

AUA7 LINE TEST UNIT - 5SPQCACAXX

DATA SHEET

SLC[®] SERIES 5 CARRIER SYSTEM

The AUA7 LTU (line test unit) (COMCODE 103840906) is a SLC Series 5 Carrier System RT (remote terminal) plug-in that automatically performs routine metallic drop tests on 192 customer loops served by the dual bank. The LTU stores the test results in its internal memory and uploads these test results to the LTC (line test controller) upon request. The LTU plugs into the unmarked slot between the LIU-P (protection LIU) slot and the LSU (line switch unit) slot of the white bank.

Figure 1 is a functional block diagram of the unit and Figure 2 shows the faceplate and board outline.

Note: The installation and removal procedures for the AUA7 LTU are included in this data sheet and start on page 5.

The LTU interfaces to the CTU (channel test unit). The LTU utilizes the CIU (craft interface unit) interface to communicate with the BCU (bank control unit). A ribbon cable assembly connects the LTU to the TEST ACCESS connector on the CTU.

Before performing a test, the LTU monitors the digital bit stream of the channel to be tested in order to determine if the channel is busy or idle. If the channel is idle, the LTU requests metallic access to the drop and performs the routine line tests. These tests consist of foreign EMF (electromotive force), leakage to ground, leakage to battery, and background noise tests.

The LTU performs three major functions: communication with the BCU, communication with the LTC, and routine line tests. The real time clock provides the time to the LTU so that it may determine when to start and stop testing. Administrative information (for example, start and stop times) as well as test results are stored in the EEPROM (electronically erasable programmable read only memory). The reset switch is used to initialize the EEPROM to its preservice (predefined) state

when the LTU is first installed.

The test results and other information are exchanged between the LTU and the LTC over a 1200 bps modem communication link. The physical connection to this communication link is provided via the T/R (tip/ring) telephone jack on the LTU.

Faceplate LEDs (light-emitting diodes), connectors, and reset switch are described as follows:

FAIL (Red LED): When lighted, indicates a failure has been detected within the AUA7 plug-in. If the FAIL LED is the only LED lighted on the LTU then the LTU should be replaced immediately. During power-up, it is normal for the FAIL LED to light briefly and then go off.

BUSY (Green LED): When lighted, indicates routine drop tests are being performed or the LTU is communicating with the LTC via the modem.

When the LTU is initially installed, the LTU must be reset by setting the RLB switch to the ENB position. During this operation, the FAIL and BUSY LEDs will light to indicate that the AUA7 EEPROM is being initialized with the preservice values. The FAIL and BUSY LEDs will flash on and off when the initialization is complete.

TEST ACCESS: This 10-pin connector interfaces the AUA7 to the CTU via a ribbon cable assembly.

T/R: This RJ11 telephone jack interfaces the modem in the AUA7 to a POTS CU (channel unit). The LTU communicates with the LTC over a 1200 bps communications link.

RLB Switch: A 2-position RLB (reset LTU board) rocker type DIP (dual in-line package) switch is located on the printed wiring board. The RLB switch should be set to the DIS (Disable) position during normal operation. Setting the RLB switch to the ENB (Enable) position enables the reset operation

during power-up of the LTU. The reset operation returns the board to its preservice (predefined) state.

Technical assistance for the SLC Series 5 Carrier System can be obtained by calling the Regional

Technical Assistance Center at 1-800-225-RTAC. This telephone number is staffed 24 hours per day.

