOCK (1)H
LTS TTS 00 (1)H
M115 A27
LTM TEST SUM L
LTM EN TB L
M617 A24
L1 LRE EN TB H

INS MTP H
SLA EX TS4 H
LCX EX ADD FORMAT (1)H
M115 A27
N1 LRE EN MB 0-2 H

LRL (BM*SEARCH)H
LTS TTS 01 (1)H
CPT TS2 (1)H
LRE READ IN MEM H
M121 B25
P2

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

LIP TAPE BRK REQ (1)L

LCS WRITE SYNC (1)H
LWN (GM+DM) H
LTS TTS 02 (1)H
M115 A27
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 01 H
LRE (TSS * INPRG (0)) H
INR IR 07 B (1)H
M117 C23
LRE EN EX OP BUF L

LRE READ IN MEM L

CPS TAPE BREAK (1)H
LIN TINR 09 (0)H
LCS BLOCK (1)H
M115 B27
M111 C21
CPT TS2 (1)H
LRE READ IN MEM H
M113 A26
M113 A26
P1
R1
S1

M111 D21
E1 LRE TAPE CARRY IN L

LTM EN TMA SETUP L

LCX EX ADD FORMAT (1)L
LRL (BM*SEARCH) H
LTS TTS 04 (1)H
M112 C24
M113 B26
M112 C24
M111 C21
M617 B23
P2 LRE EN TMA SETUP H

LCS BLOCK (1)H
LRL BLOCK EN TAC LD H
LCS WRITE (0)H
LTS TTS 04 (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 00 (1)H
M113 A26

LIN TINR 11 (0)H
LGP GP 00 (1)H
LIN TINR 11 (1)H
LTRE TAC 09 (1)H
LIN TINR 11 (0)H
LGP GP 00 (0)H
LIN TINR 11 (1)H
LTRE TAC 09 (0)H
M115 A27
M113 A26
C1 LRE EN GP 1-2 H
F1 LRE EN TDF H
J1
F2 LRE EN TAC 10-11 H
N1
K1 LRE EN TIF H
U1

LTM EN TBN L
LTM EN TBN L
LTM EN TBN L
M617 A29
S1 LRE EN TBN H

LCS SEARCH (1)H
-LWN 6M H
LTS TTS 03 (1)H
M115 A27
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

DRN. D SHEPARD	DATE 8-9-69	digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS
CHK'D. J BISONNETTE	DATE 8-9-69	TITLE: TAPE REG ENABLE CTRL
ENG. L GALE	DATE 8-9-69	
PROJ. ENG. L GALE	DATE 8-9-69	
PROD. D CALL	DATE 8-9-69	
FIRST USED ON: TC12		SIZE D | CODE BS | NUMBER TC12-0-LRE | REV. C
SCALE		DIST.
SHEET 1 OF 1		

LTM LOAD TMA L

LWN (GM+DM) H F1
LTT TP2 H R1
LCS WRITE (1)H S1
M115 B27 U2

LRE READ IN MEM H A1
CPTP TP2 H B1
M113 B24 C2

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

M617 A23 R2 S2 T2 U2
V2 LRL LOAD TMA H
LRL SEARCH SET MA L

INS B MSC H A1
INS N EQ Ø3 H B1
INR 1R Ø7 B (1)H C1
CPTP TP5 H D1
M117 A25 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 S2 T2
V2 LRL LOAD TBN H

LRL EN WRITE LD RWB H J1
M111 C21 K1
LCS WRITE (1)H J2
LTT TP0 H L2
M115 B27 K2
M2 LRL WRITE SHIFT RWB H

LTT TP3 H D2
LCS WRITE (Ø)H E2
M113 B24 F2
LTM SHIFT RWB L N2
M617 A24 K2 L2 M2
P2 LRL SHIFT RWB H

LCS SEARCH (1)H H1
LWN BM H J1
M113 B24 X1
M111 C21 L1
M1 LRL (BM+SEARCH)H
LTT TP0 H A1 B1
LTT TP4 H C1
LRL (WRITE + FWD)H D1
M121 B25 E1

LRL (BM+SEARCH) L

LTM LOAD TB L
M617 A23 E2 S2 T2 U2
V2 LRL LOAD TB H

TT TP4 H M1
LCS BLOCK (1)H N1
LCS WRITE (Ø)H P1 R1
M117 A25 S1

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

LTT TP0 H E1 F1
LCS BLOCK (1)H H1
M115 B27 J1

LRL BLK LD TAC L A1
TP8 LD TAC L B1
M617 A23 C1 D1
E1 LRL LOAD TAC H

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

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

LTM LOAD TAC H J1
LTM LOAD TAC H K1

LTT TP0 H K1
LCS WRITE (1)H L1
M115 B27 M1
N1 LRL LOAD RWB L

LTM TB TO RWB L M1 N1 P1 R1
M617 A23
S1 LRL TB TO RWB H

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	TC12-0-LRL	A

DIST.

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

G853 F10
K2
D2
L2
D2 W520 F11 H2
E2
K2 W520 F11 N2
L2
U2 W803 F16 T2 LTC B UNIT SEL H
V2

LTC SINGLE UNIT H
LTC WRITE ON H

S2 W803 F16 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.		DATE
CH'D.	SHEPARD	8-8-69
	L.K. BISCHOFF	8-8-69
ENG.		DATE
	GALE	8-8-69
PROJ. ENG.		DATE
	GALE	8-8-69
PROD.		DATE
	GALE	8-8-69
FIRST USED ON		
TC12		
SCALE		
SHEET 1 OF 1		

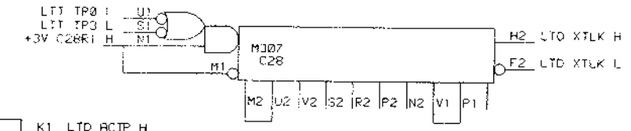
digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS

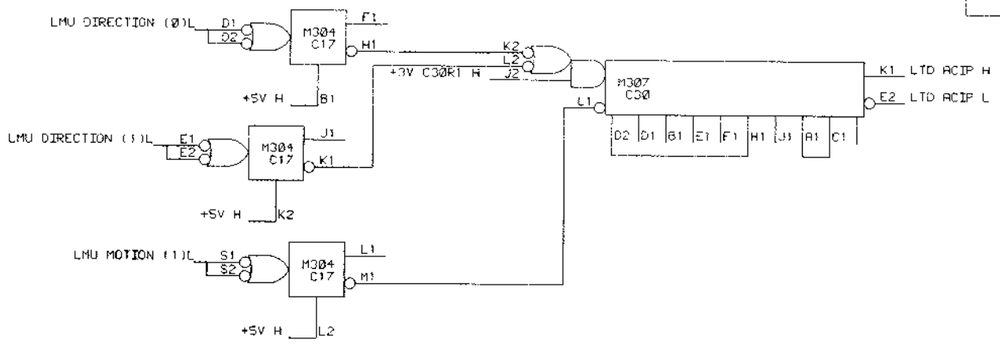
TITLE: TRANSPORT CONTROL

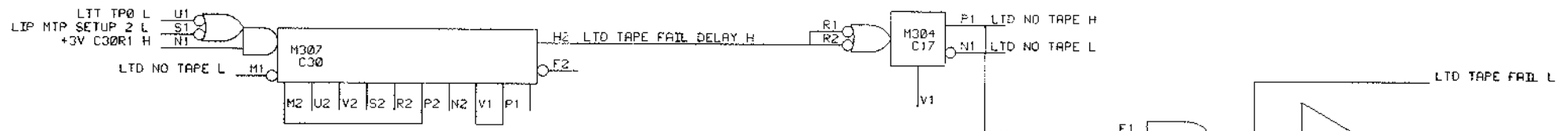
SIZE	CODE	NUMBER	REV.
D	BS	TC12-Ø-LTC	C
DIST.			

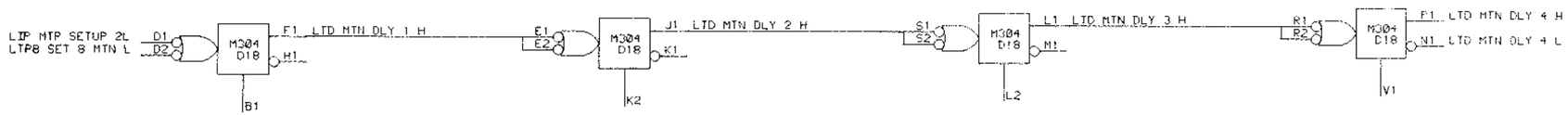
DELAY SETTINGS			
DELAY	TUSE	TOLL. ±	SWITCH SET *
TTOK	48 USEC	± 4	5
ACIP	180 MSEC	± 20	1
XTLX	7 USEC	± 1	5
TAPE FAIL	300 MSEC	± 50	1
MARK CLOCK	7.5 USEC	± 0.3	5

* ON M307 REV.B AND GREATER-SEE B-CS-M307-0-1 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	HC	EM12-00038	H
	A WASHINGTON				
	J SCANLAN			D Shepard 3-17-70	
	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 85
SCALE		NUMBER TC12-0-LTD	REV. H
SHEET 1 OF 1		DIST.	

PRD AC 06 (1)H A1
LTMR IOT 6151 H S1
M113 B38
C1 LTM SIMULATE TP0 L

LTMR IOT 6151 H D1
PRD AC 07 (1)H E1
M113 B38
F1 LTM SIMULATE TP1 L

PRA AC 00 (1)H D2
LTMR IOT 6152 H E2
M113 B38
F2 LTM TAPE PRESET L

PRA AC 01 (1)H H1
LTMR IOT 6152 H J1
M113 B38
K1 LTM SHIFT RWB L

PRB AC 02 (1)H H2
LTMR IOT 6152 H J2
M113 B38
K2 LTM TB TO RWB L

PRB AC 03 (1)H L1
LTMR IOT 6152 H M1
M113 B38
N1 LTM TEST SUM L

PRC AC 04 (1)H L2
LTMR IOT 6152 H M2
M113 B38
N2 LTM CLEAR TAPE WORD

PRC AC 05 (1)H P1
LTMR IOT 6152 H R1
M113 B38
S1 LTM SET FORWARD L

PRD AC 06 (1)H P2
LTMR IOT 6152 H R2
M113 B38
S2 LTM SET UNIT 1 L

LTMR IOT 6154 H U2
LTMR MAINT IR 00 (0)H K2
LTMR MAINT IR 01 (0)H L2
M116 B04
M2 LTM EN AC L

LTMR MAINT IR 00 (0)L T2
LTMR MAINT IR 01 (1)L U2
M112 A33
V2

LTMR IOT 6154 H A1
LTMR MAINT IR 02 (0)H S1
LTMR MAINT IR 03 (0)H C1
M117 B36
E1 LTM EN TMR SETUP L

LTMR IOT 6154 H F1
LTMR MAINT IR 02 (0)H H1
LTMR MAINT IR 03 (1)H J1
K1
M117 B36
L1 LTM EN TBN L

LTMR IOT 6154 H M1
LTMR MAINT IR 02 (1)H N1
LTMR MAINT IR 03 (0)H P1
R1
M117 B36
S1 LTM EN TB L

LTMR IOT 6154 H D2
LTMR MAINT IR 02 (1)H E2
LTMR MAINT IR 03 (1)H F2
H2
M117 B36
J2 LTM EN RWB L

LTMR IOT 6154 L P2
LTMR MAINT IR 00 (1)L R2
M112 A33
S2

LTMR MAINT IR 01 (0)H K2
LTMR MAINT IR 02 (0)H L2
LTMR MAINT IR 03 (0)H M2
N2
M117 B36
P2
A1 B1 C1 D1
M617 B23
E1 LTM EN MARK WIND H

LTMR MAINT IR 01 (0)H R2
LTMR MAINT IR 02 (0)H S2
LTMR MAINT IR 03 (1)H T2
U2
M117 B36
V2
F1 H1 J1 K1
M617 B23
L1 LTM EN STATES H

LTMR MAINT IR 01 (0)H A1
LTMR MAINT IR 02 (1)H B1
LTMR MAINT IR 03 (0)H C1
D1
M117 B35
E1
M1 N1 P1 R1
M617 B23
S1 LTM EN UNITS H

LTMR MAINT IR 02 (0)H A1
LTMR MAINT IR 03 (0)H B1
C1
M115 B34
D1 LTM LOAD TB L

LTMR MAINT IR 01 (0)H F1
LTMR MAINT IR 02 (1)H H1
LTMR MAINT IR 03 (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 02 (0)H E1
LTMR MAINT IR 03 (1)H F1
H1
M115 B34
J1 LTM LOAD TBN L

LTMR MAINT IR 01 (0)H M1
LTMR MAINT IR 02 (0)H P1
LTMR MAINT IR 03 (0)H R1
M117 B35
S1 N1
M111 C21
P1 LTM EN STATUS 1 H

LTMR MAINT IR 02 (1)H K1
LTMR MAINT IR 03 (1)H L1
M1
M115 B34
N1 LTM LOAD TMA L

LTMR MAINT IR 01 (1)H R2
LTMR MAINT IR 02 (0)H S2
LTMR MAINT IR 03 (1)H T2
U2
M117 B35
V2 H2
M111 C21
J2 LTM EN STATUS 2 H

LTMR MAINT IR 02 (1)H P1
LTMR MAINT IR 03 (0)H R1
S1
M115 B34
U1 LTM LOAD TAC L

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

L1
M1
M113 B24
N1 LTM LOAD TAC H

LTMR IOT 6152 H D2
IOC IO STROBE H E2
PRB AC 03 (1)H F2
M115 B34
N2 LTM LOAD SUM L

LTMR MAINT IR 01 (1)H K2
LTMR MAINT IR 02 (1)H L2
LTMR MAINT IR 03 (0)H M2
N2
M117 B35
P2 LTM EN TMA L

REVISIONS		
CHK	CHANGE NO.	REV.
	EM12-00003	A

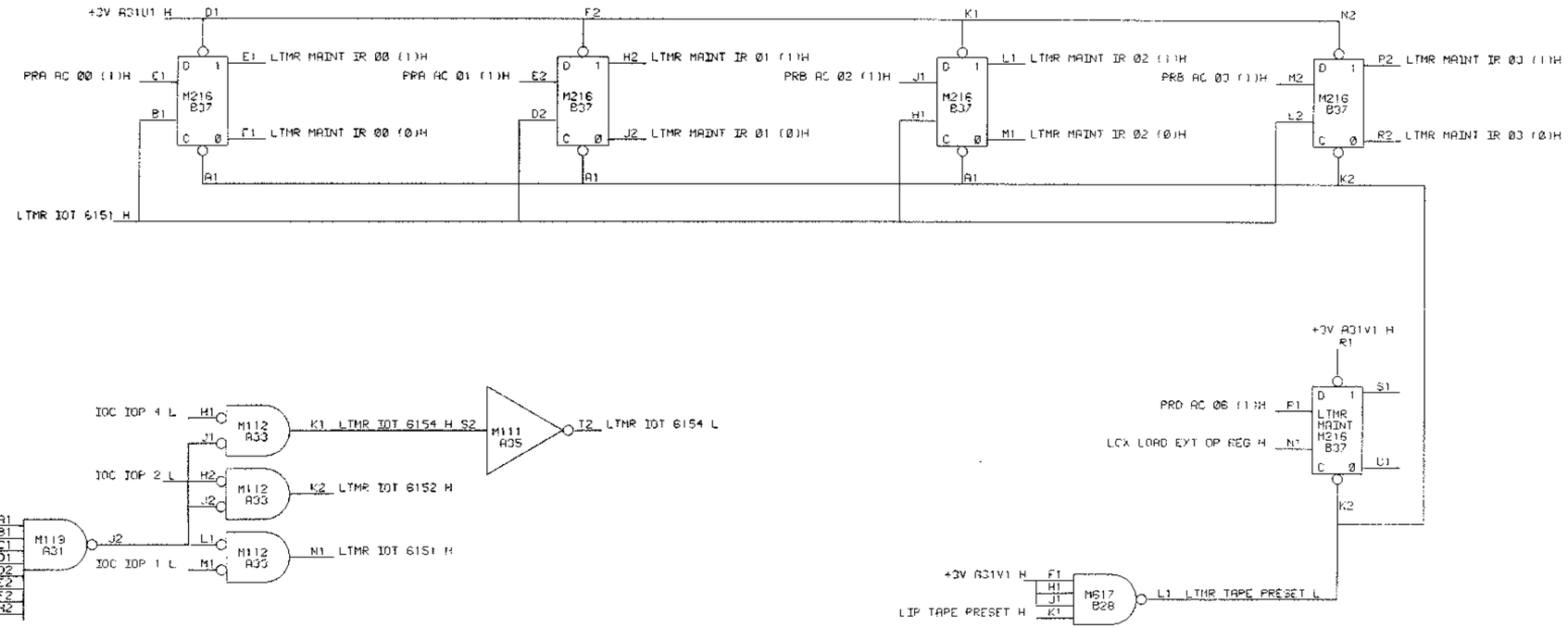
DRN. D.L. SHEPARD	DATE 2-10-69	digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS
CHKD. J.BISONETTE	DATE 2-10-69	
ENG. L.GALE	DATE 2-10-69	TITLE TAPE MAINT SIGNALS
PROJ. ENG. L.GALE	DATE 2-10-69	
PROD. D.CALE	DATE 2-10-69	
FIRST USED ON TC12		SIZE D / CODE 85 / NUMBER TC12-0-LTM / REV. A
SCALE		
SHEET 1 OF 1		DIST.

MSC 3 TAC TO AC
MSC 1 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	18 + 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 TO 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-LTMP REV. A
SCALE		DIST.
SHEET 1 OF 1		

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 AF2 BH2 BE2 | BP2 BM2 BV2 BY2

W032 E06, F06

EF2 EJ2 EH2 EK2 | EN2 ER2 EP2 ES2 | FD2 EU2 EV2 EY2 | FJ2 FF2 FH2 FE2 | FP2 FM2 FN2 FT2

LTR HEAD T H | LTR HEAD M H | LTR HEAD D1 H | LTR HEAD D2 H

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

G882 F08 | G882 F04 | G882 F07 | G882 F08 | G882 F09

LTR T READ-3 L

LTR TIME WRITE-3 L

LTR MARK CHAN L

LTR MARK WRITE-3 L

LTR D1 CHAN L

LTR DATA 1 WRITE-3 L

LTR D2 CHAN L

LTR DATA 2 WRITE-3 L

LTR D3 CHAN L

LTR DATA 3 WRITE-3 L

W6Ø3 F16

LTR T READ H

LTR M READ H

LTR D1 READ H

LTR D2 READ H

LTR D3 READ H

R1Ø7 F12

LTR TIME WRITE -3 H

LTR MARK WRITE -3 H

LTR DATA 1 WRITE -3 H

LTR DATA 2 WRITE -3 H

LTR MARK ON L

LTR WRITE ON L

N37 POWER PROTECT G916

W512 F13

LCS MARK (1)H

LTS TIME WRITE L

LWU MARK WRITE L

LCS WRITE (1)H

LTRA RWB ØØ OUT H

LTRC RWB Ø4 OUT H

LTRE RWB Ø8 OUT H

REVISIONS	REV.	CHK	CHANGE NO.
	A		00002
	B		EM12-00003

T. Quiz 6/28/68
L. GALE 6/28/68
T. Quiz 8/2/68
L GALE 8/8/68

DEC FORM NO DRD 102A

QTY.	DESCRIPTION	PART NO.	ITEM NO.

PARTS LIST

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

MATERIAL

FINISH

DRN	Joe Ogren	DATE 21 AUG 68
CHK'D	Jean Lam	DATE 2/27/69
ENG		DATE
PROJ ENG		DATE
PROG	Al Call	DATE 2/24/69

FIRST USED ON TC12

SCALE

SHEET 1 OF 1

digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS

TITLE: LTR TAPE READER-WRITERS

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

DIST.

- LTS PHASE H — BS2
BV1 — LTRA RWB ØØ OUT H

LTRA CARRY OUT ØØ L — AV2
BN1
AN2
BV2 — LTRA TAPE BUS ØØ H

BN2 BM2 — PRA AC ØØ(1) H LRE EN AC H — 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 8 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

AR1 — D 1 LTRA TMA SETUP ØØ C Ø
AT2 — D 1 LTRA TMA ØØ C Ø
AU1 — D 1 LTRA TBN ØØ C Ø
AN1 — D 1 LTRA TAC ØØ C Ø — AJ2
BP1 — D 1 LTRA TB ØØ C Ø
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 R1
LTM EN INSTR H LIN RCG H (R DG ?) — N2 P1
LTM EN STATUS 2 H LTP8 WRITE SEL H — M2 N1
M169 A16
L1 — +3V B16 U1 H
M1

PRA MB Ø1(1) H LRE EN MB Ø-2 H — AB2 AC1
LIP IN PROGRESS (1) H LTM EN STATUS 1 H — AE1 AE2
LTRA RWB Ø1(1) H LRE EN RWB H — AD2
LTRA TBN Ø1(1) H LRE EN TBN H — AF2 AL1
LTRA TMA Ø1(1) H LRE EN TMA H — AS2
LTR TMA SET UP Ø1(1) H LRE EN TMA SET UP H — AP1
LTRA TAC Ø1(1) H LRE EN TAC H — AF1 AL2

BB1
BB2
BR2 — LTRA TAPE BUS Ø1 H

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

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 CARRY OUT Ø2 L — BA1
LRL LOAD TMA SET UP H — AK1
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 — +3V B16 U1 H
V2 — LTRA MSC IN ØØ H

REVISIONS				
CHK	CHANGE NO.	REV.		
	00002	A	T. Quillen	6/18/68
	L. GALE			
	EM12-00004	B	T. Quillen	8/18/68
	L. GALE			
	EM12-00009	C		8/18/69
	L. GALE			
	EM12-00015	D		8/18/69
	L. GALE			10/7/69
	EM12-00032	E	T. Quillen	3-9-70
	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 12-8-68
CHK. T. Quillen — DATE 2/27/69
ENG. L. J. Clayton — DATE 2/28/69
PROJ. ENG. L. J. Clayton — DATE 2/28/69
PROD. P. Wall — DATE 2/28/69
FIRST USED ON TC12
SCALE
SHEET 1 OF 1

digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS

TITLE
LTRA
BITS Ø & 1

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

DIST.

+3V C26U1 H — BS2 — BV1 — LTRB EWB Φ2 OUT H

LTRB CARRY OUT Φ2 L — AV2

PRB AC Φ2(1) H — LRE EN AC H — BN2, BM2, BP2, BU1
LWN WIND Φ1(1) H — LTM EN MARK WIND H — BK2, BL2
LCS SEARCH (1) H — LTM EN STATES H — BJ2, BS1
-LTC UNIT 2 H — LTM EN UNITS H — BR1, BF1
LCXF TF Φ2(1) H — LRE EN EX OP BUF H — BM1, BL1
LTRB TB Φ2(1) H — LRE EN TB H — BK1

PRB MB Φ2(1) H — LRE EN MB Φ-2 H — AS1, AR2
LTS LC ΦΦ (1) H — LTM EN STATUS 1 H — AM2, AE2
LTRA RWB Φ2(1) H — LRE EN RWB H — AD2
LTRA TBN Φ2(1) H — LRE EN TBN H — AM1, AL1
LTRA TMA Φ2(1) H — LRE EN TMA H — AS2
LTR TMA SET UP Φ2(1) H — LRE EN TMA SET UP H — AP1
LTRB MSC IN Φ2 H — AP2
LTRA TAC Φ2(1) H — LRE EN TAC H — AL2

BN1, AN2 → AV2

AV2 → BV2 — LTRB TAPE BUS Φ2 H

BV2 → LTRB TMA SETUP Φ2 (AR1) → LRL LOAD TMA H — AU2
BV2 → LTRB TMA Φ2 (AT2) → LRL LOAD TBN H — AJ1
BV2 → LTRB TBN Φ2 (AU1) → LRL LOAD TAC H — AA1
BV2 → LTRB TAC Φ2 (AN1) → LRL LOAD TB H — BT2
BV2 → LTRB TB Φ2 (BP1) → LRL TB TO RWB H — BF2
BV2 → LTRB EWB Φ2 (AJ2) → LRL SHIFT RWB H — BE2

PRB AC Φ3(1) H — LRE EN AC H — BH2, BU1
LWN WIND Φ2(1) H — LTM EN MARK WIND H — BJ1, BL2
LCS BLOCK (1) H — LTM EN STATES H — BC1, BS1
-LTC UNIT 3 H — LTM EN UNITS H — BH1, BF1
LRE EN EX OP BUS H — BE1, BL1
LTRA TB Φ3(1) H — LRE EN TB H — BK1

LRE EN GP 1-2 H — LGP GP Φ2(1) H — C1, D1
LRE EN TAC 10-11 H — LTRF TAC 11(1) H — D2, E1
LTM EN INSTR H — LIN MTB H — E2, F1
LTM EN STATUS 2 H — F2, H1
M169 A1G

PRB MB Φ3(1) H — LRE EN MB 3-11 H — AB2, AC1
LTS LC Φ1(1) H — LTM EN STATUS 1 H — AE1, AE2
LTRA RWB Φ3(1) H — LRE EN RWB H — AD2
LTRA TBN Φ3(1) H — LRE EN TBN H — AF2, AL1
LTRA TMA Φ3(1) H — LRE EN TMA H — AS2
LTR TMA SET UP Φ3(1) H — LRE EN TMA SET UP H — AP1
LTRA TAC Φ3(1) H — LRE EN TAC H — AL2

M169 A1G: B1 ← +3V B1GU1 H; A1 → AF1

BB1, BB2 → AV2

LTRC CARRY OUT Φ4L — BA1
LRL LOAD TMA SET UP H — AK1

BV2 → LTRB TAPE BUS Φ3 H — BR2

BR2 → LTRB TMA SETUP Φ3 (AH1) → LRL LOAD TMA H — AU2
BR2 → LTRB TMA Φ3 (AD1) → LRL LOAD TBN H — AJ1
BR2 → LTRB TBN Φ3 (AK2) → LRL LOAD TAC H — AA1
BR2 → LTRB TAC Φ3 (AH2) → LRL LOAD TB H — BT2
BR2 → LTRB TB Φ3 (BD1) → LRL TB TO RWB H — BF2
BR2 → LTRB EWB Φ3 (AV1) → LRL SHIFT RWB H — BE2

LRE EN GP 1-2 H — LGP GP Φ1 (1) H — C1, H2
LRE EN TAC 10-11 H — LTRF TAC 10(1) H — D2, J2
LTRF EN INSTR H — LIN RDE H — E2, K2
LTM EN STATUS 2 H — F2, L2
M169 A1G: J1 → K1 — LTRB MSC IN Φ2 H
+3V B1GU1 H → J1

LTMR MAINT (1) H — PRE AC Φ9(1) H — A1, B1
LTMR MAINT (Φ) H — LTR DI READ H — C1, D1
M121 C26 → E1

M222
A18
B18

REVISIONS	CHANGE NO.	REV.
CHK	00002	A
TGuilino L.GALE 6/18/68		
EM12-00003		B
TGuilino 6/24/69 L.GALE 8/5/69		
EM12-00009		C
J.D. Mecca 8/21/69 L.GALE 8/26/69		
EM12-00015		D
L.GALE 10/15/69		

DEC FORM NO DRD 102A

QTY.	DESCRIPTION	PART NO.	ITEM NO.
PARTS LIST			

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

		DATE
DRN.		12-8-68
CHK	T Guilino	2/3/69
ENG	L Clayton	2-28-69
PROJ. ENG	L Clayton	2-28-69
PROD.	J Dillon	2/24/69

FIRST USED ON TC12
SCALE
SHEET 1 OF 1

digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS

TITLE: LTRB BITS 2&3

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

DIST.

TC12-Φ-LTRB D BS

LRE EN EX OP BUF H — BN2
LCX MARK (1) H — BM2

PRC AC Ø4 (1) H — BP2
LRE EN AC H — BU1

LWN WIND Ø3 (1) H — BK2
LTM EN MARK WIND H — BL2

LCS CHECK WORD (1) H — BJ2
LTM EN STATES H — BS1

-LTC UNIT 4 H — BR1
LTM EN UNITS H — BF1

LIN WRC H — BM1
LTM EN INSTR H — BL1

LTRC TB Ø4 (1) H — BK1
LRE EN TB H

PRC MB Ø4 (1) H — AS1
LRE EN MB 3-11 H — AR2

LWN MARK WRITE H — AM2
LTM EN STATUS 1 H — AE2

LTRC RWB Ø4 (1) H — AD2
LRE EN RWB H

LTRC TBN Ø4 (1) H — AM1
LRE EN TBN H — AL1

LTRC TMA Ø4 (1) H — AS2
LRE EN TMA H

LTR TMA SET UP Ø4 (1) H — AP1
LRE EN TMA SET UP H

AP2

LTRC TAC Ø4 (1) H — AL2
LRE EN TAC H

LTRC CARRY OUT Ø4 L — AV2

BN1
AN2

LTRC TAPE BUS Ø4 H — BV2

-LTS PHASE H — BS2

BV1 — LTRC RWB Ø4 OUT H

LTRC TMA SETUP Ø4 — AE1
LTRC TMA Ø4 — AT2
LTRC TBN Ø4 — AU1
LTRC TAC Ø4 — AN1
LTRC TB Ø4 — BP1
LTRC RWB Ø4

PRC AC Ø5 (1) H — BM2
LRE EN AC H — BU1

LWN EM H — BJ1
LTM EN MARK WIND H — BL2

LCS TURN AROND (1) H — BC1
LTM EN STATES H — BS1

-LTC UNIT 5 H — BH1
LTM EN UNITS H — BF1

LIN WRG H — BE1
LTM EN INSTR H — BL1

LTRC TB Ø5 (1) H — BK1
LRE EN TB H

PRC MB Ø5 (1) H — AB2
LRE EN MB 3-11 H — AC1

LTRA RWB Ø0 OUT H — AE1
LTM EN STATUS 1 H — AE2

LTRC RWB Ø5 (1) H — AD2
LRE EN RWB H

LTRC TBN Ø5 (1) H — AF2
LRE EN TBN H — AL1

LTRC TMA Ø5 (1) H — AS2
LRE EN TMA H

LTR TMA SET UP Ø5 (1) H — AP1
LRE EN TMA SET UP H

LRE EN EX OP BUF L — P2
LCK TAPE INT EN (1) L — R2
M112 C24 — S2 — AF1

LTRC TAC Ø5 (1) H — AL2
LRE EN TAC H

LTRD CARRY OUT Ø6 L — BA1

LRL LOAD TMA SET UP H — AK1

BB1
BB2

LTRC TAPE BUS Ø5 H — BR2

LTRC TMA SETUP Ø5 — AH1
LTRC TMA Ø5 — AD1
LTRC TBN Ø5 — AK2
LTRC TAC Ø5 — AH2
LTRC TB Ø5 — BO1
LTRC RWB Ø5 — 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
LTRD RWB Ø6 OUT H

M222
A19
B19

REVISIONS			
DWN	CHANGE NO.	REV	
JMB	00002	A	T.Quilling L.GALE 6/18/68
EV	EM12-000310 TC12	B	GALE 2.7.70
	EM12 000337	C	GALE 7.21.70

QTY.	DESCRIPTION	PART NO.	ITEM NO.

PARTS LIST

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

MATERIAL

FINISH

		DATE
DRN		12-8-68
CHK'D		2/27/69
ENG		3-25-69
PROJ. ENGR		3-25-69
PROD		3/3/69

FIRST USED ON: TC12

digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS

TITLE: LTRC BITS 4&5

SIZE D | CODE 85 | NUMBER TC12-Ø-LTRC | REV C

SCALE

SHEET 1 OF 1

DIST.

DEC FORM NO DRD 102A

LTM MAINT (1)H — BN2 / BM2
LRE EN EX OP BUF H

PRD AC Ø6(1)H — BP2 / BU1
LRE EN AC H

LWN CM H — BK2 / BL2
LTM EN MARK WIND H

LCS WRITE (1)H — BJ2 / BS1
LTM EN STATES H

-LTC UNIT 6 H — BR1 / BF1
LTM EN UNITS H

LIN WRI H — BM1 / BL1
LTM EN INSTR H

LTRD TB Ø6(1)H — BK1
LRE EN TB H

PRD MB Ø6(1)H — AS1 / AR2
LRE EN MB 3-11 H

LTRC RWB Ø4 OUT H — AM2 / AE2
LTM EN STATUS 1 H

LTRD RWB Ø6(1)H — AD2
LRE EN RWB H

LTRD TBN Ø6(1)H — AM1 / AL1
LRE EN TBN H

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

LTRD CARRY OUT Ø6 L — AV2

BN1

AN2

+3V C26U1 H — BS2

BV1 — LTRD RWB Ø6 OUT H

BV2 — LTRD TAPE BUS Ø6 H

LTRD TMA SETUP Ø6	AR1	
LTRD TMA Ø6	AT2	
LTRD TBN Ø6	AU1	
LTRD TAC Ø6	AN1	AJ2
LTRD TB Ø6	BP1	
LTRD RWB Ø6		

PRD AC Ø7(1)H — BH2 / BU1
LRE EN AC H

LWN GM H — BJ1 / BL2
LTM EN MARK WIND H

LCS WRITE CYCLE H — BC1 / BS1
LTM EN STATES H

-LTC UNIT 7 H — BH1 / BF1
LTM EN UNITS H

LIN CNK H — BE1 / BL1
LTM EN INSTR H

LTRD TB Ø7(1)H — BK1
LRE EN TB H

PRD MB Ø7(1)H — AB2 / AC1
LRE EN MB 3-11 H

LTRE RWB Ø8 OUT H — AE1 / AE2
LTM EN STATUS 1 H

LTRD RWB Ø7(1)H — AD2
LRE EN RWB H

LTRD TBN Ø7(1)H — AF2 / AL1
LRE EN TBN H

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

LTRE CARRY OUT Ø8 L — BA1

LRL LOAD TMA SET UP H — AK1

BB1

BB2

BR2 — LTRD TAPE BUS Ø7 H

LTRD TMA SETUP Ø7	AH1	
LTRD TMA Ø7	AD1	
LTRD TBN Ø7	AK2	
LTRD TAC Ø7	AH2	AB1
LTRD TB Ø7	BD1	
LTRD RWB Ø7	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 / L2
PRF AC 1Ø(1)H

LTMR MAINT (Ø)H — M2 / N2
LTR D2 READ H

M121 C26 — P2

M222
A2Ø
B2Ø

REVISIONS	REV.	CHANGE NO	CHK			
	A	00002	T. Quill LTD	1 GALE		
FV	B	EM12-00030	T. Quill 4-3-70	GALE		

DEC FORM NO ORD 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.		12-8-69
CHK'D		2-17-69
ENG.		2-28-69
PROJ. ENGR.		2-27-69
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:

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
LCK NO PAUSE (1) L — R1
M112 C29 — 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 — APT
LRE EN TMA SET UP H
LTRE TAC ØB(1) H — AL2
LRE EN TAC H

LTRE CARRY OUT ØB L — AV2
BN1
AN2

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

BV2 — LTRE TAPE BUS ØB H

D 1 LTRE TMA SET UP ØB C Ø — AR1
D 1 LTRE TMA ØB C Ø — AT2
D 1 LTRE TBN ØB C Ø — AU1
D 1 LTRE TAC ØB C Ø — AN1 — AN2
D 1 LTRE TB ØB C Ø — BP1
D 1 LTRE RWB ØB C Ø

PRE AC Ø9(1) H — BH2
LRE EN AC H — BU1
LWN FM H — BJ1
LTM EN MARK WIND H — AL2
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
LCK HOLD MOTION (1) H — R2
M113 B16 — S2
M113 B16 — P1 — R1 — S1

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 — AF1
LRE EN TAC H — AL2

LTRF CARRY OUT 1Ø L — BR1
BB1
BB2

BR2 — LTRE TAPE BUS Ø9 H

D 1 LTRE TMA SET UP 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
D 1 LTRE TB Ø9 C Ø — BD1
D 1 LTRE RWB Ø9 C Ø — BD2

LRL LOAD TMA SET UP H — AK1
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			
DWN	CHANGE NO.		REV.
	00002	T QUILLIN L GALE 6/18/68	A
	EM12-00017	GALE 11-5-68	B

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. — DATE 12-8-68
CHK. — DATE 12-13-68
ENG. — DATE 2-21-69
PROJ. ENG. — DATE 2-28-69
PROD. — DATE 3-20-69
FIRST USED ON TC12
SCALE
SHEET 1 OF 1

digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS

TITLE
LTRE BITS 8&9

SIZE D | CODE 85 | NUMBER TC12-Ø-LTRE | REV B
DIST.

LTM EN INSTR H — BN2
LGP GP Ø1(1) H — BM2
PRF AC 1Ø(1) H — BP2
LRE EN AC H — BU1
LWN BM H — BK2
LTM EN MARK WIND H — BL2
LTS TIMING OK H — BJ2
LTM EN STATES H — BS1
LCS TAPE OK H — BR1
LTM EN UNITS H — BF1
LGP GPCNT 1(1) H — BM1
LRE EN GPCNT H — BL1
LTRF TB 1Ø(1) H — BK1
LRE EN TB H

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

LTRF TAC 1Ø(1) H — ALE
LRE EN TAC 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

BN1
AN2
AV2
LTRF CARRY OUT 1ØL

BV2 — LTRF TAPE BUS 1Ø H

+3V C26U1 H — BS2
BV1 — LTRF RWB 1Ø OUT H

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

PRF AC 11(1) H — BH2
LRE EN AC H — BU1
LWN IM H — BJ1
LTM EN MARK WIND H — BL2
LTT TAPE FAIL DELAY H — BC1
LTM EN STATES H — BS1
LTC WRITE EN H — BH1
LTM EN UNITS H — BF1
LGP GPCNT 2(1) H — BE1
LRE EN GPCNT H — BL1
LTRF TB 11(1) H — BK1
LRE EN TB H

LTM EN INSTR H — P2
LGP GP Ø2 (1) H — R2
LRE EN EX OP BUF H — P1
LMU PRE U1 (1) H — R1
M113 E23 — S2 — T2
M113 E23 — S1 — U2
M113 E23 — V2 — AF1

PRF MB 11(1) H — AB2
LRE EN MB 3-11 H — AC1
LGP GPCNT 2(1) H — AE1
LTM EN STATUS 1 H — AE2
LTRF RWB 11(1) H — AD2
LRE EN RWB H
LTRF TBN 11(1) H — AF2
LRE EN TBN H — AL1
LTRF TMA 11(1) H — AS1
LRE EN TMA H
LTR TMA SET UP 11(1) H — AP2
LRE EN TMA SET UP H
LTRF TAC 11(1) H — AL2
LRE EN TAC H

BB1
BB2
LRE TAPE CARRY IN L — BA1
LRL LOAD TMA SET UP H — AK1

BR2 — LTRF TAPE BUS 11 H

D 1 LTRF TMA SETUP 11 C Ø — AH1
D 1 LTRF TMA 11 C Ø — AD1
D 1 LTRF TBN 11 C Ø — AK2
D 1 LTRF TAC 11 C Ø — AH2
D 1 LTRF TB 11 C Ø — BD1
D 1 LTRF RWB 11 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

LTME MAINT (1) H — E2
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.	
JHB	00002	A	T.Guilland L.GALE 6/18/68
JHB	EM12-00003	B	T.Guilland L.GALE 10/16/68
JHB	EM12-00015	C	L.GALE 10/16/68
JHB	EM12-00017	D	T.Guilland L.GALE 11-5-69
JHB	EM12-00019	E	L.GALE

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

QTY.	DESCRIPTION	PART NO.	ITEM NO.

PARTS LIST

DRN.	DATE	digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS
CHKD	DATE	
ENG	DATE	TITLE: LTRF BITS 1Ø&11
PROJ. ENG	DATE	
PROD	DATE	
FIRST USED ON: TC12		SIZE D · CODE 85 · NUMBER TC12-Ø-LTRF · REV. E
SCALE		DIST
SHEET / OF /		

DEC FORM NO. DRD 102A

SIZE D · CODE 85 · NUMBER TC12-Ø-LTRF · REV. E

LTT TP4 L — F2
LTT TP0 H — E2
LTMR TAPE PRESET L — A1
M216 D20 LTS TTS 00 — H2, J2

LTT TP0 L — K1
LTT TP1 L — H1
M216 D20 LTS TTS 01 — J1, L1, M1, R1

LTT TP1 L — N2
LTT TP2 L — L2
M216 D20 LTS TTS 02 — N2, P2, R2, K2

LTT TP2 L — R1
LTT TP3 L — N1
M216 D20 LTS TTS 03 — P1, S1, U1, K2

+3V C23V1 L — U2
+3V C23V1 H — T2
LTT TP3 L — S2
M216 D20 LTS TTS 04 — V2, V1, K2

LTT TP0 H — M1
+3V C23V1 H — N1
LTT TP4 H — P1, R1
M121 C26 — S1

LCX MARK (1)L — K2, J2
M401 E21 — E2, D2, N2, R2, S2, T2, P2
LTS MARK CLOCK H — S2
M216 E20 LTS TC 01 — +3V E19V1 H — U2, T2, V2, V1, K2
LTMR TAPE PRESET L

M216 D20 LTS TC 00 — +3V E19V1 H — D1, C1, E1, B1, F1, A1
LTMR TAPE PRESET L

* SEE DWG LTD FOR FREQUENCY

LWN BM L — J2
LTP8 BM L — K2
M115 C29 — L2, M2

LTT TP4 H — T2
M113 E24 — U2, V2, LTS (BM*TP4) L

LTT TP0 L — P1, R1
M113 C16 — S1, LTS LC 02 (1)H

LTT TP3 L — P2, R2
M113 C16 — S2, LTS LC 02 (0)H

M216 D19 LTS LC 01 — R1, P1, S1, N1, U1, K2
LMU FAIL SET MTN L

M216 D19 LTS LC 00 — U2, T2, V2, S2, V1, K2

NOTE:
LMU FAIL SET MTN SERVES NO LOGICAL FUNCTION FOR LC 01 AND LC 00

LTS TC 00 (1)H — F1
LTS TC 01 (1)H — H1
LTS TC 00 (0)H — J1
LTS TC 01 (0)H — K1
M121 E19 — L1, LTS TIME WRITE L

LTS TIMING OK L
LTMR MAINT (0)H — M1
LMU MOTION (1)H — N1
LCX MARK (0)H — P1
LCS TAPE OK H — R1
-LTD ACIP H — R2
LTD TTOK H — S2, T2, U2
M119 C22 — V2, S2
M111 C21 — T2, LTS TIMING OK H

LTS PHASE L
LTS LC 02 (1)H — M1
LCS CHK WRD (0)H — N1
LTS LC 02 (0)H — P1
LCS CHK WRD (1)H — R1
M121 E19 — S1, U2
M111 C21 — V2, LTS PHASE H

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	
MK	EM12-00015	C
	K BOGGS	
	J SCANLAN	
MK	EM12-00022	D
	[illegible]	

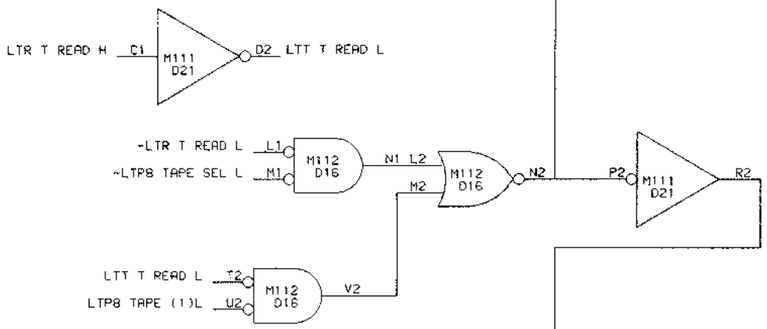
DRN.	D.J. SHEPARD	DATE 7-9-69
CHK'D.	J.K. BISONETE	DATE 7-9-69
ENG.	L. GALE	DATE 7-9-69
PROJ. ENG.	L. GALE	DATE 7-9-69
PROD.	D. CALL	DATE 7-23-69
FIRST USED ON	TC12	
SCALE		
SHEET 1 OF 1		

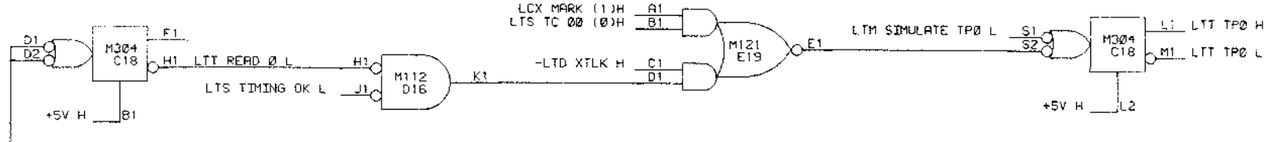
digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS

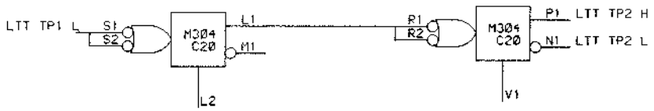
TITLE: TAPE STATES

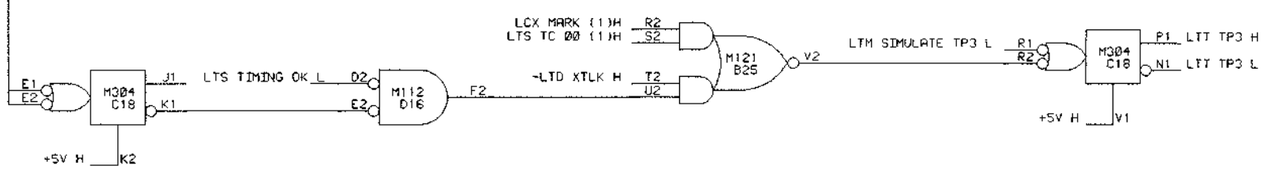
SIZE	CODE	NUMBER	REV.
D	BS	TC12-0-LTS	D

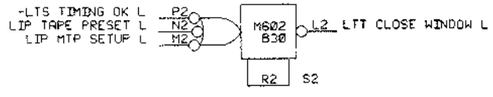
DIST.

