MULTIPLE
TRANSPORT
ADAPTER

PERTEC
PERIPHERAL EQUIPMENT
DIVISION

MODEL NO. _____

SERIAL NO. _____

MULTIPLE TRANSPORT ADAPTER

PERTEC
PERIPHERAL EQUIPMENT

9600 IRONDALE AVE., CHATSWORTH, CALIF. 91311
PHONE (213) 882-0030 TWX (910) 494-2093

OPERATING AND SERVICE MANUAL NO. 102188

SERVICE AND WARRANTY

This PERTEC product has been rigorously checked out by capable quality control personnel. The design has been engineered with a precise simplicity which should assure a new level of reliability. Ease of maintenance has been taken into consideration during the design phase with the result that all components (other than mechanical components) have been selected wherever possible from manufacturer s "off the shelf" stock. Should a component fail, it may be readily replaced from PERTEC or your local supplier. The unit has been designed for "plug-in" replacement of circuit boards or major components which will ensure a minimum of equipment down time.

PERTEC warrants products of its manufacture to be free from defects in design, workmanship, and material under normal and proper use and service for a period of twelve (12) months after the date of shipment. PERTEC agrees to repair or replace at the place of manufacture, without charge, all parts of said products which are returned, for inspection, to its factory within the applicable warranty period, provided such inspection discloses that the defects are as above specified and provided a l s o that the equipment has not been altered or repaired other than with authorization from PERTEC and by its approved procedures, subjected to misuse, improper maintenance, negligence, or accident, damaged by excessive current or otherwise, or had its serial number or any part thereof altered, defaced or re - moved. This warranty is in lieu of all other warranties, expressed or implied, including those of merchantability or fitness for purpose.

Please read the instruction manual thoroughly as to operation, maintenance, and component reference list. Should you require additional assistance in servicing this equipment, please contact the following regional service centers. A trained service representative will be pleased to assist you.

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*Los Angeles, Calif.	(213) 996-1333	Munich, Germany	18-48-53
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Sydney, Australia	69-0444	Haifa, Israel	(04) 68234
Brussels, Belgium	2-480586	Milano, Italy	5462641
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Vancouver, Canada	(604) 926-3411	Oslo, Norway	550750
Naerum, Denmark	(01) 804200	Johannesburg, So. Africa	42-1939
*London, England	Reading 582-115	Madrid, Spain	2560265
Helsinki, Finland	460844	Solna, Sweden	820410
Clamart, France	6445530		

*Indicates PERTEC-operated service center

PROPRIETARY NOTICE

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SECTION I
GENERAL DESCRIPTION AND SPECIFICATIONS

1.1 INTRODUCTION

This section provides a physical description, functional description, and specifications for the Multiple Transport Adapter (MTA). This adapter is manufactured by PERTEC Peripheral Equipment, Chatsworth, California.

1.2 PURPOSE OF MTA

The system provides the capability of connecting together two, three, or four PERTEC tape transports. Standard cable lengths of 10 feet are used between transports; this capability is referred to as daisy-chaining.

The transports can be any combination of any two speeds and any PERTEC 6000 Series Phase Encoded or NRZI unit may be used provided the Formatter or Controller is capable of multi-format operation.

The MTA system allows a transport to be removed from the daisy chain without affecting the operation of the remaining transports. When the last transport on the chain is removed, the terminator board which is always installed on the last transport, must be moved to the transport that now becomes the last transport in the system.

The system provides the capability of generating the configuration information of each transport. This generated information consists of:

- NRZI/PE
- 7-track/9-track
- High Speed/Low Speed
- Single Stack/Dual Stack signals

Provisions are available for identifying any transport with a particular select line. Identification for each transport is selected by a five-position switch located on each of the MTA boards, or by a similar switch located at a convenient remote location by the customer. The remote switch, connecting cable, and connectors are not supplied and must be furnished by the customer for this application.

1.3 PHYSICAL DESCRIPTION

A block diagram of the MTA system is shown in Figure 1-1. Figure 1-2 illustrates a typical MTA PCBA with connecting cables. In general, the following assemblies are required.

Qty	
1	Formatter/Controller Cable Assembly
(N - 1)*	MTA Cable Assemblies
1	MTA Terminator Assembly

These assemblies are shown within the dashed lines of Figure 1-1.

1.4 FUNCTIONAL DESCRIPTION

The first assembly in Figure 1-1 connects the formatter or controller to the first transport. The second assembly provides for transport-to-transport connection, while the third assembly is simply a terminator version of the MTA PCBA and is used only on the last transport in the daisy-chain.

If an MTA daisy-chain is being added to an existing single transport system the customer's cable presently used for connecting a formatter or controller to the single transport can be used as the formatter/controller cable assembly. Additional wires for supplying +5v and the additional select signals from the formatter must be added to the cable. Refer to Table 2-3 for connector and pin locations.

*N = Number of transports to be daisy-chained.

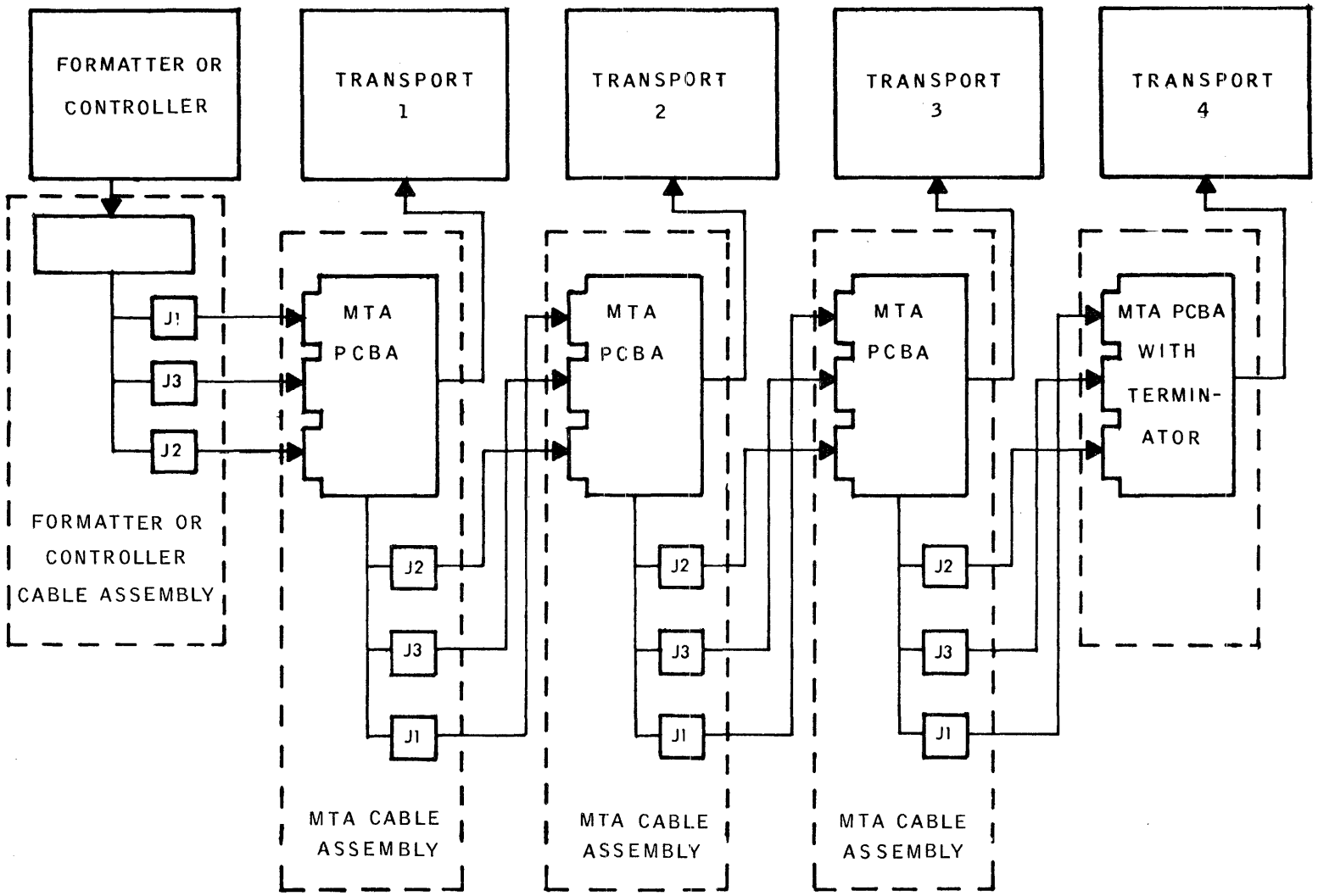

Figure 1-1. MTA System Diagram

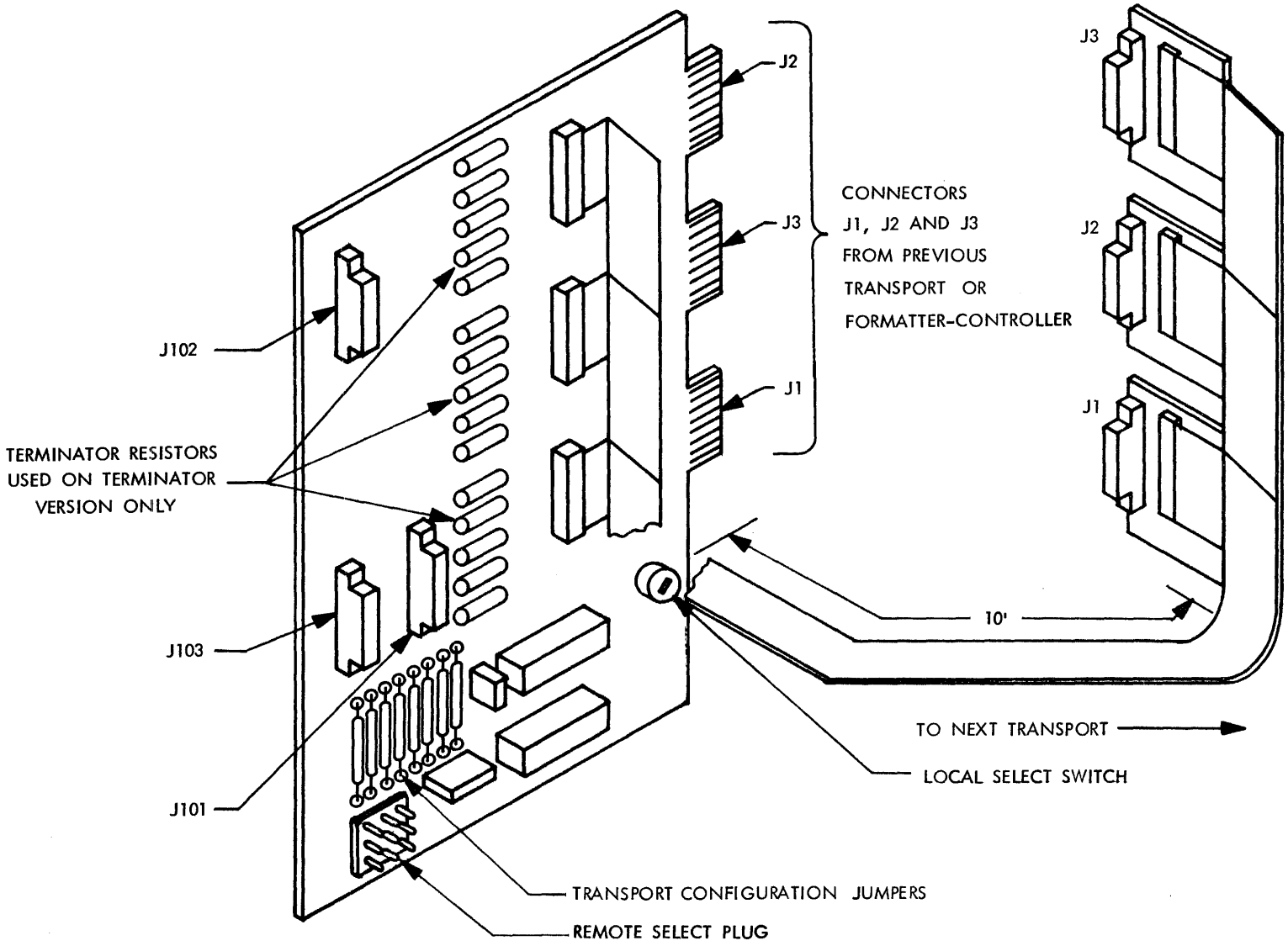

Figure 1-2. MTA Cable Assembly

If the formatter cable assembly (Part No. 102201) is used, all +5v and select interface signals to and from the daisy-chain transports will already be incorporated in the 36-wire flat cable assembly.

1.4.1 FORMATTER CABLE ASSEMBLY

Drawing No. 102201* shows the formatter cable assembly used in the MTA daisy-chain system. This assembly consists of a printed circuit board approximately 6-1/2 by 3-1/4 inches in size. A 100-pin female connector and three 36-pin cable transition connectors are used to transfer the formatter signals into groups of Read, Write, and Control signals. Each of these three signal groups is transmitted via a 36-wire flat cable to cable connector PCBAs (Part No. 102203). These assemblies connect to the three edge connectors on the MTA PCBA.

1.4.2 MTA CABLE ASSEMBLY

Drawing No. 102200 shows the MTA cable assembly. This assembly consists of a printed circuit board approximately 6 by 17-1/2 inches in size. Three 36-pin female connectors on the PCBA mate with the male edge connectors on the data and tape control boards in the transport. The MTA cable assembly has three 36-wire flat cables permanently attached that extend the signals on to the next MTA in the daisy-chain. Gating electronics and a select switch are included on the assembly. It also contains the necessary mechanical structure to affix the assembly to the transport.

1.4.3 MTA TERMINATOR ASSEMBLY

Drawing No. 102200 also shows the MTA terminator assembly. This assembly consists of a special version of the MTA PCBA.containing termination resistors but no affixed cables for daisy-chaining. It also contains the necessary mechanical structure to affix the assembly to the transport.

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*All drawings appear at the end of Section V.

1.5 INTERFACE SPECIFICATIONS

Refer to Figure 1-3 for the interface circuit.

Levels:	+3v	= High =	False	On Interface
	0v	= Low =	True	
	+5v	= High =	True	To Drivers, or From Receivers
	0v	= Low =	False	

The following are noise margins using the circuit in Figure 1-3.

	0°C	25°C	50°C
High	300 mv	450 mv	550 mv
Low	450 mv	250 mv	200 mv

The above margins are in excess of maximum crosstalk on a 40-foot continuous cable without shielding.

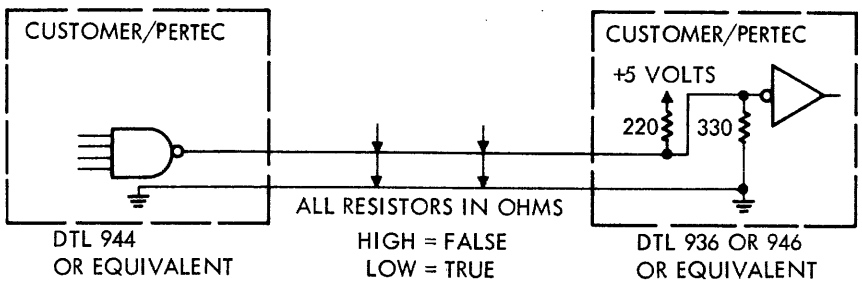


Figure 1-3. Transport Interface Circuit, Formatter/Controller

1.6 MECHANICAL AND ELECTRICAL SPECIFICATIONS

The mechanical and electrical specifications are enumerated in Table 1-1.

Table 1-1

Mechanical and Electrical Specifications

36 Conductor Flat Cable	
Width in inches	2.75 (approximately)
Thickness in inches	0.045
Number of conductors	36
Wire gage (standard)	24
Insulation	pvc
Characteristic impedance in ohms	100
Capacitance in picofarads per foot	15
Inductance in microhenry per foot	0.20
Velocity of propagation in nanoseconds per foot	1.5
Insulation resistance in ohms per foot	10^{10}
Standard length in feet	10
Operating temperature	2°C (35°F) to 50°C (122°F)
Operating	0 to 20,000 feet
Humidity	15 to 95 percent without condensation
Shock and Vibration	Will withstand normal installation and shipping vibration and shock
Non-operating temperature	-45°C (-50°F) to 71°C (160°F)
Non-operating altitude	0 to 50,000 feet
Drivers	DTL944, TTL7416, or equivalent
Receivers	DTL936, DTL946, TTL7404, or equivalent

SECTION II
INSTALLATION

2.1 INTRODUCTION

This section contains information for unpacking and mounting the Multiple Transport Adapter (MTA). Additionally, the procedure for modifying an existing transport system to accept installation of the MTA system is detailed.

2.2 UNPACKING THE MTA

The MTA is shipped in a protective container designed to minimize the possibility of damage during shipping. The shipping container conforms to the National Safe Transit Committee Pre-Shipment Test Procedure.

The following procedure is used to unpack the unit.

(1) Open the container by cutting the tape along the end of the container.

(2) Check the contents of the shipping container against the packing slip and investigate for possible damage. Notify the carrier immediately if any damage is noted.

2.3 JUMPER CONNECTIONS

Tables defining jumper connections required to establish various operating versions of the MTA system can be found on the Schematic Drawing No. 101965, the PCBA Drawing No. 101966, and on the Formatter Cable Drawing No. 101970.

MTA boards are shipped with jumpers W7 through W14 in place. It will be required that the customer remove certain jumpers to comply to the

transport configuration desired. The jumpers are to be removed before the MTA board is installed. Refer to Note 8 on Drawing No. 101965 for examples. Component layout is shown on Assembly Drawing No. 101966.

If an MTA board is installed on another transport in the daisy chain, that transport will operate according to the jumper configuration of that MTA board.

2.4 TERMINATING RESISTORS

Prior to installing an MTA Cable Assembly on a transport, it will be necessary to remove (or verify the removal of) the existing 220- and 330-ohm terminating resistors from the data board and the tape control board used in each transport. It is required that the MTA Terminator Assembly be installed on the last transport in the daisy-chain.

It should be noted that a PERTEC tape transport shipped as part of a Transport/MTA system may already have the appropriate terminator resistors removed from the data and tape control boards.

NOTE

If the last transport is removed from the daisy-chain system, the MTA Terminator Assembly must be moved upstream to the next transport in the system.

The following procedure is used to remove (or verify the removal of) certain terminating resistors and a vertical card cage support bar prior to mounting the MTA PCBA.

(1) Ensure that all power is removed from all transports and the formatter/controller.

