PC11
reader/punch control
engineering drawings

DIGITAL EQUIPMENT CORPORATION • MAYNARD, MASSACHUSETTS

PC11 ENGINEERING DRAWINGS

Drawing No.	Title
A-ML-PC11-0	High-Speed Paper Tape Reader & Punch, Master List
A-PL-PC11-0-0	High-Speed Paper Tape Reader & Punch, Parts List
C-DI-PC11-0-1	Drawing Index (PC11)
D-MU-PC11-0-MU	Module Utilization
A-PL-PC11-0-MU	Module Utilization, Parts List
D-CS-M7810-0-1	PC11 Interface
A-SP-PC11-0-5	PC11/PR11 Test Procedure

MASTER DRAWING LIST

DWG. NO.	REV. LET.	NO. OF SHEETS	TITLE
A-PL-PC11-Ø-Ø	D	1	HS PAPER TAPE RDR & PUNCH
C-DI-PC11-Ø-1	D	1	DRAWING INDEX
D-CS-M781Ø-Ø-1	#	4	PC11 INTERFACE
D-MU-PC11-Ø-MU	B	1	MODULE UTILIZATION
A-PL-PC11-Ø-MU	B	1	MODULE UTILIZATION
A-SP-PC11-0-5	B	5	PC11/PR11 TEST PROCEDURE
A-AL-PC11-0-6	B	1	ACCESSORY LIST

REVISIONS			
REV.	DATE	CHG. NO.	APP'D.
A	11/70	00001	D.C.
B	9/71	00002	P.J.
C	11/71	00003	P.J.
D	2/72	00004	P.J.
E	7/72	00005	P.J.
F	5/74	00006	P.J.
H	5/77	00007	H.D. (DAD)
J	4/78	00008	

DRN. MARCOTTE	DATE 4/2/70	digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS
CHK'D. PFYFFER	DATE 4/14/70	
ENG.	DATE 5/4/70	TITLE HS PAPER TAPE RDR & PUNCH (60HZ)
PROJ. ENG.	DATE	
PROD.	DATE 5/5/70	
FIRST USED ON PDP11		SIZE A / CODE ML / NUMBER PC11-Ø / REV. J
SCALE NONE		
SHEET 1 OF 1		DIST.

DEC FORM NO.16-1033
DRA 103

ML

DIGITAL EQUIPMENT CORPORATION
MAYNARD, MASSACHUSETTS

PARTS LIST

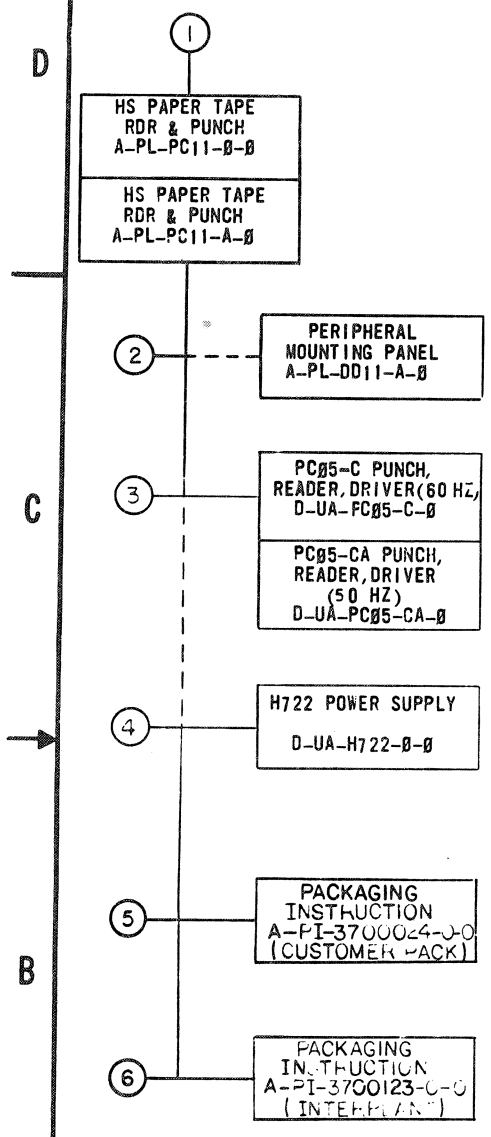
MADE BY P. MARCOTTE	CHECKED AL PFYFFER	SECTION
DATE 4/2/70	DATE 4/14/70	1
ENG R.E. Jonson	PROD Thacpowald	ISSUED SECT.
DATE 5/4/70	DATE 5/5/70	1

ITEM NO.	DWG NO. / PART NO.	DESCRIPTION	QUANTITY/VARIATION PC11-Ø-Ø(60HZ)	PC11-A-Ø(50HZ)	
	A-PL-DD11-A-Ø	PERIPHERAL MOUNTING PANEL	1	1	(IF REQUIRED)
	A-PL-PC11-Ø-MU	MODULE UTILIZATION	1	1	
	C-SC-1209856-0-01	MODULE HOLDER	A/R	A/R	
	D-UA-BCØ8J-6-Ø	BCØ8J CABLE 6FT.	*	*	
	D-UA-PCØ5-C-Ø	PCØ5-C, PUNCH, READER, DRIVER	1		
	D-UA-PCØ5-CA-Ø	PCØ5-CA, PUNCH, READER, DRIVER		1	
	~~D-AR-PC11-Ø-4~~	~~OPTION ARRANGEMENT~~	~~1~~		
	D-UA-BCØ8J-1Ø-Ø	BCØ8J CABLE 10FT.	*	*	
	A-PI-3700024-0-0	PACKAGING INSTRUCTIONS CUST. PACK	1	1	
	A-PI-3700123-0-0	PACKAGING INSTRUCTIONS INTERPLANT	1	1	
	23-760A9	BOOTSTRAP ROM, PC11 **	1	1	
	9906228	BOX ROM SHIPPING **	1	1	
	*NOTE: 2 EA. BCØ8F-X CABLES ARE REQUIRED. THE LENGTH IS DETERMINED BY THE SYSTEM CONFIGURATION.				
	** NOTE: TO BE SHIPPED WITH PC11 AND USED WHEN HOST SYSTEM CONTAINS AN M9312 BOOT MODULE.				