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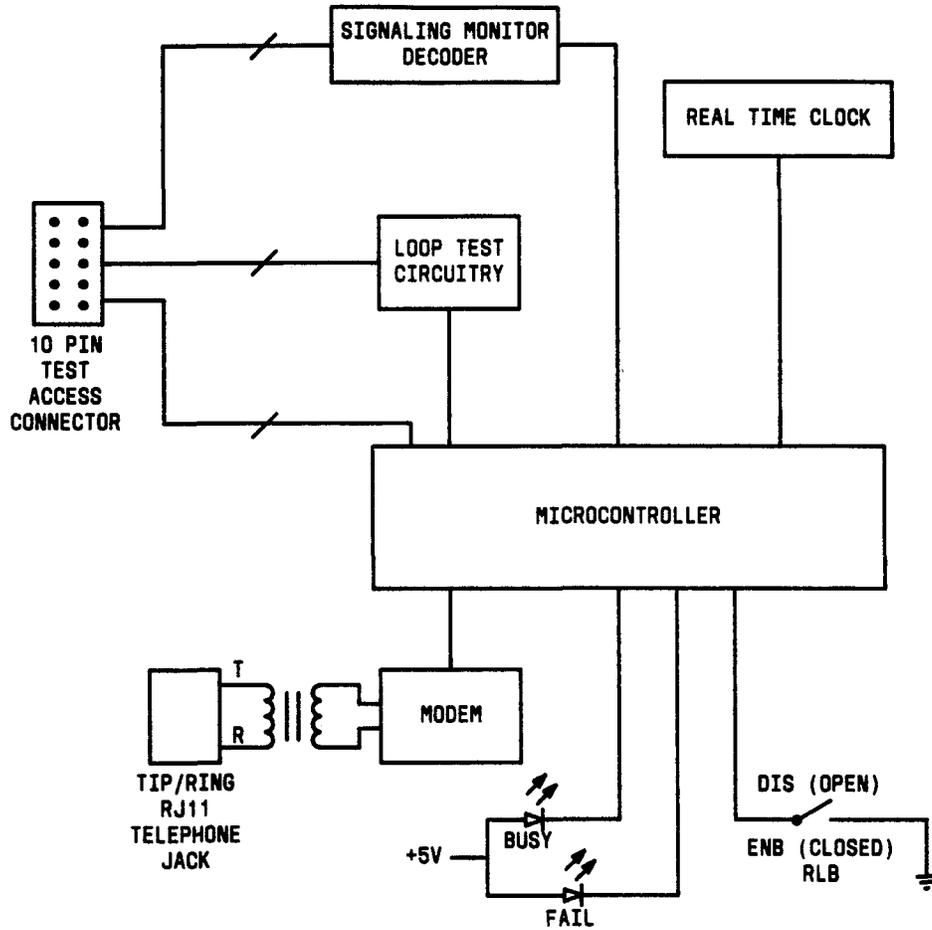
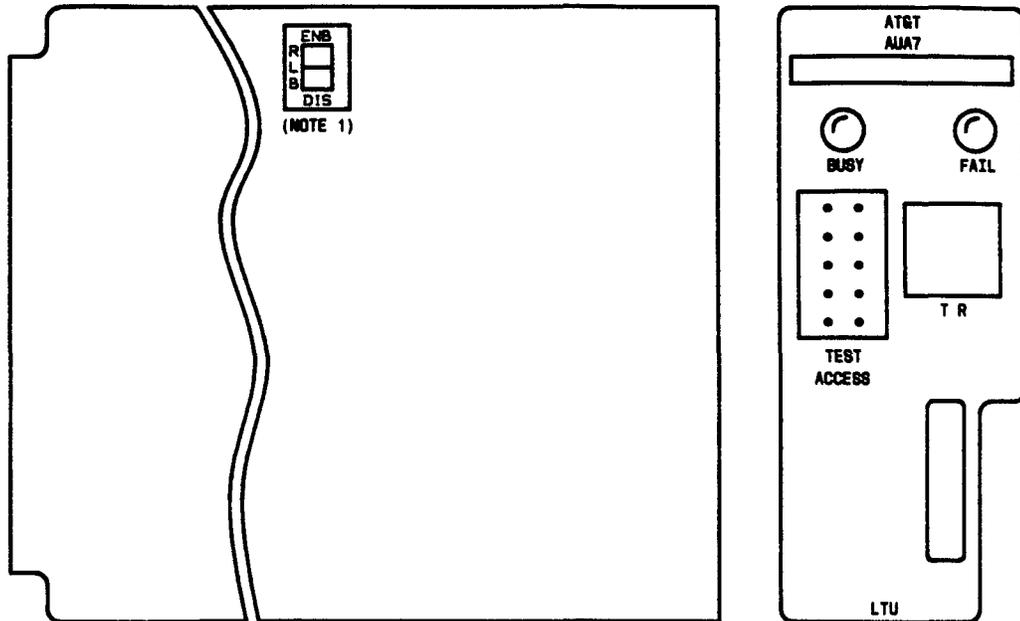


Figure 1—AUA7 LTU block diagram



NOTE 1: THE AUA7 HAS A DAUGHTER BOARD THAT PREVENTS ACCESS TO THE FRONT OF THE RLB (RESET LTU BOARD) SWITCH. HOWEVER, THE SWITCH IS ACCESSIBLE FROM THE TOP OF THE CIRCUIT PACK.