(2) From the back of the transport loosen the captive card retaining screws allowing for the removal of the data and tape control circuit boards.

(3) Disconnect the existing formatter/controller female cable connectors J1, J2, and J3 from the male edge connectors on each PCBA.

(4) Remove the data and tape control circuit boards from the transport card cage.

(5) Remove all the designated 220- and 330-ohm terminating resistors from the data and tape control boards. Refer to Tables 2-1 and 2-2.

(6) Remove the two (upper/lower) retaining screws from the vertical card cage bar (located at the edge connector side of the card cage) and remove the bar.

NOTE

The vertical card cage bar removed in Step (6) will be replaced by a similar bar as part of the MTA assembly.

2.5 MTA DAISY-CHAIN INSTALLATION

An MTA assembly must be installed on each daisy-chained transport. This assembly acts as the interface exchange for the distribution of signals from the formatter or the controller to each transport in the daisy-chain. The procedure described in Paragraph 2.4 must be accomplished prior to installing an MTA assembly.

The MTA assembly is secured to the transport card cage by the hardware provided on the MTA assembly. This hardware consists of four screws and related washers attached to the vertical support bar and end blocks of the assembly. The following procedure is utilized for installation.

(1) Position the MTA card cage bar in the position vacated by the removal of the vertical support bar (refer to Paragraph 2.4).

Table 2-1

Data Board Terminating Resistors

Data Board	Assembly Drawing No.	Schematic Drawing No.	Terminating Resistors to be Removed
D	101032	101031	R101-102; R201-202; R301-302; R401-402; R501-502; R601-602; R701-702; R801-802; R901-902; R1; R2; R4; R5; R12; R13
D1	101721	101720	R101-102; R201-202; R301-302; R401-402; R501-502; R601-602; R701-702; R801-802; R901-902; R1; R2; R4; R5; R19; R20
E7	101079	101078	R101-102; R201-202; R301-302; R401-402; R501-502; R601-602; R701-702; R1, R2; R3; R4
E9	101011	101010	R101-102; R201-202; R301-302; R401-402; R501-502; R601-602; R701-702; R801-802; R901-902; R1; R2; R3; R4
E17	101716	101715	R101-102; R201-202; R301-302; R401-402; R501-502; R601-602; R701-702; R1, R2; R3; R4
E19	101711	101710	R101-102; R201-202; R301-302; R401-402; R501-502; R601-602; R701-702; R801-802; R901-902; R1; R2; R3; R4
F	101346	101345	R101-102; R201-202; R301-302; R401-402; R501-502; R601-602; R701-702; R801-802; R901-902; R1, R2; R9; R10, R22; R23
G	101376	101375	R101-102; R201-202; R301-303; R401-402; R501-502; R601-602; R701-702; R801-802; R901-902; R1; R2; R9; R10; R23; R24; R25; R26
K	101887	101886	R1; R2; R46; R48

Table 2-2

Tape Control Board Terminating Resistors

Tape Control Board	Assembly Drawing No.	Schematic Drawing No.	Terminating Resistors to be Removed
C1	101241	101240	R2; R3; R4; R5; R10; R11; R12; R13; R16; R17; R22; R23; R26; R27; R32; R33
C2	101882	101881	R2; R3; R4; R5; R10; R11; R12; R13; R16; R17; R22; R23; R26; R26; R32; R33
F	101671	101670	R2; R3; R4; R5; R10; R11; R12; R13; R16; R17; R22; R23; R26; R27; R32; R33

(2) Install the upper and lower support bar retaining screws through the mounting holes on the card cage and into the ends of the vertical card cage bar.

(3) Install the upper and lower retaining screws through the card cage flange and into the end support blocks.

CAUTION

DAMAGE TO J1, J2, AND J3 ON THE MTA PCBA WILL RESULT IF THE MTA PCBA IS INSTALLED OR REMOVED FROM THE CARD CAGE AT ANY ANGLE OTHER THAN 90 DEGREES.

The tape control and data PCBAs are then installed in the card cage. Installation is accomplished by aligning the three female connectors on the MTA assembly with male edge connectors on the data and tape control PCBAs. Tighten the captive retaining screws on the data and tape control PCBAs.

Refer to Figure 1-1. Install the female connectors J1, J2, and J3 from the formatter cable to the male edge connectors J1, J2, and J3 of the MTA assembly installed on the first transport. To ensure correct installation of the female connectors from the formatter/controller, or from an MTA cable assembly, connectors J1, J2, and J3 are keyed to mate only with their respective male edge connectors on the MTA printed circuit boards. Continue to install each set of three connectors from the preceeding MTA cable assembly to the succeeding MTA board installed on a transport until the last transport in the daisy-chain is reached. The last transport will have the MTA board bearing the terminating resistors for all transports. This MTA board will not have the daisy-chain extension cables attached to it.

2.6 SELECTOR SWITCH

Each MTA assembly has a Selector Switch, S1. This switch can be positioned to respond to any one of four select lines generated by the formatter.

2.7 REMOTE CONTROL

Each MTA assembly provides a male connector (J4) to extend the transport selector switch facility to a convenient location for the customer.

The customer must supply the cable, the remote switch, and the connector to establish this remote control feature to those transports he selects in the daisy-chain. When using this remote switch option, the local switch located on the MTA assembly must be turned to the off position and jumper W1 must be removed.

2.8 INTERFACE CONNECTIONS

The customer may choose to interface to an MTA system by one of the following methods.

(1) Use of Formatter Cable Assembly (No. 102201), designed specifically for interfacing between PERTEC Formatters and the MTA system.

(2) By using existing PERTEC Formatter to Single Transport cables. If an existing cable is used the cable should be inspected to ensure it includes the additional signals noted in Table 2-3, and that it conforms to the following qualifications.

   (a) Maximum length of 10 feet.

   (b) Twisted pairs with not less than one twist per lineal inch.

(c) Wire size to be 22- or 24-gauge with a minimum installation thickness of 0.01 inch.

(d) Ensure that the ground side of each twisted pair is grounded within a few inches of the signal source and destination.

Table 2-3
Additional Formatter Cable Signals

From Formatter/Connector J102	Signal	To MTA Assembly
B48	+5v	5 on J3
B49	+5v	6 on J3
B50	+5v	7 on J3
A48	GND	E on J3
A49	GND	F on J3
A50	GND	H on J3
A42	Live SLT1	B on J2
B43	Live SLT2	D on J2
A43	Live SLT3	H on J2
A41	Return SLT1	2 on J2
B44	Return SLT2	4 on J2
A44	Return SLT3	7 on J2

SECTION III
OPERATION

3.1 INTRODUCTION

This section describes the operation of the Multiple Transport Adapter (MTA) and defines the PE and NRZI formatter interface lines as routed by the MTA system.

3.2 MTA INTERFACING

There are two interfaces provided by the MTA for routing Read, Write, and Control signals; one from the MTA to the formatter/controller, the other from the MTA to the transport. Input/output pin assignments for Read, Write, and Control signals in both PE and NRZI applications are listed in Tables 3-1, 3-2, and 3-3, respectively.

Further details concerning controller/formatter interfacing can be found in the following PERTEC publications.

- PE Formatter Manual No. 101399
- NRZI Formatter Manual No. 101600
- PE/NRZI Formatter Application Notes No. 70712

The MTA is designed to operate with both PE and NRZI formatters and transports; therefore, the details concerning interfacing are integrated. The PE and NRZI transport interface connections are identical with only minor exceptions. These differences are noted in Tables 3-1, 3-2, and 3-3.

Table 3-1

Read Signals, Transport to Formatter via MTA

Transport J103			MTA J3			Formatter J102		Signal
Live	Ret		Live	Ret		Live	Ret	
1	A	→	1	A	→	B1	B2	READ DATA PARITY (RDP)
2	B	→	2	B	→	A1	A2	READ DATA STROBE (RDS)*
3	C	→	3	C	→	B3	B2	READ DATA 0 (RD0)
4	D	→	4	D	→	A3	A2	READ DATA 1 (RD1)
8	J	→	8	J	→	A6	A5	READ DATA 2 (RD2)
9	K	→	9	K	→	B7	A8	READ DATA 3 (RD3)
10	L	→	10	L	→	A7	A8	NRZI (NRZ)
11	M	→	11	M	→	B9	B8	7-, 9-TRACK (7TR/9TR)*
12	N	→	12	N	→	A9	A8	SINGLE (SGL)
13	P	→	13	P	→	B10	B11	SPEED (SPD)
14	R	→	14	R	→	A10	A11	READ DATA 4 (RD4)
15	S	→	15	S	→	B12	B11	READ DATA 5 (RD5)
17	U	→	17	U	→	B13	B14	READ DATA 6 (RD6)
18	V	→	18	V	→	A13	A14	READ DATA 7 (RD7)

Note: The following pins provide +5v and ground from the Formatter to the MTA assemblies.

			5	E	←	A48	B48	
			6	F	←	A49	B49	
			7	H	←	A50	B50	

* Relevant to NRZI Operation Only.

Table 3-2

Write Signals, Formatter to Transport via MTA

Formatter J102			MTA J2			Transport J102		Signal
Live	Ret		Live	Ret		Live	Ret	
B15	B14	→	A	1	→	A	1	WRITE DATA STROBE (WDS)
B16	B17	→	C	3	→	C	3	WRITE AMPLIFIER RESET (WARS)
B18	B17	→	E	5	→	E	5	READ THRESHOLD 1 (RTH1)
A18	A17	→	F	6	→	F	6	READ THRESHOLD 2 (RTH1)
A21	A20	→	L	10	→	L	10	WRITE DATA PARITY (WDP)
B22	B23	→	M	11	→	M	11	WRITE DATA 0 (WD0)
A22	A23	→	N	12	→	N	12	WRITE DATA 1 (WD1)
B24	B23	→	P	13	→	P	13	WRITE DATA 2 (WD2)
A24	A23	→	R	14	→	R	14	WRITE DATA 3 (WD3)
B25	B26	→	S	15	→	S	15	WRITE DATA 4 (WD4)
A25	A26	→	T	16	→	T	16	WRITE DATA 5 (WD5)
B26	B26	→	U	17	→	U	17	WRITE DATA 6 (WD6)
A27	A26	→	V	18	→	V	18	WRITE DATA 7 (WD7)
						J101		
A42	A41	→	B	2	→	J	2	SELECT 1 (SLT1)*
B43	B44	→	D	4	→	J	16	SELECT 2 (SLT2)*
A43	A44	→	H	7	→	J	17	SELECT 3 (SLT3)*

*Provided through Select Switch.

Table 3-3

Control Signals, Transport/MTA/Formatter

Formatter J102			MTA J1			Transport J101		Signal
Live	Ret		Live	Ret		Live	Ret	
A28	A29	→	B	2	→	B	2	OVERWRITE (OVW)
B30	B29	→	C	3	→	C	3	SYNCHRONOUS FORWARD Command (SFC)
A30	A29	→	D	4	→	D	4	DATA DENSITY SELECT (DDS)*
B31	B32	→	E	5	→	E	5	SYNCHRONOUS REVERSE Command (SRC)
A31	A32	←	F	6	←	F	6	DATA DENSITY INDICATOR (DDI)*
B33	B32	→	H	7	→	H	7	REWIND Command (RWC)
B34	B35	→	K	9	→	K	9	SET WRITE STATUS (SWS)
A34	A35	→	L	10	→	L	10	OFF-LINE Command (OFC)
B36	B35	←	M	11	←	M	11	ON-LINE (ONL)
A36	A35	←	N	12	←	N	12	REWIND (RWD)
B37	B38	←	P	13	←	P	13	FILE PROTECT (FPT)
A37	A38	←	R	14	←	R	14	LOAD POINT (LDP)
A39	A38	←	T	16	←	T	16	READY (RDY)
B40	B41	←	U	17	←	U	17	END OF TAPE (EOT)
B42	B41	→	J	8	→	J	8	SELECT 0 (SLT0)**

* Relevant to NRZI Operation Only.

** Provided through Select Switch.

3.2.1 INTERFACE SIGNALS (FORMATTER/CONTROLLER TO TRANSPORT THROUGH MTA)

All waveform names are chosen to correspond to the logical true condition. All interface lines are low-true at the interface with the true level of 0v and the false level of +3v.

All pulse widths at the interface must be a minimum of 1 μsecond wide.

3.2.1.1 SLT0 - SLT3 (Transport Select Lines)

The levels on these four lines are used to select one transport from the possible four. Only one line can be true at a time.

When a transport is selected, all interface lines to and from the transport are activated, and the transport is connected to the formatter/controller.

3.2.1.2 SFC (Synchronous Forward Command)

This is a level which, when true and the selected transport is Ready and On-Line, causes the tape to move in the forward direction at the specified speed. When the level goes false, tape motion ceases.

3.2.1.3 SRC (Synchronous Reverse Command)

This is a level which, when true and the selected transport is Ready and On-Line, causes the tape to move in the reverse direction at the specified speed. When the level goes false, tape motion ceases.

3.2.1.4 RWC (Rewind Command)

This is a pulse which, if the selected transport is Ready and On-Line, causes the transport to rewind to BOT.

3.2.1.5 OFC (Off-Line Command)

This is a pulse which places the selected transport under local control. An Off-Line command can be given while a rewind is in progress provided OFC is separated by at least 1 μsecond from RWC.

3.2.1.6 SWS (Set Write Status)

The level on this line is the output of a flip-flop within the formatter which identifies the Read/Write status specified in the last command. The level on this line controls the selected transports read/write electronics. Setting this level true causes the selected transport to enter the Write mode of operation. When this level is false, the transport will enter the Read mode of operation.

Regardless of the state of the SWS line, the transport will be forced into the Read mode of operation under any one of the following conditions.

(1) An RWC or OFC is received.

(2) Interlock is lost.

(3) Transport is switched to the Off-Line mode.

3.2.1.7 OVW (Overwrite)

This is a level which, when true, causes special action in the write electronics of the selected transport to facilitate the editing of tape.

3.2.1.8 RTH1 (Read Threshold 1)

The level on this line is the output of a flip-flop within the formatter which stores the condition of THR1 specified in the last command.

When this level is true, and the selected transport has a single stack head, the read electronics of the transport are conditioned to operate in the high read threshold mode. When false, the transport reverts to the normal read threshold.

3.2.1.9 RTH2 (Read Threshold 2)

The output of this line is used only by those transports which have an extra low read threshold capability. When this level is true, the read electronics of the selected transport are conditioned to operate in the extra low read threshold mode. When false, the transport reverts to the normal read threshold.

3.2.1.10 DDS (Data Density Select) (Optional, 7-Channel NRZI Only)

When the External Density Select option is incorporated in NRZI 7-channel transports the levels on this line control the packing density of data transfers to and from tape.

When this option is incorporated, DDS is routed to the Density Indicator Line (DDI) and when true, selects the higher of two possible packing densities. When false, the lower packing density is selected.

3.2.1.11 WARS (Write Amplifier Reset) (PE Units)

A pulse immediately following the last character of the postamble is generated during all write operations. When in the Edit mode this pulse is utilized to control the early turn-off of write current in the selected transport.

3.2.1.12 WARS (Write Amplifier Reset) (NRZI Units)

This is a pulse which causes the LRC character to be written onto tape.

In 9-channel systems, WARS occurs four character periods after the CRC character is written.

In 7-channel systems, WARS occurs four character periods after the last data character is written.

The leading edge of the WARS pulse resets the write register in the selected transport. This reset action causes all channels to be erased in a uniform direction in the inter-record gap (IRG).

Additionally, the WARS pulse is utilized in transports having a dual stack head (read after write) to control the early turn-off of write current during edit operations.

3.2.1.13 WDS (Write Data Strobe) (PE Units)

This is a pulse with a frequency twice the frequency of the data transfer rate. The trailing edge of WDS is utilized to copy the PE data appearing on WDP, WD0 - WD7 into the selected transport write logic.

The formatter logic holds the WDP, WD0 - WD7 line steady for the duration of WDS.

3.2.1.14 WDS (Write Data Strobe (NRZI Units)

This is a pulse for each data character to be written onto tape. The trailing edge of each WDS pulse is utilized to copy data appearing on WDP, WD0 - WD7 into the write register in the selected transport logic.

The formatter logic holds WDP, WD0 - WD7 steady for the duration of each WDS.

3.2.1.15 WDP, WD0 - WD7 (Write Data) (PE Units)

These 9 lines are utilized to transfer the PE data from the formatter to the selected transport. The information is copied on the trailing edge of each WDS pulse into the selected transport write logic and written directly onto the tape.

3.2.1.16 WDP, WD0 - WD7 (Write Data) (NRZI Units)

These 9 lines transfer the 9 channels of data from the formatter to the selected transport. The information is copied on the trailing edge of each WDS pulse into the selected transport write logic, coded into NRZI form and written onto the tape.

3.2.2 INTERFACE SIGNALS (TRANSPORT TO FORMATTER THROUGH MTA)

Waveform names correspond to the logical true condition. All interface lines are low-true at the interface with the true level of 0v and the false level of +3v.

All pulse widths at the interface must be a minimum of 1 μsecond wide.

A disconnected interface line is interpreted as a logical false signal by the formatter logic.

3.2.2.1 RDY (Ready)

This is a level which is true only when the transport is ready to receive external commands. The following conditions must exist.

(1) All interlocks are made.

(2) Initial load or rewind sequence is complete.

(3) Transport is on-line.

(4) Transport is not rewinding.

3.2.2.2 ONL (On-Line)

This is a level which, when true, indicates that the selected transport is under remote control. This level is false when the transport is off-line and cannot be operated remotely.

3.2.2.3 RWD (Rewinding)

This is a level which is true when the selected transport is engaged in a rewind operation.

3.2.2.4 FPT (File Protect)

This is a level which is true when the transport power is on, and a reel of tape without a write enable ring is mounted on the transport.

3.2.2.5 LDP (Load Point)

This is a level which is true when the BOT tab is located under the photo-tab sensor. The LDP level goes false when the tab leaves the photo-tab sensor.

3.2.2.6 EOT (End of Tape)

This is a level which, when true, indicates that the EOT reflective tab is positioned under the photo-tab sensor. This level is unstaticised and transitions to and from the true state are not clean.

3.2.2.7 NRZ (Transport Format)

This is a line which is employed in systems having a mixture of PE and NRZI transports. When true, the level indicates that the selected transport is utilizing the NRZI format. When false, this level indicates that the selected transport is utilizing the PE format.

When the level on this line is true, the command lines of a PE formatter are disabled. When the level is false, the command lines of an NRZI formatter are disabled.