TITLE	ASSY NO.	SIZE	CODE	NUMBER	REV.	ECO NO.
HS PAPER TAPE RDR & PUNCH	SHEET 1 OF 1	A	PL	PC11-Ø-Ø	D	PC11-00008
		DIST. G				

DEC FORM NO.
DRA 110

MC



FIND NO.	MECHANICAL DESCRIPTION	PART NO.	USAGE PROD	CUST	FC
1.	HS PAPER TAPE RDR & PUNCH	A-PL-PC11-Ø-Ø			
	HS PAPER TAPE RDR & PUNCH (PL)	A-PL-PC11-A-Ø			
	BCØ8J CABLE	D-UA-BCØ8J-6-Ø			
	MODULE HOLDER	C-SC-1209856-0-01			
2.	PERIPHERAL MOUNTING PANEL	A-PL-DD11-A-Ø			
	DRAWING INDEX	C-DI-DD11-A-1			
3.	PCØ5-C, PUNCH, READER, DRIVER	D-UA-PCØ5-C-Ø			
	PCØ5-C, PUNCH, READER DRIVER (PL)	A-PL-PCØ5-C-Ø			
	DRAWING INDEX	D-DI-PCØ5-Ø-1			
	PCØ5-CA, PUNCH, READER DRIVER	D-UA-PCØ5-CA-Ø			
	PCØ5-CA, PUNCH, READER DRIVER (PL)	A-PL-PCØ5-CA-Ø			
4.	H722 POWER SUPPLY	D-UA-H722-Ø-Ø			
	H722 POWER SUPPLY	A-PL-H722-Ø-Ø			
	PANEL, MOUNTING	D-IA-5308863-Ø-Ø			
	PROTECTION COVER	B-MD-5302903-Ø-Ø			
5.	PACKAGING INST. (CUST. PACK)	A-PI-3700024-0-0			
	OUTER SHIPPING CARTON	A-PS-9905046-0-0			
	INNER SHIPPING CARTON	A-PS-9905047-0-0			
	BOTTOM PAD	A-PS-9905053-0-0			
	FRONT SPACER	A-PS-9905054-0-0			
	SIDE SPACER	A-PS-9905055-0-0			
	REAR SUPPORT	A-PS-9905052-0-0			
	TOP SPACER	A-PS-9905056-0-0			
	TORO PAD	A-PS-9905044-1-0			
	POLY BAG -20×13×40×1-1/2 MIL.	A-PS-9905129-7-0			
6.	PACKAGING INST. (INTERPLANT)	A-PI-3700123-0-0			
	TAPELESS CARTON	A-PS-9905348-0-0			
	SPECIAL DIE CUT	A-PS-9905348-1-0			
	ONE PIECE FOLDER	A-PS-9905348-2-0			
	QUAD MODULE BOOK PACK	A-PS-9905072-0-0			
	POLY BAG	A-PS-9905129-7-0			

FIND NO.	ELECTRICAL DESCRIPTION	PART NO.	USAGE PROD	CUST	FC
1.	HS PAPER TAPE RDR & PUNCH	A-ML-PC11-Ø			
	HS PAPER TAPE RDR & PUNCH	A-ML-PC11-A			
	PC11 INTERFACE	D-CS-M781Ø-Ø-1			
	MODULE UTILIZATION	D-MU-PC11-Ø-MU			
	MODULE UTILIZATION (PL)	A-PL-PC11-Ø-MU			
	PC11/PR11 TEST PROCEDURE	A-SP-PC11-Ø-5			
	ACCESSORY LIST	A-AL-PC11-0-6			
4.	H722 POWER SUPPLY	D-CS-H722-Ø-1			

REVISIONS REV.	CHANGE NO.	CHK
A	PC11-00001	EV
B	PC11-00004	
C	PC11-00005	
D	PC11-00006	

FIRST USED ON OPTION/MODEL: PDP11

PARTS LIST

QTY.	DESCRIPTION	PART NO.	ITEM NO.

UNLESS OTHERWISE SPECIFIED

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

MATERIAL

FINISH

		DATE
DRN.	[illegible]	4-3-70
CHK'D.	[illegible]	5/4/70
ENG.		
PROJ. ENG.		
PROD.	[illegible]	5/5/70

NEXT HIGHER ASSY: A-ML-PC11-Ø

SCALE NONE

SHEET 1 OF 1

digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS

TITLE: DRAWING INDEX (PC11)

SIZE	CODE	NUMBER	REV.
C	DI	PC11-Ø-1	D

DIST. E

DEC FORM NO. DRC 100

NOTES:

