ADTRAN

Dual U-BR1TE Plug-In Option Card
(Part Number 1200107L1#HS)
and Dual U-BR1TE Plug-On Option Card
(Part Number 1200108L1)

USER MANUAL

ADTRAN

NOTE

Notes provide additional useful information.

CAUTION

Cautions signify information that could prevent service interruption.

WARNING

Warnings provide information that could prevent damage to the equipment or endangerment to human life.

FCC regulations require that the following information be provided in this manual:

1. This equipment complies with Part 68 of the FCC rules. The required label is affixed to the bottom of the chassis.

2. If this equipment causes harm to the telephone network, the telephone company may temporarily discontinue service. If possible, advance notification is given; otherwise, notification is given as soon as possible. The telephone company will advise the customer of the right to file a complaint with the FCC.

3. The telephone company may make changes in its facilities, equipment, operations, or procedures that could affect the proper operation of this equipment; advance notification and the opportunity to maintain uninterrupted service is given.

4. If experiencing difficulty with this equipment, please contact ADTRAN for repair and warranty information. The telephone company may require this equipment to be disconnected from the network until the problem is corrected or it is certain the equipment is not malfunctioning.

5. This unit contains no user-serviceable parts.

6. An FCC-compliant telephone cord with a modular plug is provided with this equipment. This equipment is designed to be connected to the telephone network or premises wiring using an FCC-compatible modular jack, which is Part 68 compliant.

7. The following information may be required when applying to the local telephone company for leased line facilities.

Service Type	REN/SOC	FIC	USOC
ISDN	6.0N	021S5	RJ-49C

**FEDERAL COMMUNICATIONS COMMISSION RADIO FREQUENCY
INTERFERENCE STATEMENT**

This equipment has been tested and found to comply with the limits for a Class
A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed
to provide reasonable protection against harmful interference when the equip-
ment is operated in a commercial environment. This equipment generates, uses,
and can radiate radio frequency energy and, if not installed and used in accor-
dance with the instruction manual, may cause harmful interference to radio fre-
quencies. Operation of this equipment in a residential area is likely to cause
harmful interference in which case the user will be required to correct the inter-
ference at his own expense.

Shielded cables must be used with this unit to ensure compliance with Class A
FCC limits.

CAUTION *Change or modifications to this unit not expressly approved by
the party responsible for compliance could void the user's author-
ity to operate the equipment.*

CANADIAN EMISSIONS REQUIREMENTS

This digital apparatus does not exceed the Class A limits for radio noise emis-
sions from digital apparatus as set out in the interference-causing equipment
standard entitled "Digital Apparatus," ICES-003 of the Department of Commu-
nications.

Cet appareil nuerique respecte les limites de bruits radioelectriques applicables
aux appareils numeriques de Class A prescrites dans la norme sur le materiel
brouilleur: "Appareils Numeriques," NMB-003 edictee par le ministre des Com-
munications.

CANADIAN EQUIPMENT LIMITATIONS

Notice: The Canadian Industry and Science Canada label identifies certified equipment. This certification means that the equipment meets certain telecommunications network protective, operational, and safety requirements. The Department does not guarantee the equipment will operate to the user's satisfaction.

Before installing this equipment, users should ensure that it is permissible to be connected to the facilities of the local telecommunications company. The equipment must also be installed using an acceptable methods of connection. In some cases, the company's inside wiring associated with a single line individual service may be extended by means of a certified connector assembly (telephone extension cord). The customer should be aware that compliance with the above limitations may not prevent degradation of service in some situations.

Repairs to certified equipment should be made by an authorized Canadian maintenance facility designated by the supplier. Any repairs or alterations made by the user to this equipment, or equipment malfunctions, may give the telecommunications company cause to request the user to disconnect the equipment.

Users should ensure for their own protection that the electrical ground connections of the power utility, telephone lines and internal metallic water pipe system, if present, are connected together. This precaution may be particularly important in rural areas.

WARNING	*Users should not attempt to make such connections themselves, but should contract the appropriate electric inspection authority, or an electrician, as appropriate.*

The Load Number (LN) assigned to each terminal device denotes the percentage of the total load to be connected to a telephone loop which is used by the device, to prevent overloading. The termination on a loop may consist of any combination of devices subject only to the requirement that the total of the Load Numbers of all devices does not exceed 100.

