TECHNICAL MANUAL

DIRECT SUPPORT AND GENERAL SUPPORT

MAINTENANCE MANUAL

CONVERTER, TELEPHONE SIGNAL

CV-3478/TTC

This copy is a reprint which includes current pages from Change 1.

DEPARTMENTS OF THE ARMY, THE NAVY, AND THE AIR FORCE

18 APRIL 1983



5 SAFETY STEPS TO FOLLOW IF SOMEONE IS THE VICTIM OF ELECTRICAL SHOCK

1. **DO NOT TRY TO PULL OR GRAB THE INDIVIDUAL**
2. **IF POSSIBLE TURN OFF THE ELECTRICAL POWER**
3. **IF YOU CANNOT TURN OFF THE ELECTRICAL POWER, PULL, PUSH, OR LIFT THE PERSON TO SAFETY USING A DRY WOODEN POLE OR A DRY ROPE OR SOME OTHER INSULATING MATERIAL**
4. **SEND FOR HELP AS SOON AS POSSIBLE**
5. **AFTER THE INJURED PERSON IS FREE OF CONTACT WITH THE SOURCE OF ELECTRICAL SHOCK, MOVE THE PERSON A SHORT DISTANCE AWAY AND IMMEDIATELY START ARTIFICIAL RESUSCITATION**

TM 11-5805-715-34
EE119-DB-MMI-010/E154 CV3478
TO 31W2-2TTC39-12
C1

CHANGE

NO. 1

DEPARTMENTS OF THE ARMY,
THE NAVY, AND THE AIR FORCE
Washington, DC, 20 August 1984

DIRECT SUPPORT AND GENERAL SUPPORT
MAINTENANCE MANUAL
CONVERTER, TELEPHONE SIGNAL
CV-3478/TTC
(NSN 5805-01-127-6943)

TM 11-5805-715-34, 18 April 1983, is changed as follows:

1. Title of manual is changed as shown above. New or changed material is indicated by a vertical bar in the margin. Added or revised illustrations are indicated by a vertical bar in front of the figure caption.

2. Remove old pages and insert new pages as indicated below:

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3. File this change sheet in front of the publication.

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INSERT LATEST CHANGED PAGES. DESTROY SUPERSEDED PAGES.

NOTE: The portion of the text affected by the changes Is indicated by a vertical line In the outer margins of the page Changes to illustrations are indicated by miniature pointing hands. Changes to wiring diagrams are indicated by shaded areas.

Dates of issue for original and changed pages are:

Original .....0..... 18 April 83
Change .....1..... 20 August 84

TOTAL NUMBER OF PAGES IN THIS PUBLICATION IS 97 CONSISTING OF THE FOLLOWING:

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EE119-DB-MMI-010/E154 CV3478
TO 31W2-2TTC39-12

Technical Manual
No. 11-5805-715-34
Technical Manual
EE119-DB-MMI-010/E154 CV3478
Technical Order

TO 31W2-2TTC39-12

DEPARTMENTS OF THE ARMY

THE NAVY, AND

THE AIR FORCE

Washington, DC *18 April 1983*

DIRECT SUPPORT AND GENERAL SUPPORT

MAINTENANCE MANUAL

CONVERTER, TELEPHONE SIGNAL

CV-3478/TTC

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 the Commander, US Army Communications-Electronics Command and Fort Monmouth, ATTN; DRSEL-ME-MP, Fort Monmouth, NJ 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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CHAPTER 1

INTRODUCTION

Section I. General

1-1. Scope

This manual describes the intermediate maintenance of the Converter, Telephone Signal CV-3478/ TTC (fig. 1-1), hereafter referred to as the NATO Interface Unit (NIU). The manual contains information on the functioning of equipment and direct and general support maintenance instructions. A complete listing of reference publications is provided in appendix A. The Maintenance Allocation Chart is contained in appendix B of TM 11-5805-715-12. The Repair Parts and Special Tools List (RPSTL) is contained in TM 11-5805-715-34P.

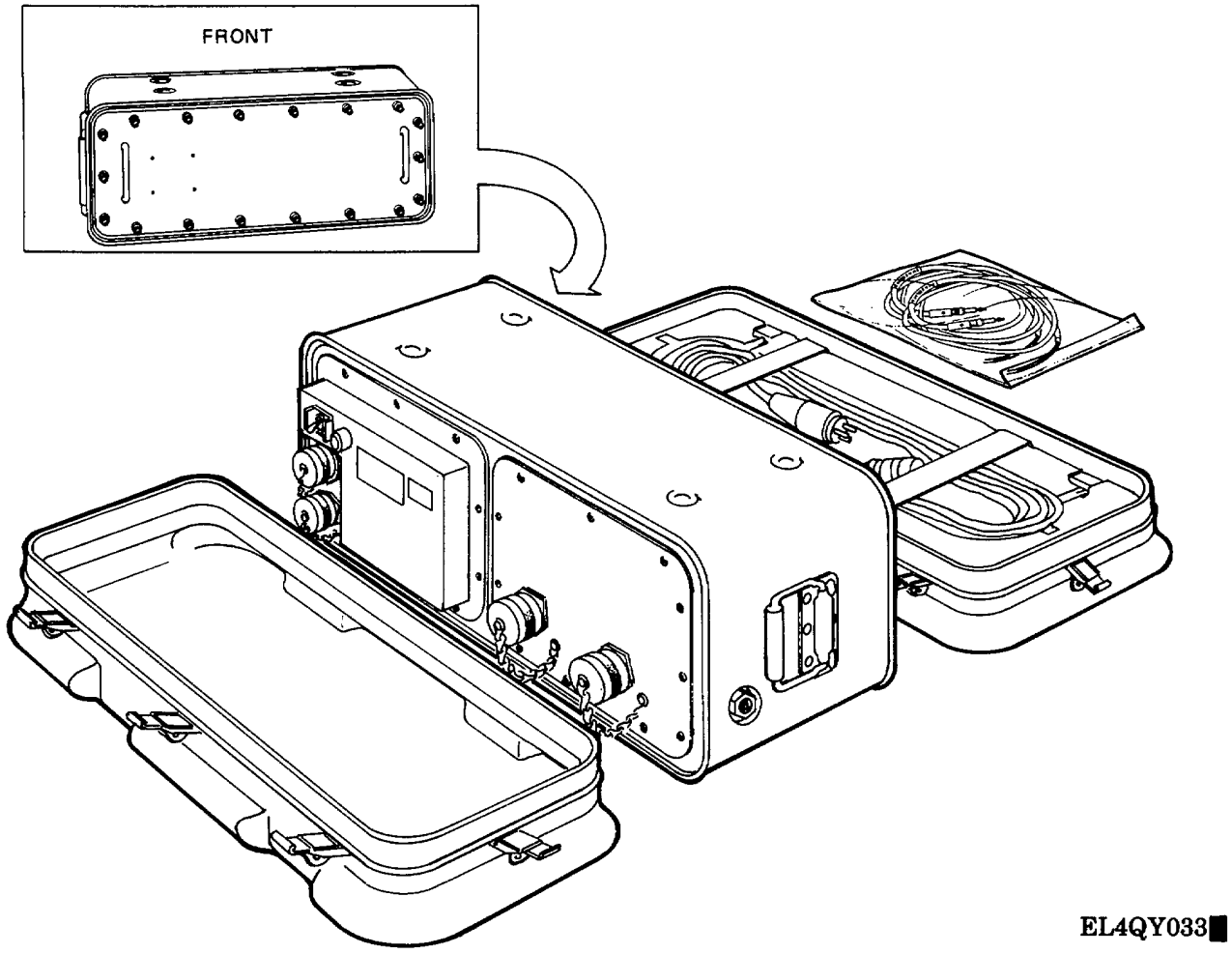


Figure 1-1. Converter, Telephone Signal CV-3478/TTC.

1-2. Consolidated Index of Army Publications and Blank Forms

Refer to the latest issue of DA Pam 310-1 to determine whether there are new editions, changes, or additional publications pertaining to the equipment.

1-3. Maintenance Forms, Records and Reports

a. Reports of Maintenance and Unsatisfactory Equipment. Department of the Army forms and procedures used for equipment maintenance will be those prescribed by DA Pam 738-750 as contained in Maintenance Management Update. Air Force personnel will use AFR 66-1 for maintenance reporting and TO-00-35D54 for unsatisfactory equipment reporting. Navy personnel will report maintenance performed utilizing the Maintenance Data Collection Subsystem (MDCS) IAW OPNAVINST 4790.2, Vol. 3, and unsatisfactory material/conditions (UR submissions) IAW OPNAVINST 4790.2, Vol. 2, chapter 17.

b. *Report of Packaging and Handling Deficiencies*. Fill out and forward SF 364 (Report of Discrepancy (ROD)) as prescribed in AR 735-11-2/DLAR 4140. 55/NAVMATINST 4355.73A/AFR 400-54/MCO 4430.3F.

c. Discrepancy in Shipment Report (DISREP) (SF 361). Fill out and forward Discrepancy in Shipment Report (DISREP) (SF 361) as prescribed in AR 55-38/NAVSUPINST 4610.33C/AFR 75-18/MCO P4610.19D/DLAR 4500.15.

1-4. Reporting Equipment Improvement Recommendations (EIR)

a. *Army*. If your Telephone Signal Converter CV-3478/TTC needs improvement, let us know. Send us an EIR. You, the user, are the only one who can tell us what you don't like about your equipment. Let us know why you don't like the design. Put it on an SF 368 (Quality Deficiency Report). Mail it to Commander, US Army Communications-Electronics Command and Fort Monmouth, ATTN: DRSEL-ME-MP, Fort Monmouth, NJ 07703-5007. We'll send you a reply.

b. *Air Force*. Air Force personnel are encouraged to submit EIR's in accordance with AFR 900-4.

c. *Navy.* Navy personnel are encouraged to submit EIR's through their local Beneficial Suggestion Program.

1-5. Administrative Storage

Administrative Storage of equipment issued to and used by Army activities will have preventive maintenance performed in accordance with the PMCS procedures listed in TM 11-5805-715-12. When removing the equipment from administrative storage, the PMCS should be performed to assure operational readiness. Disassembly and repacking of equipment for shipment of limited storage are also covered in TM 11-5805-715-12.

1-6. Destruction of Army Electronics Materiel

Destruction of Army electronics materiel to prevent enemy use shall be in accordance with TM 750-244-2.

Section II. DESCRIPTION AND DATA

1-7. Purpose and Use

The NATO Interface Unit (NIU) is a means to connect national telecommunications systems which use different signaling techniques. For a cross- national connection, two NIU's are required, each of which accepts one national standard and converts it to the NATO standard (fig. 1-2). The NIU described in this manual converts the 2600-Hz SF signaling (dial pulse) and supervision used by the AN/TTC-39 circuit switch to the NATO standard dc signaling. Conversion between the 4-wire system on the circuit switch side of the NIU and the 6-wire system used on the NATO standard side is also accomplished.

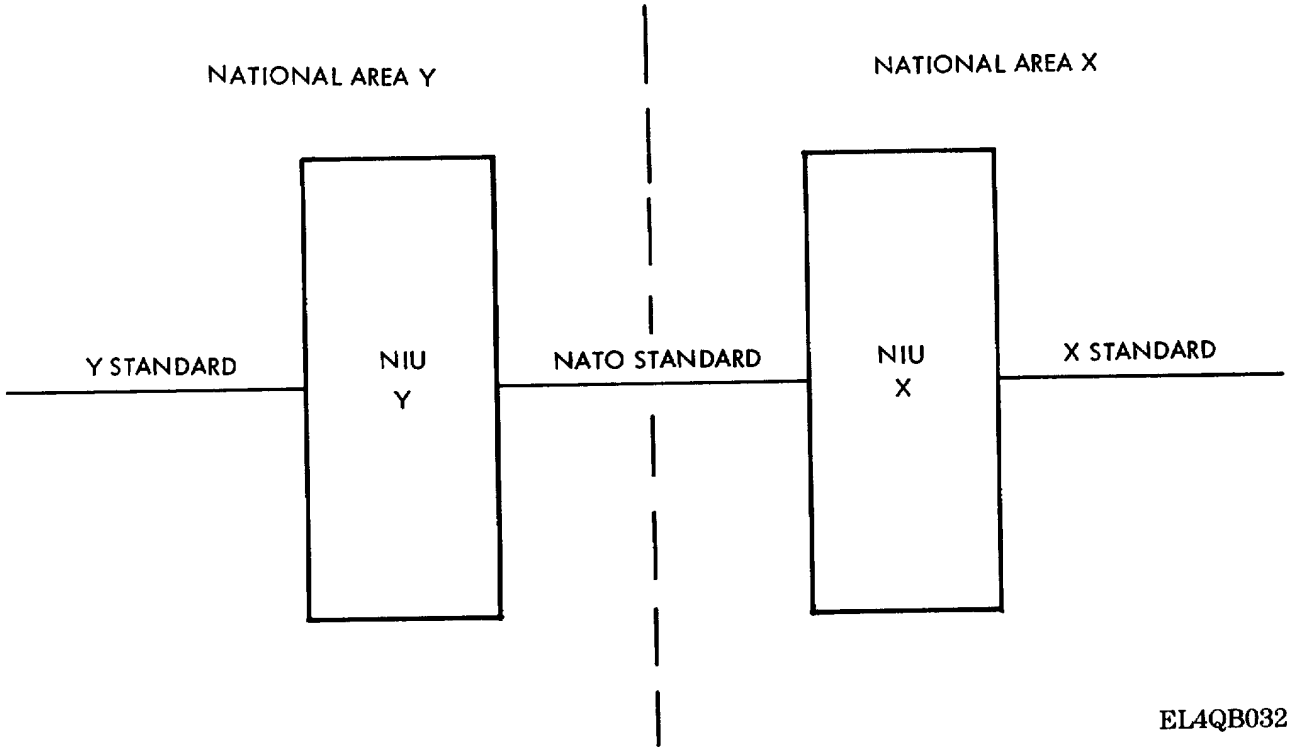


Figure 1-2. Cross-National Connection.

1-8. Description

The NIU consists of a printed circuit card nest containing 17 plug-in circuit cards, a connector plate assembly which carries the backplane wiring, internal signal and power cabling, and a sealed, multi voltage dc power supply (fig. FO-6). All assemblies are enclosed in an equipment case as shown in figure 1-3. The front panel of the unit is secured by captive thumbscrews located around its periphery (fig. 1-4). An EMI gasket attached to this panel forms an effective seal when the panel is in place. Removing the front panel provides access to the replaceable plug-in printed circuit cards. The cards are held in position by retaining bars which are molded into the inside of the panel. Front and rear contour-molded, high impact transit covers provide a watertight seal, and are sufficiently rugged to eliminate special handling or tiedown re quirements. Each transit cover is equipped with quick release, turn-locking, cam-action latches. As shown in figure 1-3, the front transit cover doubles as a sun shield by utilizing the four legs stored inside the cover. The front transit cover also provides storage for the ac power cord.

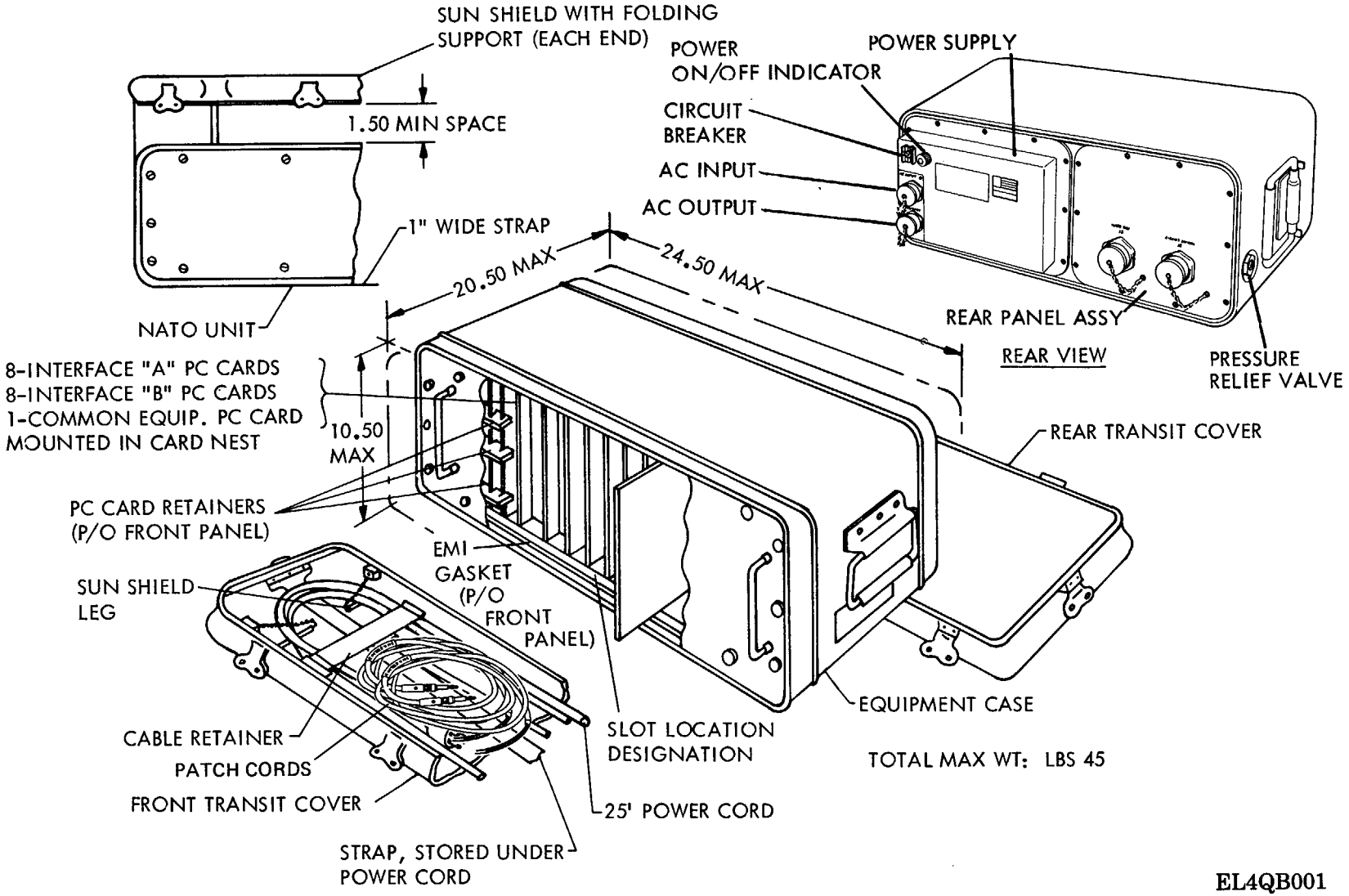


Figure 1-3. Converter, Telephone Signal CV-3478/TTC. Item Identification

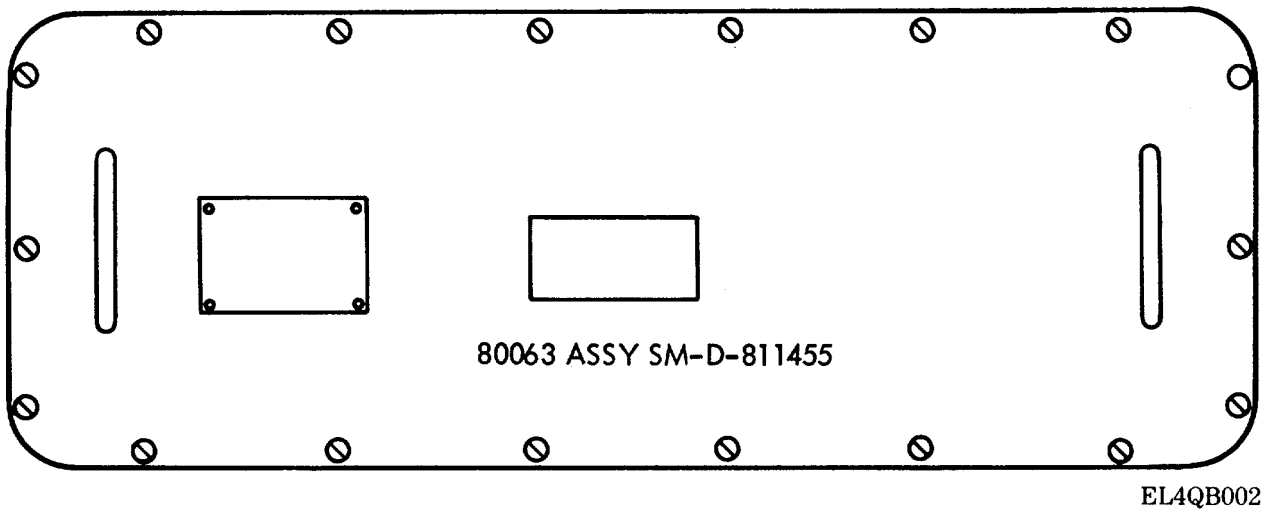


Figure 1-4. Front Panel.

Power and signal connections are made at the rear of the case. As illustrated in figure 1-5, signaling and voice traffic connections are made through RFI shielded connectors J2 (circuit switch) and J1 (NATO box). Operating power is supplied by a replaceable self-contained, sealed power supply which is mounted on the back of the unit (fig. 1-5). Input power is supplied through the ac input connector on the power supply. The ac output connector is used to connect a winterizing kit for operating the NIU under conditions of extreme cold.

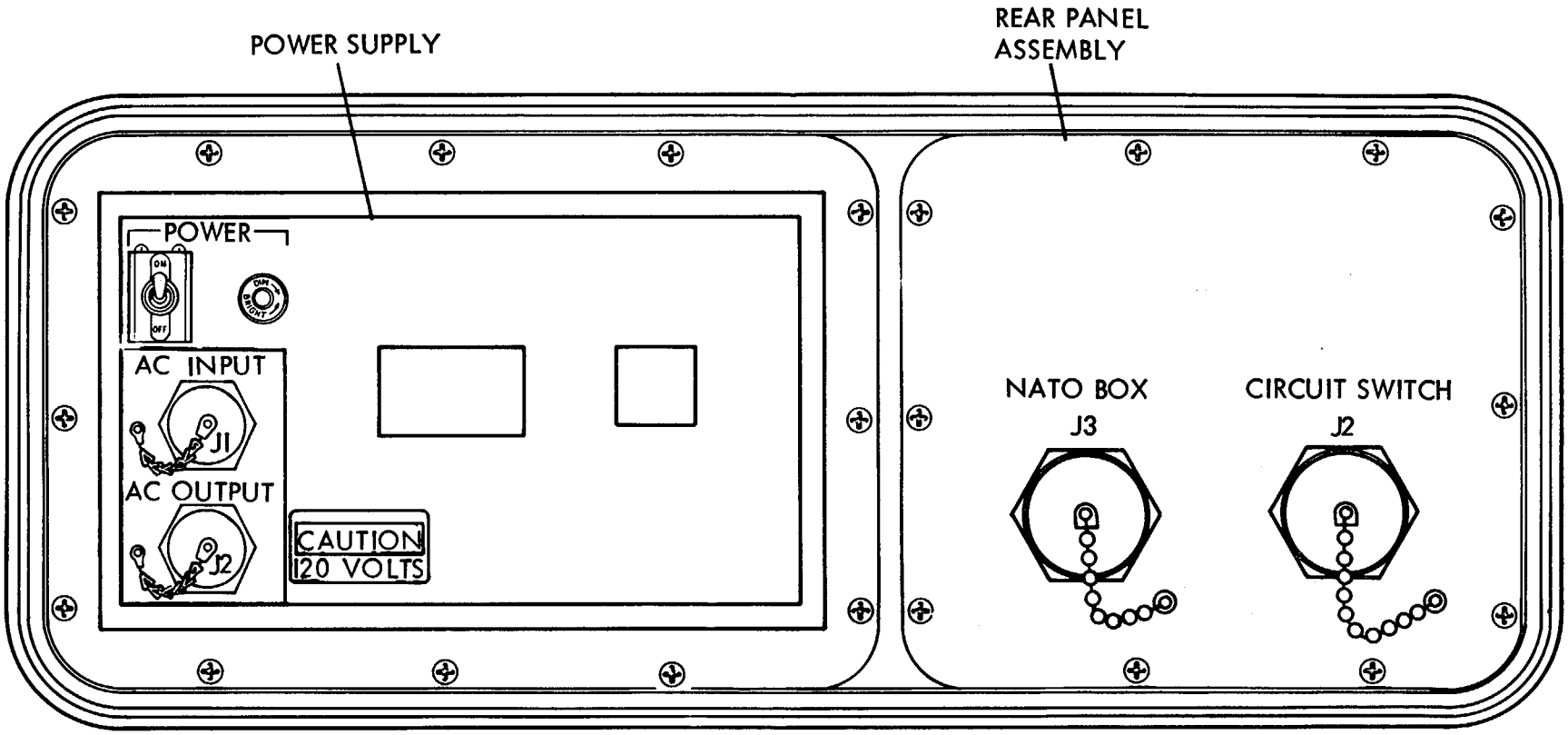


Figure 1-5. Rear Panel

All circuit components are mounted on printed circuit cards which are conformal coated for protection against moisture, dust, and other contaminants. Two circuit cards per channel, one for transmit and one for receive, provide the NIU with an 8-channel capability. One additional circuit card, common to all channels, supplies the 2600-Hz signaling frequency, 1050-Hz test frequency, and the 32-kHz and 500-Hz clocks. The NIU is designed to operate unattended and has no external operator controls other than a circuit breaker located on the power supply. Those controls required for the initial adjustment of signal level and for testing are located directly on the individual printed circuit cards.

1-9. Technical Characteristics

a. *Power*

Input voltage: 115 volts ac
50, 60, or 400 Hz
single phase
1. 0 amp (max.)

b. *Transmission Characteristics*.

Insertion loss: With the transmit and receive gain adjustment equal to 0 dB; a dB ± 0.5 dB measured with a 900-Hz test tone at -4 dBm.

Harmonic distortion: 35 dB minimum of any single test frequency between 300 to 3400 Hz (test frequency power at - 4 dBm).

Limiting: 900-Hz test tone at + 4 dBm from the NIU not limited.

Amplitude vs. Frequency response: All frequencies between 300 Hz and 3400 Hz will be within ± 1.0 dB with respect to attenuation of 900 Hz (3-dB points below 275 Hz and above 3500 Hz).

Envelope delay distortion: 25 microsec and between 600 Hz and 3200 Hz (band elimination filter removed from circuit).

Noise: Idle channel noise -52.7 dBmp max or 5.2 nwp (37.3 dBrnC).

Crosstalk: 55 dB minimum between transmit and receive at any frequency between 300 Hz and 3400 Hz; 70 dB minimum between different channels in the NIU; 65 dB minimum between signaling and traffic channels.

Terminal impedance: 600 ohms resistive; Return loss 18 dB minimum between 300 Hz and 3400 Hz (reference to 600-ohm load).

Longitudinal balance: 40 dB minimum from 300 Hz to 3400 Hz.

Rise and fall time (DC signaling): 5 msec maximum measured at receiver end.

c. *Environmental Characteristics*.

Temperature (operating): -50 degrees F to + 125 degrees F.

Temperature (nonoperating): -70 degrees to 160 degrees F.

Humidity: 0 to 100 percent.

Altitude (operating): Sea level to 10,000 feet.

Altitude (nonoperating): Sea level to 40,000 feet.

d. *Electrical Characteristics*.

HI-level receiver: Input level: -16 dbm to -4 dbm
-10 dbm ±1.5 db (transmit tolerance)
-10 dbm ± 4.5 db (facility tolerance) at the 2600 Hz signaling frequency.

LO-level receiver: Input level: -31 dbm to - 13 dbm at the 2600 Hz signaling frequency.

1-10. Items Comprising an Operable Equipment.

The items comprising an operable equipment are listed in table 1-1.

Table 1-1. Major Item Configuration

Part. No.	Item	Quantity	Dimensions (in.)			Weight (lb.)
			Height	Depth	Width	
	Converter, Telephone Signal CV-3478/ TTC consisting of:					
SM-D-810470	Converter	1	10.50	20.50	24.50	45
SM-D-812377	Power Cable - 25 ft.	1				
SM-D-811235	Signal Cable Assembly U-186(B)/G - 25 ft.	1				
SM-D-811746	Signal Cable Assembly U-185(B)/G - 25 ft.	1				
SM-D-811745	Electrical Cable Assembly CX-13099 ( )/GT (NATO Crossover) - 25 ft.	1				
SM-A-838684-71	Electrical Cord Assembly	2				

CHAPTER 2

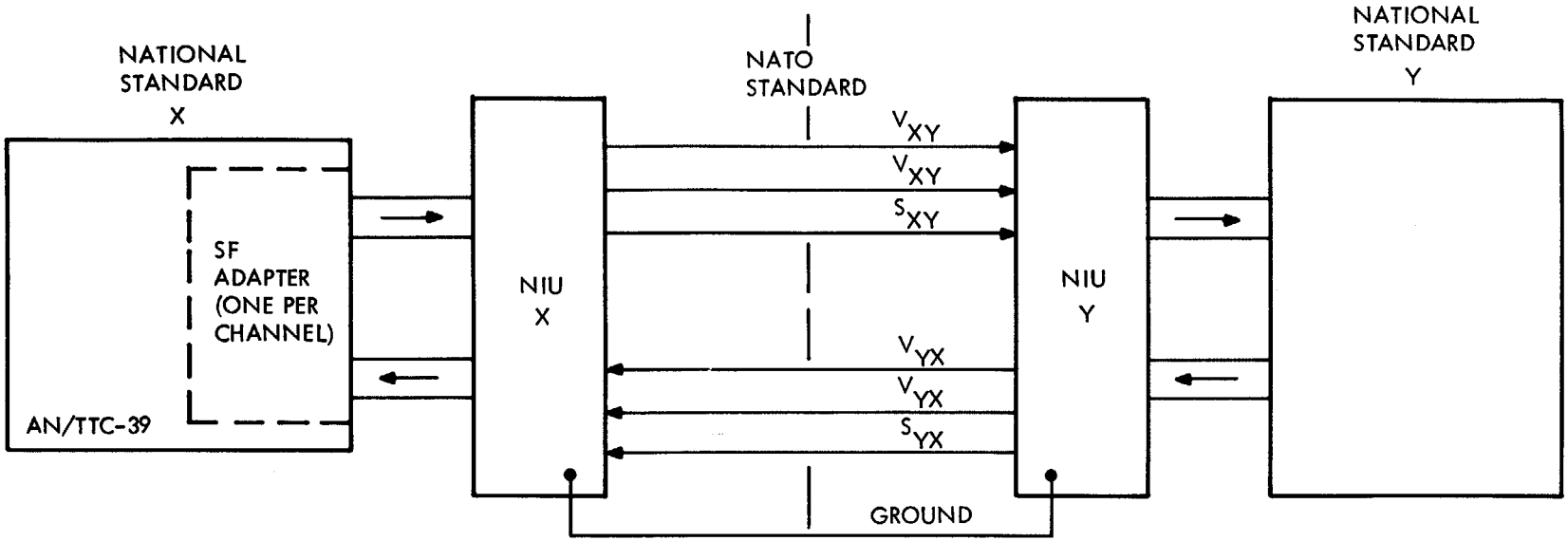
FUNCTIONING OF EQUIPMENT

2-1. Scope

This chapter presents the functional description of the NIU. A simplified functional block diagram of the NIU is shown in figure FO-2. The diagram illustrates the transmit path and receive path and is described in the following paragraphs.