3.2.2.8 DDI (Data Density Indicator) (7-Channel NRZI Only)

The levels on this line are relevant only to 7-channel NRZI systems and select either the high or low density mode of operation for both transport and formatter.

When the level on this line is true, the high density mode is selected; when the level is false, the low density mode is selected.

DDI is normally controlled by the density select switch (HI DEN) located on the selected transport. Alternatively, if the selected transport contains the external density select option, density selection may be controlled from the customer's equipment via the DEN and DDS interface lines.

3.2.2.9 SINGLE (Head Configuration)

This is a line employed in systems having mixed transports. When true, the level indicates that the selected transport has a single stack read/write head. When the level is false, a transport having a dual stack read-after-write head is selected.

The levels on this line condition the PE formatter to generate appropriate delays for the generation of the IBG and for head positioning.

3.2.2.10 7TR/9TR (NRZI Track Configuration) (Optional)

This is a line which is employed in systems having a mixture of 7- and 9-track transports. When true, this level indicates that a 7-track transport has been selected. When false, this level indicates that a 9-track transport has been selected.

3.2.2.11 SINGLE/DUAL (Head Configuration) (Optional)

This is a line employed in systems having mixed transports. When true, the level indicates that the selected transport has a single stack read/write head. When false, the level indicates that the selected transport has a dual stack read-after-write head.

The levels on this line condition the formatter to generate appropriate delays for the generation of the IRG and for head positioning.

3.2.2.12 SPEED (Tape Speed) (Optional)

This is a line which is used when it is desired to attach transports of two different tape speeds to a formatter.

When false, this line indicates the selected transport is high speed; when true, it indicates the selected transport is low speed.

This line controls a dual speed oscillator in the formatter logic which scales all formatter timing according to the tape speed.

3.2.2.13 RDS (Read Data Strobe) (NRZI Units)

This is a pulse which is generated for each character of information read from tape on the selected transport.

The formatter logic samples read data appearing on RDP, RD0 - RD7 on the trailing edge of each RDS pulse.

3.2.2.14 RDP, RD0 - RD7 (Read Data Lines) (NRZI Units)

The nine Read Data lines are employed to transmit read data from the selected transport to the formatter. Each character of information is identified by a pulse on the RDS line and is copied into the formatter logic on the trailing edge of RDS.

3.2.2.15 RDP, RD0 - RD7 (Read Data Lines) (PE)

The nine Read Data lines are employed to transmit read data from the selected transport to the formatter. They are the outputs of nine peak detectors, individually gated with the output of a threshold detector associated with each channel. The read signals are replicas of the PE waveforms used to drive the write amplifiers.

3.2.2.16 LOL (Load And On-Line)

This is a pulse which when true, enables a remote Load sequence. A second pulse on this line, spaced a minimum of 1 second from the initial pulse, causes the transport to be placed On-line.

The pulse is routed directly from controller to transport interfaces via the MTA motherboard.

This option must be specified when the transport is ordered.

SECTION IV
THEORY OF OPERATION

4.1 INTRODUCTION

This section describes the theory of operation of the Multiple Transport Adapter (MTA).

The MTA consists of the necessary printed circuit boards, electronics, and interconnecting cables to interface with up to four transports under varying speeds, coding, 7- or 9-track head configurations, with single or dual stack operation.

4.2 ORGANIZATION OF THE MTA SYSTEM

The MTA system is of modular construction, consisting of three basic assemblies. The first assembly is the Formatter Cable Assembly which is used to transmit signals from the formatter to the first transport in the daisy chain. The second assembly, the MTA Cable Assembly, provides for transport to transport connection. The third assembly, the MTA Terminator Assembly, is used on the last transport in the chain and provides for proper termination of the transmission of signals through the cable system.

The MTA cable and terminator assemblies also provide for identification of each transport with a particular select line and for generation of transport configuration signals.

4.3 THEORY OF OPERATION

4.3.1 FORMATTER CABLE ASSEMBLY

The following is a description of the Formatter Cable Assembly (refer to Drawing Nos. 102201 and 101970).

The Formatter Cable Assembly consists of a printed circuit board assembly, the Formatter Cable PCBA, Part No. 101970, to which three 36-wire flat cables are attached. Each of these cables terminator with a simple connector PCBA J1, J2, and J3.

The Formatter Cable PCBA is approximately 6-1/2 inches long by 3-7/32 inches wide. There are four connectors on the PCBA. Connector J1 is a 100-pin female type that mates directly to the interface edge connector of the formatter. The other three connectors, J101, J102, and J103, are 36-pin flat cable to printed circuit board connectors and are used to accept the three 36-wire flat cables.

The printed circuits on the PCBA route the signals from J1 to J101, J102, and J103. The signals routed to J101 are Control signals, while those routed to J102 are Write signals, and those routed to J103 are Read signals.

Provision is made on the PCBA for five jumper wires, W1 through W5. W1 is not used when the formatter cable assembly is used in an MTA system. When the formatter cable assembly is used to interface a formatter to a single transport W1 is included so as to route WARS to the control connector, J102. This routing is accomplished on the MTA PCBA, thus eliminating the need for W1 in MTA applications.

W2, W3, and W4, when installed, route ISLT3, ISLT2, and ISLT1, respectively, to J102 for use in MTA applications. These jumpers must be installed for use with MTAs but are not needed for single transport applications.

W5 is used to route the formatter +5v power to J103 when MTA power is to be derived from the formatter. If power for the MTA is to be derived from the transport, or if a single transport only is used, W5 may be omitted.

The three 36-wire flat cables emanating from the Formatter Cable PCBA terminate at their opposite ends into Cable Connector PCBAs, Part No. 102203. These PCBAs include a 36-pin female type connector and a 36-pin flat cable to printed circuit board connector. The 36-pin female connectors are keyed for proper installation and interface directly to the edge connectors on the MTA PCBA.

4.3.2 MTA CABLE ASSEMBLY

The following is a description of the MTA Cable Assembly (refer to Drawing Nos. 102200, 101965, and 101966).

The MTA Cable Assembly consists of the MTA PCBA, Part No. 101966, three 36-wire flat cables attached permanently to the MTA PCBA, Cable Connector PCBAs terminate each of the flat cables and mechanical mounting hardware.

The MTA PCBA is approximately 17-1/2 inches long by 6-1/4 inches wide. There are ten connectors, two integrated circuits, one switch, and six jumper wires on this PCBA.

Of the connectors, J1, J2, and J3 are 36-pin male edge connectors, J4 is a 9-pin molex pin array, J11, J12, and J13 are 36-pin flat cable to printed circuit board connectors, while J101, J102, and J103 are 36-pin female connectors.

As previously stated, PCBA connections J1, J2, and J3 on the Formatter Cable Assembly conduct all signals from the formatter or controller to edge connectors J1, J2, and J3 on the MTA PCBA. Tape control signals appearing on edge connector J1 are directly cross-connected to J11, which in turn is directly connected to J101.

Write signals appearing on connector J2 are directly cross-connected to J12, which in turn is directly connected to J102.

Read signals appearing on connector J3 are directly cross-connected to J13, which in turn is directly connected to J103.

In this manner the signals are passed straight through an MTA assembly, thus enabling it to act as a signal transfer and pickoff point.

On each MTA PCBA is a 5-position switch S1. This Select Switch enables the transport to be switched to select signal lines SLT0, SLT1, SLT2, SLT3, and OFF. Connector J4 provides for a remote select switch. Circuits U1-A through U1-D provide drive for the cable attached to J4, when remote select is used. The outputs of the local and remote select switches are inverted and logically ORed with circuits U1-E, U1-F, and U2-A.

When the remote control Select Switch is used as the master operating switch, the Select Switch on the corresponding MTA assembly must be positioned to OFF and jumper W1 removed. Conversely, when the MTA assembly Select Switch is in operation the remote control Select Switch must be positioned to OFF or W1 must be installed.

CAUTION

IN OPERATION, NO TWO TRANSPORTS IN A DAISY-CHAIN MAY BE ASSIGNED TO THE SAME SELECT SIGNAL LINE FROM THE FORMATTER/CONTROLLER AT THE SAME TIME. CONSEQUENTLY, THE POSITIONING OF SELECT SWITCH S1 ON ONE MTA ASSEMBLY MUST NOT DUPLICATE THE SWITCH POSITION OF ANY OTHER SELECT SWITCH ON ANY OTHER MTA ASSEMBLY AT ANY TIME. THIS SAME SWITCHING CONDITION APPLIES TO THE POSITIONING OF A REMOTE CONTROL SWITCH.

The input to U2-A is the low-true select signal and is routed to J101 for use in activating the transport to which the MTA is attached. The output of U2-A is high-true select and is used in gating transport configuration signals.

Transport configuration signals are generated by the MTA. These signals provide for the proper operation and control of the selected transport when used with a PERTEC Formatter.

The transport configuration signals are generated by selective placement of jumpers W7 through W14 on the MTA assembly. The jumpers are employed as follows.

(1) W7, W8 — Generate the 7-track or 9-track tape format transport indicator.

(2) W9, W10 — Used to indicate that a single or dual stack transport has been selected.

(3) W11, W12 — Employed to indicate that an NRZI or PE transport is selected.

(4) W13, W14 — Used to identify the High or Low speed transport selected.

The following example illustrates the jumper placement required to operate the MTA with a PERTEC 6840-9 Tape Transport.

W8 — Signifies 9-track transport.

W10 — Signifies dual stack transport.

W11 — Signifies NRZI transport.

W13 or W14 — Selection of W13 or W14 would depend on whether the machine is operating at the High or Low speed of the two possible speeds on the daisy-chain.

If the MTA is to be used in conjunction with a PERTEC Model 6611 or 6612 Read Only Transport, it is not necessary to install any of the W7 - W14 jumpers. This configuration information is generated on the transport and routed to the daisy-chain interface by the MTA assembly.

Jumpers W3 and W5 are used for deriving +5v power for the MTA from the transport or the formatter, respectively. Only one jumper should be used.

4.3.3 MTA TERMINATOR ASSEMBLY

The following is a description of the MTA Terminator Assembly (refer to Drawing Nos. 102200, 101965, and 101966).

The MTA Terminator Assembly is identical to the MTA Cable Assembly except that it does not have flat cables emanating from it and it does include termination resistors. This assembly is used on the last transport in the MTA daisy-chained system.

NOTE

If the last transport is removed from the daisy-chain system the MTA terminator assembly must be moved upstream to the next transport in the system.

Terminator resistor pairs are provided for each signal on the transport interface, including those signals transmitted from the transport. These resistors terminate the cable transmission line in its characteristic impedance eliminating any undesirable signal reflections.

Prior to installing an MTA assembly on to a transport, the existing 220- and 330-ohm terminating resistors on the data and tape control boards in each of the transports must be removed. Refer to Paragraph 2.4 and Tables 2-1 and 2-2 for those resistors to be removed from the various data and tape control boards.

SECTION V
SCHEMATICS AND PARTS LISTS

5.1 INTRODUCTION

This section includes the schematics, assembly drawings, and parts lists.

5.2 SPARE PARTS

Table 5-1 provides a description of the spare parts. When ordering, spare parts, the customer should include the PERTEC part number, the serial number of the equipment, and a description of the part.

5.3 DRAWINGS

(1) MTA Schematic, Drawing No. 101965

(2) MTA PCBA, Drawing No. 101966

(3) Formatter Cable PCBA, Drawing No. 101970

(4) MTA Cable/Terminator Assembly, Drawing No. 102200

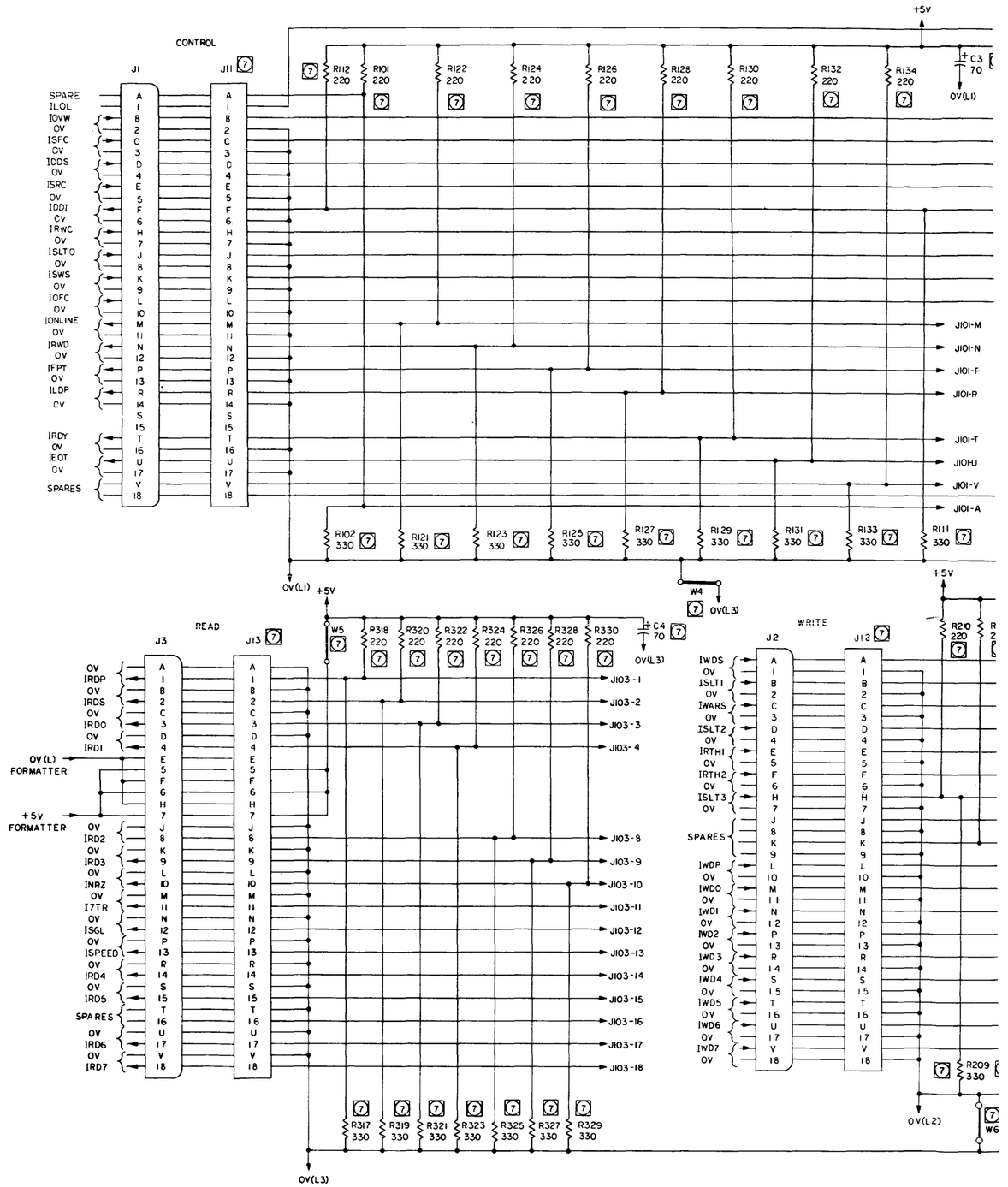
(5) Formatter Cable Assembly, Drawing No. 102201

(6) Cable Connector PCBA, Drawing No. 102203

Table 5-1

Part Number Cross Reference

PERTEC Part No. (Typical)	Manufacturer (or equivalent)	Description or Part Number
Capacitors		
132-2752	Kemet	TK2R7W35 (2.7 μfarads, 35v, ±20%)
133-7060	Mallory	MTA70E20 (70 μfarads, 20v, -10 +100%)
Connectors		
503-1560	Molex Corporation	Male (1 required)
503-1561		Female (5 required)
503-6259		
Inverters, Hex		
700-7416	Texas Instruments	TISN7416N
700-8360	Fairchild	U6A993659
Jumpers		
100373-01	PERTEC	3/4-inch
100373-02		1/2-inch
Switches		
514-8715	Spectrol	87-11-15, 7118, Select S1



9 WHEN MTA IS UTILIZED WITH A TAPE TRANSPORT WHICH HAS A SELECT SWITCH, PLUG SELECT SWITCH CONNECTOR INTO J4 ON MTA.

8 JUMPERS W7 THROUGH W14 ARE INSTALLED IN A MANNER THAT CORRESPONDS TO THE CONFIGURATION OF THE TRANSPORT ON WHICH THE MTA IS INSTALLED. FOR EXAMPLE; IF THE TRANSPORT IS A 7 TRACK, SINGLE STACK HEAD, NRZ UNIT, JUMPERS W7, W9 AND W11 ARE INSTALLED WHILE JUMPERS W8, W10 AND W12 ARE OMITTED. W13 AND W14 ARE USED TO INDICATE THE RELATIVE SPEED OF THE TRANSPORT WHEN THE DAISY CHAIN SYSTEM INCLUDES TRANSPORTS WITH DIFFERENT SPEEDS. IF THE TRANSPORT IS A READ ONLY UNIT (PEC 6100 SERIES) ALL JUMPERS, W7 THROUGH W14 ARE OMITTED.