IMPORTANT SAFETY INFORMATION

SAVE THESE INSTRUCTIONS

When using your telephone equipment, please follow these basic safety precautions to reduce the risk of fire, electrical shock, or personal injury:

1. Do not use this product near water, such as near a bathtub, wash bowl, kitchen sink, laundry tub, in a wet basement, or near a swimming pool.
2. Avoid using a telephone (other than a cordless-type) during an electrical storm. There is a remote risk of shock from lightning.
3. Do not use the telephone to report a gas leak in the vicinity of the leak.
4. Use only the power cord, power supply, and/or batteries indicated in the manual. Do not dispose of batteries in a fire. They may explode. Check with local codes for special disposal instructions.

WARRANTY AND CUSTOMER SERVICE

ADTRAN will replace or repair this product within five years from the date of shipment if it does not meet its published specifications or fails while in service. For detailed warranty, repair, and return information refer to the ADTRAN Equipment Warranty and Repair and Return Policy Procedure.

Return Material Authorization (RMA) is required prior to returning equipment to ADTRAN.

For service, RMA requests, or further information, contact one of the numbers listed on the back page of this manual.

LIMITED PRODUCT WARRANTY

ADTRAN warrants that for five (5) years from the date of shipment to Customer, all products manufactured by ADTRAN will be free from defects in materials and workmanship. ADTRAN also warrants that products will conform to the applicable specifications and drawings for such products, as contained in the Product Manual or in ADTRAN's internal specifications and drawings for such products (which may or may not be reflected in the Product Manual). This warranty only applies if Customer gives ADTRAN written notice of defects during the warranty period. Upon such notice, ADTRAN will, at its option, either repair or replace the defective item. If ADTRAN is unable, in a reasonable time, to repair or replace any equipment to a condition as warranted, Customer is entitled to a full refund of the purchase price upon return of the equipment to ADTRAN. This warranty applies only to the original purchaser and is not transferable without ADTRAN's express written permission. This warranty becomes null and void if Customer modifies or alters the equipment in any way, other than as specifically authorized by ADTRAN.

EXCEPT FOR THE LIMITEDWARRANTY DESCRIBED ABOVE, THE FOREGOING CONSTITUTES THE SOLE AND EXCLUSIVE REMEDY OF THE CUSTOMER AND THE EXCLUSIVE LIABILITY OF ADTRAN AND IS IN LIEU OF ANY AND ALL OTHER WARRANTIES (EXPRESSED OR IMPLIED). ADTRAN SPECIFICALLY DISCLAIMS ALL OTHER WARRANTIES, INCLUDING (WITHOUT LIMITATION), ALL WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. SOME STATES DO NOT ALLOW THE EXCLUSION OF IMPLIED WARRANTIES, SO THIS EXCLUSION MAY NOT APPLY TO CUSTOMER.

In no event will ADTRAN or its suppliers be liable to Customer for any incidental, special, punitive, exemplary or consequential damages experienced by either Customer or a third party (including, but not limited to, loss of data or information, loss of profits, or loss of use). ADTRAN is not liable for damages for any cause whatsoever (whether based in contract, tort, or otherwise) in excess of the amount paid for the item. Some states do not allow the limitation or exclusion of liability for incidental or consequential damages, so the above limitation or exclusion may not apply to Customer.

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Chapter 1   Introduction

DUAL U-BR1TE PLUG-IN AND PLUG-ON OPTION CARDS

The Dual U-BR1TE Plug-in and Plug-on Option Cards are compatible with the TSU/TDU/HSU family of T1 multiplexers. The Plug-in Dual U-BR1TE is designed to occupy a single slot in a TSU family product and will accept plug-on modules designed for use in this product family. The Dual U-BR1TE Plug-on Module may be plugged on any TSU/TDU plug-in module. The Dual U-BR1TE Option Cards are subject to the host T1 multiplexer's operation and control.

The Dual U-BR1TEs provide two ISDN U-interfaces and allow the transport of Basic Rate ISDN (BRI) information over T1 carriers and unloaded twisted pair wiring.

Functional Description

The Dual U-BR1TEs are configured in the same manner as the host multiplexer. The internal menu for the configuration of each U-BR1TE is a part of the Dual U-BR1TE Module and is automatically available when the Dual U-BR1TE is installed into the TSU.

The Dual U-BR1TEs provide two U-interfaces. Each U-interface allows the transmission and reception of Basic Rate 2B+D information over three consecutive DS0s of the TSU family's T1 facility and is capable of operating in either the LUNT or LULT mode.