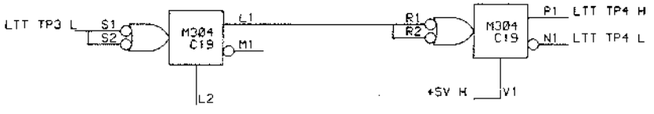






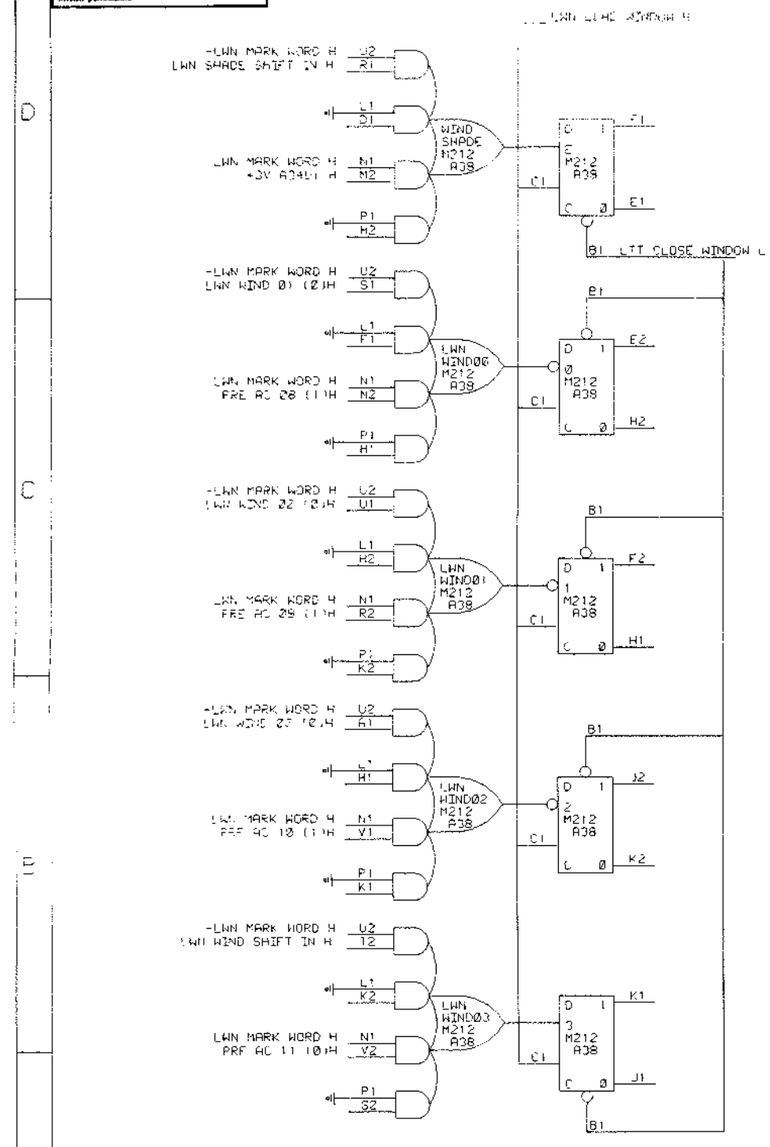


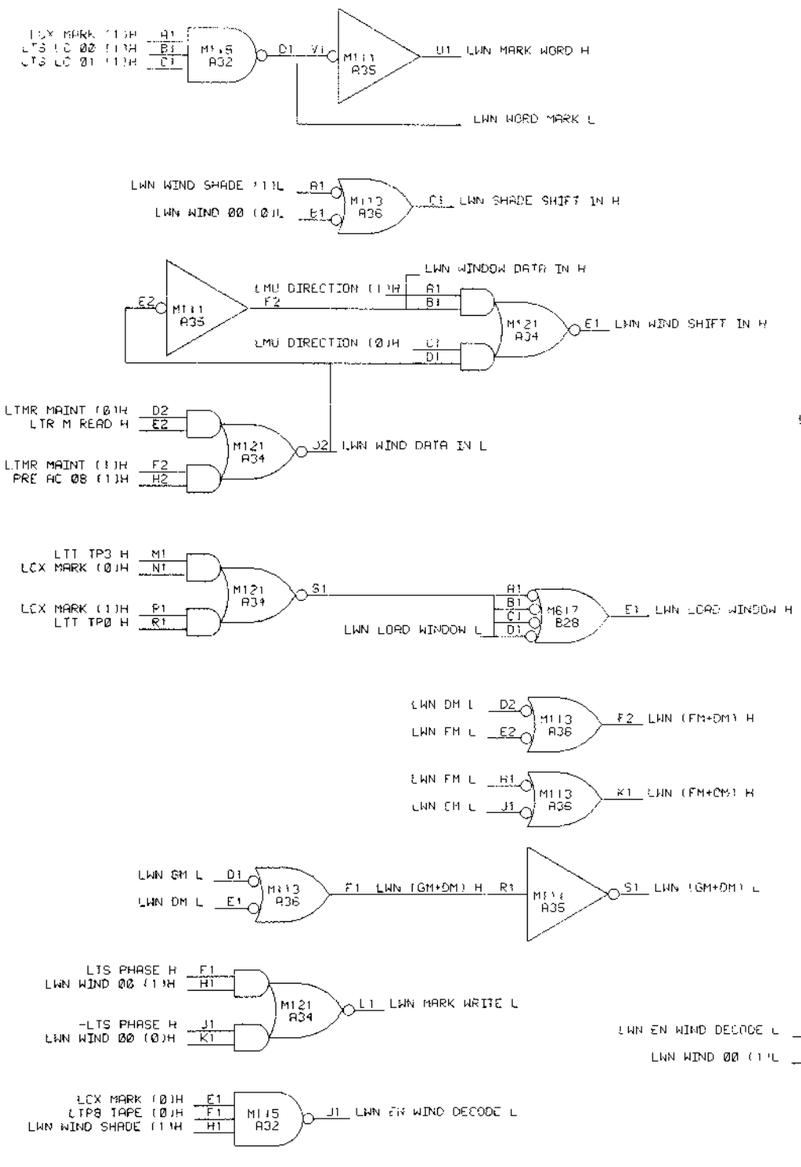


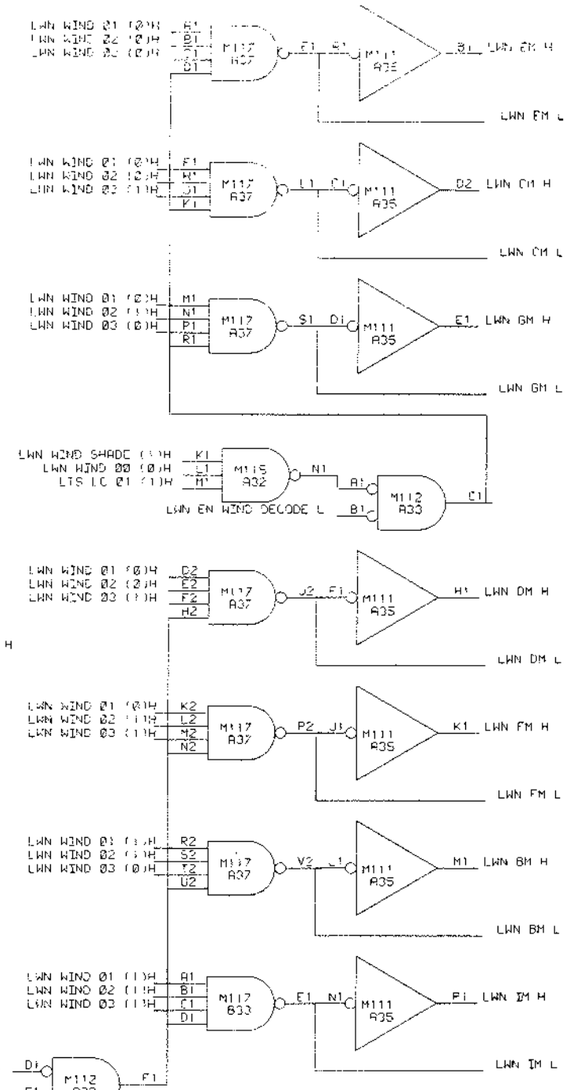


REVISIONS		
CHK	CHANGE NO.	REV.
PD	EM12-00001	A
	J FASSHAUER 4-15-69	
	L GALE 4-24-69	
NR	EM12-00005	B
	A WASHINGTON 7-18-69	
	L GALE 7-18-69	
	EM12-00015	C

DRN. D.L. SHEPARD	DATE 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 TIME PULSES
PROJ. ENG. L. GALE	DATE 8-9-69	
PROD. D. CALI	DATE 8-9-69	
FIRST USED ON: TC12		
SCALE		SIZE D; CODE 85; NUMBER TC12-0-LTT; REV. C
SHEET 1 OF 1		DIST.







REVISIONS		
CHK	CHANGE NO.	REV.
NR	EM12-00005	A
	J FASSHAUER 4-15-69	
	L GALE 4-23-69	
	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

DRN D SHEPARD	DATE 3-9-69	digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS	
CHK'D L BISONETTE	DATE 3-9-69		
ENG L GALE	DATE 3-9-69	TITLE TAPE MARK WINDOW	
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-LWN / REV. D	
SCALE			
SHEET 1 OF 1		DIST.	

MASTER DRAWING LIST

MAINTENANCE MANUALS NO.	TITLE	UNIT VARIATIONS VC12-0	VC12-C	VC12-N	VC12-S
VC12-Linc Scope Control		X			
VC12-C Color Control			X		
VC12-N Neg Intens Adapt				X	
VC12-S 611/601 Control					X

USED ON OPTIONS							
PDP-12							

REVISIONS

REV.	DATE	CHG. NO.	APP'D.
M	1/72	12-00099	R.M.
N	2/72	VC12S-0C001	F.S.
P	8/72	EM12-58	RI

DRN. APREA	DATE 3/69	digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS
CHK'D. HUTNAK	DATE 3/69	
ENG. GALE	DATE 3/69	TITLE PDP-12 Display Controls
PROJ. ENG. GALE	DATE 3/69	
PROD. CALL	DATE 3/69	
FIRST USED ON PDP-12		SIZE A · CODE ML · NUMBER VC12-0 · REV. P
SCALE		
SHEET 1 OF 2		DIST.

PRINT SET VC12-0	VC12-C	VC12-N	VC12-S	DWG. NO.	REV. LET.	NO. OF SHEETS	TITLE	OPTION NO.
X				D-FD-VC12-0-4	C	1	Linc-8 Scope Display	
X		X		D-BS-VC12-0-DSC	F	1	DSC Display Control	
X			X	D-BS-VC12-0-DSX	F	1	DSX Horizontal D-A	
X				D-BS-VC12-0-DSY	B	1	DSY Vertical D-A	
X				D-BS-VC12-0-DSI		1	Display Int Reg	
	X			D-CS-VC12-C-COL	A	1	Color Control	
X	X	X	X	A-PL-VC12-0-0	A	1	PDP-12 Scope Control	
	X			A-SL-VC12-C-2		1	VC12C Software List	
X				A-SP-VC12-0-5		5	VC12 Specifications	
	X			A-SP-VC12-C-1		5	Specifications (Color Control)	
		X		D-IA-7006975-0-0	#	1	Cable Assy (VC12N)	
			X	D-CS-VC12-S-3		1	611/601 CIRCUIT SCHEMATIC	
			X	D-CS-VC12-S-1		1	611 SCOPE CONTROL	
			X	A-SP-VC12-S-2		14	INSTALLATION ACCEPTANCE PROCEDURE	
			X	C-IA-7008521-0-0	#	1	611/601 SCOPE CABLE	
			X	C-IA-7008793-0-0	#	1	611/601 RELAY WIRING DIAGRAM	

TITLE				
PDP-12 Display Controls.	SHEET 2 OF 2	SIZE A · CODE ML	NUMBER VC12-0	REV –

DRA 132

DEC 16 (325) 1048 1-N471

DIGITAL EQUIPMENT CORPORATION
MAYNARD, MASSACHUSETTS

PARTS LIST

MADE BY DATE D. MACKLIN 1-8-72	CHECKED DATE 1-31-72	SECTION 1
ENG D Macklin DATE 2-2-72	PROD DATE 2-4-72	ISSUED SECT. 1

ITEM NO.	DWG NO./PART NO.	DESCRIPTION	QUANTITY/VARIATION VC12-0	VC12-C	VC12-N	VC12-S
	A615	D-A	2			
	M101	Bus Data Interface	1			
	M115	Nand Gate	1			
	M117	Nand Gate	1			
	M216	Six Flop Flops	2			
	M711	Display Control	1			
	M7601	611/color Control		1		1
	W681	Scope Intensifier			1	
	D-IA-7000238-0-0	Internal Scope Cable	*			
	D-IA-7006975-0-0	Cable Assy (VC12N)			1	
	D-AD-7005963-0-0	Relay Panel Assy.	**			
	12-03185-2	Precision Power Supply ± 15V	Δ			
	C-AD-7006045-0-0	Power Supply BRKT Assy.	Δ			

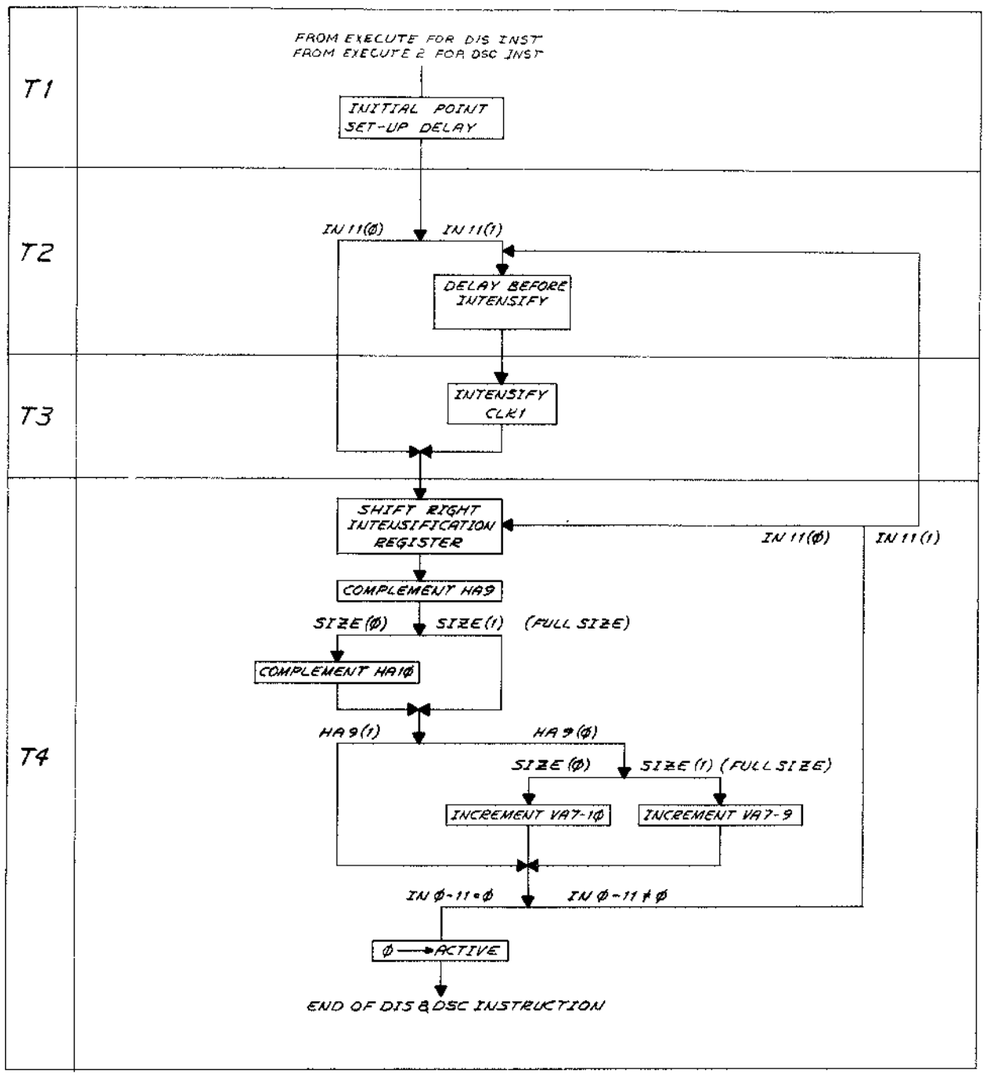
* Quantity of "One" when adding this option (VC12) to a PDP-12-C System.

** Quantity of "One" when adding this option (VC12) to a PDP-12-C System with no added AD12 or DR12 option.

Δ Quantity of "One" Each when adding this option (VC12) to a PDP-12-C System with no added AD12 or KW12 option.

TITLE	ASSY NO.	SIZE	CODE	NUMBER	REV.	ECO NO.
PDP-12 Display Controls	SHEET 1 OF 1	A	PL	VC12-0-0	A	VC12S-00001
		DIST.				

DEC FORM DEC 16-(325)-1031-N870
DRA 110



TIMING TABLE (μSECS)		
	STD SYS	COMMENTS
T1	25.Ø	CAN BE CHANGED BY REPLACING 30K Ω RESISTOR ADJACENT TO POLARITY SWITCH ON M711 15K Ω = 1Ø μSECS 7K Ω = 5 μSECS
T2	1.5 OR 7.Ø	PULSE REPETION RATE SWITCH SETS DESIRED TIME
T3	.5 OR 1Ø.Ø	INTENSIFICATION PULSE WIDTH IS DETERMINED BY WIDTH SWITCH SETTING ON M711
T4	.8	NON-ADJUSTABLE FIXED TIME

REVISIONS				
CHK	CHANGE NO.	REV.		
Dm8	00002	A	T. Quigley	6/18/68
			L. GALE	
	EM12-00008	B	L. GALE	8-15-68
	EM12-00033	C	L. GALE	2-5-70

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. Joe Aspen DATE 2/12/69
CHKD. A Scanlon DATE 2/12/69
ENG. [illegible] DATE 2-28-69
PROJ. ENG. [illegible] DATE 2-28-69
PROD. [illegible] DATE 2-28-69

FIRST USED ON VC12

SCALE

SHEET 1 OF 1

digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS

TITLE: LINC-8 SCOPE DISPLAY DIS & DSC

SIZE D | CODE FD | NUMBER VC12-Ø-9 | REV. C

DIST.

DEC FORM NO DRD 102A

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

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

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

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

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

DSC LD HORZ H
DSC CLK 1 OUTPUT

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

DSC ACTIVE (1) H

DSC LD HORZ H
D 1 DSC ACTIVE C Ø
DSC BUSY L
DM2 DN2 DSC BUSY H

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

DSI IN 11(Ø)H DP1

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

DT2 DSC INTEN L
DV1 DSC Z DRIVER H
DU1 DSC INTEN H

H2 W512 N27 F2
J2 K2 L2 WGB1 MØ3 N2 DSC 503 INTEN L
A2 B2
+1Ø -15
VC12-N OPTION

SLA (DSC * EXECUTE 2) L
R2 S2 M121 E22 V2 DSC START DSC H
- DSC BUSY L T2 U2

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

CST IO PRESET L
CR2
PRC AC Ø4(1)H DD1
RCL LOAD MSC4 H CV1
D 1 DSC SIZE C Ø DU2
DSC SHFT L
DE2 DSC HA 1Ø H
DM1 DSX HA 9 (1) H
DP2 DSY VA 1Ø (Ø) H
DSC SIZE (Ø) H
DR2 DSC VA 9 H

DSX HA 9 (1) L DV2 DF1 DSC VA 7Ø H

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

-INS DIS H CL2
-INS DSC H CL1

DSC LD MB5 L CH2
CST IO PRESET L CR2
DSC CLR V8-11L CD1
CM2 DSC LD IN H
CK2 DSC LD VERT H
DS2 DSC LD HORZ H
CF2 DSC SET IN 11 L

DSY V8 (1) H CS1 CU1 DSC 8 L
DSY V7 (1) H CS2 CV2 DSC 7 L

D 1 V8 C Ø
DSY V9 (Ø) H CJ1
DSC INITIALIZE L

D 1 V7 C Ø

M711
C37
D37

REVISIONS	REV	CHANGE NO	CHK	
	A	00002		T. GUILLIN L. GALE 6/18/68
	B	EMI2-00033		L. GALE 8-2-70
	C	EMI2-00037		L. GALE 3-9-70 FV EMI2-00037
	D	EMI2-00044		GALE 7/29/70 SCANLON 2-2-71
	E	12-00099		R. MOORE 2-22-72
	F	EMI2-00056		TKNAIAN 2-22-72

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 Orsa DATE 4-SEPT-68
CHK'D J. Scanlon DATE 2/27/69
ENG'R W. Clayton DATE 2-28-69
PROJ. ENG'R [illegible] DATE 2-28-69
PROD'N [illegible] DATE 3-24-69

FIRST USED ON VC12
SCALE
SHEET 1 OF 1

digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS

TITLE
DSC DISPLAY CONTROL

SIZE D | CODE 085 | NUMBER VC12-Ø-DSC | REV F | DIST.

DEC FORM NO DRD 102A

DSX X OUT L

DSX X DEF L

EH2

EJ2

FU2 FV2

CHAN

FS2 FT2

DSC LD HORZ H

PRA MB Ø(1) H

H3

EW2 FD2

PRB MB 3 (1) H

H4

EP1

PRC MB 4 (1) H

H5

EU1

PRC MB 5 (1) H

H6

EV1

PRD MB 6 (1) H

EP2 ES2 ET2

H7

EU2

PRD MB 7 (1) L

EV2

ER2 FH1 FF1

H8

FE1 FK1 +3V

PRE MB 8 (1) L

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

GND

A1 DSX CHAN (Ø) H
B1 GND
C1 DSC Z DRIVER L
D1 HQ GND 37
E1 GND
F1 DSX X DEF L
H1 HQ GND 36
J1 DSY Y DEF L
K1 GND
L1 COL RED L/S611 INT H**
M1
N1
P1
R1 GND
S1 DSC 503 INTEN L/ ERASE DONE
T1 GND
U1
V1

*W828 F38 / *W828 F39

A2 GND
B2 DSX CHAN(Ø) H
C2 DSX X OUT L
D2 GND
E2 HQ GND 37
F2 GND
H2 DSC Z DRIVER H
J2 GND
K2 DSY Y OUT L
L2 GND
M2 HQ GND 36
N2 GND
P2 COL RED L/S611 INT H**
R2 GND
S2 DSC 503 INTEN L/ERASE DONE
T2 GND
U2 GND
V2

H9 FJ1 PRE MB 9(1) L

H10 FL1 PRF MB 10 (1) L

H11 FK1 FE2 FD2 +3V DSC LD HORZ H

PRF MB 11(1) L

DSC INITIALIZE L

HA9 FL2 FR2 FM2 FV2 FP2 +3V

DSC SHIFT H

+3V

HA10 FJ2 FF2 FH2

DSC HA10 H

DSC INITIALIZE L

NOTE: HQ POWER FOR THIS MODULE AND E F36 IS DERIVED FROM HQ POWER SUPPLY SHOWN ON AD12-0-YAD

*AG783 CABLE ASSY. MAY ALSO BE USED.

**USED WITH VC12-S OPTION

AG15
E37
F37

REVISIONS				
DWN	CHANGE NO.		REV.	
T. Quillin 6/18/69	00002	L. GALE	A	
L. GALE 8-15-69	EM12-00008	V. Mullane	B	
L. GALE 8-12-71	EM12-00039	R. MOORE	C	
L. GALE 8-25-71	12-00096	R. MOORE	D	
L. GALE 8-12-71	EM12 00054	R MOORE	E	10-2-71
F. STRAIGHT 8-27-71	VC12-00001	R. MOORE	F	8-27-71

DEC FORM NO. OMD 102A

QTY.	DESCRIPTION	PART NO	ITEM NO.

PARTS LIST

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

MATERIAL

FINISH

DRN	Chuck Quillin	DATE 2-16-69
CHKD	L. Gale	DATE 2/27/69
ENG	R. Moore	DATE 3-24-69
PROJ ENG	Robert L.	DATE 1-24-69
PROD	L. Gale	DATE 3/28/69

FIRST USED ON VC12

SCALE

SHEET 1 OF 1

digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS

TITLE

DSX HORIZONTAL D-A

SIZE	CODE	NUMBER	REV.
D	85	VC12-Ø-DSX	F

DIST.

DSY Y OUT L

DSY Y DEF L

EH2

EJ2

V3 — EH2 — FD2

V4 — EP1

V5 — EU1

V6 — EV1

V7 — ES2 — EP2 — DSC 7 L — ET2 — EV2 — EU2 — DSC CLR V7 L

V8 — ER2 — DSC 8 L — FF1 — FH1 — FK1 — FE1 — DSC CLR V8-11 L

DSC LD VERT H

PRB AC 3 (Ø) H

PRC AC 4 (1) H

PRC AC 5 (1) H

PRD AC 6 (1) H

PRD AC 7 (1) L

PRE AC 8 (1) L

EH2

EJ2 OUTPUT

AG15

+5V — EA2

-15V — EB2

-15V H.Q. — EE2

+15V H.Q. — ED2

H.Q. GND — EF2

+5V — FA2

V9 — FJ1 — FD2

V1Ø — FL1

V11 — FE2 — FK1

DSC LD VERT H

PRE AC 9 (1) L

PRF AC 1Ø (1) L

PRF AC 11 (1) L

DSC CLR V8-11 L

+3V

VA9 — FL2 — FR2 — FM2 — FN2

DSC VA 9 H

+3V

VA1Ø — FK2 — FJ2 — FF2

DSC VA 1Ø H

FP2

FH2

DSC INITIALIZE L

AG15
E36
F36

QTY.	DESCRIPTION	PART NO.	ITEM NO.

PARTS LIST

REV.	CHANGE NO	DRN	CHK'D	ENG	PROJ. ENG	PROD
A	2000	R. DUNCAN	L. GALE	L. GALE	L. GALE	L. GALE
B	EM1200039	8-20-70	8-20-70	8-20-70	8-20-70	8-20-70

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

FIRST USED ON: VC12

SCALE

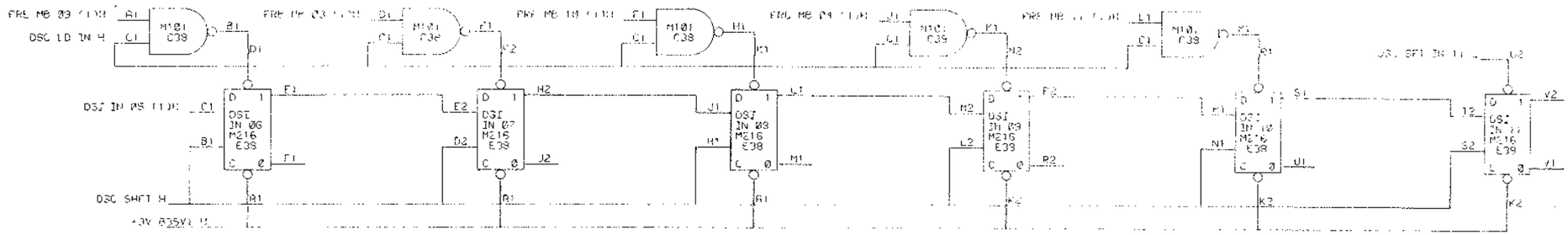
SHEET OF

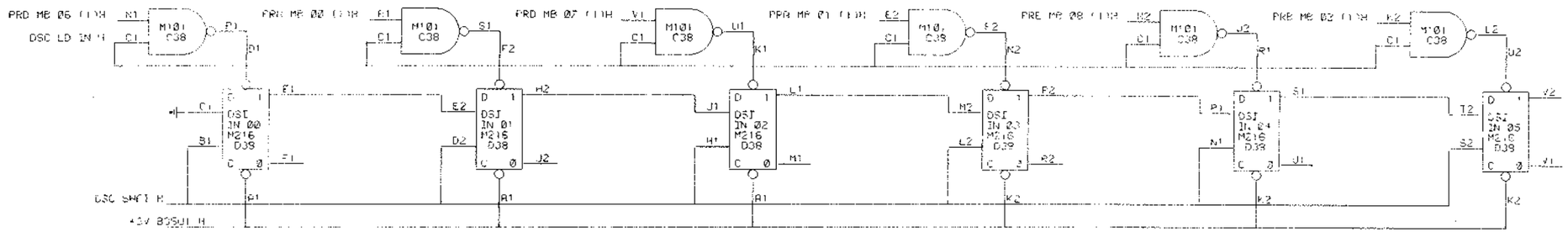
digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS

TITLE: DSY VERTICAL D-A

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

DIST





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: 85 | NUMBER: VC12-0-DSI | REV: 00
SCALE:		
SHEET 1 OF 1		DIST.

R12 5ΦK CW +5V
R13 1ΦK
C12 .033μF
C9 150Φ pF
S1
+3V INS N EQ Φ1 H +3.5V
D1
E2
C1
1Φ E2
A1
E1
+3.5V
PRE AC Φ9 (1) H
PRE AC Φ8(1)H RCL LD MSC 4 H
P2 N1
E3
E5
P1
IOC I/O PRESET L
COL BUSY +TP5
T2
F36 A015
V2
COL RED (Φ) H
S2
E1
D2
INS N EQ Φ6 H
E3
R2
E4
J1
SKL I SENSE L
INS N EQ Φ7 H
K1
E4
R3 50K CW +5V
R14 1ΦK
C13 .15μF
C14 .015μF
S1
V2
E6
V1
COL RED DELAY
H2
A2 +5V
R7 47Φ
R6 2.2K
Q3
R5 1.2K
R4 1ΦΦ
C8 10pF
Q2
C7 .01μF
R3 33Φ
B1
COL RED L
Q1
R1 2.2K
C10 .01μF
R2 2K
R8 33Φ
B2 -15V
E1
E3
DSC BUSY L
CPTP TP5 H
M1
F1
E3
COL DSC BUSY H
COL BUSY +TP5
+5V
R10 180Φ
+3.5V
C11 .01μF
R11 390

NOTE:
HAND WIRING LIST BELOW REQUIRED BEFORE INSTALLING INTO THE PDP-12

WIRE LIST

SIGNAL	FROM	TO	ADD	DELETE
DSC BUS WTEN L	M02E2	M03N2		X
GND	R04U2	R04DC2		X
DSC BUSY H	D39U1	D37N2		X
+5V	H01R2	H03R2		X
INS N EQ Φ7 H	L29P1	M02B2	X	
INS N EQ Φ6 H	L29H1	H01U2	X	
INS N EQ Φ6 H	D32R2	R04U2	X	
SKL I SENSE L	K04K1	H01R2	X	
DSC BUSY H	D39 U1	D36 L1	X	

D36
M7601

REVISIONS	REV
CHK	
CHANGE NO VC12C-00001	A
M. Tarsa 11-3-71	
F. STRAIGHT	
F. Straight 11-5-71	

FIRST USED ON OPTION/MODEL	QTY.	DESCRIPTION	PART NO.	ITEM NO.
VC12-C		PARTS LIST		

UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES. TOLERANCES
DECIMALS .XXX ± .005 .XX ± .02 .X ± .1
ANGLES ± 0° 30'
REMOVE BURRS AND BREAK SHARP CORNERS SURFACE QUALITY ✓
MATERIAL —
FINISH —

DRN		DATE 30 Jun 71
CHK'D		DATE 8/13/71
ENG		DATE 8/14/71
PROJ. ENG.		DATE 8/16/71
PROD.		DATE 8/19/71
NEXT HIGHER ASSY.		
SCALE	NONE	
SHEET	OF	

digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS

TITLE
COLOR SCOPE CONTROL

SIZE	CODE	NUMBER	REV
D	CS	VC12-C-COL	A

DEC FORM NO
DRD 102-B

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 = $\emptyset\emptyset\emptyset_8$ $\emptyset$ 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% / ^{o}C

ENG	APPD	SIZE	CODE	NUMBER	REV
R. L. Bingham	L. Gale	A	SP	VC12-0-5	

DEC FORM NO. DRA 107

ENGINEERING SPECIFICATION

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

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 adigital voltage capable of driving up to 10 TTL gate input loads.

Load Source (channel flip flop) bit Ø of the alpha register referenced if a DIS instruction, or memory loc ØØØ1 if a DSC instruction.

"AND" logic gates must be provided at the CRT display logically select the intensification pulses defined to coincide with the analog points to be displayed on either channel as defined by the logic level.

DIGITAL EQUIPMENT CORPORATION
MAYNARD, MASSACHUSETTS

SOFTWARE LIST

MADE BY Fred STRAIGHT	CHECKED Fred Straight	SECTION
DATE 10-5-71	DATE 10-5-71	
ENG Fred Straight	PROD M. Conroy	ISSUED SECT.
DATE 10-5-71	DATE 10-7-71	

LEGEND

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

ITEM NO.	DWG NO./PART NO.	DESCRIPTION	QUANTITY/VARIATION VC12-C	KIT CHECK BY ____ DATE ____	INSTALLATION CHECK BY ____ DATE ____
	MAINDEC-12-D6BC-D	VR14/VR20 MAINTENANCE DIAGNOSTIC WRITE UP	1		
	MAINDEC-12-D6BC-PB	VR14/VR20 MAINTENANCE DIAGNOSTIC BINARY	1		

TITLE	ASSY. NO.	SIZE	CODE	NUMBER	REV.	ECO NO
VC12 COLOR CONTROL	SHEET 1 OF 1	A	SL	VC12-C-2		
		DIST.				

DEC FORM NO.
DRA 120

DIGITAL EQUIPMENT CORPORATION
MAYNARD, MASSACHUSETTS

ENGINEERING SPECIFICATION

DATE SEPT.21,1971

TITLE VC12-C SPECIFICATIONS

REVISIONS

REV	DESCRIPTION	CHG NO	ORIG	DATE	APPD BY	DATE

ENG	APPD	SIZE	CODE	NUMBER	REV
Fred Straight 9/71	7/26/71	A	SP	VC12-C-1	

DEC FORM NO. DRA 107

ENGINEERING SPECIFICATION [redacted] CONTINUATION SHEET

TITLE

GENERAL DESCRIPTION

The VC12-C VR20 Color Display Control is a one module option to the PDP-12 computer. It adds the logic to the VR14 scope control (VC12-Ø) necessary to operate a VR20 two Color Display.

The following ECO's are required before installation of the VC12-C:

ECO	Description
EM12-ØØØ39	Change wiring to scope portion of EM12.
12-ØØØ96	Adds required wiring to internal scope cable 7006238 and BC12A
EM12-ØØØ51	Adds required wiring to EM12.

PROGRAMMING

There are four instructions unique to the VC12-C option. A summary of these is given below. For reference the standard VR14 display instructions* are described also.

*Reference Specification A-SP-VC12-Ø-5

	SIZE	CODE	NUMBER	REV
	A	SP	VC12-C-1	

DEC FORM NO DEC 16-(381)-1022-N370 DRA 108

VC12-C INSTRUCTION SUMMARY (LINC MODE)

MNEUMONIC	CODE	DESCRIPTION
ESF	ØØØ4	If the accumulator =14 the ESF instruction will set the VR20 to red mode. If the AC=1Ø the green mode will be set. I/O preset sets the green mode.
RSKP	447 + 20I	Skip on red mode if I=Ø Skip on green mode if I=1
DSKP	446 + 20I	Skip on color not ready if I=Ø Skip on color ready if I=1 Used after the ESF instruction to indicate the VR20 has switched colors

VC12 INSTRUCTIONS (REFERENCE)

MNEUMONIC	CODE	DESCRIPTION
DIS	140 + 20I + α	Display a dot. If I=Ø the contents of the α register is the horizontal coordinate. If I=1 the contents of α incremented by one is the horizontal coordinate. If bit Ø of the contents of α = Ø channel 1 is set. If bit Ø=1 channel 2 is set. In all cases the AC holds the vertical coordinate
DSC	174Ø + 20I + β	Display character instruction displays at 2 x 6 dot matrix. The address of the pattern word is either taken from the contents of β, (I=Ø) or contents of β + 1, (I=1)

NOTE:

Previous to this option linc codes Ø466 and Ø467 were implied unconditional skips. Any programs that use these codes and are to be customer modified to utilize the color scope will require redefining these codes.

Programs written on the dial assembler are unaffected because dial defines the skip as Ø456.

PROGRAM EXAMPLE

This routine illustrates a method of displaying two dots at center screen on the VR20. One dot will be in green on channel 1, the other in red on channel 2.

```
MNEUMONIC          ADDRESS/CONTENTS      COMMENT

        *20
Start,  LDA            4Ø2Ø/1ØØØ     /Store Address,
        XADD1          4Ø21/ØØ45     /of X Coordinate,
        STC ALPHA      4Ø22/4ØØ2     /into the α register
        LDA I          4Ø23/1Ø20     /Put green mode,
        1Ø             4Ø24/ØØ10     /No. into AC.
        ESF            4Ø25/ØØØ4     /set green mode.
        DSKP I         4Ø26/Ø466     /done switching green?
        JMP.-1         4Ø27/6Ø26     /no wait.
        CLR            4Ø3Ø/ØØ11     /set vertical coord.=Ø
        DIS ALPHA      4Ø31/Ø142     /display a green dot.
        LDA            4Ø32/1ØØØ     /Store address of,
        XADD2          4Ø33/ØØ46     /X coord. plus channel,
        STC            4Ø34/4ØØ2     /2 Into the α register.
        LDA I          4Ø35/1Ø2Ø     /Put red mode no.,
        14             4Ø36/ØØ14     /into the AC.
        ESF            4Ø37/ØØØ4     /set red mode.
        DSKP I         4Ø4Ø/Ø466     /Done switching to red?
        JMP.-1         4Ø41/6Ø4Ø     /No wait.
        CLR            4Ø42/ØØ11     /set vertical coord=Ø.
        DIS ALPHA      4Ø43/Ø142     /Display A red dot.
        JMP START      4Ø44/6Ø2Ø     /Do it all again.

XADD1,  14ØØ           4Ø45/14ØØ     /X coord. Chan 1
XADD2,  54ØØ           4Ø46/54ØØ     /X coord. Chan 2

ALPHA =2                             /defined for assembler
DSKP  =446                           /
```

GENERAL SPECIFICATIONS

NOMINAL COLOR SWITCHING DELAYS:

Red to Green	1.6 MS
Green to Red	.3 MS

DETAILED DESCRIPTION

The M7601 module is utilized only when changing or testing color status on the VR20.

Initially "IOC I/O presset L" sets the pre-color flip-flop to the green mode. The first instruction following sets the scope to green via signal "CoL Busy + TP5" The color flip-flop is part of the A615 D/A module located in slot F36. When a program color change is initiated "RcL LD MSC 4 H" toggles the pre-color flip-flop. The one shot applicable to the color change is triggered and at TP5 time (if no display in progress) the color flip-flop is set to the desired mode. The VR20 scope starts changing color. During this period no display is allowed because "CoL DSC Busy H" is asserted for the length of the delay. Any attempt at displaying will hang the processor in internal pause.

The active one-shot enables the other input to the "INS N EØ 6 H" gate and the instruction Ø446 will cause a skip. At any time, the "INS or EQ Ø7 H" gate reflects the color the scope is in, and can be sampled by the Ø447 instruction.

INSTALLATION AND ACCEPTANCE

1. Insure ECO's EM12-ØØ39, EM12-ØØØ51 and 12-ØØØ96 are installed.

2. Install red wires as per the hand wiring list on print D-CS-VC12-C-CoL.

3. Install the M7601 module into slot D36.

4. Adjust the delays at pin D36B1 for 1.6 MS (red to green) and .3MS (green to red). Use main DEC 12-D6BC or the sample program attached.

5. The VC12-C will be considered acceptable upon successful completion of mainDEC 12-D6BC.

MASTER DRAWING LIST

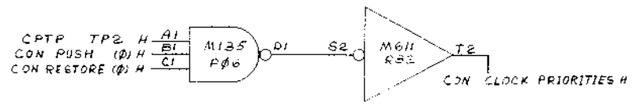
DWG. NO.	REV. LET.	NO. OF SHEETS	TITLE
A-ML-EP12-0	REF	2	PROCESSOR
D-MU-EP12-0-1	REF	2	MODULE UTILIZATION PROC.
A-PL-EP12-0-1	REF	3	MODULE UTILIZATION PROC. (PL)
D-BS-KF12-0-CON	B	1	CONTROL GATING
D-BS-KF12-0-I01	B	1	IOT GENERATOR
D-BS-KF12-0-MAIN		1	MAINTENANCE
D-BS-KF12-0-MUX	D	1	MULTIPLEXER CONTROL
D-BS-KF12-0-MUX1		1	MUX API
D-BS-KF12-0-MUX2		1	MUX DEVICE 1
D-BS-KF12-0-PA1	A	1	PRIORITY LEVELS IN
D-BS-KF12-0-PA2		1	PRIORITY DECODING
D-BS-KF12-0-PTRS		1	STACK & VECTOR POINTERS
D-BS-KF12-0-PUSH		1	PUSH GATING
D-BS-KF12-0-RES	B	1	RESTORE GATING
D-BS-KF12-0-SSB		1	SAVE STATUS BITS
D-IC-KF12-0-CAB		1	BREAK DEVICE CABLE
D-FD-KF12-0-MRG	A	1	MAJOR REGISTER GATING
D-FD-KF12-0-FD	A	1	FLOW DIAGRAM
D-FD-KF12-0-FDBF		1	BLOCK FLOW
D-FD-KF12-0-FDVG		1	VECTOR GATING
A-SP-KF12-0-1	REF		ENGINEERING SPECIFICATIONS

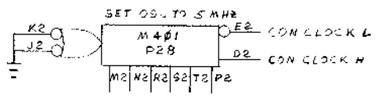
REVISIONS

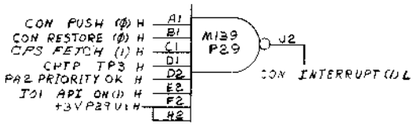
REV.	DATE	CHG. NO.	APP'D.
A	0671	EP12-40	D.M.
B	8/71	EP12-42	R.M.
C	10/71	EP12-43	R.M.
D	1/72	EP12-44	R.M.
E	7/72	EP12-46	R.I.

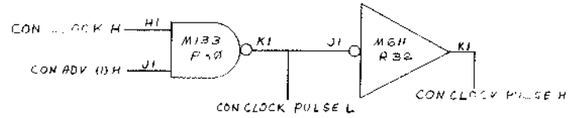
DRN. E.WILSON	DATE 3/17/71	digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS
CHK'D.	DATE	
ENG.	DATE	
PROJ/ENG.	DATE	
PROD.	DATE	
FIRST USED ON PDP12		TITLE AUTOMATIC PRIORITY INTERRUPT
SCALE		SIZE A · CODE ML · NUMBER KF12-0 · REV. E
SHEET 1 OF 1		DIST.

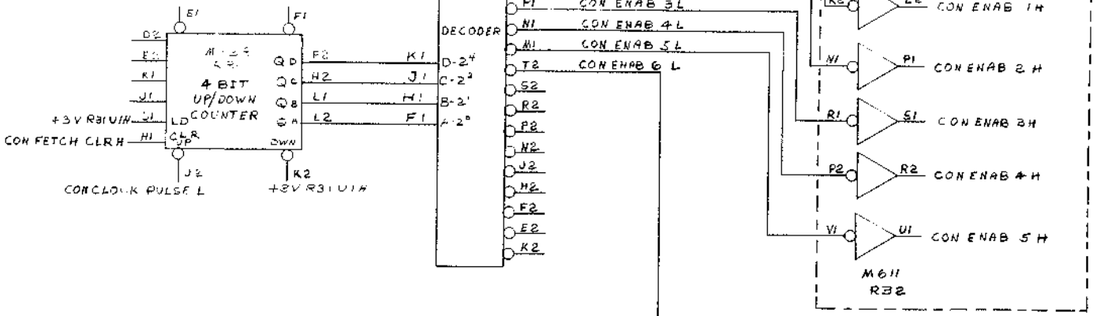
DEC FORM NO. DRA 103

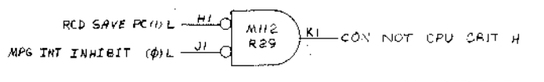


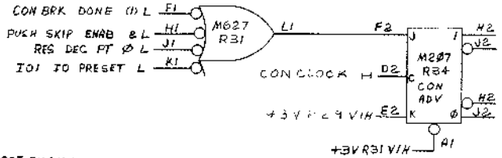


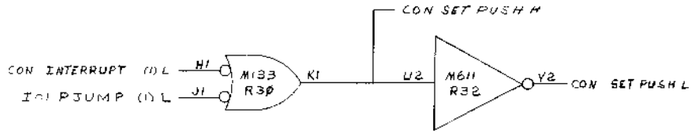


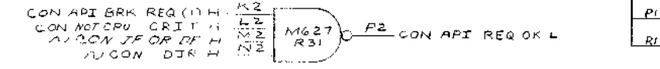


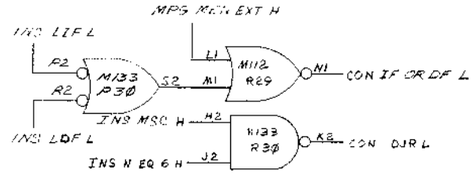


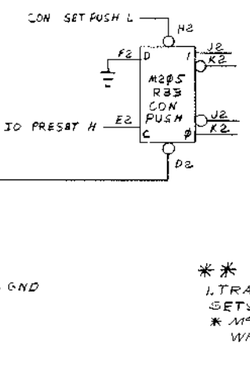


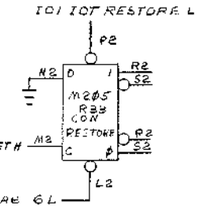


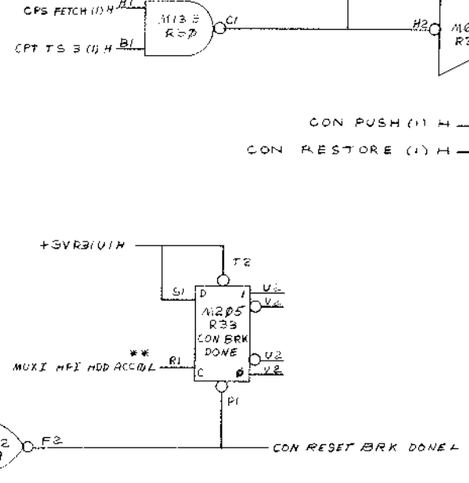


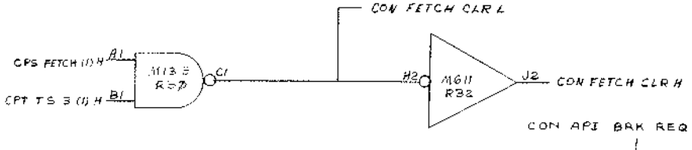


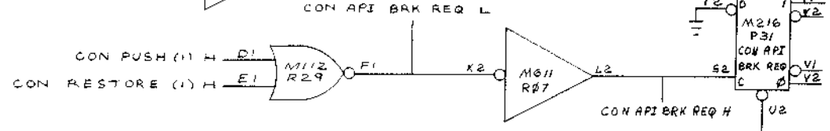


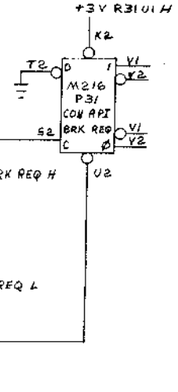


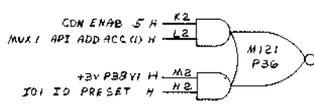


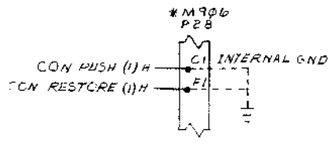












** NOTE
1. TRAILING EDGE OF API ADD ACC (1) L SETS BRK DONE FLOP.
* M906 INSTALLED IN P28 WHEN KF12 NOT INSTALLED.

REVISIONS			
SYM	CHANGE NO	REV	
	EP12-0004A	A	
	EP12-0004B	B	

MODEL		DRN	9-5-71
		CHK'D	
IKNAIAN	5-14-72	ENG	
		PROJ. ENG.	
		PROD.	

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

UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES TOLERANCES

DECIMALS	ANGLES
XXX ± .005	±0° 30'
.XX ± .02	
X ± .1	

REMOVE BURRS AND BREAK SHARP CORNERS SURFACE QUALITY ✓

MATERIAL —

FINISH —

digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS

TITLE: CONTROL MATING

NEXT HIGHER ASSY: A-ML-KF12-Ø

SCALE

SHEET 1 OF 1

SIZE	CODE	NUMBER	REV.
D	BS	KF12-Ø-CON	B

DIST.