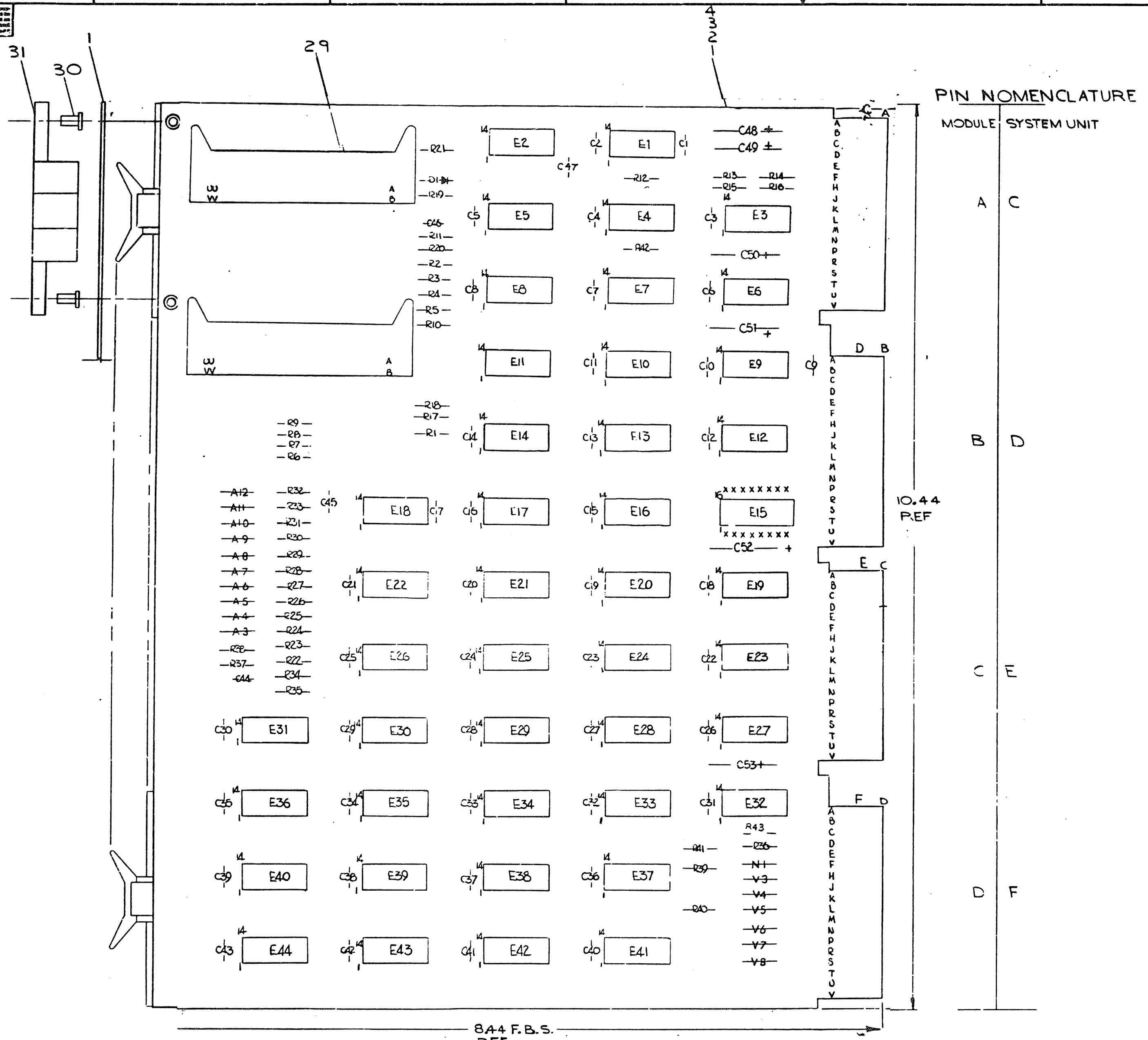
1.) PIN NOTATION THROUGHOUT IS ORDERED UPON MODULE PLACEMENT IN THE SYSTEM UNIT. MODULE REFERENCE ALONE IS OBTAINED BY CONVERTING THE FIRST LETTER ACCORDING TO THE PIN NOMENCLATURE CHART AT THE LEFT.

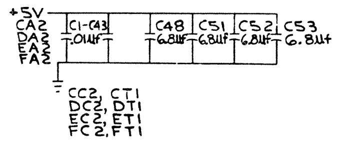
2.) JUMPERS TO BE USED AT CONNECTIONS A3-A12, N1, AND V3-V8.

3. DEC 8640'S WERE PHASED IN AS 380 REPLACEMENTS. ANY 380 FAILURES SHOULD BE REPLACED BY 8640.

PIN NOMENCLATURE

MODULE	SYSTEM UNIT
A	C
B	D
C	E
D	F





PARTS LIST

QTY	REF DESIGNATION	DESCRIPTION	PART NO.	ITEM NO.
17	W1 — W17	JUMPER WIRE	9107560-01	34
25	R1, R11, R12, R14, R16, R18-R20, R22-R34, R37, R39, R41, R42	RES 1K 1/4W 5%	1300365	33
1		I.C. SOCKET	1209838	32
4		HANDLE, FLIP CHIP MAGENTA	9008337-06	31
8		EYELET #GS-4-7 STIMPSON	9006732	30
2		BERG 40 PIN CONNECTOR	1205941	29
2	E38, E42	I.C. DEC 74H74	1309667	28
2	E35, E44	I.C. DEC 7408	1910155	27
2	E20, E36	I.C. DEC 7402	1909004	26
1	E25	I.C. DEC 74H00	1909056	25
3	E22, E26, E30	I.C. DEC 8242	1909712	24
2	E21, E29	I.C. DEC 8815	1909713	23
9	E8-E10, E13, E16-E18, E39, E43	I.C. DEC 7400	1905575	22
2	E7, E34.	I.C. DEC 7474	1905547	21
9	E3-E5, E12, E14, E31, E34, E37, E41	I.C. DEC 8881	1909760	20
10	E1, E2, E6, E11, E19, E20, E23, E24, E27, E32.	I.C. DEC 8640	1911469	19
1	E40	I.C. DEC 74H04	1909931	18
1	R38	RES 47 1/4W 5%	1300202	17
1	R36	RES 390 1/4W 5%	1300303	16
1	R21	RES 4.7K 1/4W 5%	1300447	15
1	R17	RES 220 1/4W 5%	1300271	14
3	R13, R15, R35	RES 100 1/4W 5%	1300229	13
9	R2-R10	RES 470 1/4W 5%	1300316	12
2	R40, R43	RES 180 1/4W 5%	1301322	11
1	D1	DIODE D664	1100114	10
6	C48-C53	CAPACITOR 6.8 MFD 35V 10%	1005306	9
2	C46, C47	CAPACITOR 680 PF 100V 5%	1000026	8
1	C45	CAPACITOR 470 PF 100V 5%	1000024	7
1	C44	CAPACITOR 330 PF 100V 5%	1000023	6
43	C1-C43	CAPACITOR .01 MFD 50V 20%	1001610	5
REF		MODULE E.C.O. HISTORY	B-MH-M7810-0-6	4
REF		ASSY DRILLING HOLE LAYOUT	D-AH-M7810-0-5	3
REF		X-Y COORDINATE HOLE LOCATION	K-CO-M7810-0-4	2
1		ETCHED CIRCUIT BOARD	5009882	1