Features

Both Dual U-BR1TE Option Cards have the following features:

- Internal test pattern which allows for testing of individual B channels without requiring external test equipment
- Transportation of ISDN Basic Rate 2B+D information over T1 facilities in the 3-DS0 format
- Performance monitoring of the layer 1 facility
- Firmware configurable to line unit LT or line unit NT mode of operation
- Loopback capability for full 2B+D as well as individual B channels in both loop and carrier directions
- B1 and B2 looopback addressability for the NT1 and up to six devices in the "downstream" (toward the NT1) direction
- Local performance monitoring without test equipment

Dual U-BR1TE Option Card

The Dual U-BR1TE Option Cards conform to the following specifications:

U-Interface

Line	2-wire (tip and ring)
Rate	160 kbps full duplex
Frequency	40 kHz
Line Code	2B1Q
Max Line Loss	42 dB @ 40 kHz
Max Distance	18000 ft with 1300 ohm resistance design
ISDN Interface Connector	RJ-45

<u>Compatibility</u>

ISDN 2B1Q Interface	ANSI T1.601-1992
Performance	TR-NWT-000397 and TR-TSY-000829
ISDN BR over T1	TR-NWT-000397
Approvals	FCC Part 15, FCC Part 68, UL

<u>Diagnostics and Tests</u>

Loopback	B1, B2 loopbacks and 2B+D loopbacks initiated through EOC as specified by TR-NWT-000397 and ANSI T1.601-1992
Selftest	RAM test
	Slot selection test
	EPROM checksum test

Physical Description

The Dual U-BR1TE Plug-in Option Card (see Figure 1-1) is designed to occupy a single slot in a TSU family product.
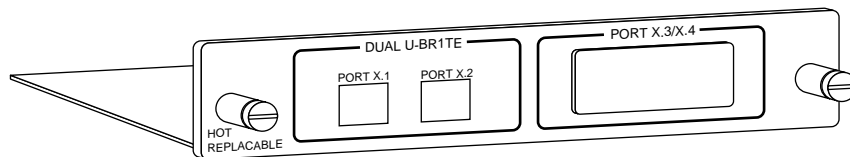
Figure 1-1. Dual U-BR1TE Plug-in Option Card

The Dual U-BR1TE Plug-in Option Card rear panel includes a plastic plug over a cutout for additional connectors. This allows a plug-on board to be added to the Dual U-BR1TE Card. The PORT X.Y indication is linked to the port numbering philosophy of the TSU 100 product family. The X represents the slot number, and the .Y indicates the port number. For the TSU 100 application, there is only one option slot. Therefore the ports are designated 1.1 and 1.2. If added, the plug-on board port designations

are 1.3 and 1.4. These port numbers appear in the front panel liquid crystal display (LCD) menu displays.

The Dual U-BR1TE Plug-on Option Card (see Figure 1-2) is designed to plug on any TSU/DSU plug-in card.
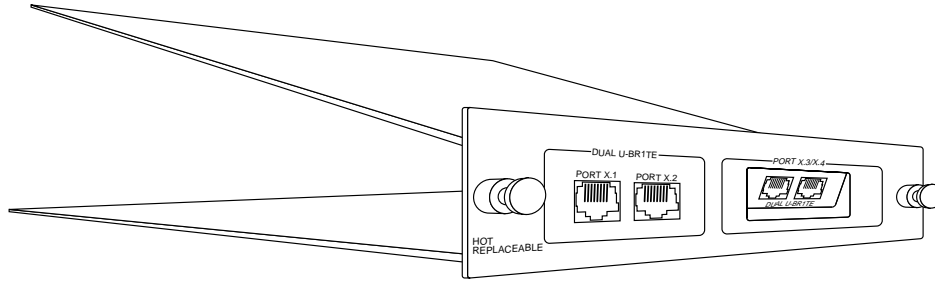

Figure 1-2. Dual U-BR1TE Plug-on Option Card

Chapter 2   Installation

UNPACK, INSPECT, POWER UP

Receipt Inspection

Carefully inspect the option module for any shipping damage. If damage is suspected, file a claim immediately with the carrier and contact ADTRAN Customer and Product Service. If possible, keep the original shipping container for use in shipping the option module for repair or for verification of damage during shipment.

ADTRAN Shipments Include

The following items are included in ADTRAN shipments of the Dual U-BR1TE:

Dual U-BR1TE Plug-in Option Card:

* Dual U-BR1TE Plug-in Option Card
* User Manual (to be inserted into main *TSU 100/120/ 600 User Manual*)

Dual U-BR1TE Plug-on Option Card:

* Dual U-BR1TE Plug-on Option Card
* User Manual (to be inserted into main *TSU 100/120/ 600 User Manual*)
* Four each #4 screws

Provided by Customer

The customer must provide cables for connection to othe equipment.

DUAL U-BR1TE PLUG-IN OPTION CARD INSTALLATION

Placement of the Option Module

Figure 2-1 represents the action required for proper placement of the option module.