7 SEE TABLE I FOR APPLICATION.

6 WHEN THE OPTIONAL REMOTE SELECT SWITCH IS USED, S1 MUST BE TURNED TO THE OFF POSITION AND W1 MUST BE REMOVED.

5 INTEGRATED CIRCUITS:
U1 IS PEC 700-8360.
U2 IS PEC 700-7416.

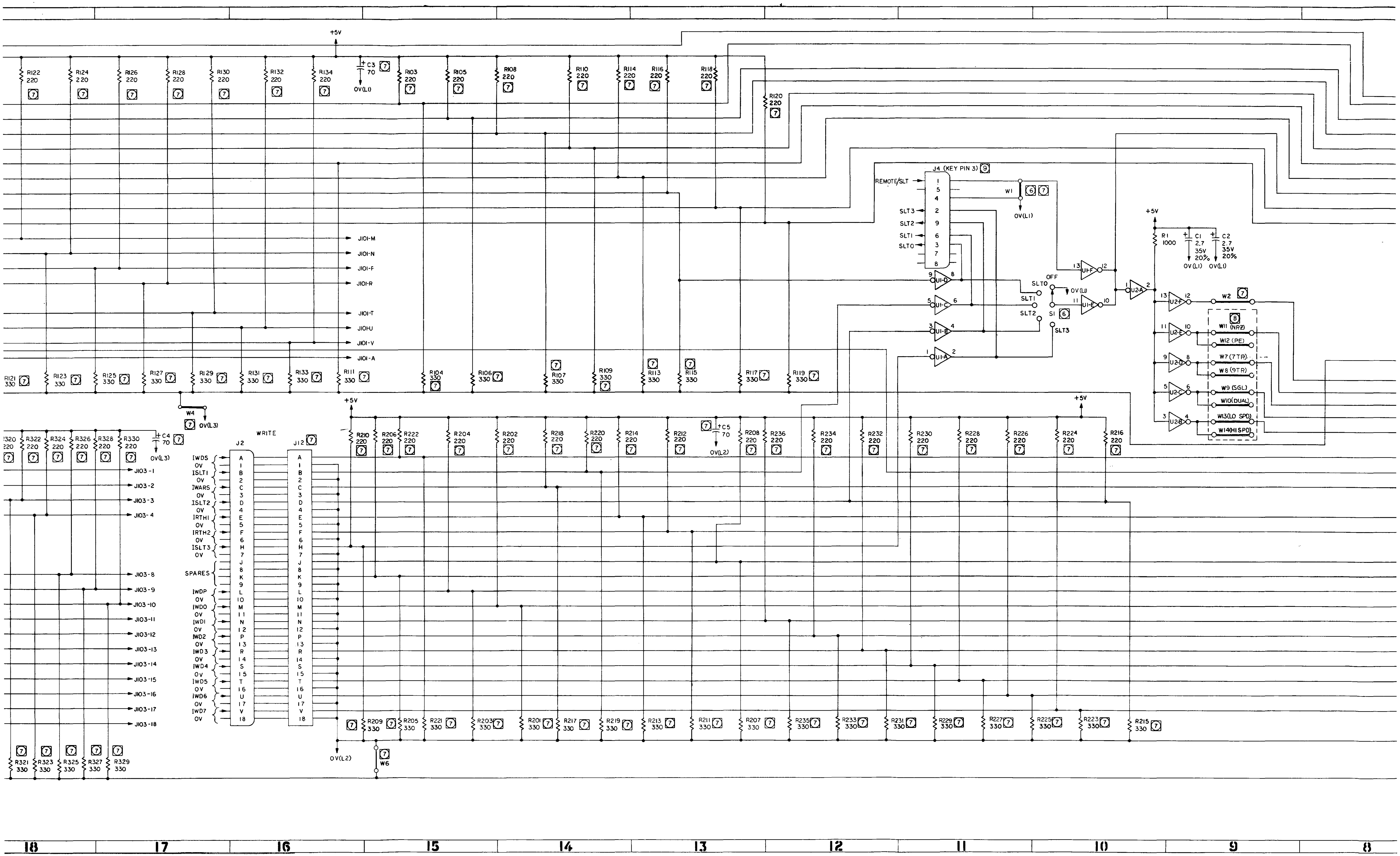
4. PIN 7 IS GND AND PIN 14 IS +5V ON ALL INTEGRATED CIRCUITS.

3 ALL RESISTOR VALUES ARE IN OHMS, 1/4W, 5%.

2 ALL CAPACITOR VALUES ARE IN MICROFARADS, 20 VOLTS, -10% + 100%.

1 REFERENCE DRAWINGS: ASSEMBLY 101966
SPECIFICATION 101969

NOTES UNLESS OTHERWISE SPECIFIED:



+5V
R122 220
R124 220
R126 220
R128 220
R130 220
R132 220
R134 220
C3 70
OV(L1)
R103 220
R105 220
R108 220
R110 220
R114 220
R116 220
R118 220
R120 220
J4 (KEY PIN 3)
REMOTE/SLT
SLT3
SLT2
SLT1
SLT0
W1
U1-D
U1-C
U1-B
U1-A
U1-F
U1-E
U2A
SLT0
SLT1
SLT2
SLT3
OFF
S1
R1 1000
C1 2.7 35V 20%
C2 2.7 35V 20%
U2-F
U2-E
U2-D
U2-C
U2-B
W2
W11 (NRZ)
W12 (PE)
W7 (7TR)
W8 (9TR)
W9 (SGL)
W10 (DUAL)
W13 (LO SPD)
W14 (HI SPD)
J101-M
J101-N
J101-F
J101-R
J101-T
J101-U
J101-V
J101-A
R121 330
R123 330
R125 330
R127 330
R129 330
R131 330
R133 330
R111 330
R104 330
R106 330
R107 330
R109 330
R113 330
R115 330
R117 330
R119 330
W4
OV(L3)
R320 220
R322 220
R324 220
R326 220
R328 220
R330 220
C4 70
J103-1
J103-2
J103-3
J103-4
J103-8
J103-9
J103-10
J103-11
J103-12
J103-13
J103-14
J103-15
J103-16
J103-17
J103-18
WRITE
J2
J12
IWDS
ISLT1
IWARS
ISLT2
IRTH1
IRTH2
ISLT3
SPARES
IWDP
IWDO
IWD1
IWD2
IWD3
IWD4
IWD5
IWD6
IWD7
OV
R210 220
R206 220
R222 220
R204 220
R202 220
R218 220
R220 220
R214 220
R212 220
C5 70
OV(L2)
R208 220
R236 220
R234 220
R232 220
R230 220
R228 220
R226 220
R224 220
R216 220
R209 330
R205 330
R221 330
R203 330
R201 330
R217 330
R219 330
R213 330
R211 330
R207 330
R235 330
R233 330
R231 330
R229 330
R227 330
R225 330
R223 330
R215 330
W6
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12
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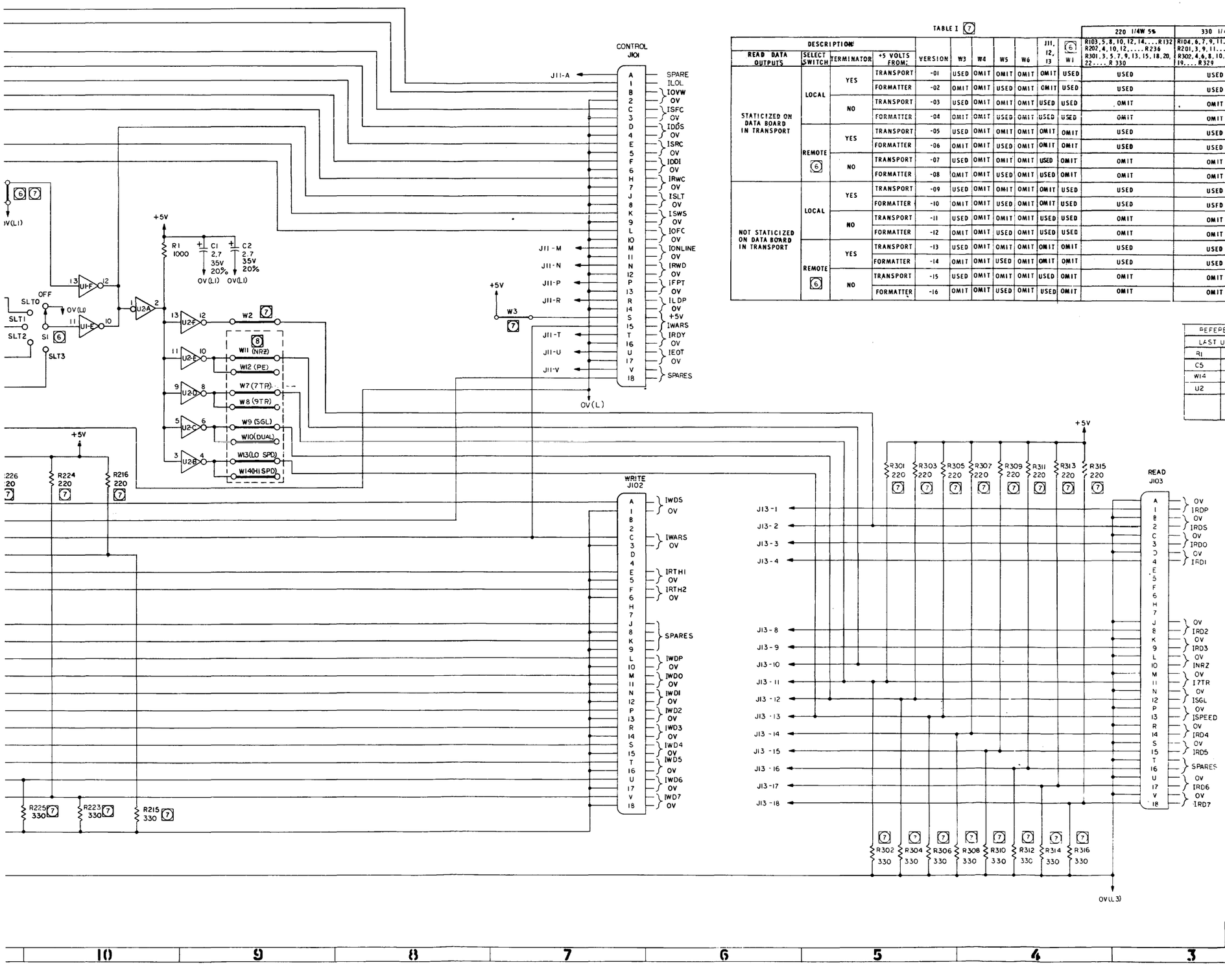


TABLE I (7)

DESCRIPTION												220 1/4W 5%	330 1/4W 5%	70 uf 20V-10% +100%	330 1/4W 5%	220 1/4W 5%	
READ DATA OUTPUTS	SELECT SWITCH	TERMINATOR	+5 VOLTS FROM:	VERSION	W3	W4	W5	W6	J11, 12, 13	W1 (6)		R103,5,8,10,12,14,...R132 R202,4,10,12,...R236 R301,3,5,7,9,13,15,18,20, 22....R330	R104,6,7,9,11....R131 R201,3,9,11...R235 R302,4,6,8,10,14,16,17, 19....R329	C3,4,5	R102,133 205,207, 312	R101, 134,206 208,311	W2
STATICIZED ON DATA BOARD IN TRANSPORT	LOCAL	YES	TRANSPORT	-01	USED	OMIT	OMIT	OMIT	OMIT	USED		USED	USED	USED	OMIT	OMIT	OMIT
			FORMATTER	-02	OMIT	OMIT	USED	OMIT	OMIT	USED		USED	USED	USED			
		NO	TRANSPORT	-03	USED	OMIT	OMIT	OMIT	USED	USED		OMIT	OMIT	OMIT			
			FORMATTER	-04	OMIT	OMIT	USED	OMIT	USED	USED		OMIT	OMIT	OMIT			
	REMOTE (6)	YES	TRANSPORT	-05	USED	OMIT	OMIT	OMIT	OMIT	OMIT		USED	USED	USED			
			FORMATTER	-06	OMIT	OMIT	USED	OMIT	OMIT	OMIT		USED	USED	USED			
		NO	TRANSPORT	-07	USED	OMIT	OMIT	OMIT	USED	OMIT		OMIT	OMIT	OMIT			
			FORMATTER	-08	OMIT	OMIT	USED	OMIT	USED	OMIT		OMIT	OMIT	OMIT			OMIT
NOT STATICIZED ON DATA BOARD IN TRANSPORT	LOCAL	YES	TRANSPORT	-09	USED	OMIT	OMIT	OMIT	OMIT	USED		USED	USED	USED			USED
			FORMATTER	-10	OMIT	OMIT	USED	OMIT	OMIT	USED		USED	USED	USED			
		NO	TRANSPORT	-11	USED	OMIT	OMIT	OMIT	USED	USED		OMIT	OMIT	OMIT			
			FORMATTER	-12	OMIT	OMIT	USED	OMIT	USED	USED		OMIT	OMIT	OMIT			
	REMOTE (6)	YES	TRANSPORT	-13	USED	OMIT	OMIT	OMIT	OMIT	OMIT		USED	USED	USED			
			FORMATTER	-14	OMIT	OMIT	USED	OMIT	OMIT	OMIT		USED	USED	USED			
		NO	TRANSPORT	-15	USED	OMIT	OMIT	OMIT	USED	OMIT		OMIT	OMIT	OMIT			
			FORMATTER	-16	OMIT	OMIT	USED	OMIT	USED	OMIT		OMIT	OMIT	OMIT	OMIT	OMIT	USED

REFERENCE DESIGNATIONS

LAST USED		DELETED
R1	R316	
C5		
W14		
U2		

REVISIONS

REV	DESCRIPTION	DATE	DR	CHK	APPR
A	PRELIMINARY	[illegible]	-		
B	ERN 3-GF	[illegible]	-	[illegible]	[illegible]
C	ECN 3944	[illegible]	[illegible]	[illegible]	[illegible]
D	ECN 5015	[illegible]	[illegible]	[illegible]	[illegible]

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES:
.XX ± .010 ANGULAR
.XXX ± .005 ± 1/2°
BREAK ALL SHARP CORNERS APPROX. .010
FINISH:
NEXT ASSY 1ST USED ON
APPLICATION
MATL:

PEC PERIPHERAL EQUIPMENT CORPORATION

TITLE
SCHEMATIC, MTA

SIZE J | DWG NO. 101965 | REV D
SCALE NONE | SHEET 1 OF 1

REV	DESCRIPTION	DATE	DR	CHK	APPR
A	PRELIMINARY	5-14-71			
B	ERN 3-GF	8/6/71	T.B		
C	ECN 2944	9/23/71	C.J.		RCA
D	ECN 2991	10/25/71			RCA
E	ECN 3798	5/29/72	RAS		
F	ECN 5015	5/9/73	RAS		
F1	ECN 5391	8/20/73			

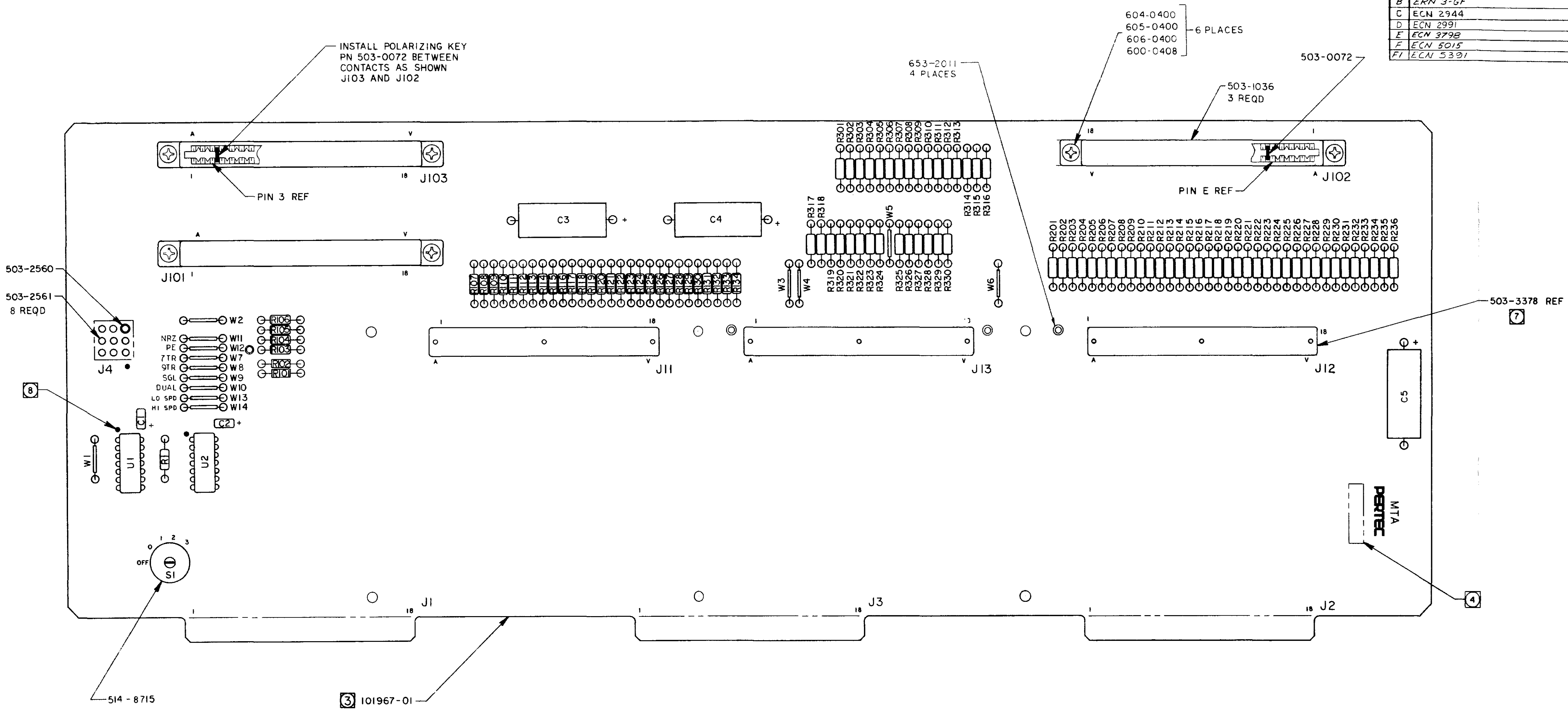


TABLE I [6]

PART NO.	REF DESIGNATION
100-1025	R1
132-2752	C1,2
700-7416	U2
700-8360	U1
[9] 100373-02	W7-14

TABLE II [5]

VERSION	100-2215 [10] R103,105,108,110,112,114-132, R202,204,210,212-236, R301,303,305,307,309,313 R315,318,320,322-330	100-3315 [11] R104,106,107,109,111-131, R201,203,209,211-235, R302,304,306,308,310,314, R316,317,319-329	503-3378 J11, J12, J13 [7]	100373-02 W1	W2	W3	W4	W5	W6		100-2215 R101, 134, 206, 208, 311	100-3315 R102, 133, 205, 207, 312	133-7060 C3,4,5
-01	USED	USED	OMIT	USED	OMIT	USED	OMIT	OMIT	OMIT		OMIT	OMIT	USED
-02	USED	USED	OMIT	USED	OMIT	OMIT	OMIT	USED	OMIT				USED
-03	OMIT	OMIT	USED	USED	OMIT	USED	OMIT	OMIT	OMIT				OMIT
-04	OMIT	OMIT	USED	USED	OMIT	OMIT	OMIT	USED	OMIT				OMIT
-05	USED	USED	OMIT	OMIT	OMIT	USED	OMIT	OMIT	OMIT				USED
-06	USED	USED	OMIT	OMIT	OMIT	OMIT	OMIT	USED	OMIT				USED
-07	OMIT	OMIT	USED	OMIT	OMIT	USED	OMIT	OMIT	OMIT				OMIT
-08	OMIT	OMIT	USED	OMIT	OMIT	OMIT	OMIT	USED	OMIT				OMIT
-09	USED	USED	OMIT	USED	USED	USED	OMIT	OMIT	OMIT				USED
-10	USED	USED	OMIT	USED	USED	OMIT	OMIT	USED	OMIT				USED
-11	OMIT	OMIT	USED	USED	USED	USED	OMIT	OMIT	OMIT				OMIT
-12	OMIT	OMIT	USED	USED	USED	OMIT	OMIT	USED	OMIT				OMIT
-13	USED	USED	OMIT	OMIT	USED	USED	OMIT	OMIT	OMIT				USED
-14	USED	USED	OMIT	OMIT	USED	OMIT	OMIT	USED	OMIT				USED
-15	OMIT	OMIT	USED	OMIT	USED	USED	OMIT	OMIT	OMIT				OMIT
-16	OMIT	OMIT	USED	OMIT	USED	OMIT	OMIT	USED	OMIT		OMIT	OMIT	OMIT

NOTES: UNLESS OTHERWISE SPECIFIED:

1. REFERENCE DRAWINGS: SCHEMATIC-101965
   SPECIFICATION-101969
2. ASSEMBLE PER STANDARD MANUFACTURING METHODS.

[3] THIS ASSY SHALL BE MADE FROM PROCESS BOARD 101967 REV E. AND SUBSEQUENT.