ETCH BOARD REV E

IC PIN LOCATIONS

IC TYPE	GND	+5V
DEC 8640	7	8

GND AND 5V ARE USUALLY PIN 7 AND 14 RESPECTIVELY. EXCEPTIONS ARE STATED ABOVE

JUMPER LIST

ITEM NO.	AWG	FROM PT	TO PT

SEMICONDUCTOR CONVERSION CHART

DEC NO.	EIA NO.	DEC NO.	EIA NO.
D664	1N3606		

REVISIONS

REV	CHANGE NO.
F	M7810-00004
E	M7810-RX003
C	M7810-00001

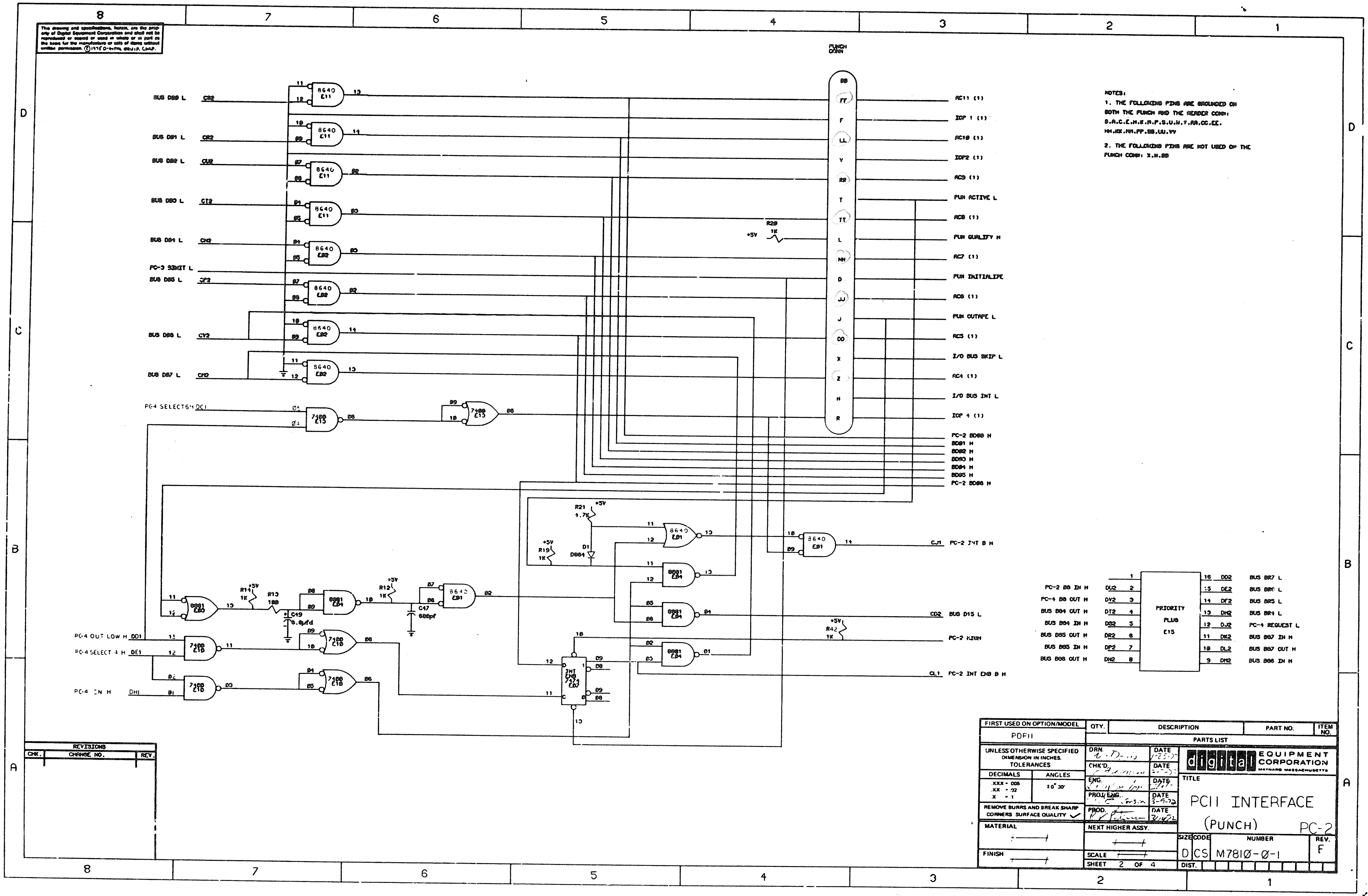
DIGITAL EQUIPMENT CORPORATION, MAYNARD, MASSACHUSETTS

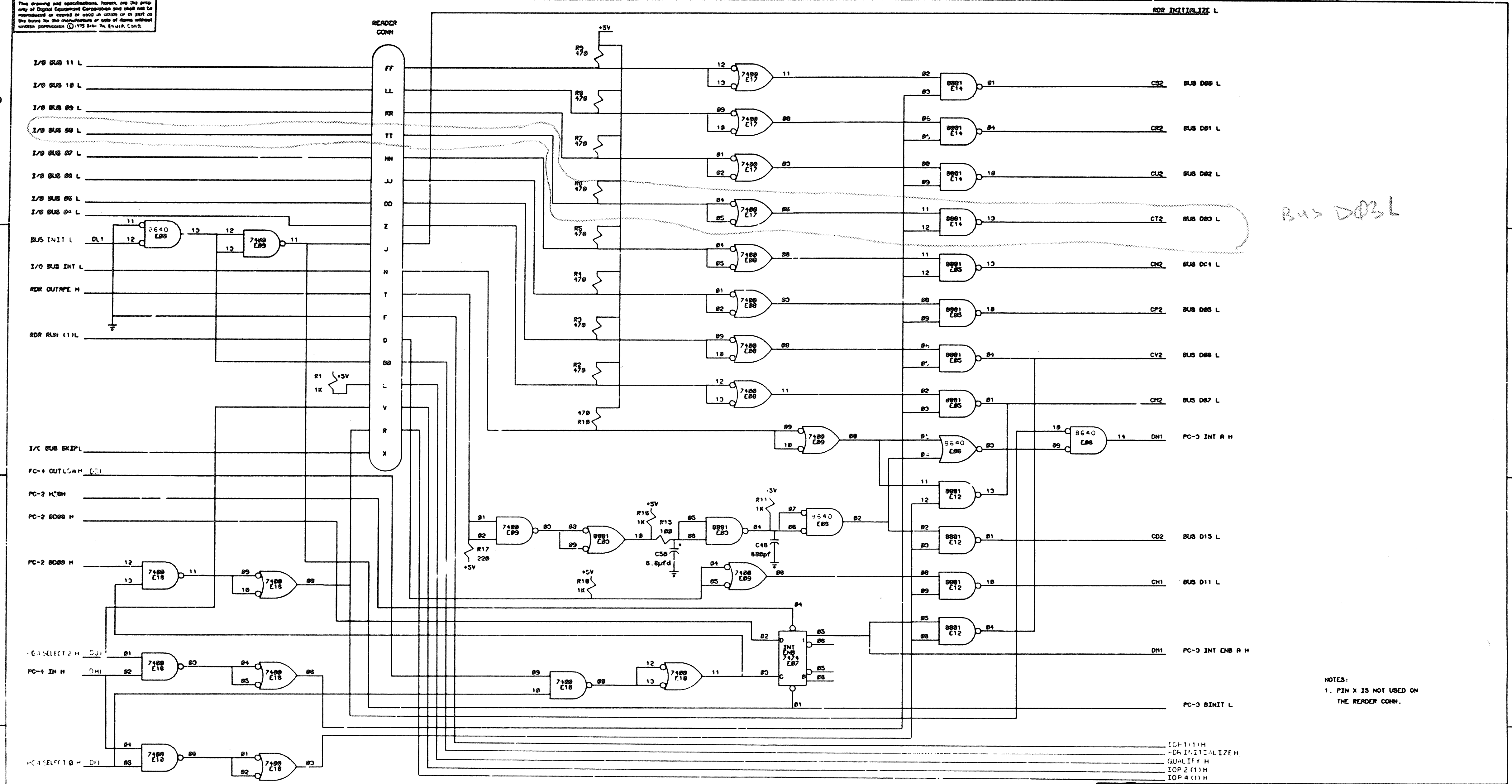
TITLE: PCII INTERFACE PC-1

SIZE: CS NUMBER: M7810-0-1 REV: F

SCALE: NONE SHEET 1 OF 4

CS M7810-0-1 F


NOTES:
1. THE FOLLOWING PINS ARE GROUNDED ON BOTH THE PUNCH AND THE READER CONN: B,A,C,E,H,K,M,P,S,U,W,Y,AA,CC,EE, HH,KK,MM,PP,SS,UU,VV
2. THE FOLLOWING PINS ARE NOT USED ON THE PUNCH CONN: X,N,BB
PUNCH CONN
BUS D00 L
BUS D01 L
BUS D02 L
BUS D03 L
BUS D04 L
PC-3 SEQUENT L
BUS D05 L
BUS D06 L
BUS D07 L
PC4 SELECT 4 H DC1
PC-4 OUT LOW H DD1
PC-4 SELECT 4 H DE1