1. Remove cover plate from the rear panel.
2. Slide option module into the rear panel until it is positioned firmly against the front of the unit.
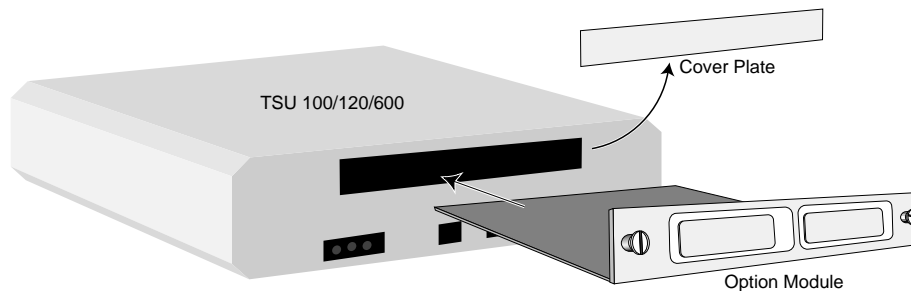3. Fasten thumb-screws at both edges of option module.

Figure 2-1. Installing the Option Module

Power Connection

Each option module derives power from the base TSU/120/600 unit. Power to the base unit is supplied by a captive eight foot power cord.

Wiring

The option module offers two connectors for the U-inter-faces. The connectors are universal and accept either an RJ-45 (8-pin) or an RJ-11 (6-pin modular plug). The pinout is given in Table 2-1.

The required wiring connections are:

Connector Type (USOC) = RJ-45

Part number = AMP # 555164-1

Table 2-1. 2-Wire Voice Pinout Connection

Pin	Name	Description
5	TIP	Tip lead of 2-wire interface
4	RING	Ring lead of 2-wire interface
1, 2, 3, 6, 7, 8	UNUSED	-

Pins used to mate with the Dual U-BR1TE connector are as follows:

RJ-11	Tip	pin 4
	Ring	pin 3
RJ-45	Tip	pin 5
	Ring	pin 4

Attaching the Plug-on Board to the Option Card

Figure 2-2 represents the action required for proper place-ment of a plug-on board on the option card.

1. Hold the plug-on board above the option card.

2. Using a downward and right-to-left motion, slip the DB-15 connector into the opening in the option card back panel.

3. Moving the plug-on board downward, secure the connection of the header pins at the front of the board.

4. Install the four 4-40 screws at the top and bottom of the plug-on board.

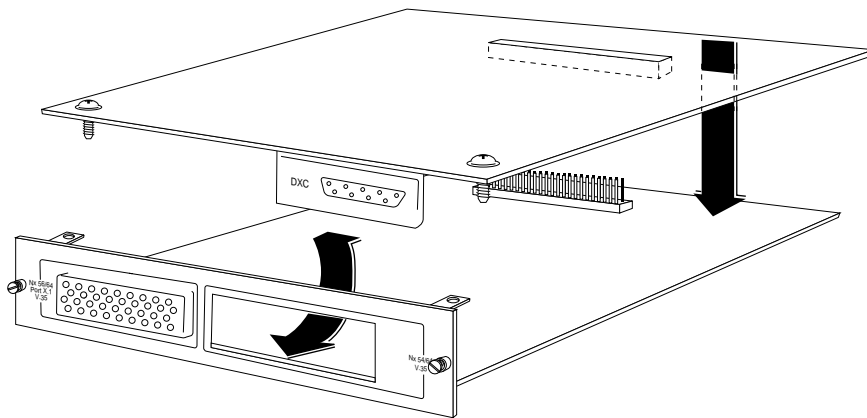**Figure 2-2. Installing Plug-on Board**

CAUTION	*The connection of the header pins between the option card and the plug-on board must be visually verified. Severe damage of the device can result from an improper connection.*

POWER UP TESTING AND INITIALIZATION

The Dual U-BR1TE Option Card executes a partial self test during the power up sequence, as described in the TSU 100/120/600 manual. A full self test can be activated from the Test menu. No initialization input is required. Any previously configured setting for the Dual U-BR1TE is restored automatically upon power up.

Successful Self Test

The green **OK** LED, located on the front panel, turns on when a successful self test is completed and the configuration is successfully restored. See the chapter *Operation* in the main user manual.

Failed Self Test

If the Dual U-BR1TE card fails one or more of the self tests, a message is displayed in the LCD during power up. See the TSU 100/120/600 user manual. Specific failures of the Dual U-BR1TE Card are identified in the appendix *Dual U-BR1TE Failure Messages* in this manual.

