

ARMY
NAVY
AIR FORCE

TM 11-5895-856-34-19
EE640-CA-MMI-190/E154 CPU
TO 31 W2-2T-122-19

TECHNICAL MANUAL

DIRECT SUPPORT AND GENERAL SUPPORT
MAINTENANCE MANUAL
FOR
CENTRAL, MESSAGE SWITCHING, AUTOMATIC
AN/TYC-39(V)1
AND
CENTRAL OFFICE, TELEPHONE, AUTOMATIC
AN/TTC-39(V)2

AUTOMATIC DATA PROCESSING
ASSEMBLIES

DEPARTMENTS OF THE ARMY, NAVY, AND AIR FORCE
22 SEPTEMBER 1983

TECHNICAL MANUAL
NO 11-5895-856-34-19
TECHNICAL MANUAL
EE640-CA-MMI-190/E154 CPU
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Washington, DC, 22 September 1983

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REPORTING ERRORS AND RECOMMENDING IMPROVEMENTS

You can help improve this manual. If you find any mistakes or if you know of a way to improve the procedures, please let us know. Mail your letter, DA Form 2028 (Recommended Changes to Publications and Blank Forms), or DA Form 2028-2 located in back of this manual direct to Commander, US Army Communications-Electronics Command and Fort Monmouth, ATTN DRSEL-ME-MP, Fort Monmouth, New Jersey 07703

For Air Force, submit AFTO Form 22 (Technical Order System Publication Improvement Report and Reply) in accordance with paragraph 6-5, Section VI, T.O. 00-5-1. Forward direct to prime ALC/MST.

For Navy, mail comments to the Commander, Naval Electronics Systems Command, ATTN ELEX 8122, Washington, DC 20360.

In either case, a reply will be furnished direct to you

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VOLUME 19 TM 11-5895-856-34-19

Card Cage Assembly, Input/Output Unit-L.H., Wire List, Logic (149019-860)

This volume is part of a 24-volume set covering the direct support and general support maintenance of the automatic data processing assemblies. This volume contains the logic wire list for the left-hand card cage assembly of the input/output unit, drawing number 149019-860. Refer to volume 1 of this series (TM 11-5895-856-34-1) for an explanation of how to use this wire list as well as other lists contained in the set

NOTE

The pages in volumes 2 through 24 of TM 11-5895-856-34 have been numbered in a special manner. Pages within these volumes are found by keying to two page identifiers the drawing number and the page number. To find the page that you desire within the volume, follow the steps listed below:

1. Find the applicable wire run list in the table of contents and note the applicable drawing number.
2. Look through the pages of the volume until you find the particular drawing number of the wire run list that you seek. This will insure that you are in the correct wire run section.
3. Go through these pages until you find the page number you are looking for within this particular wire run list.

Remember, pages in the volumes cited above are found by keying to the drawing number applicable to a particular wire run list, as well as, a page number. Make sure you are on the correct page by checking both page identifiers.

**CARD CAGE ASSEMBLY, INPUT/OUTPUT UNIT
-LEFT HAND
LOGIC WIRE LIST
149019-860**

NOTES: UNLESS OTHERWISE SPECIFIED

1. REFERENCE TO SHEET 3 FOR DEFINITION OF FIELDS.
2. REFERENCE TO SHEET 4 FOR CONFIGURATIONS OF SHIELD AND WIRE TERMINATIONS
3. REFERENCE TO SHEET 5 OF STRING LIST FOR WIRE CODE DEFINITIONS
4. REFERENCE TO SHEET 6 OF STRING LIST FOR WIRE SUMMARY LIST
5. ALL ABBREVIATIONS PER MIL-STD-12.
6. THROUGHOUT THE BODY OF THIS DOCUMENT THE UNIT NAME IS REFERRED TO AS: CARD CAGE ASSY, I/O UNIT