2-2. Functional Description

The basic function of the NIU is to convert the AN/TTC-38 2600-Hz single frequency (SF) signaling (dial tone) and supervision to the NATO standard dc. The NIU interfaces with the Circuit Switch AN/ TTC-39 on one side and with a foreign NIU on the other as shown in figure 2-1. The unit connects with four wires to the SF adapter within the AN/ TTC-39 as shown. It presents six wires to the foreign NIU: four wires for voice transmission, V_{YX} and V_{XY}; and two wires for signaling, S_{YX} and S_{XY}.



	SIGNALS TRANSMITTED FROM:
VOICE	X TO Y ON WIRES V_{XY} Y TO X ON WIRES V_{YX}
SIGNALING	X TO Y ON WIRES S_{XY} AND RETURN BY COMMON WIRE Y TO X ON WIRES S_{YX} AND RETURN BY COMMON WIRE

EL4QB012

Figure 2-1. NIU Interface.

The NIU contains eight identical channels. Each channel is interfaced with a single frequency (SF) adapter channel in the AN/TTC-39 and operates in the transmit and receive modes. Two printed circuit cards are used per channel; one for receive (NIU-A) and one for transmit (NIU-B2). A common equipment circuit card (NIU-CE) (common to all channels) provides the 2600 Hz signal frequency, the 1050 Hz test frequency and the 512 kHz timing oscillator reference (refer to fig. FO-5).

2-3. Transmit Path
(fig. FO-2)

The transmit input from the foreign NIU is applied on circuit card NIU-B2 (fig. FO-3). The transmit control logic receives commands from the foreign NIU over signal line S_{YX}. The state of this line is sensed by inverter amplifier U16 at the transmit path input. This line will be in one of two conditions as follows:

S_{YX}	*Command*
$\leq$ 4 mA	ON-HOOK
$\leq$ 4 mA	OFF-HOOK

The voltage is referenced to the common wire between the two NIU's. Upon receipt of ON-HOOK, the transmit control logic will enable the transmission of 2600 Hz tone to the circuit switch via operational amplifiers U13 and U14. The 2600 Hz tone is transmitted at a level of -10 dBm ± 1.5 db for 500 msec., or until OFF-HOOK is received, whichever comes first. If OFF-HOOK has not been received when the time-out occurs, the 2600 Hz tone will continue to be sent at -22 dbm ± 1.5 db (low level) until OFF-HOOK is received. The 2600 Hz tone is routed to the transmit control logic by toggle switch S1. This switch is mounted on the transmit circuit card and, when closed, connects the tone from the common equipment circuit card (NIU-CE) to transmit controller U12. With S1 in the open position, the transmit channel is held in the SEIZE state for test purposes.

Voice traffic in the transmit direction is routed to sum amplifier U13 in lone V_{YX}. This amplifier also accepts 2600 Hz signaling from the transmit control logic. The output of U13 is applied to transmit adjust amplifier U14 via R21 which provides variable gain to compensate for line losses between the NIU and the circuit switch. Test points J2 and J3 at the output of transmit adjust amplifier U14 allow the signal level to be monitored. A 1050 Hz test tone, generated on the common equipment card and applied to sum amplifier U13 via toggle switch S2, facilitates the line loss compensation adjustment. When power is first applied to the NIU, the power on clear circuitry consisting of Q1, U4 and U6 applies a signal to the transmit control logic (U12) which ensures that the transmit path is in the ON-HOOK low-level state.

2-4. Receive Path
(fig. FO-2)

The receive path consists of a dual level (high and low level) 2600 Hz SF receiver with logic and timing, receive gain adjust circuitry, and a 2600 Hz band elimination filter with control to restrict the signaling tone to a single trunk. The signal input from the circuit switch is applied on circuit card NIU-A (fig. FO-4).

2-5. SF Receiver

The purpose of the SF receiver is to detect and report the presence of high- or low-level 2600 Hz tone (SEIZE or RELEASE) from the circuit switch. Initial onset of signal tone (2600 Hz) is recognized only as a long duration of high-level tone. Initial onset of low-level or of high-level tone of duration less than that specified is ignored by the receiver logic. Voice simulation of the 2600 Hz signaling tone is prevented by employing the limiter capture effect in the dual level (high- and low-level) SF receiver channel. The limiter capture technique of signal detection provides a precisely fixed value amplitude square wave at the output of amplifier U11. If the square wave which is impressed upon the 2600 Hz bandpass filter FLIB has a large enough 2600 Hz component, a 2600 Hz sine wave of sufficient amplitude to pass the threshold level of comparator U9B will be generated and will trigger detector U4. Line loss compensation between the NIU and the circuit switch is provided by R3 in conjunction with operational amplifier U1. When the receiver is operating in the low-level sensitivity mode, high-pass filter U2 is switched in ahead of gain adjust amplifier U3 to remove audible information tones such as ring back and busy which are superimposed on the low-level signaling tone. If not prevented from reaching the limiter input, these tones would capture the receiver, preventing recognition of the SF signaling tone and resulting in a false OFF-HOOK indication. Toggle switch S1 is mounted on the NIU-A receive circuit card and allows the 1050 Hz test tone to be inserted into the SF receiver. Test points J2 and J3 at the output of amplifier U7 allow the signal level out of the receive card to be monitored. Toggle switch S2 allows the receiver logic to be manually cleared (low-level tone being received) in the event a long duration fade occurs. Because the receiver logic only responds to a high level tone once it has recognized a valid OFF-HOOK condition, the termination of the fade would not normally be reported. Power on clear circuitry consisting of Q2 and U13 provides the same function when power is first applied to the NIU.

2-6. Receive Logic and Timing
(fig. FO-2)

The receive logic and timing provides an initial guarding interval of time before considering the absence of low-level 2600-Hz tone valid. This provides protection against radio fades. In addition to reporting the absence of low-level SF tone, the receive logic also switches the channel sensitivity from low-level to high-level by switching analog gate U6B on and U6C off. Thirty milliseconds after the initial 140 millisecond integration period during which low-level SF tone is not present, the receive logic starts to track the incoming SF signal. Once tracking has commenced, the absence of high level SF tone is regarded as the OFF-HOOK or SEIZE state and the presence of high-level SF tone is regarded as the ON-HOOK or RELEASE state. The receive logic stops tracking and switches the receiver sensitivity back to low-level (U6C on and U6B off) after receiving high-level SF tone for a minimum of 260 msec. The ON-HOOK state will be maintained until the low-level SF tone is absent (OFF-HOOK) again for at least 140 msec. The ON-HOOK and OFF-HOOK state condition is passed to the foreign NIU over X_{XY} as follows:

State	*Resistance Into S_{XY}*
ON-HOOK	> 100 kohms
OFF-HOOK	< 100 ohms

No state change will pass unless the duration exceeds 22 msec as determined by the integrator circuit consisting of U1, U7, and U8 located on the transmit card. False state changes are, thus, prevented from being sent across the interface.

2-7. Band Elimination Filter (BEF)
(fig. FO-2)

The band elimination filter FL1A restricts the SF signaling tone (2600 Hz) to a single trunk and is switched in and out of the receive path by analog gates U6D and U6E under control of the receive logic (signal processor U6A). The BEF also prevents the subscriber from hearing the SF signaling tone mixed with audible information signals or recorded announcements. The BEF is inserted into the transmission path within 35 msec of receipt of the SF tone from amplifier U1 and removed within 25 msec of absence of the SF tone. The BEF is inserted when either the high tone is present or the low tone is present and not being tracked by the logic. The BEF is removed at all other times.

2-8. Timing Circuits
(fig. FO-5)

The clock signals required to operate the receive and transmit logic in the NIU are generated on common equipment card NIU-CE. The 32 kHz and 500 Hz clock frequencies are derived from the 512 kHz reference oscillator Z3 and 4-bit counters U1, U2 and U3. The 32 kHz and 500 Hz clocks are applied to 4-bit counter U10 and decoder U5 on circuit card NIU-B2. The clock signals are then applied to signal processor U6A on card NIU-A and transmit controller U12 on circuit card NIU-B2. A power on clear circuit, Q1 and U4A, permits resetting the clock logic to the idle state during system startup.

2-9. Signal and Test Generators
(fig. FO-5)

The 2600 Hz signaling frequency and 1050 Hz test frequency are generated on common equipment card NIU-CE by crystal oscillators Z1 and Z2 respectively and applied to receive card NIU-A and transmit card NIU-B2 as described in paragraphs 2-3 and 2-4.

2-10. Call Processing

The following paragraphs define the operational requirements for processing calls through the NIU.

a. *Low-Level 2600 Hz Input (ON-HOOK).* A low- level 2600 Hz signal is input at amplifier U1 on receive circuit card NIU-A. The gain of amplifier U1 adjusts the overall sensitivity of the receive path. The amplifier output is routed through high-pass filter U2 to gain adjust amplifier U3 and to limiter Q1, U9A. The limiter outputs a square wave replica of the analog signal to amplifier U11, which converts the uncontrolled amplitude of the limiter out- put to the very precisely controlled amplitude required for input into bandpass filter FLIB. The out- put of the filter is detected by comparator U9B which triggers one-shot U4. When triggered, the output of U4 goes to the true state (high), reporting the presence of valid 2600 Hz tone to signal processor U6A. Under control of the signal processor, band elimination filter FLIA (centered at 2600 Hz) is switched into the voice path through analog gate U6E, and the SEIZE line at J1-32 (NIU-A) goes high. This level is applied to the integrator circuit (U1, U7, U8) on transmit circuit card NIU-B2 which, after the required timeout, causes signal line SXY (J1-42) to go low (Q2 off).

b. No Low-Level 2600 Hz Input (OFF-HOOK). The absence of low-level (2600 Hz) switches analog gates U6B on and U6C off on command from signal processor U6A. The NATO switch is anticipating receipt of either dial digit or release (high-level 2600 Hz) for a period of time. Detector output U4 goes low. Output J 1-32 of NIU-A goes low and J 1-42 of NIU-B2 goes high (Q2 on). Signal processor U6A switches U6D on and U6E off.

c. Dial Pulsing from Circuit Switch. When the input signal is high level and less than release time, U6B remains on and U6C remains off (high-level detection). Detector output U4 goes high and J 1-32 is high. Analog gate U6D is switched off and U6E is switched on. When the input has no signal (no 2600 Hz), detector output U4 and J1-32 go low. Analog gate U6E is switched off and U6D is switched on

d. Dial Pulsing from NA TO (Transmit Path). The NIU receives a signal on J1-76 (card NIU-B2) for dial pulse reception from foreign NATO. The signal is inverted by U16 and the output (OFF-HOOK or ON-HOOK) applied to one-shot U15. When the S_{YX} signal line goes high (O volts), transmit controller U12 inhibits high-level 2600 Hz. When the S_{YX} signal goes low (-26 volts), transmit controller U12 enables high-level 2600 Hz. An ON-HOOK or OFF-HOOK signal is then amplified by U14 and applied to the circuit switch.

e. Release (ON-HOOK). The input received is high-level (2600 Hz) for greater than 260 msec, followed by low-level 2600 Hz. Detector U4 (receive card NIU-A) output goes high and signal processor U6A times the presence of high-level 2600 Hz tone. Analog gate U6B is switched off and U6C is switched on. Analog gate U6D is switched off and U6E is switched on. When timeout for release is satisfied, J1-32 of card NIU-A goes high and J1-42 of card NIU-B goes low, indicating ON-HOOK.

2-11. Supervision

There are no direct control lines to the NIU. Supervision is provided indirectly by program (software) control of the SF adapters, located in the circuit switch, which, through the presence or absence of 2600 Hz signaling tone, exerts control over the NIU. The following paragraphs define the processing required to effect proper operation of the NIU.

a. Incoming Seizure from Foreign NIU.
   (1) The foreign NIU sends SEIZE on S_{YX} to the local NIU.
   (2) The local NIU sends SEIZE (absence of low-level 2600 Hz) on the transmit pair to the associated SF adapter in the circuit switch.
   (3) SEIZE is detected by the dc scanner serving the SF adapter and the CPU is notified.
   (4) The CPU waits approximately 1200 msec and then returns OFF-HOOK command (SEIZE ACKNOWLEDGE) to the SF adapter.
   (5) The SF adapter sends SEIZE ACKNOWLEDGE (absence of low-level 2600 Hz) to the NIU receive pair.
   (6) The local NIU returns SEIZE ACKNOWLEDGE on S_{XY} to the foreign NIU.

b. Incoming Release from Foreign NIU.

(1) The foreign NIU sends RELEASE on S_{YX} to the local NIU.

(2) The local NIU sends RELEASE (500-msec burst of high-level tone, then continuous low-level 2600 Hz) on the transmit pair to the associated SF adapter in the circuit switch.

(3) The dc scanner in the circuit switch detects RELEASE and notifies the CPU.

(4) The CPU waits approximately 530 msec and then returns ON-HOOK (RELEASE ACKNOWLEDGE) to the SF adapter unless SEIZE is received from the dc scanner during the timeout.

(5) The SF adapter sends RELEASE AC KNOWLEDGE (500 msec burst of high-level tone, then continuous low-level 2600 Hz) to the NIU receive pair.

(6) The local NIU returns RELEASE AC-KNOWLEDGE on S_{XY} to the foreign NIU.

c. Outgoing Seizure .from Circuit Switch.

(1) The circuit switch CPU sends OFF-HOOK command to the SF adapter serving the selected NIU trunk.

(2) The circuit switch SF adapter sends SEIZE (absence of low-level 2600 Hz) to the NIU receive pair.

(3) The local NIU sends SEIZE on S_{XY} to the foreign NIU.

(4) The foreign NIU returns SEIZE AC-KNOWLEDGE on S_{YX} to the local NIU.

(5) The local NIU sends SEIZE ACKNOWLEDGE (absence of low-level 2600 Hz) to the associated SF adapter in the circuit switch.

(6) The circuit switch dc scanner serving the SF adapter detects SEIZE ACKNOWLEDGE (reported by the SF adapter as a SEIZE) and notifies the CPU.

d. Outgoing Release from Circuit Switch.

(1) The circuit switch CPU sends ON-HOOK command to the SF adapter serving the selected NIU trunk.

(2) The SF adapter sends RELEASE (500 msec burst of high-level tone, then continuous low-level 2600 Hz) to the NIU receive pair.

(3) The local NIU sends RELEASE on S_{XY} to the foreign NIU.

(4) The foreign NIU returns RELEASE AC-KNOWLEDGE on S_{YX} to the local NIU.

(5) The local NIU sends RELEASE ACKNOWLEDGE (500 msec burst of high-level tone, then continuous low-level 2600 Hz) to the associated circuit switch SF adapter.

(6) The circuit switch dc scanner detects RE-LEASE ACKNOWLEDGE (reported by the SF adapter as a RELEASE) and notifies the CPU.

2-12. Power Supply Input Protection

The power input protection is provided by a circuit breaker which trips whenever the input current exceeds 150 percent of nominal value. Output protection, except for -28 vdc circuitry, is provided by crowbar circuitry which actuates whenever an out- put exceeds 125 percent of nominal load internal rated value. The crowbar resets upon removal of in- put power.

CHAPTER 3

DIRECT SUPPORT MAINTENANCE INSTRUCTIONS

Section I. GENERAL

3-1. Introduction

Maintenance of the NIU is performed at four levels: organizational, direct support, general support and depot. This chapter provides instructions for direct support maintenance only. Direct support maintenance is performed by those maintenance activities designated to support the using organization and emphasizes corrective maintenance at the equipment site. Direct support maintenance personnel perform corrective maintenance on items which are identified as faulty by organizational maintenance personnel, but are beyond their capability to correct using the maintenance resources authorized at the organizational maintenance level. Direct sup- port maintenance personnel also provide technical assistance to the using organization in all areas which require skills and training that are beyond the capabilities of the organizational maintenance personnel. Direct support maintenance is limited to the activities described below:

a. Visually inspect components for evidence of potential failure conditions such as lack of cleanliness, improper seating of connectors, loose hard- ware or other items, discoloration due to excessive heat, frayed cables or wiring, or bent wire wrap pins. Correction of observed conditions is to be accomplished as necessary at the time of observance by the maintenance level authorized to perform the task.

b. Replace an unserviceable subassembly, module, assembly or unit with a like subassembly, module, assembly or unit.

c. Perform the repairs required to correct a specific failure or unserviceable condition and restore an item to a serviceable condition. This function includes soldering, wire wrap, or cable replacement.

Section II. TOOLS AND EQUIPMENT

3-2. Tools and Test Equipment

Tools and test equipment required to perform the maintenance procedures given in this chapter are listed in the maintenance allocation chart in appendix B of TM 11-5805-715-12. The test equipment listed in the table are authorized for use by inter- mediate level personnel. Any tools or test equipment authorized for use at the organizational level are also authorized for use by intermediate level.

3-3. Repair Parts

Repair parts and accessories authorized for use by intermediate level maintenance for the NIU are listed in the repair parts and special tools list (TM 11-5805-715-34P)

Section III. TROUBLESHOOTING

3-4. General

This section provides the fault isolation and detailed troubleshooting procedures required to identify and correct a malfunction. The troubleshooting procedures are divided into two categories. These are: (1) verification of a fault indicated by organizational maintenance, and (2) subsequent troubleshooting procedures which may be either organizational or direct support level. Verification of organizational maintenance action is required to determine if the malfunction is correctable using organizational level procedures and, if the problem has not been found, the fault requires direct support troubleshooting procedures to locate it. Perform the following procedures to verify the organizational maintenance actions:

a. Review organizational maintenance records to determine which circuit card assemblies have been replaced.

b. Review the reported malfunction with the cognizant organizational personnel. Ascertain the troubleshooting results and actions taken.

c. Based upon the results of a. and b. above, per- form such corrective maintenance at direct support as required.

3-5. Voltage and Resistance Measurements

Voltage, resistance, and continuity measurements are made by direct support maintenance for troubleshooting faults which cannot be resolved or repaired by organizational level maintenance. Normally such faults are traceable to wiring or chassis- mounted components. Use the wire run lists (tables 3-2 through 3-7), and foldout diagrams FO-1, FO-3, FO-4, FO-5, and FO-6 to support this troubleshooting. Channel assignment input/output breakout connections for the J-box U-185/J-1077 pairs are shown in table 3-4.

3-6. Direct Support Operational Check

Upon completion of repairs within the system, perform appropriate tests to verify the corrective actions. The tests should be localized around the faulted area (for example, a faulty channel). Coordinate the transmit and receive level adjustments outlined in TM 11-5805-715-12.

3-7. Connector Plate Assembly Maintenance

The connector plate assembly provides the interface connections between the individual printed circuit cards within the unit. It also provides input/output signal connections which interface the unit with the rear panel and power supply. The 76-pin card connectors are mounted vertically with the pins feeding through holes to the wire wrap side. The 70-pin signal and power connectors are mounted horizontally. All connector interconnections are accomplished using wire wrap terminations. Connector plate failures will result in the same type of failure indications as failed cards, but will not be corrected by card replacement. The majority of connector plate failures can be isolated and corrected by direct support personnel using visual inspection, continuity checks, and wire lists.

a. *Connector Plate Assembly Removal.*

(1) Remove all plug-in circuit cards from the card assembly nest. Refer to circuit card removal outlined in TM 11-5805-715-12.

(2) Remove power supply by performing step a (1) through (6) of paragraph 3-11.

(3) Using a flathead screwdriver, release the two jackscrews securing P3(J7) to the connector plate assembly. Remove power supply.

(4) Remove rear panel by performing step a of paragraph 3-10. Place rear panel to the side.

(5) Using a flathead screwdriver, remove 16 screws securing the connector plate assembly to the frame and remove the connector plate assembly from the equipment case.

(6) Refer to paragraph 3-8 to perform maintenance on the connector plate assembly.

b. *Connector Plate Assembly Installation.*

(1) Install connector plate assembly using the 16 screws removed in paragraph 3-7, step a (5).

(2) Connect P1(J5) and P2(J6) from rear panel to connector plate and tighten jackscrews.

(3) Secure rear panel with the ten screws removed in paragraph 3-10, step a (3).

(4) Connect P3(J7) from power supply to connector plate and tighten jackscrews.

(5) Secure power supply using the 12 screws removed in paragraph 3-11, step a (5).

(6) Connect signal cable from AN/TTC-39 circuit switch to J2 and signal cable from NATO to J3.

(7) Connect the ac power cable to the power supply AC INPUT connector.

3-8. Pyramiding Wire Replacement

When new wiring must be installed, the degree of pyramiding must first be determined before proceeding. The general restrictions are:

a. A wire that has been unwrapped cannot be re- wrapped. If an adequate service loop is available, the wire can be clipped and rewrapped; if not, a new wire must be installed.

b. No more than three wires can be wrapped on a single pin; a wire that has been clipped off and left in place counts as one of the three.

c. Unwrapping a clipped wire and sliding the top- most wire(s) down is not permissible. An example is provided in figure 3-1 of a case where a pin must be replaced as shown in figure 3-1, example A. Wires A, B, and C must be removed to remove pin 1. Figure 3-1, example B, shows the wires removed; and figure 3-1, example C, shows the new wires (AA and AC) installed, with the exception of wire AB to pin 4. Since three connections are already in place (X, Y, and B cut-end), these three connections must be removed to permit wrapping wire AB. However, if wires X and Y were to be replaced, a pyramiding condition could be encountered where it may become impractical and too time consuming to replace all other affected wires; i.e., all other wires related to wires X and Y replacement. A judgment is then necessary before starting to replace any wire, whether connector plate repair or replacement should be undertaken.

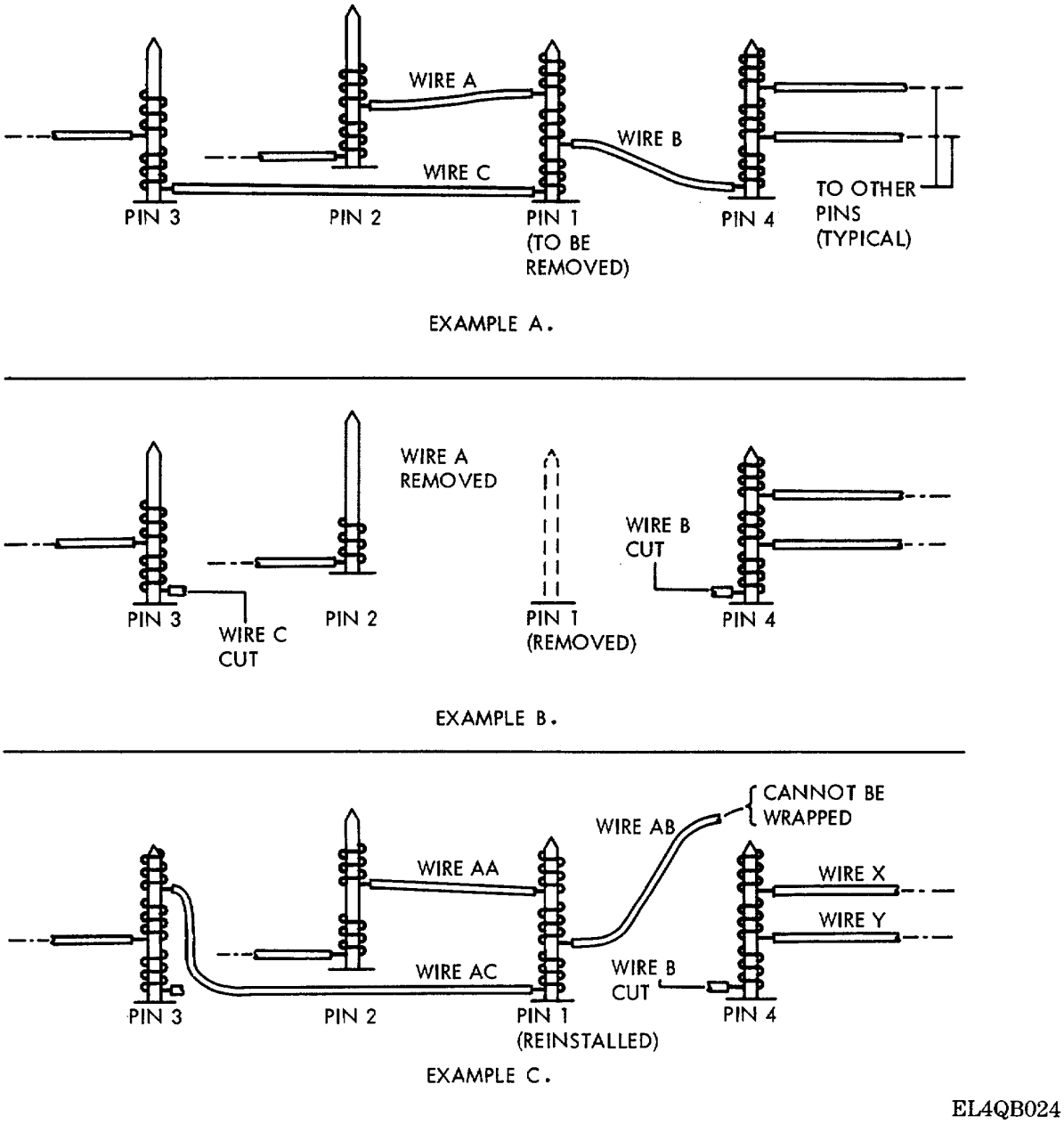


Figure 3-1. Pyramiding Wire replacement Example.

When the fault requires extensive repair, i.e., broken connector and pyramiding wire replacement (fig. 3-1), the connector plate must be removed by direct support personnel for repair at the depot facility. Refer to paragraph 3-7 for removal and replacement procedures for the connector plate assembly.

3-9. Interface Cable Maintenance

Intermediate maintenance of interface cables used with the NIU (figs. FO-7, FO-8 and FO-9) consists of removal and replacement when inspection or test discloses that a cable is damaged. Wire run lists for the signal cables are given in tables 3-2 and 3-3.

3-10. Internal Signal Cable Maintenance (fig. 3-2)

Maintenance of the internal signal cables consists of removal and replacement of connector pins on P1(J5) and P2(J6). Connectors J2 and J3 are non-repairable. To perform maintenance on the internal signal cables proceed as follows:

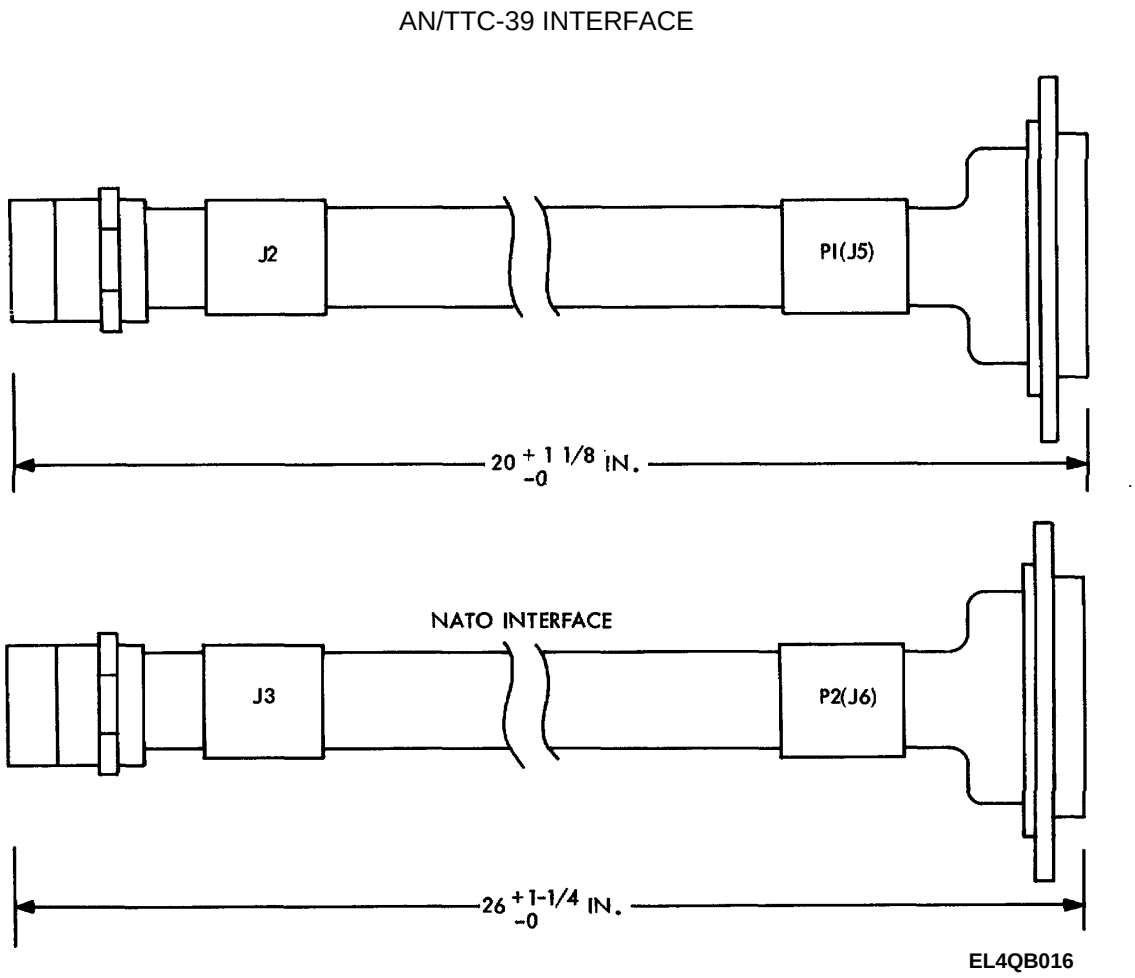


Figure 3-2. Internal Signal Interface Cables.

a. Rear Panel Removal.