[4] RUBBER STAMP PART NO. INCLUDING VERSION NO. AND ISSUE LETTER.

[5] FOR PARTS AFFECTED BY VERSION NO. SEE TABLE II.

[6] FOR PARTS NOT AFFECTED BY VERSION NO. SEE TABLE I.

[7] COVERS TO BE INSTALLED AT NEXT ASSY (DWG 102200).

[8] DOT DENOTES PIN 1 ON J4 AND ICS.

[9] FINAL CONFIGURATION OF JUMPERS TO BE SELECTED BY END USER OF PCBA PER NOTE [8] DWG 101965.

[10] EVEN NOS IN SEQUENCE.

[11] ODD NOS IN SEQUENCE.

PART NO. 101966- REV.

NEXT ASSY	1ST USED ON
102200	MTA

APPLICATION

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES:
.XX ± .010
.XXX ± .005
X/X ± 1/32
ANGULAR ± 1/2°
BREAK ALL SHARP CORNERS APPROX. .010

FINISH:

SIGNATURES: DR, CHK, DES, ENGR, ENGR

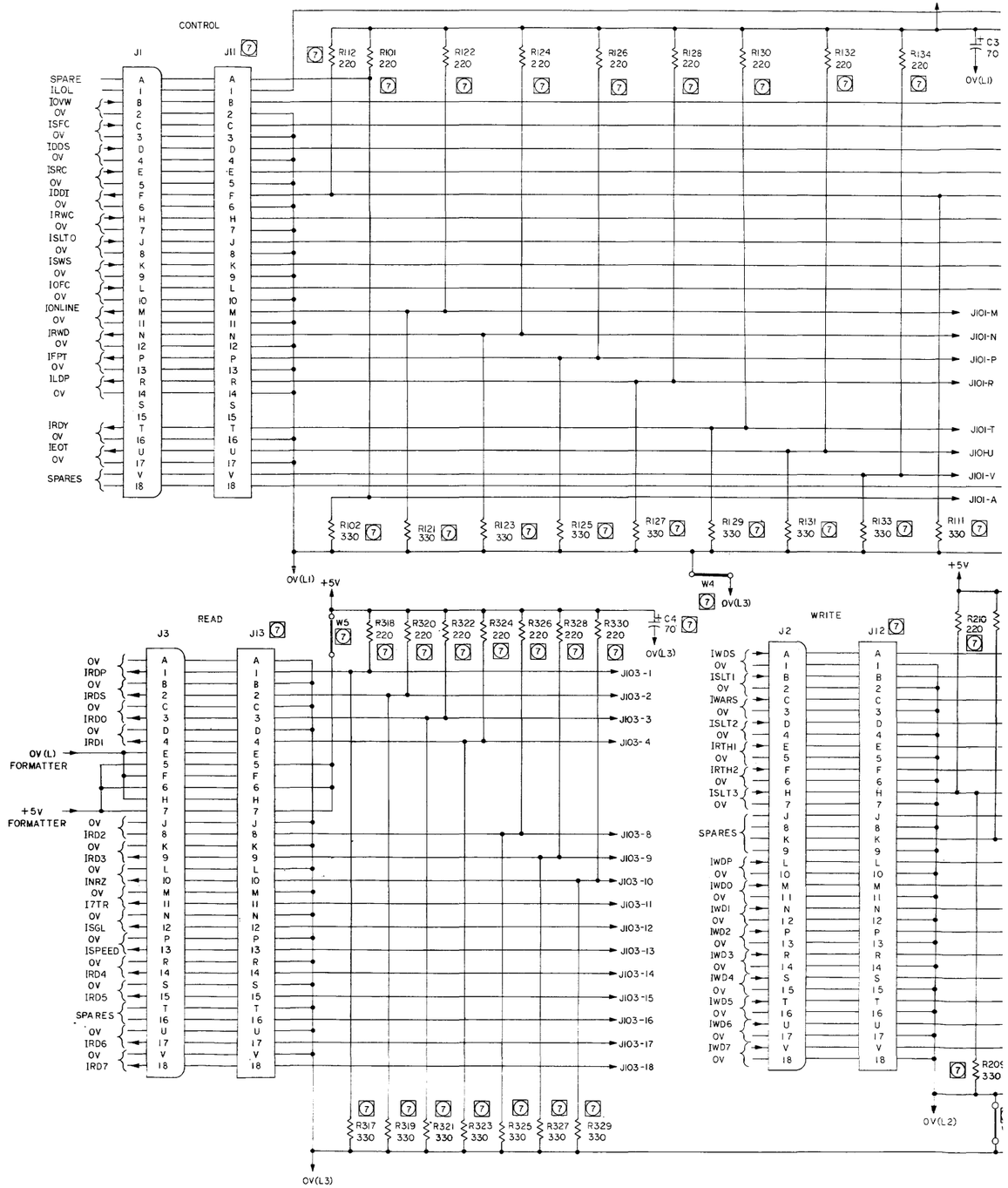
MATL:

PEC PERIPHERAL EQUIPMENT CORPORATION

TITLE PCBA MTA

SIZE E | CODE IDENT. NO. | DWG NO. 101966 | REV F1

SCALE 2/1 | DO NOT SCALE DWG | SHEET | OF



9. WHEN MTA IS UTILIZED WITH A TAPE TRANSPORT WHICH HAS A SELECT SWITCH, PLUG SELECT SWITCH CONNECTOR INTO J4 ON MTA.

8. JUMPERS W7 THROUGH W14 ARE INSTALLED IN A MANNER THAT CORRESPONDS TO THE CONFIGURATION OF THE TRANSPORT ON WHICH THE MTA IS INSTALLED. FOR EXAMPLE; IF THE TRANSPORT IS A 7 TRACK, SINGLE STACK HEAD, NRZ UNIT, JUMPERS W7, W9 AND W11 ARE INSTALLED WHILE JUMPERS W8, W10 AND W12 ARE OMITTED. W13 AND W14 ARE USED TO INDICATE THE RELATIVE SPEED OF THE TRANSPORT WHEN THE DAISY CHAIN SYSTEM INCLUDES TRANSPORTS WITH DIFFERENT SPEEDS. IF THE TRANSPORT IS A READ ONLY UNIT (PEC 6100 SERIES) ALL JUMPERS, W7 THROUGH W14 ARE OMITTED.

7. SEE TABLE I FOR APPLICATION.

6. WHEN THE OPTIONAL REMOTE SELECT SWITCH IS USED, S1 MUST BE TURNED TO THE OFF POSITION AND W1 MUST BE REMOVED.

5. INTEGRATED CIRCUITS:
   U1 IS PEC 700-8360.
   U2 IS PEC 700-7416.

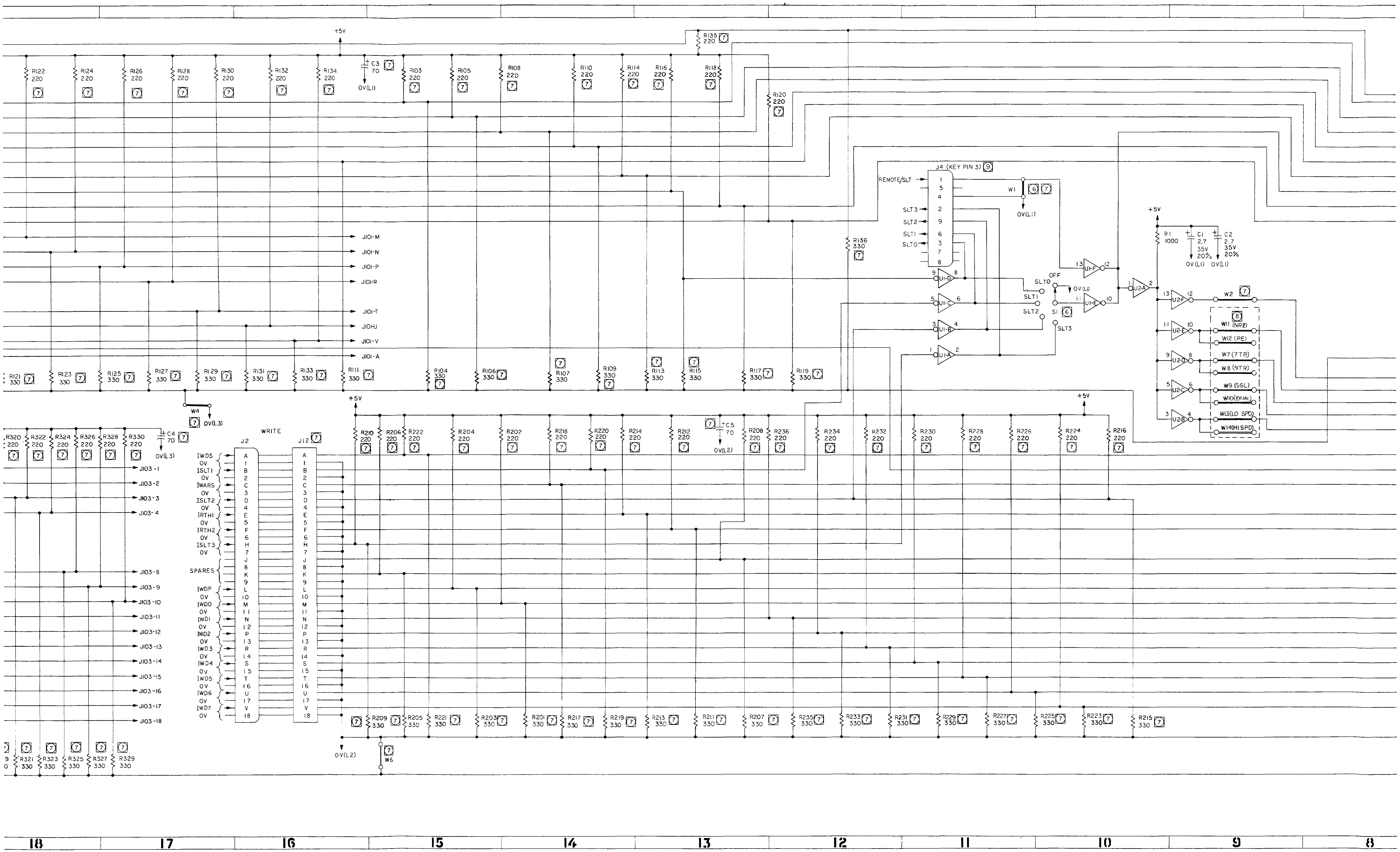
4. PIN 7 IS GND AND PIN 14 IS +5V ON ALL INTEGRATED CIRCUITS.

3. ALL RESISTOR VALUES ARE IN OHMS, 1/4W, 5%.

2. ALL CAPACITOR VALUES ARE IN MICROFARADS, 20 VOLTS, -10% + 100%.

1. REFERENCE DRAWINGS: ASSEMBLY 101966
   SPECIFICATION 101969

NOTES: UNLESS OTHERWISE SPECIFIED:


+5V
R122 220
R124 220
R126 220
R128 220
R130 220
R132 220
R134 220
C3 70
OV(L1)
R103 220
R105 220
R108 220
R110 220
R114 220
R116 220
R118 220
R135 220
R120 220
J101-M
J101-N
J101-P
J101-R
J101-T
J101-U
J101-V
J101-A
R121 330
R123 330
R125 330
R127 330
R129 330
R131 330
R133 330
R111 330
R104 330
R106 330
R107 330
R109 330
R113 330
R115 330
R117 330
R119 330
R136 330
J4 (KEY PIN 3)
REMOTE/SLT
SLT3
SLT2
SLT1
SLT0
W1
OFF
S1
W4
OV(L3)
WRITE
J2
J12
IWDS
ISLT1
IWARS
ISLT2
IRTH1
IRTH2
ISLT3
SPARES
IWDP
IWD0
IWD1
IWD2
IWD3
IWD4
IWD5
IWD6
IWD7
C4 70
J103-1
J103-2
J103-3
J103-4
J103-8
J103-9
J103-10
J103-11
J103-12
J103-13
J103-14
J103-15
J103-16
J103-17
J103-18
C5 70
OV(L2)
W6
R1 1000
C1 2.7 35V 20%
C2 2.7 35V 20%
W2
W11 (NRZ)
W12 (PE)
W7 (7TR)
W8 (9TR)
W9 (SGL)
W10(DUAL)
W13(LO SPD)
W14(HI SPD)
18
17
16
15
14
13
12
11
10
9
8

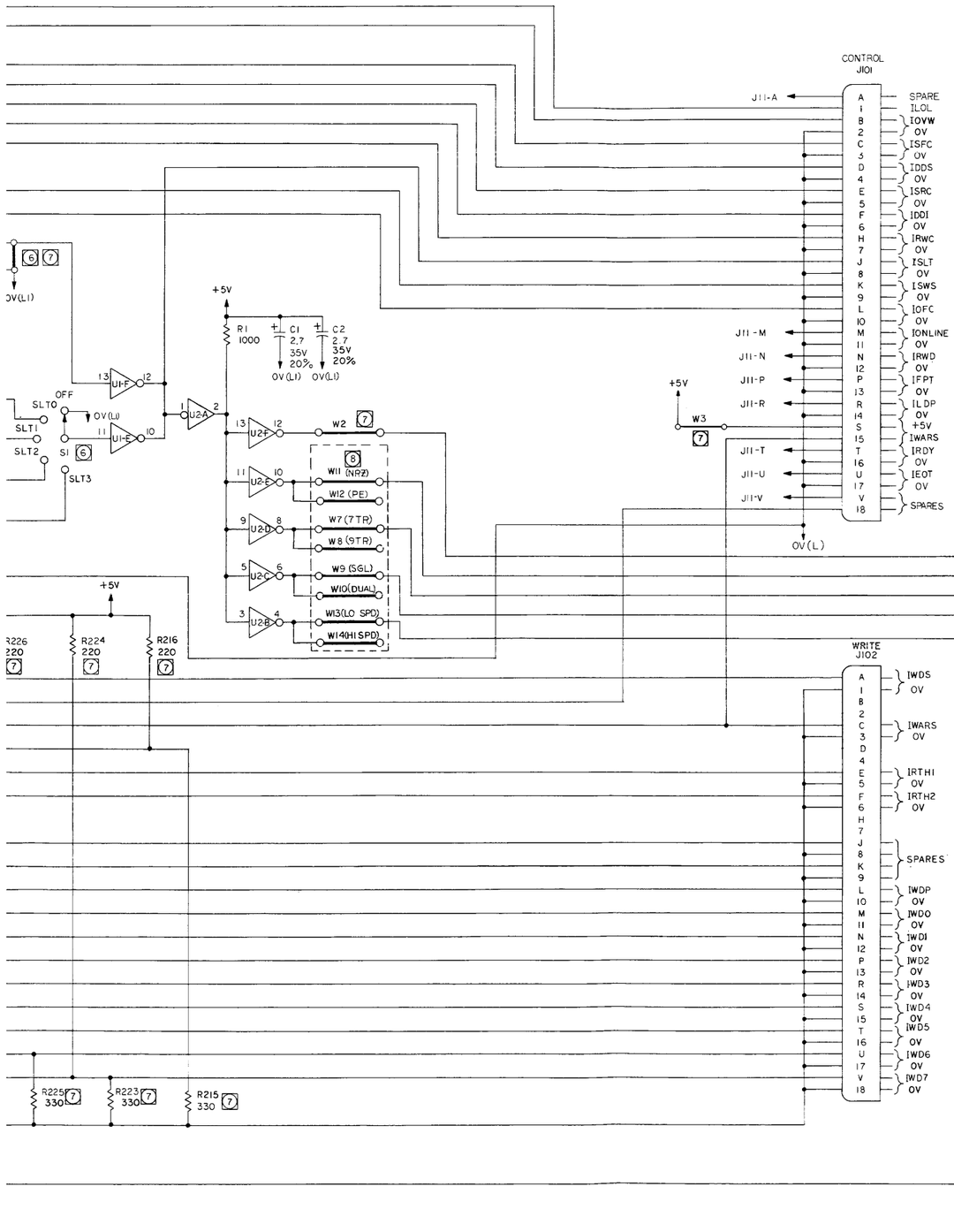


TABLE 1 (7)