PC-4 IN H DH1
AC11 (1)
IOP 1 (1)
AC10 (1)
IOP2 (1)
AC9 (1)
PUN ACTIVE L
AC8 (1)
PUN QUALITY H
AC7 (1)
PUN INITIALIZE
AC6 (1)
PUN OUTAPE L
AC5 (1)
I/O BUS SKIP L
AC4 (1)
I/O BUS INT L
IOP 4 (1)
PC-2 BD00 H
BD01 H
BD02 H
BD03 H
BD04 H
BD05 H
PC-2 BD06 H
PC-2 INT B H
BUS D15 L
PC-2 RUN
PC-2 INT ENB B H
PRIORITY PLUG E15
PC-2 B0 IN H
PC-4 B0 OUT H
BUS B04 OUT H
BUS B04 IN H
BUS B05 OUT H
BUS B05 IN H
BUS B06 OUT H
BUS BR7 L
BUS BR6 L
BUS BR5 L
BUS BR4 L
PC-4 REQUEST L
BUS B07 IN H
BUS B07 OUT H
BUS B06 IN H
REVISIONS
CHK. CHANGE NO. REV.
FIRST USED ON OPTION/MODEL
PDP11
QTY. DESCRIPTION PART NO. ITEM NO.
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
CHK'D. DATE
ENG. DATE
PROJ. ENG. DATE
PROD. DATE
NEXT HIGHER ASSY.
SCALE
SHEET 2 OF 4
digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS
TITLE
PC11 INTERFACE
(PUNCH)
PC-2
SIZE D CODE CS NUMBER M7810-0-1 REV. F
DIST.



NOTES:
1. PIN X IS NOT USED ON THE READER CONN.