Operation Alarms

The red ALARM LED on the front panel turns *on* when an alarm condition is detected.

Chapter 3   Operation

OVERVIEW

The Dual U-BR1TE card is controlled as part of the TSU 100/120/600 using the same methods as described in the *TSU 100/120/600 User Manual*. See the *TSU 100/120/600 User Manual* for descriptions of front panel indicators and buttons.

Menu Structure

When an option card is installed in the TSU 100/120/600, the unit adds it to the list of selectable options under the Port menu items. These menu items are shaded in the limited overview of the TSU 100 menu shown in Figure 3-1 on page 3-2. (The appendix of the *TSU 100 User Manual* shows a complete menu diagram.)

Menu Operation

An option module must be selected from the listing in one of the Port menu options before any option module menus are applicable. With the cursor on one of the Port menu items, press **Enter** to display a list of the currently installed option modules. To activate menus for the Dual U-BR1TE card, scroll through the list to display **X.Y U-BR1TE** and press **Enter**. (The X represents the slot number, and the Y identifies the port number.)

Once the option module is selected, the Dual U-BR1TE menus appear as a subset of, and operate the same as, menus for the TSU 100/120/600. Use the up and down arrows to place the cursor on the desired item, and press **Enter** to display the first two submenu choices.
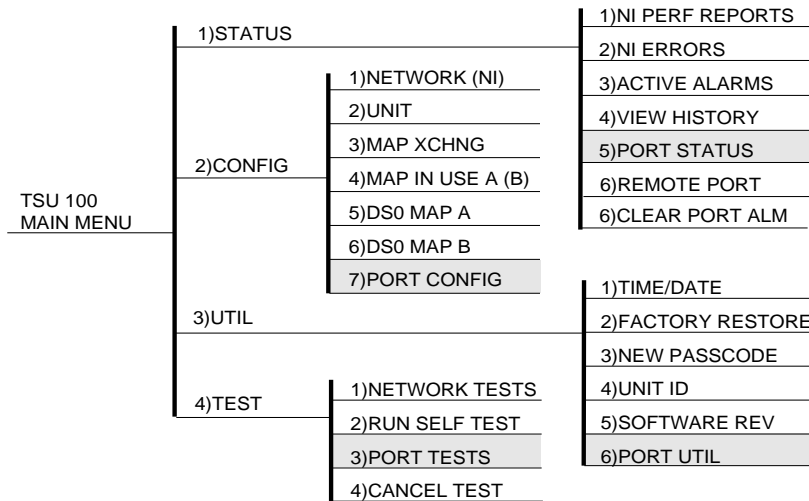
Figure 3-1. TSU 100 Main Menu

DUAL U-BR1TE MENU ITEMS

The Dual U-BR1TE menus are accessed from, and operate the same as, menus for the TSU 100/120/600. The Dual U-BR1TE items are submenu choices of those four main menus, as shown in Figure 3-1. For information on **FACTORY RESTORE** and **RUN SELF TEST**, see *TSU Features used with Dual U-BR1TE Options* on page 3-9.

The Dual U-BR1TE menu items are as follows:

- **PORT STATUS**
- **PORT CONFIGURATION**
- **PORT UTILITY**
- **PORT TEST**

PORT STATUS   **PORT STATUS**, a submenu of TSU 100/120/600 main menu
item **STATUS**, displays active status information about the
Dual U-BR1TE interface. When **PORT STATUS** is displayed,
place the cursor on it and press **Enter** to display the first
available port. Scroll to select **1.1 U-BR1TE** and press **Enter**
to activate either of the submenus shown in Figure 3-2.

STATUS		1.1 UBR1TE	
1)NI PERF REPORTS			
2)NI ERRORS			
3)ACTIVE ALARMS			
4)VIEW HISTORY		1)LOOP STATUS	
5)PORT STATUS		2)T1 STATUS	
6)REMOTE PORT		3)LOOP MONITOR	
7)CLEAR PORT ALM			

Figure 3-2. PORT STATUS Submenus

LOOP   There are three information fields: SYNC, CRC, and ACT.
STATUS   See Figure 3-3. An asterisk indicates an item is active.
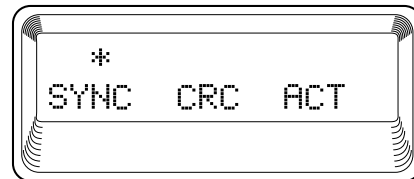
Figure 3-3. LOOP STATUS Display

SYNC
An asterisk is present if the U-interface has achieved syn-
chronization.

CRC
An asterisk is present when a CRC error has been
detected on the U-interface.