(1) Ensure that the circuit breaker on the power supply is set to OFF.

(2) Disconnect the signal cables from connectors J2 and J3 (Fig. 1-5).

(3) Remove the ten screws and washers securing rear panel.

(4) Release the four jackscrews (two each) securing P1(J5) and P2(J6) and disconnect from connector plate assembly. Remove rear panel.

(5) Remove clinch nuts securing connectors J2 and J3 to rear panel and remove cable assembly.

b. Connector Pin Removal. To remove broken pin from connector, insert extraction tool 91093-1 over connector pin and push out.

c. Connector Pin Replacement. To replace connector pin, perform the following steps: (1) Crimp connector pin to harness wire with crimping tool 90222-2.

(2) Insert connector pin into connector using a pair of needle nose pliers.

(3) Place cable assembly on rear panel and secure panel connector with clinch nuts. Replace rear panel, step d.

d. Rear Panel Replacement.

(1) Connect P1(J5)/P2(J6) from rear panel to connector plate assembly and tighten jack- screws.

(2) Secure rear panel with the ten screws and washers removed in paragraph 3-10, step a (3).

3-11. Internal Power Cable Maintenance

(fig. 3-3)

Maintenance of the internal power cable consists of removal and replacement of connector pins on P3(J7). To perform maintenance on the internal power cable proceed as follows:

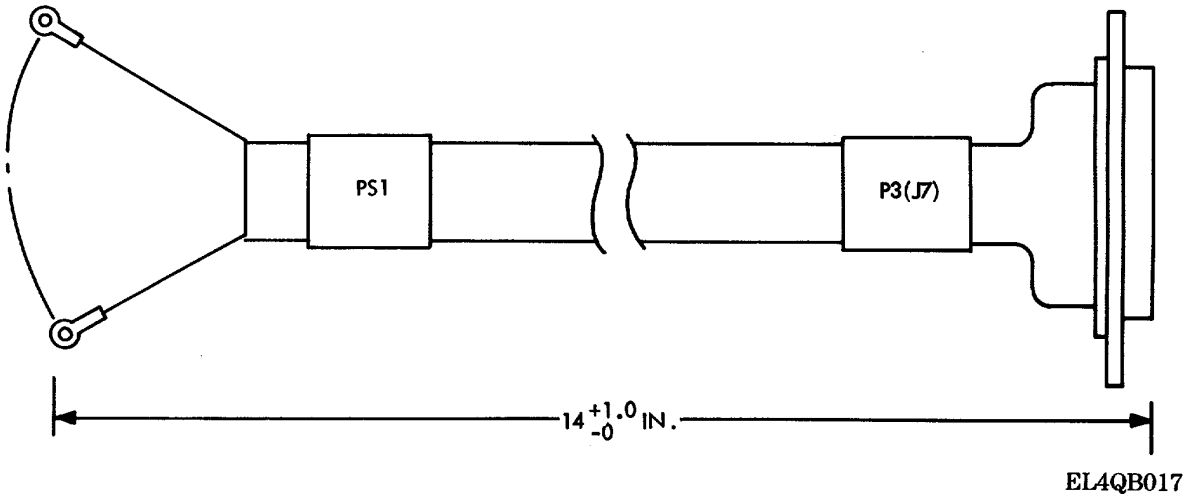


Figure 3-3. Internal Power Interface Cable.

a. *Power Supply Removal (fig. 1-5).*

(1) Set the circuit breaker to OFF.

(2) Ensure that the external power source is deenergized.

(3) Disconnect the ac power cable from the power supply AC INPUT connector.

(4) Fasten dust caps on respective connectors.

(5) Remove the 12 screws and washers which secure the power supply to the rear panel of the NIU equipment case.

(6) Carefully pull out the power supply and place it face down.

(7) Remove all wire lug leads from the terminal boards (fig. 3-4) of the power supply with a suitable flathead screwdriver and replace screws and washers in the terminal boards.

(8) Release the two jackscrews securing P3(J7) and disconnect from connector plate assembly and remove cable assembly.

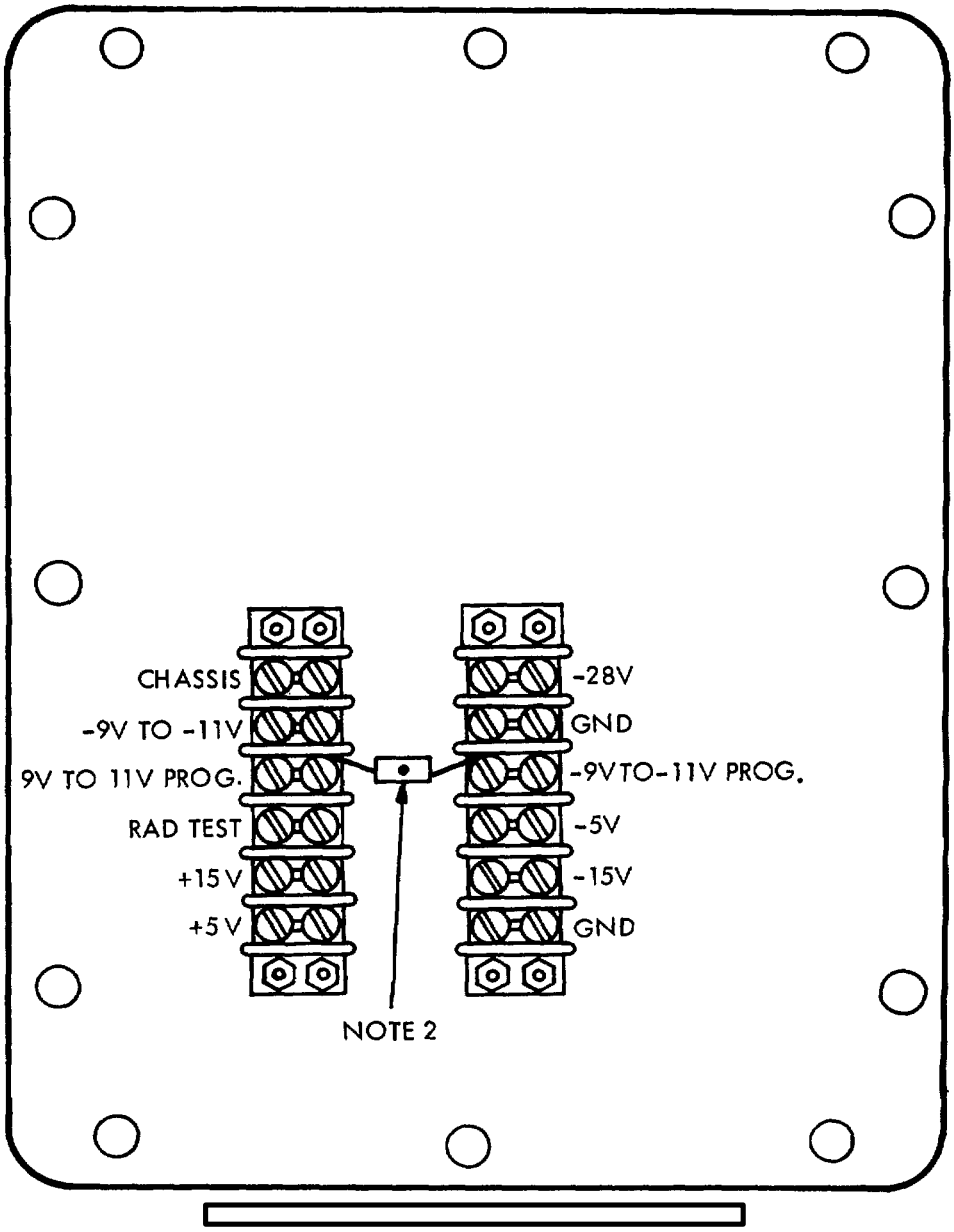


Figure 3-4. Power Supply Terminal Connections

NOTE 1. ALL POWER SUPPLY OUTPUTS ARE ISOLATED FROM CHASSIS GROUND.

2. SELECT PROGRAMMING RESISTOR (NOMINAL 130 OHMS) TO PROVIDE -10V 4 10% AT -9V TO -1IV OUTPUT.

EL4QB023

b. Connector Pin Removal. To remove broken pin
from connector, insert extraction tool 91093-1 over connector pin and push out.

c. Connector Pin Replacement. To replace connector pin, perform the following steps:

(1) Crimp connector pin to harness wire with crimping tool 90222-2.

(2) Insert connector pin into connector using a pair of needle nose pliers.

(3) Connect P3(J7) to connector plate assembly and tighten jackscrews and replace power supply, step d.

d. Power Supply Replacement.

(1) Place power supply to be installed face down in front of the rear panel.

CAUTION

Observe power supply identification on each wire. Ensure that wires are connected to the right power supply output terminal.

(2) Connect lug wires to terminal boards of power supply (fig. 3-4).

(3) Carefully insert power supply in place in the rear panel.

(4) Using a suitable Phillips screwdriver, secure the twelve screws and washers which secure the power supply to the rear panel.

CAUTION

Ensure circuit breaker is on OFF position.

(5) Connect the ac power cable to the power supply AC INPUT connector.

3-12. Fabrication of Telephone Patch Cord Assembly

(fig. 3-5)

The fabrication of the telephone patch cord used in the telephone installation to the NIU (TM 11-5805-715-12) is described as follows:

a. Use telephone patch cord assembly SM-A-838684-8.

b. Cut off one bantam plug from cord as close to plug as possible.

c. Strip nylon jacket back three inches as shown in figure 3-5.

d. Cut the shield and tape end with electrical tape.

e. Strip the two lead ends 3/4 of an inch and tin.

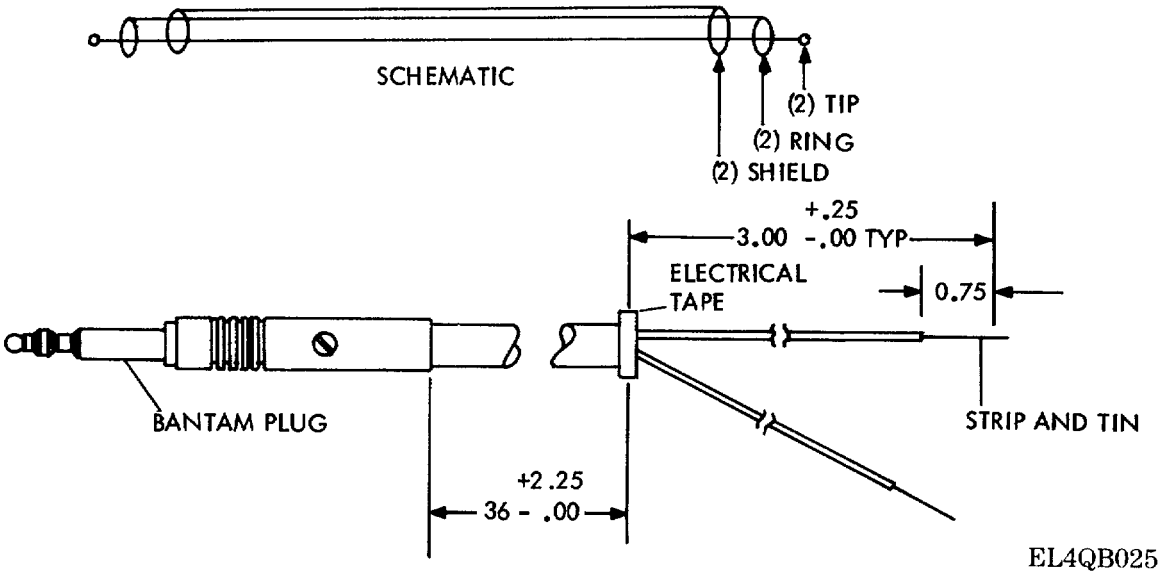


Figure 3-5. Telephone Patch Cord Assembly.

3-13. Wire Wrap Post Removal

a. Using unwrap wire tool No. 26-32 AWG, remove and tag only those wires that are necessary to allow replacement of defective wire wrap post.

b. Using extraction tool Teradyne No. 600-0001-000, remove defective wire wrap post by inserting tool over wire wrap post and gently tapping head of tool until post and nylon bushing fall free (fig. 3-6).

CAUTION

When extracting post and nylon bushing, make sure that both are recovered and do not fall into the equipment. Discard and do not reuse post or bushing.

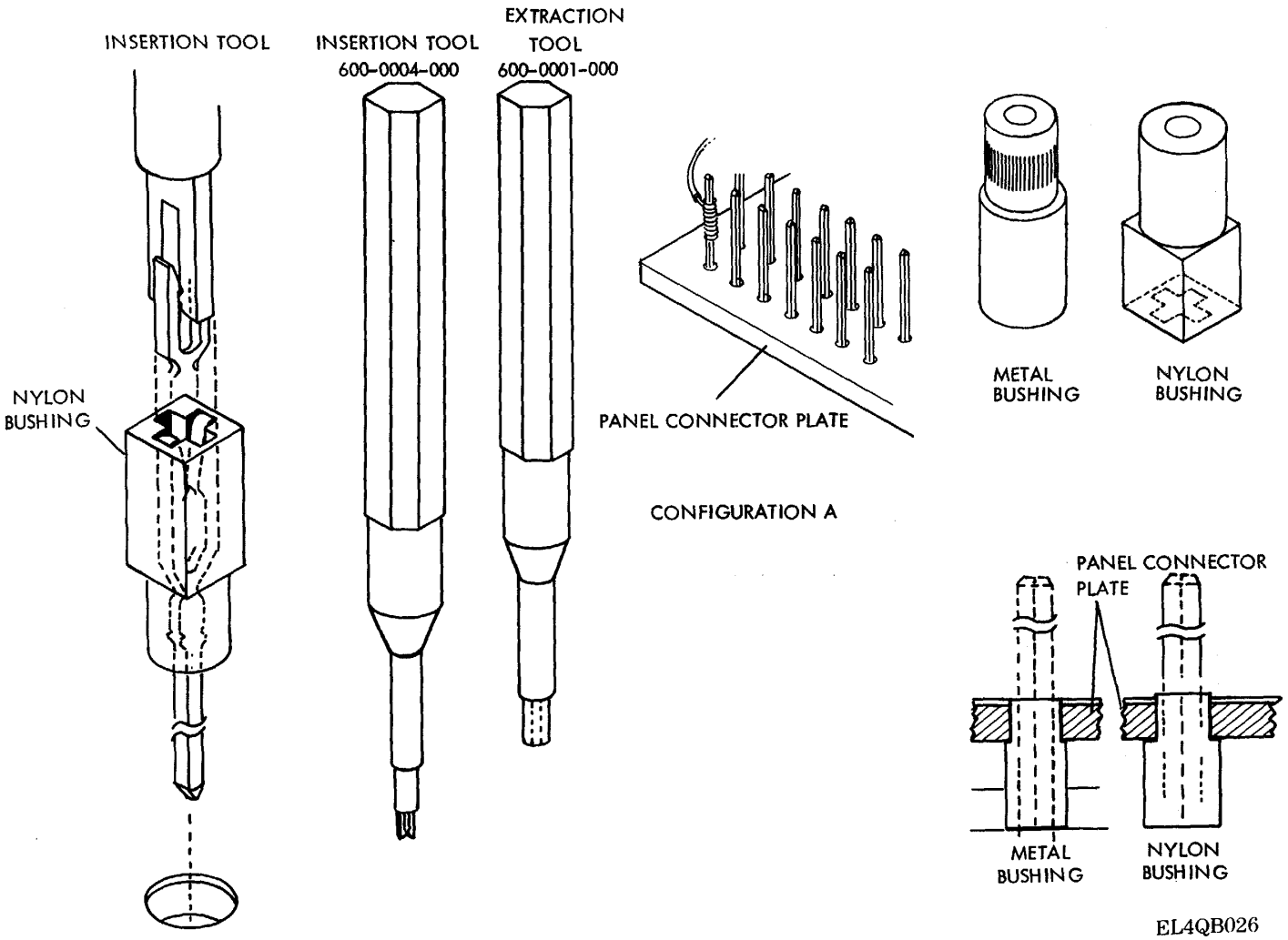


Figure 3-6. Typical Configurations for Wire Wrap Post Removal and Replacement.

3-14. Wire Wrap Post Replacement

CAUTION

Do not insert bushing and post simultaneously.

a. Insert nylon bushing into proper hole and gently tap bushing with insertion tool Teradyne No. 600-0004-000 for a snug press fit with bushing level to the other bushings.

b. Place post on insertion tool forks and insert into nylon bushing, making sure that the post fork is oriented in the same direction as all the other posts. Ensure that the post is in the bushing groove as shown in figure 3-6. Drive the post into the bushing by tapping the tool until the shoulder of the tool strikes the bushing.

c. A wire removed and tagged in paragraph 3-15 should not be reused unless there is enough excess length to allow cutting off the stripped end and re- stripping for wire wrapping. Replace the entire wire if necessary using wire wrap gun NSN 5120- 00-919-3486.

NOTE

More than one wire may have to be completely replaced when removing a wire wrap post.

3-15. Signal String List and Signal Location Tables

This paragraph contains the basic information necessary to know how to use tables 3-5 and 3-6 for troubleshooting. The ballooned numbers in the tables are used only for reference to the following definitions and explanation. It is extremely important that the steps in the subparagraphs for using the string list and signal location tables be strictly adhered to. Any deviation from these sequential steps could lead to confusion and the false assumption that the tables contain errors in signal name identification. Some names for the same signal may differ between the logic diagrams and the tables; however, the names are consistent within the string list and signal location tables. The reasons some signal names differ between the logic diagrams and the tables are as follows: a logic card may be used in different slots and/or twisted pair cables necessitate a variation in the signal names. Test points or spare and unused connections on the logic diagrams do not appear in the tables.

a. Signal Location Table (table 3-5). This list identified the signals at connector and circuit card pins.

(1) The connector reference designators (1) are horizontally in alphanumerical sequence. Item (2) lists the connectors in alphanumerical sequence for quick identification of the connectors contained on that page and to allow rapid scanning of the pages for location of the appropriate connector.

(2) The pin no. column 3 is arranged in numerical sequence and identifies the connector pin numbers. This column identifies the signal name associated with a particular logic circuit card connector for each pin. The signal information is read from right to left.

(3) The horizontal column (4) identifies the printed circuit card type code. For example, the first NIU-A column identifies the signal names for each pin of the NIU-A connector XA0002. Refer to table 3-1 to associate the card code with its part number.

(4) Identification of the abbreviations used in the tables:

(a) *in the PIN NO. column indicates multiple connections exist at the identified pin.

(b) N as a last character in the signal name indicates signal negation (low).

(c) A as last character in the signal name indicates A bus.

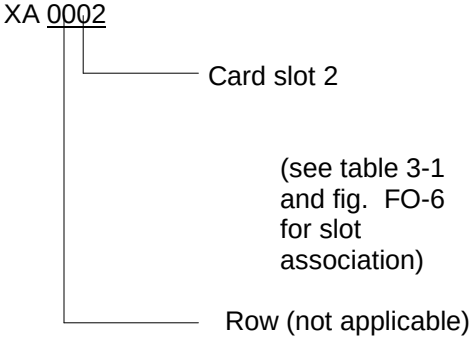
(d) B as last character in the signal name indicates B bus.

(e) R as last character in the signal name indicates ring.

(f) T as last character in the signal name indicates tip.

(g) J indicates jack type connector.

(h) XA indicates circuit card type connector followed by slot and pin reference designator; for example:



b. Signal String List Table (table 3-6). This list identifies all signals at a connector and circuit card pin.

(1) Item (1) identifies the NATO interface unit assembly.

(2) The NET NAME column (2) identifies the signal names in alphanumerical sequence.

(3) The card type connector and pin columns (3) identify all the connections to which a signal is connected. The connector/pin information is read from right to left from the signal name.

(4) Item (4)column indicates that the signal is part of a twisted pair.

Table 3-1. NATO Interface Unit Circuit Card Location

Channel	Card Slot	Part number	Card type
1	A2	SM-E-809647	NIU-A receive
	A3	SM-E-810554	NIU-B2 transmit
2	A5	SM-E-809647	NIU-A receive
	A7	SM-E-810554	NIU-B2 transmit
3	A9	SM-E-809647	NIU-A receive
	A11	SM-E-810554	NIU-B2 transmit
4	A13	SM-E-809647	NIU-A receive
	A15	SM-E-810554	NIU-B2 transmit
5	A18	Sm-E-809647	NIU-A receive
	A20	SM-E-810554	NIU-B2 transmit
6	A22	SM-E-809647	NIU-A receive
	24	SM-E-810554	NIU-B2 transmit
7	A26	SM-E-809647	NIU-A receive
	A29	SM-E-810554	NIU-B2 transmit
8	A31	SM-E-809647	NIU-A receive
	A33	SM-E-810554	NIU-B2 transmit
Common to all channels	A43	SM-E-810540	NIU-CE common equipment

(5) Identification of the abbreviations used in the table:

(a) N as the last character of the signal name indicates signal negation (low).

(b) A as the last character of the signal name indicates bus.

(c) B as the last character of the signal name indicates bus.

(d) J indicates jack type connector.

(e) XA indicates circuit card type connector followed by slot, pin reference designator, and (#); for example:

XA 00 03 - 0018 (#)

- 0018 (#) — Pin No. 18
- 03 — Card Slot 3 (see table 3-1 and FO-6 for slot association)
- 00 — Row (not applicable)

c. How to Use the Tables for Signal Tracing.

NOTE

Read the important basic information and proceed with the following sequence of steps.

When tracing a signal, always proceed in the following sequence: from table 3-1 to the logic diagram; from the logic diagram to the signal location table (table 3-5); from the signal location table to the signal string list table (table 3-6). When the connection for a particular signal name in the signal string list table has been identified, return to table 3-1 for identification of the logic card type and proceed to locate the pin on the logic diagram for signal destination.

NOTE

For the reasons explained above in paragraph 3-16 (signal name differences) the signal name on the logic diagram should not be used to locate the signal name in the signal string list tables. Refer to tables 3-5 and 3-6 and follow the example steps below.

(1) The signal to be traced is from logic card NIU-A located on connector plate assembly nest, and slot number 9 (see table 3-1); therefore, connector XA 0009.

(2) Proceed to the logic diagram to determine that the signal to be traced is from J1 pin 25.

(3) Proceed to the signal location table (table 3-5) and locate pin 25 (0025 in the PIN NO. column). The signal name is PWRCL03 in the XA 0009 NIU-A column for pin 0025.

NOTE

Disregard the fact that the signal names differ from the names on the logic diagram.

(4) Proceed to the signal string list (table 3-6) and locate signal PWRCL03 in the NET NAME column. Reading from right to left, the destination other than to pin 0025 is to XA0011-0063.

(5) Proceed to the signal location table (table 3-5) and locate XA-0011 to determine that the signal goes to pin 63 of logic card NIU-B2.

3-16. Redundant Cable Run Lists

This paragraph provides information on how to use table 3-7 which contains redundant type listings for cable runs. A redundant format is used to facilitate wire tracing by also entering the "TO" information of the "LOCATION" or "MARKING" columns in the "FROM" column in alphanumeric sequence. Figure 3-7 contains a typical table which is explained in the following subparagraphs. Card field (CF) and ballooned numbered items are used for reference only.

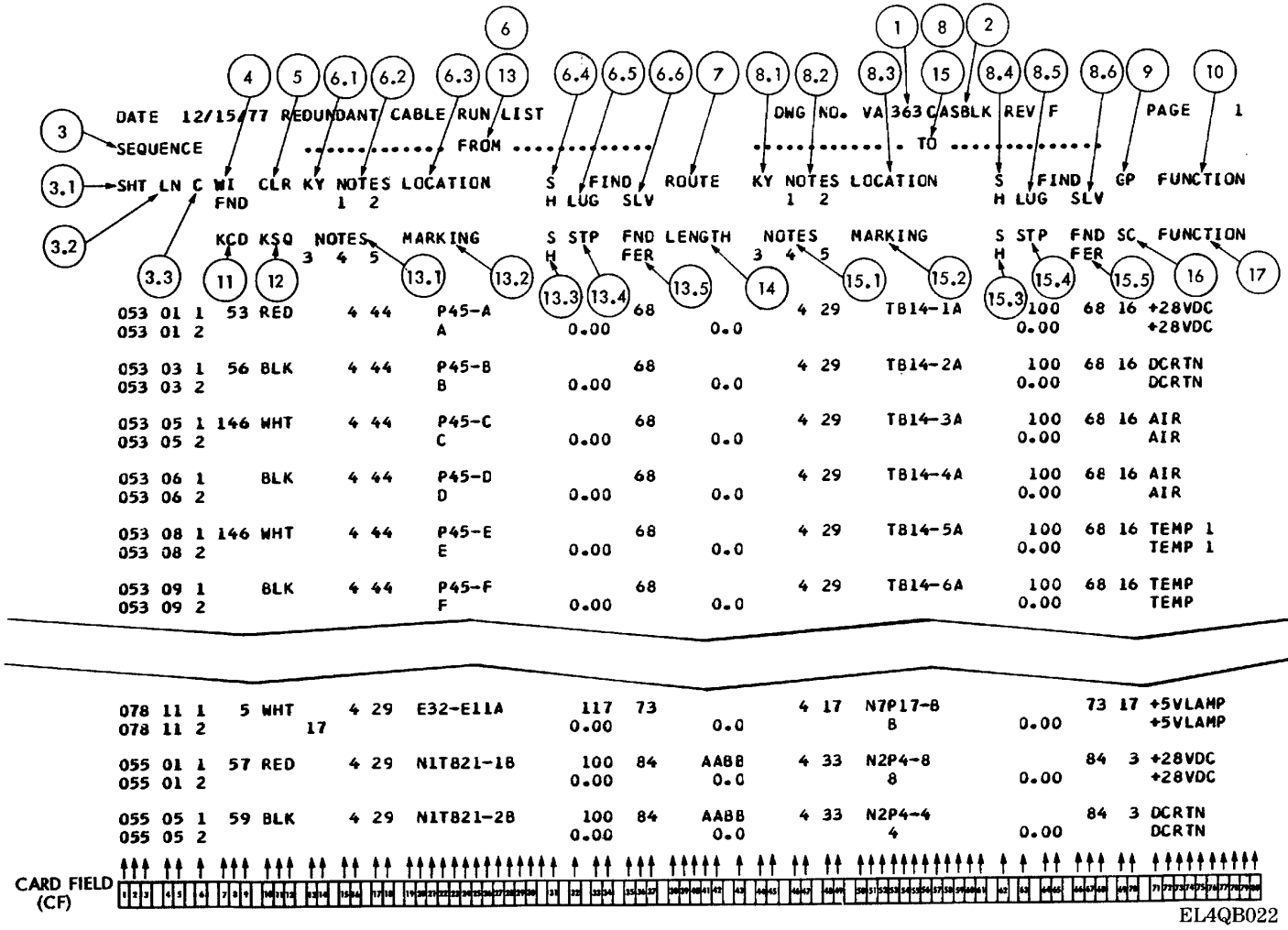


Figure 3-7. Typical Redundant Cable Run List Table.

a. Table Heading (1) and (2) . In figure 3-7, the table heading type code DWG NO. VA 363 CASBLK does not apply to the tables contained herein. This code is replaced with the actual drawing number (i.e., DWG NO. SM-B-312375).

b. SEQUENCE (3*)*

(1) SHT (3,1).The sheet number in card fields 1, 2, and 3 is the sheet number which appears in the lower right hand side of a drawing which is neither supplied nor necessary. Disregard this num- ber.

(2) LN (3.2) .Card fields 4 and 5 are used for line numbering which appears in a drawing not sup- plied nor necessary. Disregard this number.

(3) C (3.3) .Card field 6 is used for card cod- ing 1 and 2. Each code consists of 80 horizontal card fields. Code 1 reads from the top for items (3) through (10) . Code 2 reads from the top for items (11) through (17).

c. WIFND (4) . Card fields 7, 8 and 9 are used to enter the item number or find number assigned to the wire in the parts list, table 3-8.

d. CLR (5) . Card fields 10, 11 and 12 are used to enter the color code of the wire insulation. The card field is blank for bare wire. Solid color conductors with no tracers use abbreviations:

BRN	brown	BLU	blue
RED	red	VIO	violet
ORN	orange	GRA	gray
YEL	yellow	WHT	white
GRN	green	BLK	black

Solid color conductors with tracers use multiple numbers (i.e., 12 is brown with a red tracer; 123 is brown with a red tracer and orange tracer):

1. Brown	6. Blue
2. Red	7. Violet (purple)
3. Orange	8. Gray (slate)
4. Yellow	9. White
5. Green	10. Black

e. ...FROM... (6) and (13)

(1) KY (6.1) . Card fields 13 and 14 are used for keying. Key is a 2-digit alphanumeric used as a means of depicting whether the wire is terminated within an assembly or from one assembly to another. Disregard this column.

