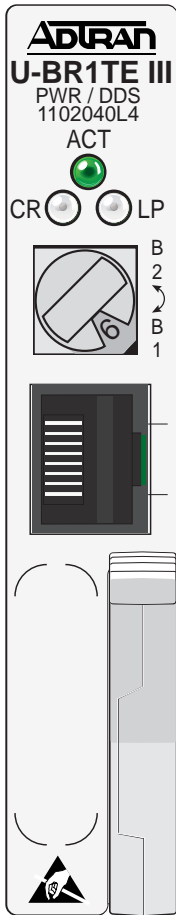


SLC-5 U-BR1TE III

CLEI: 5SC597IF_



STATUS LEDs

LP (LOOP STATUS)	<input type="radio"/> OFF <input checked="" type="radio"/> GREEN <input checked="" type="radio"/> GREEN FLASH <input checked="" type="radio"/> AMBER	Loop sync established, no loopbacks/tests in progress. Unit responding to 2B+D loopback. 1/sec = B1, 2/sec = B2 in response to eoc loopback from loop side, or during DS0 logic testing when remote has successfully looped over the loop side, or during LPTX/CRTTX testing. Loop sync not established.
CR (CARRIER STATUS)	<input type="radio"/> OFF <input checked="" type="radio"/> GREEN <input checked="" type="radio"/> GREEN FLASH <input checked="" type="radio"/> AMBER	Carrier sync established, no loopbacks/tests in progress. Unit responding to 2B+D loopback. 1/sec = B1, 2/sec = B2 in response to eoc loopback from carrier side, or during LPTX/CRTTX testing. Carrier sync not established.
LP & CR	<input checked="" type="radio"/> AMBER FLASH <input checked="" type="radio"/> GREEN FLASH	BCU out-of-service or unit in special test mode. Slot restrictions violated or unit not provisioned correctly.
CR ONLY	<input checked="" type="radio"/> AMBER FLASH	Network or trunk alarm condition.
ACT (ACTIVATION)	<input checked="" type="radio"/> GREEN <input checked="" type="radio"/> FLASHING	(ISDN) ACT bits successfully exchanged between switch and CPE. (DDS) Loop terminated by IDSL OCU-R. (ISDN) ACT bit sent in one direction only.

CIRCUIT BOARD & FRONT PANEL SWITCHES

Circuit board switch options must be made prior to installing the U-BR1TE III circuit card. The card cannot be remotely provisioned.

DIP Switch SW1 Selects the following:

- Service Level (SW1-1, SW1-2, and SW1-3). See table shown for service selection:

Service Type	Service Option	SW1-1 (B1)	SW1-2 (B2)	SW1-3 (D)
ISDN	2B+D	On	On	On
Leased	2B	On	On	Off
ISDN/DDS	B1+D	On	Off	On
ISDN	B2+D	Off	On	On
DDS/Leased	B1	On	Off	Off
Leased	B2	Off	On	Off
Leased	D	Off	Off	On

- Zero Byte Substitution (SW1-4): Enable/Disable ZBS. COT and RT selection must match. Select enabled for AMI, setting optional for B8ZS. Disable in non-D channel (leased) modes at 64 kbps or 56 kbps with secondary channel.
- POWER/NORMAL (SW1-5): ON enables span power to either U-Repeater or to the IDSL OCU-R. POWER should only be selected when SW2-1 is in LULT.

DIP Switch SW2

Termination Mode (SW2-1: LULT-LUNT) (SW2-2: ADJACENT-TANDEM). Refer to the selection chart on the circuit board for switch positions for required option settings.

Rotary Switch SW3

Front panel rotary switch selects circuit elements for loopback testing. Refer to the table for position descriptions. Clockwise rotation selects B1 channel, counter-clockwise selects B2 channel.

Position	Description	Position	Description
AD1 (1)	Address #1, address of this unit	AD6 (6)	Address #6, 5th downstream unit
AD2 (2)	Address #2, next downstream unit	LPBK (7)	Forces this unit into bidirectional loopback
AD3 (3)	Address #3, 2nd downstream unit	CRTX (8)	Carrier transmit in carrier direction
AD4 (4)	Address #4, 3rd downstream unit	LPTX (9)	Loop transmit in loop direction
AD5 (5)	Address #5, 4th downstream unit	NT1 (0)	NT1 address latching OCU in DDS mode

Note: The number in the parenthesis corresponds to the front panel display on SW3.

Front Panel RJ-45 Jack

DS0 logic level front panel jack provides access for both local and downstream loopback testing.