ACT
An asterisk is present if an NT1 is communicating with
the ISDN switch.

T1 STATUS   There are three information fields: SYNC, CRC, and ACT. See Figure 3-4. An asterisk indicates an item is active.
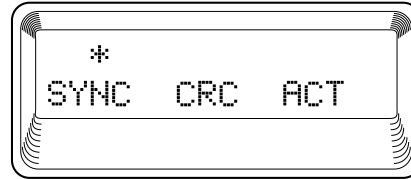

Figure 3-4. T1 STATUS Display

SYNC
An asterisk is present if the U-interface has achieved synchronization to the T1 carrier.

CRC
An asterisk is present when a CRC error has been detected on the T1 interface. (DS0s carrying U-BR1TE data only.)

ACT
An asterisk is present if an NT1 is communicating with the ISDN switch.

LOOP   **"ES=XXX"**
MONITOR   Reports the maximum number of errored seconds on the U-interface. Errored seconds are considered to be seconds in which the U-interface was not synchronized or seconds in which at least one CRC error was detected on the U-interface. This count can be set to zero by pressing **shift-clear** when the cursor is at this menu item.

PORT CONFIG   **PORT CONFIG**, a submenu of TSU 100/120/600 main menu item **CONFIGURATION**, is used to configure the Dual U-BR1TE. The submenu items shown in Figure 3-5 on page 3-5 are used to configure the parameters.

			1)SERVICE
2)CONFIG	7)PORT CONFIG	1.2 UBR1TE	2)ZBS
			3)MODE
			4)WAKE-UP TONE

Figure 3-5. PORT CONFIGURATION Submenus

The unit displays the first of four submenu items. Table 3-1 identifies the available selections for **PORT CONFIGURA-TION**. Continue with standard operating procedures.

Table 3-1. PORT CONFIGURATION Parameters

MENU ITEM	PARAMETER CHOICES
SERVICE	2B+D*, 2B, B1+D, B2+D, B1, B2
ZBS	DISABLE*, ENABLE
MODE	LULT*, LUNT
WAKE-UP TONE	OFF*, ON
*Factory Default	

SERVICE   SERVICE allows the user to select the ISDN channels to be transmitted over the T1 facility. Each channel requires one DS0 of the T1 in which to transmit and receive data. All switched applications will require the D channel.

NOTE   *The user must provision the proper number of consecutive DS0s of the T1 facility for proper operation.*

ZBS   For proper operation, the **ZBS** (zero byte substitution) for two U-BR1TE ports connected by a T1 facility must be the same value. The **ENABLE** parameter for **ZBS** must be selected if the T1 is using AMI line coding. If the T1 facility is using B8ZS line coding, the **DISABLE** parameter may be chosen.

MODE   The U-BR1TE port should be configured to operate in the **LULT** mode if being operated in the Adjacent to Customer or Tandem Office Source positions (see Figure 3-6 on page 3-6). The **MODE** should be set to **LUNT** if the port is operated in the Adjacent to Switch or Tandem Office Sink positions.

WAKE-UP TONE   Periodic wake-up tones should be turned on when the port is operated in the Tandem Office Sink configuration or when it is adjacent to a device that requires wake-up tones.
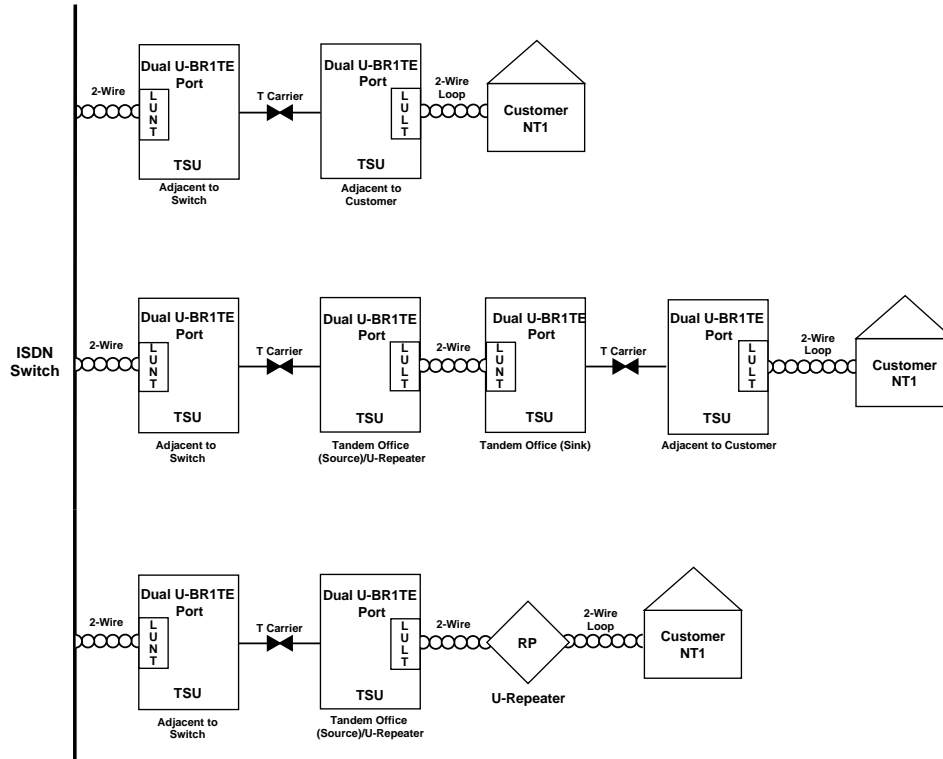