DESCRIPTION												220 1/4W 5%	330 1/4W 5%	70 uf 20V-10% +100%	330 1/4W 5%	220 1/4W 5%	
READ DATA OUTPUTS	SELECT SWITCH	TERMINATOR	+5 VOLTS FROM:	VERSION	W3	W4	W5	W6	J11, 12, 13	(6) W1		R103,5,8,10,12,14,...R132 R202,4,10,12,....R236 R301,3,5,7,9,13,15,18,20, 22,...,R330,R135	R104,6,7,9,11,...R131 R201,3,9,11,....R235 R302,4,6,8,10,14,16,17, 19,...,R329,R136	C3,4,5	R102,133 205,207, 312	R101, 134,206 208,311	W2
STATICIZED ON DATA BOARD IN TRANSPORT	LOCAL	YES	TRANSPORT	-01	USED	OMIT	OMIT	OMIT	OMIT	USED		USED	USED	USED	OMIT	OMIT	OMIT
			FORMATTER	-02	OMIT	OMIT	USED	OMIT	OMIT	USED		USED	USED	USED			
		NO	TRANSPORT	-03	USED	OMIT	OMIT	OMIT	USED	USED		OMIT	OMIT	OMIT			
			FORMATTER	-04	OMIT	OMIT	USED	OMIT	USED	USED		OMIT	OMIT	OMIT			
	REMOTE (6)	YES	TRANSPORT	-05	USED	OMIT	OMIT	OMIT	OMIT	OMIT		USED	USED	USED			
			FORMATTER	-06	OMIT	OMIT	USED	OMIT	OMIT	OMIT		USED	USED	USED			
		NO	TRANSPORT	-07	USED	OMIT	OMIT	OMIT	USED	OMIT		OMIT	OMIT	OMIT			
			FORMATTER	-08	OMIT	OMIT	USED	OMIT	USED	OMIT		OMIT	OMIT	OMIT			OMIT
NOT STATICIZED ON DATA BOARD IN TRANSPORT	LOCAL	YES	TRANSPORT	-09	USED	OMIT	OMIT	OMIT	OMIT	USED		USED	USED	USED			USED
			FORMATTER	-10	OMIT	OMIT	USED	OMIT	OMIT	USED		USED	USED	USED			
		NO	TRANSPORT	-11	USED	OMIT	OMIT	OMIT	USED	USED		OMIT	OMIT	OMIT			
			FORMATTER	-12	OMIT	OMIT	USED	OMIT	USED	USED		OMIT	OMIT	OMIT			
	REMOTE (6)	YES	TRANSPORT	-13	USED	OMIT	OMIT	OMIT	OMIT	OMIT		OMIT	USED	USED			
			FORMATTER	-14	OMIT	OMIT	USED	OMIT	OMIT	OMIT		OMIT	USED	USED			
		NO	TRANSPORT	-15	USED	OMIT	OMIT	OMIT	USED	OMIT		OMIT	OMIT	OMIT			
			FORMATTER	-16	OMIT	OMIT	USED	OMIT	USED	OMIT		OMIT	OMIT	OMIT	OMIT	OMIT	USED

REFERENCE DESIGNATIONS		
LAST USED		DELETED
R1	R316	
C5		
W14		
U2		

REVISIONS					
REV	DESCRIPTION	DATE	DR	CHK	APPR
A	PRELIMINARY	6/4/73	TB		
B	ERN 3-07	7/11/73	TB	[illegible]	[illegible]
C	ECN 2944	7/26/73	C.J.	[illegible]	[illegible]
D	ECN 5015	5/6/75	DAS	[illegible]	[illegible]
E	ECN 5612	10/6/75	T.S.	[illegible]	[illegible]

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
TOLERANCES: XX ± .010, XXX ± .005, ANGULAR ± ½°, ½ ± ⅛, ✓
BREAK ALL SHARP CORNERS APPROX. .010
FINISH:
MATL:
NEXT ASSY | 1ST USED ON | APPLICATION

THE INFORMATION HEREON IS THE PROPERTY OF PERIPHERAL EQUIPMENT CORPORATION. NO REPRODUCTION OF UNAUTHORIZED USE SHALL BE MADE

SIGNATURES	DATE
DR [illegible]	7/11
CHK [illegible]	7/11
DES [illegible]	7/11
ENGR	
ENGR [illegible]	7/11

PEC PERIPHERAL EQUIPMENT CORPORATION

TITLE SCHEMATIC, MTA

SIZE J | CONN IDENT. NO. | DWG NO. 101965 | REV E
SCALE NONE | DO NOT SCALE DWG | SHEET 1 OF 1

REVISIONS					
REV	DESCRIPTION	DATE	DR	CHK	APPR
A	PRELIMINARY	6/4/73	W		
B	ERN 3-GF	11/6/73	TB	[illegible]	[illegible]
C	ECN 2944	12/21/73	[illegible]	[illegible]	[illegible]
D	ECN 2991	2/26/74	[illegible]	[illegible]	[illegible]
E	ECN 3298	5/29/74	[illegible]	[illegible]	[illegible]
F	ECN 5015	6/9/75	RAS	[illegible]	[illegible]
F1	ECN 5431	9/9/75	[illegible]	[illegible]	[illegible]
G	ECN 5612	10/29/75	S.J.	[illegible]	[illegible]

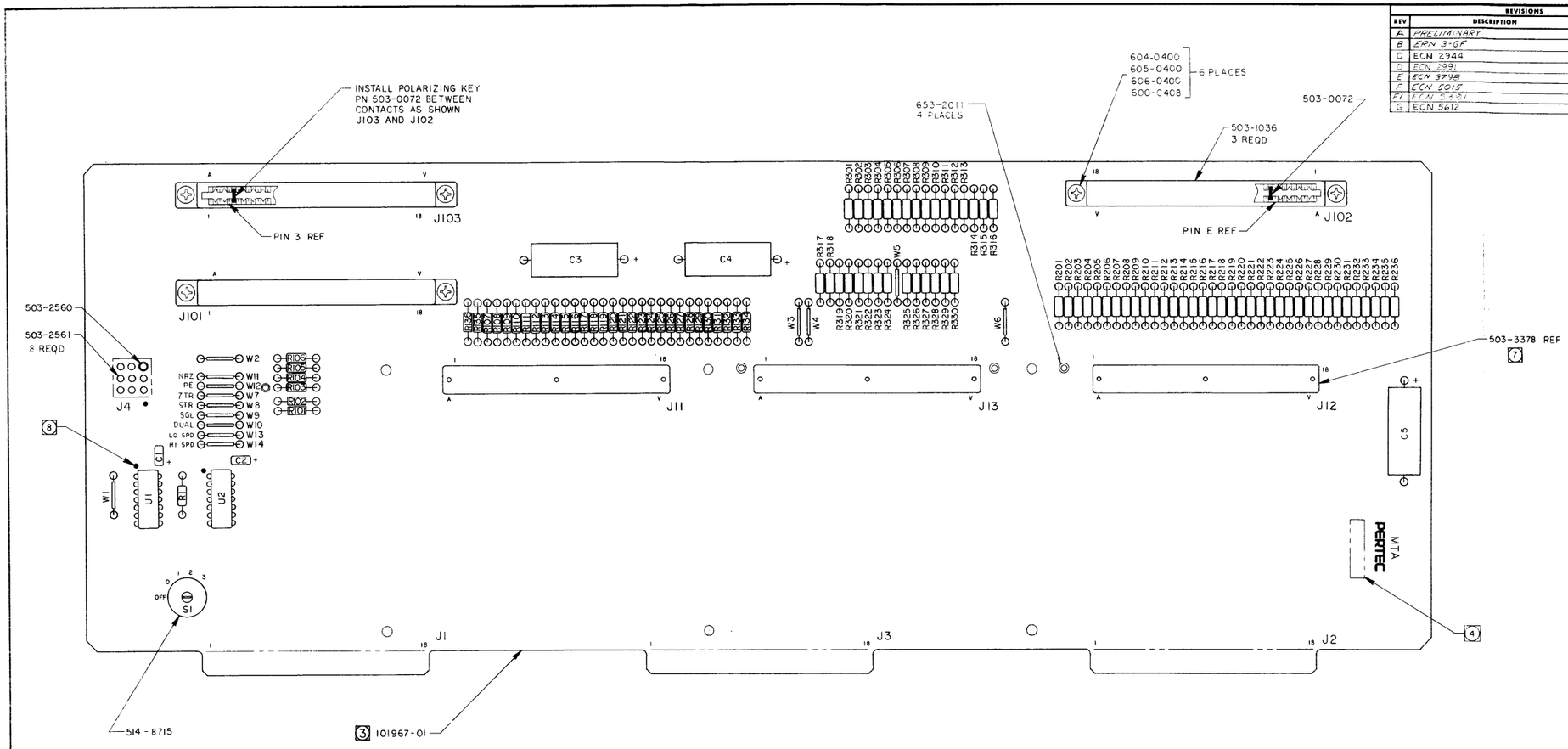


TABLE I [6]

PART NO.	REF DESIGNATION
100-1025	R1
132-2752	C1,2
700-7416	U2
700-8360	U1
[9] 100373-02	W7-14

TABLE II [5]

VERSION	100-2215 [10]	100-3315 [11]	503-3378	100373-02							100-2215	100-3315	133-7060
	R103,105,108,110,112,114-132, R232,204,210,212-236, R301,303-305,307,309,313 R315,318,320,322-330,135	R104,106,107,109,111-131, R201-203,209,211-235, R302,304,306,308-310,314, R316,317,319-329,136	J11, J12, J13 [7]	W1	W2	W3	W4	W5	W6		R101, 134, 206, 208, 311	R102, 133, 205, 207, 312	C3,4,5
-01	USED	USED	OMIT	USED	OMIT	USED	OMIT	OMIT	OMIT		OMIT	OMIT	USED
-02	USED	USED	OMIT	USED	OMIT	OMIT	OMIT	USED	OMIT				USED
-03	OMIT	OMIT	USED	USED	OMIT	USED	OMIT	OMIT	OMIT				OMIT
-04	OMIT	OMIT	USED	USED	OMIT	OMIT	OMIT	USED	OMIT				OMIT
-05	USED	USED	OMIT	OMIT	OMIT	USED	OMIT	OMIT	OMIT				USED
-06	USED	USED	OMIT	OMIT	OMIT	OMIT	OMIT	USED	OMIT				USED
-07	OMIT	OMIT	USED	OMIT	OMIT	USED	OMIT	OMIT	OMIT				OMIT
-08	OMIT	OMIT	USED	OMIT	OMIT	OMIT	OMIT	USED	OMIT				OMIT
-09	USED	USED	OMIT	USED	USED	USED	OMIT	OMIT	OMIT				USED
-10	USED	USED	OMIT	USED	USED	OMIT	OMIT	USED	OMIT				USED
-11	OMIT	OMIT	USED	USED	USED	USED	OMIT	OMIT	OMIT				OMIT
-12	OMIT	OMIT	USED	USED	USED	OMIT	OMIT	USED	OMIT				OMIT
-13	USED	USED	OMIT	OMIT	USED	USED	OMIT	OMIT	OMIT				USED
-14	USED	USED	OMIT	OMIT	USED	OMIT	OMIT	USED	OMIT				USED
-15	OMIT	OMIT	USED	OMIT	USED	USED	OMIT	OMIT	OMIT				OMIT
-16	OMIT	OMIT	USED	OMIT	USED	OMIT	OMIT	USED	OMIT		OMIT	OMIT	OMIT

[11] ODD NOS IN SEQUENCE.

[10] EVEN NOS IN SEQUENCE.

[9] FINAL CONFIGURATION OF JUMPERS TO BE SELECTED BY END USER OF PCBA PER NOTE [8] DWG 101965.

[8] DOT DENOTES PIN 1 ON J4 AND IC'S.

[7] COVERS TO BE INSTALLED AT NEXT ASSY (DWG 102200).

[6] FOR PARTS NOT AFFECTED BY VERSION NO. SEE TABLE I.

[5] FOR PARTS AFFECTED BY VERSION NO. SEE TABLE II.

[4] RUBBER STAMP PART NO. INCLUDING VERSION NO. AND ISSUE LETTER.

[3] THIS ASSY SHALL BE MADE FROM PROCESS BOARD 101967 REV F. AND SUBSEQUENT.

2. ASSEMBLE PER STANDARD MANUFACTURING METHODS.

1. REFERENCE DRAWINGS: SCHEMATIC - 101965
SPECIFICATION - 101969

NOTES: UNLESS OTHERWISE SPECIFIED:

PART NO. 101966- REV.

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES:
XX ± .010 ANGULAR
XXX ± .005 ± ½°
X ± 1/32
BREAK ALL SHARP CORNERS
APPROX. .010

THE INFORMATION HEREON IS THE PROPRIETARY PROPERTY OF PERTEC CORPORATION. NO REPRODUCTION OR UNAUTHORIZED USE SHALL BE MADE

SIGNATURES	DATE
DR [illegible]	[illegible]
CHK [illegible]	[illegible]
DES [illegible]	[illegible]
ENGR [illegible]	[illegible]
ENGR [illegible]	[illegible]

PEC PERIPHERAL EQUIPMENT CORPORATION

TITLE
PCBA
MTA

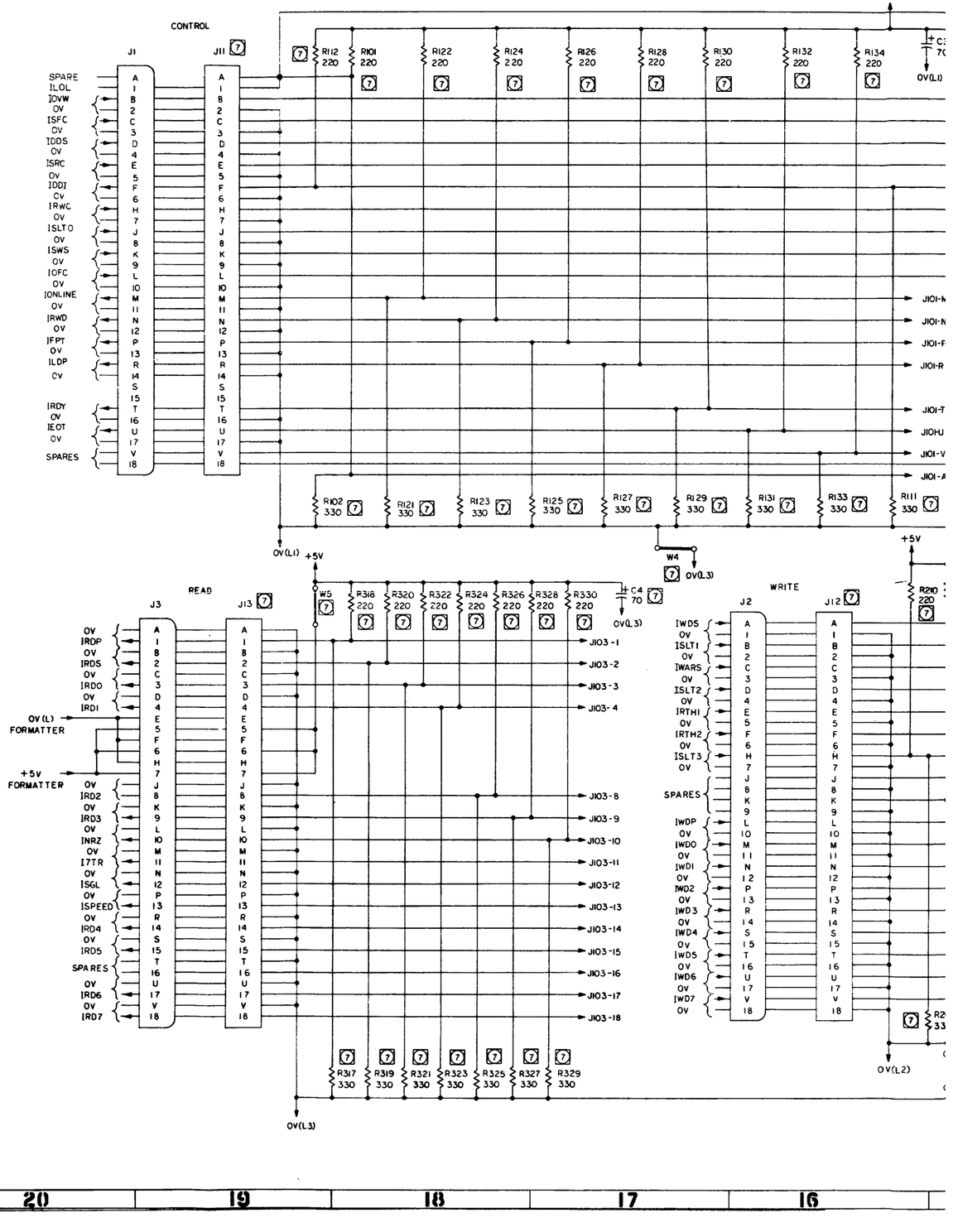
102200	MTA
NEXT ASSY	1ST USED ON
APPLICATION	

FINISH:
MATL:

SIZE	CODE IDENT. NO.	DWG NO.	REV
E		101966	G
SCALE 2/1	DO NOT SCALE DWG	SHEET 1 OF 1	

8 7 6 5 4 3 2 1
H G E D C B A

*L. O. L. Option



9 WHEN MTA IS UTILIZED WITH A TAPE TRANSPORT WHICH HAS A SELECT SWITCH, PLUG SELECT SWITCH CONNECTOR INTO J4 ON MTA.

8 JUMPERS W7 THROUGH W14 ARE INSTALLED IN A MANNER THAT CORRESPONDS TO THE CONFIGURATION OF THE TRANSPORT ON WHICH THE MTA IS INSTALLED. FOR EXAMPLE; IF THE TRANSPORT IS A 7 TRACK, SINGLE STACK HEAD, NRZ UNIT, JUMPERS W7, W9 AND W11 ARE INSTALLED WHILE JUMPERS W8, W10 AND W12 ARE OMITTED. W13 AND W14 ARE USED TO INDICATE THE RELATIVE SPEED OF THE TRANSPORT WHEN THE DAISY CHAIN SYSTEM INCLUDES TRANSPORTS WITH DIFFERENT SPEEDS. IF THE TRANSPORT IS A READ ONLY UNIT (PEC 6100 SERIES) ALL JUMPERS, W7 THROUGH W14 ARE OMITTED.