(2) NOTES (6.2) . Card fields 15 through 18 are to be used for notes. Card fields 15 and 16 for note 1 and card fields 17 and 18 for note 2. If and when additional notes are required to cover the end condition of the wire the number 2 card code is used. The number 2 card code (13.1) uses card fields 13 through 18 for three additional notes. The note number is right justified.

(3) LOCATION (6.3) . Card fields 19, 20, and 21 are used for wiring from one assembly or sub- assembly to another assembly or subassembly. The reference designation of the assembly or subassembly must be inserted in card fields 19 through 21 before the reference designation of the component part. The reference designation of the assembly or subassembly is right justified. Card fields 22 through 30 are to be used to enter the reference designation and terminal identification of the component part to which the end of the wire is connected. The alphanumeric designation is left justified.

(4) SH (6.4) . Card field 31 is used when indi- cating a shield connection. The letter S signifies shield connection.

(5) FIND LUG (6.5) . Card fields 32, 33, and 34 are used when terminating hardware is being at- tached to the end of the wire. The item or find number of the parts list is entered. The item or find number is right justified.

(6) FIND SLV (6.6) . Card fields 35, 36, and 37 are used when insulation sleeving or marker sleeving is required on the end of a lead either for insulating purposes or for marking. The item or find number of the parts list is entered. The item or find number is right justified.

f. ROUTE (7) . Card fields 38 through 43 are used to indicate the specific routing path of a lead. Point to point wiring (shortest route) is shown as P/P.

g. .... TO...(8)

(1) KY (8.1) . Card fields 44 and 45 are used for keying. Key is a 2-digit alphanumeric used as a means of depicting whether the wire is terminated within an assembly or from one assembly to another.

(2) NOTES (8.2) . Card fields 46 and 47 are to be used for note 1 and card fields 48 and 49 for note 2. When additional notes are required to cover the end condition of the wire, the number 2 card code is used. The number 2 card code has card fields 44 through 49 assigned for three additional notes. The note number is right .justified.

(3) LOCATION (8.3) . Card fields 50, 51, and 52 are used when wiring one assembly or subas- sembly to another assembly or subassembly. The reference designation of the assembly or subas- sembly is inserted in card fields 50 through 52 before the reference designation of the component part. The reference designation of the assembly or subassembly is right justified. Card fields 53 through 61 are to be used to enter the reference designation and terminal identification of the com-ponent part to which the end of the wire is to be connected.

(4) SH (8.4) . Card field 62 is used when indi- cating a shield connection. The letter S is used to signify the shield.

(5) FIND LUG (8.5) . Card fields 63, 64, and 65 are used when terminating hardware is being at- tached to the end of the wire. The item or find number of the parts listed is entered. The item or find number is right justified.

(6) FIND SLV (8.6) . Card fields 66, 67, and 68 are used when insulation sleeving or marker sleeving is required on the end of a lead either for insulating purposes or for marking. The item or find number of the parts list is entered. The item or find number is right justified.

h. GP (9) . Card fields 69 and 70 are used when certain wires in the wire run list are to be grouped together and enclosed in a braid, shield, or through a piece of insulation sleeving.

i. FUNCTION (10) . Card fields 71 through 80 are used, when required, to enter the circuit function which the wire is a part of (i.e., GND, + 15V, RTN). When the function name does not fit into the card field, abbreviations are used. Nonstandard ab- breviations must be covered by a note giving the nonstandard abbreviation and explaining the full meaning of the abbreviation. The function is left justified.

j. KCD (11) . Card fields 7, 8, and 9 are used for distinguishing modular assemblies. Two-digit alpha- numeric is used with right justification.

k. KSQ (12) . Card fields 10, 11, and 12 are used to represent wiring sequence within a key or key-code. A 3-digit number is used with right justification.

*l. .. FROM...(*13)

(1) NOTES (13.1) . See item (6.2) . Card fields 13 through 18 are to be used for three ad- ditional notes if required. The. note numbers are right justified.

(2) MARKING (13.2) . Card fields 19 through 30 are used when marking is required on the end of the wire. Card field 19, 20, and 21 are used for marking the subassembly reference designation such as A1, A2, etc. Card fields 22 through 30 are used for marking the part reference designation and its termination point. The marking is left justified.

(3) SH (13.3). Card field 31 is not used.

(4) STP (13.4). Card fields 32, 33, and 34 are used for stripping information for the end of the wire (strip length in inches and hundredths of inches). The fields are blank when bare wire is used. The strip lengths are inserted using decimal figures. The decimal point is between Card fields 32 and 33.

(5) FND FER (13.5) . Card fields 35, 36, and 37 are for use when ferrules are to be used on either shielded or coax wire. The item or find number from the parts list is right justified.

m. LENGTH G . Card fields 38 through 43 are used when the lead length is required (i.e., critical leads). The lead length information is inserted in in- ches and tenths of inches. The decimal point is be- tween card fields 42 and 43.

*n. FROM.. (*15),

(1) NOTES (15.1) . See item (8.2) . Card fields 44 through 49 are to be used for three additional notes if required. The note numbers are right justified.

(2) MARKING (15.2) . Card fields 50 through 61 are used when marking is required on the end of the wire. Card fields 50, 51, and 52 are used for marking the subassembly reference designation such as A1 A2, etc. Card fields 53 through 61 are used for marking the part reference designation and its termination point. The marking is left justified.

(3) SH. (15.3) Card field 62 is not used.

(4) STP (15.4) . Card fields 63, 64, and 65 are used for stripping information for the end of the wire (strip length in inches and hundredths of inches). The card fields are blank when bare wire is used. The strip lengths are inserted using decimal figures. The decimal point is between card fields 63 and 64.

(5) FND FER P (15.5) . Card fields 66, 67, and 68 are for use when ferrules are to be used on either shielded or coax wire. The item or find number is right justified.

o. SC (16) . Card fields 69 and 70 are used when a supplement code is required for adding or deleting a line of information. The letter "A" is used for adding a line and the letter "D" for deleting a line. Supplement coding is right justified.

p. FUNCTION (17) . See item (10)

Table 3-2. Signal Cable Assembly U-185(B)/G (SM-D-811746) Wire Run List

Pair No.	Wire color	From	To		Pair No.	Wire color	From	To
	BL/W	P1-A	P2-1A			G/BK/BK	P1-C	P2-13B
1					14	BR/BK	P1-D	P2-14A
	BL/W/W	P1-B	P2-1B					
	O/W	P1-C	P2-2A			BR/BK/BK	P1-E	P2-14B
2						GY/BK	P1-F	P2-15A
	O/W/W	P1-D	P2-2B		15			
	G/W	P1-E	P2-3A			GY/BK/BK	P1-G	P2-15B
3						B/Y	P1-H	P2-16A
	G/W/W	P1-F	P2-3B		16			
	BR/W	P1-G	P2-4A			B/Y/Y	P1-K	P2-16B
4						O/Y	P1-M	P2-17A
	BR/W/W	P1-H	P2-4B		17			
	GY/W	P1-J	P2-5A			O/Y/Y	P1-N	P2-17B
5						G/Y	P1-P	P2-18A
	GY/W/W	P1-K	P2-5B		18			
	BL/R	P1-L	P2-6A			G/Y/Y	P1-Q	P2-18B
6						BR/Y	P1-R	P2-19A
	BL/R/R	P1-M	P2-6B		19			
	O/R	P1-N	P2-7A			BR/Y/Y	P1-S	P2-19B
7						GY/Y	P1-T	P2-20A
	O/R/R	P 1-P	P2-7B		20			
	G/R	P1-R	P2-8A			GY/Y/Y	P1-U	P2-20B
8						BL/V	P1-V	P2-21A
	G/R/R	P1-S	P2-8B		21			
	BR/R	P1-T	P2-9A			BL/V/V	P1-W	P2-21B
9						O/V	PI-X	P2-22A
	BR/R/R	P 1-U	P2-9B		22			
	GY/R	P1-V	P2-10A			O/V/V	P1-Y	P2-22B
10					23			
	GY/R/R	PI-W	P2-01B			G/V/V	P1-AA	P2-23B
	BL/BK	P1-X	P2-1 A			BR/V	P1-BB	P2-24A
11					24			
	BL/BK/BK	P1-Y	P2-11B			BR/V/V	P1-CC	P2-24B
	GV	P1-Z	P2-23A			GY/V	P1-DD	P2-25A
					25			
	O/BK	P1-Z	P2-12A			GY/V/V25	P1-EE	P2-25B
12						R/W	P1-FF	P2-26A
	O/BK/BK	P1-A	P2-12B					
	G/BK	P1-B	P2-13A					
13						R/W/W	P1-GG	P2-26B

Table 3-3. Electrical Cable Assembly CX-13099 ( )/GT (SM-D-811745) Wire Run List

Pair No.	Wire color	From	To		Pair No.	Wire color	From	To
	BL/W	P1-1A	P2-2A			BR/BK/BK	P1-14B	P2-13B
1						GY/BK	P1-15A	P2-15B
	BL/W/W	P1-1B	P2-2B		15			
	O/W	P1-2A	P2-lA			GY/BK/BK	P1-15B	P2-15A
2						B/Y	P1-16A	P2-17A
	O/W/W	P1-2B	P2-1B		16			
	G/W	P1-3A	P2-3B			B/Y/Y	P1-16B	P2-17B
3						O/Y	P1-17A	P2-16A
	G/W/W	P1-3B	P2-3A		17			
	BR/W	P1-4A	P2-5A			O/Y/Y	P1-17B	P2-16B
4						G/Y	P1-18A	P2-18B
	BR/W/W	P1-4B	P2-5B		18			
	GY/W	P1-5A	P2-4A			G/Y/Y	P1-18B	P2-18A
5						BR/Y	P1-19A	P2-20A
	GY/W/W	P1-5B	P2-4B		19			
	BL/R	P1-6A	P2-6B			BR/Y/Y	P1-19B	P2-20B
6						GY/Y	P1-20A	P2-19A
	BL/R/R	P1-6B	P2-6A		20			
	O/R	P1-7A	P2-8A			GY/Y/Y	P1-20B	P2-19B
7						BL/V	P1-21A	P2-21B
	O/R/R	P1-7B	P2-8B		21			
	G/R	P1-8A	P2-7A			BL/V/V	P1-21B	P2-21A
8						O/V	P1-22A	P2-28A
	G/R/R	P1-8B	P2-7B		22			
	BR/R	P1-9A	P2-9B			O/V/V	P1-22B	P2-23B
9								
	BR/R/R	P1-9B	P2-9A			BL/BK/BK	P1-11B	P2-10B
	GY/R	P1-10A	P2-11A			G/V	P1-23A	P2-22A
10					23			
	GY/R/R	P1-10B	P2-11B			G/V/V	P1-23B	P2-22B
	BL/BK	P-11A	P2-10A			BR/V	P1-24A	P2-24B
11					24			
	BR/V/V	P1-24B	P2-24A					
	O/BK	P1-12A	P2-12B			GY/V	P1-25A	P2-25A
12								
	O/BK/BK	P1-12B	P2-12A		25			
	GY/V/V	P1-25B	P2-25B					
	G/BK P13	P2-14A	R/W			P1-26A	P2-26A	
13								
	G/BK/BK	P1-13B	P2-14B					
	BR/BK	P1-14A	P2-13A			R/W/W	P1-26B	P2-26B
14								

Table 3-4. NATO Interface Unit Input/Output Connections

Circuit switch side (J2)				Foreign NATO side (J3)		
U-185/ J-1077 pin	J2 pin (MS-conn)	Function	Channel	Function	J3 pin (MS-conn.)	P2 (far end) pin
9A	T	Voice-to CS	1	Voice-to NATO	A	1A
9B	U	Voice-to CS		Voice-to NATO	B	1B
10OA	V	Voice-from CS		Voice-from NATO	C	2A
O1B	W	Voice-from CS		Voice-from NATO	D	2B
				Signal-to NATO	E	3A
				Signal-from NATO	F	3B
11A	X	Voice-to CS	2	Voice-to NATO	G	4A
11B	Y	Voice-to CS		Voice-to NATO	H	4B
12A	Z	Voice-from CS		Voice-from NATO	J	5A
12B	a	Voice-from CS		Voice-from NATO	K	5B
				Signal-to NATO	L	6A
				Signal-from NATO	M	6B
13A	b	Voice-to CS	3	Voice-to NATO	N	7A
13B	c	Voice-to CS		Voice-to NATO	P	7B
14A	d	Voice-from CS		Voice-from NATO	R	8A
14B	e	Voice-from CS		Voice-from NATO	S	8B
				Signal-to NATO	T	9A
				Signal-from NATO	U	9B
15A	f	Voice-to CS	4	Voice-to NATO	V	10A
15B	g	Voice-to CS		Voice-to NATO	W	10B
16A	h	Voice-from CS		Voice-from NATO	X	11A
16B	k	Voice-from CS		Voice-from NATO	Y	11B
				Signal-to NATO	Z	12A
				Signal-from NATO	a	12B
17A	m	Voice-to CS	5	Voice-to NATO	b	13A
17B	n	Voice-to CS		Voice-to NATO	c	13B
18A	p	Voice-from CS		Voice-from NATO	d	14A
18B	q	Voice-from CS		Voice-from NATO	e	14B
				Signal-to NATO	f	15A
				Signal-from NATO	g	15B
19A	r	Voice-to CS	6	Voice-to NATO	h	16A
19B	s	Voice-tb CS		Voice-to NATO	k	16B
20A	t	Voice-from CS		Voice-from NATO	m	17A
20B	u	Voice-from CS		Voice-from NATO	n	17B
				Signal-to NATO	p	18A
				Signal-from NATO	q	18B
21A	v	Voice-to CS	7	Voice-to NATO	r	19A
21B	w	Voice-to CS		Voice-to NATO	s	19B
22A	x	Voice-from CS		Voice-from NATO	t	20A
22B	y	Voice-from CS		Voice-from NATO	u	20B
				Signal-to NATO	v	21A
				Signal-from NATO	w	21B

Table 3-4. NATO Interface Unit Input/Output Connections-Continued

Circuit switch side (J2)				Foreign NATO side (J3)		
U-185/ J-1077 pin	J2 pin (MS-conn)	Function	Channel	Function	J3 pin (MS-conn.)	P2 (far end) pin
23A	z	Voice-to CS	8	Voice-to NATO	x	22A
23B	AA	Voice-to CS		Voice-to NATO	y	22B
24A	BB	Voice-from CS		Voice-from NATO	z	23A
24B	CC	Voice-from CS		Voice-from NATO	AA	23B
				Signal-to NATO	BB	24A
				Signal-from NATO	CC	24B
25A	DD	NIU-to/from	Order	NIU-to/from the	DD	25A
25B	EE	the Circuit Switch	wire pair (i.e., TA-312)	Foreign NIU	EE	25B
26A	FF	Ground	Common signaling	Ground	FF	26A
26B	GG	Ground	Ground	Ground	GG	26B

Table 3-5. Connector Plate Nest Signal Location Table

SIGNAL LOCATION TABLE . J 0005 . DWG NO.
ASSY REF DES = NATO . J 0006 .
. J 0007 . REV SHEET 2
SOURCE WIRE LIST = REV . . CODE IDENT 04655

SLOT LOCATION, DEVICE / SIGNAL NAMES *=DUPLICATE PIN DATA

J 0005	J 0006	J 0007			PIN NO
	RCVCH01OTT	+5 VDC B			0005
	XMTCH01INR	+15VDC B			0006
	SIGCH01 R	-28VDC B			0007
	RCVCH02OTT				0008
	XMTCH02INR	-5 VDC B			0009
	SIGCH02 R				0010
RCVCH01INR	RCVCH03OTT	-10VDC B			0011
XMTCH01OTR	XMTCH03INR				0012
RCVCH02INR	SIGCH03 R	-15VDC B			0013
XMTCH02OTR	RCVCH04OTT				0014
RCVCH03INR	XMTCH04INR				0015
XMTCH03OTR	SIGCH04 R				0016
RCVCH04INR	RCVCH05OTT	+5 VDC A			0017
XMTCH04OTR	XMTCH05INR	+15VDC A			0018
RCVCH05INR	SIGCH05 R	-28VDC A			0019
XMTCH05OTR	RCVCH06OTT	GROUND A			0020
RCVCH06INR	XMTCH06INR	-5 VDC A			0021
XMTCH06OTR	SIGCH06 R	-10VDC A			0022
RCVCH07INR	RCVCH07OTT	-15VDC A			0023
XMTCH07OTR	XMTCH07INR				0024
RCVCH08INR	SIGCH07 R	GROUND B			0025
XMTCH08OTR	RCVCH08OTT				0026
EOW 2 T					0027
GROUND C	XMTCH08INR	GROUND D			0028
	SIGCH08 R	GROUND C			0029
	EOW 1 T				0030
	GROUND E	GROUND E			0031
		GROUND F			0032
	RCVCH01OTR				0040
	XMTCH01INT				0041
	SIGCH01 T				0042
	RCVCH02OTR				0043
	XMTCH02INT				0044
	SIGCH02 T				0045
RCVCH01INT	RCVCH03OTR				0046
XMTCH01OTT	XMTCH03INT				0047
RCVCH02INT	SIGCH03 T				0048
XMTCH02OTT	RCVCH04OTR				0049
RCVCH03INT	XMTCH04INT				0050
XMTCH03OTT	SIGCH04 T				0051
RCVCH04INT	RCVCH05OTR				0052
XMTCH04OTT	XMTCH05INT				0053
RCVCH05INT	SIGCH05 T				0054
XMTCH05OTT	RCVCH06OTR				0055
RCVCH06INT	XMTCH06INT				0056
XMTCH06OTT	SIGCH06 T				0057
RCVCH07INT	RCVCH07OTR				0058
XMTCH07OTT	XMTCH07INT				0059
RCVCH08INT	SIGCH07 T				0060
XMTCH08OTT	RCVCH08OTR				0061
EOW 2 R					0062
GROUND D	XMTCH08INT				0063
	SIGCH08 T				0064
	EOW 1 R				0065
	GROUND F				0066

Table 3-5. Connector Plate Nest Signal Location Table - Continued

SIGNAL LOCATION TABLE . XA 0002 . DWG NO.
ASSY REF DES = NATO . XA 0003 .
. XA 0005 . REV SHEET 3
SOURCE WIRE LIST = REV . XA 0007 .
. XA 0009 . CODE IDENT 04655

SLOT LOCATION, DEVICE / SIGNAL NAMES *=DUPLICATE PIN DATA

XA 0002 NIU -A	XA 0003 NIU - B	XA 0005 NIU -A	XA 0007 NIU - B	XA 0009 NIU -A	PIN NO
T1050-10DB		T1050-10DB		T1050-10DB	0007
SHIELD02		SHIELD05		SHIELD09	0009
RCVCH01INR		RCVCH02INR		RCVCH03INR	0010
RCVCH01INT		RCVCH02INT		RCVCH03INT	0011
+5 VDC A	+5 VDC A	+5 VDC A	+5 VDC A	+5 VDC A	0017
+15VDC A	+15VDC A	+15VDC A	+15VDC A	+15VDC A	0018
-28VDC A	-28VDC A	-28VDC A	-28VDC A	-28VDC A	0019
SHIELD02	GROUND A	SHIELD05	GROUND A	SHIELD09	0020
GROUND A		GROUND A		GROUND A	0020*
-5 VDC A	-5 VDC A	-5 VDC A	-5 VDC A	-5 VDC A	0021
-10VDC A	-10VDC A	-10VDC A	-10VDC A	-10VDC A	0022
-15VDC A	-15VDC A	-15VDC A	-15VDC A	-15VDC A	0023
	CKPH1CH1 N		CKPH1CH2 N		0024
PWRCL01 N	CKPH0CH1 N	PWRCL02 N	CKPH0CH2 N	PWRCL03 N	0025
CKPH0CH1 N		CKPH0CH2 N		CKPH0CH3 N	0028
CKPH1CH1 N		CKPH1CH2 N		CKPH1CH3 N	0029
CKPH2CH1 N		CKPH2CH2 N		CKPH2CH3 N	0031
PSEIZE01 N		PSEIZE02 N		PSEIZE03 N	0032
PBCLR01 N		PBCLR02 N		PBCLR03 N	0035
RCVCH01OTT		RCVCH02OTT		RCVCH03OTT	0036
SHIELD02	XMTCH01OTR	SHIELD05	XMTCH02OTR	SHIELD09	0037
RCVCH01OTR	XMTCH01OTT	RCVCH02OTR	XMTCH02OTT	RCVCH03OTR	0038
	PSEIZE01 N		PSEIZE02 N		0039
GROUND A	SHIELD03	GROUND A	SHIELD07	GROUND A	0040
	GROUND A		GROUND A		0040*
	SIGCH01 R		SIGCH02 R		0042
	PBCLR01 N		PBCLR02 N		0043
	CLOCK500HZ		CLOCK500HZ		0045
	CLOCK32KHZ		CLOCK32KHZ		0046
	TN2600-7DB		TN2600-7DB		0048
+5 VDC B	+5 VDC B	+5 VDC B	+5 VDC B	+5 VDC B	0055
+15VDC B	+15VDC B	+15VDC B	+15VDC B	+15VDC B	0056
-28VDC B	-28VDC B	-28VDC B	-28VDC B	-28VDC B	0057
GROUND B	SHIELD03	GROUND B	SHIELD07	GROUND B	0058
	GROUND B		GROUND B		0058*
-5 VDC B	-5 VDC B	-5 VDC B	-5 VDC B	-5 VDC B	0059
-10VDC B	-10VDC B	-10VDC B	-10VDC B	-10VDC B	0060
-15VDC B	-15VDC B	-15VDC B	-15VDC B	-15VDC B	0061
	PWRCL01 N		PWRCL02 N		0063
	CKPH2CH1 N		CKPH2CH2 N		0064
	XMTCH01INR		XMTCH02INR		0071
GROUND B	GROUND B	GROUND B	GROUND B	GROUND B	0072
	XMTCH01INT		XMTCH02INT		0074
	T1050-10DB		T1050-10DB		0075
	SIGCH01 T		SIGCH02 T		0076

Table 3-5. Connector Plate Nest Signal Location Table - Continued

SIGNAL LOCATION TABLE . XA 0011 . DWG NO.
. XA 0013 .
ASSY REF DES = NATO . XA 0015 . REV SHEET 4
. XA 0018 .
SOURCE WIRE LIST = REV . XA 0020 . CODE IDENT 04655

SLOT LOCATION, DEVICE / SIGNAL NAMES *=DUPLICATE PIN DATA

XA 0011 NIU - B	XA 0013 NIU -A	XA 0015 NIU - B	XA 0018 NIU -A	XA 0020 NIU - B	PIN NO
	T1050-10DB		T1050-10DB		0007
	SHIELD013		SHIELD018		0009
	RCVCH04INR		RCVCH05INR		0010
	RCVCH04INT		RCVCH05INT		0011
+5 VDC A	+5 VDC A	+5 VDC A	+5 VDC A	+5 VDC A	0017
+15VDC A	+15VDC A	+15VDC A	+15VDC A	+15VDC A	0018
-28VDC A	-28VDC A	-28VDC A	-28VDC A	-28VDC A	0019
GROUND A	SHIELD013	GROUND A	SHIELD018	GROUND A	0020
	GROUND A		GROUND A		0020*
-5 VDC A	-5 VDC A	-5 VDC A	-5 VDC A	-5 VDC A	0021
-10VDC A	-10VDC A	-10VDC A	-10VDC A	-10VDC A	0022
-15VDC A	-15VDC A	-15VDC A	-15VDC A	-15VDC A	0023
CKPH1CH3 N		CKPH1CH4 N		CKPH1CH5 N	0024
CKPH0CH3 N	PWRCL04 N	CKPH0CH4 N	PWRCL05 N	CKPH0CH5 N	0025
	CKPH0CH4 N		CKPH0CH5 N		0028
	CKPH1CH4 N		CKPH1CH5 N		0029
	CKPH2CH4 N		CKPH2CH5 N		0031
	PSEIZE04 N		PSEIZE05 N		0032
	PBCLR04 N		PBCLR05 N		0035
	RCVCH04OTT		RCVCH05OTT		0036
XMTCH03OTR		XMTCH04OTR		XMTCH05OTR	0037
XMTCH03OTT	RCVCH04OTR	XMTCH04OTT	RCVCH05OTR	XMTCH05OTT	0038
PSEIZE03 N		PSEIZE04 N		PSEIZE05 N	0039
GROUND A	GROUND A	GROUND A	GROUND A	GROUND A	0040
SIGCH03 R		SIGCH04 R		SIGCH05 R	0042
PBCLR03 N		PBCLR04 N		PBCLR05 N	0043
CLOCK500HZ		CLOCK500HZ		CLOCK500HZ	0045
CLOCK32KHZ		CLOCK32KHZ		CLOCK32KHZ	0046
TN2600-7DB		TN2600-7DB		TN2600-7DB	0048
+5 VDC B	+5 VDC B	+5 VDC B	+5 VDC B	+5 VDC B	0055
+15VDC B	+15VDC B	+15VDC B	+15VDC B	+15VDC B	0056
-28VDC B	-28VDC B	-28VDC B	-28VDC B	-28VDC B	0057
GROUND B	GROUND B	GROUND B	GROUND B	GROUND B	0058
-5 VDC B	-5 VDC B	-5 VDC B	-5 VDC B	-5 VDC B	0059
-10VDC B	-10VDC B	-10VDC B	-10VDC B	-10VDC B	0060
-15VDC B	-15VDC B	-15VDC B	-15VDC B	-15VDC B	0061
PWRCL03 N		PWRCL04 N		PWRCL05 N	0063
CKPH2CH3 N		CKPH2CH4 N		CKPH2CH5 N	0064
XMTCH03INR		XMTCH04INR		XMTCH05INR	0071
GROUND B	GROUND B	GROUND B	GROUND B	GROUND B	0072
XMTCH03INT		XMTCH04INT		XMTCH05INT	0074
T1050-10DB		T1050-10DB		T1050-10DB	0075
SIGCH03 T		SIGCH04 T		SIGCH05 T	0076

Table 3-5. Connector Plate Nest Signal Location Table - Continued

SIGNAL LOCATION TABLE . XA 0022 . DWG NO.
. XA 0024 .
ASSY REF DES = NATO . XA 0026 . REV SHEET 5
. XA 0029 .
SOURCE WIRE LIST = REV . XA 0031 . CODE IDENT 04655

SLOT LOCATION, DEVICE / SIGNAL NAMES *=DUPLICATE PIN DATA

XA 0022 NIU -A	XA 0024 NIU - B	XA 0026 NIU -A	XA 0029 NIU - B	XA 0031 NIU -A	PIN NO
T1050-10DB		T1050-10DB		T1050-10DB	0007
SHIELD022					0009
RCVCH06INR		RCVCH07INR		RCVCH08INR	0010
RCVCH06INT		RCVCH07INT		RCVCH08INT	0011
+5 VDC A	+5 VDC A	+5 VDC A	+5 VDC A	+5 VDC A	0017
+15VDC A	+15VDC A	+15VDC A	+15VDC A	+15VDC A	0018
-28VDC A	-28VDC A	-28VDC A	-28VDC A	-28VDC A	0019
SHIELD022	GROUND A	GROUND A	GROUND A	GROUND A	0020
GROUND A					0020*
-5 VDC A	-5 VDC A	-5 VDC A	-5 VDC A	-5 VDC A	0021
-10VDC A	-10VDC A	-10VDC A	-10VDC A	-10VDC A	0022
-15VDC A	-15VDC A	-15VDC A	-15VDC A	-15VDC A	0023
	CKPH1CH6 N		CKPH1CH7 N		0024
PWRCL06 N	CKPH0CH6 N	PWRCL07 N	CKPH0CH7 N	PWRCL08 N	0025
CKPH0CH6 N		CKPH0CH7 N		CKPH0CH8 N	0028
CKPH1CH6 N		CKPH1CH7 N		CKPH1CH8 N	0029
CKPH2CH6 N		CKPH2CH7 N		CKPH2CH8 N	0031
PSEIZE06 N		PSEIZE07 N		PSEIZE08 N	0032
PBCLR06 N		PBCLR07 N		PBCLR08 N	0035
RCVCH06OTT		RCVCH07OTT		RCVCH08OTT	0036
	XMTCH06OTR		XMTCH07OTR		0037
RCVCH06OTR	XMTCH06OTT	RCVCH07OTR	XMTCH07OTT	RCVCH08OTR	0038
	PSEIZE06 N		PSEIZE07 N		0039
GROUND A	GROUND A	GROUND A	GROUND A	GROUND A	0040
	SIGCH06 R		SIGCH07 R		0042
	PBCLR06 N		PBCLR07 N		0043
	CLOCK500HZ		CLOCK500HZ		0045
	CLOCK32KHZ		CLOCK32KHZ		0046
	TN2600-7DB		TN2600-7DB		0048
+5 VDC B	+5 VDC B	+5 VDC B	+5 VDC B	+5 VDC B	0055
+15VDC B	+15VDC B	+15VDC B	+15VDC B	+15VDC B	0056
-28VDC B	-28VDC B	-28VDC B	-28VDC B	-28VDC B	0057
GROUND B	GROUND B	GROUND B	GROUND B	GROUND B	0058
-5 VDC B	-5 VDC B	-5 VDC B	-5 VDC B	-5 VDC B	0059
-10VDC B	-10VDC B	-10VDC B	-10VDC B	-10VDC B	0060
-15VDC B	-15VDC B	-15VDC B	-15VDC B	-15VDC B	0061
	PWRCL06 N		PWRCL07 N		0063
	CKPH2CH6 N		CKPH2CH7 N		0064
	XMTCH06INR		XMTCH07INR		0071
GROUND B	GROUND B	GROUND B	GROUND B	GROUND B	0072
	XMTCH06INT		XMTCH07INT		0074
	T1050-10DB		T1050-10DB		0075
	SIGCH06 T		SIGCH07 T		0076

Table 3-5. Connector Plate Nest Signal Location Table - Continued

SIGNAL LOCATION TABLE . XA 0033 . DWG NO.
. XA 0043 .
ASSY REF DES = NATO . REV SHEET 6
SOURCE WIRE LIST = REV . CODE IDENT 04655

*=DUPLICATE PIN DATA

SLOT LOCATION, DEVICE / SIGNAL NAMES					
XA 0033 NIU - B	XA 0043 NIU - C				PIN NO
	TN2600-7DB				0001
	T1050-10DB				0002
	EOW 2 T				0005
	EOW 2 R				0008
	EOW 1 T				0011
	EOW 1 R				0014
+5 VDC A	+5 VDC A				0017
+15VDC A	+15VDC A				0018
-28VDC A	-28VDC A				0019
GROUND A	GROUND A				0020
-5 VDC A	-5 VDC A				0021
-10VDC A	-10VDC A				0022
-15VDC A	-15VDC A				0023
CKPH1CH8 N					0024
CKPH0CH8 N					0025
	CLOCK500HZ				0030
	CLOCK32KHZ				0034
XMTCH08OTR					0037
XMTCH08OTT					0038
PSEIZE08 N					0039
GROUND A	GROUND A				0040
SIGCH08 R					0042
PBCLR08 N					0043
CLOCK500HZ					0045
CLOCK32KHZ					0046
TN2600-7DB					0048
+5 VDC B	+5 VDC B				0055
+15VDC B	+15VDC B				0056
-28VDC B	-28VDC B				0057
GROUND B	GROUND B				0058
-5 VDC B	-5 VDC B				0059
-10VDC B	-10VDC B				0060
-15VDC B	-15VDC B				0061
PWRCL08 N					0063
CKPH2CH8 N					0064
XMTCH08INR					0071
GROUND B	GROUND B				0072
XMTCH08INT					0074
T1050-10DB					0075
SIGCH08 T					0076

Table 3-6. Connector Plate, Signal String List

SIGNAL STRING LIST ①

ASSY REF DES = NATO

SOURCE WIRE LIST = REV

DWG NO.