FIRST USED ON OPTION/MODEL	QTY.	DESCRIPTION	PART NO	ITEM NO
PDF11		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	

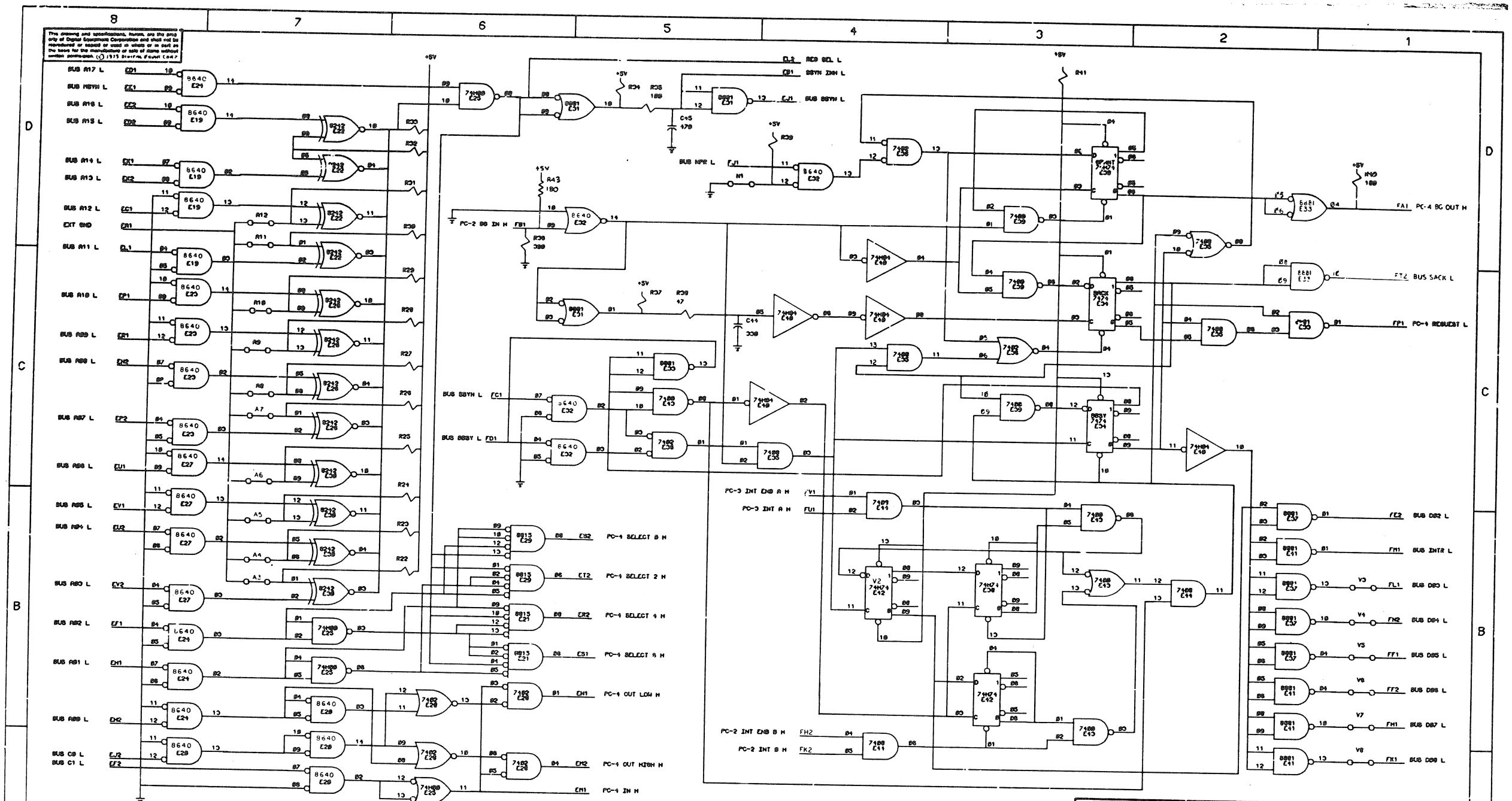
DRN. [illegible]	DATE
CHK'D. [illegible]	DATE
ENG. [illegible]	DATE [illegible]
PROJ. ENG. [illegible]	DATE [illegible]
PROD. [illegible]	DATE [illegible]
NEXT HIGHER ASSY.	
SCALE	
SHEET 3 OF 4	

digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS

TITLE: PC11 INTERFACE (READER) PC-3

SIZE	CODE	NUMBER	REV.
D	CS	M7810-0-1	F

REVISIONS		
CHK.	CHANGE NO.	REV.



NOTES:

1. UNLESS OTHERWISE INDICATED:
   RESISTORS ARE 1K, 1/4W, 5%
   CAPACITOR VALUES ARE IN PICOFARADS.

2. THE ADDRESS LINES ARE TO BE JUMPERED FOR A 0 AND THE VECTOR LINES ARE JUMPERED FOR A 1. FINAL JUMPER CONFIGURATION TO BE DETERMINED AT SYSTEM CHECKOUT.

REVISIONS		
CHR.	CHANGE NO.	REV.

FIRST USED ON OPTION/MODEL	QTY.	DESCRIPTION	PART NO.	ITEM NO.
PDP11		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. N D	DATE 1/5/72	digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS
CHK'D.	DATE 3-1-72	TITLE
ENG.	DATE 3/1/72	PCII INTERFACE (ADDRESS SELECTION & INTERRUPT CONT.) PC-4
PROJ. ENG.	DATE 3-1-72	
PROD.	DATE 3-1-72	
NEXT HIGHER ASSY.		SIZE D / CODE CS / NUMBER M7810-0-1 / REV. F
SCALE		DIST.
SHEET 4 OF 4		

NOTES:
SLOT 13 OR 14 IN THE KA11 PROCESSOR OR,
SLOT 1,2,3 OR 4, IN THE DD11-A.