SIZE FORM 160 9D-102-B

IO1 BMB Ø3 (1) H PD2
IO0 BMB Ø4 (1) H PE2
IO0 BMB Ø5 (1) H PF2
IO0 BMB Ø6 (1) H PH2
IO0 BMB Ø7 (1) H PJ2
IO0 BMB Ø8 (1) H PK2
+3V PØ7 U1 H RD2
RE2

PDI — IO1 DEV 77 H

IO1 IOT 5-7 L J2
IO1 IOT 3-7 L K2
IO1 IOT 4 L L2
M135 PØ6 — M2 — N1 — M611 PØ8 — P1 — RF2 — PV2 — M107 PR12 — RP2 — EXT AC CLEAR BUS L
IO1 IOT 5-7 L + IO1 IOT 3-7 L + IO1 IOT 4 L
+3V PØ7 U1

IO0 BIOP 1 H — PM2
IO0 BIOP 2 H — PN2
IO0 BIOP 4 H — PP2
IO0 BMB Ø9 (1) H — PA1
IO0 BMB 10 (1) H — PB1
IO0 BMB 11 (1) H — PC1

M107 PR12 outputs:
RH2 IO1 RESTORE L
RM2 IO1 IOT 2 L
RJ2 IO1 IOT 3-7 L
RN2 IO1 IOT 3-2 L
RS2 IO1 IOT 4-4 L
RK2 IO1 IOT 5-7 L
RT2 IO1 IOT 5-4 L
RP2 IO1 IOT 6-2 L
RU2 IO1 IOT 6-4 L
RL2 IO1 IOT 7-7 L
RR2 IO1 IOT 7-2 L
RV2 IO1 IOT 7-4 L

IO0 BMB Ø3 (1) H M1
IO0 BMB Ø4 (1) H N1
IO0 BMB Ø5 (1) H P1
IO0 BMB Ø6 (1) H R1
IO0 BMB Ø7 (1) H R2
IO0 BMB Ø8 (1) H S2
ING IOT H T2
CPT IOT PAUSE (1) H U2
M139 P29 — V2 — IO1 PUSH JUMP L

PRE MB Ø9 (1) H D2
IO0 BMB 10 (1) H E2
M133 PØ7 — F2 — H1 — M133 PØ7 — K1
PRF MB 11 (1) L J1

IO0 BMB 10 (1) H Q2
IO0 BMB Ø9 (1) H E2
PRF MB 11 (1) H F2
IO1 PROC IOT H H2
M627 RØ2 — V2 — IO1 API ON L

IOC PROC IOT L A1
M611 PØ8 — B1 — IO1 PROC IOT H

M133 PØ7 — H2 — J2 — K2 — IO1 API OFF L

IO1 IOT 7-1 L P1
IO1 API ON (Ø) L R1
M112 R29 — S1 — L1 — M611 PØ8 — M1 — IO1 LD VECTOR L

IO1 IOT 6-2 L P2
IO1 API ON (Ø) L R2
M112 R29 — S2 — K2 — M611 PØ8 — L2 — IO1 LD STACK L

IO1 IOT 2 L L2
IO1 API ON (Ø) L M2
M112 R29 — N2 — L1 — M133 PØ7 — N1 — IO1 LD STACK-VEC FLOP
IO0 BAC Ø7 (1) H — M1

IO1 IOT 5-7 L E2 — F2 — IO1 RVELTR H
IO1 IOT 4-4 L F1 — H1 — IO1 R ACV H
IO1 IOT 3-1 L D1 — E1 — IO1 RFLD H
IO1 IOT 2 L J1 — K1 — IO1 IOT SET LEV H
M611 PØ8

IOC IO PRESET L U2
M611 PØ4 — V2 — IO1 IO PRESET H
P2 — M611 PØ8 — R2 — IO1 IO PRESET L
V1 — M611 P37 — U1 — IO1 IO PRESET BUFF L

IO1 API ON L D1
M805 R33 IO1 API ON — C1 — E1 — F1 — B1 — A1
IO1 IO PRESET H B1
IO1 API OFF L A1

IO1 PUSH JUMP L
#205 R33 IO1 PJMP — K1 — L1 — M1 — N1 — J1 — N1
CON CLR BRK REQ L H1

IO1 IOT 5 E 3 E 4 H
M734 PR13 — PD2 PE2 PF2 PH2 PJ2 PK2
IO1 RFLD H PM2
IO1 R STACK H PN2
IO1 RVECTR H PP2

PA1 IO1 EN WORD A H
PB1 IO1 EN WORD B H
PC1 IO1 EN WORD C H

PTRS STACK Ø0 (Ø) H EF1 — 0
PTRS STACK Ø1 (Ø) H EH1 — 1
PTRS STACK Ø2 (Ø) H PJ1 — 2
PTRS VELTOR Ø0 (Ø) H PK1 — 3
PTRS VELTOR Ø1 (Ø) H EL1 — 4
PTRS VELTOR Ø2 (Ø) H EM1 — 5
+3V PØ7 U11 H EP1 — 6
+3V PØ7 U1 H EP1 — 7
~ PA2 PRES LEV 3 H PR1 — 8
~ PA2 PRES LEV 2 H PS1 — 9
~ PA2 PRES LEV 1 H PU1 — 10
~ PA2 PRES LEV Ø H PV1 — 11
M734 — WORD A — I/O BUS

PTRS STACK Ø3 (Ø) H PD1 — 0
PTRS STACK Ø4 (Ø) H PE1 — 1
PTRS STACK Ø5 (Ø) H PR2 — 2
PTRS STACK Ø6 (Ø) H PS2 — 3
PTRS STACK Ø7 (Ø) H PT2 — 4
PTRS STACK Ø8 (Ø) H PU2 — 5
PTRS STACK Ø9 (Ø) H PV2 — 6
PTRS STACK 10 (Ø) H RD2 — 7
PTRS STACK 11 (Ø) H RE2 — 8
PTRS STACK 12 (Ø) H RF2 — 9
PTRS STACK 13 (Ø) H RU1 — 10
PTRS STACK 14 (Ø) H RV1 — 11
M734 — WORD B — I/O BUS

PTRS VECTOR Ø3 (Ø) H RH2 — 0
PTRS VECTOR Ø4 (Ø) H RJ2 — 1
PTRS VECTOR Ø5 (Ø) H RK2 — 2
PTRS VECTOR Ø6 (Ø) H RL2 — 3
PTRS VECTOR Ø7 (Ø) H RM2 — 4
PTRS VECTOR Ø8 (Ø) H RN2 — 5
PTRS VECTOR Ø9 (Ø) H RP2 — 6
~ PA1 LSB SEL H RR2 — 7
PA2 TRAIL 2 H RS2 — 8
PA2 TRAIL 1 H PT2 — 9
PA2 TRAIL Ø H RU2 — 10
+3V PØ7 U1 RV2 — 11
M734 — WORD C — I/O BUS

I/O BUS:
0 EAI EXT I/O BUS ØØ L
1 EBI EXT I/O BUS Ø1 L
2 ECI EXT I/O BUS Ø2 L
3 EDI EXT I/O BUS Ø3 L
4 EEI EXT I/O BUS Ø4 L
5 EFI EXT I/O BUS Ø5 L
6 EHI EXT I/O BUS Ø6 L
7 EJI EXT I/O BUS Ø7 L
8 EKI EXT I/O BUS Ø8 L
9 ELI EXT I/O BUS Ø9 L
10 EMI EXT I/O BUS 10 L
11 ENI EXT I/O BUS 11 L

REVISIONS			
CHK	CHANGE NO	REV	
	EP12-00044	A	

MOORE — E H12 — TKNAIAN

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

UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES. TOLERANCES
DECIMALS: .XXX ± .005, .XX ± .02, X ± .1 — ANGLES: ±0° 30'
REMOVE BURRS AND BREAK SHARP CORNERS SURFACE QUALITY ✓
MATERIAL / / — FINISH

DRN. M-Sweeney DATE 4-2-71
CHK'D DATE
ENG. DATE
PROJ. ENG DATE
PROD DATE

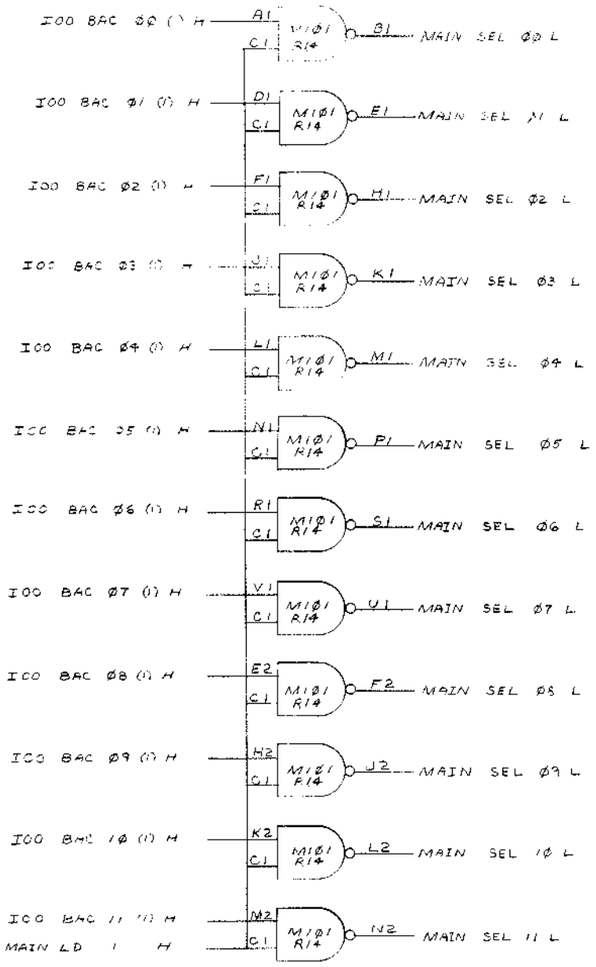
NEXT HIGHER ASSY. A-ML-KF12-Ø
SCALE
SHEET 1 OF 1

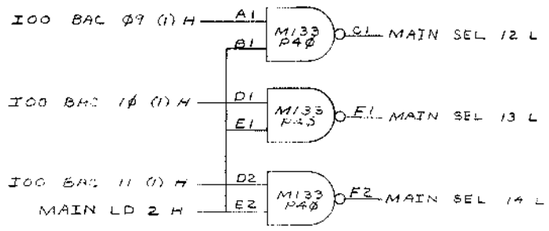
digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS

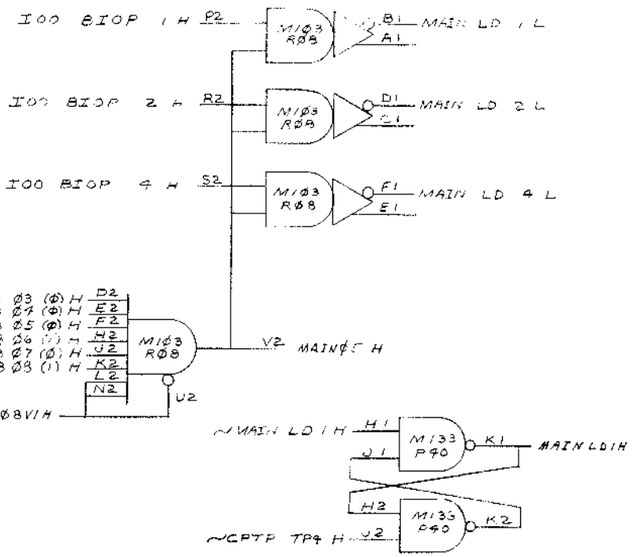
TITLE: IOT GENERATOR

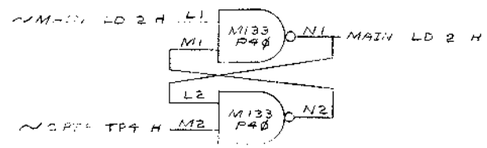
SIZE D | CODE BS | NUMBER KF12-Ø-IO1 | REV. B
DIST.

DEC FORM NO ORD 102-B









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

UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES TOLERANCES	DRN.	DATE 2-23-71
DECIMALS: .XXX ± .005, XX ± .02, X ± .1 — ANGLES: ±0° 30'	CHK'D	DATE
	ENG.	DATE
REMOVE BURRS AND BREAK SHARP CORNERS SURFACE QUALITY ✓	PROJ. ENG.	DATE
	PROD.	DATE
MATERIAL	NEXT HIGHER ASSY.	
FINISH	SCALE	
	SHEET 1 OF 1	

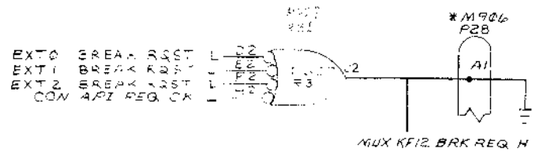
digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS

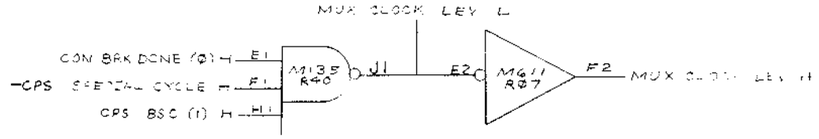
TITLE: MAINTENANCE

SIZE	CODE	NUMBER	REV
D	BS	KF12-O-MAIN	

DIST.

REVISIONS		
CHANGE NO		REV
		CHK





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NOTE:

1. *M9Ø6 INSTALLED IN P28 WHEN KF12 NOT INSTALLED.
2. ** CABLE FROM DMØ4.

REVISIONS	CHANGE NO	REV	CHK
	EP12-00040	A	
	EP12-00042	B	
	EP12-00044	C	
	EP12-00046	D	

M. Gassaway 6-23-71
MACKLIN
6-28-71
R. MOORE
9-9-71
MOORE
2-16-72
IKNAIAN

DEC FORM NO
DRD 102-B

FIRST USED ON OPTION/MODEL
PDP 12

UNLESS OTHERWISE SPECIFIED
DIMENSION IN INCHES.
TOLERANCES

DECIMALS	ANGLES
XXX ± .005 XX ± .02 X ± .1	±0° 30'

REMOVE BURRS AND BREAK SHARP CORNERS SURFACE QUALITY ✓

MATERIAL

FINISH

QTY.	DESCRIPTION	PART NO.	ITEM NO.

PARTS LIST

DRN. E. Wilson DATE 3-5-71
CHK'D DATE
ENG DATE
PROJ. ENG. DATE
PROD DATE 5/2/72

NEXT HIGHER ASSY.
A-ML-KF12-?

SCALE
SHEET OF

DIGITAL EQUIPMENT CORPORATION
MAYNARD MASSACHUSETTS

TITLE
MULTIPLEXER CONTROL

SIZE	CODE	NUMBER	REV.
D	BS	KF12-Ø-MUX	D

DIST

D BS KF12-Ø-MUX D

PTRS STACK ØØ (1) L — A1 — M623 P10 — D1 — EXT EXT DATA ADD Ø L
C1

PTRS STACK Ø2 (1) L — E1 — M623 P10 — K1 — EXT EXT DATA ADD 2 L
J1

PTRS STACK Ø4 (1) L — M1 — M623 P10 — R1 — EXT DATA ADD Ø1 L
P1

PTRS STACK Ø6 (1) L — D2 — M623 P10 — W2 — EXT DATA ADD Ø3 L
F2

MUX 1 ENABLE STACK ADD L

PTRS STACK Ø1 (1) L — B1 — M623 P10 — E1 — EXT EXT DATA ADD 1 L

PTRS STACK Ø3 (1) L — H1 — M623 P10 — L1 — EXT DATA ADD Ø0 L

PTRS STACK Ø5 (1) L — N1 — M623 P10 — S1 — EXT DATA ADD Ø2 L

PTRS STACK Ø7 (1) L — E2 — M623 P10 — V2 — EXT DATA ADD Ø9 L

PTRS STACK Ø8 (1) L — K2 — M623 P10 — N2 — EXT DATA ADD Ø5 L
M2

PTRS STACK 10 (1) L — R2 — M623 P10 — U2 — EXT DATA ADD 07 L
T2

PTRS STACK 12 (1) L — A1 — M623 P11 — D1 — EXT DATA ADD Ø9 L
C1

PTRS STACK 14 (1) L — F1 — M623 P11 — K1 — EXT DATA ADD (11) L
J1

MUX 1 ENABLE STACK ADD L

PTRS STACK Ø9 (1) L — L2 — M623 P10 — P2 — EXT DATA ADD Ø6 L

PTRS STACK 11 (1) L — S2 — M623 P10 — V2 — EXT DATA ADD Ø8 L

PTRS STACK 13 (1) L — B1 — M623 P11 — E1 — EXT DATA ADD 10 L

M623 P11 — H1 — L1

S2 — M906 R22

MUX 1 API DATA OUT L — M1 — M623 P11 — R1 — IOB DATA IN H
P1

100 ADD ACCEPTED (1) L — D2 — M623 P11 — M2 — MUX 1 API ADD ACC (1) L
F2

M611 R07 — N1 — P1 — MUX 1 API ADD ACC (1) H

MUX PRI APIL

T2 — M906 R22

M611 P04 — N1 — P1 — MUX 1 API BREAK (1) H

PUSH CARRY INSERT L — N1 — M623 P11 — S1 — EXT INCREMENT MB L
100 B BREAK (Ø) H — E2 — M623 P11 — U2 — MUX 1 API BREAK (1) L

MUX 1 API DATA OUT H

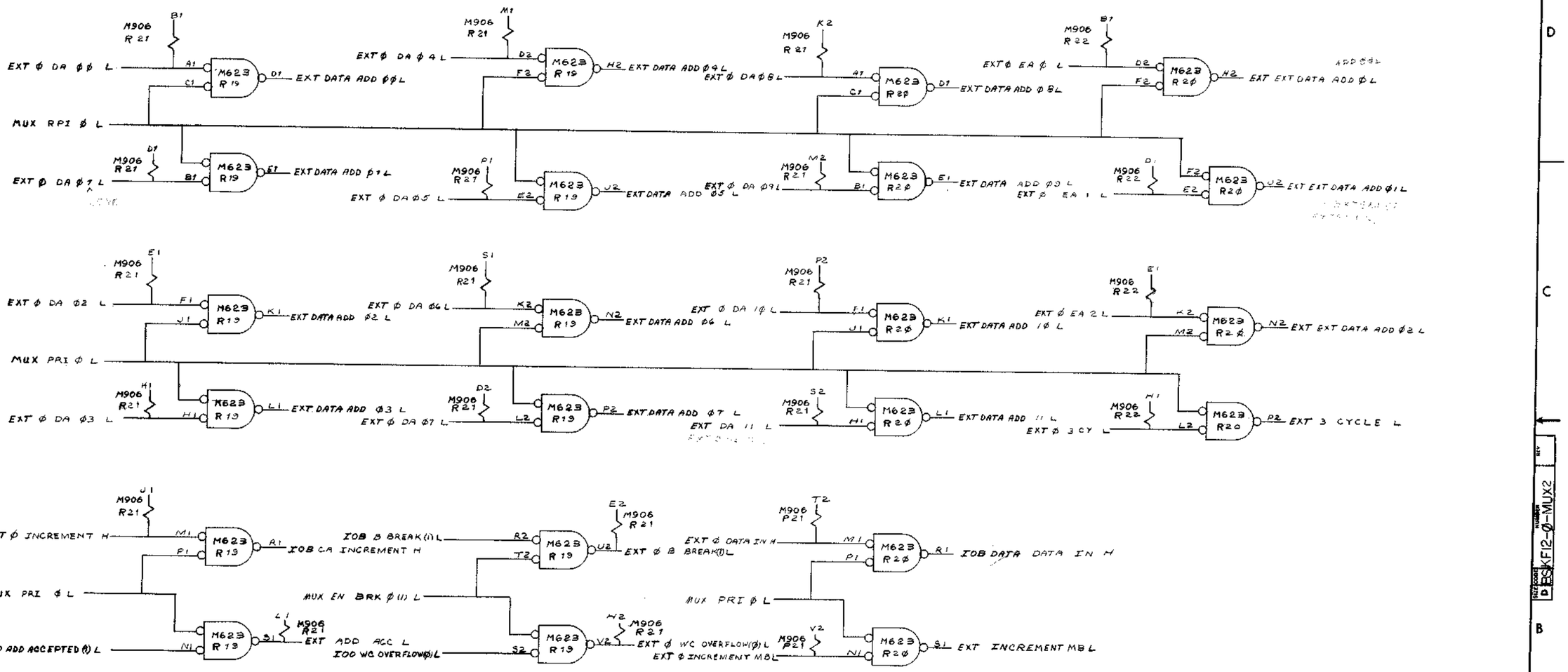
CON RESTORE (1) L — D2
PUSH GET JUMP ADD L — E2 — M133 P03 — F2 — J1 — M611 R07 — K1 — MUX 1 API DATA OUT L

~PUSH GET JUMP ADD L — T2
MUX PRI API (1) L — U2 — M112 R29 — V2 — P2 — M611 P34 — R2 — MUX 1 ENABLE STACK ADD L

FIRST USED ON OPTION/MOD: PDP12	QTY.	DESCRIPTION	PART NO. / ITEM NO.
		PARTS LIST	
UNLESS OTHERWISE SPECIFIED: DIMENSION IN INCHES; TOLERANCES: DECIMALS ± .005, FRACTIONS ± 1/64, ANGLES ± 0°30'; FINAL SURFACE QUALITY √; REMOVE BURRS AND BREAK SHARP CORNERS	DRN. M. Gainer	DATE 3-23-71	digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS
	CHK'D.	DATE	
	ENG.	DATE	TITLE: CHANNEL-MULTIPLEXER MUX-API
	PROJ. ENG.	DATE	
MATERIAL	MOD.	DATE 7/1/71	
	NEXT HIGHER ASSY: A-ML-KF12-Ø		SIZE D / CODE BS / NUMBER KF12-Ø-MUX 1 / REV
FINISH	SCALE		DIST.
	SHEET 1 OF 1		

REVISIONS: REV. | CHANGE NO. | CHK

DEC FORM NO ORD 102A



REVISIONS	REV.	CHANGE NO	CHK

OEC FORM NO. DRD 102A

FIRST USED ON OPTION/MOD	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	M. Quinn	DATE 8-23-71
CHK'D		DATE
ENG		DATE
PROJ. ENG.		DATE
PROD.		DATE 7/1/72

NEXT HIGHER ASSY
A-ML-KF12-Ø

SCALE

SHEET 1 OF 1

digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS

TITLE
CHANNEL-MULTIPLEXER

SIZE	CODE	NUMBER	REV
D	BS	KF12-Ø-MUX2	

DIST.

EXT INT RQST BUS 1 L
EXT INT RQST BUS 2 L
EXT INT RQST BUS 3 L
M135 R40

PAI LEV INT L
M611 P34
M623 P11
EXT INT RQST BUS L
(THIS SIGNAL IS EFFECTIVE ONLY WHEN THE KF12 IS NOT SELECTED)
EXT INT RQST BUS 4 L

M192 P39 (E OUT / E IN)
GND
PAI LEV 14 (1) L
PAI LEV 13 (1) L
PAI LEV 12 (1) L
PAI LEV 11 (1) L
PAI LEV 10 (1) L
PAI LEV 9 (1) L
PAI LEV 8 (1) L
PAI LSB SEL L
PAI LSB BIT 2 L
PAI LSB BIT 1 L
PAI LSB BIT Ø L

EXT INT RQST BUS 5 L
M623 R10
M623 R10
EXT INT RQST BUS 6 L
EXT INT RQST BUS L

*NOTE:
M192 "ENCODER" CHARACTERISTICS:
① "E OUT" IS LOW WHEN ALL INPUTS ARE HIGH.
② WHEN "E IN" IS HIGH ALL OUTPUTS ARE HIGH.

M192 P39 (E OUT / E IN)
PAI LEV 7 (1) L
PAI LEV 6 (1) L
PAI LEV 5 (1) L
PAI LEV 4 (1) L
PAI LEV 3 (1) L
PAI LEV 2 (1) L
PAI LEV 1 (1) L
PAI LEV Ø (1) L
PAI TRIAL S L
PAI MSB BIT 2 L
PAI MSB BIT 1 L
PAI MSB BIT Ø L

M905 R16

PWF PWR LOW (1) L	A1	B1	EXT LEV Ø L
CLIP TAPE INTERRUPT L	C1	D1	EXT LEV 1 L
ACLIO INT RQST L	E1	F1	EXT LEV 2 L
TSS INT RQST L	H1	J1	EXT LEV 3 L
TTO TPR FLG (1) L	K1	L1	EXT LEV 4 L
TTI KEYBOARD FLAG (1) L	M1	N1	EXT LEV 5 L
DTTI KEYBOARD FLAG (1) L	P1	R1	EXT LEV 6 L
DTTO TPR FLG (1) L	V1	T1	EXT LEV 7 L
PCL INT RQST L	E2	F2	EXT LEV 8 L
EXT INT RQST BUS 1 L	H2	J2	EXT LEV 9 L
EXT INT RQST BUS 2 L	K2	L2	EXT LEV 11 L
EXT INT RQST BUS 3 L	M2	N2	EXT LEV 12 L
EXT INT RQST BUS 4 L	P2	R2	EXT LEV 13 L
EXT INT RQST BUS 5 L	S2	T2	EXT LEV 14 L
EXT INT RQST BUS 6 L	U2	V2	

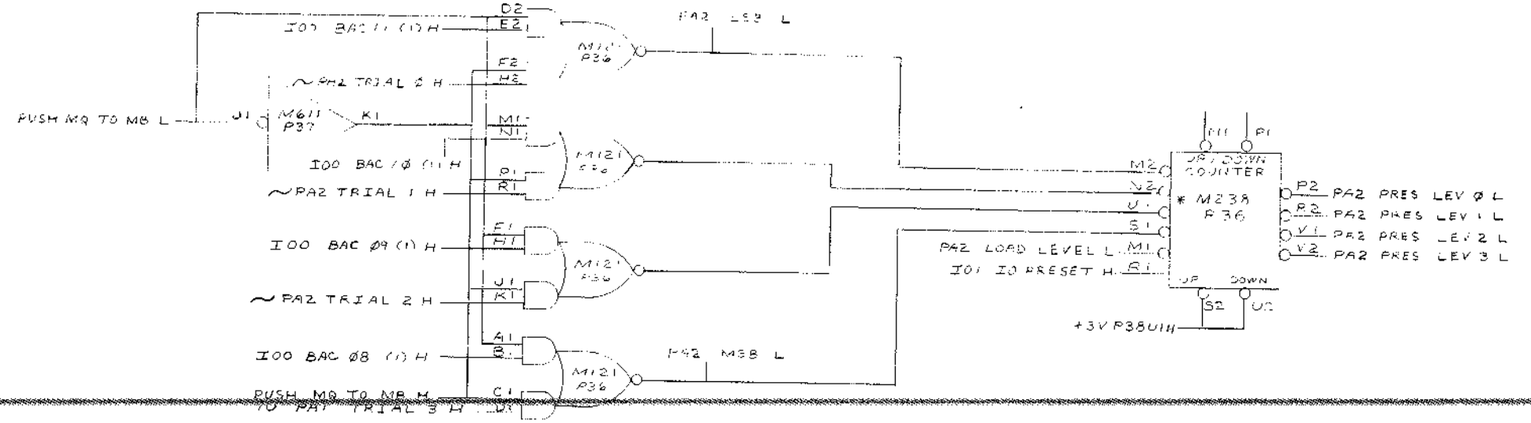
MAIN SEL Ø0 L — EXT LEV Ø L — IOI IO PRESET BUF L
MAIN SEL Ø1 L — EXT LEV 1 L — IOI IO PRESET BUF L
MAIN SEL Ø2 L — EXT LEV 2 L — IOI IO PRESET BUF L
MAIN SEL Ø3 L — EXT LEV 3 L — IOI IO PRESET BUF L
MAIN SEL Ø4 L — EXT LEV 4 L — IOI IO PRESET BUF L
MAIN SEL Ø5 L — EXT LEV 5 L
MAIN SEL Ø6 L — EXT LEV 6 L
MAIN SEL Ø7 L — EXT LEV 7 L
MAIN SEL Ø8 L — EXT LEV 8 L
MAIN SEL Ø9 L — EXT LEV 9 L
MAIN SEL 10 L — EXT LEV 10 L
MAIN SEL 11 L — EXT LEV 11 L
MAIN SEL 12 L — EXT LEV 12 L
MAIN SEL 13 L — EXT LEV 13 L
MAIN SEL 14 L — EXT LEV 14 L (+3V)
M002 R15 — M205 R37 PAI LEV Ø/1/2/3/4 — M205 R38 PAI LEV 5/6/7/8/9 — M205 R39 PAI LEV 10/11/12/13/14

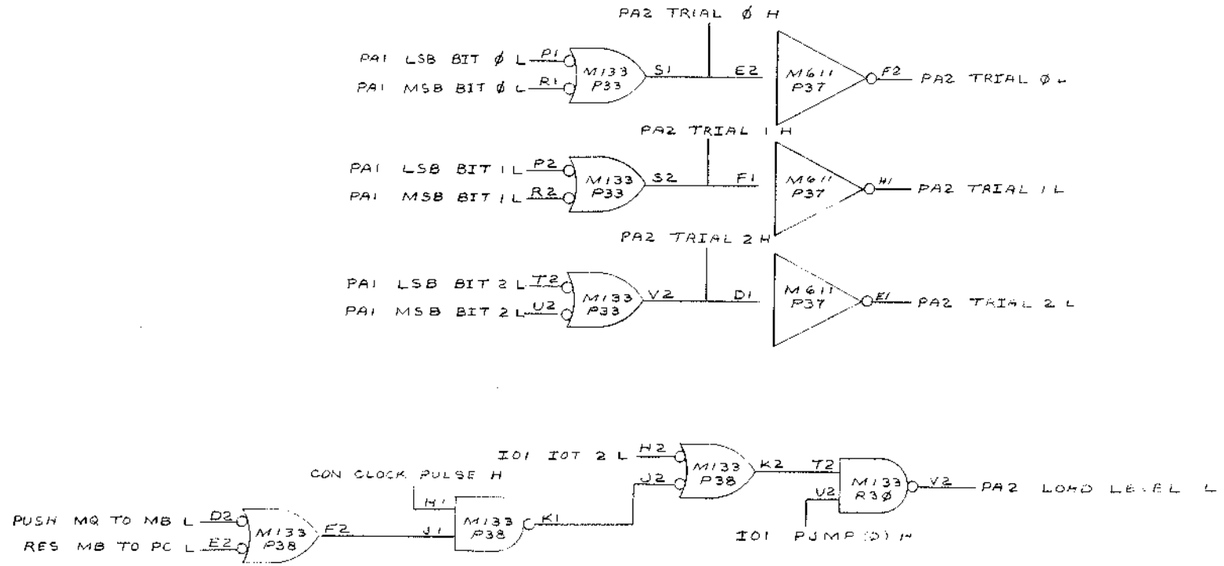
CON CLOCK PRIORITIES H

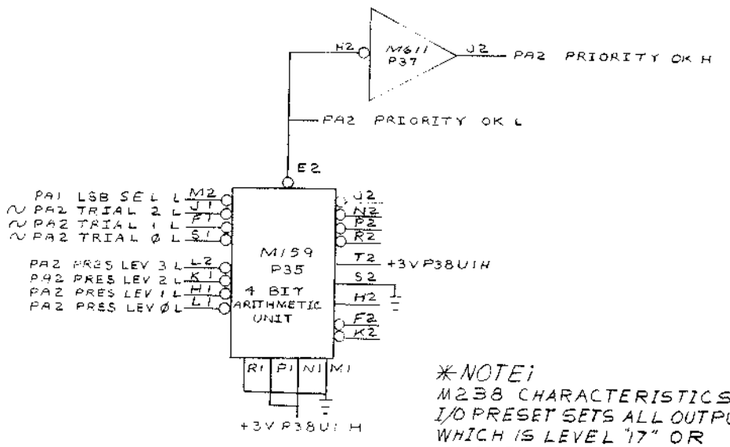
REV	A	8-24-71	MACKLIN	
		6-23-71		

FIRST USED ON OPTION/MODEL: PDP 12	QTY.	DESCRIPTION / PARTS LIST	PART NO. / ITEM NO.
UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES TOLERANCES: DECIMALS .XXX ± .005, .XX ± .02, .X ± .1; ANGLES ± 0° 30'; REMOVE BURRS AND BREAK SHARP CORNERS SURFACE QUALITY ✓	DRN. G. Milazzo	DATE 2-25-71	digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS
	CHK'D.	DATE	TITLE: PRIORITY LEVELS IN
	ENG.	DATE	
	PROJ. ENG.	DATE	
	PROD.	DATE	
MATERIAL	NEXT HIGHER ASSY. A-ML-KF12-0		SIZE D / CODE BS / NUMBER KF12-Ø-PAI / REV. A
FINISH	SCALE		
	SHEET / OF /		DIST

A B C D







*NOTE:
M238 CHARACTERISTICS.
I/O PRESET SETS ALL OUTPUTS LOW WHICH IS LEVEL "1" OR MACHINE LEVEL.

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

UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES. TOLERANCES
DECIMALS .XXX = 005 .XX = 02 .X = .1 ANGLES ±5° 30'
REMOVE BURRS AND BREAK SHARP CORNERS SURFACE QUALITY ✓
MATERIAL
FINISH

		DATE
DRN	E Wilson	3-9-71
CHK'D		
ENG.		
PROJ. ENG		
PROG.		3/24/71
NEXT HIGHER ASSY.	A-ML-KF12-0	
SCALE		
SHEET / OF /		

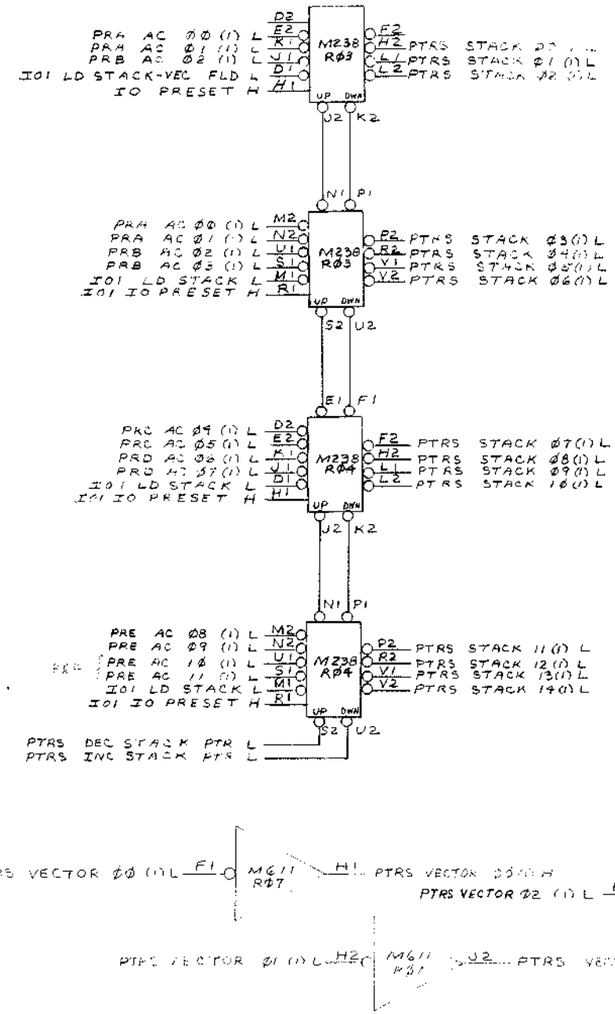
digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS

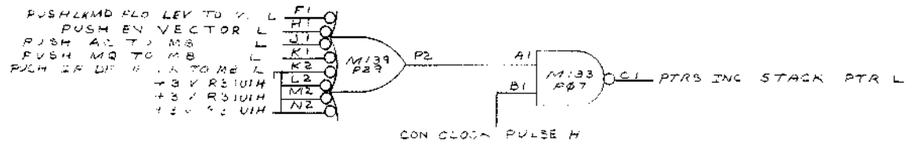
TITLE: PRIORITY DECODING

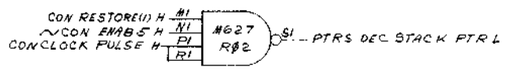
SIZE	CODE	NUMBER	REV.
D	BS	KF12-0-PA2	

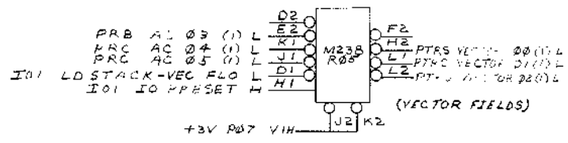
DIST

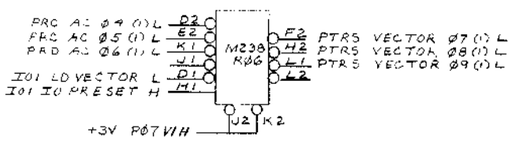
REVISIONS			
REV	CHANGE NO	DATE	CHK

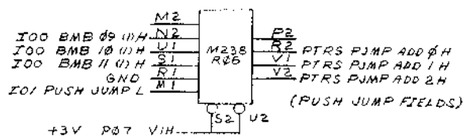


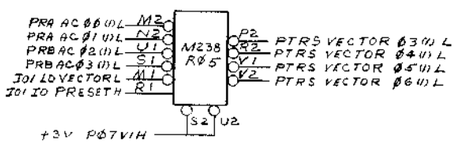


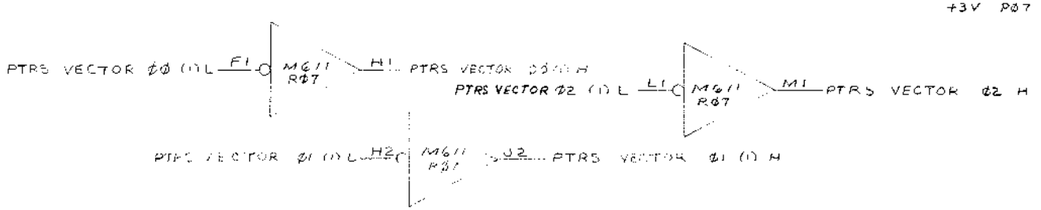












FIRST USED ON OPTION/MODEL	QTY.	DESCRIPTION	PART NO.	ITEM NO.
PDP 12		PARTS LIST		

UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES TOLERANCES
DECIMALS .XXX ± .005 .XX ± .02 .X ± .1 ANGLES ±0° 30'
REMOVE BURRS AND BREAK SHARP CORNERS SURFACE QUALITY ✓
MATERIAL
FINISH

DRN E Wilson DATE 2-24-71
CHK'D DATE
ENG. DATE
PROJ ENG DATE
PROD. DATE

digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS

TITLE STACK & VECTOR POINTERS

NEXT HIGHER ASSY. A-ML-KF12-0
SCALE
SHEET OF

SIZE D | CODE BS | NUMBER KF12-0-PTRS | REV.
DIST

REVISIONS | REV. | CHANGE NO. | CHK

DEC FORM NO UAD 102-B

PUSH VECTOR TO PC L — M623 R11 A1, C1 — D1
PTRS VECTOR Ø3 (1) L — M623 R11 B1 — E1 — EXT DATA ØØ L
PTRS VECTOR Ø4 (1) L — M623 R11 F1, J1 — K1 — EXT DATA Ø1 L
PTRS VECTOR Ø5 (1) L — M623 R11 H1 — L1 — EXT DATA Ø2 L
PTRS VECTOR Ø6 (1) L — M623 R11 M1, P1 — R1 — EXT DATA Ø3 L
PTRS VECTOR Ø7 (1) L — M623 R11 N1 — S1 — EXT DATA Ø4 L
PTRS VECTOR Ø9 (1) L — M623 R11 D2, F2 — H2 — EXT DATA Ø5 L
PTRS VECTOR Ø9 (1) L — M623 R11 E2 — V2 — EXT DATA Ø6 L
PAI LSB SEL L — M623 R11 K2, M2 — N2 — EXT DATA Ø7 L
NPA2 TRAIL 2 L — M623 R11 L2 — P2 — EXT DATA Ø8 L
NPA2 TRAIL 1 L — M623 R11 R2, T2 — U2 — EXT DATA Ø9 L
NPA2 TRAIL Ø L — M623 R11 S2 — V2 — EXT DATA 10 L

PUSH LK MQ FL LEV TO MB L
CON PUSH (1) H — D2
CON ENAB 3 H — E2
M135 P30 — F2
K2 — M611 P04 — L2 — PUSH LK MQ FL LEV TO MB H

CON PUSH (1) H — D2
CON ENAB Ø H — E2
CST TSI (Ø) H — F2
M135 R40 — H2 — PUSH AC TO MB L

PUSH MQ TO MB L
CON PUSH (1) H — J2
CON ENAB 4 H — K2
CPT TSI (Ø) H — L2
M135 R40 — M2 — J1
M611 P37 — K1 — PUSH MQ TO MB H

PUSH IF OF UF TO MB L
CON PUSH (1) H — P1
CON ENAB 5 H — R1
M133 P30 — S1 — L1
M611 P04 — M1 — PUSH IF OF UF TO MB H

PUSH EN VECTOR L
CON PUSH (1) H — P1
CON ENAB 1 H — R1
CPT TSI (Ø) H — S1
M135 R40 — U1 — E2
M611 R32 — F2
PUSH EN VECTOR H — D1
M133 P32 — E1 — F1
CON ADV (Ø) H
PUSH PC TO MB L — N1
M611 P34 — P1 — PUSH PC TO MB H

IOI PJMP (Ø) H — E1
CON ADV (1) H — F1, H1
M135 P06 — J1 — PUSH VECTOR TO PC L

CON CLOCK PULSE H — L1
PUSH IF OF UF TO MB H — M1
M133 P38 — N1 — PUSH IB → IF L

PUSH GET JUMP ADD L
CON PUSH (1) H — P1
CON ENAB 2 H — R1
IOI PJMP (1) H — S1
M135 P06 — U1 — V1
M611 P08 — U1 — PUSH GET JUMP ADD H

IOI P JMP (1) L — H2
SKH SKIP (1) L — J2
M133 P30 — K2
PUSH PC TO MB H — L1
M133 P30 — M1 — N1 — PUSH CARRY INSERT L

CON PUSH (1) H — K1
CON ENABLE 2 H — L1
IOI PUMP (Ø) H — M1
M135 P06 — N1 — PUSH SKIP ENAB 2 L

REV	CHANGE NO	DATE
NI USAGE		

FIRST USED ON OPTION MODE	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

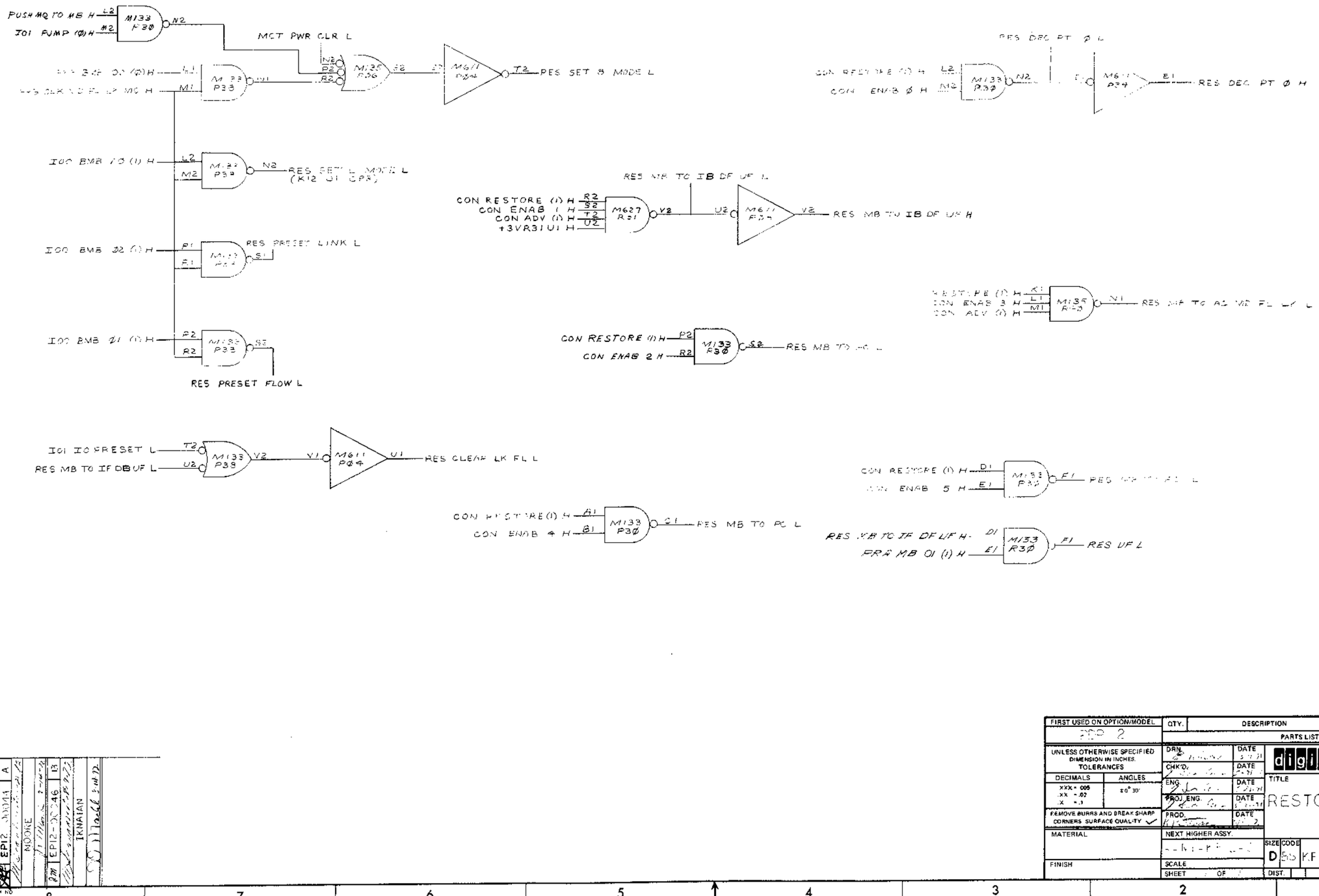
DRN B. Wilson — DATE 3-2-71
CHK'D — DATE
ENG. — DATE
PROJ. ENG. — DATE
PROD. — DATE
NEXT HIGHER ASSY A-11-KF12-0

digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS

TITLE: PUSH GATING

SIZE D | CODE BS | NUMBER KF12-0-PUSH | REV
SCALE
SHEET OF | DIST

KF12-0-PUSH



REVISIONS			
CHK	CHANGE NO	REV	
	EP12-00044	A	
	EP12-00046	B	

MODIFIED BY: IKNAIAN
DRAWN BY: [illegible]

FIRST USED ON OPTION/MODEL	QTY.	DESCRIPTION	PART NO.	ITEM NO.
PDP 2		PARTS LIST		

UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES. TOLERANCES

DECIMALS	ANGLES
XXX ± .005 XX ± .02 X ± .1	±0° 30'

REMOVE BURRS AND BREAK SHARP CORNERS SURFACE QUALITY ✓

MATERIAL

FINISH

DRN.		DATE 3-71
CHK'D.		DATE 3-71
ENG.		DATE 3-71
PROJ. ENG.		DATE 3-71
PROD.		DATE 3-71

NEXT HIGHER ASSY.