REV SHEET 2 ②

CODE IDENT 04655

③ PIN LOCATIONS (DRAWING NUMBER REFERENCE) *=OUTPUT			NET NAME	T
XA 0002-0018( )	XA 0003-0018( )	XA 0005-0018( )	+15VDC A	
XA 0007-0018( )	XA 0009-0018( )	XA 0011-0018( )		
XA 0013-0018( )	XA 0015-0018( )	XA 0018-0018( )		
XA 0020-0018( )	XA 0022-0018( )	XA 0024-0018( )		
XA 0026-0018( )	XA 0029-0018( )	XA 0031-0018( )		
XA 0033-0018( )	XA 0043-0018( )	J 0007-0018( )		
XA 0043-0056( )	XA 0033-0056( )	XA 0031-0056( )	+15VDC B	
XA 0029-0056( )	XA 0026-0056( )	XA 0024-0056( )		
XA 0022-0056( )	XA 0020-0056( )	XA 0018-0056( )		
XA 0015-0056( )	XA 0013-0056( )	XA 0011-0056( )		
XA 0009-0056( )	XA 0007-0056( )	XA 0005-0056( )		
XA 0003-0056( )	XA 0002-0056( )	J 0007-0006( )		
XA 0002-0019( )	XA 0003-0019( )	XA 0005-0019( )	-28VDC A	
XA 0007-0019( )	XA 0009-0019( )	XA 0011-0019( )		
XA 0013-0019( )	XA 0015-0019( )	XA 0018-0019( )		
XA 0020-0019( )	XA 0022-0019( )	XA 0024-0019( )		
XA 0026-0019( )	XA 0029-0019( )	XA 0031-0019( )		
XA 0033-0019( )	XA 0043-0019( )	J 0007-0019( )		
XA 0002-0057( )	XA 0003-0057( )	XA 0005-0057( )	-28VDC B	
XA 0007-0057( )	XA 0009-0057( )	XA 0011-0057( )		
XA 0013-0057( )	XA 0015-0057( )	XA 0018-0057( )		
XA 0020-0057( )	XA 0022-0057( )	XA 0024-0057( )		
XA 0026-0057( )	XA 0029-0057( )	XA 0031-0057( )		
XA 0033-0057( )	XA 0043-0057( )	J 0007-0007( )		
XA 0002-0017( )	XA 0003-0017( )	XA 0005-0017( )	+5 VDC A	
XA 0007-0017( )	XA 0009-0017( )	XA 0011-0017( )		
XA 0013-0017( )	XA 0015-0017( )	XA 0018-0017( )		
XA 0020-0017( )	XA 0022-0017( )	XA 0024-0017( )		
XA 0026-0017( )	XA 0029-0017( )	XA 0031-0017( )		
XA 0033-0017( )	XA 0043-0017( )	J 0007-0017( )		
XA 0043-0055( )	XA 0033-0055( )	XA 0031-0055( )	+5 VDC B	
XA 0029-0055( )	XA 0026-0055( )	XA 0024-0055( )		
XA 0022-0055( )	XA 0020-0055( )	XA 0018-0055( )		
XA 0015-0055( )	XA 0013-0055( )	XA 0011-0055( )		
XA 0009-0055( )	XA 0007-0055( )	XA 0005-0055( )		
XA 0003-0055( )	XA 0002-0055( )	J 0007-0005( )		
XA 0002-0022( )	XA 0003-0022( )	XA 0005-0022( )	-10VDC A	
XA 0007-0022( )	XA 0009-0022( )	XA 0011-0022( )		
XA 0013-0022( )	XA 0015-0022( )	XA 0018-0022( )		
XA 0020-0022( )	XA 0022-0022( )	XA 0024-0022( )		
XA 0026-0022( )	XA 0029-0022( )	XA 0031-0022( )		
XA 0033-0022( )	XA 0043-0022( )	J 0007-0022( )		
XA 0002-0060( )	XA 0003-0060( )	XA 0005-0060( )	-10VDC B	
XA 0007-0060( )	XA 0009-0060( )	XA 0011-0060( )		
XA 0013-0060( )	XA 0015-0060( )	XA 0018-0060( )		
XA 0020-0060( )	XA 0022-0060( )	XA 0024-0060( )		
XA 0026-0060( )	XA 0029-0060( )	XA 0031-0060( )		
XA 0033-0060( )	XA 0043-0060( )	J 0007-0011( )		
XA 0002-0023( )	XA 0003-0023( )	XA 0005-0023( )	-15VDC A	
XA 0007-0023( )	XA 0009-0023( )	XA 0011-0023( )		
XA 0013-0023( )	XA 0015-0023( )	XA 0018-0023( )		
XA 0020-0023( )	XA 0022-0023( )	XA 0024-0023( )		
XA 0026-0023( )	XA 0029-0023( )	XA 0031-0023( )		
XA 0033-0023( )	XA 0043-0023( )	J 0007-0023( )		
XA 0002-0061( )	XA 0003-0061( )	XA 0005-0061( )	-15VDC B	
XA 0007-0061( )	XA 0009-0061( )	XA 0011-0061( )		
XA 0013-0061( )	XA 0015-0061( )	XA 0018-0061( )		
XA 0020-0061( )	XA 0022-0061( )	XA 0024-0061( )		
XA 0026-0061( )	XA 0029-0061( )	XA 0031-0061( )		

Table 3-6. Connector Plate, Signal String List - Continued

SIGNAL STRING LIST . DWG NO.
ASSY REF DES = NATO . REV SHEET 3
SOURCE WIRE LIST = REV . CODE IDENT 04655

PIN LOCATIONS (DRAWING NUMBER REFERENCE) *=OUTPUT			NET NAME T
XA 0033-0061( )	XA 0043-0061( )	J 0007-0013( )	
XA 0002-0021( )	XA 0003-0021( )	XA 0005-0021( )	-5 VDC A
XA 0007-0021( )	XA 0009-0021( )	XA 0011-0021( )	
XA 0013-0021( )	XA 0015-0021( )	XA 0018-0021( )	
XA 0020-0021( )	XA 0022-0021( )	XA 0024-0021( )	
XA 0026-0021( )	XA 0029-0021( )	XA 0031-0021( )	
XA 0033-0021( )	XA 0043-0021( )	J 0007-0021( )	
XA 0002-0059( )	XA 0003-0059( )	XA 0005-0059( )	-5 VDC B
XA 0007-0059( )	XA 0009-0059( )	XA 0011-0059( )	
XA 0013-0059( )	XA 0015-0059( )	XA 0018-0059( )	
XA 0020-0059( )	XA 0022-0059( )	XA 0024-0059( )	
XA 0026-0059( )	XA 0029-0059( )	XA 0031-0059( )	
XA 0033-0059( )	XA 0043-0059( )	J 0007-0009( )	
XA 0003-0025( )	XA 0002-0028( )		CKPH0CH1 N
XA 0007-0025( )	XA 0005-0028( )		CKPH0CH2 N
XA 0011-0025( )	XA 0009-0028( )		CKPH0CH3 N
XA 0015-0025( )	XA 0013-0028( )		CKPH0CH4 N
XA 0020-0025( )	XA 0018-0028( )		CKPH0CH5 N
XA 0024-0025( )	XA 0022-0028( )		CKPH0CH6 N
XA 0029-0025( )	XA 0026-0028( )		CKPH0CH7 N
XA 0033-0025( )	XA 0031-0028( )		CKPH0CH8 N
XA 0003-0024( )	XA 0002-0029( )		CKPH1CH1 N
XA 0007-0024( )	XA 0005-0029( )		CKPH1CH2 N
XA 0011-0024( )	XA 0009-0029( )		CKPH1CH3 N
XA 0015-0024( )	XA 0013-0029( )		CKPH1CH4 N
XA 0020-0024( )	XA 0018-0029( )		CKPH1CH5 N
XA 0024-0024( )	XA 0022-0029( )		CKPH1CH6 N
XA 0029-0024( )	XA 0026-0029( )		CKPH1CH7 N
XA 0033-0024( )	XA 0031-0029( )		CKPH1CH8 N
XA 0003-0064( )	XA 0002-0031( )		CKPH2CH1 N
XA 0007-0064( )	XA 0005-0031( )		CKPH2CH2 N
XA 0011-0064( )	XA 0009-0031( )		CKPH2CH3 N
XA 0015-0064( )	XA 0013-0031( )		CKPH2CH4 N
XA 0020-0064( )	XA 0018-0031( )		CKPH2CH5 N
XA 0024-0064( )	XA 0022-0031( )		CKPH2CH6 N
XA 0029-0064( )	XA 0026-0031( )		CKPH2CH7 N
XA 0033-0064( )	XA 0031-0031( )		CKPH2CH8 N
XA 0003-0046( )	XA 0007-0046( )	XA 0011-0046( )	CLOCK32KHZ
XA 0015-0046( )	XA 0020-0046( )	XA 0024-0046( )	
XA 0029-0046( )	XA 0033-0046( )	XA 0043-0034( )	

Table 3-6. Connector Plate, Signal String List - Continued

SIGNAL STRING LIST . DWG NO.
ASSY REF DES = NATO . REV SHEET 4
SOURCE WIRE LIST = REV . CODE IDENT 04655

PIN LOCATIONS (DRAWING NUMBER REFERENCE) *=OUTPUT			NET NAME	T
XA 0003-0045( )	XA 0007-0045( )	XA 0011-0045( )	CLOCK500HZ	
XA 0015-0045( )	XA 0020-0045( )	XA 0024-0045( )		
XA 0029-0045( )	XA 0033-0045( )	XA 0043-0030( )		
XA 0043-0014( )	J 0006-0065( )		EOW 1	R T
XA 0043-0011( )	J 0006-0030( )		EOW 1	T T
XA 0043-0008( )	J 0005-0062( )		EOW 2	R T
XA 0043-0005( )	J 0005-0027( )		EOW 2	T T
XA 0043-0020( )	XA 0043-0040( )	XA 0031-0040( )	GROUND A	
XA 0033-0040( )	XA 0033-0020( )	XA 0029-0040( )		
XA 0026-0040( )	XA 0024-0040( )	XA 0022-0040( )		
XA 0020-0040( )	XA 0018-0040( )	XA 0015-0040( )		
XA 0013-0040( )	XA 0011-0040( )	XA 0009-0040( )		
XA 0007-0040( )	XA 0005-0040( )	XA 0003-0040( )		
XA 0002-0040( )	XA 0002-0020( )	XA 0003-0020( )		
XA 0005-0020( )	XA 0007-0020( )	XA 0009-0020( )		
XA 0011-0020( )	XA 0013-0020( )	XA 0015-0020( )		
XA 0018-0020( )	XA 0020-0020( )	XA 0022-0020( )		
XA 0024-0020( )	XA 0026-0020( )	XA 0029-0020( )		
XA 0031-0020( )	J 0007-0020( )			
XA 0043-0072( )	XA 0043-0058( )	XA 0033-0058( )	GROUND B	
XA 0033-0072( )	XA 0031-0072( )	XA 0031-0058( )		
XA 0029-0058( )	XA 0026-0058( )	XA 0024-0058( )		
XA 0022-0058( )	XA 0020-0058( )	XA 0018-0058( )		
XA 0015-0058( )	XA 0013-0058( )	XA 0011-0058( )		
XA 0009-0058( )	XA 0007-0058( )	XA 0005-0058( )		
XA 0003-0058( )	XA 0002-0058( )	XA 0002-0072( )		
XA 0003-0072( )	XA 0005-0072( )	XA 0007-0072( )		
XA 0009-0072( )	XA 0011-0072( )	XA 0013-0072( )		
XA 0015-0072( )	XA 0018-0072( )	XA 0020-0072( )		
XA 0022-0072( )	XA 0024-0072( )	XA 0026-0072( )		
XA 0029-0072( )	J 0007-0025( )			
J 0005-0028( )	J 0007-0029( )		GROUND C	
J 0005-0063( )	J 0007-0028( )		GROUND D	
J 0006-0031( )	J 0007-0031( )		GROUND E	
J 0006-0066( )	J 0007-0032( )		GROUND F	
XA 0003-0043( )	XA 0002-0035( )		PBCLR01	N
XA 0007-0043( )	XA 0005-0035( )		PBCLR02	N
XA 0011-0043( )	XA 0009-0035( )		PBCLR03	N
XA 0015-0043( )	XA 0013-0035( )		PBCLR04	N
XA 0020-0043( )	XA 0018-0035( )		PBCLR05	N
XA 0024-0043( )	XA 0022-0035( )		PBCLR06	N
XA 0029-0043( )	XA 0026-0035( )		PBCLR07	N
XA 0033-0043( )	XA 0031-0035( )		PBCLR08	N
XA 0003-0039( )	XA 0002-0032( )		PSEIZE01	N
XA 0007-0039( )	XA 0005-0032( )		PSEIZE02	N
XA 0011-0039( )	XA 0009-0032( )		PSEIZE03	N

Table 3-6. Connector Plate, Signal String List - Continued

SIGNAL STRING LIST . DWG NO.
ASSY REF DES = NATO . REV SHEET 5
SOURCE WIRE LIST = REV . CODE IDENT 04655

PIN LOCATIONS (DRAWING NUMBER REFERENCE) *=OUTPUT		NET NAME	T
XA 0015-0039( )	XA 0013-0032( )	PSEIZE04	N
XA 0020-0039( )	XA 0018-0032( )	PSEIZE05	N
XA 0024-0039( )	XA 0022-0032( )	PSEIZE06	N
XA 0029-0039( )	XA 0026-0032( )	PSEIZE07	N
XA 0033-0039( )	XA 0031-0032( )	PSEIZE08	N
XA 0003-0063( )	XA 0002-0025( )	PWRCL01	N
XA 0007-0063( )	XA 0005-0025( )	PWRCL02	N
XA 0011-0063( )	XA 0009-0025( )	PWRCL03	N
XA 0015-0063( )	XA 0013-0025( )	PWRCL04	N
XA 0020-0063( )	XA 0018-0025( )	PWRCL05	N
XA 0024-0063( )	XA 0022-0025( )	PWRCL06	N
XA 0029-0063( )	XA 0026-0025( )	PWRCL07	N
XA 0033-0063( )	XA 0031-0025( )	PWRCL08	N
XA 0002-0010( )	J 0005-0011( )	RCVCH01INR	T
XA 0002-0011( )	J 0005-0046( )	RCVCH01INT	T
XA 0002-0038( )	J 0006-0040( )	RCVCH01OTR	T
XA 0002-0036( )	J 0006-0005( )	RCVCH01OTT	T
XA 0005-0010( )	J 0005-0013( )	RCVCH02INR	T
XA 0005-0011( )	J 0005-0048( )	RCVCH02INT	T
XA 0005-0038( )	J 0006-0043( )	RCVCH02OTR	T
XA 0005-0036( )	J 0006-0008( )	RCVCH02OTT	T
XA 0009-0010( )	J 0005-0015( )	RCVCH03INR	T
XA 0009-0011( )	J 0005-0050( )	RCVCH03INT	T
XA 0009-0038( )	J 0006-0046( )	RCVCH03OTR	T
XA 0009-0036( )	J 0006-0011( )	RCVCH03OTT	T
XA 0013-0010( )	J 0005-0017( )	RCVCH04INR	T
XA 0013-0011( )	J 0005-0052( )	RCVCH04INT	T
XA 0013-0038( )	J 0006-0049( )	RCVCH04OTR	T
XA 0013-0036( )	J 0006-0014( )	RCVCH04OTT	T
XA 0018-0010( )	J 0005-0019( )	RCVCH05INR	T
XA 0018-0011( )	J 0005-0054( )	RCVCH05INT	T
XA 0018-0038( )	J 0006-0052( )	RCVCH05OTR	T
XA 0018-0036( )	J 0006-0017( )	RCVCH05OTT	T
XA 0022-0010( )	J 0005-0021( )	RCVCH06INR	T

Table 3-6. Connector Plate, Signal String List - Continued

SIGNAL STRING LIST
ASSY REF DES = NATO
SOURCE WIRE LIST = REV

DWG NO.
REV SHEET 6
CODE IDENT 04655

PIN LOCATIONS (DRAWING NUMBER REFERENCE) *=OUTPUT			NET NAME	T
XA 0022-0011( )	J 0005-0056( )		RCVCH06INT	T
XA 0022-0038( )	J 0006-0055( )		RCVCH06OTR	T
XA 0022-0036( )	J 0006-0020( )		RCVCH06OTT	T
XA 0026-0010( )	J 0005-0023( )		RCVCH07INR	T
XA 0026-0011( )	J 0005-0058( )		RCVCH07INT	T
XA 0026-0038( )	J 0006-0058( )		RCVCH07OTR	T
XA 0026-0036( )	J 0006-0023( )		RCVCH07OTT	T
XA 0031-0010( )	J 0005-0025( )		RCVCH08INR	T
XA 0031-0011( )	J 0005-0060( )		RCVCH08INT	T
XA 0031-0038( )	J 0006-0061( )		RCVCH08OTR	T
XA 0031-0036( )	J 0006-0026( )		RCVCH08OTT	T
XA 0013-0009( )	XA 0013-0020( )		SHIELD013	
XA 0018-0009( )	XA 0018-0020( )		SHIELD018	
XA 0002-0009( )	XA 0002-0037( )	XA 0002-0020( )	SHIELD02	
XA 0022-0009( )	XA 0022-0020( )		SHIELD022	
XA 0003-0040( )	XA 0003-0058( )		SHIELD03	
XA 0005-0009( )	XA 0005-0037( )	XA 0005-0020( )	SHIELD05	
XA 0007-0040( )	XA 0007-0058( )		SHIELD07	
XA 0009-0009( )	XA 0009-0037( )	XA 0009-0020( )	SHIELD09	
XA 0003-0042( )	J 0006-0007( )		SIGCH01	R T
XA 0003-0076( )	J 0006-0042( )		SIGCH01	T T
XA 0007-0042( )	J 0006-0010( )		SIGCH02	R T
XA 0007-0076( )	J 0006-0045( )		SIGCH02	T T
XA 0011-0042( )	J 0006-0013( )		SIGCH03	R T
XA 0011-0076( )	J 0006-0048( )		SIGCH03	T T
XA 0015-0042( )	J 0006-0016( )		SIGCH04	R T
XA 0015-0076( )	J 0006-0051( )		SIGCH04	T T
XA 0020-0042( )	J 0006-0019( )		SIGCH05	R T
XA 0020-0076( )	J 0006-0054( )		SIGCH05	T T
XA 0024-0042( )	J 0006-0022( )		SIGCH06	R T
XA 0024-0076( )	J 0006-0057( )		SIGCH06	T T
XA 0029-0042( )	J 0006-0025( )		SIGCH07	R T
XA 0029-0076( )	J 0006-0060( )		SIGCH07	T T
XA 0033-0042( )	J 0006-0029( )		SIGCH08	R T

Table 3-6. Connector Plate, Signal String List - Continued

SIGNAL STRING LIST . DWG NO.
ASSY REF DES = NATO . REV SHEET 7
SOURCE WIRE LIST = REV . CODE IDENT 04655

PIN LOCATIONS (DRAWING NUMBER REFERENCE) *=OUTPUT			NET NAME	T
XA 0033-0076( )	J 0006-0064( )		SIGCH08	T T
XA 0043-0001( )	XA 0033-0048( )	XA 0029-0048( )	TN2600-7DB	
XA 0024-0048( )	XA 0020-0048( )	XA 0015-0048( )		
XA 0011-0048( )	XA 0007-0048( )	XA 0003-0048( )		
XA 0043-0002( )	XA 0033-0075( )	XA 0031-0007( )	11050-10DB	
XA 0029-0075( )	XA 0026-0007( )	XA 0024-0075( )		
XA 0022-0007( )	XA 0020-0075( )	XA 0018-0007( )		
XA 0015-0075( )	XA 0013-0007( )	XA 0011-0075( )		
XA 0009-0007( )	XA 0007-0075( )	XA 0005-0007( )		
XA 0003-0075( )	XA 0002-0007( )			
XA 0003-0071( )	J 0006-0006( )		XMTCH01INR	T
XA 0003-0074( )	J 0006-0041( )		XMTCH01INT	T
XA 0003-0037( )	J 0005-0012( )		XMTCH01OTR	T
XA 0003-0038( )	J 0005-0047( )		XMTCH01OTT	T
XA 0007-0071( )	J 0006-0009( )		XMTCH02INR	T
XA 0007-0074( )	J 0006-0044( )		XMTCH02INT	T
XA 0007-0037( )	J 0005-0014( )		XMTCH02OTR	T
XA 0007-0038( )	J 0005-0049( )		XMTCH02OTT	T
XA 0011-0071( )	J 0006-0012( )		XMTCH03INR	T
XA 0011-0074( )	J 0006-0047( )		XMTCH03INT	T
XA 0011-0037( )	J 0005-0016( )		XMTCH03OTR	T
XA 0011-0038( )	J 0005-0051( )		XMTCH03OTT	T
XA 0015-0071( )	J 0006-0015( )		XMTCH04INR	T
XA 0015-0074( )	J 0006-0050( )		XMTCH04INT	T
XA 0015-0037( )	J 0005-0018( )		XMTCH04OTR	T
XA 0015-0038( )	J 0005-0053( )		XMTCH04OTT	T
XA 0020-0071( )	J 0006-0018( )		XMTCH05INR	T
XA 0020-0074( )	J 0006-0053( )		XMTCH05INT	T
XA 0020-0037( )	J 0005-0020( )		XMTCH05OTR	T
XA 0020-0038( )	J 0005-0055( )		XMTCH05OTT	T
XA 0024-0071( )	J 0006-0021( )		XMTCH06INR	T
XA 0024-0074( )	J 0006-0056( )		XMTCH06INT	T
XA 0024-0037( )	J 0005-0022( )		XMTCH06OTR	T
XA 0024-0038( )	J 0005-0057( )		XMTCH06OTT	T
XA 0029-0071( )	J 0006-0024( )		XMTCH07INR	T
XA 0029-0074( )	J 0006-0059( )		XMTCH07INT	T
XA 0029-0037( )	J 0005-0024( )		XMTCH07OTR	T

Table 3-6. Connector Plate, Signal String List - Continued

SIGNAL STRING LIST . DWG NO.
ASSY REF DES = NATO . REV SHEET 8
SOURCE WIRE LIST = REV . CODE IDENT 04655

PIN LOCATIONS (DRAWING NUMBER REFERENCE) *=OUTPUT						NET NAME	T
XA	0029-0038(	)	J	0005-0059(	)	XMTCH07QTT	T
XA	0033-0071(	)	J	0006-0028(	)	XMTCH08INR	T
XA	0033-0074(	)	J	0006-0063(	)	XMTCH08INT	T
XA	0033-0037(	)	J	0005-0026(	)	XMTCH08OTR	T
XA	0033-0038(	)	J	0005-0061(	)	XMTCH08OTT	T

Table 3-7. NATO Interface Unit, Redundant Cable Wire Run List

NOTES

1. Workmanship per MIL-STD-454, Requirement 9.
2. Partial reference designations are shown. For complete designations prefix with unit number or assembly or subassembly designations as applicable.
3. Termination marking required. Hot-stamp per MIL-M-81531, black characters, centrally located. Marking to be the same as indicated in the applicable location column unless otherwise specified.
4. Entries in Group column denote specific lengths, see figures 3-2 and 3-3.
5. Solder per MIL-STD-454, Requirement 5.
6. A plus symbol before a pin letter (example: J2 +A) indicates a lower case letter.
7. Heat shrink into position as shown.
8. Quantity in inches, cut to 3/4 inch lengths.
9. For connector and jackscrew information see table 3-8.
10. For P1 keying, install item 6 (keying, pin) into location numbers 27 and 62.
11. For P2 keying, install item 6 (keying, pin) into location numbers 33 and 68.
12. Quantity in feet.
13. Quantity in inches.
14. For P3 keying, install item 6 (keying, pin) into location number 30.
15. The numeral "15" in the applicable Note column denotes that two (2) wire ends are common to one piece of termination hardware.