H78 STRING AND CONNECTOR LIST, DEFINITION OF FIELDS

1. **Record Number**-A unique Data Processing number which associates all information pertaining to a wire "FROM" Connector, "TO" Connector, Wire Code, etc. This number is the wire ID when that field is blank.
2. **Prefix**-An assembly alphanumeric to be used when a wire terminates in two assemblies. This number will be the reference designation as required by USAS Y32 16-1968.
3. **Connector**-Any type of terminating point, plug, receptacle, etc. Designations are in accordance with USAS Y32 16-1968.
4. **Pin**-Exact terminating point of the respective connector. Designations are unique
 - A. SHXXXX Indicates the junction of a shield and a pigtail, the four digits to the right are the wire amenity of the shielded wire.
 - B. JCT indicates a common point of two or more shield pigtails.
 - C. Jacket the terminology used when describing the line that defines the identification of a shielded wire.
5. **Sh Fg**-References a graphic representation showing how a shielded wire or coax is to be terminated. A number in this field indicates the level of automatic wire wrapping.
6. **Multi Group**-Associates wires of a group such as "twisted wire" or "shielded wire." Jacket, pigtails and center conductors will be shown as a common group.
7. **Wire Code**-A three-digit code for wire type and gage or bus bar.
8. **Wire Color**-Standard RETMA color code
 - A. Base Stripe Tracer
 - B. Stripe, Tracer 1 and Tracer 2 if the digit to the left is other than 9 and the two positions to the right are not blank and not equal. The Base Color is understood to be white.
9. **Wire Ident**-A number used for reference to differentiate one wire from another. This number will be used to identify the wire when specified in the wire list sleeve code field.
10. **Spc Inst**-A code which indicates that a wire must be given special attention as follows:
 - A. Direct routing, no service loops, no harnessing.
 - B. See general notes or instruction pages.
 - C. See general notes or instruction pages.
 - D. See general notes or instruction pages.
 - E. See general notes or instructor pages.
 - F. See signal description.
 - G. This connection does not go directly to the "TO" connector, but intersects a line going to the "TO" connector.
 - H. See special routing page.
 - I. Junction point for multi-layer laminated board (MLB) connection.
 - J. Denotes a bus reference point.
 - K. Blank out "TO" connector and pin.
 - L. Will cause a signal name of three characters or less to be entered in the string list.
 - M. Will cause a record to be omitted from the string list. (This record will print in the connector list).
 - N. Will suppress printing the wire identity in the harness string and double entry list.
 - P. Will cause the equation to be used as the signal name for sorting purposes only in the string list.

Drawing No.
149019-860
Rev G, sheet 2

H78 STRING AND CONNECTOR LIST, DEFINITION OF FIELDS-Continued

- Q. Will cause an equation record to be omitted from logic listing
- R. Will suppress printing the "FROM/TO" pin number in the string and connector lists.
- S. Do not move record number to the Dent field for an ADD transaction in the harness string and double entry only. (Use only when adding a file.)
- T. Twist wire code.
- U. Not available.
- V. See general notes or instruction pages.
- W. Fixed wire length submitted.
- X. Sequence of string is to be left as is.
- Y. See general notes or instruction pages.
- Z. Will suppress printing of the "FROM" pin.

10. **Misc-**Unless otherwise noted, the number 1 indicates a pre-wired connector

11. **Signal-**An alphanumeric signal name, mnemonic where feasible, which identifies one specific function from another.

- SPP Denotes an available termination.
- SPF Denotes an unwired termination which has an assigned function.
- SPW Denotes a non-functional wire which is terminated at one or both ends.
- SPO Denotes a spare output of a circuit.
- DNW Indicates that a termination may not be wired.
- SPA Denotes an unassigned circuit, as one of a group on a printed circuit board.
- SPI Denotes a spare input of a circuit.
- SPG Denotes an unassigned logic gate, as one of a group on a printed circuit board.
- SPR Denotes a spare resistor.
- SPD Denotes an unassigned Input diode of an assigned logic gate.

12. **Seq No.-**A number which, in conjunction with SIGNAL, allows a signal string to be consistently printed in a given order.

13. **Equation-**A mnemonic name assigned to each gate of an element.

14. **Term-**An "OR" function composed of one or more factors

15. **Factor-**A specific input to a logical gate or active element.

16. **Ckt or Chip Type-**Denotes a specific circuit board type

17. **Group-**Denotes a specific circuit on a printed circuit board.

18. **Load or Power Plane-**Denotes the current draw in milliamps by a specific circuit or voltage.

19. **AND Test Point-**Denotes the input test point for a specific circuit on a printed circuit board.