SCALE

SHEET OF

digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS

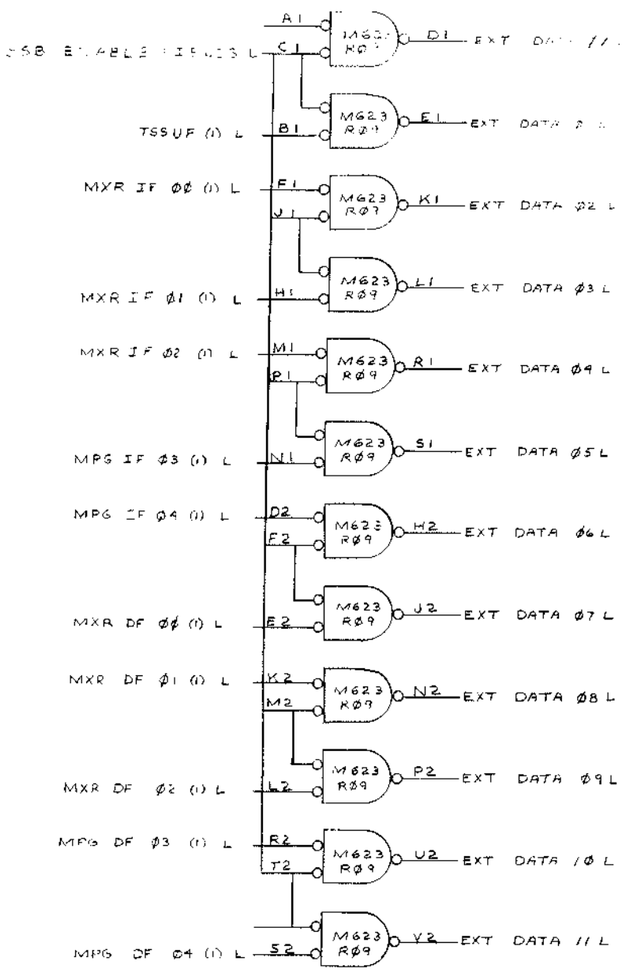
TITLE: RESTORE GATING

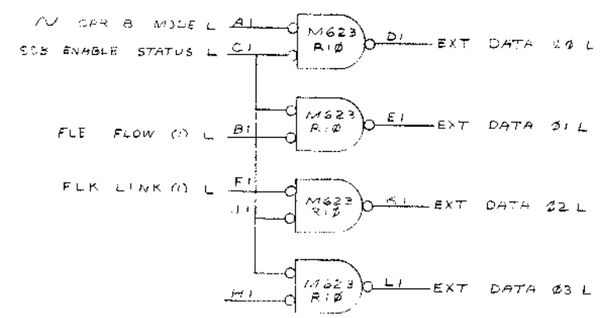
SIZE	CODE	NUMBER	REV.
D	BS	KF12-0-INES	B

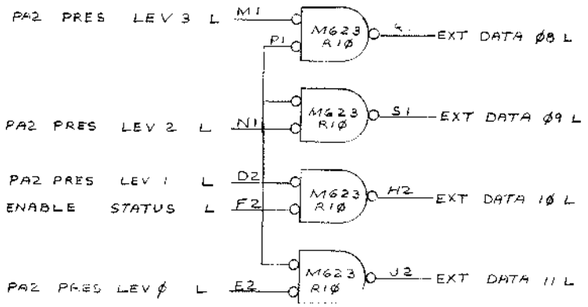
DIST.

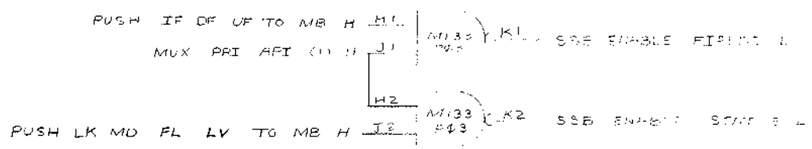
USED ON: KF12-0-INES REV B

DEC FORM NO. 1060 102-B









FIRST USED ON ASSEMBLY: PDP 12	QTY.	DESCRIPTION	PART NO.	ITEM NO.
		PARTS LIST		

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

DRN E. Wilson DATE 2-22-72
CHK'D DATE
ENG. DATE
PROJ ENG. DATE
PROD. DATE 3/22/72
NEXT HIGHER ASSY A-ML-KF12-0
SCALE
SHEET OF

digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS

TITLE: SAVE STATUS BITS

SIZE D | CODE BS | NUMBER KF12-0-SSB | REV.
DIST

REVISIONS: REV. | CHANGE NO. | CHK

DEC FORM NO DRD 102A

SIZE D | CODE BS | NUMBER KF12-0-SSB | REV.

M9Ø3 P14 — EXT INT RQST BUS Ø1 L
M9Ø3 P15 — EXT INT RQST BUS Ø2 L
M9Ø3 P16 — EXT INT RQST BUS Ø3 L
M9Ø3 P17 — EXT INT RQST BUS Ø4 L
M9Ø3 P18 — EXT INT RQST BUS Ø5 L
M9Ø3 P19 — EXT I/O BUS Ø9 L; EXT I/O BUS Ø8 L; EXT I/O BUS Ø7 L; EXT SKIP BUS L; EXT INT RQST BUS Ø6 L; EXT AC CLEAR BUS L; IOO B RUN(Ø) H; MEA BRK SYNC CLK B H; EXT ENAB INT PAUSE H

M9Ø3 P14 — EXT I/O BUS ØØ L; EXT I/O BUS Ø1 L; EXT I/O BUS Ø2 L; EXT I/O BUS Ø3 L; EXT I/O BUS Ø4 L; EXT I/O BUS Ø5 L; EXT I/O BUS Ø6 L; EXT I/O BUS Ø7 L; EXT I/O BUS Ø8 L
M9Ø3 P15 — EXT I/O BUS Ø9 L; EXT I/O BUS 1Ø L; EXT I/O BUS 11 L; EXT SKIP BUS L; EXT INT RQST BUS Ø6 L; EXT AC CLEAR BUS L; IOO B RUN(Ø) H; MEA BRK SYNC CLK B H; EXT ENAB INT PAUSE H
M9Ø3 P16 — EXT DATA ØØ L; EXT DATA Ø1 L; EXT DATA Ø2 L; EXT DATA Ø3 L; EXT DATA Ø4 L; EXT DATA Ø5 L; EXT DATA Ø6 L; EXT DATA Ø7 L; EXT DATA Ø8 L
M9Ø3 P17 — EXT DATA Ø9 L; EXT DATA 1Ø L; EXT DATA 11 L; EXT Ø 3 CY L; EXT Ø CA INCREMENT H; EXT Ø WC OVERFLOW(Ø) H; EXT Ø EA Ø2 L; EXT Ø EA Ø1 L; EXT Ø EA ØØ L
M9Ø3 P18 — EXT 1 DA ØØ L; EXT 1 DA Ø1 L; EXT 1 DA Ø2 L; EXT 1 DA Ø3 L; EXT 1 DA Ø4 L; EXT 1 DA Ø5 L; EXT 1 DA Ø6 L; EXT 1 DA Ø7 L; EXT 1 DA Ø8 L
M9Ø3 P19 — EXT 1 DA Ø9 L; EXT 1 DA 1Ø L; EXT 1 DA 11 L; EXT 1 BREAK RQST L; EXT 1 DATA IN H; EXT 1 B BREAK(Ø) H; EXT 1 ADD ACC; EXT 1 INCREMENT MB L; IOO B A INITIALIZE H

DEVICE #1

11Ø/3 P2Ø — EXT Ø DA ØØ L; EXT Ø DA Ø1 L; EXT Ø DA Ø2 L; EXT Ø DA Ø3 L; EXT Ø DA Ø4 L; EXT Ø DA Ø5 L; EXT Ø DA Ø6 L; EXT Ø DA Ø7 L; EXT Ø DA Ø8 L
M9Ø3 P21 — EXT DATA ØØ L; EXT DATA Ø1 L; EXT DATA Ø2 L; EXT DATA Ø3 L; EXT DATA Ø4 L; EXT DATA Ø5 L; EXT DATA Ø6 L; EXT DATA Ø7 L; EXT DATA Ø8 L
M9Ø3 P2Ø — EXT Ø DA Ø9 L; EXT Ø DA 1Ø L; EXT Ø DA 11 L; EXT Ø BREAK RQST L; EXT Ø DATA IN H; IOO EXT Ø B BREAK(Ø) H; IOO EXT Ø ADD ACC 11 L; EXT Ø INCREMENT MB L; IOO B A INITIALIZE H
M9Ø3 P21 — EXT DATA Ø9 L; EXT DATA 1Ø L; EXT DATA 11 L; EXT Ø 3 CY L; EXT Ø CA INCREMENT H; IOO EXT Ø WC OVERFLOW(Ø) H; EXT Ø EA Ø2 L; EXT Ø EA Ø1 L; EXT Ø EA ØØ L

DEVICE #2

M9Ø3 P22 — EXT 1 DA ØØ L; EXT 1 DA Ø1 L; EXT 1 DA Ø2 L; EXT 1 DA Ø3 L; EXT 1 DA Ø4 L; EXT 1 DA Ø5 L; EXT 1 DA Ø6 L; EXT 1 DA Ø7 L; EXT 1 DA Ø8 L
M9Ø3 P22 — EXT 1 DA Ø9 L; EXT 1 DA 1Ø L; EXT 1 DA 11 L; EXT 1 BREAK RQST L; EXT 1 DATA IN H; EXT 1 B BREAK(Ø) H; EXT 1 ADD ACC; EXT 1 INCREMENT MB L; IOO B A INITIALIZE H
M9Ø3 P23 — EXT DATA ØØ L; EXT DATA Ø1 L; EXT DATA Ø2 L; EXT DATA Ø3 L; EXT DATA Ø4 L; EXT DATA Ø5 L; EXT DATA Ø6 L; EXT DATA Ø7 L; EXT DATA Ø8 L
M9Ø3 P23 — EXT DATA Ø9 L; EXT DATA 1Ø L; EXT DATA 11 L; EXT 1 3 CY L; EXT 1 CA INCREMENT H; EXT 1 WC OVERFLOW(Ø) H; EXT 1 EA Ø2 L; EXT 1 EA Ø1 L; EXT 1 EA ØØ L

DEVICE #3

M9Ø4 P24 — EXT 2 DA ØØ L; EXT 2 DA Ø1 L; EXT 2 DA Ø2 L; EXT 2 DA Ø3 L; EXT 2 DA Ø4 L; EXT 2 DA Ø5 L; EXT 2 DA Ø6 L; EXT 2 DA Ø7 L; EXT 2 DA Ø8 L
M9Ø4 P24 — EXT 2 DA Ø9 L; EXT 2 DA 1Ø L; EXT 2 DA 11 L; EXT 2 BREAK RQST L; EXT 2 DATA IN H; EXT 2 B BREAK(Ø) H; EXT 2 ADD ACC (1) L; EXT 2 INCREMENT MB L; IOO B A INITIALIZE H
M9Ø3 P25 — EXT DATA ØØ L; EXT DATA Ø1 L; EXT DATA Ø2 L; EXT DATA Ø3 L; EXT DATA Ø4 L; EXT DATA Ø5 L; EXT DATA Ø6 L; EXT DATA Ø7 L; EXT DATA Ø8 L
M9Ø3 P25 — EXT DATA Ø9 L; EXT DATA 1Ø L; EXT DATA 11 L; EXT 2 3 CY L; EXT 2 CA INCREMENT H; EXT 2 WC OVERFLOW(Ø) H; EXT 2 EA Ø2 L; EXT 2 EA Ø1 L; EXT 2 EA ØØ L

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

UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES TOLERANCES
DECIMALS .XXX ± .005, .XX ± .02, X ± 1; ANGLES ± 0° 30'
REMOVE BURRS AND BREAK SHARP CORNERS SURFACE QUALITY ✓
MATERIAL —
FINISH —

DRN. M. Watkins DATE 3-9-71
CHK'D DATE
ENG ✓ DATE
PROJ ENG DATE
PROD. DATE 3/12

digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS

TITLE: BREAK DEVICE CABLES

NEXT HIGHER ASSY. A-ML-KF12-Ø
SCALE
SHEET 1 OF 1

SIZE CODE D | NUMBER IC KF12-0-CAB | REV.
DIST

SIZE CODE D BSKF12-Ø-BDC REV

INCR STACK
(PUSH + PUSH JUMP)

STACK POINTER
15 BITS

IOT 6772 (SMLV)
$AC_{0-2} \rightarrow STACK_{0-2}$

IOT 6776 (SSTK)
$AC_{0-11} \rightarrow STACK_{3-14}$

MA

API REQ BRK * BRK GRANTED

DECR STACK
(RESTORE)

MB

REST * ENAB 1

REST * ENAB 3

REST * ENAB 4

REST * ENAB 5
REST * ENAB 2

REST * ENAB 2

MEMORY
(UP TO 32K)

UF

IF (5)

DF (5)

PUSH + PUSHJ
* ENAB 5

MD

* PC

PUSH + PUSHJ
* ENAB 1

FLO

LK

PUSH + PUSHJ
* ENAB 3

AC

PUSH + PUSHJ
* ENAB 0
PUSH + PUSHJ
* ENAB 4

MQ

PUSH + PUSHJ
* ENAB 4

MB

* NOTE:
FOR PUSH AND PUSH J,
MB + SKIP → MB;
THE SKIP FLIP-FLOP IS NOT
REQUIRED TO BE RESTORED.

PUSH + PUSHJ

P	AC
P+1	PC + SKIP
P+2	MQ, FL, LK
P+3	MQ
P+4	UF, IF, DF
(P)	

"STACK"

RESTORE

REVISIONS			
DWG	CHANGE NO.	REV	
CM	E11-00016	A	

IKNATAIN

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

UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES. TOLERANCES
DECIMALS: .XXX ± .005, .XX ± .02, X ± 1
ANGLES: ±0° 30'
REMOVE BURRS AND BREAK SHARP CORNERS SURFACE QUALITY ✓
MATERIAL —
FINISH —

DRN. J LONG DATE 5/14/70
CHK'D DATE
ENG. DATE
PROJ. ENG. DATE
PROD. DATE

digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS

TITLE: MAJOR REGISTER-GATING

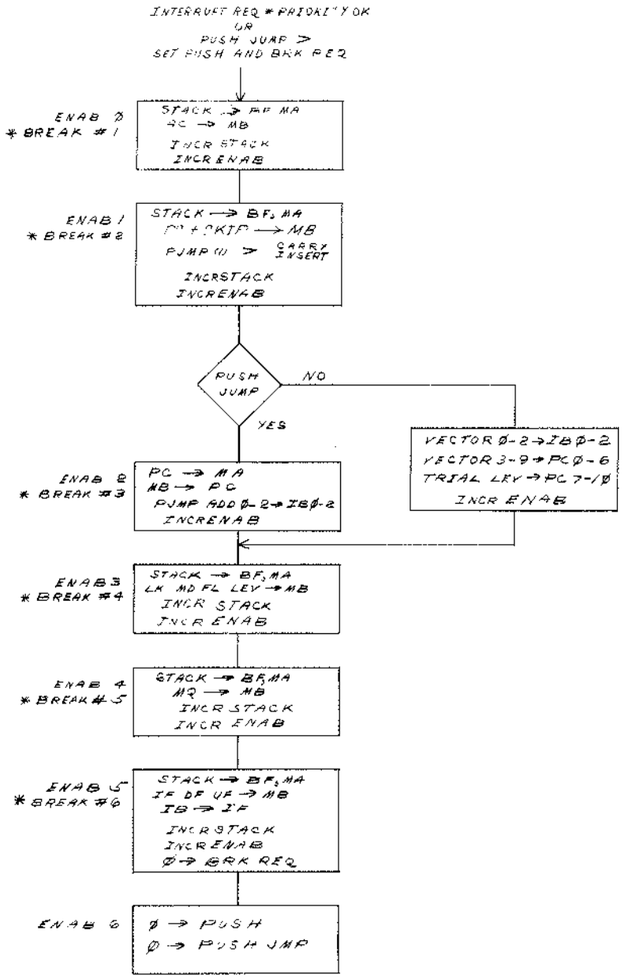
NEXT HIGHER ASSY. A-ML-KF12-C

SIZE D | CODE FD | NUMBER KF12-C-MRG | REV. A

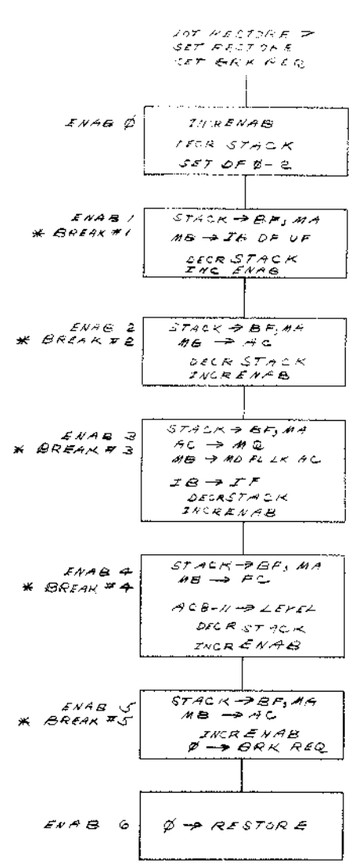
SCALE | SHEET OF | DIST.

DEC FORM NO 1401-102-B

PUSH



RESTORE



* NOTE
IF THE RF11 HAS LOWEST PRIORITY ON THE BUS, BREAK REQUESTS FROM OTHER DEVICES WILL BE ACKNOWLEDGED DURING A PUSH OR RESTORE.

REVISIONS			
CHK	CHANGE NO	REV	
PH	EP12-00046	A	
	IKNAIAN 8-9-72		
	[illegible] 8-14-72		

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

UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES. TOLERANCES
DECIMALS: XXX ± .005, .XX ± .02, .X ± 1; ANGLES: ±0° 30'
REMOVE BURRS AND BREAK SHARP CORNERS. SURFACE QUALITY ✓
MATERIAL —
FINISH —

DRN.	M. Spence	DATE 3-22-72
CHK'D.	[illegible]	DATE [illegible]
ENG.	[illegible]	DATE [illegible]
PROJ ENG.	[illegible]	DATE [illegible]
PROD.	[illegible]	DATE [illegible]

NEXT HIGHER ASSY. A-ML-KF12-Ø
SCALE NONE
SHEET [illegible] OF [illegible]

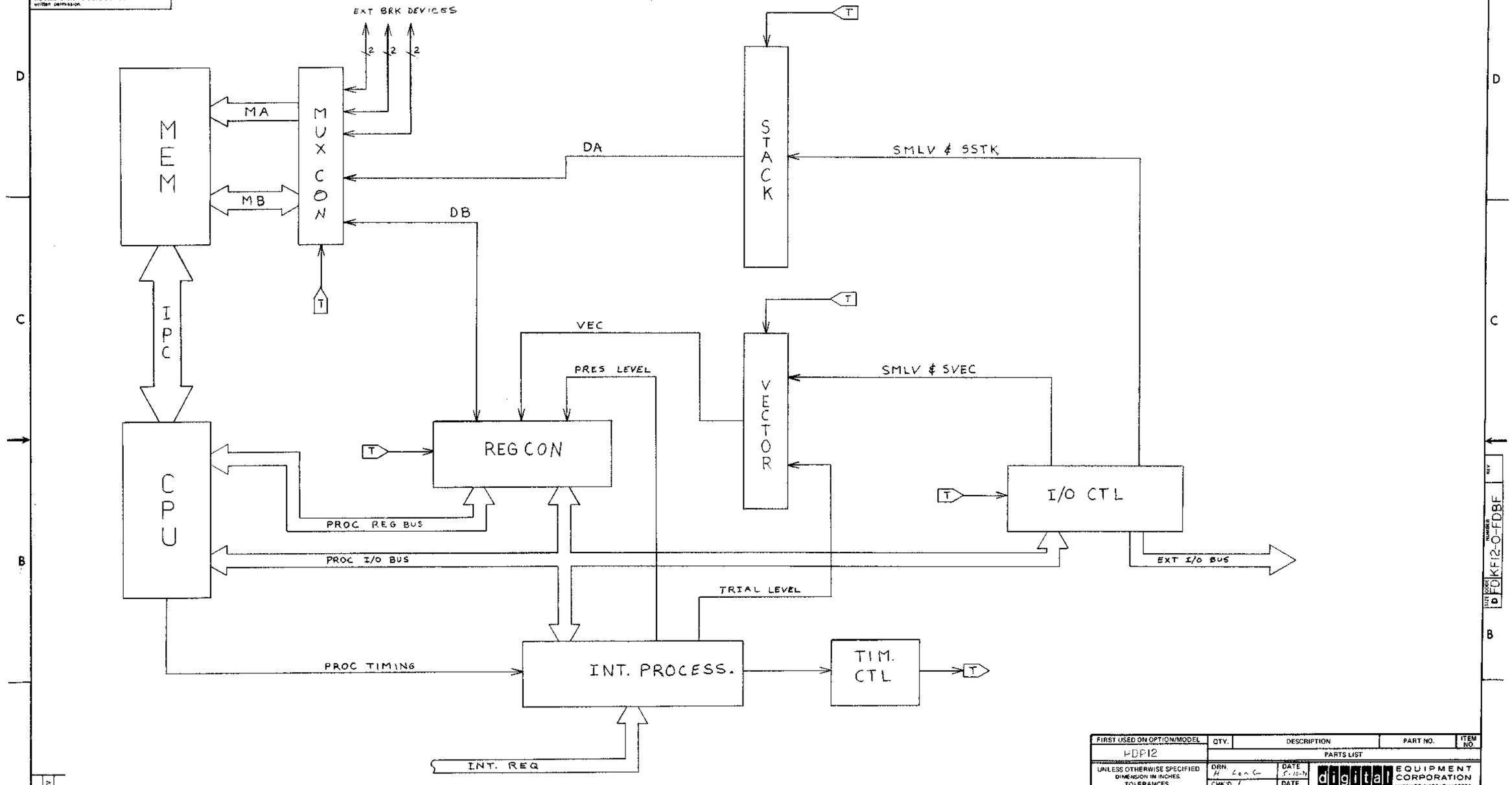
digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS

TITLE: FLOW-DIAGRAM

SIZE	CODE	NUMBER	REV.
D	FD	KF12-Ø-FD	A

DIST

DEC FORM NO. DNG 102-B



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

UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES. TOLERANCES
DECIMALS: XXX ± .005, XX ± .02, X ± .1 — ANGLES: ± 0° 30'
REMOVE BURRS AND BREAK SHARP CORNERS SURFACE QUALITY ✓
MATERIAL
FINISH

DRN. H Lan Cu	DATE 5-10-71	digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS
CHK'D Jan Cu	DATE 5-21-71	
ENG. Jan Cu	DATE 5-21-71	TITLE: BLOCK FLOW
PROJ. ENG. Jan Cu	DATE 5-21-71	
PROD. [illegible]	DATE 5/21/71	

NEXT HIGHER ASSY. A-ML-KF12-C
SCALE
SHEET OF

SIZE	CODE	NUMBER	REV
D	FD	KF12-0-FDBF	

DIST.

REVISIONS: REV | CHANGE NO. | CHK

DEC FORM NO DRD 102-B

IOT 6772 (SMLV)

$AC_{7-5} \rightarrow VEC_{\emptyset-2}$

IOT 6777 (SVEC)

$AC_{\emptyset-6} \rightarrow VEC_{3-9}$

1 OF 15 INTERRUPTS

15

D F/F C

CLOCK

15

NOTE: INTERRUPT REQUEST IS NOT GRANTED UNLESS TRIAL LEVEL (VALUE) IS LESS THAN PRESENT LEVEL.

VEC ∅ 1 2 3 4 5 6 7 8 9

∅ 1 2 3 TRIAL

PUSH * ~ PUSHJ

~ PUSHJ * PUSH * ENAB 1

~ PUSHJ * PUSH * ENAB 1

∅

IF ∅ 1 2 3 4

PC ∅ 1 2 3 4 5 6 7 8 9 10 11

PUSH * ENAB 5

PUSH * PUSHJ * ENAB 2 (CONTAINS VECTOR ADDRESS)

IB ∅ 1 2

MB ∅ 1 2 3 4 5 6 7 8 9 10 11

PUSHJ

9 10 11 IR

PUSHJ MB→PC IS ACTUALLY LOADED VIA:

PC→MA

MEM→MB

MB→PC

REVISIONS: REV | CHANGE NO | CHK

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

UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES. TOLERANCES

DECIMALS: .XXX ± .005, XX ± .02, X ± .1 — ANGLES: ±0° 30'

REMOVE BURRS AND BREAK SHARP CORNERS SURFACE QUALITY ✓

MATERIAL: --

FINISH: --

DRN. H Lenis DATE 12/11

CHK'D DATE

ENG. DATE 12/12/71

PROJ. ENG. DATE 12/12/71

PROD. DATE

digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS

TITLE: VECTOR GATING

NEXT HIGHER ASSY.: --ML-KF12-0

SCALE

SHEET OF

SIZE D | CODE FD | NUMBER KF12-Ø-FDVG | REV.

DIST.

DATA CODE D FDKF12-0-FDVG REV

MASTER DRAWING LIST

DWG. NO.	REV. LET.	NO. OF SHEETS	TITLE
~~A-PL-DM12-0-0~~		~~1~~	~~3 CHANNEL DATA BREAK MUX~~
D-BS-DM12-0-MUX3		1	MUX DEVICE 2
D-BS-DM12-0-MUX4		1	MUX DEVICE 3
A-SP-DM12-0-1	REF		ENGINEERING SPECIFICATIONS
A-ML-EP12-0	REF	2	PROCESSOR
D-MU-EP12-0-1	REF	2	MODULE UTILIZATION PROC.
A-PL-EP12-0-1	REF	3	MODULE UTILIZATION PROC. (PL)

REVISIONS			
REV.	DATE	CHG. NO.	APP'D.
A	10/71	EP12-43	R.M.
B	1/71	EP12-44	R.M.

DRN.		DATE 5-20-71
CHK'D		DATE
ENG.		DATE
PROJ. ENG.		DATE 5-21-71
PROD.		DATE 5/21/71
FIRST USED ON	KF12	
SCALE		
SHEET	1 OF 1	

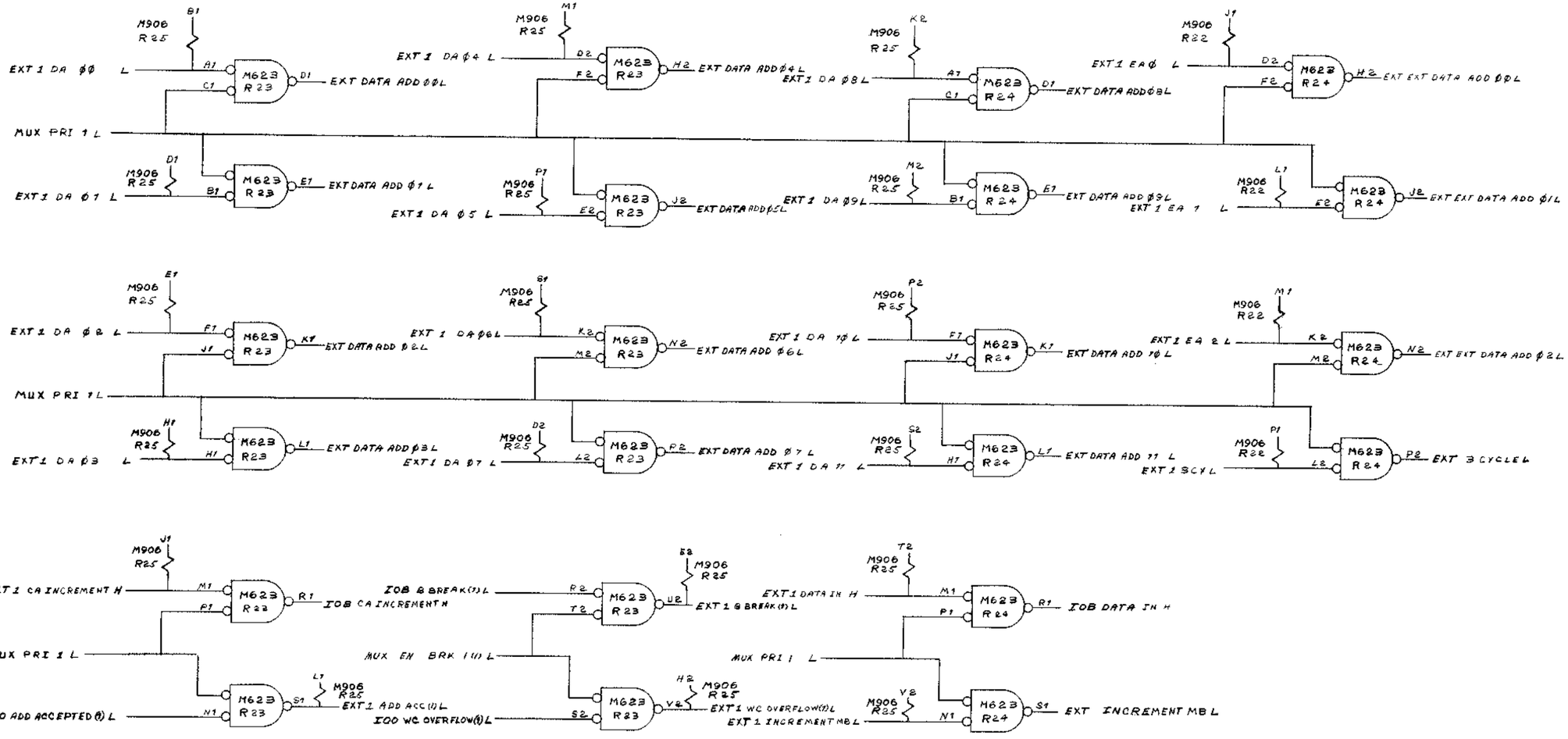
digital EQUIPMENT CORPORATION
MAYNARD, MASSACHUSETTS

TITLE
3 CHANNEL
DATA BREAK MUX

SIZE	CODE	NUMBER	REV.
A	ML	DM12-0	B

DIST.

DEC FORM NO.16-1033
DRA 103



REVISIONS	REV	CHANGE NO.	CHK

DEC FORM NO. DRD 102A

FIRST USED ON OPTION/MOD	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. M-Quinn	DATE 2-23-71	
CH'D.	DATE 3-21-71	
ENG.	DATE 3-21-71	
PROJ. ENG.	DATE 3-21-71	
PROD.	DATE 3/21/71	

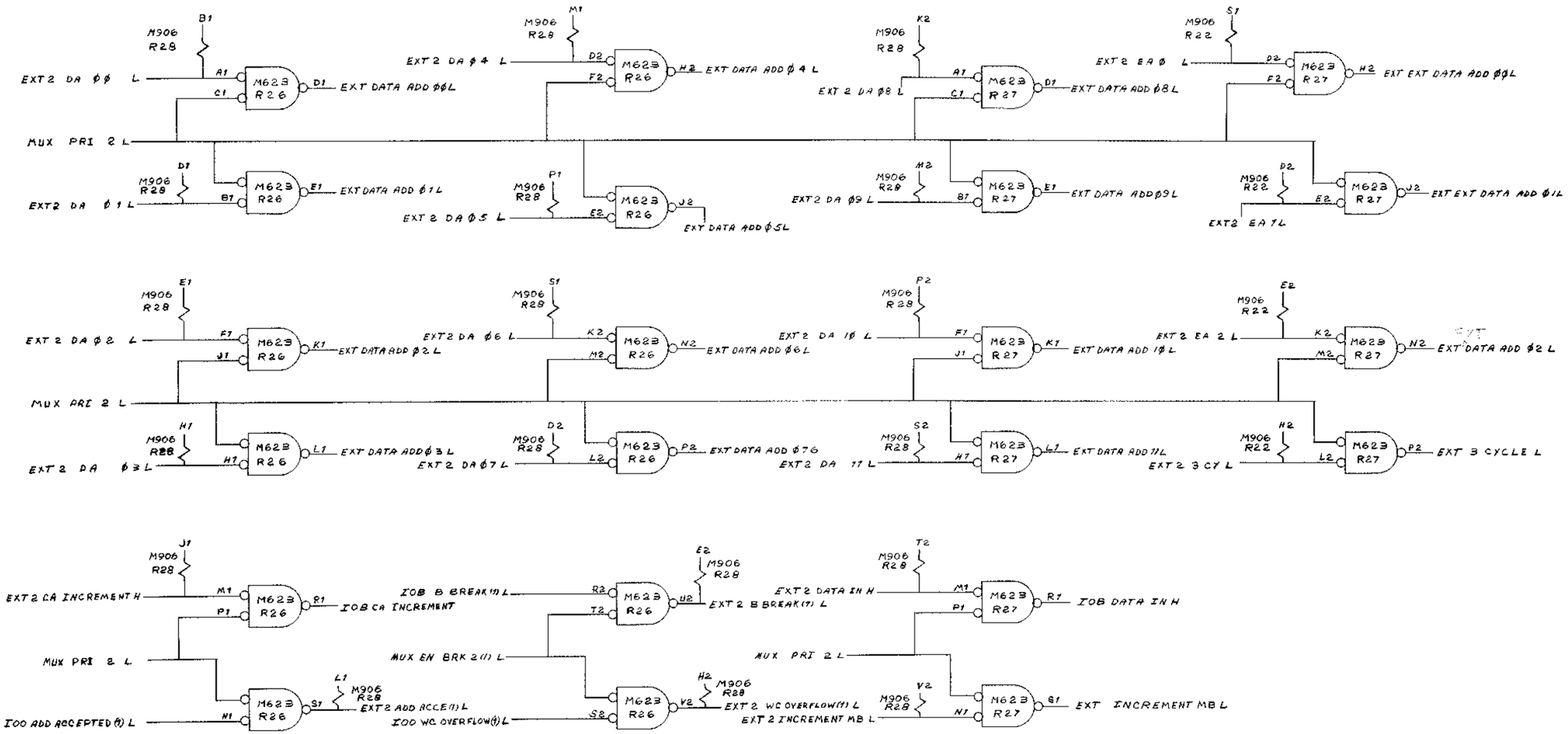
NEXT HIGHER ASSY: A-ML-KF12-Ø
SCALE
SHEET 1 OF 2

digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS

TITLE: MUX DEVICE 2

SIZE	CODE	NUMBER	REV.
D	DBS	DM12-Ø-MUX3	

DIST.



FIRST USED ON OPTION/MOD	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	M. Quinn	DATE 8-23-71
CHK'D	Scala	DATE 8-31-71
ENG	Scala	DATE 8-31-71
PROJ ENG	Scala	DATE 8-31-71
PROD	[illegible]	DATE 9/21/71

NEXT HIGHER ASSY A-ML-KF12-Ø

SCALE

SHEET 1 OF 1

digital EQUIPMENT CORPORATION
MAYNARD MASSACHUSETTS

TITLE
MUX DEVICE 3

SIZE	CODE	NUMBER	REV
D	BS	DM12-Ø-MUX4	

DIST.

REVISIONS | REV. | CHANGE NO. | CHK

DEC FORM NO 10 102A

DBSDM12-Ø-MUX4

MASTER DRAWING LIST

MAINTENANCE MANUALS NO.	TITLE	UNIT VARIATIONS KE12-0
KE12-0	ARITHMETIC OPERATION	X

USED ON OPTIONS							

REVISIONS REV.	DATE	CHG. NO.	APP'D.
A	3-18-69	EP12-01	JS
B	6-5-69	EP12-04	LG
C	10-70	EP12-30	LG
D	7/71	MISC-86	A.V.
E	1/72	EP12-44	R.M.

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 ARITHMETIC OPERATION
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 KE12-Ø · REV. E
SCALE		
SHEET 1 OF 2		DIST

PRINT SET KE12-Ø	DWG. NO.	REV. LET.	NO. OF SHEETS	TITLE	OPTION NO.
X	D-FD-KE12-0-2	A	1	EAE FETCH	
X	D-FD-KE12-0-3		1	EAE EXECUTE PART 1	
X	D-FD-KE12-0-4		1	EAE EXECUTE PART 2	
X	D-BS-KE12-0-EAEC	B	1	EAE CONTROL	
X	D-BS-KE12-0-EAED	A	1	EAE DISABLE	
X	D-BS-KE12-0-EAES		1	EAE STEP COUNTER TMD CONTROL	
X	D-BS-KE12-0-EAET		1	EAE TIMING	
	A-ML-EP12-0	REF	2	PROCESSOR	
	D-MU-EP12-0-1	REF	2	MODULE UTILIZATION PROC.	
	A-PL-EP12-0-1	REF	3	MODULE UTILIZATION PROC. (PL)	

TITLE ARITHMETIC OPERATION	SHEET 2 OF 2	SIZE A · CODE ML · NUMBER KE12-Ø · REV. E

DRA 132

DEC 16-(325)-1048-1-N471

T1

T2

T3

T4

OFF PAUSE

T5

OPR · IR3 = 1 · IR11 = 1

NOT NMI

NMI

$AC\emptyset\emptyset \neq AC\emptyset1 + (AC_{3-11} = \emptyset \cdot MQ_{0-11} = \emptyset)$

NOT $AC\emptyset\emptyset \neq AC\emptyset1 + (AC_{3-11} = \emptyset \cdot MQ_{0-11} = \emptyset)$

$\emptyset \rightarrow SC$

$\emptyset \rightarrow SC$
$1 \rightarrow$ RECYCLE SYNC

$1 \rightarrow$ T5 RECYCLE

IR4	IR7	
1	Ø	Ø → AC
1	1	Ø → MQ
		Ø → AC
		AC → MQ
Ø	1	Ø → AC

IR5	IR6	
1	Ø	MQ + AC → AC
Ø	1	SC + AC → AC

$1 \rightarrow$ EAE ON
$1 \rightarrow$ RECYCLE SYNC

NOT $AC\emptyset1 \neq AC\emptyset2 + (AC_{3-11} = \emptyset \cdot MQ_{0-11} = \emptyset)$

$AC\emptyset1 \neq AC\emptyset2 + (AC_{3-11} = \emptyset \cdot MQ_{0-11} = \emptyset)$

LINK, AC, MQ SHIFT LEFT
SC + 1 → SC
Ø → MQ11

LINK, AC, MQ SHIFT LEFT
SC + 1 → SC
Ø → MQ11

Ø → RECYCLE SYNC

Ø → T5 RECYCLE

Ø → EAE ON

NMI + T5 RECYCLE (1)

(N = 5) MUY
(N = 7) DIV
(N = 15) ASR
(N = 17) LSR

Ø → LINK

(N = 3) SCL
(N = 13) SHL

N = 1
NMI + T5 RECYLE (1)

Ø → EXECUTE

1 → FETCH

TO NEXT INSTRUCTION

REVISIONS		
CHK	CHANGE NO.	REV.
FV	EP12-00030	A

D. MACKLIN 11/3/69

DEC FORM NO. ORD 1024

QTY.	DESCRIPTION	PART NO.	ITEM NO.

PARTS LIST

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

MATERIAL

FINISH

DRN.		DATE 11-22-68
CHK.		DATE 2/1967
ENG.		DATE 2/19/68
PROJ. ENG.		DATE 2/19/68
PROD.		DATE 2/1968

FIRST USED ON KE12

SCALE

SHEET / OF /

digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS

TITLE: EAE FETCH

SIZE D | CODE FD | NUMBER KE12-Ø-2 | REV. A

DIST.

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)

N ≠ 8

1 → RECYCLE SYNC

1 → T5 RECYCLE

MUY + DIV

DIV

MUY

Ø → SC

1 → RECYCLE SYNC

1 → T5 RECYCLE

OFF PAUSE

T5

1 → EAE ON T5 RECYCLE

SHL (N = 13)

ASR (N = 15)

LSR (N = 17)

LINK, AC, MQ SHIFT LEFT Ø → MQ11

AC, MQ SHIFT RIGHT ACØØ → LINK, ACØØ, ACØ1

AC, MQ SHIFT RIGHT Ø → ACØØ

SC ≠ 17

SC + 1 → SC

SC = 17

Ø → RECYCLE SYNC

SC + 1 → SC

Ø → T5 RECYCLE

Ø → EAE ON

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 → T5 RECYCLE

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

		DATE
DRN	Joe Ogren	11-20-68
CHK	R. Scarborough	12/18/69
ENG	[illegible]	2/19/69
PROJ ENG	[illegible]	2/19/69
PROD	[illegible]	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.

DEC FORM NO DRD 102A

KE12-Ø-3

EAE EXECUTE PART 2 (DIVIDE)

T1

T2

T3

T4

OFF PAUSE

T5

ENTER FROM EAE EXECUTE PART 1

Ø → SC
1 → RECYCLE SYNC

1 → T5 RECYCLE

Ø → T5 RECYCLE

1 → EAE ON

(SC=Ø)+(SC=1)+MQ1Ø≠MQ11

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

SC=Ø + NOT CARRY ØØ

EN Σ NO SHIFT
LOAD AC

NOT SC≠Ø+MQ11(1)

MQ ØØ → AC11

SC=Ø + NOT CARRY ØØ

Ø → RECYCLE SYNC

(SC≠Ø)+(SC≠1)+MQ1Ø≠MQ11

EN
Σ MB AND LINK AND AC

EN SUM SHIFT LEFT
EN MQ SHIFT LEFT
LOAD AC LOAD MQ
LOAD LINK

SC=Ø+MQ11(1)

$\overline{MQ\,ØØ}$ → AC11

SC≠Ø + CARRY ØØ

SC=Ø

Ø → MQ11

SC=14

LOAD MQ
SC+1 → SC
Ø → RECYCLE SYNC

SC≠Ø

Σ LINK ADDER
AND MQ11
→ MQ11

SC≠14

LOAD MQ
SC+1 → SC

Ø → T5 RECYCLE

MQ1Ø(Ø) MQ11(Ø)

Σ MB AND AC
→ AC

MQ1Ø(Ø) MQ11(1)

AC → AC

MQ1Ø(1) MQ11(Ø)

Σ MB AND $\overline{AC}$
→ AC

MQ1Ø(1) MQ11(1)

$\overline{AC}$ → AC

1 → FETCH

TO NEXT INSTRUCTION

REVISIONS | REV. | CHANGE NO. | CHK

DEC FORM NO DRD 1024

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.	Dorso	11-22-68
CHKD.	J Scanlon	2/18/69
ENG.	W. Cal.	2/19/69
PROG. ENG.	W. Cal.	2/19/69
PROD.	W Cal	2/19/69

FIRST USED ON
KE12

SCALE

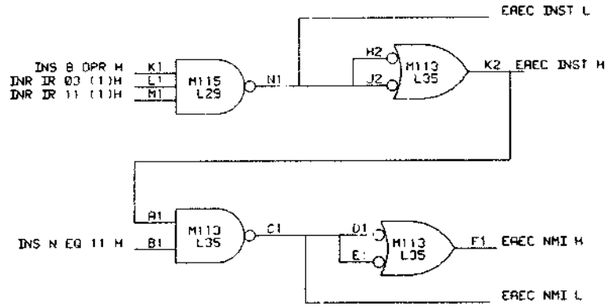
SHEET OF

digital EQUIPMENT CORPORATION
MAYNARD, MASSACHUSETTS

TITLE
EAE EXECUTE
PART 2

SIZE	CODE	NUMBER	REV.
D	FD	KE12-Ø-4	

DIST.



REVISIONS		
CHG	CHANGE NO.	REV.
JS	00001	A
	J.SCANLAN 3-13-69	
	EP12-00004	B

DRN. D.J. SHEPARD	DATE 2-20-69	digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS
CHK'D. J.BISONETTE	DATE 2-20-69	
ENG. J. GALE	DATE 2-20-69	TITLE EAE CONTROL
PROJ. ENG. J. GALE	DATE 2-20-69	
PROD. J. GALE	DATE 2-20-69	
FIRST USED ON KE12		SIZE D CODE 05 NUMBER KE12-2-EAEC REV. B
SCALE		
SHEET 1 OF 1		DIST.

M906 K27 B1 EAEC EN LD MQ L *M90E K27

M906 K27 J1 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 EALE 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 NOL ADD L

EAEC EN MB H
F1

M906 K27 D2 EAEC A 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 K28K2

* INSERTED ONLY WHEN SYSTEM DOES NOT HAVE KE12.

REVISIONS		
ECO	CHANGE NO.	REV.
JS	60032	A
	ADS	
W Scanlon 3/13/69		

DWN. R.A. Shepard	DATE 3/12/69	digital EQUIPMENT CORPORATION / MAYNARD, MASSACHUSETTS
CHK'D. T.L. Lancaster	DATE 3/24/69	TITLE EAE DISABLE
ENGR.	DATE	
PROJ. ENGR.	DATE	
PROG. W Scanlon	DATE 3/13/69	
FIRST USED ON KE12		SIZE D / CODE 86 / NUMBER KE12-0-EAED / REV. A
SCALE		DIST.
SHEET 1 OF 1		

EAES SC 01 (1)H
EAES SC 02 (1)H
EAES SC 03 (1)H
EAES SC 04 (1)H
M117 M34
P2
+3V M3401 H
EAET ON B (1)H
EAES SC 00 (1)H
M160 M35
T2
PRD MB 07 (0)H
EAES EN MB TO SC H
+3V M3401 H
EAET ON B (1)H
EAES SC 00 (0)H
M111 L33
EAES SC 02 (1)H
EAES SC 03 (1)H
EAES SC 04 (1)H
M115 L34
J1
EAES SC 00 (1)H
M113 M33
K2 EAES SC FULL L
P2
M111 L33
R2
EAES SC 01 (1)H
EAET ON B (1)H
M160 M36
T2
EAES EN MB TO SC H
PRE MB 08 (0)H
EAES SC 01 (0)H
EAET ON B (1)H
+3V M3401
EAES SC 03 (1)H
EAES SC 04 (1)H
M113 M33
N1
R1
M111 L33
S1
EAET ON B (1)H
EAES SC 02 (0)H
EAES ISC 03*SC 04) H
M160 M36
EAEC NMI H
EAET ON (1)H
M115 L29
D1 EAES EA MQ SH L 1 L
PRE MB 09 (0)H
EAES EN MB TO SC H
EAES ISC 03*SC 04) L
EAES SC 02 (1)H
EAET ON B (1)H
EAES SC 3 EQ 0 L
EAES SC 00 (0)H
EAES SC 01 (0)H
EAES SC 02 (0)H
EAES SC 03 (0)H
M117 M34
V2
V1
M111 L33
U1
EAES SC 0-3 EQ 0 H
EAES SC 04 (0)H
M113 M33
K1 EAES SC EQ 0 L
EAES SC 03 (0)H
EAES SC 04 (1)H
EAET ON B (1)H
M160 M35
R1
EAES EN MB TO SC H
PRE MB 10 (0)H
EAES SC 03 (1)H
EAES SC 04 (0)H
EAET ON B (1)H
EAES SC 04 (0)H
M160 M36
V2
EAEC DIV EXECUTE L
INS N EQ 13 L
M113 M33
N2
EAT T5 RECYCLE (1)H
-EAET DIV OVFLOW H
EAEC EXECUTE H
M117 M34
J2 EAES EA MQ SH L 2
-INS N EQ 05 H
-INS N EQ 07 H
SLA EX 1S4 H
M115 L34
D1
M111 L33
S2
T2
PRF MB 11 (0)H
EAES EN MB TO SC H
CPTP TP4 H
EAEC NMI L
EAEC EXECUTE L
M113 M33
S1
EAET MQ LOAD (1)L
M113 M33
T2
U2
M113 M33
+3V M3401 H
EAES SC 00 M216 M37
EAES LOAD SC H
EAES LOAD SC H
EAES SC 01 M216 M37
EAES LOAD SC H
EAES SC 02 M216 M37
EAES LOAD SC H
EAES SC 03 M216 M37
EAES LOAD SC H
EAES SC 04 M216 J29

NOTE:
N=00 NOP
N=03 SCL
N=05 MQV
N=07 DVI
N=11 NMI
N=13 SHL
N=15 ASR
N=17 LSR

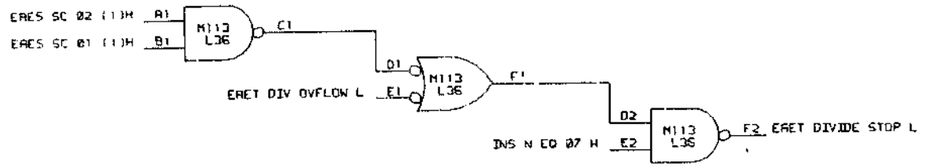
REVISIONS		
ENG	CHANGE NO.	REV.