Table 3-7. NATO Interface Unit, Redundant Cable Wire Run List - Continued

DATE 4/18/78 REDUNDANT CABLE RUN LIST DWG NO. SM-B-812375 REV PAGE 1

SEQUENCE					FROM						TO						
SHT	LN	C	WI FND	CLR	KY	NOTES 1 2	LOCATION	S H	FIND LUG	FIND SLV	ROUTE	KY	NOTES 1 2	LOCATION	S H	FIND LUG	FIND SLV	GP	FUNCTION
			KCD	KSQ	NOTES 3 4 5		MARKING	S H	STP	FND FER	LENGTH	NOTES 3 4 5		MARKING	S H	STP	FND FER	SC	FUNCTION
005	11	1		WHT	6	3	J2-+A			8		3		P1-48		2	8	A	XMTCH02OTT
005	11	2							0.19		0.0					0.12			XMTCH02OTT
005	13	1	7	BLK	6	3	J2-+B			8		3		P1-16		2	8	A	RCVCH03INR
005	13	2							0.19		0.0					0.12			RCVCH03INR
005	14	1		WHT	6	3	J2-+C			8		3		P1-51		2	8	A	RCVCH03INT
005	14	2							0.19		0.0					0.12			RCVCH03INT
006	01	1	7	BLK	6	3	J2-+D			8		3		P1-15		2	8	A	XMTCH03OTR
006	01	2							0.19		0.0					0.12			XMTCH03OTR
006	02	1		WHT	6	3	J2-+E			8		3		P1-50		2	8	A	XMTCH03OTT
006	02	2							0.19		0.0					0.12			XMTCH03OTT
006	04	1	7	BLK	6	3	J2-+F			8		3		P1-18		2	8	A	RCVCH04INR
006	04	2							0.19		0.0					0.12			RCVCH04INR
006	05	1		WHT	6	3	J2-+G			8		3		P1-53		2	8	A	RCVCH04INT
006	05	2							0.19		0.0					0.12			RCVCH04INT
006	07	1	7	BLK	6	3	J2-+H			8		3		P1-17		2	8	A	XMTCH04OTR
006	07	2							0.19		0.0					0.12			XMTCH04OTR
006	08	1		WHT	6	3	J2-+K			8		3		P1-52		2	8	A	XMTCH04OTT
006	08	2							0.19		0.0					0.12			XMTCH04OTT
006	10	1	7	BLK	6	3	J2-+M			8		3		P1-20		2	8	A	RCVCH05INR
006	10	2							0.19		0.0					0.12			RCVCH05INR
006	11	1		WHT	6	3	J2-+N			8		3		P1-55		2	8	A	RCVCH05INT
006	11	2							0.19		0.0					0.12			RCVCH05INT
006	13	1	7	BLK	6	3	J2-+P			8		3		P1-19		2	8	A	XMTCH05OTR
006	13	2							0.19		0.0					0.12			XMTCH05OTR
006	14	1		WHT	6	3	J2-+Q			8		3		P1-54		2	8	A	XMTCH05OTT
006	14	2							0.19		0.0					0.12			XMTCH05OTT

Table 3-7. NATO Interface Unit, Redundant Cable Wire Run List - Continued

DATE 4/18/78 REDUNDANT CABLE RUN LIST — DWG NO. SM-B-812375 REV — PAGE 2

SEQUENCE					FROM						TO					
SHT LN C	WI FND	CLR	KY	NOTES 1 2	LOCATION	S H	FIND LUG	FIND SLV	ROUTE	KY	NOTES 1 2	LOCATION	S H	FIND LUG	FIND SLV	GP FUNCTION
	KCD	KSQ	NOTES 3 4 5	MARKING		S H	STP	FND FER	LENGTH	NOTES 3 4 5	MARKING		S H	STP	FND FER	SC FUNCTION
007 01 1	7	BLK	6 3	J2-+R			8			3	P1-22		2	8		A RCVCH06INR
007 01 2						0.19		0.0					0.12			RCVCH06INR
007 02 1		WHT	6 3	J2-+S			8			3	P1-57		2	8		A RCVCH06INT
007 02 2						0.19		0.0					0.12			RCVCH06INT
007 04 1	7	BLK	6 3	J2-+T			8			3	P1-21		2	8		A XMTCH06OTR
007 04 2						0.19		0.0					0.12			XMTCH06OTR
007 05 1		WHT	6 3	J2-+U			8			3	P1-56		2	8		A XMTCH06OTT
007 05 2						0.19		0.0					0.12			XMTCH06OTT
007 07 1	7	BLK	6 3	J2-+V			8			3	P1-24		2	8		A RCVCH07INR
007 07 2						0.19		0.0					0.12			RCVCH07INR
007 08 1		WHT	6 3	J2-+W			8			3	P1-59		2	8		A RCVCH07INT
007 08 2						0.19		0.0					0.12			RCVCH07INT
007 10 1	7	BLK	6 3	J2-+X			8			3	P1-23		2	8		A XMTCH07OTR
007 10 2						0.19		0.0					0.12			XMTCH07OTR
007 11 1		WHT	6 3	J2-+Y			8			3	P1-58		2	8		A XMTCH07OTT
007 11 2						0.19		0.0					0.12			XMTCH07OTT
007 13 1	7	BLK	6 3	J2-+Z			8			3	P1-26		2	8		A RCVCH08INR
007 13 2						0.19		0.0					0.12			RCVCH08INR
007 14 1		WHT	3	J2-AA			8			3	P1-61		2	8		A RCVCH08INT
007 14 2						0.19		0.0					0.12			RCVCH08INT
008 01 1	7	BLK	3	J2-BB			8			3	P1-25		2	8		A XMTCH08OTR
008 01 2						0.19		0.0					0.12			XMTCH08OTR
008 02 1		WHT	3	J2-CC			8			3	P1-60		2	8		A XMTCH08OTT
008 02 2						0.19		0.0					0.12			XMTCH08OTT
008 04 1	7	WHT	3	J2-DD			8			3	P1-27		2	8		A E1-EOW2
008 04 2						0.19		0.0					0.12			E1-EOW2

Table 3-7. NATO Interface Unit, Redundant Cable Wire Run List - Continued

DATE 4/18/78 REDUNDANT CABLE RUN LIST DWG NO. SM-B-812375 REV PAGE 3

SEQUENCE					FROM							TO						
SHT	LN	C	WI FND	CLR	KY	NOTES 1 2	LOCATION	S H	FIND LUG	FIND SLV	ROUTE	KY	NOTES 1 2	LOCATION	S H	FIND LUG	FIND SLV	GP	FUNCTION
			KCD	KSQ	NOTES 3 4 5		MARKING	S H	STP	FND FER	LENGTH	NOTES 3 4 5		MARKING	S H	STP	FND FER	SC	FUNCTION
008	05	1		BLK		3	J2-EE			8			3	P1-62		2	8	A	E2-EOW2
008	05	2							0.19		0.0					0.12			E2-EOW2
008	07	1	7	WHT		3	J2-FF			8			3	P1-28		2	8	A	GND
008	07	2							0.19		0.0					0.12			GND
008	08	1		BLK		3	J2-GG			8			3	P1-63		2	8	A	GND
008	08	2							0.19		0.0					0.12			GND
005	01	1	7	BLK		3	J2-T			8			3	P1-12		2	8	A	RCVCH01INR
005	01	2							0.19		0.0					0.12			RCVCH01INR
005	02	1		WHT		3	J2-U			8			3	P1-47		2	8	A	RCVCH01INT
005	02	2							0.19		0.0					0.12			RCVCH01INT
005	04	1	7	BLK		3	J2-V			8			3	P1-11		2	8	A	XMTCH01OTR
005	04	2							0.19		0.0					0.12			XMTCH01OTR
005	05	1		WHT		3	J2-W			8			3	P1-46		2	8	A	XMTCH01OTT
005	05	2							0.19		0.0					0.12			XMTCH01OTT
005	07	1	7	BLK		3	J2-X			8			3	P1-14		2	8	A	RCVCH02INR
005	07	2							0.19		0.0					0.12			RCVCH02INR
005	08	1		WHT		3	J2-Y			8			3	P1-49		2	8	A	RCVCH02INT
005	08	2							0.19		0.0					0.12			RCVCH02INT
005	10	1	7	BLK		3	J2-Z			8			3	P1-13		2	8	A	XMTCH02OTR
005	10	2							0.19		0.0					0.12			XMTCH02OTR
011	05	1		BLK		6 3	J3-+A			8			3	P2-51		2	8	B	SIGCH04SYX
011	05	2							0.19		0.0					0.12			SIGCH04SYX
011	07	1	7	WHT		6 3	J3-+B			8			3	P2-17		2	8	B	RCVCH05OTT
011	07	2							0.19		0.0					0.12			RCVCH05OTT
011	08	1		BLK		6 3	J3-+C			8			3	P2-52		2	8	B	RCVCH05OTR
011	08	2							0.19		0.0					0.12			RCVCH05OTR

Table 3-7. NATO Interface Unit, Redundant Cable Wire Run List - Continued

DATE 4/18/78 REDUNDANT CABLE RUN LIST — DWG NO. SM-B-812375 REV — PAGE 4

SEQUENCE					FROM							TO						
SHT	LN	C	WI FND	CLR	KY	NOTES 1 2	LOCATION MARKING	S H	FIND LUG STP	FIND SLV FND FER	ROUTE LENGTH	KY	NOTES 1 2 / 3 4 5	LOCATION MARKING	S H	FIND LUG STP	FIND SLV FND FER	GP SC	FUNCTION
			KCD	KSQ		NOTES 3 4 5													
011	10	1	7	BLK		6 3	J3-+D			8			3	P2-18		2	8	B	XMTCH05INR
011	10	2							0.19		0.0					0.12			XMTCH05INR
011	11	1		WHT		6 3	J3-+E			8			3	P2-53		2	8	B	XMTCH05INT
011	11	2							0.19		0.0					0.12			XMTCH05INT
011	13	1	7	WHT		6 3	J3-+F			8			3	P2-19		2	8	B	SIGCH05SXY
011	13	2							0.19		0.0					0.12			SIGCH05SXY
011	14	1		BLK		6 3	J3-+G			8			3	P2-54		2	8	B	SIGCH05SYX
011	14	2							0.19		0.0					0.12			SIGCH05SYX
012	01	1	7	WHT		6 3	J3-+H			8			3	P2-20		2	8	B	RCVCH06OTT
012	01	2							0.19		0.0					0.12			RCVCH06OTT
012	02	1		BLK		6 3	J3-+K			8			3	P2-55		2	8	B	RCVCH06OTR
012	02	2							0.19		0.0					0.12			RCVCH06OTR
012	04	1	7	BLK		6 3	J3-+M			8			3	P2-21		2	8	B	XMTCH06INR
012	04	2							0.19		0.0					0.12			XMTCH06INR
012	05	1		WHT		6 3	J3-+N			8			3	P2-56		2	8	B	XMTCH06INT
012	05	2							0.19		0.0					0.12			XMTCH06INT
012	07	1	7	WHT		6 3	J3-+P			8			3	P2-22		2	8	B	SIGCH06SXY
012	07	2							0.19		0.0					0.12			SIGCH06SXY
012	08	1		BLK		6 3	J3-+Q			8			3	P2-57		2	8	B	SIGCH06SYX
012	08	2							0.19		0.0					0.12			SIGCH06SYX
012	10	1	7	WHT		6 3	J3-+R			8			3	P2-23		2	8	B	RCVCH07OTT
012	10	2							0.19		0.0					0.12			RCVCH07OTT
012	11	1		BLK		6 3	J3-+S			8			3	P2-58		2	8	B	RCVCH07OTR
012	11	2							0.19		0.0					0.12			RCVCH07OTR
012	13	1	7	BLK		6 3	J3-+T			8			3	P2-24		2	8	B	XMTCH07INR
012	13	2							0.19		0.0					0.12			XMTCH07INR

Table 3-7. NATO Interface Unit, Redundant Cable Wire Run List - Continued

DATE 4/18/78 REDUNDANT CABLE RUN LIST — DWG NO. SM-B-812375 REV — PAGE 5

SEQUENCE					FROM						TO						
SHT	LN	C	WI FND	CLR	KY NOTES 1 2	LOCATION	S H	FIND LUG	FIND SLV	ROUTE	KY NOTES 1 2	LOCATION	S H	FIND LUG	FIND SLV	GP	FUNCTION
			KCD	KSQ	NOTES 3 4 5	MARKING	S H	STP	FND FER	LENGTH	NOTES 3 4 5	MARKING	S H	STP	FND FER	SC	FUNCTION
012	14	1		WHT	6 3	J3-+U			8		3	P2-59		2	8	B	XMTCH07INT
012	14	2						0.19		0.0				0.12			XMTCH07INT
013	01	1	7	WHT	6 3	J3-+V			8		3	P2-25		2	8	B	SIGCH07SXY
013	01	2						0.19		0.0				0.12			SIGCH07SXY
013	02	1		BLK	6 3	J3-+W			8		3	P2-60		2	8	B	SIGCH07SYX
013	02	2						0.19		0.0				0.12			SIGCH07SYX
013	04	1	7	WHT	6 3	J3-+X			8		3	P2-26		2	8	B	RCVCH08OTT
013	04	2						0.19		0.0				0.12			RCVCH08OTT
013	05	1		BLK	6 3	J3-+Y			8		3	P2-61		2	8	B	RCVCH08OTR
013	05	2						0.19		0.0				0.12			RCVCH08OTR
013	07	1	7	BLK	6 3	J3-+Z			8		3	P2-28		2	8	B	XMTCH08INR
013	07	2						0.19		0.0				0.12			XMTCH08INR
009	01	1	7	WHT	3	J3-A			8		3	P2-5		2	8	B	RCVCH01OTT
009	01	2						0.19		0.0				0.12			RCVCH01OTT
013	08	1		WHT	3	J3-AA			8		3	P2-63		2	8	B	XMTCH08INT
013	08	2						0.19		0.0				0.12			XMTCH08INT
009	02	1		BLK	3	J3-B			8		3	P2-40		2	8	B	RCVCH01OTR
009	02	2						0.19		0.0				0.12			RCVCH01OTR
013	10	1	7	WHT	3	J3-BB			8		3	P2-29		2	8	B	SIGCH08SXY
013	10	2						0.19		0.0				0.12			SIGCH08SXY
009	04	1	7	BLK	3	J3-C			8		3	P2-6		2	8	B	XMTCH01INR
009	04	2						0.19		0.0				0.12			XMTCH01INR
013	11	1		BLK	3	J3-CC			8		3	P2-64		2	8	B	SIGCH08SYX
013	11	2						0.19		0.0				0.12			SIGCH08SYX
009	05	1		WHT	3	J3-D			8		3	P2-41		2	8	B	XMTCH01INT
009	05	2						0.19		0.0				0.12			XMTCH01INT

Table 3-7. NATO Interface Unit, Redundant Cable Wire Run List - Continued

DATE 4/18/78 REDUNDANT CABLE RUN LIST DWG NO. SM-B-812375 REV PAGE 6

SEQUENCE					FROM					TO				
SHT	LN	C	WIRE FND	CLR	KY NOTES 1 2	LOCATION	S H	FIND LUG	FIND SLV	ROUTE	KY NOTES 1 2	LOCATION	S H	FIND LUG	FIND SLV	GP	FUNCTION
			KCD	KSQ	NOTES 3 4 5	MARKING	S H	STP	END FER	LENGTH	NOTES 3 4 5	MARKING	S H	STP	END FER	SC	FUNCTION
013	13	1		7 WHT	3	J3-DD			8		3	P2-30		2	8	B	E4-EOWI
013	13	2						0.19		0.0				0.12			E4-EOWI
009	07	1		7 WHT	3	J3-E			8		3	P2-7		2	8	B	SIGCH01SXY
009	07	2						0.19		0.0				0.12			SIGCH01SXY
013	14	1		BLK	3	J3-EE			8		3	P2-65		2	8	B	E4-EOWI
013	14	2						0.19		0.0				0.12			E4-EOWI
009	08	1		BLK	3	J3-F			8		3	P2-42		2	8	B	SIGCH01SYX
009	08	2						0.19		0.0				0.12			SIGCH01SYX
014	01	1		7 WHT	3	J3-FF			8		3	P2-31		2	8	B	GND
014	01	2						0.19		0.0				0.12			GND
009	10	1		7 WHT	3	J3-G			8		3	P2-8		2	8	B	RCVCH02OTT
009	10	2						0.19		0.0				0.12			RCVCH02OTT
014	02	1		BLK	3	J3-GG			8		3	P2-66		2	8	B	GND
014	02	2						0.19		0.0				0.12			GND
009	11	1		BLK	3	J3-H			8		3	P2-43		2	8	B	RCVCH02OTR
009	11	2						0.19		0.0				0.12			RCVCH02OTR
009	13	1		7 BLK	3	J3-J			8		3	P2-9		2	8	B	XMTCH02INR
009	13	2						0.19		0.0				0.12			XMTCH02INR
009	14	1		WHT	3	J3-K			8		3	P2-44		2	8	B	XMTCH02INT
009	14	2						0.19		0.0				0.12			XMTCH02INT
010	01	1		7 WHT	3	J3-L			8		3	P2-10		2	8	B	SIGCH02SXY
010	01	2						0.19		0.0				0.12			SIGCH02SXY
010	02	1		BLK	3	J3-M			8		3	P2-45		2	8	B	SIGCH02SYX
010	02	2						0.19		0.0				0.12			SIGCH02SYX
010	04	1		7 WHT	3	J3-N			8		3	P2-11		2	8	B	RCVCH03OTT
010	04	2						0.19		0.0				0.12			RCVCH03OTT

Table 3-7. NATO Interface Unit, Redundant Cable Wire Run List - Continued

DATE 4/18/78 REDUNDANT CABLE RUN LIST DWG NO. SM-B-812375 REV PAGE 7

SEQUENCE					FROM						TO					
SHT LN C	WI FND	CLR	KY NOTES 1 2	LOCATION	S H	FIND LUG	FIND SLV	ROUTE	KY NOTES 1 2	LOCATION	S H	FIND LUG	FIND SLV	GP	FUNCTION
	KCD	KSQ	NOTES 3 4 5	MARKING	S H	STP	FND FER	LENGTH	NOTES 3 4 5	MARKING	S H	STP	FND FER	SC	FUNCTION
010 05 1		BLK	3	J3-P			8		3	P2-46		2	8	B	RCVCH03OTR
010 05 2						0.19		0.0				0.12			RCVCH03OTR
010 07 1	7	BLK	3	J3-R			8		3	P2-12		2	8	B	XMTCH03INR
010 07 2						0.19		0.0				0.12			XMTCH03INR
010 08 1		WHT	3	J3-S			8		3	P2-47		2	8	B	XMTCH03INT
010 08 2						0.19		0.0				0.12			XMTCH03INT
010 10 1	7	WHT	3	J3-T			8		3	P2-13		2	8	B	SIGCH03SXY
010 10 2						0.19		0.0				0.12			SIGCH03SXY
010 11 1		BLK	3	J3-U			8		3	P2-48		2	8	B	SIGCH03SYX
010 11 2						0.19		0.0				0.12			SIGCH03SYX
010 13 1	7	WHT	3	J3-V			8		3	P2-14		2	8	B	RCVCH04OTT
010 13 2						0.19		0.0				0.12			RCVCH04OTT
010 14 1		BLK	3	J3-W			8		3	P2-49		2	8	B	RCVCH04OTR
010 14 2						0.19		0.0				0.12			RCVCH04OTR
011 01 1	7	BLK	3	J3-X			8		3	P2-15		2	8	B	XMTCH04INR
011 01 2						0.19		0.0				0.12			XMTCH04INR
011 02 1		WHT	3	J3-Y			8		3	P2-50		2	8	B	XMTCH04INT
011 02 2						0.19		0.0				0.12			XMTCH04INT
011 04 1	7	WHT	3	J3-Z			8		3	P2-16		2	8	B	SIGCH04SXY
011 04 2						0.19		0.0				0.12			SIGCH04SXY
016 01 1	13	RED	3	PS1-(+15)		15	8		3	P3-18		2	8	C	+15V
016 01 2						0.00		0.0				0.12			+15V
015 03 1	13	RED	3	PS1-(+15)		15	8		3	P3-6		2	8	C	+15V
015 03 2						0.00		0.0				0.12			+15V
016 03 1	13	RED	3	PS1-(-28)		15	8		3	P3-19		2	8	C	-28V
016 03 2						0.00		0.0				0.12			-28V

Table 3-7. NATO Interface Unit, Redundant Cable Wire Run List - Continued

DATE 4/18/78 REDUNDANT CABLE RUN LIST DWG NO. SM-B-812375 REV PAGE 8

SEQUENCE					FROM						TO				
SHT LN C	WI FND	CLR	KY NOTES 1 2	LOCATION	S H	FIND LUG	SLV	ROUTE	KY NOTES 1 2	LOCATION	S H	FIND LUG	SLV	GP	FUNCTION
	KCD	KSQ	NOTES 3 4 5	MARKING	S H	STP	FND FER LENGTH		NOTES 3 4 5	MARKING	S H	STP	FND FER	SC	FUNCTION
015 05 1	13	RED	3	PS1-(-28)		15	8		3	P3-7		2	8	C	-28V
015 05 2						0.00		0.0				0.12			-28V
015 13 1	13	RED	3	PS1-(+5)		15	8		3	P3-17		2	8	C	+5V
015 13 2						0.00		0.0				0.12			+5V
015 01 1	13	RED	3	PS1-(+5)		15	8		3	P3-5		2	8	C	+5V
015 01 2						0.00		0.0				0.12			+5V
015 09 1	14	VIO	3	PS1-(-10)		15	8		3	P3-11		2	8	C	-10V
015 09 2						0.00		0.0				0.12			-10V
016 11 1	14	VIO	3	PS1-(-10)		15	8		3	P3-22		2	8	C	-10V
016 11 2						0.00		0.0				0.12			-10V
015 11 1	13	RED	3	PS1-(-15)		15	8		3	P3-13		2	8	C	-15V
015 11 2						0.00		0.0				0.12			-15V
016 13 1	14	VIO	3	PS1-(-15)		15	8		3	P3-23		2	8	C	-15V
016 13 2						0.00		0.0				0.12			-15V
016 09 1	13	RED	3	PS1-(-5)		15	8		3	P3-21		2	8	C	-5V
016 09 2						0.00		0.0				0.12			-5V
015 07 1	14	VIO	3	PS1-(-5)		15	8		3	P3-9		2	8	C	-5V
015 07 2						0.00		0.0				0.12			-5V
017 03 1	12	BLK	15	PS1-GND					3	P1-28		2	8	C	GND
017 03 2						0.00		0.0				0.12			GND
017 05 1	12	BLK	3 15	PS1-GND		16	11		3	P1-29		2	8	C	GND
017 05 2						0.00		0.0				0.12			GND
017 07 1	12	BLK	15	PS1-GND					3	P1-31		2	8	C	GND
017 07 2						0.00		0.0				0.12			GND
017 09 1	12	BLK	3 15	PS1-GND		16	11		3	P1-32		2	8	C	GND
017 09 2						0.00		0.0				0.12			GND

Table 3-7. NATO Interface Unit, Redundant Cable Wire Run List - Continued

DATE 4/18/78 REDUNDANT CABLE RUN LIST DWG NO. SM-B-812375 REV PAGE 9

SEQUENCE						FROM							TO						
SHT	LN	C	WI FND	CLR	KY	NOTES 1 2	LOCATION	S H	FIND LUG	FIND SLV	ROUTE	KY	NOTES 1 2	LOCATION	S H	FIND LUG	FIND SLV	GP	FUNCTION
			KCD	KSQ	NOTES 3 4 5		MARKING	S H	STP	FND FER	LENGTH	NOTES 3 4 5		MARKING	S H	STP	FND FER	SC	FUNCTION
016	05	1	12	BLK	3		PS1-GND		15	8		3		P3-20		2	8	C	GND
016	05	2							0.00		0.0					0.12			GND
017	01	1	12	BLK	3		PS1-GND		15	8		3		P3-25		2	8	C	GND
017	01	2							0.00		0.0					0.12			GND
005	01	1	7	BLK	3		P1-11		2	8		3		J2-T			8	A	RCVCH01INR
005	01	2							0.12		0.0					0.19			RCVCH01INR
005	04	1	7	BLK	3		P1-12		2	8		3		J2-V			8	A	XMTCH01OTR
005	04	2							0.12		0.0					0.19			XMTCH01OTR
005	07	1	7	BLK	3		P1-13		2	8		3		J2-X			8	A	RCVCH02INR
005	07	2							0.12		0.0					0.19			RCVCH02INR
005	10	1	7	BLK	3		P1-14		2	8		3		J2-Z			8	A	XMTCH02OTR
005	10	2							0.12		0.0					0.19			XMTCH02OTR
005	13	1	7	BLK	3		P1-15		2	8		6	3	J2-+B			8	A	RCVCH03INR
005	13	2							0.12		0.0					0.19			RCVCH03INR
006	01	1	7	BLK	3		P1-16		2	8		6	3	J2-+D			8	A	XMTCH03OTR
006	01	2							0.12		0.0					0.19			XMTCH03OTR
006	04	1	7	BLK	3		P1-17		2	8		6	3	J2-+F			8	A	RCVCH04INR
006	04	2							0.12		0.0					0.19			RCVCH04INR
006	07	1	7	BLK	3		P1-18		2	8		6	3	J2-+H			8	A	XMTCH04OTR
006	07	2							0.12		0.0					0.19			XMTCH04OTR
006	10	1	7	BLK	3		P1-19		2	8		6	3	J2-+M			8	A	RCVCH05INR
006	10	2							0.12		0.0					0.19			RCVCH05INR
006	13	1	7	BLK	3		P1-20		2	8		6	3	J2-+P			8	A	XMTCH05OTR
006	13	2							0.12		0.0					0.19			XMTCH05OTR
007	01	1	7	BLK	3		P1-21		2	8		6	3	J2-+R			8	A	RCVCH06INR
007	01	2							0.12		0.0					0.19			RCVCH06INR

Table 3-7. NATO Interface Unit, Redundant Cable Wire Run List - Continued

DATE 4/18/78 REDUNDANT CABLE RUN LIST DWG NO. SM-B-812375 REV PAGE 10

SEQUENCE				FROM						TO					
SHT LN C	WI FND	CLR	KY NOTES 1 2	LOCATION	S H	FIND LUG	SLV	ROUTE	KY NOTES 1 2	LOCATION	S H	FIND LUG	SLV	GP	FUNCTION
	KCD	KSQ	NOTES 3 4 5	MARKING	S H	STP	FND FER	LENGTH	NOTES 3 4 5	MARKING	S H	STP	FND FER	SC	FUNCTION
007 04 1	7	BLK	3	P1-22		2	8		6 3	J2-+T			8	A	XMTCHO6OTR
007 04 2						0.12		0.0				0.19			XMTCHO6OTR
007 07 1	7	BLK	3	P1-23		2	8		6 3	J2-+V			8	A	RCVCHO7INR
007 07 2						0.12		0.0				0.19			RCVCHO7INR
007 10 1	7	BLK	3	P1-24		2	8		6 3	J2-+X			8	A	XMTCHO7OTR
007 10 2						0.12		0.0				0.19			XMTCHO7OTR
007 13 1	7	BLK	3	P1-25		2	8		6 3	J2-+Z			8	A	RCVCHO8INR
007 13 2						0.12		0.0				0.19			RCVCHO8INR
008 01 1	7	BLK	3	P1-26		2	8		3	J2-BB			8	A	XMTCHO8OTR
008 01 2						0.12		0.0				0.19			XMTCHO8OTR
008 04 1	7	WHT	3	P1-27		2	8		3	J2-DD			8	A	E1-EOW2
008 04 2						0.12		0.0				0.19			E1-EOW2
008 07 1	7	WHT	3	P1-28		2	8		3	J2-FF			8	A	GND
008 07 2						0.12		0.0				0.19			GND
017 03 1	12	BLK	3	P1-28		2	8		15	PS1-GND				C	GND
017 03 2						0.12		0.0				0.00			GND
017 05 1	12	BLK	3	P1-29		2	8		3 15	PS1-GND		16	11	C	GND
017 05 2						0.12		0.0				0.00			GND
017 07 1	12	BLK	3	P1-31		2	8		15	PS1-GND				C	GND
017 07 2						0.12		0.0				0.00			GND
017 09 1	12	BLK	3	P1-32		2	8		3 15	PS1-GND		16	11	C	GND
017 09 2						0.12		0.0				0.00			GND
005 02 1		WHT	3	P1-46		2	8		3	J2-U			8	A	RCVCHO1INT
005 02 2						0.12		0.0				0.19			RCVCHO1INT
005 05 1		WHT	3	P1-47		2	8		3	J2-W			8	A	XMTCHO1OTT
005 05 2						0.12		0.0				0.19			XMTCHO1OTT

Table 3-7. NATO Interface Unit, Redundant Cable Wire Run List - Continued

DATE 4/18/78 REDUNDANT CABLE RUN LIST — DWG NO. SM-B-812375 REV — PAGE 11

SEQUENCE	FROM								TO							
SHT LN C	WI FND	CLR	KY NOTES 1 2	LOCATION	S H	FIND LUG	FIND SLV	ROUTE	KY NOTES 1 2	LOCATION	S H	FIND LUG	FIND SLV	GP	FUNCTION
	KCD	KSQ	NOTES 3 4 5	MARKING	S H	STP	FND FER	LENGTH	NOTES 3 4 5	MARKING	S H	STP	FND FER	SC	FUNCTION
005 08 1		WHT	3	P1-48		2	8		3	J2-Y			8	A	RCVCH02INT
005 08 2						0.12		0.0				0.19			RCVCH02INT
005 11 1		WHT	3	P1-49		2	8		6 3	J2-+A			8	A	XMTCH02OTT
005 11 2						0.12		0.0				0.19			XMTCH02OTT
005 14 1		WHT	3	P1-50		2	8		6 3	J2-+C			8	A	RCVCH03INT
005 14 2						0.12		0.0				0.19			RCVCH03INT
006 02 1		WHT	3	P1-51		2	8		6 3	J2-+E			8	A	XMTCH03OTT
006 02 2						0.12		0.0				0.19			XMTCH03OTT
006 05 1		WHT	3	P1-52		2	8		6 3	J2-+G			8	A	RCVCH04INT
006 05 2						0.12		0.0				0.19			RCVCH04INT
006 08 1		WHT	3	P1-53		2	8		6 3	J2-+K			8	A	XMTCH04OTT
006 08 2						0.12		0.0				0.19			XMTCH04OTT
006 11 1		WHT	3	P1-54		2	8		6 3	J2-+N			8	A	RCVCH05INT
006 11 2						0.12		0.0				0.19			RCVCH05INT
006 14 1		WHT	3	P1-55		2	8		6 3	J2-+Q			8	A	XMTCH05OTT
006 14 2						0.12		0.0				0.19			XMTCH05OTT
007 02 1		WHT	3	P1-56		2	8		6 3	J2-+S			8	A	RCVCH06INT
007 02 2						0.12		0.0				0.19			RCVCH06INT
007 05 1		WHT	3	P1-57		2	8		6 3	J2-+U			8	A	XMTCH06OTT
007 05 2						0.12		0.0				0.19			XMTCH06OTT
007 08 1		WHT	3	P1-58		2	8		6 3	J2-+W			8	A	RCVCH07INT
007 08 2						0.12		0.0				0.19			RCVCH07INT
007 11 1		WHT	3	P1-59		2	8		6 3	J2-+Y			8	A	XMTCH07OTT
007 11 2						0.12		0.0				0.19			XMTCH07OTT
007 14 1		WHT	3	P1-60		2	8		3	J2-AA			8	A	RCVCH08INT
007 14 2						0.12		0.0				0.19			RCVCH08INT