	SEE NOTE 1
A	
B	M7810
C	PC11 INTERFACE
D	
E	
F	

REVISIONS

CHK	CHANGE NO.	REV.
	PC11-00003	A
	M. Quinn 12-10-71	
	P. JANSON	
	P.E. Janson 12-13-71	
	PC11-00004	F
	2-16-72	
	JANSON	
	P.E. Janson 2-22-72	

FIRST USED ON OPTION/MODEL: PDP 11

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 R. Hulle DATE 1/13/70
CHK'D DATE 1/28/71
ENG DATE
PROJ. ENG. DATE
PROD DATE 1/5/70
NEXT HIGHER ASSY A-ML-PC11-Ø
SCALE NONE
SHEET 1 OF 1

digital EQUIPMENT CORPORATION
MAYNARD, MASSACHUSETTS

TITLE MODULE UTILIZATION

SIZE D CODE MU NUMBER PC11-Ø-MU REV B

DEC FORM NO. DRD 100

DIGITAL EQUIPMENT CORPORATION
MAYNARD, MASSACHUSETTS

PARTS LIST

MADE BY P. MARCOTTE	CHECKED AL PFYFFER	SECTION
DATE 3/26/70	DATE 4/24/70	1
ENG [illegible] Jensen	PROD Hugo Durald	ISSUED SECT.
DATE 5/4/70	DATE 5/5/70	1

ITEM NO.	DWG NO. / PART NO.	DESCRIPTION	QUANTITY / VARIATION
	M7810	PC11 INTERFACE	1
	5408776	PRIORITY JUMPER LEVEL *4	1

TITLE	ASSY NO.	SIZE	CODE	NUMBER	REV.	ECO NO.
MODULE UTILIZATION	D-MU-PC11-0-MU	A	PL	PC11-0-MU	B	PC11-00004
	SHEET 1 OF 1	DIST				

DEC FORM NO.
DRA 110

DIGITAL EQUIPMENT CORPORATION
MAYNARD, MASSACHUSETTS

ENGINEERING SPECIFICATION

DATE 9/1/70

TITLE PC11/PR11 TEST PROCEDURE

REVISIONS

REV	DESCRIPTION	CHG NO	ORIG	DATE	APPD BY	DATE
A	— / —	PC11—00003	P. JANSON	12—71	R.E. Jansen	12-8-71
B		PC11—00004	P. JANSON	2—72	D.E. Jansen	2-22-72

ENG R.E. Jansen | APPD [illegible] | SIZE A | CODE SP | NUMBER PC11-0-5 | REV B

DEC FORM NO. DRA 107

ENGINEERING SPECIFICATION — CONTINUATION SHEET

1.0 TEST EQUIPMENT

1.1 A known good PC11 module
1.2 A 453 scope and voltage probes.
1.3 Extender modules

1.3.1 2 double width
1.4 Small option test station equipped with:
1.4.1 KA11 processor
1.4.2 4K of memory
1.4.3 DD11 option panel with 3 G727 grant continuity boards
1.4.4 Tape loader
1.4.5 Test stand
1.4.6 Teletype
1.4.7 H722 step down transformer

2.0 TEST SET UP

2.1 Remove PC05 or PC05R from its carton
2.2 Remove chassis track slides from PC or PR to permit installation into test station cabinet
2.3 Remove metal cover over the modules to permit installation of I/O cables
2.4 Install PCO to be tested in the chassis tracks provided in the test station cabinet
2.5 Connect AC power to the PCO:
2.5.1 115 VAC @ 60HZ to PC11 or PR11
2.5.2 115 VAC @ 50HZ to PC11A or PR11A by using the output of the H722 step down transformer
2.6 Install PC11/PR11 modules in the DD11 located in the test stand as follows:
2.6.1 M7810 in slots C,D,E,F, with a level #4 priority plug installed.
2.6.2 Address assignment: cut all "A" jumpers except A4 and A7 this gives address 777550
2.6.3 Vector assignment: cut all "V" jumpers except V5, V4 and V3. Cut N1. This gives Vector address 70

SIZE	CODE	NUMBER	REV
A	SP	PC11-0-5	B

DEC FORM NO 16-1022 DRA 108

CONTINUATION SHEET

2.6.4 If for some reason one of the other slots in the DD11 must be used, each preceding (unused) D slot must contain a G727.
FOR EXAMPLE: If the option modules are installed in C, D, E & F four, slots D01, D02 & D03 must contain G727 grant continuity modules.

2.7 Connect I/O cables as follows:
2.7.1 Reader cable (BC08J) from the reader plug on the M781 to slot B9 in the PCO logic.
2.7.2 Punch cable (BC08J) from the punch plug on the M781 to slot B10 in the PCO logic.
2.8 Turn on power to the PCO with the switch located on the rear of the PCO.

3.0 PC11/PR11 TESTING

3.1 If not previously loaded, load the diagnostic (Maindec 11-D2BA) into memory via the tape loader.
3.1.1 Put halt switch down, set the switch register to all 0's. Depress the LOAD ADDR switch and then hit the START switch (to initialize).
3.1.2 Place tape in reader.
3.1.3 Depress feed switch on reader.
3.1.4 Depress SW1 switch on loader control panel.
3.1.5 After tape is read, if END light comes on, the tape is loaded correctly. If ERROR light comes on go back to step 3.1.1 and reload tape.
3.2 The diagnostic (D2BA) consists of 12 different tests. All of these tests have a loading address of 200, but have varying switch register settings for starting.
3.3 Below is a table which lists the tests, run times (as indicated) for one successful pass of the test, and use of the test as it applies to the PC11 or PR11.