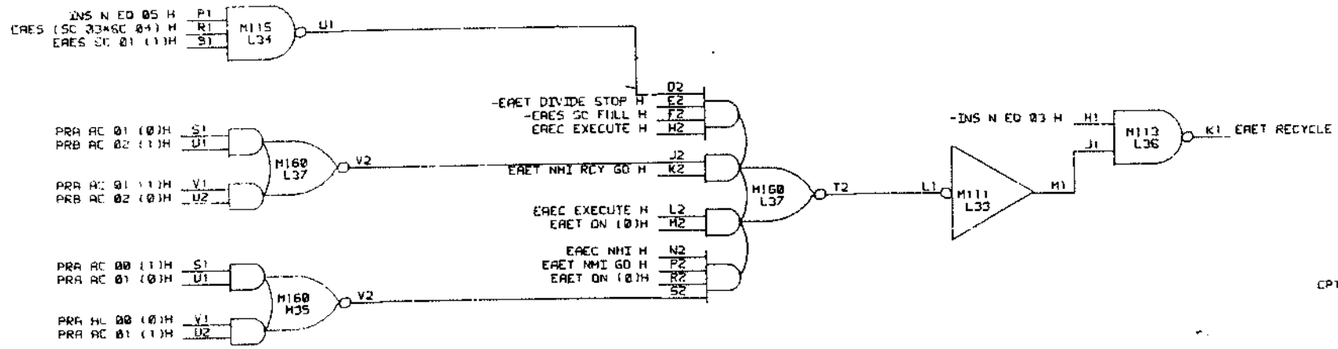
DRN	B. Shepard	DATE	11/24/69
CHKD	J. Brim	DATE	2/26/70
ENGR	S. Hale	DATE	2/26/70
MGR	S. Hale	DATE	2/26/70
MAINT	Allan	DATE	2/26/70
FIRST USED ON	KE12		
SCALE			
SHEET	1 OF 1		

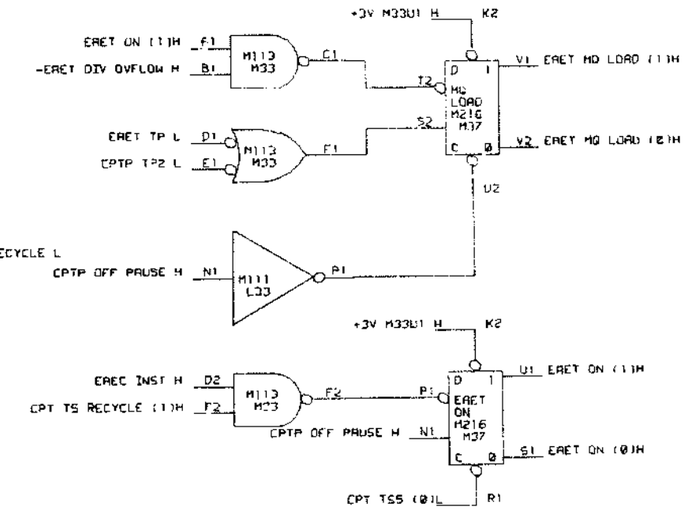
digital EQUIPMENT CORPORATION / MAYNARD, MASSACHUSETTS

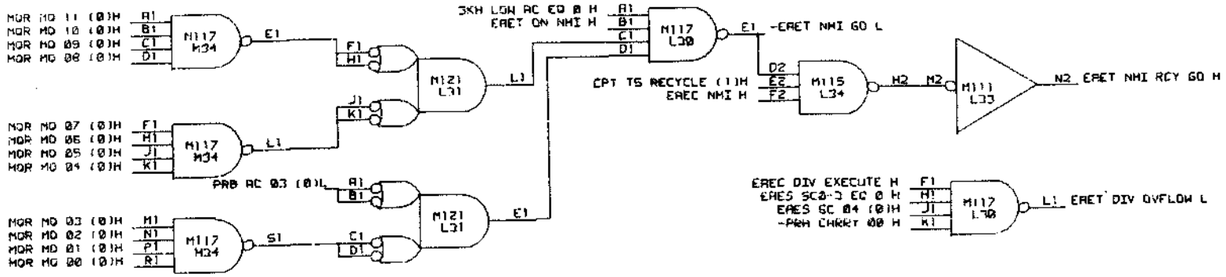
TITLE
EAE STEP COUNTER & MQ CONTROL

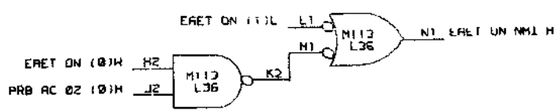
SIZE/CODE	NUMBER	REV.
D 85	KE12-0-EAES	00
DIST.		

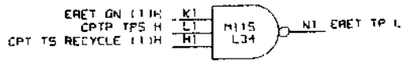


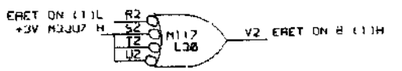












DRAWN	B. Shepard	DATE	01/01/82	digital EQUIPMENT CORPORATION	
CHECKED		DATE		TITLE	EAE TIMING
ENGR		DATE			
MFG		DATE			
USED ON	KE12			SIZE	NUMBER / REV.
SCALE				D	BS KE12-0-EAET / 00
SHEET	1 OF 1			DIST.	

MASTER DRAWING LIST

DWG. NO.	REV. LET.	NO. OF SHEETS	TITLE
A-ML-EP12-0	REF	2	PROCESSOR
~~A-ML-PDP12-0~~		~~2~~	~~PDP12 SYSTEM~~
~~K-WL-EP12-0-3~~	~~REF~~		~~WIRE LIST~~
D-MU-EP12-0-1	REF	2	MODULE UTILIZATION PROC
~~D-MU-EP12-0-2~~	~~REF~~		~~MODULE UTILIZATION PROC~~
D-BS-XY12-0-PCL	A	1	PCL PLOTTER CONTROL
A-PL-EP12-0-1	REF	3	MODULE UTILIZATION PROC PL
~~A-PL-EP12-0-2~~	~~REF~~		~~MODULE UTILIZATION PROC PL~~
C-IA-7005543-0-0	#	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.
C	3/71	EP12-36	J.S.
D	1/72	EP12-44	R.M.

DRN. J. APREA	DATE 3/7/69	digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS
CHK'D. R. HUTNAK	DATE 3/7/69	
ENG. L. Gale	DATE 3/10/69	TITLE PLOTTER CONTROL
PROJ. ENG. L. Gale	DATE 3/10/69	
PROD. W Call	DATE 3/10/69	
FIRST USED ON PDP-12		SIZE A / CODE ML / NUMBER XY12-0 / REV. D
SCALE		
SHEET 1 OF 1		DIST.

DEC FORM NO. DRA 103

PRE MB Ø8 (Ø)L
PRD MB Ø7 (Ø)L
PRB MB Ø3 (1)H — MF2
PRC MB Ø4 (Ø)H — MH2
PRD MB Ø6 (Ø)H — MD2
PRC MB Ø5 (1)H — ME2
IOC IOP 1 H
NH2
PCL PLTR IOT H
PRE MB Ø8 (1)H
MK2
D 1 PEN RIGHT C Ø
MJ2 PCL PEN R H
C2 P2 15 4
PCL FAST OP DONE L
PRD MB Ø7 (1)H
MS2
D 1 PEN LEFT C Ø
ML2 PCL PEN L H
R2 3
PRD MB Ø7 (Ø)H
PRE MB Ø8 (Ø)H
5Ø INST L
D 1 DRUM UP C Ø
MN2 PCL DRUM UP H
S2 1
PCL PLTR IOT H
IOC IOP 2 H
MM2
NP2
M7Ø4
MØ5
NØ5
IOC IOP 4 H
PRD MB Ø7 (Ø)H
NT2
NU1
IOC IOP 1 L
NL2
NM2
IOC IOP 2 L
PCL PLTR IOT H
PCL 5Ø INST L
PRE MB Ø8 (1)H
D 1 DRUM DOWN C Ø
MR2 PCL DRUM DOWN H
T2 2
IOC IOP 4 H
PCL PTRL IOT H
DLY 2.5 MS Ø
NJ2
DLY 2 (1)H
DLY 2 (Ø)H
5Ø INST L
5Ø INST H
MU2
D 1 PEN UP C Ø
MT2 PCL PEN UP H
U2 9
PCL SLOW OP DONE L
PRD MB Ø7 (1)H
D 1 PEN DOWN C Ø
MV2 PCL PEN DOWN H
V2 1Ø
WØØ25
NØ4
CANNON SK-19-21Ø-½
PCL PLTR FLAG (Ø)H
NS2
PCL PLTR IOT H
IOC IOP 4 H
PRE MB Ø8 (Ø)H
NV1
DLY 35 MS Ø
NK2
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 5Ø INST H
IOC IO PRESET H
NN2
PCL IO PRESET L
D 1 PLTR FLAG C Ø
PCL PLTR IOT H
IOC IOP 1 H
PCL 5Ø INST H
NE2
INT SKIP BUS L
NOTE: SKIP AND INT REQUESTS ARE OPEN COLLECTOR OUTPUT
+3V
NF2
PCL INT RQST BUS L

REVISIONS			
CHK.	CHANGE NO.	REV.	
MFK.	EP12-00036	A	
	J. SCANLAN 4-27-71		
	5-20-71		

DEC FORM NO DRD 102A

QTY.	DESCRIPTION	PART NO.	ITEM NO
PARTS LIST			

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

DRN. — DATE 2-3-69
CHK'D. — DATE 2-25-69
ENG. — DATE 2-28-69
PROJ. ENGR. — DATE 2-28-69
PROD. — DATE 3/4/69
FIRST USED ON XY12
SCALE
SHEET 1 OF 1

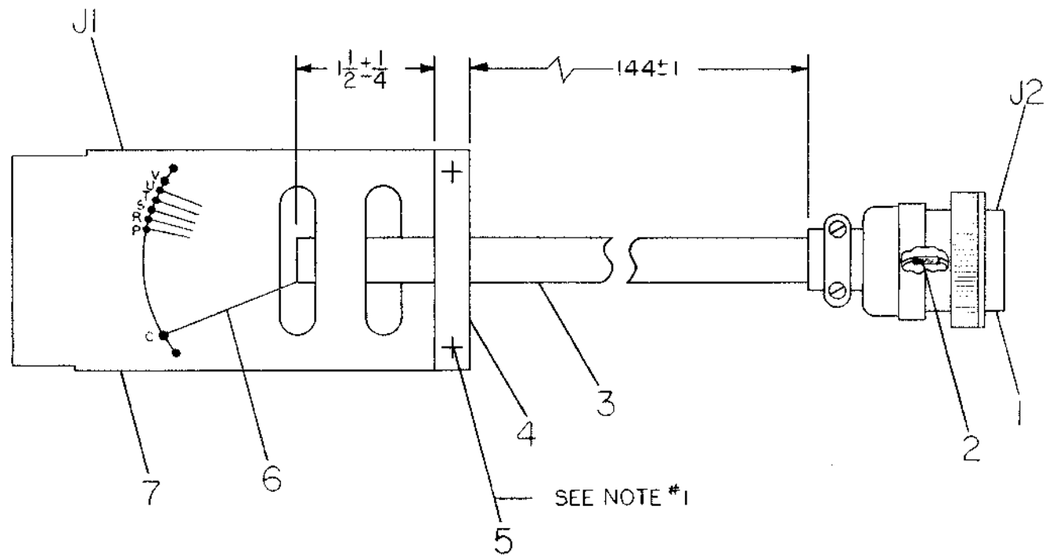
digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS

TITLE: PCL PLOTTER CONTROL

SIZE D | CODE B5 | NUMBER XY12-Ø-PCL | REV. A | DIST.

REV A | NUMBER XY12-Ø-PCL | SIZE D | CODE B5

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



NOTES:

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

QTY.	DESCRIPTION	PART NO.	ITEM NO.
	PARTS LIST		
1	WØ23 CABLE CONNECTOR	5002726	7
A/R	#18 AWG STRD TEF WHT		6
2	EYELET #A-94 E.B. STIMPSON		5
1	CLABLE CLAMP	5302016	4
A/R	BLK VINYL TUBING #2 — 17/64 ID		3
7	TUBING HY-SHRINK #18 X 1/4 LONG RED		2
1	CANNON [illegible]-19-21C-1/2		1

REVISIONS			
CHK	CHANGE NO.	REV.	
[illegible]	ECO #3101	A	CHANGED U/C FROM 12.01 TO 144 ±1 [illegible] 10/10/67
[illegible]	WØ23-00003	B	[illegible]

L. GALE

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. P Somers	DATE 6-30-67	
CHK'D. [illegible]	DATE [illegible]	
ENG. [illegible]	DATE 7-22-67	
PROJ. ENG. [illegible]	DATE 7-22-67	
FROM [illegible]	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	1A	7005543-0-0	B

DIST. G

DEC FORM NO. DRC 100

MASTER DRAWING LIST

DWG. NO.	REV. LET.	NO. OF SHEETS	TITLE
A-ML-EP12-0	REF	2	PROCESSOR
D-MU-EP12-0-1	REF	2	MODULE UTILIZATION PROC
D-BS-KT12-0-TSS	D	1	PDP-12 TIME SHARING OPTION
A-PL-EP12-0-1	REF	3	MODULE UTILIZATION PROC PL
A-SL-KT12-0-2		1	SOFTWARE LIST
A-SP-KT12-0-1		2	ACCEPTANCE PROCEDURE

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.
D	3/71	EP12-36	J.S.
E	1/72	EP12-44	R.M.
F	7/72	EP12-46	R.I.

DRN. J. SCANLAN	DATE 3/7/69	
CHK'D. R. Hetrick	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		
SCALE		
SHEET 1 OF 1		

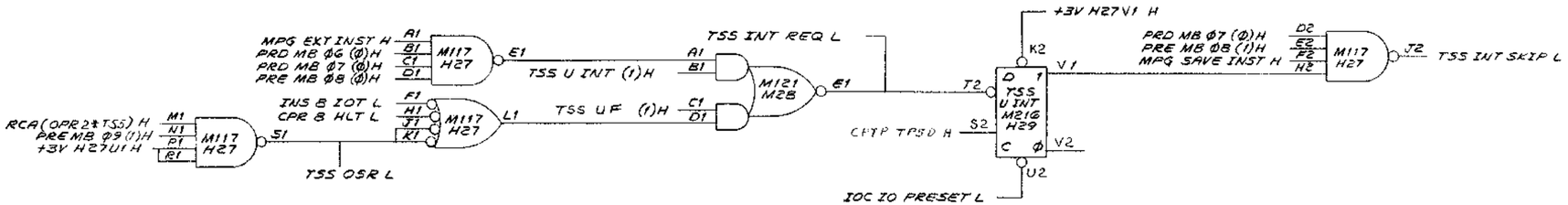
digital EQUIPMENT CORPORATION
MAYNARD, MASSACHUSETTS

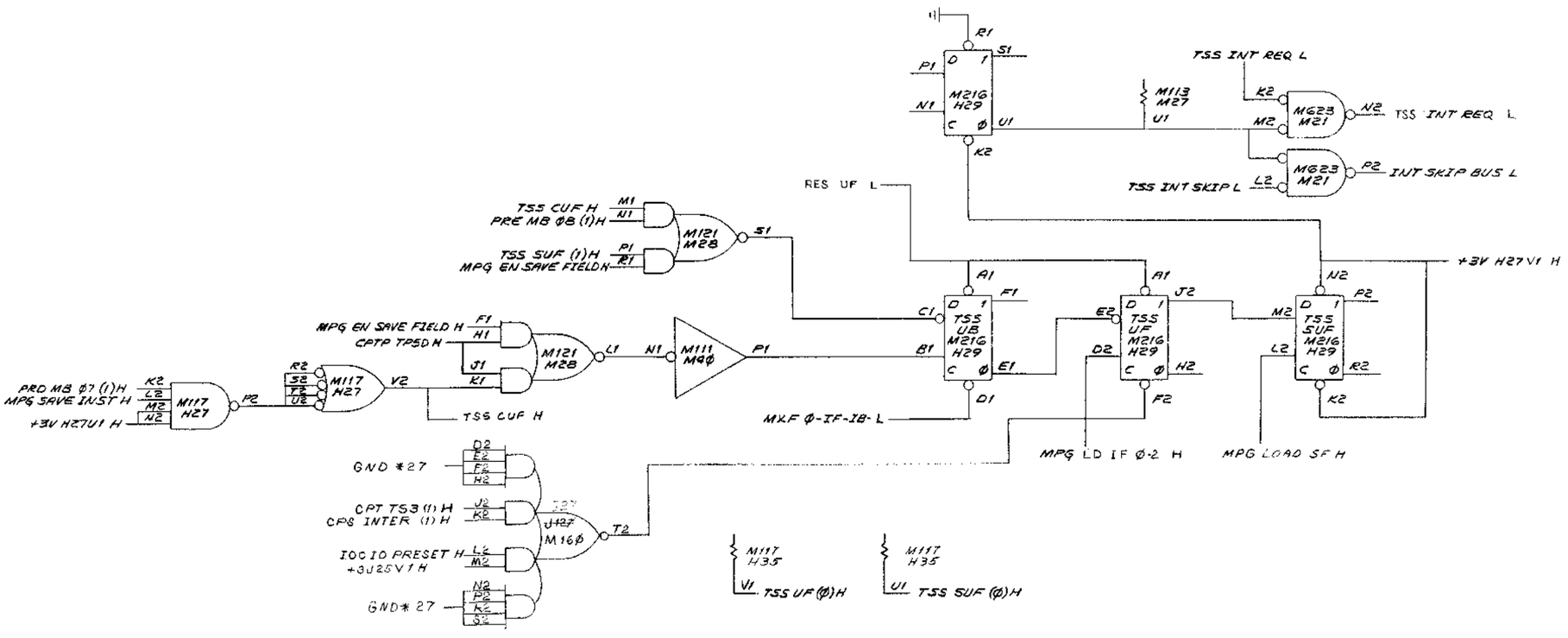
TITLE
PDP-12 TIME SHARING OPTION

SIZE	CODE	NUMBER	REV.
A	ML	KT12-0	F

DIST.

DEC FORM NO. DRA 103





REVISIONS	CHANGE NO.	REV.
CHK.	EP12-00002	A
J. SCANLON 7/22/69		
J. SCANLON 7/22/69	EP12-00026	B
D. MACKLIN 9/19/70		
D. MACKLIN 9-2-70	EP12-00030	C
D. MACKLIN 11-12-70	EP12-00036	D
J. SCANLAN 4-27-71		
J. SCANLAN 5-20-71		

DEC FORM NO. DRD 102A

QTY.	DESCRIPTION	PART NO.	ITEM NO.
PARTS LIST			

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

MATERIAL

FINISH

		DATE
DRN.		3/1/69
CHK'D		3/17/69
ENG.		3/21/69
PROJ. ENG.		3/21/69
PROD.		3/21/69

FIRST USED ON KT12

SCALE

SHEET 1 OF 1

digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS

TITLE: PDP12 TIME SHARING OPTION

SIZE	CODE	NUMBER	REV.
D	85	KT12-Ø-TS5	D

DIST.

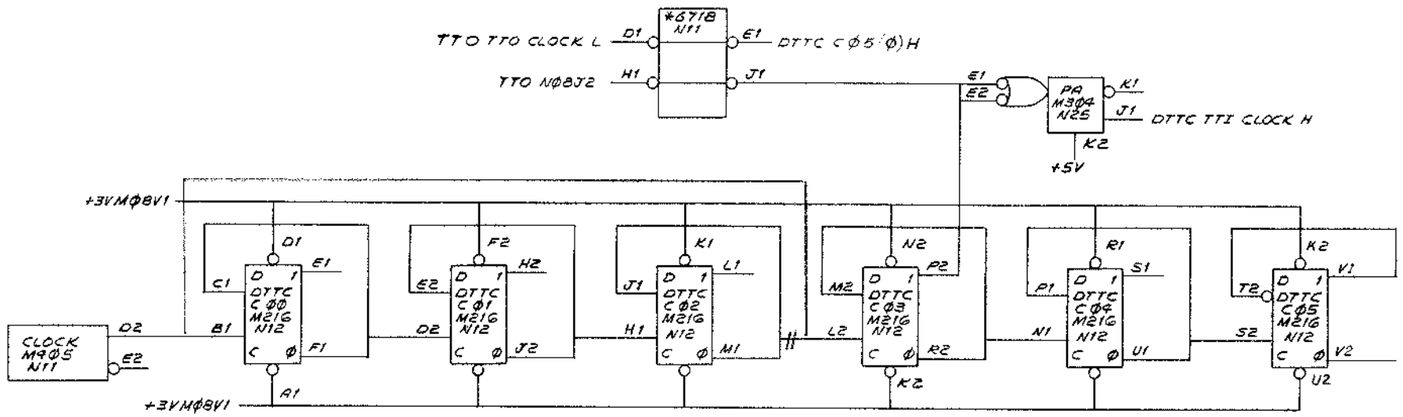
MASTER DRAWING LIST

DWG. NO.	REV. LET.	NO. OF SHEETS	TITLE
~~A-ML-PDP12-0~~	~~REF~~	~~2~~	~~PDP 12 SYSTEM~~
A-ML-EP12-0	REF	2	PROCESSOR
~~K-WL-EP12-0-3~~	~~REF~~		~~WIRE LIST~~
D-MU-EP12-0-1	REF	2	MODULE UTILIZATION PROC.
~~D-MU-EP12-0-2~~	~~REF~~		~~MODULE UTILIZATION PROC.~~
A-PL-EP12-0-1	REF	3	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.
D	1/72	EP12-44	R.M.

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	TITLE TTY/DATAPHONE
PROJ. ENG. L. Gale	DATE 8/11/69	
PROD. D Call	DATE 8/18/69	
FIRST USED ON PDP12		SIZE A · CODE ML · NUMBER DP12-A · REV. D
SCALE —		
SHEET 1 OF 1		DIST.

DEC FORM NO. DRA 103



DP12-A

WHEN THE DP12 IS USED TO DRIVE A TELETYPE AT 110 BAUD, THE MØ5 (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 10,000 BAUD) THE CRYSTAL CLOCK (MØ5, N11) IS SELECTED TO BE 128 TIMES THE BAUD RATE.

FOR BAUD RATES BETWEEN 10,000 TO 100,000 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.

The function of G718 is changed from
N11 B1 to N11 E1
N12 H1 to N11 J1

CHANGE INCORPORATED

REVISIONS			
CHK	CHANGE NO.	REV.	
[illegible]	EP12-00003	A	T. Miller 5-29-69 GALE
[illegible]	EP12-00020	B	L. GALE

DEC FORM NO. DPD 102A

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

MATERIAL

FINISH

QTY.	DESCRIPTION	PART NO	ITEM NO.

PARTS LIST

DRN.		DATE 2-23-69
CHK'D.		DATE 2/27/69
ENG.		DATE 2-28-69
PROJ. ENG.		DATE 2-28-69
PROD.		DATE 3/4/69

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.

DTTI TT0 L
DTTI TT1 L
DTTI TT2 L
DTTI TT3 L
DTTI TT4 L
DTTI TT6 L
DTTI TT7 L
MK2
MR2
MS2
ML1
MM1
MP2
MT2
MN2
NH2
U1
M117 L13
DTTI STROBE H
DTTI REC PRESET L
DTTI DATA H
DTTI SHIFT H
+3V
MR1
MK1
MJ2
DTTI 0
DTTI 1
DTTI 2
DTTI 3
DTTI 4
DTTI 5
DTTI 6
DTTI 7
NO2
IOC IOP 1 H
DTTI KEYBOARD SELECT H
DTTI KEYBOARD FLAG (1)H
DTTI KEYBOARD FLAG (0)H
MF2

DTTI START ENABLE L
+3V M0BV1 H
DTTO TTI CLOCK H
NR1
NS2
DTTI REC PRESET L
DTTI CLOCK SCALE 2 (1)H
DTTI IN ACTIVE (1)H
NU1
DTTI SHIFT L
NK2
MS1
DTTI SHIFT H

DTTI KEYBOARD SELECT H
IOC IOP 2 H
NM2
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
PRB MB 03 (1)H
PRC MB 04 (0)H
PRC MB 05 (0)H
PRD MB 06 (0)H
PRD MB 07 (0)H
PRE MB 08 (0)H
MD2
ME1
MF1
MH1
MH2
MJ1
+3V
MP1
DTTI KEYBOARD SELECT H
+3V M0BV1 H

* SEE NOTE N03
E2
NM2
ST
MM2
DTTI DATA L

DTTI KEYBOARD SELECT H
IOC IOP 4 H
ML2
+3V
NV1
DTTI STROBE H

DTTI SKIP L
DTTO SKIP L
L1
M1
M113 M08
N1
L2
M2
M113 M08
N2
DTTI SKIP TO BUS L

M113 K22
U1
DTTO TPR FLG (1)L
DTTI KEYBOARD FLAG (1)L
P1
R1
M113 M08
S1
P2
R2
M113 M08
S2
DTTI TT INT L
RCA EN TT INT (0)H

DTTI IN ACTIVE (1)L
DTTI IN LAST UNIT (1)L
DTTI START ENABLE L

DTTI DTTI 7 (0)H
DTTI SHIFT H
DTTI IN LAST UNIT
NR2
~~DTTI IN STOP 2 (1)L~~
DTTI IN STOP 1 (1)L

DTTC TTI CLOCK H
MN1
DTTI CLOCK SCALE 0
DTTI CLOCK SCALE 1
DTTI CLOCK SCALE 2
NT2
NS1
DTTI START ENABLE L

NP2
DTTI IN STOP 1
NU2
DTTI IN STOP 2
NV2
DTTI REC PRESET L
NS2

NN2
DTTI IN ACTIVE
DTTI SETUP L
~DTTI SHIFT H
DTTI SPIKE DETECTOR (1)H
DTTI SPIKE DETECTOR (0)H
DTTI KCC L
MV2
NL2
DTTI READER RUN
* SEE NOTE N03
MU2
M2
DTTI B READER RUN H

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

M706
M09
N09

NOTE: USE A W076 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.	
CMB	EPI2-00034	A	
FV	EPI2-00022	B	

L. GALE 2/15/69
CLAYTON 7/6/70

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 2-12-69
CHK'D. T. Hamilton DATE 2/27/69
ENG. R. D. Clayton DATE 2-26-69
PROJ. ENG. R. D. Clayton DATE 2-28-69
PROG. J. Ball DATE 3/24/69
FIRST USED ON DP12
SCALE
SHEET / OF /

digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS

TITLE
DTTI TELETYPE RECEIVER

SIZE	CODE	NUMBER	REV.
D	85	DP12-0-DTTI	B
DIST.			

DEC FORM NO. DRD 102A

DP12-0-DTTI REV B SIZE D CODE 85

* 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.

PRB MB Ø3 (1)H — ME2
PRC MB Ø4 (Ø)H — ME1
PRC MB Ø5 (Ø)H — MF2
PRD MB Ø6 (Ø)H — MF1
PRD MB Ø7 (Ø)H — MH2
PRE MB Ø8 (1)H — MH1
+3V MJ1 H — NJ1

DTTO SELECT H
MN1
+3V MØBV1 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, MK1
DTTO Ø
DTTO 1
DTTO 2
DTTO 3
DTTO 4
DTTO 5
DTTO 6
DTTO 7
DTTO LINE — MD2
DTTO SHIFT H
DTTO PRESET L
MV2 — DTTO B MAGNET DRIVER H
DTTO OUT ACTIVE (Ø)L
DTTO = Ø L

M7Ø7
M1Ø
N1Ø

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

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

DTTO OUT ACTIVE — MD1
DTTO = Ø L
DTTO SHIFT H
DTTO TP2 FLG — NK2

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

IOC IO PRESET H — NE2
+3V
DTTO PRESET L
+3V MØBV1 H — NR2
+3V
DTTO SELECT H
IOC IOP 2 H — ND2
+3V

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

*SEE NOTE NØ3

REVISIONS					REV
CHK	CHANGE NO.				
[illegible]	EP12-00003	T. Quillen	GALE	[illegible]	A
[illegible]	EP12-00004	L. Gale	[illegible]	[illegible]	B
FV1	EP12-00022	[illegible]	[illegible]	[illegible]	C
		CLAYTON			

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
CHKD.		DATE 2/27/69
ENG.		DATE 2-4-69
PROJ. ENG.		DATE 3-19-69
PROG.		DATE 3/28/69

FIRST USED ON DP12

SCALE NONE

SHEET 1 OF 1

digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS

TITLE
DTTO TELETYPE TRANSMITTER

SIZE D | CODE 85 | NUMBER DP12-Ø-DTTO | REV. C

DIST

DEC FORM NO. DRD 102A

MASTER DRAWING LIST

DWG. NO.	REV. LET.	NO. OF SHEETS	TITLE
~~A-ML-PDP12-0~~	~~REF~~	~~2~~	~~PDP-12 SYSTEM~~
A-ML-EP12-0	REF	2	PROCESSOR
~~K-WL-EP12-0-3~~	~~REF~~		~~WIRE LIST~~
D-MU-EP12-0-1	REF	2	MODULE UTILIZATION PROC.
~~D-MU-EP12-0-2~~	~~REF~~		~~MODULE UTILIZATION PROC.~~
A-PL-EP12-0-1	REF	3	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.
D	1/72	EP12-44	R.M.

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	TITLE: TTY/DATAPHONE (EIA LEVEL)
PROJ. ENG. L. Gale	DATE 8/11/69	
PROD. W Call	DATE 8/18/69	
FIRST USED ON: PDP12		
SCALE #		
SHEET 1 OF 1		

SIZE	CODE	NUMBER	REV.
A	ML	DP12-B	D

DIST.

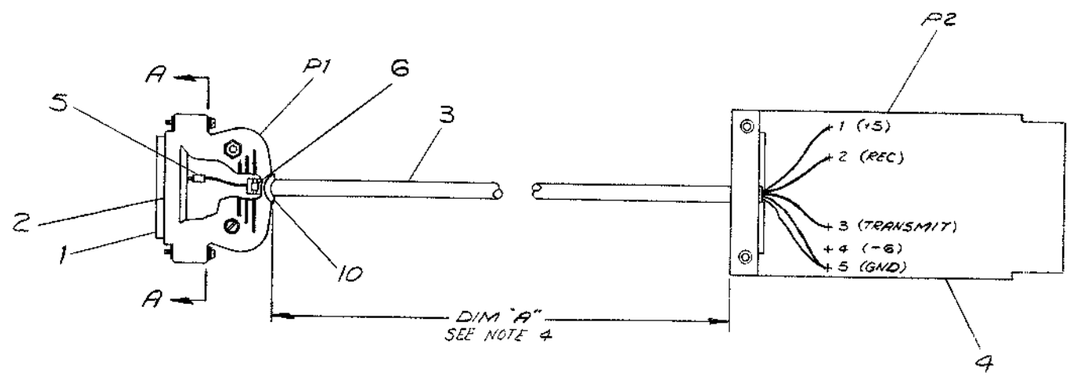
DEC FORM NO. DRA 103

LEGEND

NUMBER	DIM "A"	TOLERANCE
BCØIA-5	5 FT	± 2 IN
BCØIA-10	10 FT	± 3 IN
BCØIA-15	15 FT	± 4 IN
BCØIA-20	20 FT	± 5 IN
BCØIA-25	25FT	±6 IN
BCØIA-30	30 FT	± 7 IN
BCØIA-35	35 FT	± 8IN
BCØIA-40	40 FT	± 10 IN
BCØIA-45	45 FT	± 11 IN
BCØIA-50	50 FT	±12IN

WIRE TABLE

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



SECTION A-A

NOTES:

1. EACH SOLDERED CONNECTION ON P1 SHALL BE INSULATED WITH A 1/4 INCH PIECE OF HY-SHRINK TUBING (#5)
2. APPLY TAPE (#3) BETWEEN CABLE (#3) AND BOARD (#4) THEN SOLDER. ASSEMBLE CLAMP (#8) & EYELETS (#7) TO BOARD AFTER SOLDERING.
3. ~~VARIATIONS AND LENGTHS SHOWN IN LEGEND ARE STANDARD OTHER THAN STANDARD VARIATIONS WILL BE SPECIFIED BY ALPHANUMERIC DESIGNATION. FOR LENGTHS OTHER THAN FOOT INCREMENTS FROM ONE (1) FOOT THRU NINE (9) FEET, ELEVEN (11) INCHES.~~

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

   ~~EXAMPLE: BCØ2X-5D = 5'4"~~
   ~~LENGTHS WILL BE IN FOOT INCREMENTS FROM TEN (10) FEET ON AND WILL BE SPECIFIED BY THE CORRESPONDING NUMERICAL DESIGNATION~~
   ~~EXAMPLE: BCØ2X-11 = 11 FEET~~
   ~~THE TOLERANCE ON DIMENSION "A" WILL BE ± 2 % OF THE FOOT INCREMENT.~~
4. CABLE TO BE CUT TO DIM "A" + 8 INCHES

QTY.	DESCRIPTION	PART NO.	ITEM NO
1	GROMMET #809 A.I.R.	9007668	10
A/R	TAPE #4032 1/2 X 1 3/4 LG (3M CO)	9007834-0-0	9
1	CABLE CLAMP	1208704	8
2	EYELET #GS-4-7 STIMPSON	90067382	7
1	TIE WRAP PANDUIT #SST-1B	9007031	6
4	HEAT SHRINK TUBING 1/8 DIA	9107235	5
1	M850 CABLE CONN	M850	4
A/R	CABLE, BELDEN 5 COND	9107680	3
1	PLUG CINCH HOOD #DBS/226-1	1205885	2
1	PLUG CINCH DB-25P	1205886	1

PARTS LIST

REVISIONS	CHANGE NO	CHK	REV
	BCØIA-00001		A
	BCØIA-00003		B

FIRST USED ON OPTION/MODEL: BCØIA

DO NOT SCALE DRAWING
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

		DATE
DRN.		2-5-69
CHK'D.		2/14/69
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 D | CODE 1A | NUMBER BCØIA-Ø-Ø | REV B | DIST. G

DEC FORM NO. DRD 100

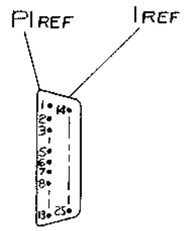
LEGEND	
NUMBER	"A" DIM
BCØ1J-1Ø	1Ø" ± 2"
BCØ1J-25	25' ± 5"

WIRE TABLE

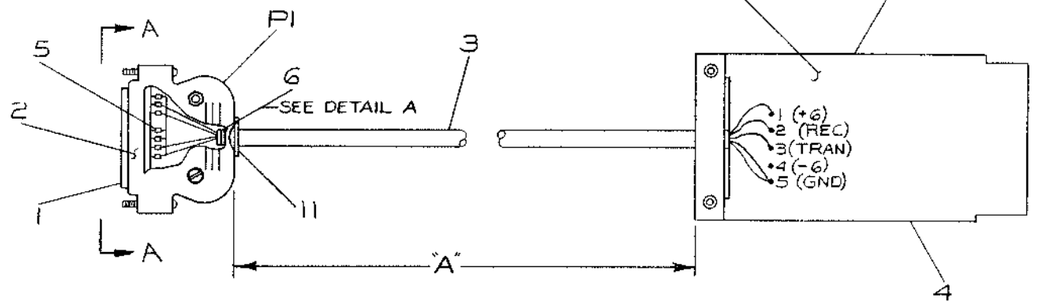
ITEM NO.	DESCRIPTION AWG	COLOR	FROM CONNECTION	TO CONNECTION	REMARKS
3		BLK	P1-7	P2-5	
3		GRN	P1-2	P2-2	
3		RED	P1-3	P2-3	
3		BRN	P1-1	P2-5	
10	22		P1-5	P1-6	JUMPER
10	22		P1-6	P1-8	JUMPER
3		WHT	P1-5	P2-1	

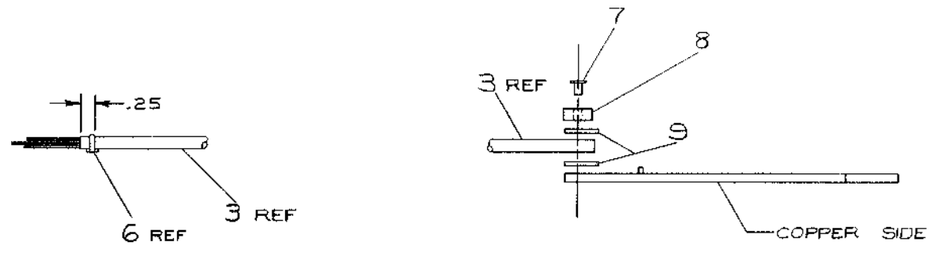
NOTES:

1. [illegible] TO BE INSULATED WITH A .25 INCH PIECE OF TAPE (ITEM #3).
2. APPLY TAPE (ITEM #9) BETWEEN CABLE (ITEM #3) AND BOARD (ITEM #4), ALSO BETWEEN CLAMP (ITEM #8) AND CABLE.



VIEW A-A
SCALE: NONE





DETAIL A

QTY.	DESCRIPTION	PART NO.	ITEM NO.
	PARTS LIST		
1	GROMMET	9007668	11
A/R	22 AWG BUS WIRE	9107560-01	10
A/R	TAPE, #4032, .03 THK x .50W	9007834	9
1	CABLE CLAMP	1202704	8
2	EYELET, #GS-4-7, STIMPSON	9006732	7
1	TIE WRAP, PANDUIT #SST-1B	9007031	6
A/R	HIGH SHRINK TUBING, WHT, .12 IN	9107255	5
1	EIA LEVEL CONVERTER	M850	4
A/R	CABLE, BELDON, 5 COND	9107630	3
1	CANNON PLUG HOOD #DB51226-1	1205885	2
1	CANNON CONNECTOR DE-19604-433 (DBM 25S)	1204975	1

FIRST USED ON OPTION/MODEL: LT37

DO NOT SCALE DRAWING
UNLESS OTHERWISE SPECIFIED
DIMENSION IN INCHES
TOLERANCES
FRACTIONS ±
.XX ±
.XXX ±
FINAL SURFACE QUALITY
REMOVE BURRS AND BREAK SHARP CORNERS
MATERIAL
FINISH

DRN. W.F.McGarthy	DATE 2/6/70	digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS
CHK'D. [illegible]	DATE 5-20-70	
ENG. [illegible]	DATE 5/21/70	TITLE: LEVEL CONVERTER (BI POLAR)
PROJ. ENG. [illegible]	DATE 5/20/70	
PROD. [illegible]	DATE 6/8/70	
NEXT HIGHER ASSY: D-UR-LT37-Ø-Ø		SIZE D, CODE 1, NUMBER ABCØ1J-Ø-Ø, REV.
SCALE: NONE		SHEET 1 OF 1, DIST.

REVISIONS	REV.
CHANGE NO	
CHK	

DEC FORM NO. DRD 100

NUMBER	REV
ABCØ1J-Ø-Ø	

SIZE CODE D

MASTER DRAWING LIST

MAINTENANCE MANUALS NO.	TITLE	UNIT VARIATIONS KP12-Ø
KP12-Ø	POWERFAIL/RESTART	X

USED ON OPTIONS							
EPI2							

REVISIONS

REV.	DATE	CHG. NO.	APP'D.
A	8/71	MISC-86	cwb

DRN. J. APREA	DATE 3-7-69	digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS
CHK'D. R. HUTNAK	DATE 3-7-69	
ENG. GALE	DATE 3-10-69	TITLE POWER FAIL/RESTART
PROJ. ENG. GALE	DATE 3-10-69	
PROD. D. CALL	DATE 3-10-69	
FIRST USED ON PDP12		
SCALE —		
SHEET 1 OF 2		

SIZE	CODE	NUMBER	REV.
A	ML	KP12-Ø	A
DIST.			

PRINT SET KP12-Ø	DWG. NO.	REV. LET.	NO. OF SHEETS	TITLE	OPTION NO.
X	D-BS-KP12-Ø-PWF		1	PWF POWER FAIL/RESTART	
1	K-WL-EPI2-0-3	REF		WIRELIST	

TITLE				
POWER FAIL/RESTART	SHEET 2 OF 2	SIZE A	CODE ML	NUMBER KP12-Ø	REV. A

DRA 132

DEC 16-(325)-1048-1-N471

(SWITCH ON MODULE)

DISABLE

ENABLE

PWF STOP OK H

P2

DLY 1 MS Ø

DLY 200 MS Ø

DLY 1 MS Ø

N2 PWF RESTART H

U1 PWF RESTART L

-MCT SHUT DOWN H U2 T2 PWF PWR LOW (1)H

-CST IO PRESET H S2 R2 PWF PWR LOW (Ø)H

M113 B16 U1

M7Ø3
FØ3

IOC IOP 2 L K2 M111 A35 L2

PRB MB Ø3 (Ø)H D2
PRC MB Ø9 (Ø)H E2
PRC MB Ø5 (1)H F2
PRD MB Ø6 (Ø)H H2
PRD MB Ø7 (Ø)H J2
PRE MB Ø8 (Ø)H K2
M2

PWF PWR LOW (1)H

L2 PWF PWR SKIP L

M113 J25 U1

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 Dyna	2-11-69
CHKD	L Stanton	2/7/69
ENG	R J Clayton	2-12-69
PROJ. ENG	R J Clayton	2-12-69
PROD	M Gill	2/7/69

FIRST USED ON
KP12

digital EQUIPMENT CORPORATION
MAYNARD, MASSACHUSETTS

TITLE
POWER FAILURE/ RESTART

SIZE	CODE	NUMBER	REV.
D	85	KP12-Ø-PWF	

SCALE

SHEET 1 OF 1

DIST.

MASTER DRAWING LIST

MAINTENANCE MANUALS NO.	TITLE	UNIT VARIATIONS KW12-A	KW12-B	KW12-C
KW12-Ø	CLOCK OPTION	X	X	X

USED ON OPTIONS							
PDP 12							

REVISIONS	REV.	DATE	CHG. NO.	APP'D.
	ORIG	8/71	MISC-86	—
	A	12/71	EM12-55	D.M.
	B	6/72	EM12-57	

DRN. APEA	DATE 3-7-69	digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS
CHK'D. R. HUTANK	DATE 3-7-69	
ENG. GALE	DATE 3-10-69	TITLE: CLOCK
PROJ. ENG. GALE	DATE 3-10-69	
PROD. CALL	DATE 3-10-69	
FIRST USED ON: PDP12		SIZE A · CODE ML · NUMBER KW12-Ø · REV. B
SCALE #		DIST.
SHEET 1 OF 2		

PRINT SET KW12-Ø	DWG. NO.	REV. LET.	NO. OF SHEETS	TITLE	OPTION NO.
X	D-BS-KW12-Ø-CLC	E	1	CLC CLOCK IO CONTROL	
X	D-BS-KW12-Ø-CLEA	E	1	CLEA INPUT CHANNEL 1	
X	D-BS-KW12-Ø-CLEB	D	1	CLEB INPUT CHANNEL 2	
X	D-BS-KW12-Ø-CLEC	D	1	CLEC INPUT CHANNEL 3	
X	D-BS-KW12-Ø-CLIO	B	1	CLIO CLOCK TO INPUT	
X	D-BS-KW12-Ø-CLKA		1	CLKA CLOCK AND BUFFER 00-05	
X	D-BS-KW12-Ø-CLKB		1	CLKB CLOCK AND BUFFER 06-11	
X	D-BS-KW12-Ø-CLR	E	1	CLR CLOCK RATE	
X	D-BS-KW12-Ø-CLTB	A	1	CLTB CLOCK TIME BASE	
X	D-CS-7006335-0-1	C	1	CLOCK CONTROL CIRCUIT SCHEMATIC	
X	D-AD-7006335-0-0	E	2	CLOCK CONTROL PANEL ASSEMBLY	
X	A-PL-7006335-0-0	E	2	CLOCK CONTROL PANEL ASSEMBLY (PL)	
X	A-PL-KW12-Ø-Ø	A	1	KW12 CLOCK CONTROL	
X	A-SP-KW12-Ø-1	A	8	KW12 REAL TIME CLOCK	
X	D-BS-KW12-Ø-CLUB	B	1	SIMPLE CLOCK	
X	A-SP-KW12-B-1		1	ENGINEERING SPECIFICATION	
—	K-WL-EM12-0-3	REF		WIRELIST	

TITLE				
CLOCK	SHEET 2 OF 2	SIZE A · CODE ML	NUMBER KW12-Ø	REV. B

DRA 132

DEC 16 (325)-1048-1-N471

DIGITAL EQUIPMENT CORPORATION
MAYNARD, MASSACHUSETTS

PARTS LIST

MADE BY [illegible] DATE 12-17-69	CHECKED W Sutherland DATE 12-17-69	SECTION
ENG L. Gallo 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

IOC IOP 1 L
+3V D29U1 H
IOC IOP 2 L
IOC IOP 4 L
M113 D29
CLC IOC IOP 1 H
CLC IOC IOP 2 H
CLC IOC IOP 4 H
M103 D25
CLC IOP 1 L
CLC IOP 1 H
CLC IOP 2 L
CLC IOP 2 H
CLC IOP 4 L
CLC IOP 4 H
PRE MB Ø3 (Ø)H
PRC MB Ø4 (Ø)H
PRC MB Ø5 (1)H
PRD MB Ø6 (Ø)H
PRD MB Ø7 (1)H
PRE MB Ø8 (1)H
CLC IOT SELECT H
M113 D29

CLC IOP 1 H
PRE MB Ø9 (1)H
PRF MB 1Ø (Ø)H
M115 C27
CLC EN STATUS TO AC L
CLC IOP 4 H
PRF MB 1Ø (Ø)H
PRF MB 11 (1)H
M115 D23
CLC CLR STATUS L
CLC IOP 1 H
PRE MB Ø9 (Ø)H
PRF MB 1Ø (1)H
M617 D17
CLC CLR BUF L
CLC IOP 4 H
PRF MB 1Ø (Ø)H
PRF MB 11 (Ø)H
M115 D23
M617 D17
CLC LD CTRL 2 H
CLC IOP 2 H
PRE MB Ø9 (Ø)H
PRF MB 11 (1)H
M115 D23
M617 D17
CLC AC TO BUF H
CLC IOP 4 H
PRF MB 1Ø (1)H
M113 D24
M617 D17
CLC BUF TO AC H

IOC IO PRESET L
M719 F2Ø
+3 D29U1 H
CLC CLOCK PRESET H
M617 D17
CLC CLOCK PRESET L

PRE MB Ø9 (1)H
CLC IOP 2 H
M113 D24
CLC IO SYNC M216 F19
CLC IOP 4 L
CLC CLOCK PRESET L

CLC IOP 2 H
PRE MB Ø9 (Ø)H
PRF MB 11 (Ø)H
M115 D23
PA M3Ø4 D28
CLC LD CTRL 1 H
CLC LD CTRL 1 L
+5V D28 H

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

- CLC SYNC STROBE 2 H
M113 D24
PA M3Ø4 D27
M719 F2Ø
18K
+5V
M113 D23
CLC SYNC STROBE 1 L
M719 F21
CLC SYNC STROBE 1 H
CLR MODE 2 (1)H
M113 D24
PA M3Ø4 D27
CLC CLR CNT H
CLC CLR CNT L
+5V D27 H

CLC SYNC STROBE 2 L
CLR MODE 1 (1)L
M719 F2Ø
CLC STROBE EVENTS H
PA M3Ø4 D27
CLC SYNC STROBE 2 H
CLC SYNC STROBE 2 L
+5V D27 H

REVISIONS					
CHK	CHANGE NO.	REV			
	00001	A	L.GALE 1-26-68		
	EM12-00017	B	L.GALE 11-4-68	L.GALE 11-5-68	
	EM12-00019	C	L.GALE 11-4-69	L.GALE 12-11-69	
	EM12-00041	D	D.MACKLIN 10/3/70		
	EM12-00057	E	D.MACKLIN 6-1-72		

OEG FORM NO. DRD 102A

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

QTY.	DESCRIPTION	PART NO.	ITEM NO.
	PARTS LIST		

DRN.		DATE 1-28-69
CHKD.		DATE 2/2/69
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
CLC
CLOCK IO CONTROL

SIZE	CODE	NUMBER	REV.
D	85	KW12-Ø-CLC	E

DIST.