Figure 3-6. Network Locations

PORT UTILITY

PORT UTILITY, a submenu of the TSU 100/120/600 main menu item **UTILITIES** (**UTIL**), displays the current software information for each port installed in the unit. This information is required when requesting assistance from ADTRAN Technical Support or when updates are needed.

When **PORT UTILITY** is displayed, place the cursor on it and press **Enter** to display the first available port. See Figure 3-7.

3)UTIL	1)TIME/DATE		
	2)FACTORY RESTORE		
	3)SET PASSCODE		
	4)UNIT ID		
	5)SOFTWARE REV		
	6)PORT UTILITY	1.1 UBR1TE	SW REVISION

Figure 3-7. PORT UTILITY Submenus

Display **1.1 UBR1TE** (scroll to display if necessary), and press **Enter**. The unit displays the option card name and the software version installed. Press **Cancel** to exit or select another port.

PORT TEST

PORT TEST, a submenu of the TSU 100/120/600 main menu item **TEST,** activates tests of the selected data ports. Selecting the Dual U-BR1TE displays tests available for this option card. See Figure 3-8.

4)TEST	1)NETWORK TESTS		1)B1 REMOTE LPBK
	2)RUN SELF TEST		2)B2 REMOTE LPBK
	3)PORT TEST	1.1 UBR1TE	3)LOCAL LOOPBACK
	4)CANCEL TEST		4)B1 2047 PATT
			5)B2 2047 PATT
			6)INJECT ERROR
			7)PATT RESULTS

Figure 3-8. PORT TEST Submenus

Table 3-2 identifes the available selections for **PORT TEST**.

Table 3-2. PORT TEST Parameters

MENU ITEM	PARAMETER CHOICES
B1 REMOTE LPBK	ADDRESS 1, 2, 3, 4, 5, 6, NT1, NO LOOPBACK
B2 REMOTE LPBK	ADDRESS 1, 2, 3, 4, 5, 6, NT1, NO LOOPBACK
LOCAL LOOPBACK	B1, B2, NO LOOPBACK
B1 2047 PATT	T1_TX, LP_TX, NONE
B2 2047 PATT	T1_TX, LP_TX, NONE
INJECT ERROR	Inserts error into transmitted pattern
PATT RESULTS	Activates/deactivates the display of the test pattern's errored seconds.

B1 REMOTE LPBK
Remote loopbacks of the B1 channel in the network-to-customer direction are initiated by selecting items under this menu. The loopback may be requested for this unit and the five next U-BR1TES toward the NT1. A **LOOPING** message is displayed on the LCD once a test has been initiated. The initiating U-BR1TE sends the loopback command and begins transmitting the internally generated 2047 pattern. When the U-BR1TE begins receiving the 2047 pattern, it displays **FAR END LOOPED** on the LCD. The initiating U-BR1TE transmits the 2047 pattern for the duration of the test. The user can view the pattern results by choosing menu item **7)PATT RESULTS**, and can inject errors into the transmitted pattern by choosing menu item **6)INJECT ERROR**. Select **NO LOOPBACK** under the **B1 REMOTE LPBK** menu to exit the test.

B2 REMOTE LPBK
The **B2 REMOTE LPBK** operates exactly like the **B1 REMOTE LPBK TEST**, but the B2 channel is looped back rather than the B1 channel.

LOCAL LPBK
The local U-BR1TE may be commanded to loop back either the B1 or B2 channel. When a channel is put in **LOCAL LOOPBACK**, it will loop back both the T1 and U-interface data associated with the channel.