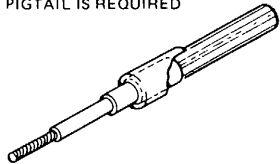
20. **OR Test Point-**Denotes the output test point for a specific circuit on a circuit board.

21. **Signal Description-**A written description or name of a signal or voltage

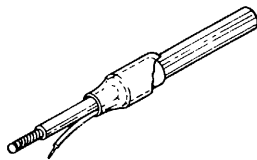
22. **ECO No.-**A letter number combination to show the Engineering Change Order level of that particular wire list record.

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Rev G, sheet 3

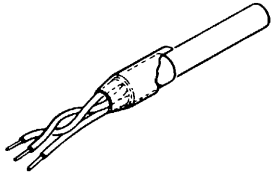
SHIELD FIGURE A
SHIELD TERMINATION FOR SHIELDED,
SINGLE AND MULTIPLE CONDUCTORS,
NO PIGTAIL IS REQUIRED



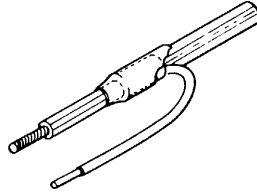
SHIELD FIGURE B
SHIELD TERMINATION FOR SHIELDED,
SINGLE AND MULTIPLE CONDUCTORS,
FRONT PIGTAIL IS REQUIRED



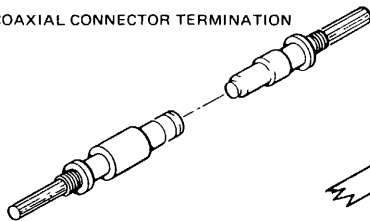
SHIELD FIGURE G
SHIELDED CABLE TERMINATION WITH DRAIN WIRE



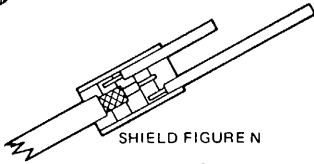
SHIELD FIGURE C
SHIELD TERMINATION FOR SHIELDED,
SINGLE AND MULTIPLE CONDUCTORS,
A REAR PIGTAIL IS REQUIRED