M503
F23

G783
F25

CLC LD CTRL 1 H — F2
CLC STROBE EVENTS H — K2
PRD AC ϕ7 (1)H — H2
CLEA PRE EVENT 1 (ϕ)H
CLEA EVENT 1 (1)H
CLC SYNC STROBE 1H — J2
CLC CLR STATUS L — S1
PRD AC ϕ6 (1)H — K1
CLC LD CTRL 2 H — J1
CLC CLOCK PRESET H — P1

F2 HQ GND
E2 +15 HQ
A2 +5
D2 −15 HQ

CLEA EN INPUT 1 (1)H
CLEA STROBE EVENT 1 L — L2
CLEA INPUT 1 — R1
CLEA PRE EVENT 1 (1)H
CLEA PRE EVENT 1 (ϕ)H — R2
CLEA EVENT 3 — M1
CLEA EN INPUT 1 (1)H
CLEA EN INPUT 1 (ϕ)H — Z1
CLEA EN EV 1 INT (1)H — V2
CLEA EN EV 1 INT (ϕ)H

M111 D21
M103 D25 — N1 CLEA CNT TO BUF L
CLR RATE ϕ (ϕ)L — H1
CLR RATE 1 (ϕ)L — J1
M103 D26 — K1 −CLEA EXT RATE H
U2 CLEA INT REQ L

M719
F2ϕ

REVISIONS	CHK	REV.
CHANGE NO. 00001	S Mercer L GALE 9/24/69	A
00002	T. Dailey L GALE 6/18/69	B
EM12-00015	Pedro Marrero 10-27-70	C
EM12-00030	T Quill 3-2-70 GALE	D
EM12-00055	1-3-72 R. MOORE 1-14-72	E

DEC FORM NO. DRD 102A

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

MATERIAL

FINISH

QTY.	DESCRIPTION	PART NO.	ITEM NO.
PARTS LIST			

		DATE
DRN.		2-1-69
CHKD.		2/27/69
ENG.		2/28/69
PROJ. ENG.		2/28/69
PROD.		2/28/69

FIRST USED ON KW12

SCALE

SHEET 1 OF 1

digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS

TITLE
CLEA
INPUT CHAN 1

SIZE	CODE	NUMBER	REV.
D	BS	KW12-ϕ-CLEA	E

DIST.

KW12-ϕ-CLEA
D BS E

GT83 F25

H1 E1 M1 K2 K1 L2 ST R2 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

D 1 CLEB INPUT 2 C Ø R1

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

+3V D24V1 H N1

D 1 CLEB EVENT 2 C Ø M1

U2 CLEB INT REQ L

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

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

M719 F21

REVISIONS	CHK	CHANGE NO	REV
		00001 L. GALE 4/24/69	A
		00002 T. Butler L. GALE 6/18/69	B
		EM12-00015 L. GALE 10/1/69	C
		EM12-00055 R. MOORE 1-3-72	D

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 63 REMOVE BURRS AND BREAK SHARP CORNERS

MATERIAL

FINISH

	NAME	DATE
DRN		1-31-69
CHK'D		2/7/69
ENG		2/25/69
PROJ ENG		2/28/69
PROD		2/28/69

FIRST USED ON KW12

SCALE

SHEET 1 OF 1

QTY.	DESCRIPTION	PART NO.	ITEM NO.

PARTS LIST

digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS

TITLE
CLEB
INPUT CHAN 2

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

DIST.

K1 J1 N1 C1 D1 — G783 F25

H2 H1 J2 E1 +6.2V D1 -6.2V — ST — P2 S2 — PA — S1 Y2 — M503 F24

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

CLC LD CTRL 1 H — F2
CLC STROBE EVENTS H — K2
PRF AC 11 (1)H — H2
CLEC PRE EVENT 3 (Ø)H
CLEC EVENT 3 (1)H
CLC SYNC STROBE 1 H — J2
CLC CLR STATUS L — S1
PRF AC 1Ø (1)H — K1
CLC LD CTRL 2 H — J1
CLC CLOCK PRESET H — P1

F1 — CLEA EN INPUT 2 (1)H
L2 — CLEC CNT TO BUF L

D 1 CLEC INPUT 3 C Ø R1

D 1 PRE-EVENT C Ø R2 — CLEC PRE EVENT 3 (1)H — CLEC PRE EVENT 3 (Ø)H

+3V D29V1 H — N1

D 1 CLEC EVENT 3 C Ø M1

U2 — CLEC INT REQ L

D 1 C Ø — L1 — CLEC EN INPUT 3 (1)H — CLEC EN INPUT 3 (Ø)H

D 1 V2 C Ø — CLEC EN EV 3 INT (1)H — CLEC EN EV 3 INT (Ø)H

M719 F22

REVISIONS	CHK	CHANGE NO.	REV.
		00001	A
		00002	B
		EM12-00015	C
		EM12-00055	D

L. GALE 4/24/68
L. GALE 6/18/68
L. GALE 10/11/68
L. GALE 12/16/68
R. MOORE 1-3-72

DEC FORM NO. DRD 302A

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

	NAME	DATE
DRN.		2-1-69
CHK'D		2/6/69
ENG.		2/28/69
PROJ. ENG.		2/28/69
PROD.		3/24/69

FIRST USED ON KW12

SCALE

SHEET 1 OF 1

QTY.	DESCRIPTION	PART NO.	ITEM NO.

PARTS LIST

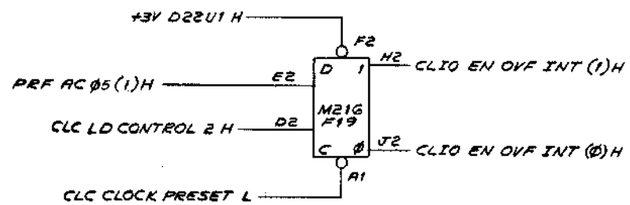
digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS

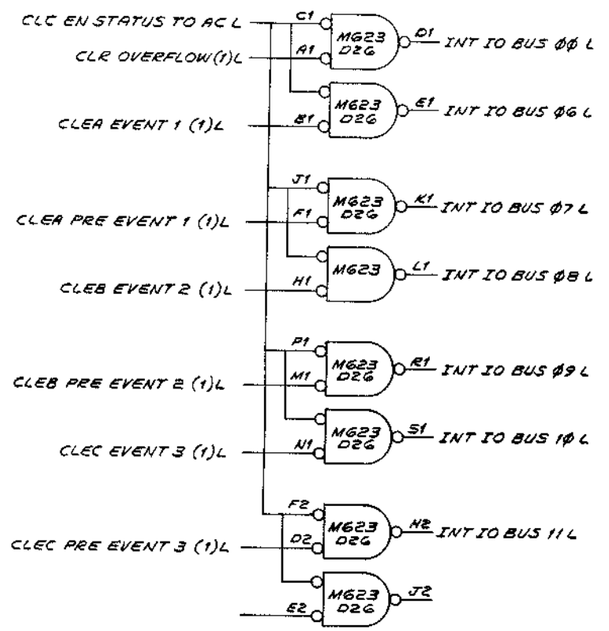
TITLE: CLEC INPUT CHAN 3

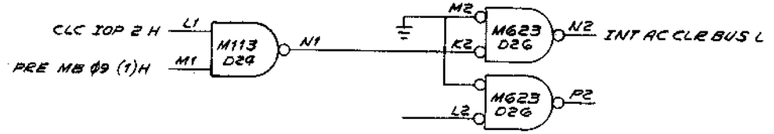
SIZE D | CODE 85 | NUMBER KW12-Ø-CLEC | REV. D

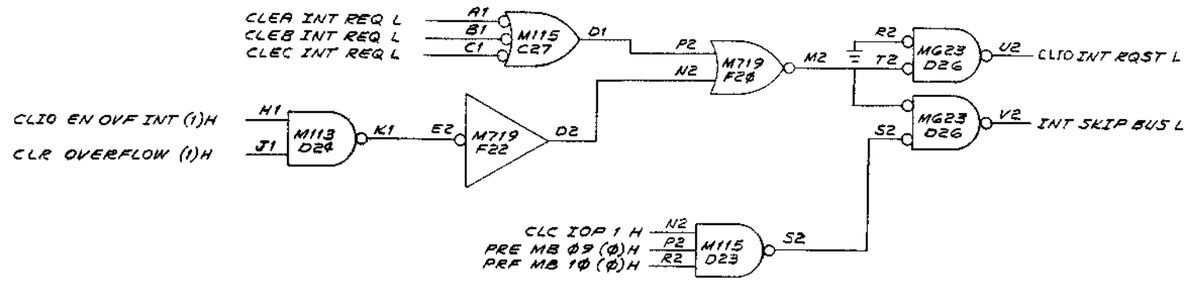
DIST.

DATAPROCESSOR D | 85 | KW12-Ø-CLEC | REV D









REVISIONS			
CHK	CHANGE NO.	REV.	
	00002	A	
T. Baillie			
L. GALE			
	EM12-00047	B	
SCANLAN			

DEC FORM NO DRD 102A

QTY.	DESCRIPTION	PART NO.	ITEM NO.

PARTS LIST

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

MATERIAL

FINISH

DRN.		DATE 1-29-69
CHK.		DATE 2/27/69
ENG.		DATE 2/28/69
PROJ. ENG.		DATE 2/28/69
PROD.		DATE 2/28/69

FIRST USED ON
KW12

SCALE

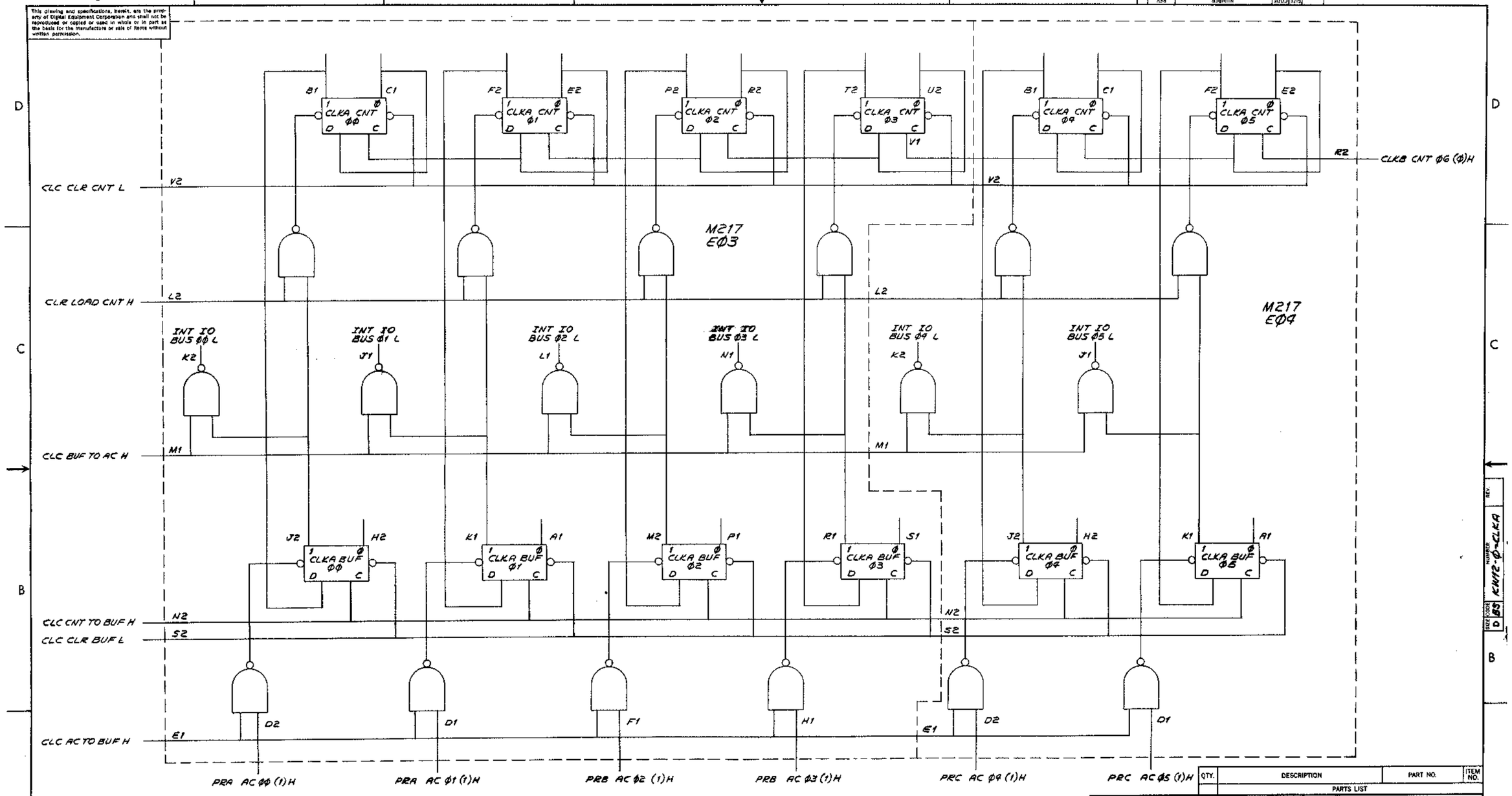
SHEET 1 OF 1

digital EQUIPMENT CORPORATION
MAYNARD, MASSACHUSETTS

TITLE
CLIO
CLOCK IO INPUT

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

DIST.



QTY.	DESCRIPTION	PART NO.	ITEM NO.

PARTS LIST

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

MATERIAL

FINISH

		DATE
DRN.		1-31-69
CHKD		2/21/69
ENG		2/28/69
PROM. ENG		2/28/69
PROD.		2/28/69

FIRST USED ON KW12

SCALE

SHEET / OF /

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

FORM NO. 102A

CLC CLR CNT L

CLR LOAD CNT H

CLC BUF TO AC H

CLC CNT TO BUF H

CLC CLR BUF L

CLC AC TO BUF H

CLR COUNT (Ø) H

M217 EØ4

M217 EØ7

INT IO BUS Ø6 L

INT IO BUS Ø7 L

INT IO BUS Ø8 L

INT IO BUS Ø9 L

INT IO BUS 1Ø L

INT IO BUS 11 L

PRD AC Ø6 (1) H

PRD AC Ø7 (1) H

PRE AC Ø8 (1) H

PRE AC Ø9 (1) H

PRF AC 1Ø (1) H

PRF AC 11 (1) H

QTY.	DESCRIPTION	PART NO.	ITEM NO.

PARTS LIST

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

MATERIAL

FINISH

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

FIRST USED ON KW12

SCALE

SHEET 1 OF 1

digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS

TITLE
CLKB
CLOCK & BUFFER
Ø6-11

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

DIST.

REVISIONS	REV.
CHANGE NO	
CHK	

DEC FORM NO. DRD 102A

+3V D22V1 H

PRA AC ØØ (1)H

CLC LD CTRL 1 H

CLC CLOCK PRESET L

M216 E09 CLR RATE Ø

PRA AC Ø1 (1)H

M216 E09 CLR RATE 1

PRB AC Ø2 (1)H

M216 E09 CLR RATE 2

PRB AC Ø3 (1)H

M216 E09 CLR MODE Ø

PRC AC Ø4 (1)H

M216 E09 CLR MODE 1

PRC AC Ø5 (1)H

M216 E09 CLR MODE 2

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 4ØØK HERTZ H

CLR RATE Ø (Ø)H
CLR RATE 1 (1)H
CLR RATE 2 (Ø)H
-CLTB 1ØØK HERTZ (Ø)H

CLR RATE Ø (Ø)H
CLR RATE 1 (1)H
CLR RATE 2 (1)H
-CLTB 1ØK HERTZ H

CLR RATE Ø (1)H
CLR RATE 1 (Ø)H
CLR RATE 2 (Ø)H
-CLTB 1K HERTZ H

CLR RATE Ø (1)H
CLR RATE 1 (Ø)H
CLR RATE 2 (Ø)H
-CLTB 1ØØ HERTZ H

CLEA PRE EVENT 1 (Ø)H

M117 D22 · M115 D23 · M719 F22 · M719 F21

PRA AC ØØ (1)H — M111 D21

CLC CLR STATUS L — M719 F21

+3V D22U1 H

CLC CLR CNT. L
CLKA CNT ØØ (Ø)H
M216 F19
CLR OVERFLOW (1)H
CLR OVERFLOW (Ø)H

CLC CLOCK PRESET H — M719 F21

CLC CLOCK PRESET L

CLR COUNT M216 F19 · M113 D24 · M719 F22

+3VC23U1

CLR COUNT SYNC M216 A10

CLC SYNC STROBE IH

CLC CLOCK PRESET L

+3VC23U1

CLC CLR CNT L
CLKA CNT ØØ(Ø)H
CLR A-D STROBE M216 A10

PA M5Ø3 F24 · PA M3Ø4 D27 · M113 D24 · M719 F21 · M719 F22 · M623 D26

CLC LD CTRL 2 H
PRC AC Ø4 (1) H

P1 CLR EXT A-D START H A1

CLR MODE 2 (1) L

CLR MODE 1 (Ø) H

M117 D17 U1 CLR LOAD CNT H

D24 M113 CLR EXT A-D START L

CLR CLOCK PRESET L

REVISIONS	CHANGE NO.	REV.
CHK	ØØØØ1	A
2nd	EM12-00003	B
2nd	EM12-00009	C
2nd	EM12-00034	D
2nd	EM12-00055	E

L GALE 4/24/68 · L GALE 8/6/68 · T Cwulla 3-19-70 · GALE 3/30/70 · R. MOORE 1-3-72 · 1-21-72

DEC FORM NO. DRD 102A

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

MATERIAL

FINISH

QTY.	DESCRIPTION	PART NO.	ITEM NO.

PARTS LIST

DRN		DATE 11-24-69
CHK'D		DATE 2-7-69
DWG.		DATE 2/28/69
PROJ. ENG.		DATE 2/28/69
PROD.		DATE 3/7/69

FIRST USED ON KW12

SCALE

SHEET 1 OF 1

digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS

TITLE

CLR CLOCK RATE

SIZE D | CODE 85 | NUMBER KW12-Ø-CLR | REV E

DIST.

E1
E2
PA M304 D28
J1
K1
K2
CLTB 10K HERTZ H
CLTB 10K HERTZ L

S1
S2
PA M304 D28
L1
M1
L2
CLTB 1K HERTZ H
CLTB 1K HERTZ L

R1
R2
PA M304 D28
P1
N1
V1
CLTB 100 HERTZ H
CLTB 100 HERTZ L

M719 F20

A1 CLTB TB13 Ø B1
CLTB TB12 Ø
C1 CLTB TB11 Ø
CLTB TB10 Ø H1

M719 F21

A1 CLTB TB23 Ø B1
CLTB TB22 Ø
C1 CLTB TB21 Ø
CLTB TB20 Ø H1

M719 F22

A1 CLTB TB33 Ø B1
CLTB TB32 Ø
C1 CLTB TB31 Ø
CLTB TB30 Ø H1

M905 CLK F18
D2 CLTB 400K HERTZ H
E2 CLTB 900K HERTZ L
J2

+3V D22U1 H

CLTB 100K HERTZ (1)H
CLTB 100K HERTZ (Ø)H

CLTB ØØ M21G F19
S1 U1 R1 P1 N1

M21G F19
V2 V1 U2 K2 T2 S2

NOTE: DECADE COUNT SEQUENCE

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

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
UNLESS OTHERWISE SPECIFIED	Joe Young	1-20-67
	CHKD	2/2/67
	ENG	2/28/67
	PROJ ENG	2/28/67
	PROD	2/28/67

FIRST USED ON KW12
SCALE
SHEET 1 OF 1

digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS

TITLE
CLTB
CLOCK TIME BASE

SIZE D | CODE 85 | NUMBER KW12-Ø-CLTB | REV. A
DIST.

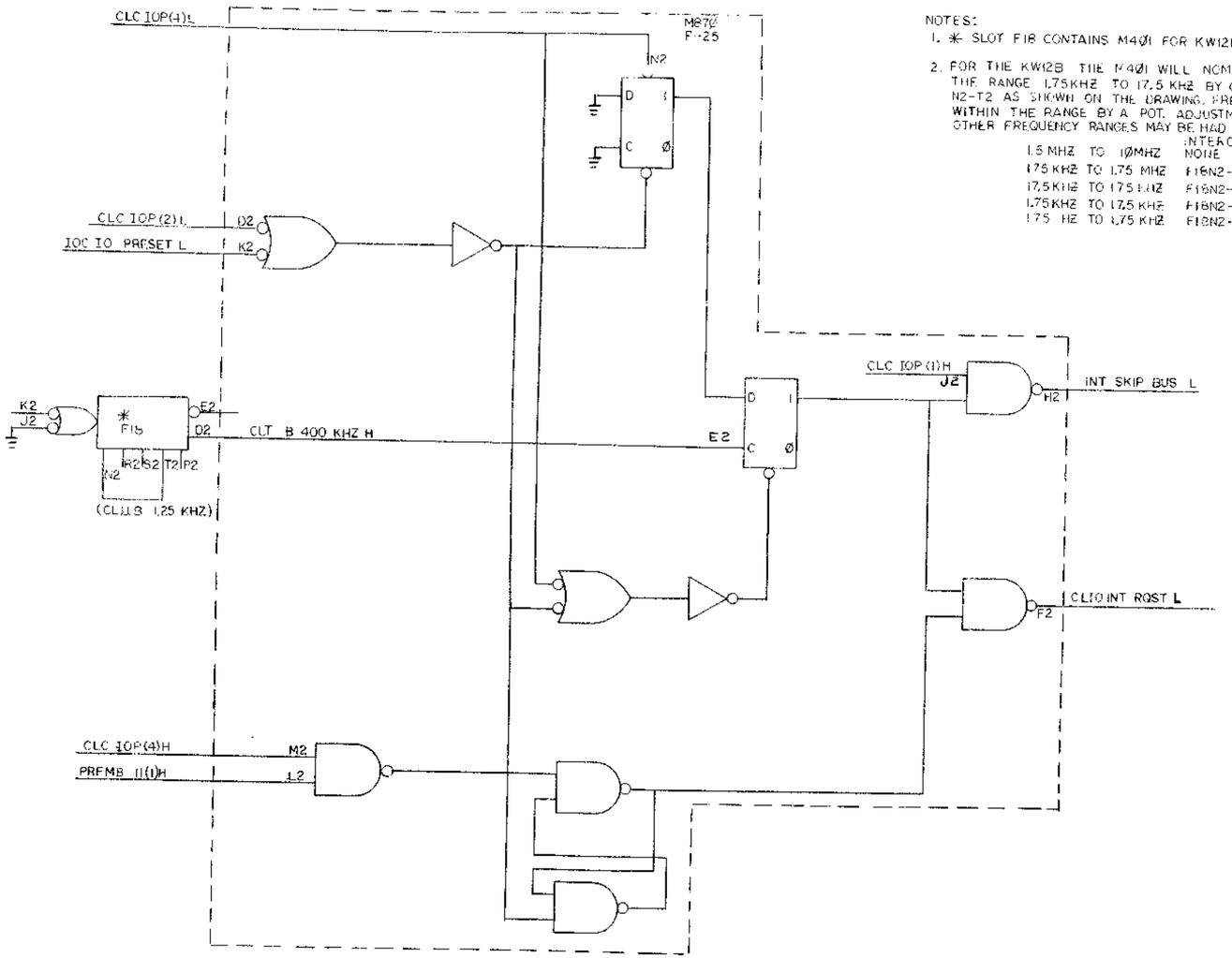
REVISIONS			
CHK	CHANGE NO.	REV	
	EM12-00011	A	
[illegible]	L. GALE	9-11-67	

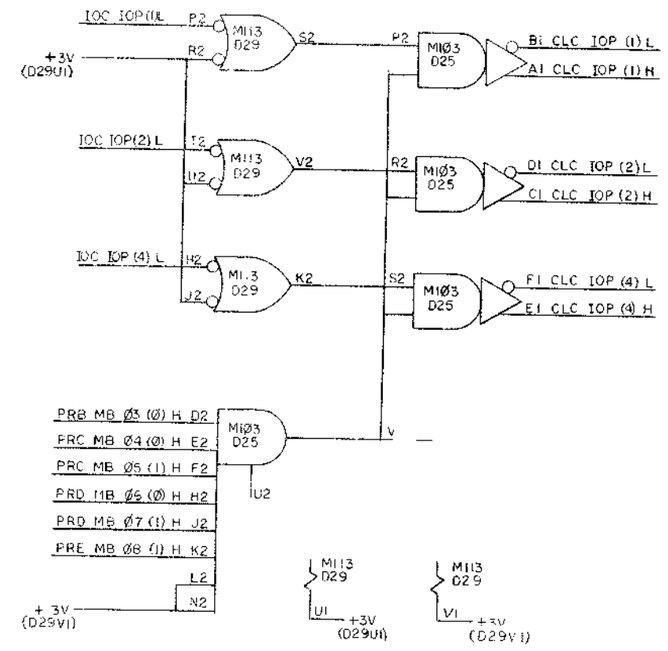
DEC FORM NO. DRO 102A

KW12-Ø-CLTB REV A SIZE D CODE 85

NOTES:
1. * SLOT F18 CONTAINS M4Ø1 FOR KW12B AND M4Ø5 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	NONE (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				REV.
CHK	CHANGE NO.			
EV	EM12—00341	D.MACKLIN	10/30/70	A
EV	EM12—00347	SCANLAN	3-27-71	B

DEC FORM NO. DRD 102A

FIRST USED ON OPTION/MODEL	QTY.	DESCRIPTION	PART NO.	ITEM NO.
KW12		PARTS LIST		

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

MATERIAL

FINISH

DRN	L Fontaine	DATE 2/6/70
CHK'D	[illegible]	DATE 3/5/70
ENG	[illegible]	DATE 3/9/70
PROJ. ENG	[illegible]	DATE 3/9/70
PROD	[illegible]	DATE 3/6/70

NEXT HIGHER ASSY: A-ML-KW12-B

SCALE

SHEET OF

digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS

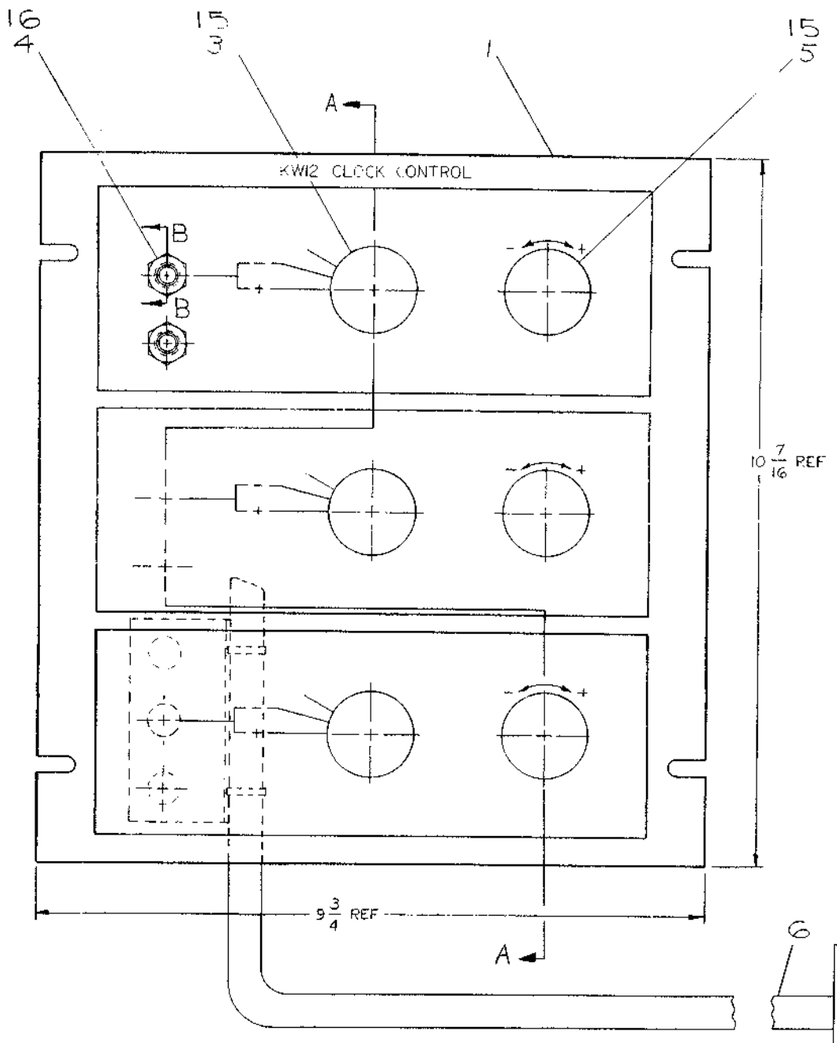
TITLE: SIMPLE CLOCK

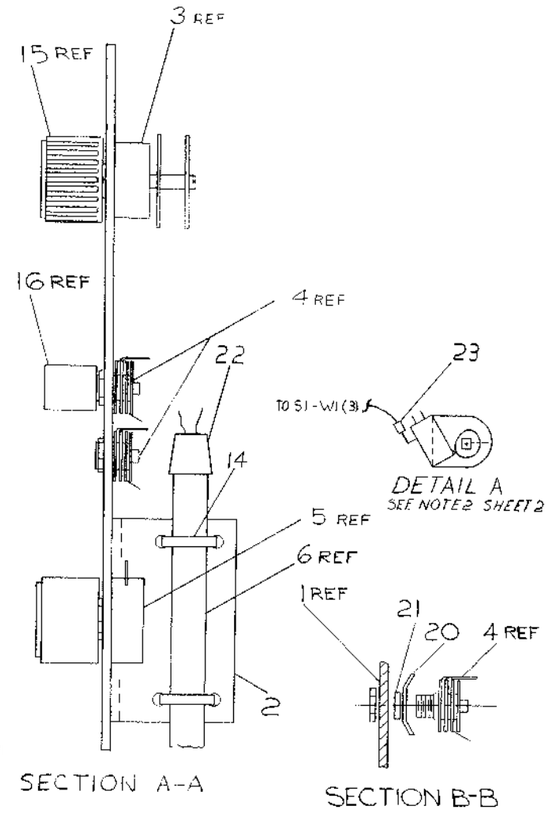
SIZE	CODE	NUMBER	REV.
D	BS	KW12-Ø-CLUB	B

DIST.

NOTES

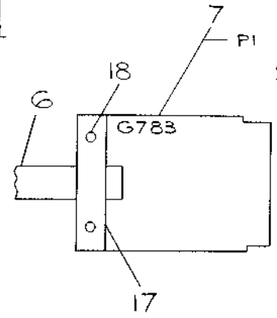
1. TWIST DRAIN WIRES OF PAIR #2,5, AND 6 TOGETHER AND SOLDER TO GND LUG.





SECTION A-A

SECTION B-B



REVISIONS		
CHK	CHANGE NO.	REV.
[illegible]	EM12-00013 L. GALE	A
[illegible]	EM12-00014 T. Gallucci 10-1-69	B
GALE	EM12-00020 T. Gallucci 12-17-69	C
GALE	EM12-00045 T. FLICHER	D
[illegible]	EM12-00050 R. IKNAYIAN	E

DEC FORM NO. DRD 100

FIRST USED ON OPTION/MODEL	QTY.	DESCRIPTION	PART NO.	ITEM NO.
KWI2		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

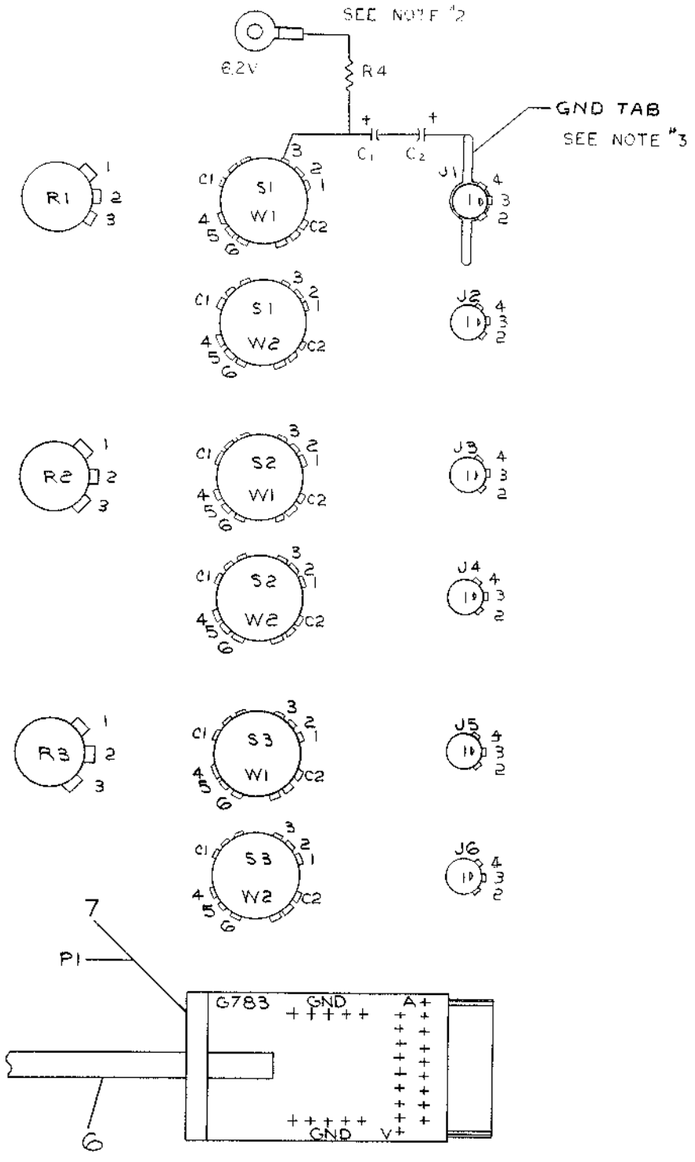
DRN. QUADROS	DATE 15 JULY 69	digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS
CHK'D	DATE 8/1/69	
ENG.	DATE 8/1/69	
PROJ. ENG.	DATE 8/1/69	
PROD.	DATE 8/1/69	

NEXT HIGHER ASSY A-ML-KWI2-Ø
SCALE NONE
SHEET 1 OF 2

TITLE
(KWI2) CLOCK CONTROL PANEL

SIZE	CODE	NUMBER	REV
D	AD	7006335-0-0	E

DIST.



WIRING DIAGRAM
VIEW FROM REAR OF PANEL

WIRE TABLE

ITEM NO	DESCRIPTION AWG	COLOR	CONNECTIONS FROM	TO	REMARKS	SIGNAL
6	22	BLK	P1-A1	S1-W1(C1)	RED SHIELD	-CLK1
		RED	P1-B1	S1-W1(C2)	PAIR#1	+CLK1
		DRAIN	P1-GND	S1-W1(6)		SYS GND
		BLK	P1-C1	S1-W2(1)	GRN SHIELD	+6.2V
		WHT	P1-D1	S1-W2(2)	PAIR#2	-6.2V
		DRAIN	P1-GND	GND TAB		SYS GND
		BLK	P1-E1	S2-W1(C1)	BLU SHIELD	-CLK2
		GRN	P1-H1	S2-W1(C2)	PAIR#3	+CLK2
		DRAIN	P1-GND	S2-W1(6)		SYS GND
		BLK	P1-J1	S3-W1(C1)	BLU SHIELD	-CLK3
		BLU	P1-K1	S3-W1(C2)	PAIR#4	+CLK3
		DRAIN	P1-GND	S3-W1(6)		SYS GND
		BLK	P1-L1	R1-2	BLU SHIELD	VCLK1
		YEL	P1-M1	R2-2	PAIR#5	VCLK2
		DRAIN	P1-GND	GND TAB		SYS GND
		BLK	P1-N1	R3-2	BLU SHIELD	VCLK3
		BRN	P1-P1	GND TAB	PAIR#6	SYS GND
6		DRAIN	P1-GND	GND TAB		SYS GND
8		BLK	S1-W1(1)	S1-W1(5)		-CLK1
			S1-W1(5)	J1-2		-CLK1
			J1-2	J1-4		-CLK1
			J1-4	J2-2		-CLK1
			S2-W1(1)	S2-W1(5)		-CLK2
			S2-W1(5)	J3-2		-CLK2
			J3-2	J3-4		-CLK2
			J3-4	J4-2		-CLK2
			S3-W1(1)	S3-W1(5)		-CLK3
			S3-W1(5)	J5-2		-CLK3
			J5-2	J5-4		-CLK3
			J5-4	J6-2		-CLK3
			S1-W2(1)	S1-W2(5)		+6.2V
			S1-W2(5)	S2-W2(1)		+6.2V
			S2-W2(1)	S2-W2(5)		+6.2V
			S2-W2(5)	S3-W2(1)		+6.2V
			S3-W2(1)	S3-W2(5)		+6.2V
			S1-W2(C1)	R1-1		+6.2V
			S1-W2(C2)	R1-3		VCLK1
			S3-W2(C1)	R3-1		+6.2V
8		BLK	S3-W2(C2)	R3-3		VCLK3
9		RED	S1-W1(2)	S1-W1(4)		+CLK1
			S1-W1(2)	J1-3		+CLK1
			J1-3	J2-3		+CLK1
			R4-C1+	S1-W1(3)	NOTE 2	
			S1-W1(3)	S2-W1(3)		
4		RED	S2-W1(3)	S3-W1(3)		
10		BRN	S1-W1(6)	J1-1		CLK1 HQ GND
			J1-1	J2-1		CLK1 HQ GND
			S2-W1(6)	J3-1		CLK2 HQ GND
			J3-1	J4-1		CLK2 HQ GND
			S3-W1(6)	J5-1		CLK3 HQ GND
			J5-1	J6-1		CLK3 HQ GND
			S1-W2(3)	S1-W2(6)		SYS GND
			S1-W2(6)	S2-W2(3)		
			S2-W2(3)	S2-W2(6)		
			S2-W2(6)	S3-W2(3)		
			S3-W2(3)	S3-W2(6)		
10		BRN	S3-W2(6)	GND TAB		SYS GND
11		WHT	S1-W2(2)	S2-W2(2)		-6.2V
11		WHT	S2-W2(2)	S3-W2(2)		-6.2V
12		GRN	S2-W1(2)	S2-W1(4)		+CLK2
12		GRN	S2-W1(2)	J3-3		+CLK2
12		GRN	J3-3	J4-3		+CLK2
13		BLU	S3-W1(2)	S3-W1(4)		+CLK3
13		BLU	S3-W1(2)	J5-3		+CLK3
13		BLU	J5-3	J6-3		+CLK3
19		YEL	R2-1	S2-W2(C1)		+6.2V
19	22	YEL	R2-3	S2-W2(C2)		VCLK2

NOTES:

1. C1 IS WIPER CONTACT FOR SWITCH POSITIONS 1,2,3.
   C2 IS WIPER CONTACT FOR SWITCH POSITIONS 4,5,6.
2. 26" LONG RED WIRE FROM POWER SWITCH TO R4 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".
3. 65 INCHES LONG 18 AWG. WHT. FROM GND TAP SHOULD BE CONNECTED TO PIN 12 OF P7 ON 724 POWER SUPPLY. TERMINATE WIRE WITH AMP PIN "1209378-01.

WIRE TABLE

ITEM NO	DESCRIPTION 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
30			C2+	GND TAP		GND
30			C1-	C2-		

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

QTY.	DESCRIPTION	PART NO.	ITEM NO.
	PARTS LIST		

NEXT HIGHER ASSY

DRN. T. Ferguson	DATE 7-23-69	digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS
CHK'D K. Russ	DATE 8-5-69	
ENG. S. Hale	DATE 8/11/69	TITLE KW12 CLOCK CONTROL PANEL
PROJ ENG. S. Hale	DATE 8/11/69	
PROD. D. Cale	DATE 8/18/69	
SCALE NONE	SHEET 2 OF 2	SIZE D CODE AD NUMBER 7006335-0-0 REV. E
		DIST.

REVISIONS: REV. | CHANGE NO. | CHK

DEC FORM NO DRD 100

SIZE CODE D | NUMBER AD 7006335-0-0 | REV. E

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 W Call	ISSUED SECT.
DATE 8/11/69	DATE 8/18/69	1

ITEM NO	DWG NO. / PART NO.	DESCRIPTION	QUANTITY / VARIATION
1	D-IA-7407414-0-0	PANEL	1
2	B-MD-7406901-0-0	CABLE BRKT	1
3	B-MD-7407540-0-0	SWITCH ROTARY	3
4	1203562	JAX #13-B 3 COND SWITCH CRAFT	6
5	1309402-07	POT 5K 2W 20% A & B	3
6	9107582	CABLE #8778 BELDEN	8FT.
7	G783	CONN, CABLE G783	1
8	9107350-00	WIRE #22 AWG BLK STRD TEF INS	A/R
9	9107350-22	WIRE #22 AWG RED STRD TEF INS	A/R
10	9107350-11	WIRE #22 AWG BRN STRD TEF INS	A/R
11	9107350-99	WIRE #22 AWG WHT STRD TEF INS	A/R
12	9107350-55	WIRE #22 AWG GRN STRD TEF INS	A/R
13	9107350-66	WIRE #22 AWG BLU STRD TEF INS	A/R
14	9007032	TIE WRAP #SST-2-B PANDUIT	2
15	1209244	KNOB BUCKEYE SS-125L-2	6
16	1209430	PHONE PLUG #90 SWITCHCRAFT	6
17	1202790	CABLE CLAMP	1
18	9006741	EYELET A94 STIMPSON	2
19	9107350-44	WIRE #22 AWG YEL STRD TEF INS	A/R
20	9007612	SOLDER LUG	1
21	9008979	WASHER INT TOOTH 3/8	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	E	EM12-00050

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	9000703	TIE WRAP PANDUIT #SST-1B	8
29	1300365	RESISTOR 1K, ¼W, 5%	1
30	1002627	CAPACITOR 2.2 MFD 20V 10%	2
31	9107360-99	WIRE #18 AWG WHT.	65"
32	1209378-01	PIN #606204 AMP	1
33	9107714-01	TUBING, POLYOLEFIN HEAT SHRINK - BLK	A/R
34	9107278-11	TUBING, #18 AWG TEFLON WIRE - NATURAL	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	E	

P1
G783

+CLK1
-CLK1
-6.2V
+6.2V
+CLK2
-CLK2
+CLK3
-CLK3
VCLK1
VCLK2
VCLK3
GND

DRAIN

TO PWR ON OFF SW (N.O.) SIDE

R4 1K 1/4W 5%
C1, C2 2.2 µf 20V 10%
RED

S1 S2 S3

R1 R2 R3 POT. 5K 2W 20%
W1 W2

CLK 1 INPUT — J1
CLK 1 OUTPUT — J2
CLK 2 INPUT — J3
CLK 2 OUTPUT — J4
CLK 3 INPUT — J5
CLK 3 OUTPUT — J6

BLK
RED
BRN
GRN
BLU
WHT
YEL
-6.2V
+6.2V

PLUG: GND, -V, +V

-V +V

WHEN C1 IS IN THE 2ND POSITION AND C2 IS IN THE 5TH POSITION THE SIGNAL IS IN THE POSITIVE RAMP FIRING POSITION

NOTE:
ALL WIRES 22 AWG STRD TEF INS UNLESS OTHERWISE SPECIFIED

REF. DESIGNATION	DESCRIPTION	PART NO.
R4	1K 1/4W 5%	1300365
C1, C2	2.2µf 20V 10%	1002627
P1	CABLE CONN	G783
R1, R2, R3	POT. 5K 2W 20%	1309402-07
J1, J2, J3, J4, J5, J6	JAX # 13B 3COND. SWITCHCRAFT	1203562
S1, S2, S3	SWITCH REWORK	SMD 7006306

PARTS LIST

TRANSISTOR & DIODE CONVERSION CHART

DEC	EIA	DEC	EIA

digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS

TITLE: CLOCK CONT. KW12

SIZE D | CODE CS | NUMBER 7006335-0-1 | REV. C

PRINTED CIRCUIT REV

DRN K. Anderson 5/4/68
CHK R. Simo 5/7/68
ENG [illegible] 5/10/68
PROD [illegible] 5/15/68

REVISIONS

DASH NO.	PER NO.	REV.
-1	2054	A
-1	2055	B
-1	2056	C

SIZE DRAWN NO. 1005 101

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
A	ECO CHANGE	EM12-00055	R. MOORE	12/71	R. Moore	1-24-72

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	A

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	A

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:

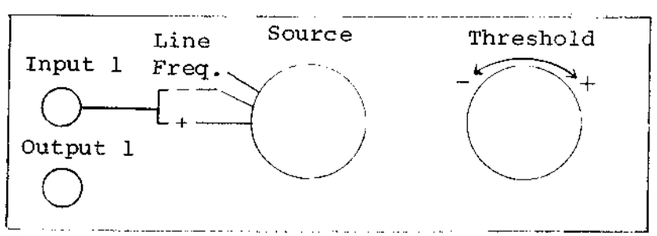
1) Channel 1

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)
CLSR	6132	C(AC) → C (Clock Control Register) The AC is unchanged

*Mnemonic defined in DIAL PMode only. In LMode user must define symbol himself.

Clock Control Register

Count Rate Reg.			Mode Reg.			Not Used		Not Used		Not Used	
00	01	02	03	04	05	06	07	08	09	10	11
C0	C1	C2	M0	M1	M2						
								Sim. Ch. 1 Event		Sim. Ch. 2 Event	Sim. Ch. 3 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 M2 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
110) to trigger the A/D Converter if A-D Control also has
111) FAST-SAMPLE flip-flop set. The remaining two mode control bits are decoded exactly as above. *

CLAB 6133 C (AC) ⟶ C (Buffer Preset Register) The AC is unchanged

CLEN 6134 C (AC) ⟶ C (Clock Enable Register)

Enable Register Bit

00 - 03 Not used
04 C (Buffer Preset Register) —ORed→ C (Clock Counter)

*This bars A-D conversion starts by the SAM instruction. A--D conversion starts with Clock Overflow only; loaded into AC by SAM instruction only.

04 cont'd. If mode control register M2 (1).

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 IOP 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

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	D	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 3/12/69	
ENG.	DATE 3/10/69	
PROJ. ENG.	DATE 3/10/69	
PROD.	DATE 3/11/69	
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	E

DIST.