B1 2047 PATT

A U-BR1TE port may be commanded to transmit the internally generated 2047 pattern on the B1 channel in either the T1 (T1_TX) or the U-interface (LP_TX) direction. The pattern may be looped back to the U-BR1TE port and verified with the results viewed by choosing **7)PATT RESULTS**, or the 2047 pattern may be verified using test equipment at accessible points in the network. Errors may be injected into the transmitted pattern by choosing **6)INJECT ERROR**.

B2 2047 PATT

B2 2047 PATT operates exactly like **B1 2047 PATT**, with the pattern transmitted in the B2 channel instead of the B1 channel.

INJECT ERROR

Selecting this menu item while the U-BR1TE is transmitting the 2047 pattern (**B1 REMOTE LPBK**, **B2 REMOTE LPBK**, **B1 2047 PATT**, **B2 2047 PATT**) inserts an error in the transmitted pattern.

PATT RESULTS

Selecting this menu item while the U-BR1TE is transmitting the 2047 pattern causes the U-BR1TE to display the maximum number of errored seconds of the test pattern on the bottom line of the LCD (ES=xs). The display continues until this menu item is selected a second time. Pressing **shift-clear** while in this menu resets the errored seconds to zero.

TSU FEATURES USED WITH DUAL U-BR1TE OPTIONS

In addition to the Dual U-BR1TE menu items, two additional menu items of the TSU 100/120/600 may be operated in conjunction with the Dual U-BR1TE option module. These are **FACTORY RESTORE** and **RUN SELF TEST**.

FACTORY RESTORE

FACTORY RESTORE, a submenu of the TSU 100/120/600 main menu item **UTIL** (**UTILITIES**), restores the factory in-

stalled default setting for all Dual U-BR1TE option module parameters.

When **FACTORY RESTORE** is displayed, place the cursor on it and press **Enter**. The unit is restored to preset factory defaults and returns to the main menu. The factory default for port configuration parameters is shown in Table 3-1 on page 3-5.

RUN SELF TEST   **RUN SELF TEST**, a submenu of the TSU 100/120/600 main menu item **TEST**, executes both the Dual U-BR1TE internal test and the TSU 100/120/600 internal test. The results of the self test are displayed in the LCD. See the *TSU 100/120/600 User Manual* for additional information on **SELF TEST**.

When **RUN SELF TEST** is displayed, place the cursor on it and press **Enter** to execute the test. The unit continuously changes the display in the LCD window until all test results are shown.

Appendix A   Dual U-BR1TE Option Card Menu Tree

The menu tree for the Dual U-BR1TE Plug-in and Plug-on Option Cards is provided in Figure A-1.

1)Port Status	1)LOOP STATUS
	2)T1 STATUS
	3)LOOP MONITOR
2)Port Config	1)SERVICE
	2)ZBS:
	3)MODE
	4)WAKE-UP TONE:
3)Port Utility	1)SW Revision
4)Port Test	1)B1 REMOTE LPBK
	2)B2 REMOTE LPBK
	3)LOCAL LOOPBACK
	4)B1 2047 PATT
	5)B2 2047 PATT
	6)INJECT ERROR
	7)PATT RESULTS

Figure A-1. Dual U-BR1TE Option Cards Menu Tree

Appendix B — Dual U-BR1TE Failure Messages

FAILURE MESSAGE AT POWER UP

The following messages indicate a probable component failure on the Dual U-BR1TE Card:

E01 - **EPROM CS**   EPROM checksum error
E02 - **RAM DATA**   Data Bus Failure
E03 - **RAM ADDR**   Address Bus Failure
E04 - **RAM CELL**   Ram Cell Failure

Product Support Information

Pre-Sales Inquiries and Applications Support
Please contact your local distributor, ADTRAN Applications Engineering, or
ADTRAN Sales:

Applications Engineering	(800) 615-1176
Sales	(800) 827-0807

Post-Sale Support
Please contact your local distributor first. If your local distributor cannot help,
please contact ADTRAN Technical Support and have the unit serial number avail-
able.

Technical Support	(888) 4ADTRAN

Repair and Return
If ADTRAN Technical Support determines that a repair is needed, Technical Sup-
port will coordinate with the Customer and Product Service (CaPS) department to
issue an RMA number. For information regarding equipment currently in house
or possible fees associated with repair, contact CaPS directly at the following num-
ber:

CaPS Department	(256) 963-8722

Identify the RMA number clearly on the package (below address), and return to
the following address:

ADTRAN, Inc.
CaPS Department
6767 Old Madison Pike
Progress Center
Building #6, Suite 690
Huntsville, AL 35807

RMA # _____