Figure 2—AUA7 LTU switch layout and faceplate

LTU INSTALLATION

Installation of the LTU consists of five basic steps:

- Set the LTU into its *preservice* state by placing the LTU RLB switch in the ENB position.
Since the LTU must communicate with the LTC for data transfers, the LTU must be initialized into a state which can be recognized by the LTC. This state is known as the *preservice* state.
- Return the LTU RLB switch to the DIS position.
The LTU performs a built-in self-test when powered up to determine its health.
- Replace the present 3B1E (or equivalent) protector with a 3B2E protector in order to isolate the LTU modem from the loop plant.
- Make the modem connection between the T/R telephone jack on the faceplate of the LTU and a POTS or SPOTS[®] CU.
The modem interface between the LTU and CU must be connected so that the LTU can communicate with the LTC.
- Make the test access connection between the TEST ACCESS connector on the faceplate of the LTU and the TEST ACCESS connector on the faceplate of the CTU.
The interface between the LTU and the CTU must be connected via a ribbon cable so that the LTU can communicate with the bank controllers.

Preparation

Verify that the items listed in TABLE A are available for installation of the LTU.

TABLE A	
ITEMS REQUIRED FOR LTU INSTALLATION	
QUANTITY	DESCRIPTION
1	AUA7 LTU CP (circuit pack)
1	3B2E protector
1	Flat ribbon cable (COMCODE 846372332)
1	2-conductor cable (COMCODE 103732541)
2	Flat cable clips
3	Splicing connectors
2	I clips
1	Modular jack (COMCODE 406103655)

Install AUA7 LTU

Since the LTU must communicate with the LTC for administration and data retrieval, the LTU must be set into a state which can be recognized by the LTC before the LTU can be used.

The following procedure should be used for resetting the LTU into its *preservice* state.

STEP	PROCEDURE
1.	Obtain an AUA7 LTU CP and inspect for any visible damage.
2.	Set the RLB (reset LTU board) switch to the ENB (enable) position.
3.	Plug the AUA7 LTU into the unmarked slot located between the LIU-P (protection LIU) slot and the LSU (line switch unit) slot of the white bank.
	This starts the reset procedure. Both BUSY and FAIL LEDs light indicating that the LTU is resetting its memory to the <i>preservice</i> state.
	If only the FAIL LED lights and remains lighted, a hardware failure has occurred. The LTU should be replaced and the procedure repeated.
4.	Remove the AUA7 LTU when reset is complete.
	Note: The reset process is complete when both LEDs flash on and off. Removing the LTU before the LEDs begin to flash may leave the LTU in an unknown state.
5.	Set the RLB switch to the DIS (disable) position.
6.	Reinsert the AUA7 LTU.
	The LTU powers-up.
	During power up, the microcontroller within the LTU checks the health of the LTU by performing built-in self-tests. The status of the LTU is reported to the internal status register. The FAIL LED lights briefly and then go off during a normal power-up. If the LTU detects a hardware failure, the FAIL LED on the LTU faceplate lights and remains lighted.
	The status register information is transferred to the LTC during the initial handshake between the LTU and LTC of every session so that the LTU administrator can be notified of the LTU condition.
7.	If neither LED on the AUA7 LTU is lighted, then the LTU is operational.
8.	The interface cabling between the LTU and the CTU and the modem cabling between the LTU and the CU can now be attached.
9.	If the FAIL LED remains lighted, then the LTU is not operational.
	The LTU must be replaced and the LTU installation procedure must be repeated.

Replacing the Protector

This section describes the procedure for replacing the present protector with a 3B2E protector. Replacing the protector isolates the LTU modem from the external environment.

STEP	PROCEDURE
1.	Locate and remove the 3B1E (or equivalent) protector assigned to the VF (voice-frequency) pair specified in the WORD (work order record detail) document.
2.	Insert the 3B2E protector into the vacant slot.

Install Modem Cable Between LTU and POTS CU

This section describes the procedure for connecting the LTU to the TIP and RING VF pair (Figure 3).