DEC FORM NO.
DRA 103

LTP8 W1(1)H
LTP8 W2(1)H
M112 A33 → N2

+3V A33U1 H
+3V A33V1 H
-LWN WINDOW DATA IN L
LTP8 CLOSE 8 WIND L
LTT TP3 H

LTP8 W9 M21G C33 (A1, C1, B1 → F1, E1, D1)
LTP8 W8 M21G C33 (E2, D2 → J2, H2, F2)
LTP8 W7 M21G C33 (J1, H1 → M1, L1, K1)
LTP8 W6 M21G C33 (M2, L2 → K2, R2, N2)
LTP8 W5 M21G C33 (P1, N1 → U1, S1, R1)
LTP8 W4 M21G C33 (T2, S2 → V1, V2, U2)
LTP8 W3 M21G C32 (A1, C1, B1 → F1, E1, D1)
LTP8 W2 M21G C32 (K2, P1, N1 → U1, S1, R1)
LTP8 W1 M21G C32 (J1, H1 → M1, L1, K1)

LTP8 SET 8 TAPE L
LIP TAPE PRESET H
+3V A33V1 H
LTP8 TAPE M21G C32 (N2, P2, M2, L2 → R2, K2)

LTP8 TAPE SEL H
LTP8 W1(1)H
M115 C29 (E1, F1, H1 → J1) → LTP8 BM L

LTP8 W9(ϕ)H
LTP8 W8(1)H
LTP8 W7(1)H
LTP8 W6(ϕ)H
LTP8 W5(1)H
LTP8 W9(ϕ)H
LTP8 W3(1)H
LTP8 W2(ϕ)H
M119 A31 (F1, H1, J1, K1, R2, L2, M2, N2 → P2)
M111 A35 (M2 → N2)

LTT CLOSE WINDOW L
LIP TAPE PRESET L
PA M3004 C19 (D1, D2 → F1, H1, B1 → +5V)
→ LTP8 CLOSE 8 WIND H
→ LTP8 CLOSE 8 WIND L

LTMR IOT 6152 H
PRE AC ϕ9(1)H
+3V C22U1 H
M115 C29 (N2, P2, R2 → S2) → LTP8 SET 8 MTN L

LTMR IOT 6152 H
PRF AC 1ϕ(1)H
+3V C22U1 H
M115 C29 (D2, E2, F2 → H2) → LTP8 SET 8 TAPE L

+3V A33V1 H
LTP8 BM L
LTT TP9 H
LTP8 BLOCK M21G C32 (A1, E2, D2 → J2, H2, F2)
LTM CLEAR TAPE WORD L
PRF AC 1(1) L
LTP8 WRITE M21G C32 (K2, T2, S2 → V1, V2, U2)
LTP8 SET 8 TAPE L
LTP 8 CLOSE 8 WIND L
M112 C24 → V1
M111 D21 (M2 → N2) → LTP 8 WRITE SEL H

M112 C24
LTP8 TAPE (1) L
M111 C21 (U1, P2 → R2) → LTP8 TAPE SEL H

LTS LC ϕϕ(ϕ)H
LTS LC ϕ1(1)H
M115 C29 (T2, U2, V2 → V1)
M111 C21 (K2 → L2) → LTP8 TAPE WORD H
LTP8 TAPE WORD L
LTP8 BM L
M113 D29 (P1, R1 → S1)

LTS TTS9(1)H
LTP8 WRITE(ϕ)H
M115 C29 (K1, L1, M1 → N1) → LTP8 EN RWB L

LTT TP9 H
M113 D29 (L2, M2 → N2) → LTP8 LO TAC L

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 = ϕ
AC 1ϕ(1)	SEL 8 TAPE AND AC 11 → WRITE

SKL 19 = SKIP ON 8 BLOCK
SKL 17 = SKIP ON 8 WORD
TAPE PRESET = ϕ → WRITE
ϕ → MOTION
DESELECT 8 TAPE

REVISIONS	CHK	CHANGE NO.	REV.
		EM12-00001	A
L. GALE 4/24/69			
		EM12-00004	B
L. GALE			
		EM12-00010	C
DWG. # WAS TC128-0-LTP8			
GALE 8/26/69			
		EM12-0000032	D
GALE 3/4/70			
GALE 3/16/70			

DEC FORM NO. DAD 102A

QTY.	DESCRIPTION	PART NO.	ITEM NO.
PARTS LIST			

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

MATERIAL
FINISH

		DATE
DRN.		1-29-69
CHKD.		2/1/69
ENG.		2/14/69
PROJ. ENG.		2/14/69
PROD.		2/25/69

FIRST USED ON: TC12-F
SCALE
SHEET 1 OF 1

digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS

TITLE: LTP8 8 TAPE CONTROL

SIZE D | CODE 85 | NUMBER TC12-F-LTP8 | REV D
DIST.

MASTER DRAWING LIST

DWG. NO.	REV. LET.	NO. OF SHEETS	TITLE
A-ML-PDP12-0		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	D	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	E	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	E	8	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.
L	0671	00001	R.S.
M	10/71	EM12-53	RM

DRN. J. APREA	DATE 3/7/69	digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS
CHK'D. R. HUTANK	DATE 3/7/69	
ENG. L. Lalo	DATE 3/10/69	TITLE ANALOG TO DIGITAL CONVERTER
PROJ. ENG. L. Lalo	DATE 3/10/69	
PROD. W. Wall	DATE 3/10/69	
FIRST USED ON PDP-12		SIZE A · CODE ML · NUMBER AD12-0 · REV M
SCALE		
SHEET 1 OF 1		DIST.

DEC FORM NO. DRA 103

G783
F33

YAD ANALOG CHAN 7 — CW — E1 — R2 — R2
YAD ANALOG CHAN 6 — CW — H1 — S1 — S1
YAD ANALOG CHAN 5 — CW — J1 — P1 — P1
YAD ANALOG CHAN 4 — CW — K1 — T2 — T2
YAD ANALOG CHAN 3 — CW — L1 — M1 — M1
YAD ANALOG CHAN 2 — CW — M1 — L2 — L2
YAD ANALOG CHAN 1 — CW — N1 — K1 — K1
YAD ANALOG CHAN Ø — CW — P1 — N2 — N2

ANALOG BUFF A215 D34

V2

+5V — A2
-15V — B2
GRD — C2
+15V REG — D2
-15V REG — E2
HQ GND — F2

YADC IR 11(1)H
YADC IR 1Ø(1)H
YADC IR 11(Ø)H
YADC IR 11(1)H
YADC IR 1Ø(Ø)H — C1
YADC IR Ø7(1)H
YADC IR 11(Ø)H
YADC IR 11(1)H
D1 YADC IR 1Ø(1)H
YADC IE 11(Ø)H
B1 YADC IR 11(1)H
E1 YADC IE 1Ø(Ø)H
A1 YADC IR Ø9(Ø)H
F1 YADC IE 11(Ø)H

H1 YADC NEQ ØØ L

D33 MULTIPLEX A131

U1

YAD MPX RTN H

D1 — -7V — -15V
C1 — J2 H2 — +7V — +15V
F1
R1
GRD

D2 +15V REG
E2 -15V REG
F2 HQ GRD

W@23 E35
F2 BLK
H2 BLK
J2 BLK
K2 BLK
L2 ORG
D2 RED
S2
E2 BLU
M2 GRN
12-03185-2
120VAC@7-420CPS.)
CLR EXT A-D START H

YAD MPX MODE H

ANA. BUF A215 D34
+15V REG — D2
-15V REG — F2
HQ GRD — F2
P2
U2
YAD MPX RTN H
V2
E34 F34
FJ2
ED2
FL2
FF2
-15V REG — EE2
FM2
HQ GRD — EF2
FK2
EU2 ES2 EH2 EJ2
SAMPLE & HOLD A404 *
FA2 +5V
FH2
EV2
DV2
A-D CONV AB11
C35 D35
YADC HOLD (1) L
YADC START H — CH2
+15V REG — DU2
-15V REG — CV2
HQ GRD — DN2
+5V — CA2
CE2 YAD AD 2(1)H
CD2 YAD AD 3(1)H
CN2 YAD AD 4(1)H
CM2 YAD AD5(1)H
DL2 YAD AD6(1)H
DR2 YAD AD 7(1)H
DK2 YAD AD8(1)H
DP2 YAD AD 9(1)H
DS2 YAD AD 1Ø(1)H
DT2 YAD AD 11(1)H
DM2
YAD DONE H

EM12 HIGHER THAN REV. U MUST HAVE A405

* AD12'S PRE-WIRED TO EM12 REV.V OR HIGHER USES A405 INSTEAD OF A404.

REVISIONS				
CHK	CHANGE NO.	REV.		
	00001	A	L GALE	4/24/69
	EM12-00008	B	L GALE	5-15-69
	12-00076	C	L GALE	7-2-70
	EM12-00053	D	LINDHEIMER	10-20-71

DEC FORM NO DRD 102A

QTY.	DESCRIPTION	PART NO.	ITEM NO.
	PARTS LIST		

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

DRN.		DATE 1-4-68
CHKD.		DATE 2/27/68
ENG.		DATE
PROJ. ENG.		DATE 2/26/69
PROD.		DATE 2/21/69

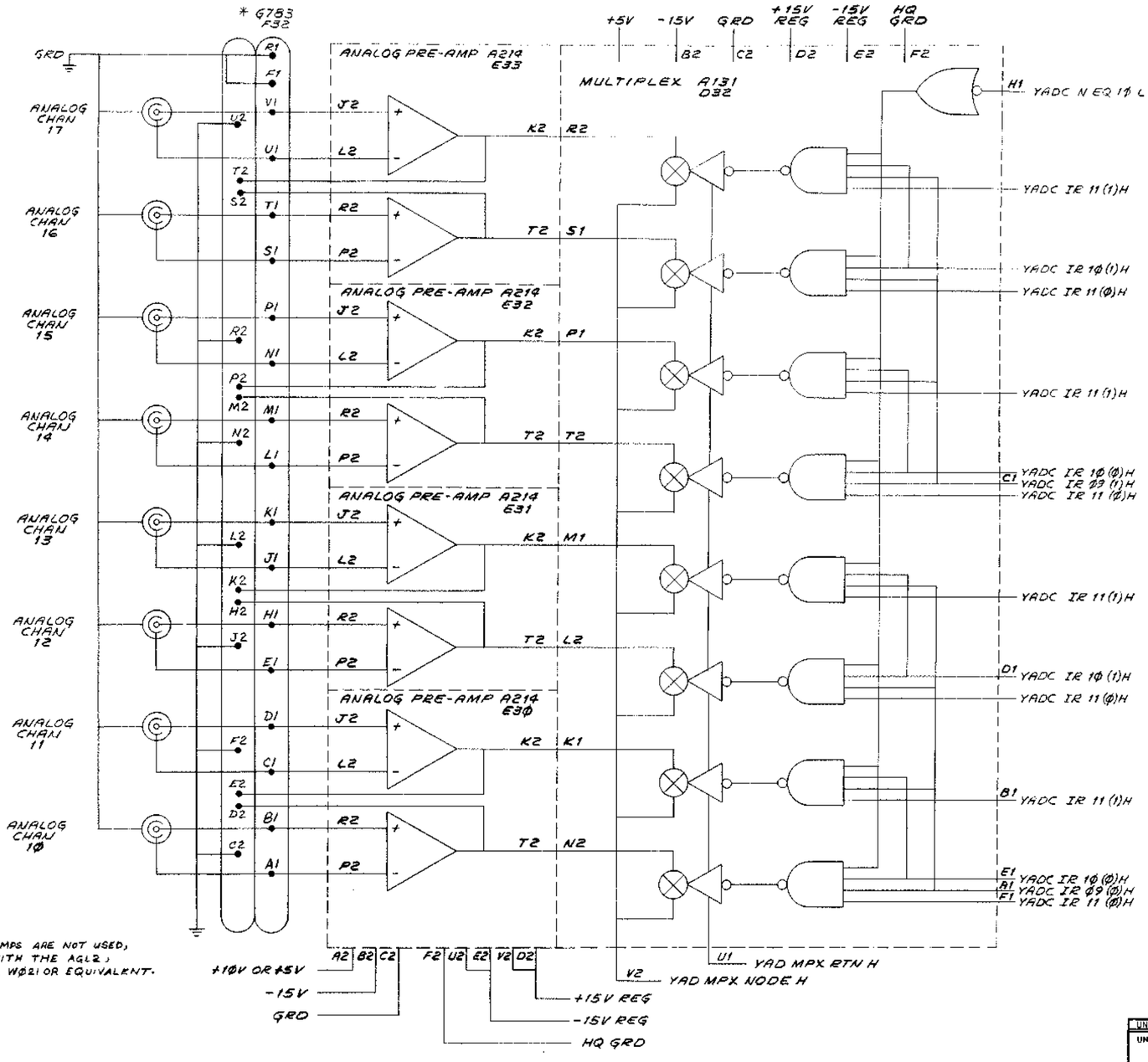
FIRST USED ON AD12
SCALE
SHEET 1 OF 1

digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS

TITLE A-D CONVERTER YAD

SIZE	CODE	NUMBER	REV.
D	85	AD12-Ø-YAD	D

DIST.



* WHEN PREAMPS ARE NOT USED, SUCH AS WITH THE AGL2, CABLE IS A WØ21 OR EQUIVALENT.

REVISIONS			
CHK	CHANGE NO		REV
	00002	T. QUILLIN L. GALE 6/18/69	A

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 1-8-69
CHK'D		DATE 2/27/69
ENG.		DATE 2-28-69
PROJ. ENG.		DATE 2-28-69
PROG.		DATE 2-28-69

FIRST USED ON AD12

SCALE

SHEET / OF /

digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS

TITLE
YAD A
CHAN 1Ø-17

SIZE	CODE	NUMBER	REV.
D	85	AD12-Ø-YADA	A

DIST.

DEC FORM NO ORD 102A

+5V | -15V LOGIC | GRD | +15V REG | -15V REG | HQ GRD

* G783 F3Ø

PREAMP A214 E29 — MULTIPLEX A131 D31 — GND — ANALOG CHAN 27 — ANALOG CHAN 26 — ANALOG CHAN 25 — ANALOG CHAN 24 — ANALOG CHAN 23 — ANALOG CHAN 22 — ANALOG CHAN 21 — ANALOG CHAN 2Ø

PREAMP A214 E28 — PREAMP A214 E27 — PREAMP A216 E26

YADC N EQ 2Ø L

YADC IR B 11 (1)H

YADC IR B 1Ø (1)H

YADC IR B 11 (Ø)H

YADC IR B 1Ø (Ø)H

YADC IR B Ø9 (1)H

YADC IR B 11 (Ø)H

YADC IR B 1Ø (1)H

YADC IR B 11 (1)H

YADC IR B 1Ø (Ø)H

YADC IR B Ø9 (Ø)H

YADC IR B 11 (Ø)H

YAD MPX NODE H

YAD MPX RTN H

* G783 F31

* WHEN PREAMPS ARE NOT USE — SUCH AS WITH THE AGL2 — CABLE IS A WØ21 OR EQUIVALENT.

* G783 F3Ø

PREAMP A214 F29 — MULTIPLEX A131 D3Ø — SHIC — ANALOG CHAN 37 — ANALOG CHAN 36 — ANALOG CHAN 35 — ANALOG CHAN 34 — ANALOG CHAN 33 — ANALOG CHAN 32 — ANALOG CHAN 31 — ANALOG CHAN 3Ø

PREAMP A214 F28 — PREAMP A214 F27 — PREAMP A214 F26

YADC N EQ 3Ø L

YADC IR B 11 (1)H

YADC IR B 1Ø (1)H

YADC IR B 11 (Ø)H

YADC IR B 1Ø (Ø)H

YADC IR B Ø9 (1)H

YAD IR B 11 (Ø)H

YADC IR B 11 (1)H

YADC IR B 1Ø (1)H

YADC IR B 11 (1)H

YADC IR B 1Ø (Ø)H

YADC IR B Ø9 (Ø)H

YADC IR B 11 (Ø)H

YAD MPX RTN H

+1ØV OR +5V — -15V — GRD — HQ GRD — -15V REG — +15V REG

REVISIONS	REV
CHANGE NO	A
CHK	00002
	T QUILLIN
	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 63
REMOVE BURRS AND BREAK SHARP CORNERS

MATERIAL

FINISH

		DATE
DRN.		1-4-68
CHK'D		2/2/68
ENG.		2/26/68
PROJ. ENG.		2/28/68
PROD.		3/12/68

FIRST USED ON: AD12

SCALE

SHEET 1 OF 1

digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS

TITLE: YAD B CHAN 2Ø-37

SIZE D | CODE 85 | NUMBER AD12-Ø-YADB | REV. A

DIST

DEC FORM NO. DRD 202A

+3V D29U1 H
INR IR Ø7 B (1)H
INR IR Ø8 (1)H
INR IR Ø9 (1)H
INR IR 1Ø (1)H
INR IR 11 (1)H
YADC IR Ø7 1Ø M216 C31
YADC IR Ø8 M216 C31
YADC IR Ø9 M216 C31
YADC IR 1Ø M216 C31
YADC IR 11 M216 C31
+3V D29V1 H
YADC LOAD A-D IR H

YADC FAST SAM (Ø)H
CPTP TP4 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 µ SEC-M76Ø 3 µ SEC-M76ØØ
PULSER 1.4 SEC-M76Ø .4 µ SEC-M76ØØ
YADC A-D BUSY
YADC HOLD
YADC START H
CLC CLOCK PRESET H
YAD DONE H
+3V

CPT T5 RECYCLE (Ø)H
CPTP TP5 H
INS SAM H
RCL LOAD MSC Ø4 H
YADC AC Ø5 (Ø)H
YAD DONE H
IOC IO PRESET L
YADC A-D PAUSE

PRC AC Ø5 (1)H
RCL LOAD MSC Ø4 H
IOC IO PRESET L
YADC FAST SAM

M76ØØ* 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 L Ø3

YADC IR Ø7 (Ø)H
YADC IR Ø8 (Ø)H
YADC IR Ø7 (Ø)H
YADC IR Ø8 (1)H
YADC IR Ø7 (1)H
YADC IR Ø8 (Ø)H
YADC IR Ø7 (1)H
YADC IR Ø8 (1)H
M113 D29
YADC N EQ ØØ L
YADC N EQ 1Ø L
YADC N EQ 2Ø L
YADC N EQ 3Ø L

* AD12'S PRE-WIRED TO EM12 REV. U OR LOWER USE M16Ø INSTEAD OF M76ØØ.

PRC AC Ø5 (1)H
YAD AD Ø5 (1)H
YAD AD Ø4 (1)H
YAD AL 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 IR 11 (Ø)L
YADC IR 11 (1)L
YADC IR 1Ø (Ø)L
YADC IR 1Ø (1)L
YADC IR Ø9 (Ø)L
YADC IR Ø9 (1)L
M111 C34
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 IR B 11 (Ø)H
YADC IR B 11 (1)H
YADC IR B 1Ø (Ø)H
YADC IR B 1Ø (1)H
YADC IR B Ø9 (Ø)H
YADC IR B Ø9 (1)H

REVISIONS	REV.	CHANGE NO.	CHK	
	A	00001		L.GALE 4/24/68
	B	EM12-00009		L. GALE 8/26/68
FV	C	EM12-00041		D. MACKLIN 10/28/69
FV	D	EP12-00030		D. MACKLIN 10/20/70
	E	EE12-00053		L. LINDHEIMER 12/21/71

QTY.	DESCRIPTION	PART NO.	ITEM NO.

PARTS LIST

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

MATERIAL
FINISH

		DATE
DRN.	Joe Cross	2-12-69
CHK'D.		2/12/69
ENG.		
PROJ. ENG.		
PROD.		

FIRST USED ON: AD12
SCALE
SHEET 1 OF 1

digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS

TITLE: YADC A-D CONTROL

SIZE D | CODE 85 | NUMBER AD12-Ø-YADC | REV. E

DIST.

DEC FORM NO DRD 102A

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	T.J.Duggan	2/4/70
B		12-00068	L. GALE	4-15-70	L. Gale	4/21/70
C		12-00076	BUDIANSKY	6-4-70	D. Budiansky	7/21/70
D	CHANGE PER ECO	AD12-00001	SCHWEGLER	5-6-71	R. Schwegler	8/24/71
E	CHANGE PER ECO	EM12 00053	LINDERHEIMER	10-18-71		

ENG	APPD	SIZE	CODE	NUMBER	REV
L. Gale 6/3/69	L. Gale 6/3/69	A	SP	AD12-0-1	E

DEC FORM NO. DRA 107

SHEET 1 OF 8

ENGINEERING SPECIFICATION

digital — 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 (normal noninverting connection):	±2% 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 (source IMP <250)	25 db worse case 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 120-volts rms for 5 sec.
AM-12	± 8 volts indef.
Overvoltage Recovery Time: AD12, AG12	8 μsec
Frequency Response: AD12, AG12, AM12	0- to 30-kHz flat 60-kHz 3-db down
Parameter Pots: AD12	8 10-turn parameter potentiometers are provided. 1-½ to 2 turns at each extreme are beyond the A to D range.
Long Term Stability (1 hour)	Better than 1% for ± 30C.

Multiplexer Performance

Number and Type:	16 FET multiplex switches expandable to 32 (AM-12)

SIZE	CODE	NUMBER	REV
A	SP	AD12-0-1	E

DEC FORM NO DRA 108

SHEET 2 OF 8

1) AD12, AM12, AG12 Specifications cont'd.

A/D Performance (See Note 1)

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.

Note 1 - Newer AD12's use A405 sample and hold and a M7600 A-D Control Module. This newer version has a faster sample rate. See sheet 8 of this specification.

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	*	A405	Sample and Hold	E34, F34	AD-12-Ø-YAD
1		A811	A/D Converter Mod.	C35, D35	AD-12-Ø-YAD
1	*	M7600	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

* AD12's pre-wired to EM12 Rev U or lower use A404 and M760.

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

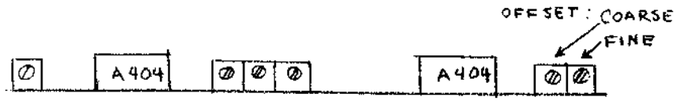
Qty.	Part #	Use in AG12	Location	Print Ref.
8	A214	Analog Preamplifiers	E26-E29	AD12-Ø-YADB
			F26-F29	
		Input, Relay Panel	F30-F31	AD-700-6046
				AD12-Ø-YADB

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.

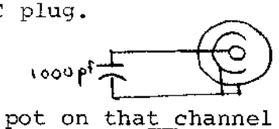


5) Remove D34N2 to D34F2 connection.

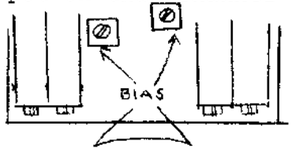
6) Turn parameter potentiometer slowly 10 turns over the full range. Assure that each count is displayed on Ch. Ø display. Repeat this test on each of the remaining parameter pots. (1-½ to 2 turns at each end of the pot do not offset the number displayed.)

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.



** See Sheet 8 of this specification for A405 layout.

Replace EDC and assure ±Ø volts.
Readjust offset if necessary.

8) Set EDC to +.985; adjust gain to indicate +776 readout on channel under test.

9) Increase EDC voltage to +.995; assure +777.

10) Set EDC at -.985; assure -776 reading. If necessary, slightly readjust the offset pot on the A214 in question, but insure that a reading of +Ø or -Ø (or the ±Ø threshold) is still present when EDC is set to Ø volts. See step 7.

11) Record voltage of switching indecision point for the numbers -770 to -777 and +000 to +007; assure non is less 1 mv nor greater than 3 mv.

12) Repeat steps 7 through 12 for successive analog channels.

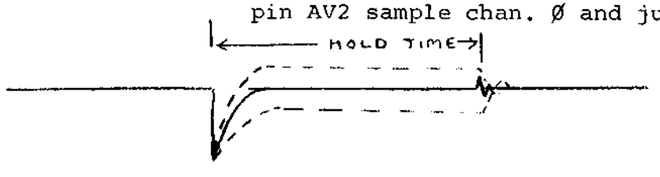
* 13) A note about the other pots on the A404: Only the offset pot should be adjusted in the normal set-up procedure of the PDP-12 analog-to-digital converter.

* Use step 13 on Sheet 8 of this specification when A405 is installed. 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.

NEWER AD12's

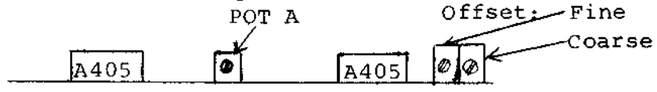
When A405 and M7600 are installed, the following performance specifications hold:

A/D Performance

Resolution:	10 bits ±½ LSB ± .1%/°C for Inputs to ch. 10→37
Conversion Rate:	69 KHz
Sample Acquisition Time:	3 usec (±1 usec)
Aperture Time:	100 nsec

Steps 4 and 13 are modified as follows:

4) Adjust A405 Sample and Hold offset until Ch. Ø reaches the threshold point of +Ø and -Ø volts.

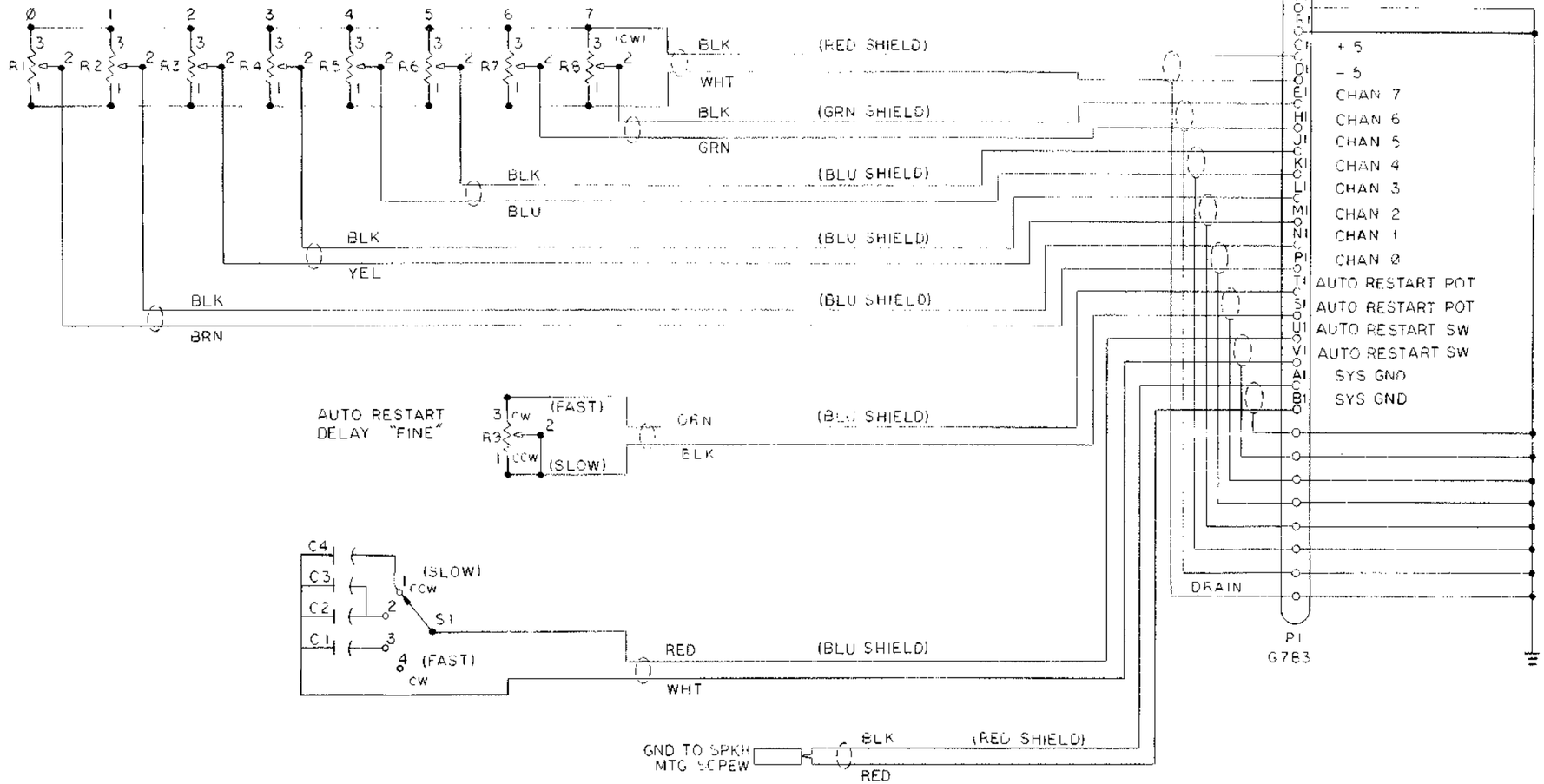


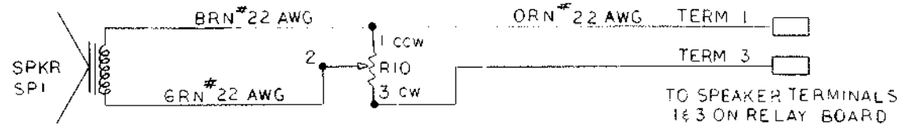
13) A note about the other pot on the A405: Only the offset pots should be adjusted in the normal set-up procedure of the PDP-12 analog-to-digital converter.

Pot A (marked on board) is the amplifier balance

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.

ANALOG CHANNELS Ø THRU 7





NOTE: WIRE IS BELDEN CABLE #8774 EXCEPT AS NOTED

REF DESIG	DESCRIPTION	PART NO
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 CENTRAL AB	1209304
R10	POT 2.5K OHM JAIN 0565252UA	1309402-06
R9	POT 25K JAIN 0565253 UA	1309402-09
R1 THRU R8	POT 5K OHM 10 TURN DUNCAN	1309532-6

PARTS LIST

REVISIONS

CHK	CHG NO	REV
	13934	A

		DATE
DRN	[illegible]	10 JUN 69
CHKD	[illegible]	10 Jun 69
ENG	[illegible]	6/11/69
PROD	[illegible]	6/11/69

TRANSISTOR & DIODE CONVERSION CHART

DEC	EIA	DEC	EIA

digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS

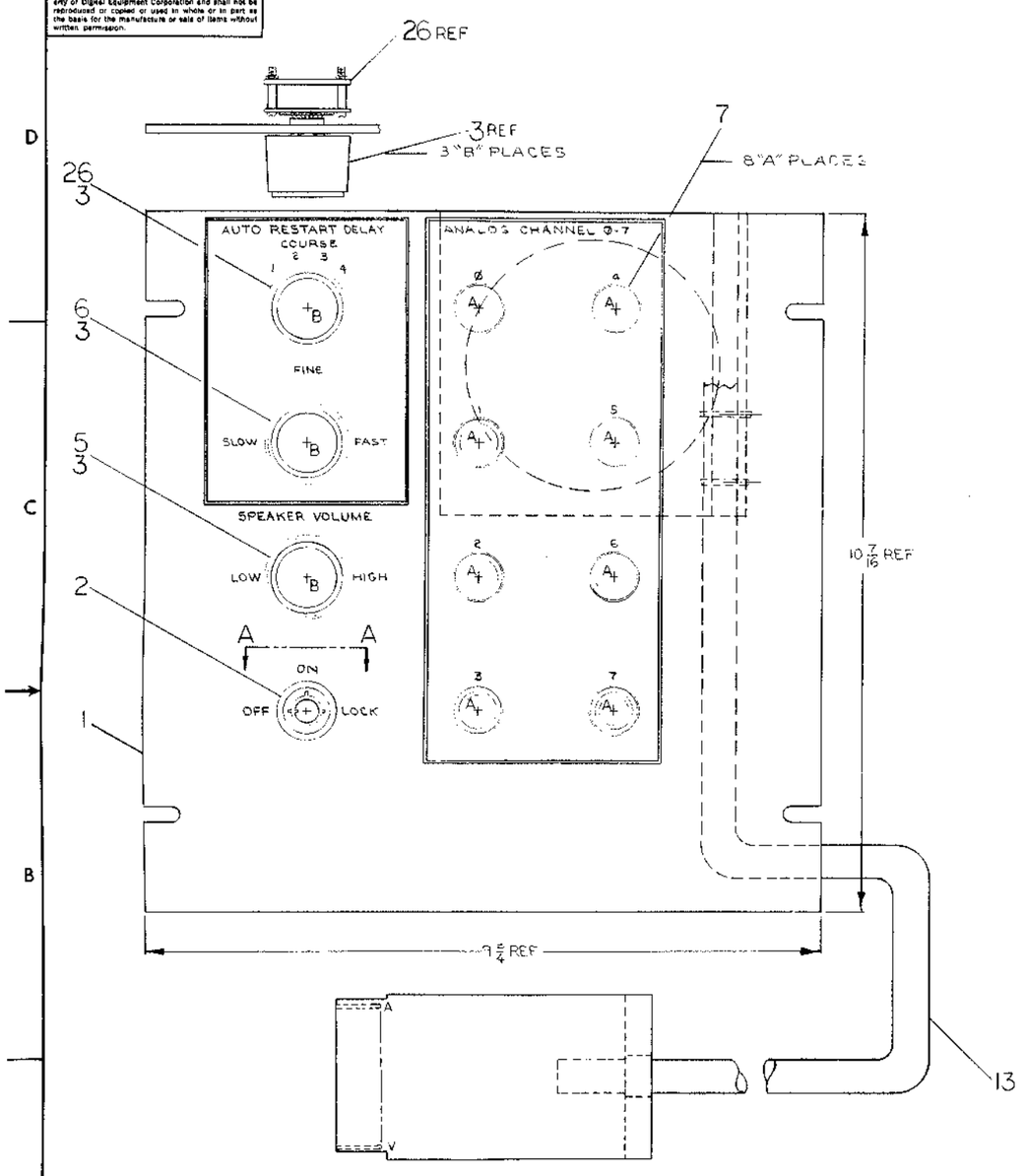
TITLE ANALOG PANEL PDP-12

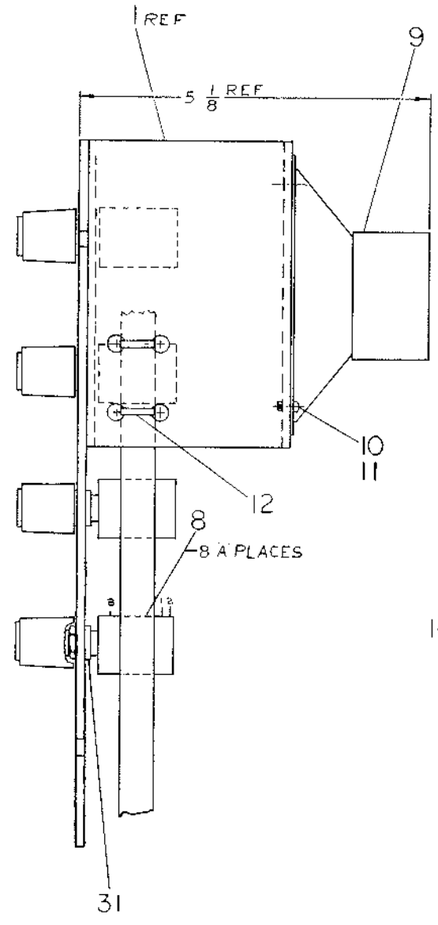
SIZE	CODE	NUMBER	REV.
C	CS	7005964-0-1	A

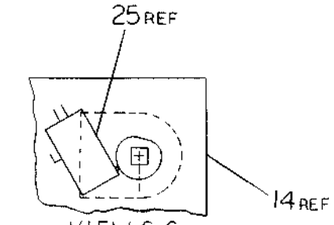
PRINTED CIRCUIT REV.

SIZE C | CODE CS | NUMBER 7005964-0-1 | REV A

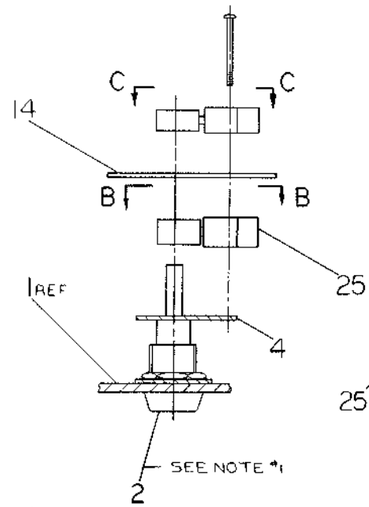
DEC FORM NO. DRC 102



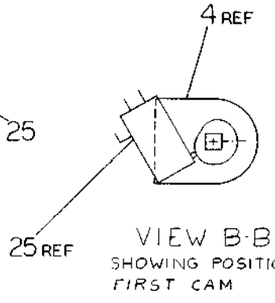




VIEW C-C
SHOWING POSITION OF SECOND CAM



SECTION A-A
(SHOWING ASSY OF LOCK)



VIEW B-B
SHOWING POSITION OF FIRST CAM

NOTES:
1. LIST AS ASSEMBLED PARTS ONLY ITEM [illegible] ON PARTS LIST. ASSEMBLY CONSISTS OF ITEMS 1 THRU 14 AS SHOWN ON DRAWING.
2. WIRES FROM ITEM "B" NOT USED AR TO BE CUT OFF AT CASING.
3. ATTACH GND LUG (ITEM "32) & WASHER (ITEM "54) TO SPEAKER MTG. SCREW

REVISIONS			
CHK	CHANGE NO	REV	
[illegible]	12-00011	A	L GALE [illegible]
K.K.	12-00054	B	T GALE 2-25-70
FV	12-00067	C	L GALE 4-7-70

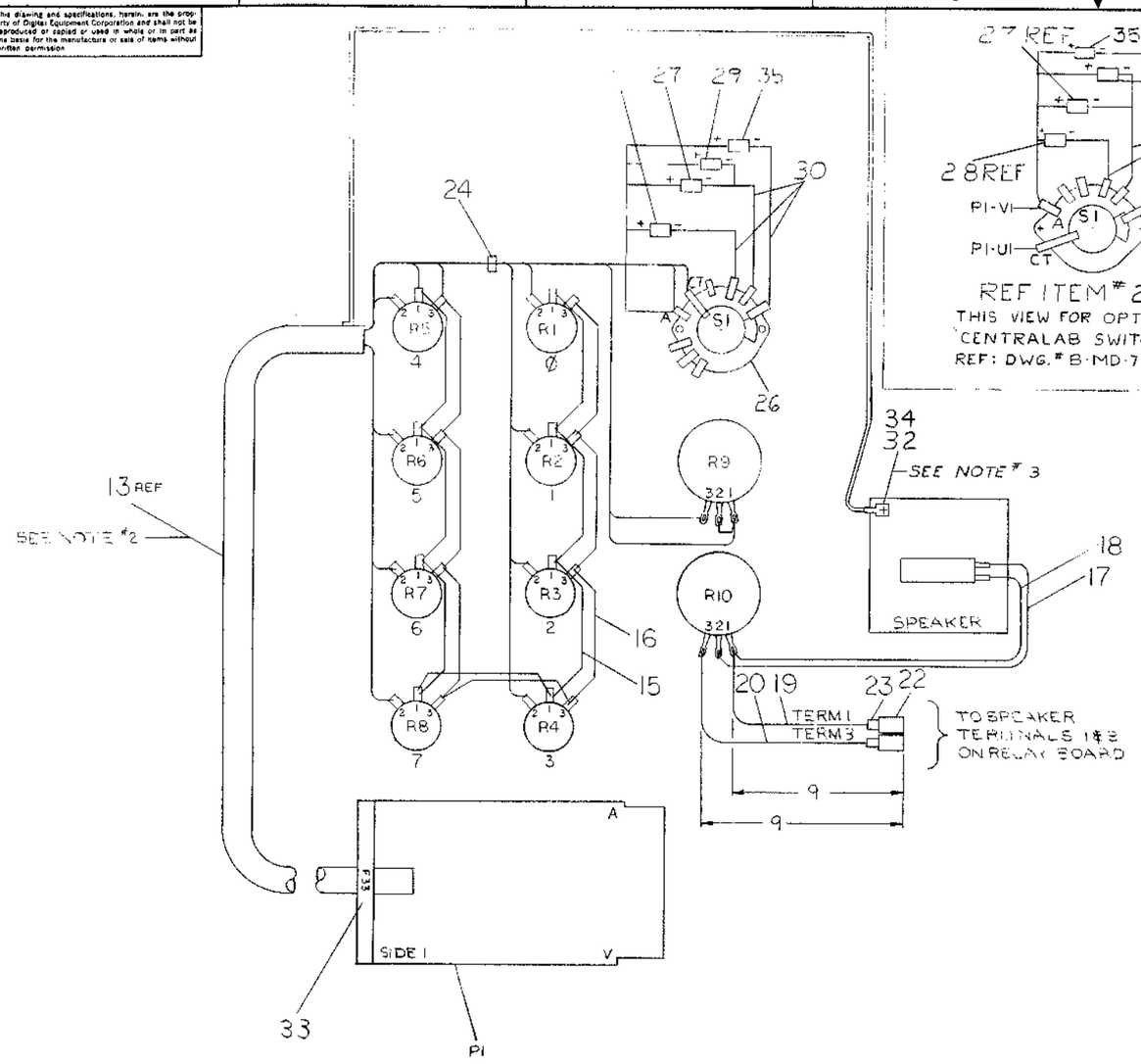
DEC FORM NO. DRD 100

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. Stan Potter	DATE 10/2/68	digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS
CHK'D. K. Russ	DATE 3/20/69	
ENG. [illegible]	DATE 3-5-69	
PROJ. ENG. [illegible]	DATE 3-3-69	TITLE: ANALOG PANEL ASSY
PROD. A.D. Call	DATE 3/3/69	
NEXT HIGHER ASSY C-UA-PDP12-0-0		SIZE D CODE AD NUMBER 7005964-0-0 REV C
SCALE NONE		
SHEET 1 OF 2		DIST.

DRAWING NUMBER D AD 7005964-0-0 REV C



WIRE TABLE

ITEM NO	AWG	COLOR	FROM	TO	REMARKS	SIGNAL
13	22	BLU	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	R9-1		-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	R7-1		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	SPKR GND	RED SHIELD	SYS GND
13	22	RED	P1-B1	SPKR GND	PAIR # 1	SYS GND

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.	Peter Bent	DATE 10/15/68
CHK'D.	R. Russo	DATE 2/25/69
ENG.	[illegible]	DATE 5-5-69
PROJ. ENGR.	[illegible]	DATE 5-5-69
PROD.	[illegible]	DATE 5/5/69

TEXT OUT PER ASSY

SCALE NONE
SHEET 2 OF 2

digital EQUIPMENT CORPORATION
MAYNARD MASSACHUSETTS

TITLE
ANALOG PANEL ASSY

SIZE	CODE	NUMBER	REV
D	AD	7005964-0-0	C

DIST.

REVISIONS			
REV	CHANGE NO.	CHK	

DEC FORM NO DRD 100

DIGITAL EQUIPMENT CORPORATION
MAYNARD, MASSACHUSETTS

PARTS LIST

MADE BY S. POITRAS	CHECKED K. RUSS	SECTION
DATE 10/9/68	DATE 11/21/68	1
ENG L. Gale 3-3-69	PROD W Call	ISSUED SECT.
DATE	DATE 3/3/69	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				

DIGITAL EQUIPMENT CORPORATION
MAYNARD, MASSACHUSETTS

PARTS LIST

MADE BY S. POITRAS	CHECKED K. RUSS	SECTION
DATE 10/9/68	DATE 11/21/68	1
ENG L. Gale 3-3-69	PROD W Call	ISSUED SECT.
DATE	DATE 3/3/69	1

ITEM NO.	DWG NO. / PART NO.	DESCRIPTION	QUANTITY / VARIATION
~~23~~	~~9107255~~	~~TUBING WITH SHRINKABLE 1/8 O.D.~~	A/R
24	9007031	TY. WRAP #SST-1-B PANDUIT	A/R
25	1209355	MICRO SW #6831 "MICRO"	2
** 26	B-MD-7407195-0-0	SWITCH CENTRALAB (REWORK)	1
26	1209394	SWITCH CENTRALAB PA-020	1
27	1005965	CAPACITOR .47 uf 35V 10%	1
28	1000050	CAPACITOR .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

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.	D Call	DATE 8/18/69

FIRST USED ON: PDP12

SCALE: #

SHEET 1 OF 1

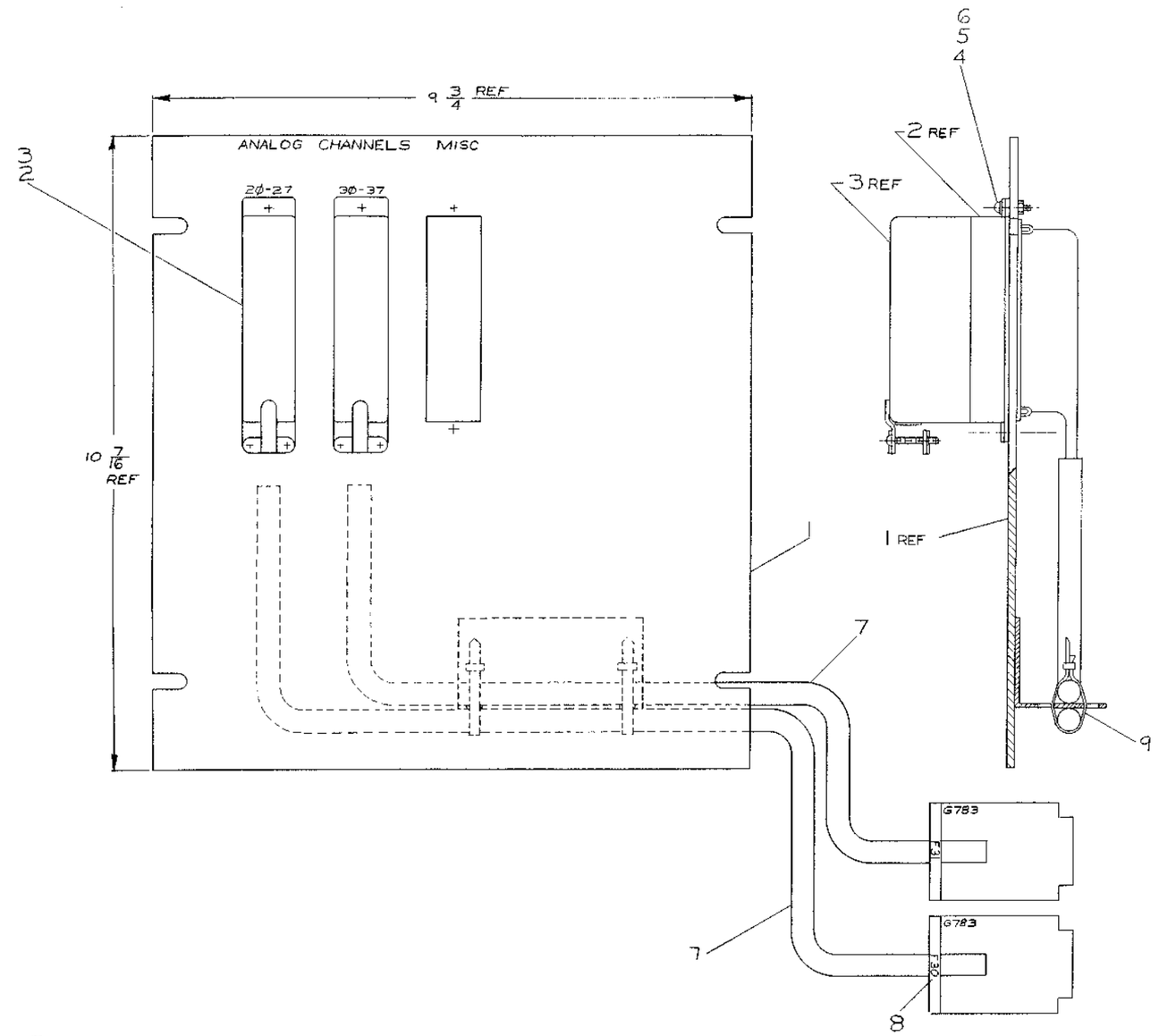
digital EQUIPMENT CORPORATION
MAYNARD, MASSACHUSETTS

TITLE: A-D ADDITIONAL PREAMPS

SIZE	CODE	NUMBER	REV.
A	ML	AG12-0	A

DIST.