7 SEE TABLE I FOR APPLICATION.

6 WHEN THE OPTIONAL REMOTE SELECT SWITCH IS USED, S1 MUST BE TURNED TO THE OFF POSITION AND W1 MUST BE REMOVED.

5 INTEGRATED CIRCUITS:
U1 IS PEC 700-8360.
U2 IS PEC 700-7416.

4. PIN 7 IS GND AND PIN 14 IS +5V ON ALL INTEGRATED CIRCUITS.

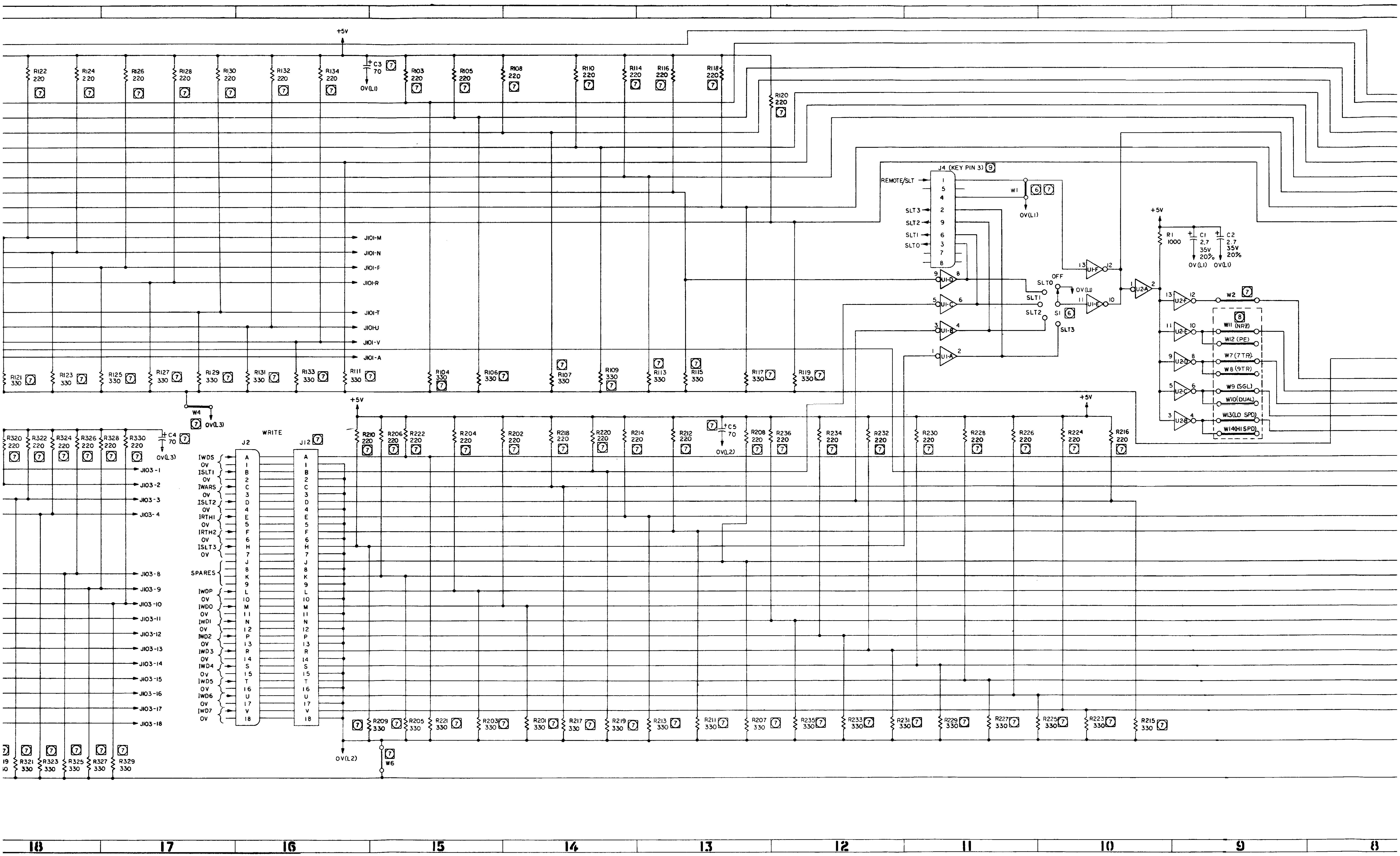
3 ALL RESISTOR VALUES ARE IN OHMS, 1/4W, 5%.

2 ALL CAPACITOR VALUES ARE IN MICROFARADS, 20 VOLTS, -10% + 100%.

1 REFERENCE DRAWINGS: ASSEMBLY 101966
SPECIFICATION 101969

NOTES UNLESS OTHERWISE SPECIFIED:

22 21 20 19 18 17 16


+5V
J4 (KEY PIN 3)
REMOTE/SLT
SLT3
SLT2
SLT1
SLT0
W1
OV(L1)
OFF
S1
W2
W11 (NRZ)
W12 (PE)
W7 (7TR)
W8 (9TR)
W9 (SGL)
W10 (DUAL)
W13 (LO SPD)
W14 (HI SPD)
J101-M
J101-N
J101-F
J101-R
J101-T
J101-U
J101-V
J101-A
W4
OV(L3)
WRITE
J2
J12
IWDS
ISLT1
IWARS
ISLT2
IRTH1
IRTH2
ISLT3
SPARES
IWDP
IWD0
IWD1
IWD2
IWD3
IWD4
IWD5
IWD6
IWD7
J103-1
J103-2
J103-3
J103-4
J103-8
J103-9
J103-10
J103-11
J103-12
J103-13
J103-14
J103-15
J103-16
J103-17
J103-18
OV(L2)
W6
18
17
16
15
14
13
12
11
10
9
8

REVISIONS					
REV	DESCRIPTION	DATE	DR	CHK	APP'D
A	PRELIMINARY	[illegible]			
B	ECN 3-69				
C	ECN 5944				
D	ECN 5815				

TABLE 1 (7)

DESCRIPTION				VERSION	W3	W4	W5	W6	J11, I2, I3	(6) W11	220 1/4W 5%	330 1/4W 5%	70 ut 20V-10% +100%	330 1/4W 5%	220 1/4W 5%	
READ DATA OUTPUTS	SELECT SWITCH	TERMINATOR	+5 VOLTS FROM:													
STATICIZED ON DATA BOARD IN TRANSPORT	LOCAL	YES	TRANSPORT	-01	USED	OMIT	OMIT	OMIT	OMIT	USED	USED	USED	USED	OMIT	OMIT	OMIT
			FORMATTER	-02	OMIT	OMIT	USED	OMIT	OMIT	USED	USED	USED	USED			
		NO	TRANSPORT	-03	USED	OMIT	OMIT	OMIT	USED	USED	OMIT	OMIT	OMIT			
			FORMATTER	-04	OMIT	OMIT	USED	OMIT	USED	USED	OMIT	OMIT	OMIT			
	REMOTE (6)	YES	TRANSPORT	-05	USED	OMIT	OMIT	OMIT	OMIT	OMIT	USED	USED	USED			
			FORMATTER	-06	OMIT	OMIT	USED	OMIT	OMIT	OMIT	USED	USED	USED			
		NO	TRANSPORT	-07	USED	OMIT	OMIT	OMIT	USED	OMIT	OMIT	OMIT	OMIT			
			FORMATTER	-08	OMIT	OMIT	USED	OMIT	USED	OMIT	OMIT	OMIT	OMIT			OMIT
NOT STATICIZED ON DATA BOARD IN TRANSPORT	LOCAL	YES	TRANSPORT	-09	USED	OMIT	OMIT	OMIT	OMIT	USED	USED	USED	USED			USED
			FORMATTER	-10	OMIT	OMIT	USED	OMIT	OMIT	USED	USED	USED	USED			
		NO	TRANSPORT	-11	USED	OMIT	OMIT	OMIT	USED	USED	OMIT	OMIT	OMIT			
			FORMATTER	-12	OMIT	OMIT	USED	OMIT	USED	USED	OMIT	OMIT	OMIT			
	REMOTE (6)	YES	TRANSPORT	-13	USED	OMIT	OMIT	OMIT	OMIT	OMIT	OMIT	USED	USED			
			FORMATTER	-14	OMIT	OMIT	USED	OMIT	OMIT	OMIT	OMIT	USED	USED			
		NO	TRANSPORT	-15	USED	OMIT	OMIT	OMIT	USED	OMIT	OMIT	OMIT	OMIT			
			FORMATTER	-16	OMIT	OMIT	USED	OMIT	USED	OMIT	OMIT	OMIT	OMIT	OMIT	OMIT	USED
											C3,4,5	R102,133 205,207, 312		R101, 134,206 208,311		W2

REFERENCE DESIGNATIONS		
LAST USED		DELETED
R1	R316	
C5		
W14		
U2		

ECN 5612 inc.

10	9	8	7	6	5	4	3	2	1

TITLE	SCHEMATIC, MTA
DWG NO.	101965
REV	D
SIZE	J
SCALE	NONE
SHEET	1 OF 1
NEXT ASSY	
APPLICATION	
PEC	PERIPHERAL EQUIPMENT CORPORATION

REVISIONS					
REV	DESCRIPTION	DATE	DR	CHK	APPD
A	PRELIMINARY	5/18/77	JW		
B	ECN 3-GF	10/11/77	TB		
C	ECN 2944	12/9/77	CJ		
D	ECN 2991	1/31/78	DC		
E	ECN 3728	5/19/78	RAS		
F	ECN 5015	9/19/79	RAS		
F1	ECN 5391	11/7/79	LL		

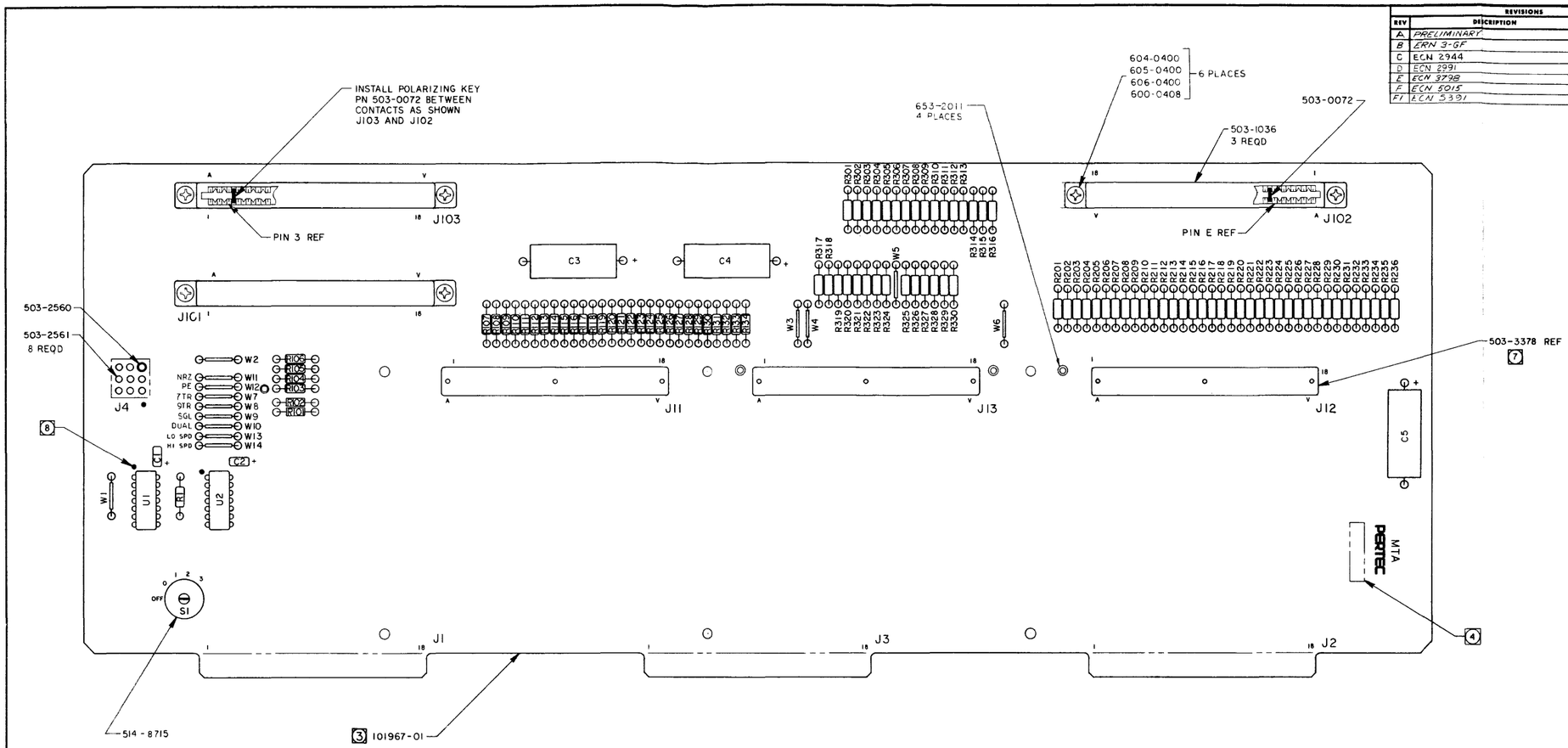


TABLE I [6]

PART NO.	REF DESIGNATION
100-1025	R1
132-2752	C1, 2
700-7416	U2
700-8360	U1
[9] 100373-02	W7-14

TABLE II [5]

VERSION	100-2215 [10]	100-3315 [11]	503-3378 [7]	100373-02						100-2215	100-3315	133-7068
	R103,105,108,110,112,114-132, R202,204,210,212-236, R301,303,305,307,309,313 R315,318,320,322-330	R104,106,107,109,111-131, R201,203,209,211-235, R302,304,306,308,310,314, R316,317,319-329	J11, J12, J13	W1	W2	W3	W4	W5	W6	R101, 134, 206, 208, 311	R102, 133, 205, 207, 312	C3, 4, 5
-01	USED	USED	OMIT	USED	OMIT	USED	OMIT	OMIT	OMIT	OMIT	OMIT	USED
-02	USED	USED	OMIT	USED	OMIT	OMIT	OMIT	USED	OMIT			USED
-03	OMIT	OMIT	USED	USED	OMIT	USED	OMIT	OMIT	OMIT			OMIT
-04	OMIT	OMIT	USED	USED	OMIT	OMIT	OMIT	USED	OMIT			OMIT
-05	USED	USED	OMIT	OMIT	OMIT	USED	OMIT	OMIT	OMIT			USED
-06	USED	USED	OMIT	OMIT	OMIT	OMIT	OMIT	USED	OMIT			USED
-07	OMIT	OMIT	USED	OMIT	OMIT	USED	OMIT	OMIT	OMIT			OMIT
-08	OMIT	OMIT	USED	OMIT	OMIT	OMIT	OMIT	USED	OMIT			OMIT
-09	USED	USED	OMIT	USED	USED	USED	OMIT	OMIT	OMIT			USED
-10	USED	USED	OMIT	USED	USED	OMIT	OMIT	USED	OMIT			USED
-11	OMIT	OMIT	USED	USED	USED	USED	OMIT	OMIT	OMIT			OMIT
-12	OMIT	OMIT	USED	USED	USED	OMIT	OMIT	USED	OMIT			OMIT
-13	USED	USED	OMIT	OMIT	USED	USED	OMIT	OMIT	OMIT			USED
-14	USED	USED	OMIT	OMIT	USED	OMIT	OMIT	USED	OMIT			USED
-15	OMIT	OMIT	USED	OMIT	USED	USED	OMIT	OMIT	OMIT			OMIT
-16	OMIT	OMIT	USED	OMIT	USED	OMIT	OMIT	USED	OMIT	OMIT	OMIT	OMIT

[11] ODD NOS IN SEQUENCE.

[10] EVEN NOS IN SEQUENCE.

[9] FINAL CONFIGURATION OF JUMPERS TO BE SELECTED BY END USER OF PCBA PER NOTE [8] DWG 101965.

[8] DOT DENOTES PIN 1 ON J4 AND IC[S].

[7] COVERS TO BE INSTALLED AT NEXT ASSY (DWG 102200).

[6] FOR PARTS NOT AFFECTED BY VERSION NO. SEE TABLE I.

[5] FOR PARTS AFFECTED BY VERSION NO. SEE TABLE II.

[4] RUBBER STAMP PART NO. INCLUDING VERSION NO. AND ISSUE LETTER.

[3] THIS ASSY SHALL BE MADE FROM PROCESS BOARD 101967 REV E. AND SUBSEQUENT.

2. ASSEMBLE PER STANDARD MANUFACTURING METHODS.

1. REFERENCE DRAWINGS: SCHEMATIC - 101965
SPECIFICATION - 101969

NOTES: UNLESS OTHERWISE SPECIFIED:

PART NO. 101966- REV.

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES:
.XX ± .010
.XXX ± .005
ANGULAR ± 1/2°
BREAK ALL SHARP CORNERS APPROX. .010

THE INFORMATION HEREON IS THE PROPRIETARY OF PERTEC PERIPHERALS CORPORATION AND REPRODUCTION OR DISCLOSURE OF THIS DRAWING OR INFORMATION THEREON MAY NOT BE MADE.