STEP	PROCEDURE
1.	Remove covers in the cable area between the bank mounting uprights, if present.
2.	Locate the VF wire pair, specified on the WORD document or work order, in the cable bundles within the bank uprights.
3.	On the protector side of the 710 connector, carefully separate the appropriate TIP and RING pair from the cable bundle.
4.	Refer to Figure 4 and insert the TIP lead of the specified VF pair and the TIP (green) wire from the modular jack into the splicing connector supplied.
5.	Firmly crimp the connector and check to assure a reliable connection.
6.	Repeat Steps 4 and 5 connecting the RING lead from the VF pair to the RING (red) wire from the modular jack.
7.	Insert one of the plugs on the 2-conductor cable into the modular jack and check to assure a reliable connection.
8.	Dress the 2-conductor cable to the right side of the bank using the J clips provided (see Figure 3).
9.	Attach the J clips to both sides of the bank.
10.	Arrange the slack in the cable neatly within the cable area between the frame uprights.
11.	Secure the 2-conductor cable to the J clips.

STEP	PROCEDURE
12.	Dress the cable over the LSU, or the LSU slot if the LSU is not installed, and plug it into the T/R connector on the LTU faceplate. A click should be heard when the plug is installed into the connector indicating that the plug is fully seated and locked into the faceplate connector.
13.	Dial the telephone number that is assigned to LTU being installed. The BUSY LED should turn on when the LTU answers the call. If the BUSY LED does not light, then the modem cable is not installed properly or is connected to the wrong cable pair.
14.	Place the cable bundles into the cable area and replace the cover.

Install Interface Cable Between LTU and CTU

This section describes the procedures for connecting the LTU to the CTU (Figure 3).

STEP	PROCEDURE
1.	Attach the 10-conductor flat ribbon cable to the TEST ACCESS connector on the LTU faceplate. Verify that the connector plug is fully seated and locked into the connector jack.
2.	Dress the cable around the LSU, or the LSU slot if the LSU is not installed, to the right side of the channel bank.
3.	Attach the flat cable clips to the right side of the channel bank.
4.	Fasten the cable to the flat cable clip.
5.	Fasten the cable to the second cable clip.
6.	Dress the cable to the front of the channel bank.
7.	Attach the cable to the TEST ACCESS connector on the CTU faceplate. Secure the connector using the attached screws.

This completes the LTU installation. The LTU can now be provisioned by the LTC.

LTU REMOVAL

The following procedure should be performed anytime an AUA7 LTU is removed from an RT bank.

STEP	PROCEDURE
1.	Remove the 2-conductor cable from the T/R connector on the LTU faceplate.
2.	Remove the flat ribbon cable from the TEST ACCESS connector on the CTU faceplate.
3.	Remove the LTU.