Table 3-7. NATO Interface Unit, Redundant Cable Wire Run List - Continued

DATE 4/18/78 REDUNDANT CABLE RUN LIST DWG NO. SM-B-812375 REV PAGE 12

SEQUENCE	WI FND	CLR	KY	NOTES 1 2	LOCATION	S H	FIND LUG	FIND SLV	ROUTE LENGTH	KY	NOTES 1 2	LOCATION	S H	FIND LUG	FIND SLV	GP	FUNCTION
	KCD	KSQ	NOTES 3 4 5	MARKING		S H	STP	FNDFER			NOTES 3 4 5	MARKING	S H	STP	FNDFER	SC	FUNCTION
008 02 1		WHT	3	P1-61		2		8			3	J2-CC			8	A	XMTCH08OTT
008 02 2						0.12			0.0					0.19			XMTCH08OTT
008 05 1		BLK	3	P1-62		2		8			3	J2-EE			8	A	E2-EOW2
008 05 2						0.12			0.0					0.19			E2-EOW2
008 08 1		BLK	3	P1-63		2		8			3	J2-GG			8	A	GND
008 08 2						0.12			0.0					0.19			GND
010 01 1	7	WHT	3	P2-10		2		8			3	J3-L			8	B	SIGCH02SXY
010 01 2						0.12			0.0					0.19			SIGCH02SXY
010 04 1	7	WHT	3	P2-11		2		8			3	J3-N			8	B	RCVCH03OTT
010 04 2						0.12			0.0					0.19			RCVCH03OTT
010 07 1	7	BLK	3	P2-12		2		8			3	J3-R			8	B	XMTCH03INR
010 07 2						0.12			0.0					0.19			XMTCH03INR
010 10 1	7	WHT	3	P2-13		2		8			3	J3-T			8	B	SIGCH03SXY
010 10 2						0.12			0.0					0.19			SIGCH03SXY
010 13 1	7	WHT	3	P2-14		2		8			3	J3-V			8	B	RCVCH04OTT
010 13 2						0.12			0.0					0.19			RCVCH04OTT
011 01 1	7	BLK	3	P2-15		2		8			3	J3-X			8	B	XMTCH04INR
011 01 2						0.12			0.0					0.19			XMTCH04INR
011 04 1	7	WHT	3	P2-16		2		8			3	J3-Z			8	B	SIGCH04SXY
011 04 2						0.12			0.0					0.19			SIGCH04SXY
011 07 1	7	WHT	3	P2-17		2		8			6 3	J3-+B			8	B	RCVCH05OTT
011 07 2						0.12			0.0					0.19			RCVCH05OTT
011 10 1	7	BLK	3	P2-18		2		8			6 3	J3-+D			8	B	XMTCH05INR
011 10 2						0.12			0.0					0.19			XMTCH05INR
011 13 1	7	WHT	3	P2-19		2		8			6 3	J3-+F			8	B	SIGCH05SXY
011 13 2						0.12			0.0					0.19			SIGCH05SXY

Table 3-7. NATO Interface Unit, Redundant Cable Wire Run List - Continued

DATE 4/18/78 REDUNDANT CABLE RUN LIST DWG NO. SM-B-812375 REV PAGE 13

SEQUENCE				FROM						TO					
SHT LN C	WI FND	CLR	KY NOTES 1 2	LOCATION	S H	FIND LUG	FIND SLV	ROUTE	KY NOTES 1 2	LOCATION	S H	FIND LUG	FIND SLV	GP	FUNCTION
	KCD KSQ		NOTES 3 4 5	MARKING	S H	STP	FND FER LENGTH		NOTES 3 4 5	MARKING	S H	STP	FND FER	SC	FUNCTION
012 01 1	7	WHT	3	P2-20		2	8		6 3	J3-+H			8	B	RCVCH06OTT
012 01 2						0.12	0.0					0.19			RCVCH06OTT
012 04 1	7	BLK	3	P2-21		2	8		6 3	J3-+M			8	B	XMTCH06INR
012 04 2						0.12	0.0					0.19			XMTCH06INR
012 07 1	7	WHT	3	P2-22		2	8		6 3	J3-+P			8	B	SIGCH06SXY
012 07 2						0.12	0.0					0.19			SIGCH06SXY
012 10 1	7	WHT	3	P2-23		2	8		6 3	J3-+R			8	B	RCVCH07OTT
012 10 2						0.12	0.0					0.19			RCVCH07OTT
012 13 1	7	BLK	3	P2-24		2	8		6 3	J3-+T			8	B	XMTCH07INR
012 13 2						0.12	0.0					0.19			XMTCH07INR
013 01 1	7	WHT	3	P2-25		2	8		6 3	J3-+V			8	B	SIGCH07SXY
013 01 2						0.12	0.0					0.19			SIGCH07SXY
013 04 1	7	WHT	3	P2-26		2	8		6 3	J3-+X			8	B	RCVCH08OTT
013 04 2						0.12	0.0					0.19			RCVCH08OTT
013 07 1	7	BLK	3	P2-28		2	8		6 3	J3-+Z			8	B	XMTCH08INR
013 07 2						0.12	0.0					0.19			XMTCH08INR
013 10 1	7	WHT	3	P2-29		2	8		3	J3-BB			8	B	SIGCH08SXY
013 10 2						0.12	0.0					0.19			SIGCH08SXY
013 13 1	7	WHT	3	P2-30		2	8		3	J3-DD			8	B	E4-EOWI
013 13 2						0.12	0.0					0.19			E4-EOWI
014 01 1	7	WHT	3	P2-31		2	8		3	J3-FF			8	B	GND
014 01 2						0.12	0.0					0.19			GND
009 02 1		BLK	3	P2-40		2	8		3	J3-B			8	B	RCVCH01OTR
009 02 2						0.12	0.0					0.19			RCVCH01OTR
009 05 1		WHT	3	P2-41		2	8		3	J3-D			8	B	XMTCH01INT
009 05 2						0.12	0.0					0.19			XMTCH01INT

Table 3-7. NATO Interface Unit, Redundant Cable Wire Run List - Continued

DATE 4/18/78 REDUNDANT CABLE RUN LIST DWG NO. SM-B-812375 REV PAGE 14

SEQUENCE					FROM						TO					
SHT LN C	WI FND	CLR	KY NOTES 1 2	LOCATION	S H	FIND LUG	FIND SLV	ROUTE	KY NOTES 1 2	LOCATION	S H	FIND LUG	FIND SLV	GP	FUNCTION	
	KCD	KSQ	NOTES 3 4 5	MARKING	S H	STP	FND FER	LENGTH	NOTES 3 4 5	MARKING	S H	STP	FND FER	SC	FUNCTION	
009 08 1		BLK	3	P2-42		2	8		3	J3-F			8	B	SIGCH01SYX	
009 08 2						0.12		0.0				0.19			SIGCH01SYX	
009 11 1		BLK	3	P2-43		2	8		3	J3-H			8	B	RCVCH02OTR	
009 11 2						0.12		0.0				0.19			RCVCH02OTR	
009 14 1		WHT	3	P2-44		2	8		3	J3-K			8	B	XMTCH02INT	
009 14 2						0.12		0.0				0.19			XMTCH02INT	
010 02 1		BLK	3	P2-45		2	8		3	J3-M			8	B	SIGCH02SYX	
010 02 2						0.12		0.0				0.19			SIGCH02SYX	
010 05 1		BLK	3	P2-46		2	8		3	J3-P			8	B	RCVCH03OTR	
010 05 2						0.12		0.0				0.19			RCVCH03OTR	
010 08 1		WHT	3	P2-47		2	8		3	J3-S			8	B	XMTCH03INT	
010 08 2						0.12		0.0				0.19			XMTCH03INT	
010 11 1		BLK	3	P2-48		2	8		3	J3-U			8	B	SIGCH03SYX	
010 11 2						0.12		0.0				0.19			SIGCH03SYX	
010 14 1		BLK	3	P2-49		2	8		3	J3-W			8	B	RCVCH04OTR	
010 14 2						0.12		0.0				0.19			RCVCH04OTR	
009 01 1	7	WHT	3	P2-5		2	8		3	J3-A			8	B	RCVCH01OTT	
009 01 2						0.12		0.0				0.19			RCVCH01OTT	
011 02 1		WHT	3	P2-50		2	8		3	J3-Y			8	B	XMTCH04INT	
011 02 2						0.12		0.0				0.19			XMTCH04INT	
011 05 1		BLK	3	P2-51		2	8		6 3	J3-+A			8	B	SIGCH04SYX	
011 05 2						0.12		0.0				0.19			SIGCH04SYX	
011 08 1		BLK	3	P2-52		2	8		6 3	J3-+C			8	B	RCVCH05OTR	
011 08 2						0.12		0.0				0.19			RCVCH05OTR	
011 11 1		WHT	3	P2-53		2	8		6 3	J3-+E			8	B	XMTCH05INT	
011 11 2						0.12		0.0				0.19			XMTCH05INT	

Table 3-7. NATO Interface Unit, Redundant Cable Wire Run List - Continued

DATE 4/18/78 REDUNDANT CABLE RUN LIST — DWG NO. SM-B-812375 REV — PAGE 15

SEQUENCE					FROM						TO					
SHT	LN	C	WI FND	CLR	KY NOTES 1 2	LOCATION	S H	FIND LUG	FIND SLV	ROUTE	KY NOTES 1 2	LOCATION	S H	FIND LUG	FIND SLV	GP	FUNCTION
			KCD	KSQ	NOTES 3 4 5	MARKING	S H	STP	FND FER	LENGTH	NOTES 3 4 5	MARKING	S H	STP	FND FER	SC	FUNCTION
011	14	1		BLK	3	P2-54		2	8		6	3 J3-+G			8	B	SIGCH05SYX
011	14	2						0.12		0.0				0.19			SIGCH05SYX
012	02	1		BLK	3	P2-55		2	8		6	3 J3-+K			8	B	RCVCH06OTR
012	02	2						0.12		0.0				0.19			RCVCH06OTR
012	05	1		WHT	3	P2-56		2	8		6	3 J3-+N			8	B	XMTCH06INT
012	05	2						0.12		0.0				0.19			XMTCH06INT
012	08	1		BLK	3	P2-57		2	8		6	3 J3-+Q			8	B	SIGCH06SYX
012	08	2						0.12		0.0				0.19			SIGCH06SYX
012	11	1		BLK	3	P2-58		2	8		6	3 J3-+S			8	B	RCVCH07OTR
012	11	2						0.12		0.0				0.19			RCVCH07OTR
012	14	1		WHT	3	P2-59		2	8		6	3 J3-+U			8	B	XMTCH07INT
012	14	2						0.12		0.0				0.19			XMTCH07INT
009	04	1	7	BLK	3	P2-6		2	8		3	J3-C			8	B	XMTCH01INR
009	04	2						0.12		0.0				0.19			XMTCH01INR
013	02	1		BLK	3	P2-60		2	8		6	3 J3-+W			8	B	SIGCH07SYX
013	02	2						0.12		0.0				0.19			SIGCH07SYX
013	05	1		BLK	3	P2-61		2	8		6	3 J3-+Y			8	B	RCVCH08OTR
013	05	2						0.12		0.0				0.19			RCVCH08OTR
013	08	1		WHT	3	P2-63		2	8		3	J3-AA			8	B	XMTCH08INT
013	08	2						0.12		0.0				0.19			XMTCH08INT
013	11	1		BLK	3	P2-64		2	8		3	J3-CC			8	B	SIGCH08SYX
013	11	2						0.12		0.0				0.19			SIGCH08SYX
013	14	1		BLK	3	P2-65		2	8		3	J3-EE			8	B	E4-EOWI
013	14	2						0.12		0.0				0.19			E4-EOWI
014	02	1		BLK	3	P2-66		2	8		3	J3-GG			8	B	GND
014	02	2						0.12		0.0				0.19			GND

Table 3-7. NATO Interface Unit, Redundant Cable Wire Run List - Continued

DATE 4/18/78 REDUNDANT CABLE RUN LIST DWG NO. SM-B-812375 REV PAGE 16

SEQUENCE					FROM						TO					
SHT LN C	WI FND	CLR	KY	NOTES 1 2	LOCATION	S H	FIND LUG	FIND SLV	ROUTE	KY	NOTES 1 2	LOCATION	S H	FIND LUG	FIND SLV	GP FUNCTION
	KCD	KSQ		NOTES 3 4 5	MARKING	S H	STP	FND FER	LENGTH		NOTES 3 4 5	MARKING	S H	STP	FND FER	SC FUNCTION
009 07 1	7	WHT		3	P2-7		2	8			3	J3-E			8	B SIGCH01SXY
009 07 2							0.12		0.0					0.19		SIGCH01SXY
009 10 1	7	WHT		3	P2-8		2	8			3	J3-G			8	B RCVCH02OTT
009 10 2							0.12		0.0					0.19		RCVCH02OTT
009 13 1	7	BLK		3	P2-9		2	8			3	J3-J			8	B XMTCH02INR
009 13 2							0.12		0.0					0.19		XMTCH02INR
015 09 1	14	VIO		3	P3-11		2	8			3	PS1-(-10)		15	8	C -10V
015 09 2							0.12		0.0					0.00		-10V
015 11 1	13	RED		3	P3-13		2	8			3	PS1-(-15)		15	8	C -15V
015 11 2							0.12		0.0					0.00		-15V
015 13 1	13	RED		3	P3-17		2	8			3	PS1-(+5)		15	8	C +5V
015 13 2							0.12		0.0					0.00		+5V
016 01 1	13	RED		3	P3-18		2	8			3	PS1-(+15)		15	8	C +15V
016 01 2							0.12		0.0					0.00		+15V
016 03 1	13	RED		3	P3-19		2	8			3	PS1-(-28)		15	8	C -28V
016 03 2							0.12		0.0					0.00		-28V
016 05 1	12	BLK		3	P3-20		2	8			3	PS1-GND		15	8	C GND
016 05 2							0.12		0.0					0.00		GND
016 09 1	13	RED		3	P3-21		2	8			3	PS1-(-5)		15	8	C -5V
016 09 2							0.12		0.0					0.00		-5V
016 11 1	14	VIO		3	P3-22		2	8			3	PS1-(-10)		15	8	C -10V
016 11 2							0.12		0.0					0.00		-10V
016 13 1	14	VIO		3	P3-23		2	8			3	PS1-(-15)		15	8	C -15V
016 13 2							0.12		0.0					0.00		-15V

Table 3-7. NATO Interface Unit, Redundant Cable Wire Run List - Continued

DATE 4/18/78 REDUNDANT CABLE RUN LIST DWG NO. SM-B-812375 REV PAGE 17

SEQUENCE					FROM						TO					
SHT	LN	C	WI FND	CLR	KY NOTES 1 2	LOCATION	S H	FIND LUG	SLV	ROUTE	KY NOTES 1 2	LOCATION	S H	FIND LUG	SLV	GP FUNCTION
			KCD	KSQ	NOTES 3 4 5	MARKING	S H	STP	FND FER	LENGTH	NOTES 3 4 5	MARKING	S H	STP	FND FER	SC FUNCTION
017	01	1		12 BLK	3	P3-25		2	8		3	PS1-GND		15	8	C GND
017	01	2						0.12		0.0				0.00		GND
015	01	1		13 RED	3	P3-5		2	8		3	PS1-(+5)		15	8	C +5V
015	01	2						0.12		0.0				0.00		+5V
015	03	1		13 RED	3	P3-6		2	8		3	PS1-(+15)		15	8	C +15V
015	03	2						0.12		0.0				0.00		+15V
015	05	1		13 RED	3	P3-7		2	8		3	PS1-(-28)		15	8	C -28V
015	05	2						0.12		0.0				0.00		-28V

Table 3-8. NATO Interface Unit, Redundant Cable Wire Run List, Associated Parts List

ITEM NO	QTY. REQD	FT/ IN	CODE IDENT	PART OR IDENTIFYING NO.	SPECIFICATION	NOMENCLATURE OR DESCRIPTION	NOTE NO.
1	3		80063	SMA838038-3		INSERT,ELC CONN	
2	106		80063	SMA838041-2		CONTACT,ELEC	
3	REF			DELETE			
4	REF		80063	SMA838310-2		CONN,RCPT,ELEC	
5	REF		80063	SMA838310-5		CONN,PCPT,ELEC	
6	5		80063	SMA838498-1		DUMMY CONN,LAMP	
7	183	F	81349	EC24U0-9U	MIL-C-55021/1	CABLE	12
8	79	I	81349	CL1-.093IDYEL	MIL-I-23053/5	INSULATION SLVG	8
9	5	I	81349	CL1-.500IDYEL	MIL-I-23053/5	INSULATION SLVG	13
10	3	I	81349	CL1-.750IDYEL	MIL-I-23053/5	INSULATION SLVG	13
11	2	I	81349	CL1-.125IDYEL	MIL-I-23053/5	INSULATION SLVG	8
12	9	F	81349	TYPEE22AWGBLK	MIL-W-16878/4	WIRE,ELECTRICAL	12
13	9	F	81349	TYPEE22AWGRED	MIL-W-16878/4	WIRE,ELECTRICAL	12
14	9	F	81349	TYPEE22AWGVIO	MIL-W-16878/4	WIRE ELECTRICAL	12
15	19		96906	MS25036-102	MIL-T-7928	TERMINAL,LUG	
16	2		96906	MS25036-111	MIL-T-7928	TERMINAL,LUG	
17	AR		81348	SN60WRMAP2-063D	QQ-S-571	SOLDER,TIN ALLY	
18	6		96906	MS51957-20	FF-S-92	SCREW,MACHINE	
19	6		96906	MS35338-135	FF-W-84	WASHER,LOCK	
20	6		96906	MS15795-803	FF-W-92	WASHER,FLAT	
21	6		96906	MS28775-005	MIL-P-25732	PACKING,PREFORM	

CHAPTER 4

GENERAL SUPPORT MAINTENANCE INSTRUCTIONS

General support maintenance of the Converter, Telephone Signal CV-3478/TTC consists of printed circuit card repair. Refer to the maintenance allocation chart in TM 11-5805-681-12.

APPENDIX A

REFERENCES

DA PAM 310-1	Consolidated Index of Army Publications and Blank Forms.
SB 11-573	Painting and Preservation of Supplies Available for Field Use for Electronics Command Equipment.
TM 11-5805-681-12	Operator's and Organizational Maintenance Manual: Automatic Telephone Central Office, AN/TTC-39(V)(*)
TM 11-5805-715-12	Operator's and Organizational Maintenance Manual: Converter, Telephone Signal CV-3478/TTC
TM 11-5805-715-34P	Direct Support and General Support Repair Parts and Special Tools List: Converter, Telephone Signal CV-3478/TTC
TM 38-750	The Army Maintenance Management System (TAMMS)
TM 740-90-1	Administrative Storage of Equipment
TM 746-10	Marking, Packaging and Shipment of Supplies and Equipment: General Packaging Instructions for Field Units.

APPENDIX B

EXPENDABLE SUPPLIES AND MATERIALS LIST

B-1. Scope

This appendix lists expendable supplies and materials you will need to operate and maintain the Converter, Telephone Signal CV-3478/TTC. These items are authorized to you by CTA 50-970, Expendable Items (except Medical, Class V, Repair Parts, and Heraldic Items).

B-2. Explanation of Columns

a. Column 1-Item number. This number is as- signed to the entry in the listing and is referenced in the narrative instructions to identify the material (e.g., "Use cleaning compound, item 5, appx. B"). *b. Column 2-Level.* This column identifies the lowest level of maintenance that requires the listed item.

C-Operator/Crew
O-Organizational
F-Direct Support Maintenance
H-General Support Maintenance

c. Column 3-National Stock Number. This is the National stock number assigned to the item; use it to request or requisition the item.

d. Column 4-Description. Indicates the Federal item name and, if required, a description to identify the item. The last line for each item indicates the Federal Supply Code for Manufacturer (FSCM) in parentheses followed by a part.

e. Column 5-Unit of Measure (U/M). Indicates the measure used in performing the actual maintenance function. This measure is expressed by a two- character alphabetical abbreviation (e.g., ea, in., pr). If the unit of measure differs from the unit of issue, requisition the lowest unit of issue that will satisfy your requirements.

Section II EXPENDABLE SUPPLIES AND MATERIALS LIST

(1) ITEM NO.	(2) FSCM	(3) PART NUMBER	(4) DESCRIPTION AND USABLE ON CODE	(5) QTY
1	0	7920-00-924-5700 *7920-00-965-4960	CCC-C-444 81348 CLOTH, CLEANING	EA
2	0	6850-00-105-3084	S237-6973 160Z 48294 TRICHLOROTRIFLUOROETHANE S237-6973-160Z 54418	16 Oz

*** Latest active NSN**

INDEX

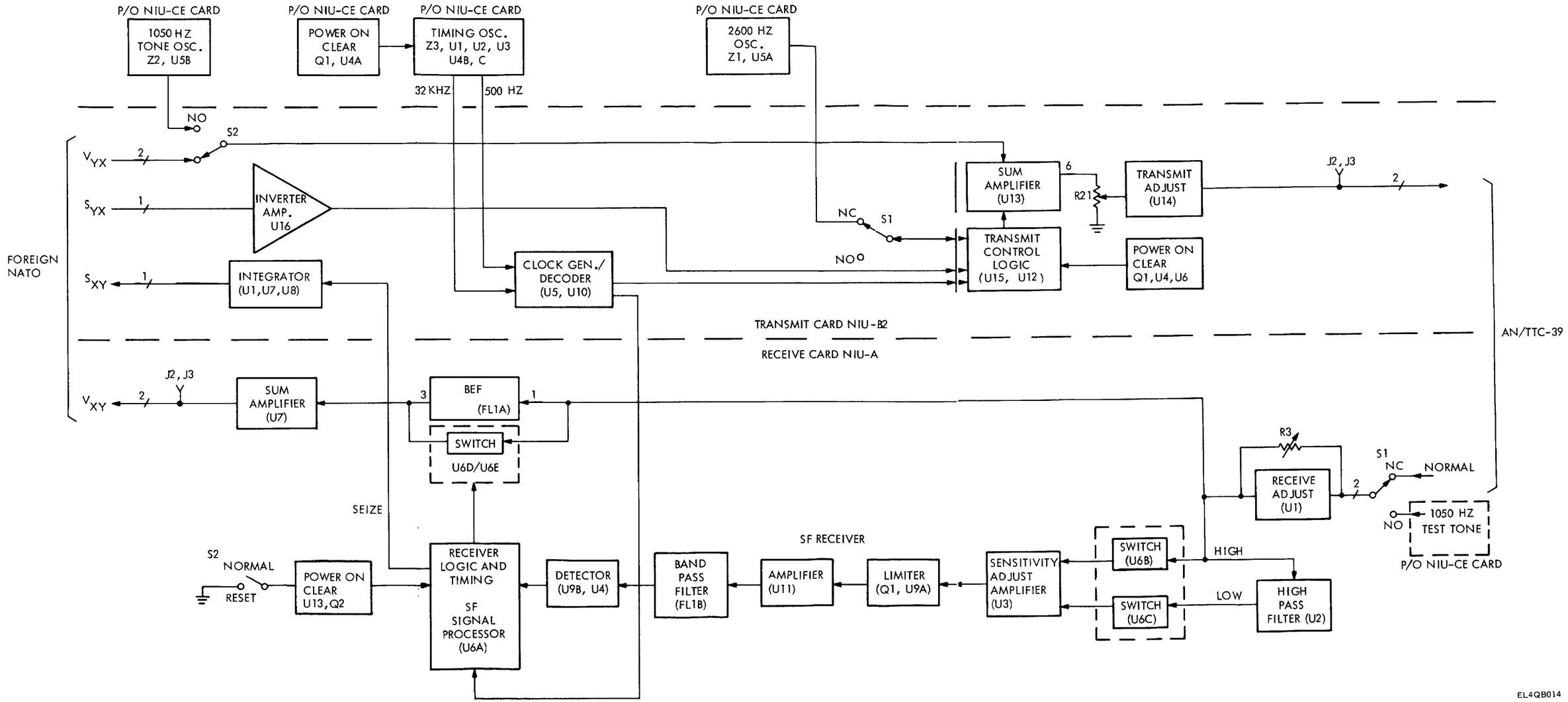
Paragraph

R

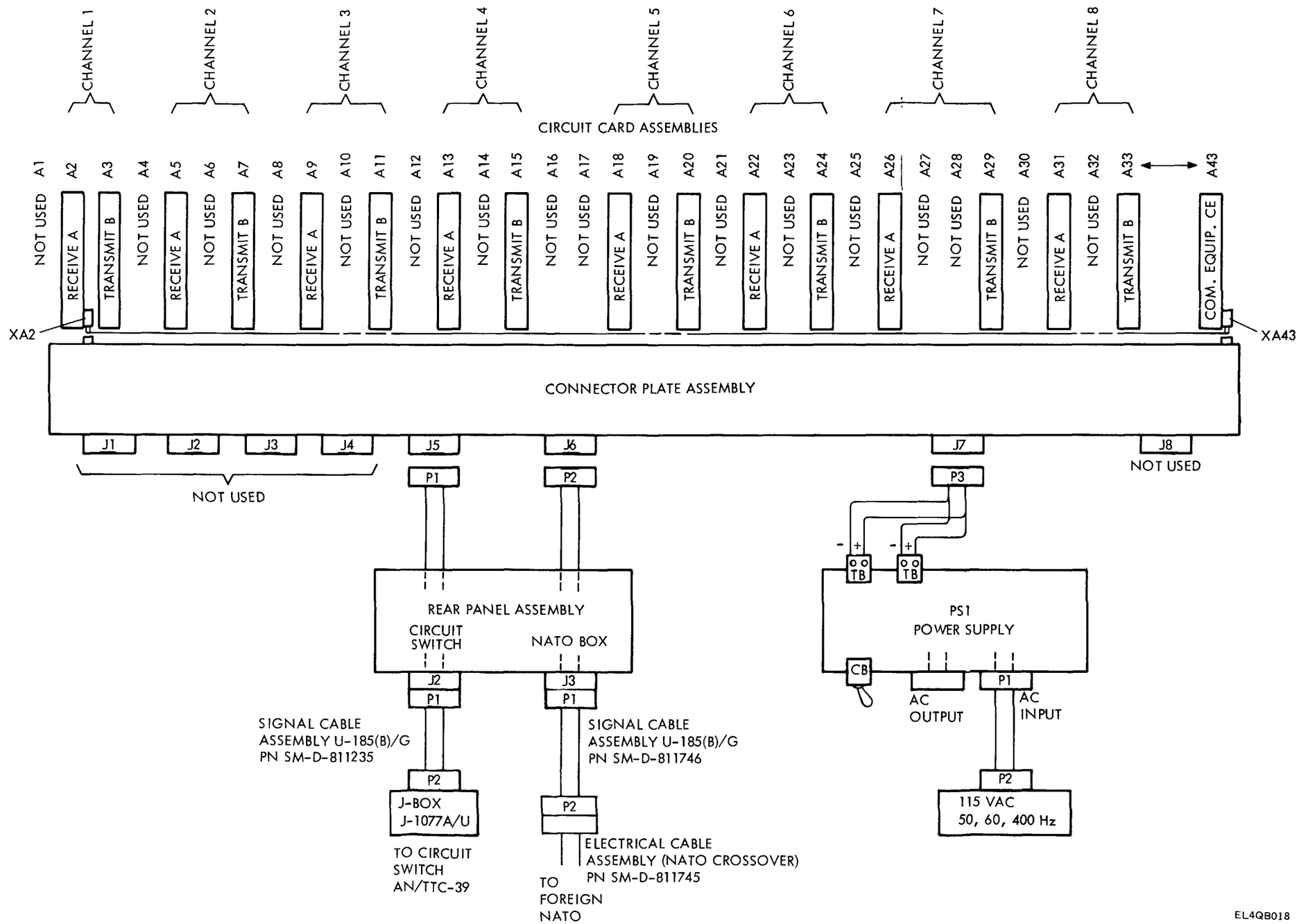
S

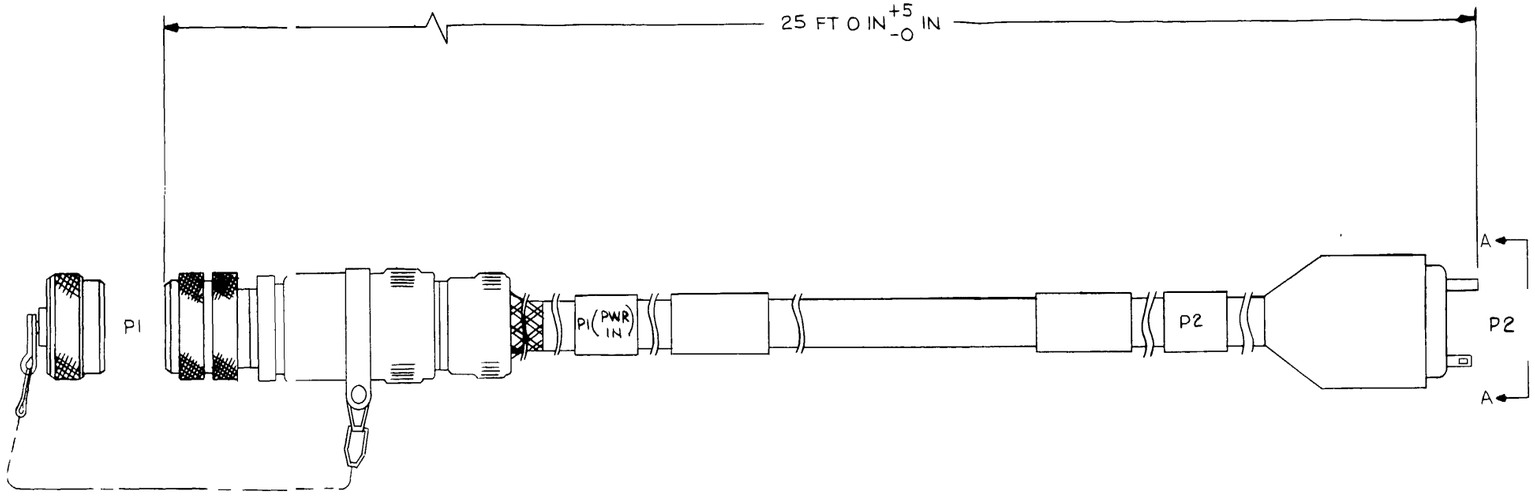
T

W


P/O NIU-CE CARD
1050 HZ TONE OSC. Z2, U5B
P/O NIU-CE CARD
POWER ON CLEAR Q1, U4A
P/O NIU-CE CARD
TIMING OSC. Z3, U1, U2, U3 U4B, C
P/O NIU-CE CARD
2600 HZ OSC. Z1, U5A
32 KHZ
500 HZ
NO
S2
V_{YX}
2
S_{YX}
1
INVERTER AMP. U16
S_{XY}
1
INTEGRATOR (U1,U7,U8)
FOREIGN NATO
CLOCK GEN./ DECODER (U5, U10)
NC
S1
NO
SUM AMPLIFIER (U13)
6
R21
TRANSMIT ADJUST (U14)
J2, J3
2
TRANSMIT CONTROL LOGIC (U15, U12)
POWER ON CLEAR Q1,U4,U6
TRANSMIT CARD NIU-B2
RECEIVE CARD NIU-A
AN/TTC-39
J2, J3
V_{XY}
2
SUM AMPLIFIER (U7)
3
BEF (FL1A)
1
SWITCH U6D/U6E
SEIZE
R3
S1
NC
NORMAL
RECEIVE ADJUST (U1)
2
NO
1050 HZ TEST TONE
P/O NIU-CE CARD
S2
NORMAL
RESET
POWER ON CLEAR U13,Q2
RECEIVER LOGIC AND TIMING
SF SIGNAL PROCESSOR (U6A)
DETECTOR (U9B, U4)
BAND PASS FILTER (FL1B)
SF RECEIVER
AMPLIFIER (U11)
LIMITER (Q1, U9A)
SENSITIVITY ADJUST AMPLIFIER (U3)
SWITCH (U6B)
SWITCH (U6C)
HIGH
LOW
HIGH PASS FILTER (U2)