DEPLOYMENT GUIDELINES

- All loops must be unloaded.
- Actual Measured Loss (AML) should not exceed 40 dB at 40 kHz with 135 Ω termination, the Nyquist frequency of IDSL.
- Loop length should not exceed 18 kft.
- Recommended bridge tap length should not exceed 2 kft.

INSERTION LOSS MEASUREMENTS

IDSL Design Limits at Traditional 4-Wire Frequencies.

Customer Rate	4-Wire Qualifying Frequency (kHz)	IDSL Loss Limit (dB)
2.4	1.2	14
2.4/SC	1.6	14.5
4.8	2.4	16
4.8/SC	3.2	17
9.6	4.8	19
9.6/SC	6.4	20.5
19.2	9.6	24
19.2/SC	12.8	27
56	28.0	35
56/SC & 64	36.0	36

INSTALLATION & TURNUP

Installation assumes the network is up and running and ready to accept the U-BR1TE III.

- Wire T/R pair, pins 31 and 32, to the SLC-5/2000 backplane.
- Select required/desired options on circuit board switches SW1 and SW2.
- Insert the U-BR1TE III into its designated slot ensuring the edge connector seats firmly into the backplane.
- After insertion the U-BR1TE III will run a self-test during which all LEDs undergo an On/Off sequence.
- After synchronization, which may take up to 90 seconds, the following LED indication will show:
 - ACT LED - Green (ISDN Application) Indicates activation bits have been successfully exchanged.
 - (DDS Application) Indicates loop terminated with an OCU-R.

- All other LEDs will be Off until network occurrences cause them to turn On.

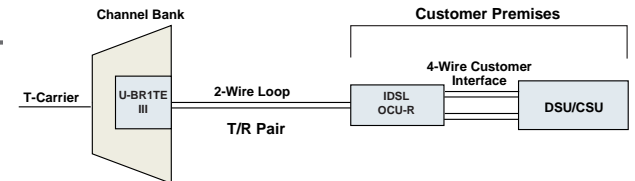
If LEDs in step 5 are as noted, proceed with loop testing per specifications.

If LEDs in step 5 are in any other configuration, refer to *TROUBLESHOOTING GUIDE*.

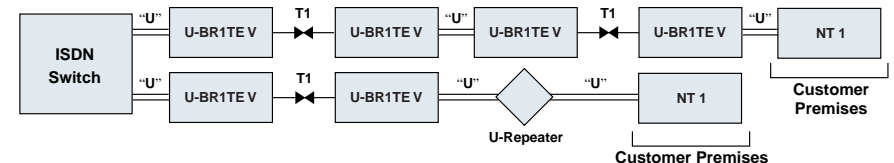
Span Power

The U-BR1TE III span powers the IDSL OCU-R or a U-Repeater. Voltage measurement from Tip to Ring is -120 VDC (with no termination). Tip to GND is 0. Ring to GND is -120 VDC (with no termination) or less depending on voltmeter impedance.

DDS APPLICATION



ISDN APPLICATIONS



TROUBLESHOOTING GUIDE

No Power at the IDSL OCU-R or U-Repeater

- Ensure U-BR1TE III is supplying necessary voltage to power U-repeater or IDSL OCU-R. Measure T/R voltage at the frame (ring to GND = -118 to -122 VDC (without loop termination), tip to ring = -118 to -122 VDC (without loop termination), tip to GND = 0. The U-BR1TE III is not polarity sensitive.
- If SW1-5 is in POWER ON position but voltage not present at downstream unit, check cable continuity.
- If voltage is measured at the remote unit, replace the remote unit.
- Neither the IDSL OCU-R nor the U-Repeater invoke a measurable short between tip and ring, thus cable resistance measurements must be made with a manually applied short.

Power, but No Synchronization

- ACT LED off - no sync with switch, check switch wiring.
- ACT LED flashing - sync with switch only, check customer termination.
- Check cable for load coils.
- Check cable does not exceed 2 kft bridged tap.
- Ensure loop length is within deployment guidelines.

Excessive Errors On Loop

- Check cable does not exceed 2 kft bridged tap.
- Ensure loop length is within deployment guidelines.
- Compare resistance of individual conductors. If these are different, high resistance or intermittent opens may be indicated. A TDR is commonly required to find such faults.

Excessive Errors On Carrier

- Check channel bank configuration and timing.
- Check near and far end U-BR1TE configuration.