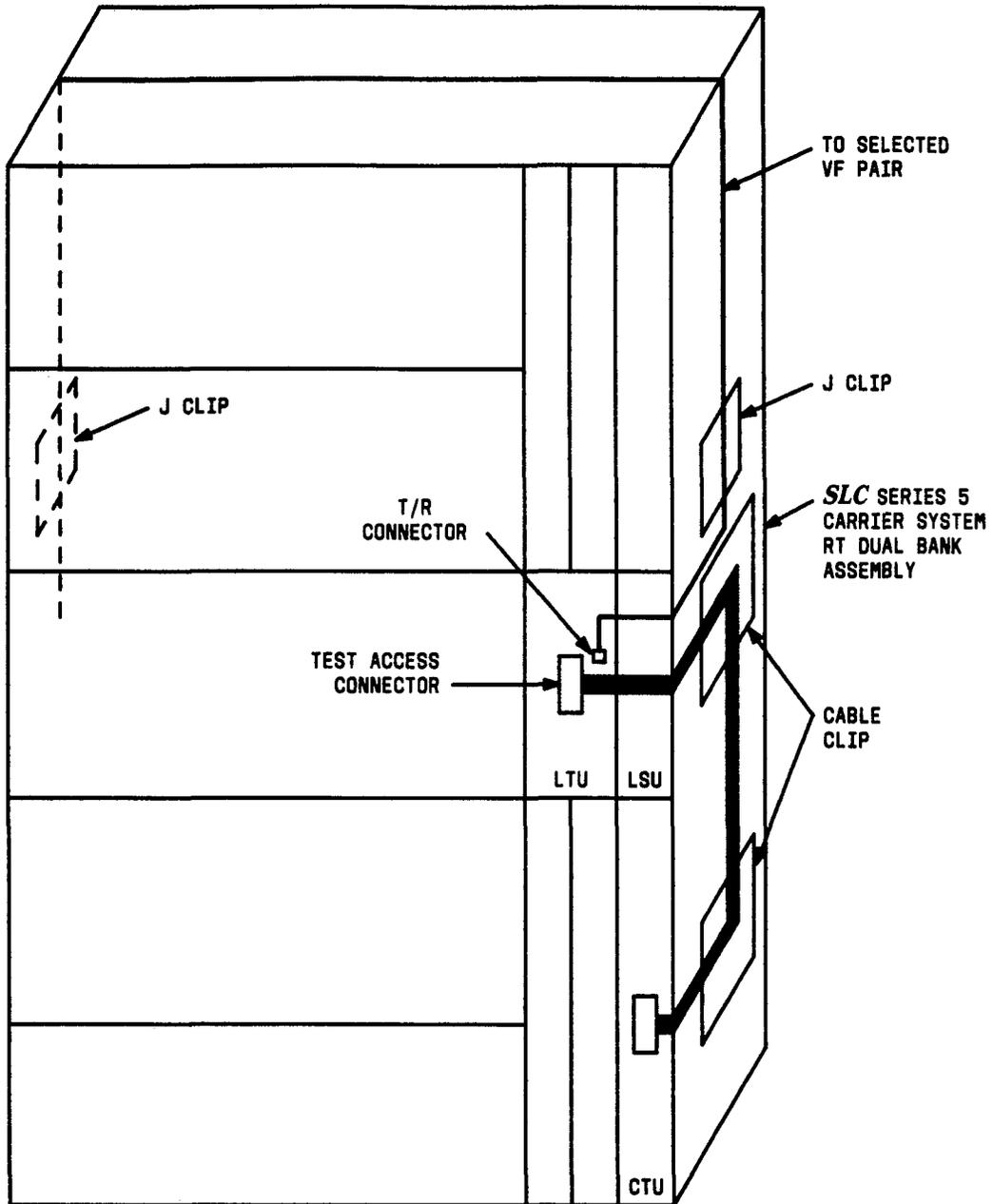


Figure 3—Connection of LTU to VF pair and CTU

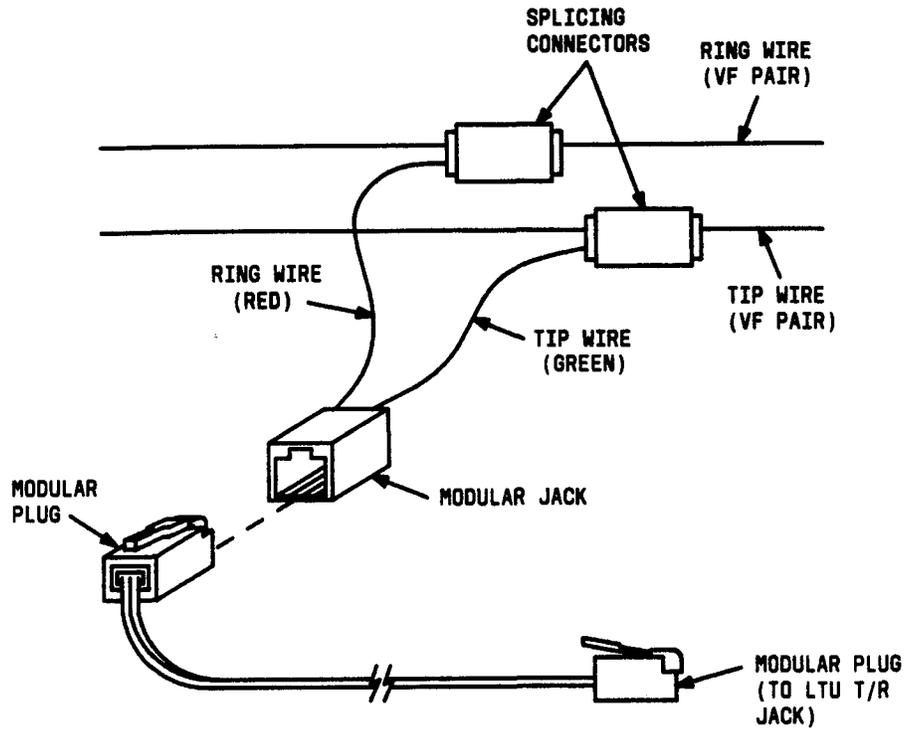


Figure 4—Connection of 2-conductor cable to VF wire pair