Test	Run Time (Min.)	Use
PRG0	3.0	PC11, PR11
PRG1	3.5	PC11, PR11
PRG2	1.5	PC11
PRG3	8.0	PC11
PRG4	See 3.5.3	PC11
PRG5	See 3.5.4	PC11
PRG6	See 3.5.5	PC11
PRG7	See 3.5.5	PC11, PR11
PRG10	See 3.5.5	PC11, PR11
PRG11	See 3.5.5	PC11
PRG12	See 3.5.6	PC11, PR11
PRG13	See 3.5.6	PC11

3.4 To run any test, set the switch register to 200 and hit load addr key. Set the switch register equal to the number of the test to be run and hit the start key. Operating instructions will be typed out along with normal switch register settings. Follow the instructions and set the switch register as desired, then hit continue.

SIZE	CODE	NUMBER	REV
A	SP	PC11-0-5	B

DEC FORM NO DRA 108A

CONTINUATION SHEET

For more specific switch settings refer to sections 4.1 to 4.12 of the diagnostic abstract.
3.5 Diagnostic Testing Sequence
3.5.1 Run one pass (for time given in table 3.3) each of PRG0, PRG1 and PRG2.
3.5.2 Run one pass of PRG3 for the time indicated in table 3.3. Pick a section of the data portion of the tape just punched and test it by inserting it into a tape registration guide (Friden # T8118). If the tape punched doesn't fit the guide, run PRG13 to determine if the punch speed is correct. Adjust to correct speed and rerun PRG3 with guide test (3.5.2)
3.5.3 If no failures occurred in the testing done in 3.5.2, run test PRG4 using the tape just punched.
3.5.4 Run PRG5 as follows:
1. After operating instructions have been typed out take the special binary count tape (D2G4) and load it into the reader.
2. Set switches to all 0's hit the start key.
3. At the end of the data portion of the tape being read, the computer will stop.
4. Using the tape just punched instead of D2G4, repeat steps 1-3 two more times.
3.5.5 Tests PRG6-PRG11 are not to be run during normal testing except as trouble shooting aids.
3.5.6 Run one pass each of PRG12 and PRG13 using the 30 second testing period for PRG12.
3.6 If any of the tests run in 3.5.1 to 3.5.6 cause failures, refer to section 4.0.
3.7 Vibrate the PC11/PR11 module. (M7810) while running PRG5. Use a standard vibrating wand, as described in DEC standard 7665057-0-0.

4.0 FAILURES

4.1 Adjustment failures may occur during testing. All adjustments are preset, but should a minor adjustment be necessary, use the following procedure:
PCO reader setup
Dated March 18, 1970
Written by C. A. Youse (of Special Products, Peripheral Equipment Engineering, located at 4-5)
4.2 When a defective module is detected, it should be tagged and returned to the stockroom for replacement.
4.2.1 After a module replacement, start retest at step 3.4.
4.3 Note: Any failure of the PCO other than noted in 4.1 constitutes a problem sufficient to remove the PCO from the station and send it back to off-line testing for examination.

5.0 HEAT TEST

5.1 Heat test should be run only after successful completion of all previously indicated tests.

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A	SP	PC11-0-5	B

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5.2 For PR11 heat testing run PRG1. For PC11 heat testing run PRG5 as indicated in 3.5.4.
5.3 Start diagnostic. Close the bottom door of the heat chamber, turn on the heater (heater control is preset to 50°C).
5.3.1 Start the computer running the test indicated in 5.2.
5.3.2 Close the bottom door of the heat chamber and turn on the heater (heater control is preset to 50°C).
5.3.3 When 50°C is reached, the top light on the heater control box will go out. Continue running the diagnostic for 10 minutes more with the door closed.
5.3.4 If no errors occur, turn off the heater, open the bottom door and allow it to cool.
5.3.5 NOTE: Do not stop the program until the temperature has returned to normal (ambient).
5.4 If unit fails in heat, refer to the typeout and the program write up, then go to 4.0 of this procedure.

6.0 TEST COMPLETION

6.1 Disconnect I/O cables and AC power.
6.2 For PC11, remove tape from unit and empty the chad box.
6.3 Remove PCO from test station.
6.4 Replace cover over modules and chassis tracks on PCO.
6.5 Put tested unit back into shipping container and send to the stockroom.

DIGITAL EQUIPMENT CORPORATION
MAYNARD, MASSACHUSETTS

ACCESSORY LIST

MADE BY K. HAMEL DATE 6/16/72	CHECKED 6/16/72 DATE	SECTION
ENG Paul E. Jansen DATE 6-22-72	PROD DATE	ISSUED SECT.

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: PC11 (60 HZ)	PC11A (50 HZ)	PR11 (50/60 HZ)	KIT CHECK BY ____ DATE ____	INSTALLATION CHECK BY ____ DATE ____
1	DEC-11-HPCB-D	PC11 Control Engineering Drawings	1	1	1		
2	DEC-11-HPCC-D	Maintenance Manual	1	1	1		
3	L1BKIT-11-PC11	Software Kit	1	1	1		
4	DEC-00-PC0A-D(1)	PC04/PC05 Maintenance Manual (Vol. 1)	1	1	1		
5	DEC-00-PC04/5 Dwg.	PC04/PC05 Engineering Drawings (Vol. 2)	1	1	1		
~~6~~	~~Reytron~~	~~Punch Manual~~	~~1~~	~~1~~	~~0~~		
7	36-5356	Punch Paper	4	4	0		
8	74-5300	Chad Box	1	1	0		
	NOTE: ITEMS 9 AND 10 MUST BE ADDED FOR FIELD ADD-ONS ONLY:						
9	90-8851	Mounting Hardware Bag	1	1	1		
10	91-9673-06	AC Line Cord 6'	1	1	1		
11	9906228	BOX *	1	1			
12	23760A9	BOOTSTRAP ROM, PC11 *	1	1			
		* ITEMS 11 & 12 SUPPLIED BY VOLUME MANUFACTURER.					

TITLE	ASSY. NO.	SIZE	CODE	NUMBER	REV.	ECO NO
HIGH SPEED READER AND PUNCH (PDP-11)	SHEET 1 OF 1	A	AL	PC11-0-6	B	PC11-00008
		DIST.				

ML