SIGNATURES	DATE
DR	5/18/77
CHK	10/11/77
DES	10/11/77
ENGR	9/19/79
ENGR	9/19/79

PEC PERIPHERAL EQUIPMENT CORPORATION

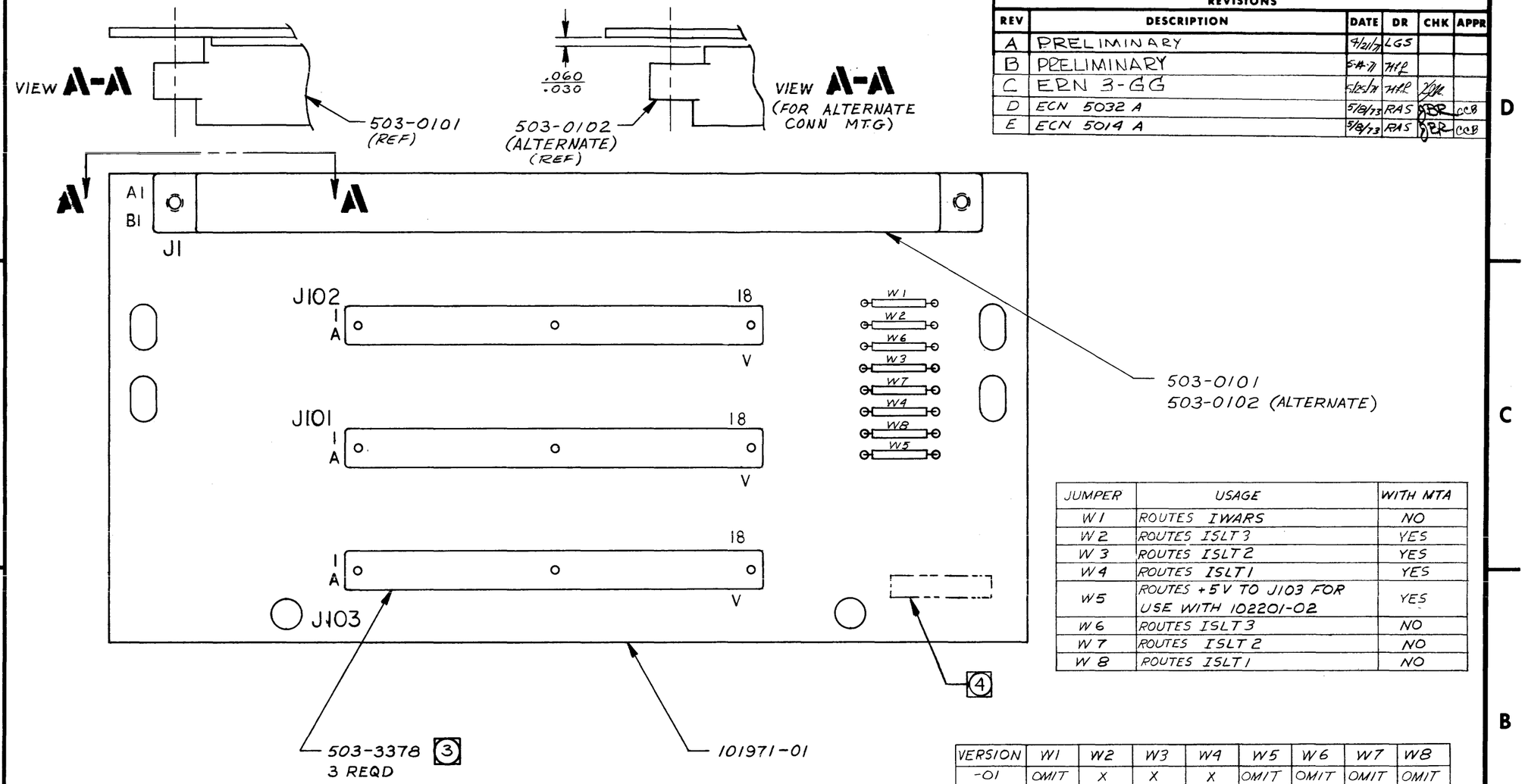
TITLE
PCBA
MTA

102200	MTA
NEXT ASSY	1ST USED ON
APPLICATION	

FINISH:
MATL:

SIZE E | DWG NO. 101966 | REV F1
SCALE 2/1 | DO NOT SCALE DWG | SHEET | OF

REVISIONS					
REV	DESCRIPTION	DATE	DR	CHK	APPR
A	PRELIMINARY	9/21/71	LGS		
B	PRELIMINARY	5-4-72	THR		
C	ECN 3-GG	5/25/73	THR	[illegible]	
D	ECN 5032 A	5/8/73	RAS	[illegible]	CCB
E	ECN 5014 A	5/8/73	RAS	[illegible]	CCB



JUMPER	USAGE	WITH MTA
W1	ROUTES IWARS	NO
W2	ROUTES ISLT 3	YES
W3	ROUTES ISLT 2	YES
W4	ROUTES ISLT 1	YES
W5	ROUTES +5V TO J103 FOR USE WITH 102201-02	YES
W6	ROUTES ISLT 3	NO
W7	ROUTES ISLT 2	NO
W8	ROUTES ISLT 1	NO

VERSION	W1	W2	W3	W4	W5	W6	W7	W8
-01	OMIT	X	X	X	OMIT	OMIT	OMIT	OMIT
-02	OMIT	X	X	X	X	OMIT	OMIT	OMIT
-03	X	OMIT	OMIT	OMIT	OMIT	OMIT	OMIT	OMIT
-04	OMIT	OMIT	OMIT	OMIT	OMIT	X	X	X
-05	OMIT	OMIT	OMIT	OMIT	X	X	X	X
-06	X	OMIT	OMIT	OMIT	OMIT	X	X	X

X INDICATES 100373-02 USED

(4) RUBBER STAMP ASSY PART NO. INCLUDING VERSION NO. AND ISSUE LETTER.
(3) COVERS TO BE INSTALLED AT NEXT ASSY.
2. THIS ASSY SHALL BE MADE FROM PROCESS BOARD 101971-01 REV E.
1. ASSEMBLE PER STANDARD MFG METHODS.

NOTES: UNLESS OTHERWISE SPECIFIED

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES:
.XX ± .01
.XXX ± .005
X/X ± 1/32
ANGULAR ± 1/2°
BREAK ALL SHARP CORNERS
APPROX. 010

SIGNATURES	DATE
DR L. H. Smith	4/21/71
CHK Z. Keeven	8/4/71
DES	
ENGR	
ENGR R. D. Spurt	8/12/71

PEC PERIPHERAL EQUIPMENT CORPORATION

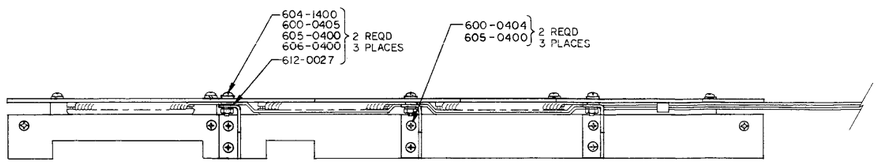
TITLE PCBA FORMATTER CABLE

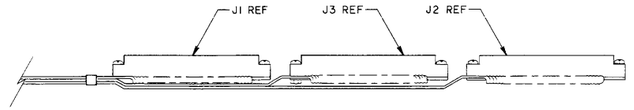
102201	MTA
NEXT ASSY	1ST USED ON
APPLICATION	

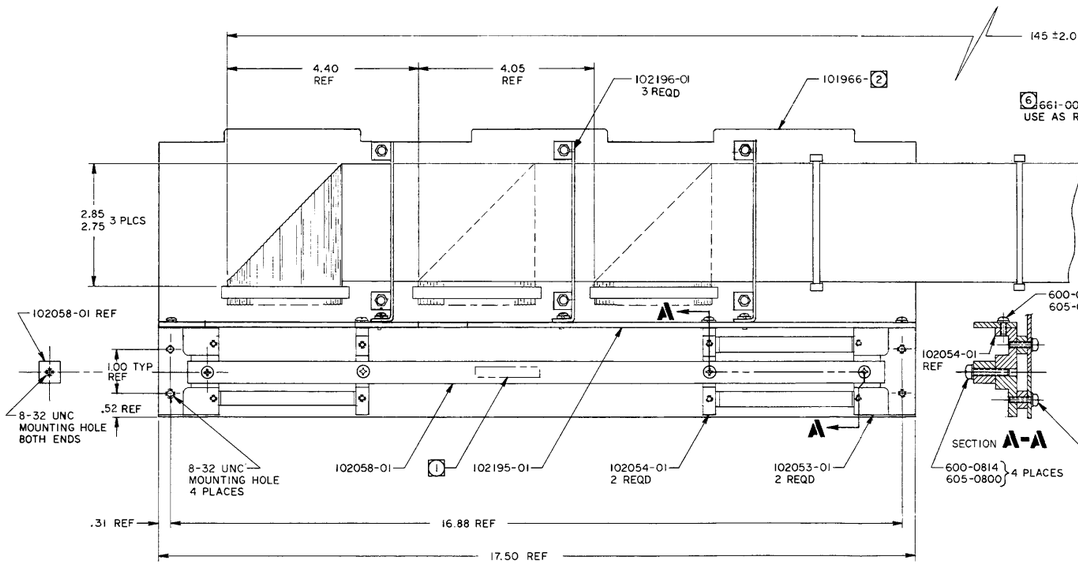
FINISH:
MATL:

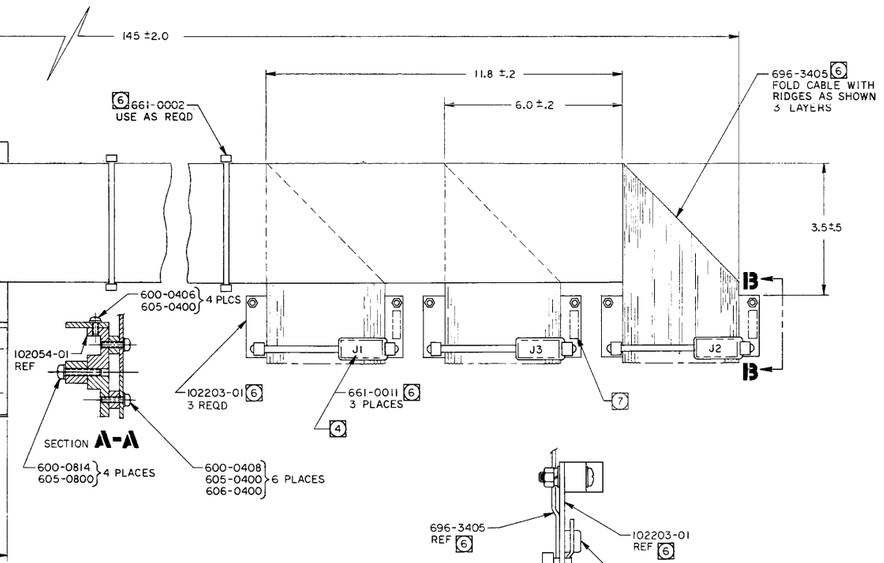
SIZE C | CODE IDENT. NO. | DWG NO. 101970 | REV E
SCALE 2/1 | DO NOT SCALE DWG | SHEET 1 OF 1

REVISIONS				
REV	DESCRIPTION	DATE	DR	CHK	APPD
A	ERN 3-GE				
B	ECN 2960				









2 TABLE I

CABLE ASSEMBLY	
VERSION NO.	MTA PCBA
102200-01	101966-03
-02	-04
-03	-07
-04	-08
-05	-11
-06	-12
-07	-15
102200-08	101966-16

2 6 TABLE I (CONT)

TERMINATOR ASSEMBLY	
VERSION NO.	MTA PCBA
102200-09	101966-01
-10	-02
-11	-05
-12	-06
-13	-09
-14	-10
-15	-13
102200-16	101966-14

7 RUBBER STAMP WORD "TOP" 1/2" LETTERS THREE PLACES BOTH SIDES OF PCBA.

6 NOT USED ON ASSEMBLY VERSIONS -09 THRU -16.

5.

4 STAMP REF DESIGNATIONS: J1, J2 AND J3 APPROXIMATELY AS SHOWN.

3 INSTALL CABLE AND CONNECTOR COVER (PART OF 503-3378) USING 3M CO. MACHINE NO. 3440 AND ALIGNMENT TOOL FOR 3M CONNECTOR P/N 3378.

2 SEE TABLE I FOR COMPLETE PART NO. AND APPLICATION.

1 STAMP PART NO. 102200 INCLUDING VERSION NO. AND LATEST ISSUE LETTER.

NOTES, UNLESS OTHERWISE SPECIFIED:

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES:
.XX ± .01
.XXX ± .005
ANGULAR ± 1/2°
BREAK ALL SHARP CORNERS APPROX. .010

THE INFORMATION HEREON IS THE PROPERTY OF PERIPHERAL EQUIPMENT CORPORATION AND IS TO BE USED ONLY AS AUTHORIZED. USE SHALL BE MADE.

SIGNATURES	DATE
DR	
CHK	
DES	
ENGR	
ENGR	

PEC PERIPHERAL EQUIPMENT CORPORATION

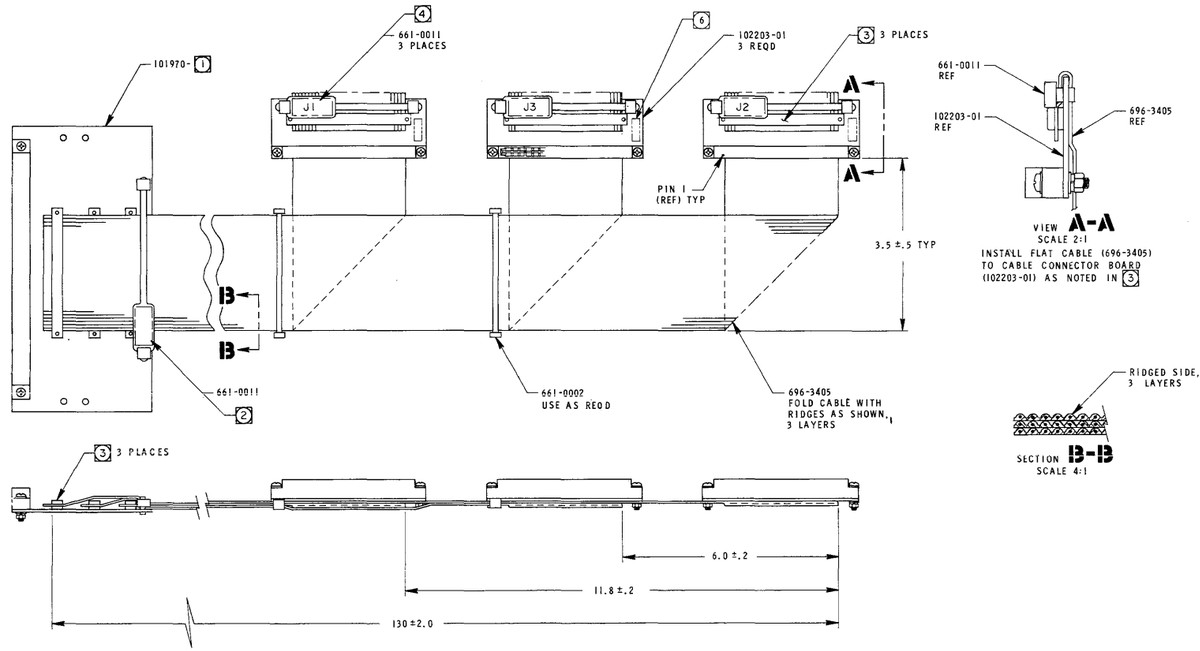
TITLE
MTA CABLE/TERMINATOR ASSEMBLY

TOPASSY MTA
NEXT ASSY 1ST USED ON
APPLICATION
FINISH:
MATL:

SIZE E | DOCUMENT NO. | DWG NO. 102200 | REV B
SCALE 1/1 | DO NOT SCALE DWG | SHEET 1 OF 1

8 7 6 5 4 3 2 1

REVISIONS					
REV	DESCRIPTION	DATE	DR	CHK	APPR
A	ERN 3-JW				
B	ECN 2960				



VIEW **A-A**
SCALE 2:1
INSTALL FLAT CABLE (696-3405)
TO CABLE CONNECTOR BOARD
(102203-01) AS NOTED IN 3

SECTION **B-B**
SCALE 4:1

6 STAMP WORD "TOP" APPROXIMATELY AS SHOWN, THREE PLACES BOTH SIDES OF PCBA.

5

4 STAMP REF DESIGNATIONS: J1, J2, & J3 APPROX AS SHOWN.

3 INSTALL CABLE AND CONNECTOR COVER (PART OF 503-3378) USING 3M CO. MACHINE NO. 3440 AND ALIGNMENT TOOL FOR 3M CONNECTOR PN 3378.

2 STAMP PART NO. 102201 INCLUDING VERSION NO. AND LATEST ISSUE LETTER.

1 FOR PART NO'S WHICH ARE AFFECTED BY VERSION NO., SEE TABLE I.

NOTES: UNLESS OTHERWISE SPECIFIED:

1 TABLE I

VERSION TABLE	
VERSION	FORMATTER CABLE PCBA
-01	101970-01
-02	101970-02

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES:
.XX ± .010
.XXX ± .005
ANGULAR ± ½°
BREAK ALL SHARP CORNERS
APPROX. .010

THE INFORMATION HEREON IS THE PROPERTY OF PERIPHERAL EQUIPMENT CORPORATION. NO REPRODUCTION OR UNAUTHORIZED USE SHALL BE MADE.

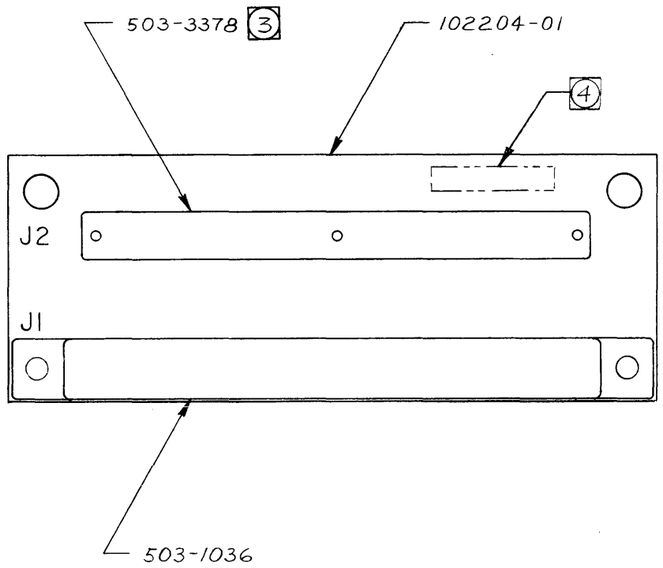
SIGNATURES	DATE
DR	
CHK	
DES	
ENGR	
ENGR	

PEC PERIPHERAL EQUIPMENT CORPORATION

TITLE
FORMATTER
CABLE ASSEMBLY

TOP ASSY / NEXT ASSY / APPLICATION
MTA / 1ST USED ON
FINISH:
MATL:
SIZE C
CODE IDENT. NO.
DWG NO. 102201
REV B
SCALE 1:1
DO NOT SCALE DWG
SHEET 1 OF 1

REVISIONS					
REV	DESCRIPTION	DATE	DR	CHK	APPR
A	ERN 3-HN	6-14-71	[illegible]	[illegible]	K. [illegible]
B	ECN 2771	8/2/71	C.W.	[illegible]	[illegible]
C	ECN 4218	9-11-72	J.C	[illegible]	[illegible]



(4) RUBBER STAMP ASSY PART NO. INCLUDING VERSION NO. AND ISSUE LETTER.
(3) COVER TO BE INSTALLED AT NEXT ASSY.
2. THIS ASSY SHALL BE MADE FROM PROCESS BOARD 102204-01 REV B AND SUBSEQUENT.
1. ASSEMBLE PER STANDARD MFG METHODS.

NOTES: UNLESS OTHERWISE SPECIFIED

102202	MTA
102201	MTA
NEXT ASSY	1ST USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES:
.XX ± .01 ANGULAR ± ½°
.XXX ± .005
X/X ± 1/32
BREAK ALL SHARP CORNERS
APPROX. 010
FINISH:

SIGNATURES	DATE
DR L.E. Smith	9/13/71
CHK [illegible]	9/15/71
DES	
ENGR [illegible]	9/15/71
ENGR [illegible]	9/15/71

MATL:

PEC PERIPHERAL EQUIPMENT CORPORATION

TITLE PCBA
CABLE CONNECTOR

SIZE	CODE IDENT. NO.	DWG NO.	REV
C		102203	C
SCALE 2/1		DO NOT SCALE DWG	SHEET 1 OF 1

PERTEC
PERIPHERAL EQUIPMENT DIVISION
9600 Irondale Avenue, Chatsworth, California 91311, Phone (213) 882-0030, TWX (910) 494-2093