Trouble Codes

The U-BR1TE III transmits an MOS (9Ah) trouble code towards the network under the following fault conditions:

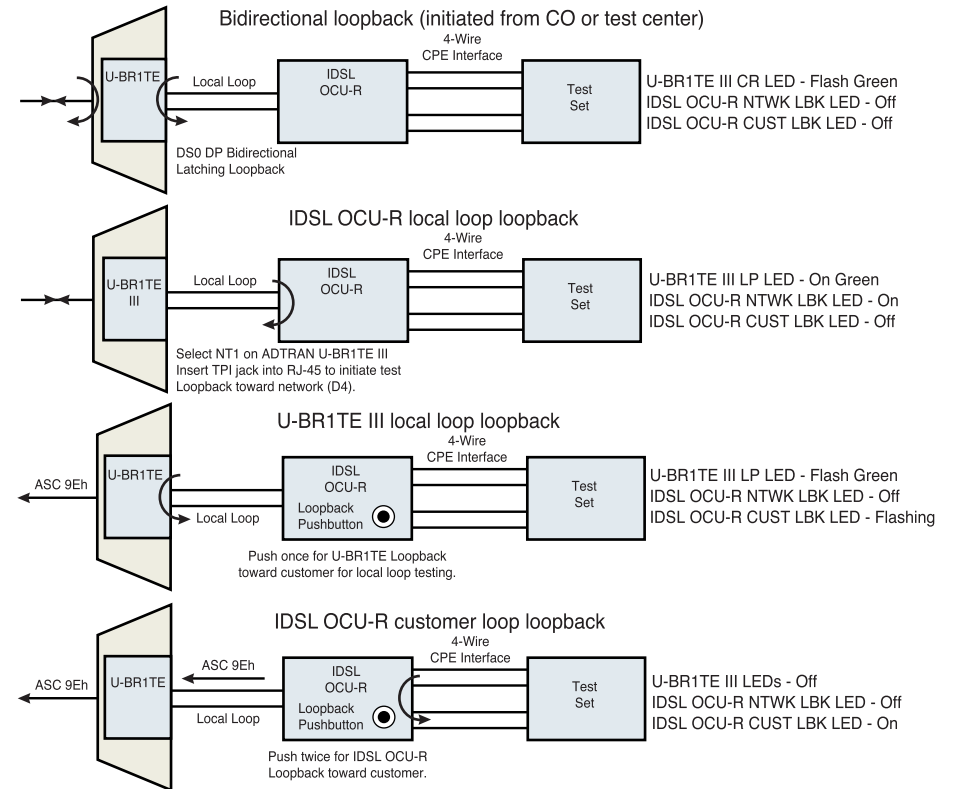
- 2-wire DSL loss of signal.
- Loss of synchronization.
- Open loop.
- The IDSL OCU-R transmits an ASC (9Eh) trouble code towards the network from the customer premises for similar 4-wire customer interface fault conditions.
- ASC (9Eh) is transmitted to the network in B1 during loopback conditions initiated by the IDSL OCU-R.

TESTING

The U-BR1TE III supports the following loopbacks and tests:

- Embedded operation channel when the D-channel is On (D, B1/B2+D, 2B+D)
- DS0 DP latching loopback sequences in B1 when D-channel is Off (B1, 2B).
- ec* remapping of subsequent DS0 DP latching loopbacks to downstream elements.
- Front panel initiated tests using SW3 for test selection and TPI test set connected to the RJ-45 jack. Tests include the following:
 - Loopback Tests (ADR1 through ADR 6 plus NT1)
 - Point-to-Point (CRTX, LPTX)
 - Local Loopback (LPBK)
 - Local Performance Monitoring via rotary switch and TPI test set.
- Externally initiated tests via front RJ-45 jacks and test set.
- Remote initiated tests from the CO, test center, or IDSL OCU-R.

LBK & Pushbutton Tests (U-BR1TE must be ADTRAN for Loopback Response from OCU-R.)
 Successful loopback tests initiated by the NT1 position or LBK pushbutton will show the LED indications listed and will transmit the trouble codes shown.



WARRANTY

Warranty for Carrier Networks products manufactured by ADTRAN and supplied under Buyer's order for use in the U.S. is ten (10) years. For a complete faxback copy of ADTRAN's *U.S. and Canada Carrier Networks Equipment Warranty*, call (877) 457-5007, Document #414.

COMPLIANCE REQUIREMENTS

CAUTION: This product for installation in a restricted access location in a Type B or E enclosure only.

Code	Input	Output
Power Code (PC)	F	C
Telecommunication Code (TC)	-	X
Installation Code	A	-

Max input current @ max load = 750 mA @ -48 VDC.

Max output current @ max load = 160 mA @ -137 VDC.