DEC FORM NO. DRA 103



REVISIONS			
CHK	CHANGE NO.	REV.	
TA	AM12-00001	A	T.Allen 8-1-69
			GALE
			8/5/69

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

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

MATERIAL —

FINISH —

DRN	Fleck	DATE 2/26/67
CHK'D	L. Kurs	DATE 2/26/67
ENG	T.A.	DATE 2/3/67
PROJ ENG	T.A.	DATE 2/3/67
PROD	A Ball	DATE 3/3/69

NEXT HIGHER ASSY: A-ML-AG12-Ø

SCALE —

SHEET 1 OF 2

digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS

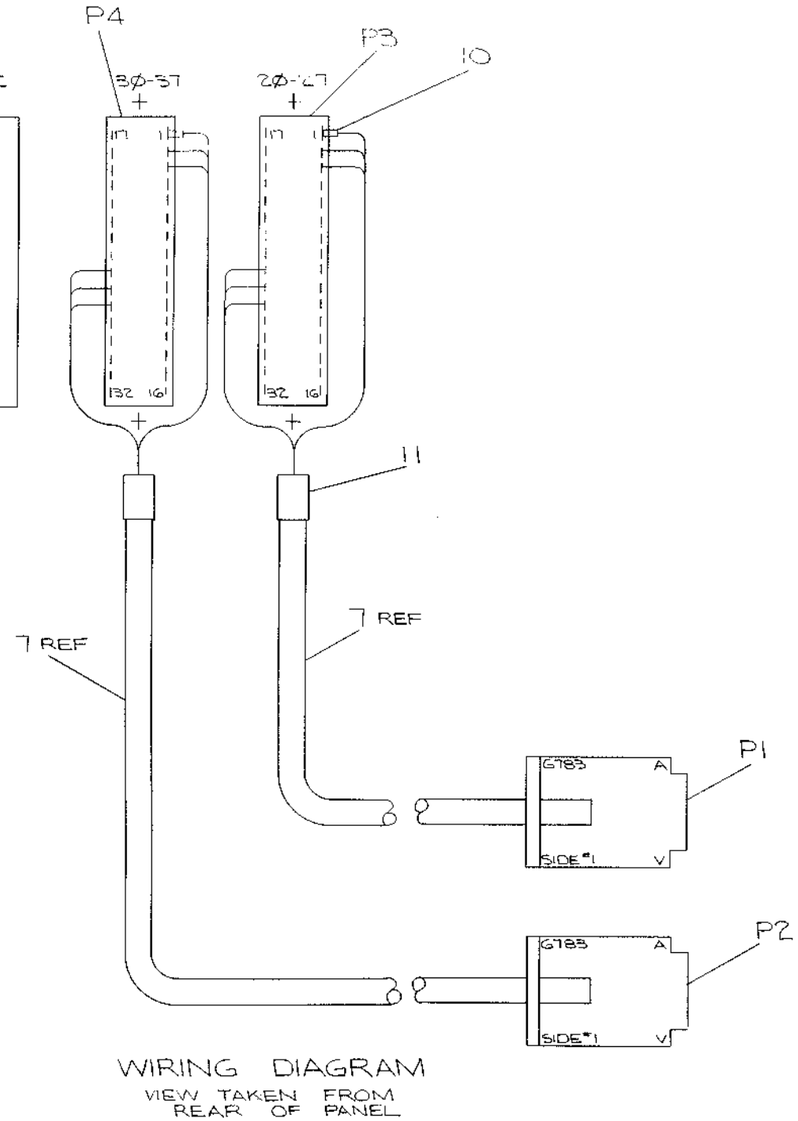
TITLE: ANALOG EXT PANEL ASSY (AG12)

SIZE	CODE	NUMBER	REV.
D	AD	7006046-0-0	A

DIST.

DEC FORM NO DRD 100

SIZE D CODE AD NUMBER 7006046-0-0 REV. A



WIRING DIAGRAM
VIEW TAKEN FROM REAR OF PANEL

WIRE TABLE

ITEM NO.	DESCRIPTION AWG	COLOR	CONNECTIONS FROM	TO	DESIGNATION	TYPICAL
7	22	BLK	P1-A1	P3-1		
		RED	P1-B1	-2	RED SHIELD PAIR #1	-CHAN 20
		DRAIN	GND	-3		+CHAN 20
		BLK	P1-C1	-4		SYS GND
		WHT	P1-D1	-5	RED SHIELD PAIR #2	-CHAN 21
		DRAIN	GND	-6		+CHAN 21
		BLK	P1-E1	-7		SYS GND
		GRN	P1-H1	-8	GRN SHIELD PAIR #3	-CHAN 22
		DRAIN	GND	-9		+CHAN 22
		BLK	P1-J1	-10		SYS GND
		BLU	P1-K1	-11	BLU SHIELD PAIR #4	-CHAN 23
		DRAIN	GND	-12		+CHAN 23
		BLK	P1-L1	-13		SYS GND
		YEL	P1-M1	-14	BLU SHIELD PAIR #5	-CHAN 24
		DRAIN	GND	-15		+CHAN 24
		BLK	P1-N1	-16		SYS GND
		BRN	P1-P1	-32	BLU SHIELD PAIR #6	-CHAN 25
		DRAIN	GND	-31		+CHAN 25
		BLK	P1-S1	-30		SYS GND
		ORN	P1-T1	-29	BLU SHIELD PAIR #7	-CHAN 26
		DRAIN	GND	-28		+CHAN 26
		RED	P1-U1	-27		SYS GND
		WHT	P1-V1	-26	BLU SHIELD PAIR #8	-CHAN 27
7	22	DRAIN	GND	-25		+CHAN 27
				-24		SYS GND
				-23		
				-22		
				-21		
				-20		
				-19		
				-18		
				P3-17		
7	22	BLK	P2-A1	P4-1		
		RED	P2-B1	-2	RED SHIELD PAIR #1	-CHAN 30
		DRAIN	GND	-3		+CHAN 30
		BLK	P2-C1	-4		SYS GND
		WHT	P2-D1	-5	RED SHIELD PAIR #2	-CHAN 31
		DRAIN	GND	-6		+CHAN 31
		BLK	P2-E1	-7		SYS GND
		GRN	P2-H1	-8	GRN SHIELD PAIR #3	-CHAN 32
		DRAIN	GND	-9		+CHAN 32
		BLK	P2-J1	-10		SYS GND
		BLU	P2-K1	-11	BLU SHIELD PAIR #4	-CHAN 33
		DRAIN	GND	-12		+CHAN 33
		BLK	P2-L1	-13		SYS GND
		YEL	P2-M1	-14	BLU SHIELD PAIR #5	-CHAN 34
		DRAIN	GND	-15		+CHAN 34
		BLK	P2-N1	-16		SYS GND
		BRN	P2-P1	-32	BLU SHIELD PAIR #6	-CHAN 35
		DRAIN	GND	-31		+CHAN 35
		BLK	P2-S1	-30		SYS GND
		ORN	P2-T1	-29	BLU SHIELD PAIR #7	-CHAN 36
		DRAIN	GND	-28		+CHAN 36
		RED	P2-U1	-27		SYS GND
		WHT	P2-V1	-26	BLU SHIELD PAIR #8	-CHAN 37
7	22	DRAIN	GND	-25		+CHAN 37
				-24		SYS GND
				-23		
				-22		
				-21		
				-20		
				-19		
				-18		
				P4-17		

REVISIONS		
REV.	CHANGE NO.	CHK.

DEC FORM NO DRD 100

FIRST USED ON OPTION/MOD

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	R.C.K	DATE 2/28/69
CHK'D	A. Rizzo	DATE 2/28/69
ENG	[illegible]	DATE 3/3/69
PROJ ENG	[illegible]	DATE 3/3/69
PROD	[illegible]	DATE 3/3/69

NEXT HIGHER ASSY

SCALE —//—

SHEET 1 OF 1

digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS

TITLE
ANALOG EXT PANEL ASSY (AG12)

SIZE	CODE	NUMBER	REV.
D	AD	7006046-0-0	A

DIST.

SIZE D CODE AD NUMBER 7006046-0-0 REV A

DIGITAL EQUIPMENT CORPORATION
MAYNARD, MASSACHUSETTS

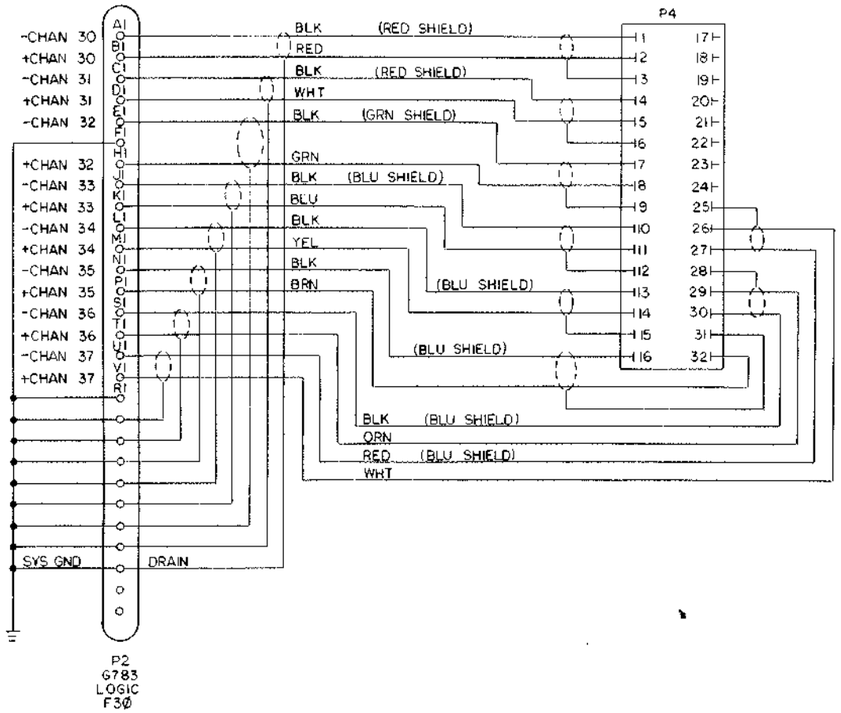
PARTS LIST

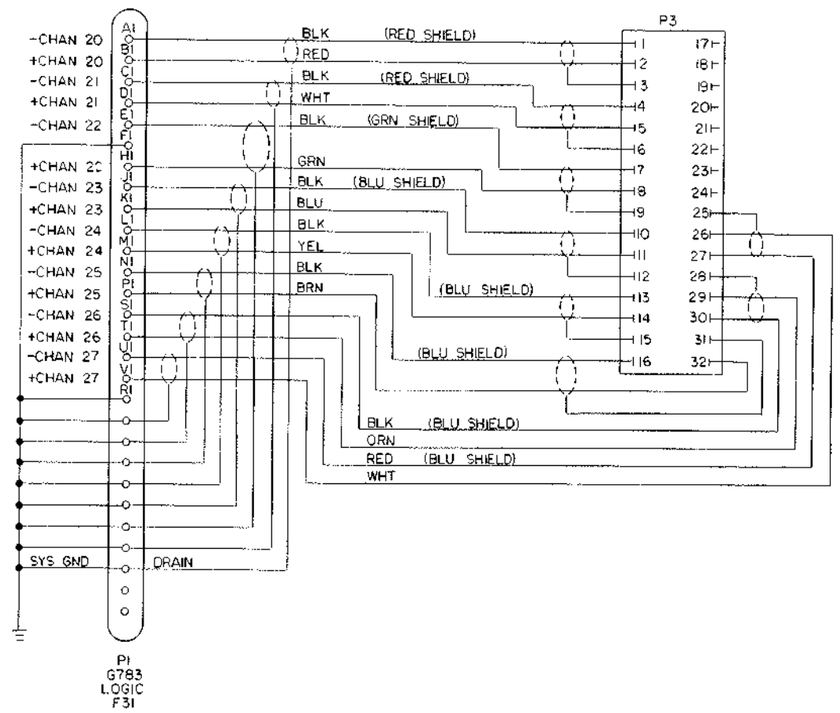
MADE BY W.F. McCARTHY DATE 12/2/68	CHECKED K. RUSS DATE 12/11/68	SECTION 1
ENG DATE L. York 3-3-69	PROD D Call DATE 3/3/69	ISSUED SECT. 1

ITEM NO.	DWG NO./PART NO.	DESCRIPTION	QUANTITY/VARIATION
1	D-IA-7406819-0-0	ANALOG EXT PANEL	1
2	1203578	CONN BLUE RIBBON #26-4401-32P AMP	2
3	1203584	CONN BLUE RIBBON #26-4501-32S 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





NOTE: WIRE IS BELDEN CABLE #8774

REF DESIGNATION	DESCRIPTION	PART NO
P3, P4	CONN #26-4401-32P-AMP	1203578
P1, P2	G783 CABLE CONN.	G783

PARTS LIST

REVISIONS	DRN	DATE
	R. Tuttle	8/14/69
	CHKD	DATE
	W. Burns	8/18/69
	ENG	DATE
	Yale	8/18/69
	PROJ	DATE
	D Call	8/18/69

TRANSISTOR & DIODE CONVERSION CHART

DEC	EIA	DEC	EIA

digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS

TITLE: ANALOG EXT PANEL PDP 12

SIZE D | CODE CS | NUMBER 70060046-0-1 | REV.

PRINTED CIRCUIT REV.

DEC FORM NO. DRD 101

SIZE D | CODE CS | NUMBER 70060046-0-1 | REV.

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	digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS
CHK'D. K. RUSS	DATE 8/1/69	
ENG. L. Gale	DATE 8/11/69	TITLE EXPANDED MULTIPLEXER
PROJ. ENG. L. Gale	DATE 8/11/69	
PROD. W Call	DATE 8/18/69	
FIRST USED ON PDP 12		SIZE A | CODE ML | NUMBER AM12-0 | REV.
SCALE -H-		
SHEET 1 OF 1		DIST.

DEC FORM NO. DRA 103

MASTER DRAWING LIST

DWG. NO.	REV. LET.	NO. OF SHEETS	TITLE
A-ML-EP12-0	REF	2	PDP 12 PROCESSOR
D-MU-EP12-0-1	REF	2	MODULE UTILIZATION PROC.
~~D-MU-EP12-0-2~~	~~REF~~	~~1~~	~~MODULE UTILIZATION PROC.~~
A-PL-EP12-0-1	REF	3	MODULE COUNT
~~A-PL-EP12-0-2~~	~~REF~~	~~1~~	~~MODULE COUNT~~
D-BS-EP12-0-IOR	REF	1	RELAY BUFFER
D-AD-7005963-0-0	D	1	RELAY PANEL ASSY
A-PL-7005963-0-0	D	1	RELAY PANEL ASSY (PL)
D-CS-7005963-0-1	B	1	RELAY PANEL CIRCUIT SCHEMATIC

REVISIONS			
REV.	DATE	CHG. NO.	APP'D.
A	7/71	12-96	F.V.
B	1/72	EP12-44	R.M.

		DATE
DRN.	K. RUSS	8/4/69
CHK'D.	K. RUSS	8/4/69
ENG.	L. Gale	8/11/69
PROJ. ENG.	L. Gale	8/11/69
PROD.	W. Cull	8/18/69

FIRST USED ON: PDP 12

SCALE: —H—

SHEET 1 OF 1

digital EQUIPMENT CORPORATION
MAYNARD, MASSACHUSETTS

TITLE: RELAY BUFFER

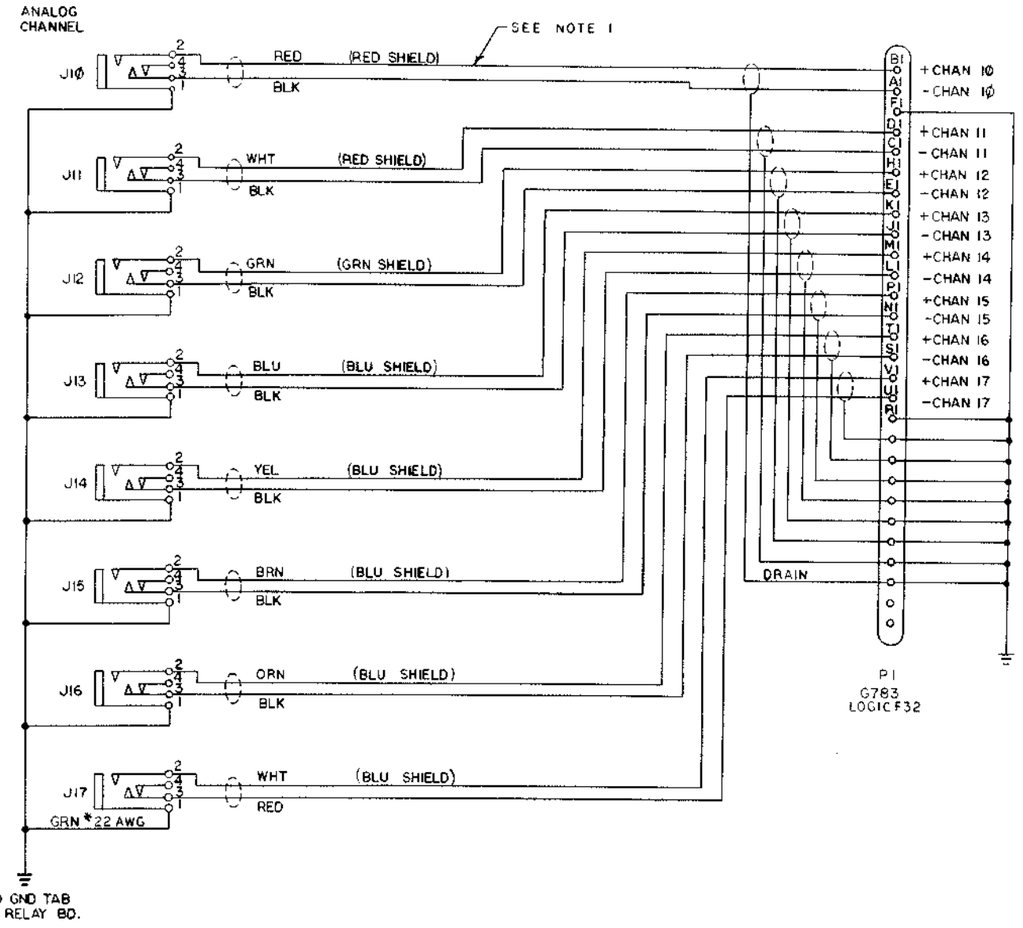
SIZE	CODE	NUMBER	REV.
A	ML	DR12-0	B

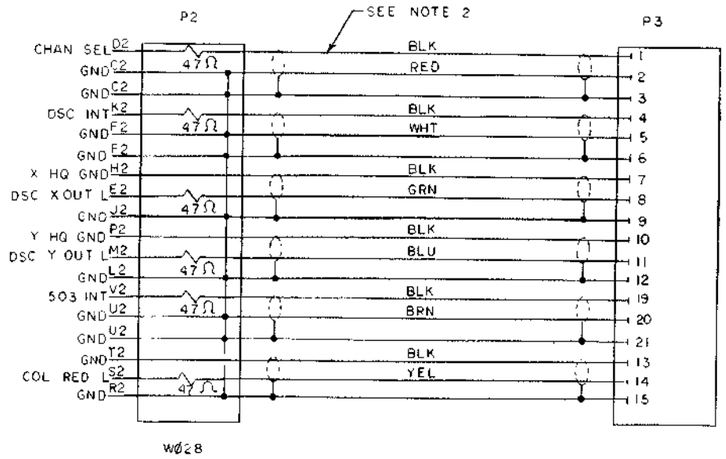
DIST.

DEC FORM NO. DRA 103

NOTES:
1. WIRE IS BELDEN CABLE #8774
2. WIRE IS BELDEN CABLE #8778

ANALOG CHANNEL





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
J1Ø THRU J17	JAX 13-B 3 COND SWITCHCRAFT	1203562

PARTS LIST

REVISIONS
CHN | CHG NO | REV
A
B

TRANSISTOR & DIODE CONVERSION CHART
DEC | EIA | DEC | EIA

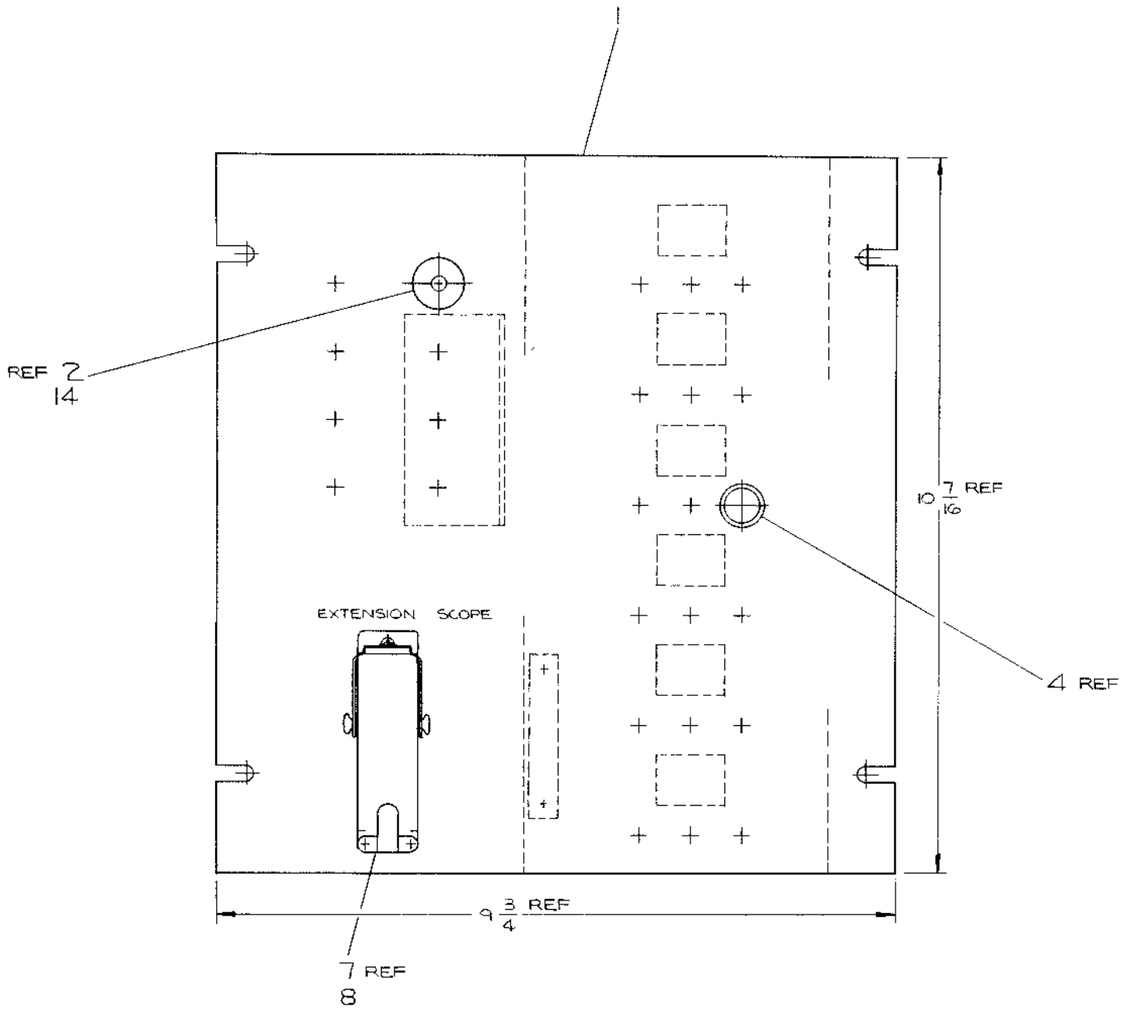
digital EQUIPMENT CORPORATION MAYNARD, MASS.-CHUBETTE

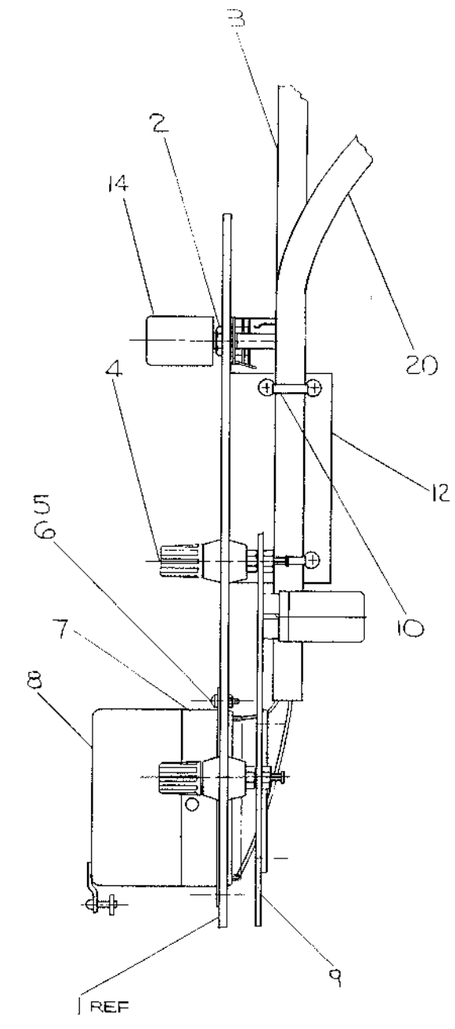
TITLE: RELAY PANEL PDP 12
SIZE D | CODE CS | NUMBER 7005963-0-1 | REV B
PRINTED CIRCUIT REV

SIZE D | CODE CS | NUMBER 7005963-0-1 | REV B

DEC FORM NO. ORD 101

NOTES:
1. ALL WIRES FROM ITEM # 3 NOT USED ARE TO BE CUT OFF AT CAB. I/O.





REVISIONS			
CHK	CHANGE NO.	REV.	
[illegible]	DRI2-00001	A	7/Shuller 7-2-69 GALE
[illegible]	12-00026	B	L. GALE
[illegible]	12-00082	C	G. BUDIANSKY
[illegible]	12-00096	D	R. MOORE

DEC FORM NO. DRD 100

FIRST USED ON OPTION/MODEL: PDP12	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	[illegible]	DATE 11-24-68
CHK'D	A. Kenney	DATE 11-22-68
ENG	C.H.	DATE 3-3-69
PROJ. ENG	[illegible]	DATE 3-3-69
PROD.	[illegible]	DATE 3/3/69

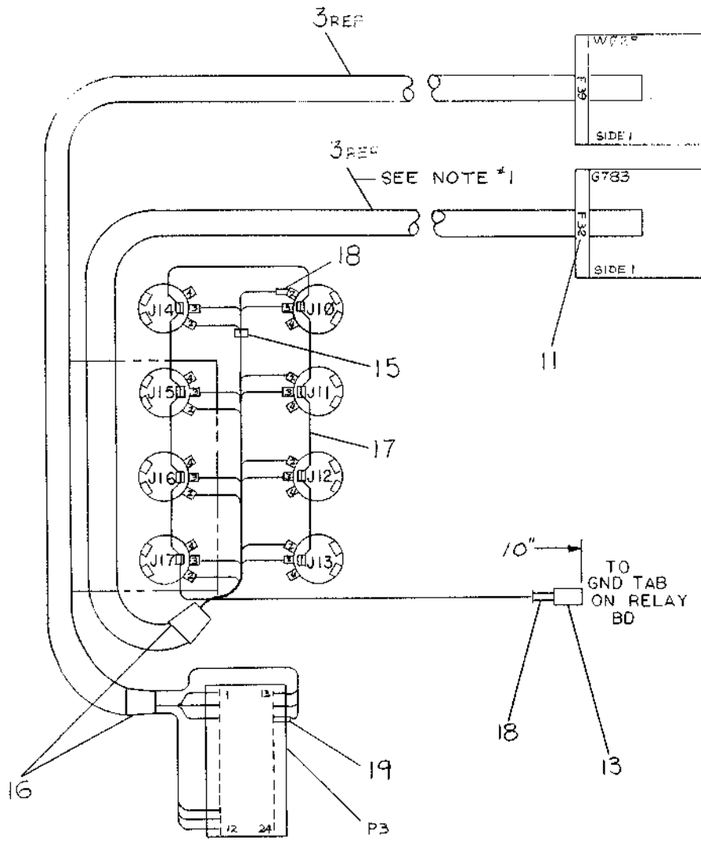
NEXT HIGHER ASSY: A-ML-DR12-Ø
SCALE —//—
SHEET 1 OF 2

digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS

TITLE: RELAY PANEL ASSY (DR12)

SIZE D | CODE AD | NUMBER 7005963-0-0 | REV D
DIST.

SIZE D | FORM AD | 7005963-0-0 | REV D



WIRING DIAGRAM
VIEW LOOKING AT REAR OF PANEL

WIRE TABLE

ITEM NO	DESCRIPTION AWG	COLOR	CONNECTIONS 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 OUT L
		DRAIN	GND	P3-12		SHIELD
		BLK	P2-T2	P3-13	PAIR#5	GND
		YEL	P2-S2	P3-14		COL RED L
		DRAIN	GND	P3-15		SHIELD
				P3-16	NOT USED	
				P3-17		
				P3-18		
		BLK	P2-V2*	P3-19	PAIR#6	S03 INT
		BRN	GND	P3-20		GND
		ORAIN	GND	P3-21		SHIELD
				P3-22	NOT USED	
				P3-23		
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 FRACTIONS ANGLES
± .005 ± 1/64 ± 0°30'
FINAL SURFACE QUALITY
REMOVE BURRS AND BREAK SHARP CORNERS

MATERIAL

FINISH

QTY.	DESCRIPTION	PART NO.	ITEM NO.
PARTS LIST			

DRN.		DATE 11/23/68
CHK'D		DATE 11/27/68
ENG.		DATE
PROJ. ENG.		DATE 12-5-67
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	D

DIST.

DIGITAL EQUIPMENT CORPORATION
MAYNARD, MASSACHUSETTS

PARTS LIST

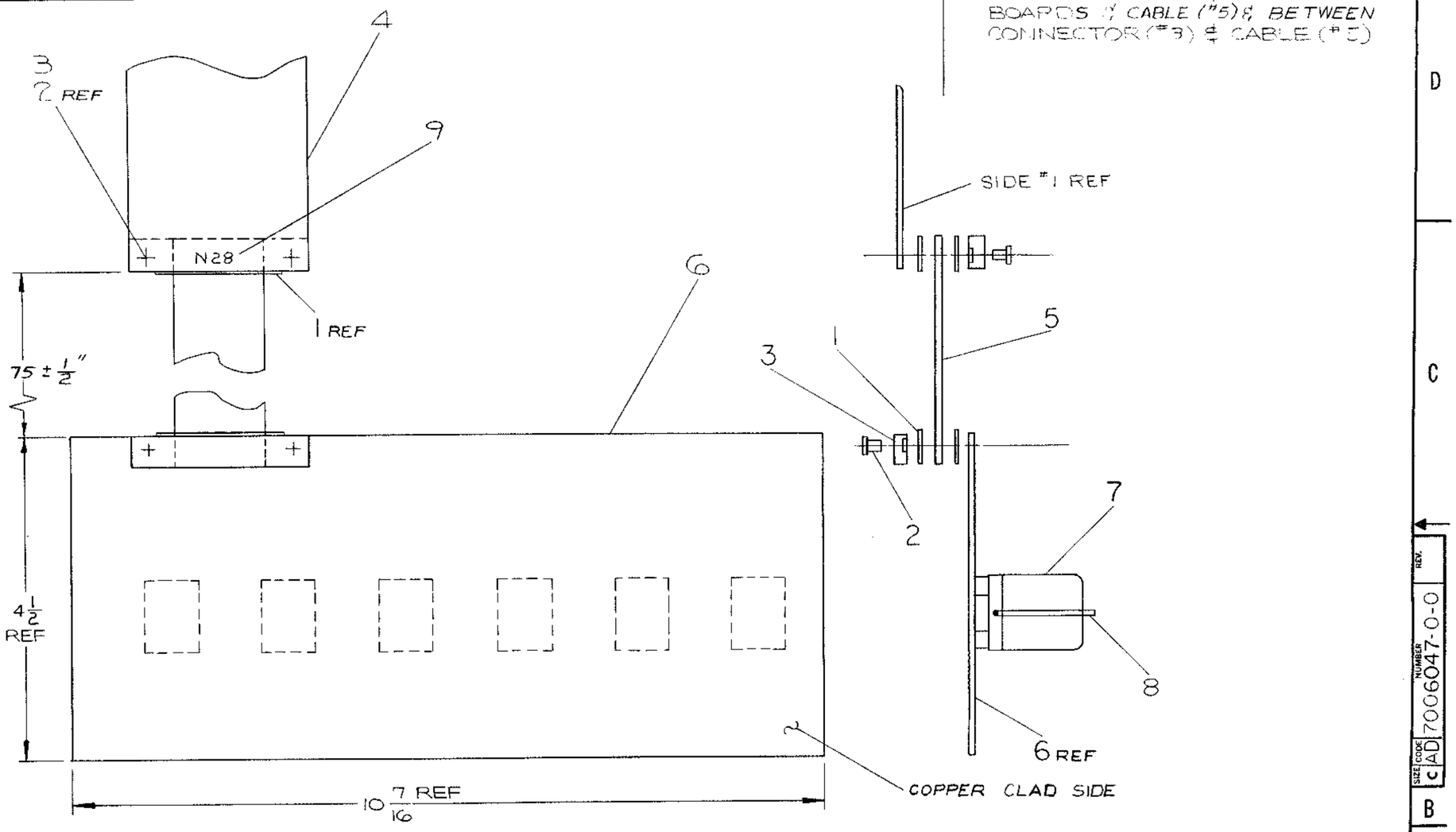
MADE BY R. COOK	CHECKED K. RUSS	SECTION
DATE 10/8/68	DATE ~~11~~/11/68	1
ENG DATE L. Gale 3/3/69	PROD DATE W. Cole 3/3/69	ISSUED SECT. 1

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 G783	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	D	12-00096
	SHEET 1 OF 1	DIST.	G			

DEC FORM NO.
DRA 110

NOTES:
1. INSTALL TAPE (#4) BETWEEN BOARDS & CABLE (#5) & BETWEEN CONNECTOR (#3) & CABLE (#5)



REVISIONS		
REV.	CHANGE NO.	CHK

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.	B. Cook	DATE 10/9/68
CHK'D	R. Russ	DATE 1-9-69
ENG.	L. Gal	DATE 3-3-69
PROJ. ENG.	L. Gal	DATE 3-3-69
PROD.	W. Call	DATE 3/3/69

NEXT HIGHER ASSY
D-AD-7005963-0-0

SCALE —//—
SHEET 1 OF 1

digital EQUIPMENT CORPORATION
MAYNARD, MASSACHUSETTS

TITLE
RELAY BOARD ASSY

SIZE C | CODE AD | NUMBER 7006047-0-0 | REV.
DIST.

DEC FORM NO. DRC 100

DIGITAL EQUIPMENT CORPORATION
MAYNARD, MASSACHUSETTS

PARTS LIST

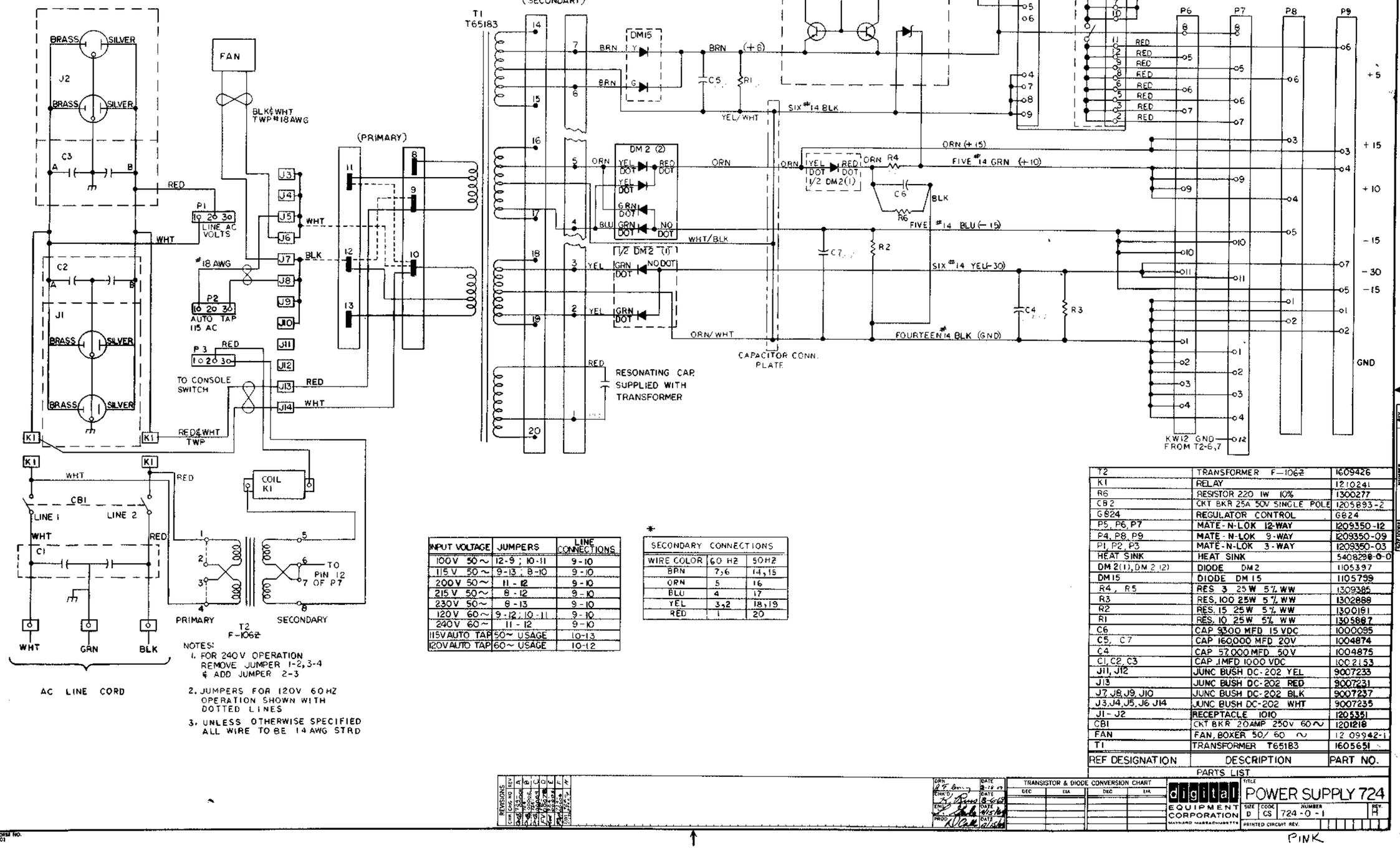
MADE BY R. COOK DATE 10/9/68	CHECKED K. RUSS DATE 1/8/69	SECTION 1
ENG DATE L. Gab 3-3-69	PROD w/ Call DATE 3/3/69	ISSUED SECT. 1

ITEM NO.	DWG NO. / PART NO.	DESCRIPTION	QUANTITY / VARIATION
1	9007834	TAPE #4032 ½ WIDEX 1-3/16 LG 3M CO	A/R
2	9006732	EYELET #GS-4-7 STIMPSON	4
3	1202704	CABLE CLAMP	2
4	M900	CABLE CONN M900	1
5	9105692 -1	FLEX PRINT CABLE 19 COND	A/R
6	C-IA-5408124-0-0	ETCH BOARD ASSY	1
7	1209349	RELAY #1368 PARELCO	6
8	1209423	RELAY CLIP PARELCO	6
9	A-DC-7407193-0-0	LOGIC DECALS	A/R

TITLE RELAY BOARD ASSY	ASSY NO. C-AD-7006047-0-0	SIZE A	CODE PL	NUMBER 7006047-0-0	REV.	ECO NO.
	SHEET 1 OF 1	DIST.	G			

DEC FORM NO.
DRA 110

X



INPUT VOLTAGE	JUMPERS	LINE CONNECTIONS
100V 50~	12-9 ; 10-11	9-10
115 V 50~	9-13 ; 8-10	9-10
200 V 50~	11 - 12	9-10
215 V 50~	8 - 12	9-10
230V 50~	8 - 13	9-10
120 V 60~	9-12; 10-11	9-10
240 V 60~	11 - 12	9-10
115V AUTO TAP	50~ USAGE	10-13
120V AUTO TAP	60~ USAGE	10-12

*

SECONDARY CONNECTIONS		
WIRE COLOR	60 HZ	50HZ
BRN	7,6	14,15
ORN	5	16
BLU	4	17
YEL	3,2	18,19
RED	1	20

NOTES:
1. FOR 240 V 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	1210241
R6	RESISTOR 220 1W 10%	1300277
CB2	CKT BKR 25A 50V SINGLE POLE	1205893-2
G824	REGULATOR CONTROL	G824
P5, P6, P7	MATE-N-LOK 12-WAY	1209350-12
P4, P8, P9	MATE-N-LOK 9-WAY	1209350-09
P1, P2, P3	MATE-N-LOK 3-WAY	1209350-03
HEAT SINK	HEAT SINK	5408298-0-0
DM 2(1), DM 2 (2)	DIODE DM2	1105397
DM15	DIODE DM15	1105799
R4, R5	RES 3 25W 5% WW	1309385
R3	RES. 100 25W 5% WW	1302888
R2	RES. 15 25W 5% WW	1300181
R1	RES. 10 25W 5% WW	1305887
C6	CAP 9300 MFD 15 VDC	1000095
C5, C7	CAP 160,000 MFD 20V	1004874
C4	CAP 57,000 MFD 50 V	1004875
C1, C2, C3	CAP .1MFD 1000 VDC	1002153
J11, J12	JUNC BUSH DC-202 YEL	9007233
J13	JUNC BUSH DC-202 RED	9007231
J7, J8, J9, J10	JUNC BUSH DC-202 BLK	9007237
J3, J4, J5, J6 J14	JUNC BUSH DC-202 WHT	9007235
J1 - J2	RECEPTACLE 1010	1205351
CB1	CKT BKR 20AMP 250V 60~	1201218
FAN	FAN, BOXER 50/60 ~	12 09942-1
T1	TRANSFORMER T65183	1605651

PARTS LIST

REVISIONS

CHK	CHG NO	REV
	A	
	B	
	C	
	D	
	E	
	F	
	H	

GRN [signature] DATE 2-18-69
END'G [signature] DATE 3-6-69
ENG [signature] DATE 4-4-69
PROD [signature] DATE 4-16-69

TRANSISTOR & DIODE CONVERSION CHART

DEC	EIA	DEC	EIA

digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS

TITLE POWER SUPPLY 724

SIZE D | CODE CS | NUMBER 724-0-1 | REV. H

PRINTED CIRCUIT REV.

DEC FORM NO. DRD 103

PINK

17 OF 2 # 18

12
4
6
2
18
3
7

AIR FLOW

4 1/32 REF

SECTION A-A

12
11

B
10 REF
10
B

2 REF

A
A

7 3/32 REF

21 3/8 REF

4
12
1

10 REF

2 REF

115 VAC - RED

COMMON - WHT

16

VIEW B-B

NOTES:
1. USE ITEM 17 WITH * 1209942 FAN, AND ITEM 8 # 18 WITH * 1209942-1 FAN.

REVISIONS			
DWK	CHANGE NO.	REV.	
1-68	12-00014	A	REVISED & REDRAWN T. Zurkowski 9-30-69 S. ZNAMIEROWSKI
	12-0002B	B	D. NEVALA
	12-00041	C	TQ ac 12-10-69 GALE
	T12-00154	D	T. GALE 1/9/70

DEC FORM NO ORD 100

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

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

MATERIAL

FINISH

DRN.		DATE 2-21-69
CHK'D.		DATE 2/19
ENG.		DATE 2/19
PROJ. ENG.		DATE 4/4/69
PROD.		DATE 4/4/69

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

D AD 7005983-0-0 D

FAN 1

FAN 2

FAN 3

FAN 4

13 REF

13 REF

13 REF

15

13 REF

*18 WHT

*18 WHT

*18 WHT

*18 WHT

*18 RED

*18 RED

*18 RED

*18 RED

14

7 REF

#18 WHT

#18 WHT

#18 RED

#18 RED

13

10 REF

5

WIRING DIAGRAM

FIRST USED ON OPTION/MODEL	QTY.	DESCRIPTION	PART NO.	ITEM NO.	
		PARTS LIST			
UNLESS OTHERWISE SPECIFIED	DRN	G. Perry	DATE	3-21-69	digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS
UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES TOLERANCES DECIMALS ± .005 FRACTIONS ± 1/64 ANGLES ± 0°30' FINAL SURFACE QUALITY REMOVE BURRS AND BREAK SHARP CORNERS	CHK'D	Ken Ross	DATE	4/1/69	TITLE: FAN HOUSING ASSY
	ENG		DATE	4/2	
	PROJ. ENG.		DATE	4/9/69	
	PROD.		DATE	4/	
MATERIAL	NEXT HIGHER ASSY				SIZE D CODE AD NUMBER 7005983-0-0 REV D
FINISH	SCALE NONE	SHEET 2 OF 2			DIST.

REVISIONS: REV. | CHANGE NO. | CHK

DEC FORM NO DRD 100

D AD 7005983-0-0 D
SIZE CODE NUMBER REV

DIGITAL EQUIPMENT CORPORATION
MAYNARD, MASSACHUSETTS

PARTS LIST

MADE BY J. FLEMING	CHECKED K. RUSS	SECTION 1
DATE 3/21/69	DATE 4/2/69	
ENG [illegible]	PROD [illegible]	ISSUED SECT. 1
DATE [illegible]	DATE 4/11/69	

ITEM NO.	DWG NO./PART NO.	DESCRIPTION	QUANTITY/VARIATION
1	E-IA-7407254-0-0	CHASSIS, FAN HOUSING	1
2	D-MD-7406948-0-0	COVER, FAN HOUSING	1
3	1209942 or 1209942-1	FA[illegible]	4
4	9006022-1	SCR PHL HD PAN #6-32 X 3/8 SST	4
5	1209379-01	PIN #60619-4 AMP	4
6	9006859	SPACER 1/4 AF X 3/4 X #6-32	2
7	C-IA-7405083-0-0	TERMINAL STRIP	1
8	9006024-1	SCR PHL HD PAN #6-32 X 1/2 SST	16
9	~~9006560~~	~~NUT KEPS #6-32~~	~~16~~
10	1209350-03	HOUSING SOCKET MATE-N-LOK	2
11	9006021-1	SCR PHL HD PAN #6-32 X 5/16	3
12	9006633	WASH INT TOOTH #6	7
13	9107430-29	WIRE #18 AWG STRD TWP (RED & WHT)	A/R
14	9006997	CONN SLDS #42025-1 AMP	12
15	9107305	TUBING SHRINKABLE #14 X 9/16 LG RED	8
16	A-DC-7406899-0-0	FAN DECALS	A/R
17	9006121	SCR, SELFTAPPING 8-32 x 3/8 LG	16
18	9008202	FAN CLIP	16
19	9007031	TIE WRAP SST-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.	G			

DEC FORM NO.
DRA 110

K