SHIELD FIGURE Z
COAXIAL CONNECTOR TERMINATION



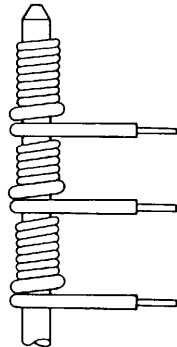
SHIELD FIGURE N
TRANSITION DEVICE WITH
SOLID WIRE PIGTAILS



SHIELD FIGURE NO 3

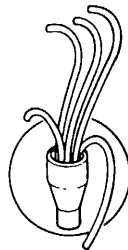
SHIELD FIGURE NO 2

SHIELD FIGURE NO 1

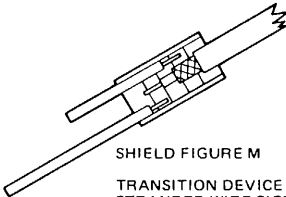


SHIELD FIGURE NUMBER
INDICATES LEVEL OF WIRE WRAP

SHIELD FIGURE X
SHIELDED WIRE
PIGTAILS—HYBRID



SHIELD FIGURE M
TRANSITION DEVICE WITH
STRANDED WIRE PIGTAILS



DRAWING NUMBER
UNIT ASSEMBLY NAME

149019-860
CARD CAGE ASSY, I/O UNIT

LOGIC

UNIT ASSEMBLY NO. 149019
T39BIUX2

REV G
DATE 09-03-82

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CONNECTOR	CIRCUIT TYPE	GROUP	TEST POINTS AND/OR	EQUATION	TERM	DESIG NATOR	FACTOR	COMMENT
				IOPWRB	00	=		
XA118	DCF	C3	30B	()	01		IOPWRDX 55 30B	
XA119	DCF	C3	30B	()	02	+	IOPWTOX 55 30B	IQU PWR DISPLAY
XA118	DCF	C3	30B	IOPWRDX	00	=		
XA118	DCF	C3	29A	(55)	01		KGNDCA 52 29A	IOPWRB BUSS
XA118	DCF	C4	29B	IOPWROX	00	=		
XA118	DCF	C4	28B	(56)	01		JUMP01 51 28B	
XA119	DCF	C3	30B	IOPWTOX	00	=		
XA119	DCF	C3	29A	(55)	01		WKLTSA 52 29A	IOPWRB BUSS
XA119	DCF	C4	29B	IOPWTOX	00	=		
XA119	DCF	C4	28B	(56)	01		SPI002 51 28B	
XA127	TLD	D4	27B	JACKAD4	00	=		
XA127	TLD	D4	25B	(51)	01		SPI011 TACKA0 47 25B 49 26B	CPU ACKNOWLEDGE
XA427	TLD	A3	04B	JBSTAD4	00	=		
XA427	TLD	A3	02A	(09)	01		TBSTSO TMRUCA4 03 02A 07 03A	BOOTSTRAP 2 TO CPU
				JDB0084	00	=		
XA127	TLD	E1	31A	()	01		T000C0 66 31A	DATA TO CPU
XA348	TLD	A1	05A	()	02	+	TS00S0 06 05A	STATE COUNTER TO CPU
XA427	TLD	C1	18A	()	03	+	TA00S0 38 18A	ADDRESS TO CPU
				JDB0184	00	=		
XA127	TLD	E2	28A	()	01		T001C0 60 28A	DATA TO CPU
XA348	TLD	C1	18A	()	02	+	TS01S0 38 18A	STATE COUNTER TO CPU
XA427	TLD	C2	15A	()	03	+	TA01S0 30 15A	ADDRESS TO CPU
				JDB0284	00	=		
XA127	TLD	E3	30B	()	01		T002C0 57 30B	DATA TO CPU
XA348	TLD	C2	15A	()	02	+	TS02S0 30 15A	STATE COUNTER TO CPU

DRAWING NUMBER
UNIT ASSEMBLY NAME

149019-860
CARD CAGE ASSY, I/O UNIT FILE IDENT

LOGIC

UNIT ASSEMBLY NO. 149019
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DATE

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CONNECTOR	CHART TYPE	GROUP	TEST POINTS AND OR	EQUATION	TERM	DESIG. FACTOR	FACTOR	COMMENT
XA427	TLD	C3	16B	()	03	+	TA02SD 33 16B	ADDRESS TO CPU
XA127	TLD	E4	33B	JDB0384 ()	00 01	=	TD03CD 63 33B	DATA TO CPU
XA348	TLD	D1	24A	()	02	+	TS03SD 52 24A	STATE COUNTER TO CPU
XA427	TLD	C4	19B	()	03	+	TA03SD 39 19B	ADDRESS TO CPU
XA127	TLD	F1	37B	JDB0484 ()	00 01	=	TD04CD 75 37B	DATA TO CPU
XA348	TLD	D2	21A	()	02	+	TS04SD 46 21A	STATE COUNTER TO CPU
XA427	TLD	D1	24A	()	03	+	TA04SD 52 24A	ADDRESS TO CPU
XA127	TLD	F2	34A	JDB0584 ()	00 01	=	TD05CD 72 34A	DATA TO CPU
XA348	TLD	E1	31A	()	02	+	TS05SD 66 31A	STATE COUNTER TO CPU
XA427	TLD	D2	21A	()	03	+	TA05SD 46 21A	ADDRESS TO CPU
XA127	TLD	F3	35A	JDB0684 ()	00 01	=	TD06CD 69 35A	DATA TO CPU
XA348	TLD	E2	28A	()	02	+	TS06SD 60 28A	STATE COUNTER TO CPU
XA427	TLD	D3	24B	()	03	+	TA06SD 45 24B	ADDRESS TO CPU
XA127	TLD	F4	39A	JDB0784 ()	00 01	=	TD07CD 80 39A	DATA TO CPU
XA348	TLD	F1	37B	()	02	+	TS07SD 75 37B	STATE COUNTER TO CPU
XA413	TLD	C3	16B	()	03	+	TI10SD 33 16B	TI10 TO DATA BUSS FOR CTS 01
XA126	TLD	A1	05A	JDB0884 ()	00 01	=	TD08CD 06 05A	DATA TO CPU
XA348	TLD	F2	34A	()	02	+	TS08SD 72 34A	STATE COUNTER TO CPU
XA413	TLD	C4	19B	()	03	+	TI20SD 39 19B	TI20 TO DATA BUSS FOR CTS 01