EL4QB014


CHANNEL 1
CHANNEL 2
CHANNEL 3
CHANNEL 4
CHANNEL 5
CHANNEL 6
CHANNEL 7
CHANNEL 8
CIRCUIT CARD ASSEMBLIES
A1 NOT USED
A2 RECEIVE A
A3 TRANSMIT B
A4 NOT USED
A5 RECEIVE A
A6 NOT USED
A7 TRANSMIT B
A8 NOT USED
A9 RECEIVE A
A10 NOT USED
A11 TRANSMIT B
A12 NOT USED
A13 RECEIVE A
A14 NOT USED
A15 TRANSMIT B
A16 NOT USED
A17 NOT USED
A18 RECEIVE A
A19 NOT USED
A20 TRANSMIT B
A21 NOT USED
A22 RECEIVE A
A23 NOT USED
A24 TRANSMIT B
A25 NOT USED
A26 RECEIVE A
A27 NOT USED
A28 NOT USED
A29 TRANSMIT B
A30 NOT USED
A31 RECEIVE A
A32 NOT USED
A33 TRANSMIT B
A43 COM. EQUIP. CE
XA2
XA43
CONNECTOR PLATE ASSEMBLY
J1
J2
J3
J4
J5
J6
J7
J8
NOT USED
P1
P2
REAR PANEL ASSEMBLY
CIRCUIT SWITCH
NATO BOX
J2
P1
J3
P1
SIGNAL CABLE ASSEMBLY U-185(B)/G PN SM-D-811235
SIGNAL CABLE ASSEMBLY U-185(B)/G PN SM-D-811746
P2
J-BOX J-1077A/U
TO CIRCUIT SWITCH AN/TTC-39
P2
ELECTRICAL CABLE ASSEMBLY (NATO CROSSOVER) PN SM-D-811745
TO FOREIGN NATO
P3
- + - +
TB TB
PS1 POWER SUPPLY
CB
AC OUTPUT
P1
AC INPUT
P2
115 VAC 50, 60, 400 Hz
EL4QB018



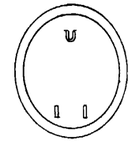
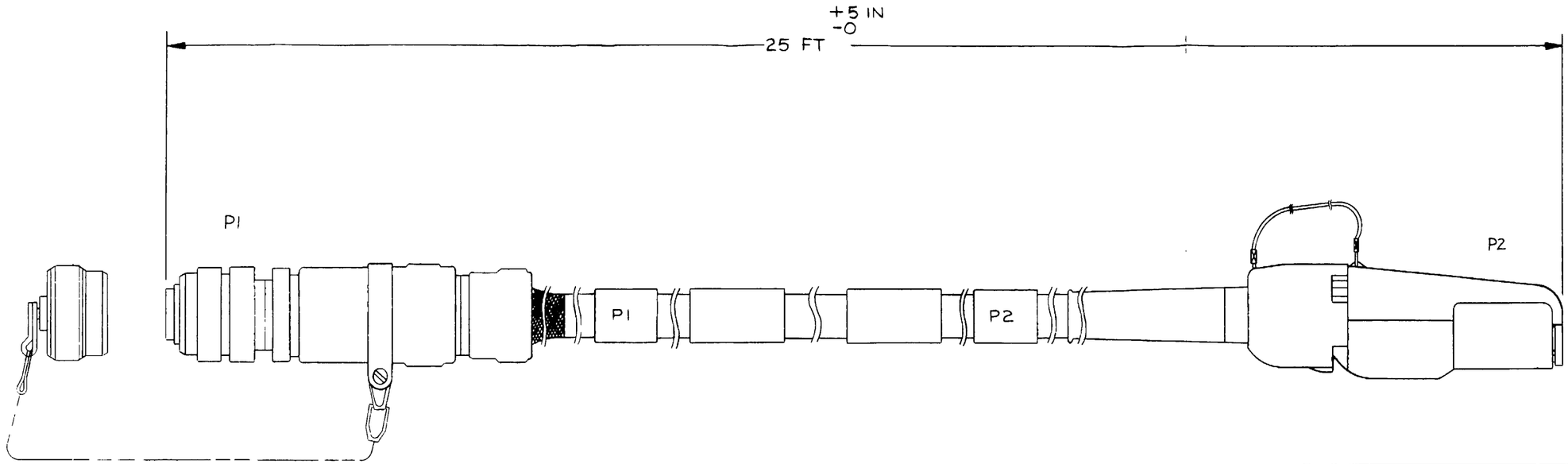
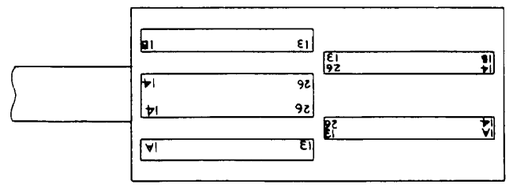


TABLE I		
WIRE COLOR	FROM	TO
BLK	P1-A	P2-BRASS
WHT	P1-B	P2-WHITE
GRN	P1-C	P2-GREEN

EL4QB019



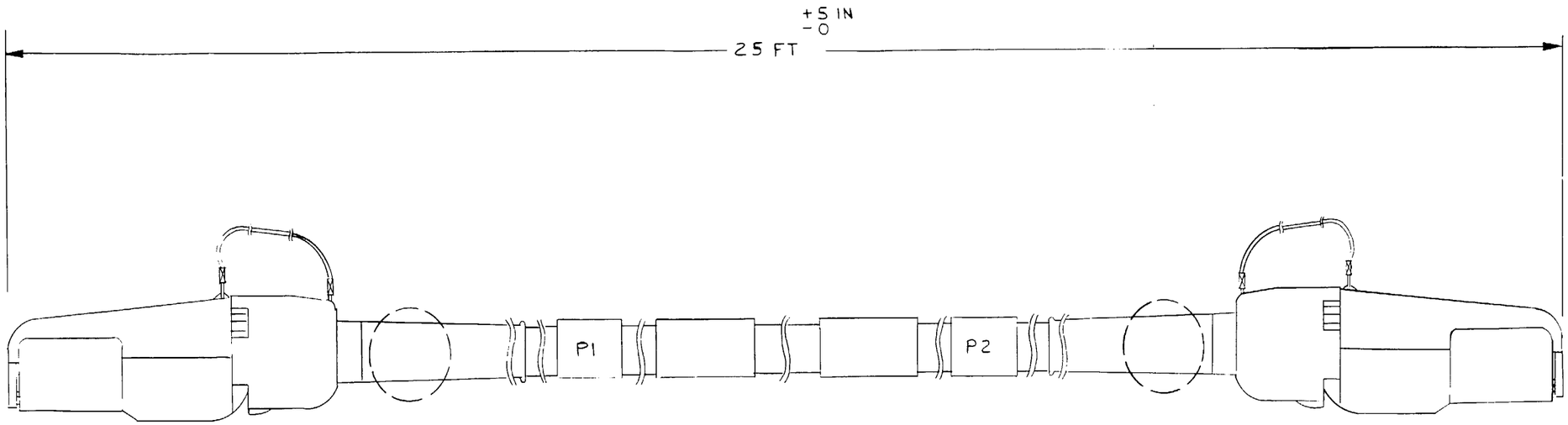


FRONT VIEW P2

NOTE:

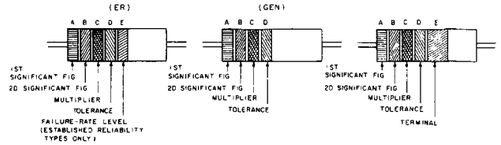
TYPICAL OF CABLES SM-D-811235 AND SM-D-811746.

EL4QB020



NOTE: NATO CROSSOVER CABLE SM-D-811745

EL4QB021



COLOR CODE MARKING FOR COMPOSITION TYPE RESISTORS

COLOR-CODE MARKING FOR FILM-TYPE RESISTORS

TABLE I
COLOR CODE FOR COMPOSITION TYPE AND FILM TYPE RESISTORS

BAND A		BAND B		BAND C		BAND D		BAND E		
COLOR	FIRST SIGNIFICANT FIGURE	COLOR	SECOND SIGNIFICANT FIGURE	COLOR	MULTIPLIER	COLOR	RESISTANCE TOLERANCE (PERCENT)	COLOR	FAILURE RATE LEVEL	TERM
BLACK	0	BLACK	0	BLACK	1			BROWN	M=1.0	
BROWN	1	BROWN	1	BROWN	10			RED	P=0.1	
RED	2	RED	2	RED	100			ORANGE	R=0.01	
ORANGE	3	ORANGE	3	ORANGE	1,000			YELLOW	S=0.001	
YELLOW	4	YELLOW	4	YELLOW	10,000	SILVER	±10 (COMP TYPE ONLY);	WHITE		SOLDERABLE
GREEN	5	GREEN	5	GREEN	100,000	GOLD	±5			
BLUE	6	BLUE	6	BLUE	1,000,000	RED	±2 (NOT APPLICABLE TO ESTABLISHED RELIABILITY)			
PURPLE (VIOLET)	7	PURPLE (VIOLET)	7							
GRAY	8	GRAY	8	SILVER	0.01					
WHITE	9	WHITE	9	GOLD	0.1					

BAND A — THE FIRST SIGNIFICANT FIGURE OF THE RESISTANCE VALUE (BANDS A THRU D SHALL BE OF EQUAL WIDTH)

BAND B — THE SECOND SIGNIFICANT FIGURE OF THE RESISTANCE VALUE

BAND C — THE MULTIPLIER (THE MULTIPLIER IS THE FACTOR BY WHICH THE TWO SIGNIFICANT FIGURES ARE MULTIPLIED TO YIELD THE NOMINAL RESISTANCE VALUE)

BAND D — THE RESISTANCE TOLERANCE

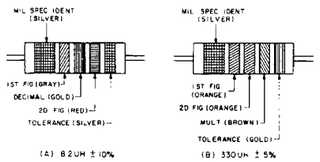
BAND E — WHEN USED ON COMPOSITION RESISTORS, BAND E INDICATES ESTABLISHED RELIABILITY FAILURE-RATE LEVEL (PERCENT FAILURE PER 1,000 HOURS) ON FILM RESISTORS THIS BAND SHALL BE APPROXIMATELY 1-1/2 TIMES THE WIDTH OF OTHER BANDS AND INDICATES TYPE OF TERMINAL

RESISTANCES IDENTIFIED BY NUMBERS AND LETTERS (THESE ARE NOT COLOR CODED)

SOME RESISTORS ARE IDENTIFIED BY THREE OR FOUR DIGIT ALPHA NUMERIC DESIGNATORS THE LETTER R IS USED IN PLACE OF A DECIMAL POINT WHEN FRACTIONAL VALUES OF AN OHM ARE EXPRESSED FOR EXAMPLE

2R7 = 2.7 OHMS 10R0 = 10.0 OHMS

FOR WIRE-WOUND-TYPE RESISTORS COLOR CODING IS NOT USED, IDENTIFICATION MARKING IS SPECIFIED IN EACH OF THE APPLICABLE SPECIFICATIONS



(A) 8.2UH ± 10% (B) 330UH ± 5%

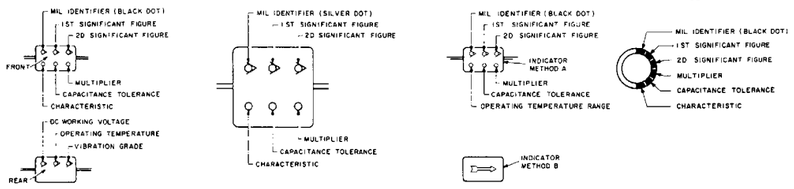
COLOR CODING FOR TUBULAR ENCAPSULATED R F CHOKES AT A AN EXAMPLE OF OF THE CODING FOR AN 8.2 UH CHOKE IS GIVEN AT B, THE COLOR BANDS FOR A 330 UH INDUCTOR ARE ILLUSTRATED

TABLE 2
COLOR CODING FOR TUBULAR ENCAPSULATED R F CHOKES

COLOR	SIGNIFICANT FIGURE	MULTIPLIER	INDUCTANCE TOLERANCE (PERCENT)
BLACK	0	1	
BROWN	1	10	1
RED	2	100	2
ORANGE	3	1,000	3
YELLOW	4		
GREEN	5		
BLUE	6		
VIOLET	7		
GRAY	8		
WHITE	9		
NONE			20
SILVER			10
GOLD	DECIMAL POINT		5

MULTIPLIER IS THE FACTOR BY WHICH THE TWO COLOR FIGURES ARE MULTIPLIED TO OBTAIN THE INDUCTANCE VALUE OF THE CHOKE COIL

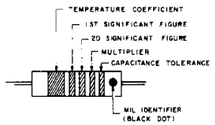
CAPACITORS, FIXED, VARIOUS-DIELECTRICS, STYLES CM, CN, CY, AND CB



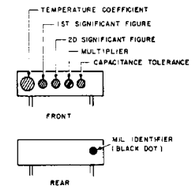
MICA-DIELECTRIC PAPER-DIELECTRIC GLASS-DIELECTRIC, GLASS CASE MICA, BUTTON TYPE

TABLE 3 — FOR USE WITH STYLES CM, CN, CY AND CB

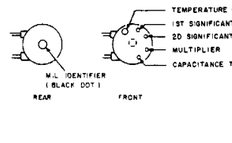
COLOR	MIL ID	1ST SIG FIG	2D SIG FIG	MULTIPLIER	CAPACITANCE TOLERANCE			CHARACTERISTIC[2]			DC WORKING VOLTAGE	OPERATING TEMP RANGE	VIBRATION GRADE
					CM	CN	CY	CB	CM	CN	CB	CM	CY, CN	CM
BLACK	CM, CY, CB	0	0	1			±20%	±20%		A			-55°TO+70°C	10-55 H z
BROWN		1	1	10					B	E	B			
RED		2	2	100	±2%		±2%	±2%	C				-55°TO+85°C	
ORANGE		3	3	1,000		±30%			D		D	300		
YELLOW		4	4	10,000					E				-55°TO+125°C	10-2,000 H z
GREEN		5	5		±5%				F			500		
BLUE		6	6										-55°TO+150°C	
PURPLE (VIOLET)		7	7											
GRAY		8	8											
WHITE		9	9											
GOLD				0.1			±5%	±5%						
SILVER	CN			0.01	±10%	±10%	±10%	±10%						



AXIAL LEAD



RADIAL LEAD



DISK-TYPE

TABLE 4 — TEMPERATURE COMPENSATING, STYLE CC

COLOR	TEMPERATURE COEFFICIENT[4]	1ST SIG FIG	2D SIG FIG	MULTIPLIER[1]	CAPACITANCE TOLERANCE		MIL ID
					CAPACITANCES OVER 10 UUF	CAPACITANCES 10 UUF OR LESS	
BLACK	0	0	0	1		±2.0 UUF	CC
BROWN	-30	1	1	10	±1%		
RED	-80	2	2	100	±2%	±0.25 UUF	
ORANGE	-150	3	3	1,000			
YELLOW	-220	4	4				
GREEN	-330	5	5		±5%	±0.5 UUF	
BLUE	-470	6	5				
PURPLE (VIOLET)	-750	7	7				
GRAY		8	5	0.01*			
WHITE		9	9	0.1*	±10%		
GOLD	+100			0.1		±1.0 UUF	
SILVER				0.01			

1 THE MULTIPLIER IS THE NUMBER BY WHICH THE TWO SIGNIFICANT (SIG) FIGURES ARE MULTIPLIED TO OBTAIN THE CAPACITANCE IN UUF

2 LETTERS INDICATE THE CHARACTERISTICS DESIGNATED IN APPLICABLE SPECIFICATIONS MIL-C-5, MIL-C-250, MIL-C-11272B, AND MIL-C-10950C RESPECTIVELY

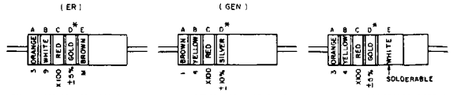
3 LETTERS INDICATE THE TEMPERATURE RANGE AND VOLTAGE-TEMPERATURE LIMITS DESIGNATED IN MIL-C-11015D

4 TEMPERATURE COEFFICIENT IN PARTS PER MILLION PER DEGREE CENTIGRADE

* OPTIONAL CODING WHERE METALLIC PIGMENTS ARE UNDESIRABLE

EL4Q8027

EXAMPLES OF COLOR CODING



NOMINAL RESISTANCE 3,900 OHMS
RESISTANCE TOLERANCE ±5%
FAILURE RATE LEVEL M

NOMINAL RESISTANCE 1,400 OHMS
RESISTANCE TOLERANCE ±10%

NOMINAL RESISTANCE 3,400 OHMS
RESISTANCE TOLERANCE ±5%
TERMINAL SOLDERABLE

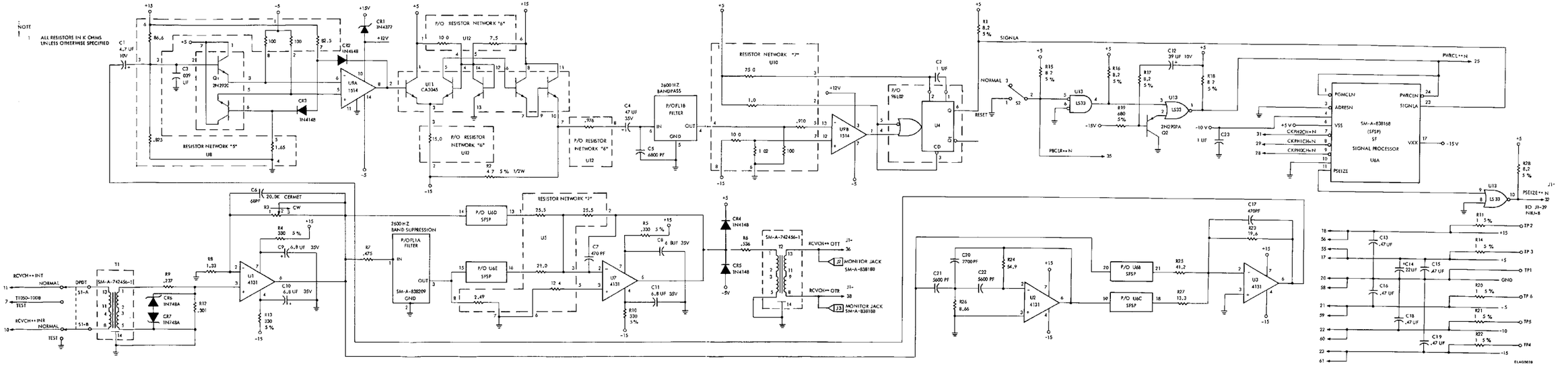
COMPOSITION-TYPE RESISTORS FILM-TYPE RESISTORS

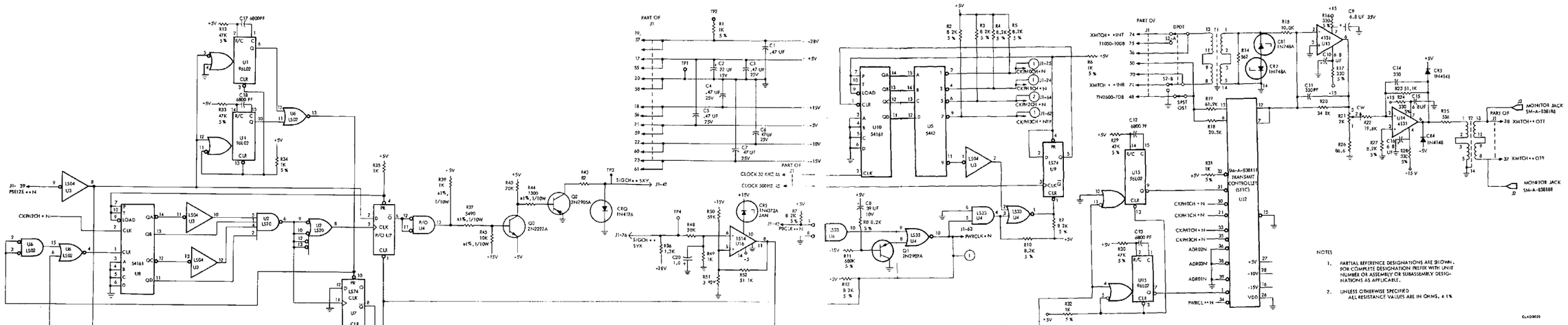
* IF BAND D IS OMITTED THE RESISTOR TOLERANCE IS ±20% AND THE RESISTOR IS NOT MIL-STD

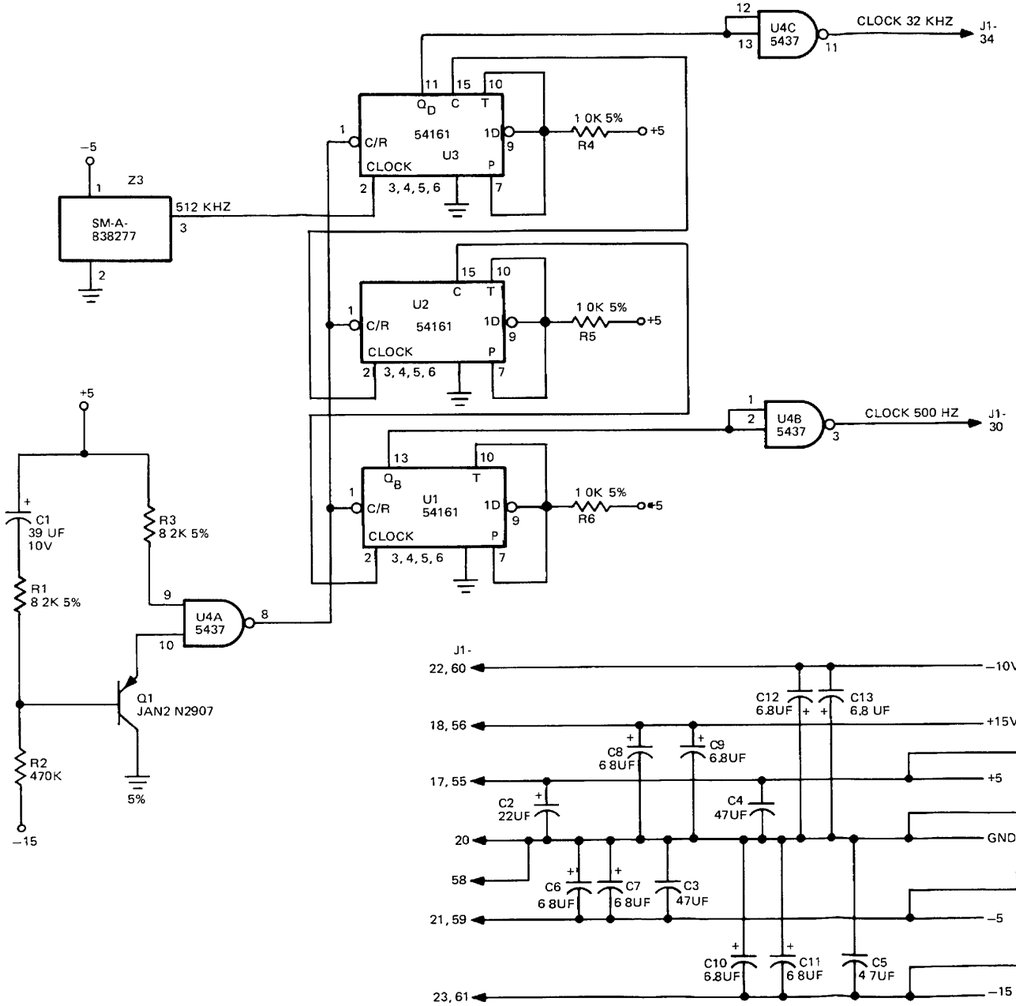
A COLOR CODE MARKING FOR MILITARY STANDARD RESISTORS

B. COLOR CODE MARKING FOR MILITARY STANDARD INDUCTORS.

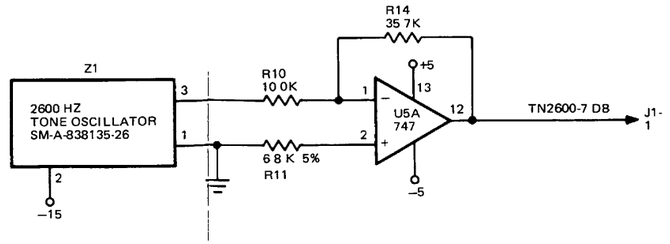
C. COLOR CODE MARKING FOR MILITARY STANDARD CAPACITORS

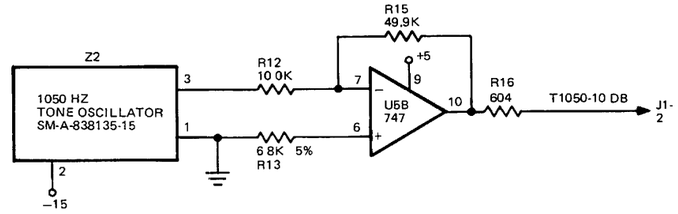

NOTE 1
1 ALL RESISTORS IN K OHMS UNLESS OTHERWISE SPECIFIED
RESISTOR NETWORK "5" U8
P/O RESISTOR NETWORK "6" U12
P/O RESISTOR NETWORK "6" U12
RESISTOR NETWORK "7" U10
2600 HZ BANDPASS P/OFL1B FILTER
P/O 96L02
SIGNLA
NORMAL
RESET
PWRCL++N
PGMCLN
ADRESN
VSS
SM-A-838168 (SFSP) SF SIGNAL PROCESSOR U6A
PWRCLN
SIGNLA
PSEIZE
VXX
PSEIZE++N
TO J1-39 NRM+B
RCVCH++INT NORMAL
T1050-100B TEST
RCVCH++INR NORMAL
TEST
DPDT
T1
SM-A-742456-1
RESISTOR NETWORK "2" U5
2600 HZ BAND SUPPRESSION P/OFL1A FILTER
SM-A-838209
P/O U6D SFSP
P/O U6E SFSP
SM-A-742456-1
RCVCH++ OTT J1-36
MONITOR JACK SM-A-838188
RCVCH++ OTR J1-38
MONITOR JACK SM-A-838188
P/O U6B SFSP
P/O U6C SFSP
TP 2
TP 3
TP1
GND
TP 6
TP5
TP4
ELAG0038

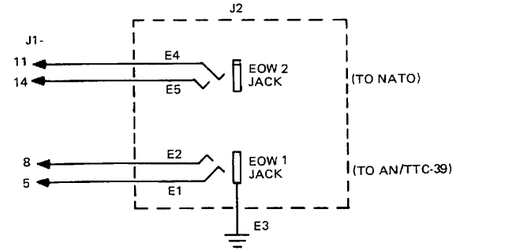

NOTES
1. PARTIAL REFERENCE DESIGNATIONS ARE SHOWN. FOR COMPLETE DESIGNATION PREFIX WITH UNIT NUMBER OR ASSEMBLY OR SUBASSEMBLY DESIGNATIONS AS APPLICABLE.
2. UNLESS OTHERWISE SPECIFIED ALL RESISTANCE VALUES ARE IN OHMS, ±1%
MONITOR JACK 5M-A-838186
MONITOR JACK 5M-A-838188
96-A-838811 TRANSMIT CONTROLLER (STTC) U12


CLOCK 32 KHZ
J1-34
U4C 5437
CLOCK 500 HZ
J1-30
U4B 5437
U4A 5437
U1 54161
U2 54161
U3 54161
C/R
CLOCK
1 0K 5%
R4
R5
R6
+5
Z3
SM-A-838277
512 KHZ
C1 39 UF 10V
R1 8 2K 5%
R2 470K 5%
R3 8 2K 5%
Q1 JAN2 N2907
–15

J1-22, 60
–10V
18, 56
+15V
17, 55
+5
20
GND
58
21, 59
–5
23, 61
–15
C12 6.8UF
C13 6.8 UF
C8 6.8UF
C9 6.8UF
C2 22UF
C4 47UF
C6 6.8UF
C7 6.8UF
C3 47UF
C10 6.8UF
C11 6.8UF
C5 4.7UF
1 0K 5%
R7
R8
R9
TP3
TP4
TP1
TP2


Z1
2600 HZ TONE OSCILLATOR SM-A-838135-26
R10 10 0K
R11 6 8 K 5%
R14 35 7K
U5A 747
TN2600-7 DB
J1-1
+5
–5
–15


Z2
1050 HZ TONE OSCILLATOR SM-A-838135-15
R12 10 0K
R13 6 8K 5%
R15 49.9K
U5B 747
R16 604
T1050-10 DB
J1-2
+5
–15


J2
J1-
11
14
E4
E5
EOW 2 JACK
(TO NATO)
8
5
E2
E1
EOW 1 JACK
(TO AN/TTC-39)
E3

EL4QB030

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