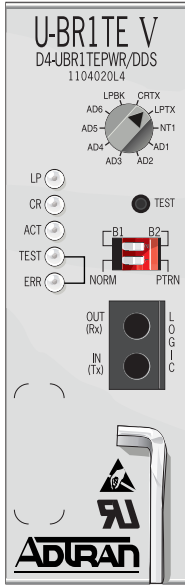


## U-BR1TE V

CLEI: D4C5BENB\_



### STATUS LEDs

<b>LP (LOOP STATUS)</b>	<input type="radio"/> OFF	Loop synchronized, no errors.
	<input type="radio"/> RED	U-interface out-of-sync, loss of signal.
	<input type="radio"/> YELLOW	Flashing = NEBE receipt, or Flashing = BER > 10 <sup>-6</sup> during Local Performance Monitoring (LPM). Solid = BER > 10 <sup>-5</sup> during LPM.
<b>CR (CARRIER STATUS)</b>	<input type="radio"/> OFF	Framing established, no NEBEs from carrier interface.
	<input type="radio"/> RED	Framing pattern not received.
	<input type="radio"/> YELLOW	Flashing = NEBE receipt, or Flashing = BER > 10 <sup>-6</sup> during LPM. Solid = BER > 10 <sup>-5</sup> during LPM.
<b>ACT (ACTIVATION)</b>	<input type="radio"/> GREEN	Solid (ISDN) = Activation bits successfully exchanged between switch & CPE. Flash 1/sec (ISDN) = ACT bit sent in one direction only. Solid (DDS) = Loop terminated by IDSL OCU-R.
<b>TEST</b>	<input type="radio"/> YELLOW	Solid = Front panel test OK, or responding to 2B+D LBK. Flash 1/sec = Response to B1 LBK request, or in front panel B1 LBK. Flash 2/sec = Response to B2 LBK request, or in front panel B2 LBK.
	<input type="radio"/> GREEN	Solid = In local performance monitoring, or 2047 Test Pattern. generation/detection invoked.
<b>ERR (Error)</b>	<input type="radio"/> RED	Flashing = Errors seen by local Test Pattern Detector.

### CIRCUIT BOARD DIP SWITCHES

- DIP Switch SW1** Selects the following:
- Bank Type (SW1-1, SW1-2): D4, SLC I, or SLC III. Refer to the selection chart on the circuit board for switch positions for desired bank type.
  - Service Level (SW1-3, SW1-4, and SW1-5). See table shown for service selection:
  - Zero Byte Substitution (SW1-6): 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.

Service Type	Service Option	SW1-3 (B1)	SW1-4 (B2)	SW1-5 (D)
ISDN	2B+D	On	On	On
	Leased	On	On	Off
ISDN/DDS	B1+D	On	Off	On
	ISDN	Off	On	On
DDS/Leased	B1	On	Off	Off
	Leased	Off	On	Off
	Leased	Off	Off	On

### DIP Switch SW3

Termination Mode (SW3-1: LULF-LUNT) (SW3-2: ADJACENT-TANDEM). Refer to the selection chart on the circuit board for switch positions for required option settings.

### Slide Switch SW6

Selects span power NORMAL (OFF), or POWER (ON) to power U-repeaters or IDSL OCU-R. The POWER position should only be used when SW3-1 is in LULF position.

### FRONT PANEL SWITCHES

Front panel switches are for selecting and initiating local tests.

#### Rotary Switch SW2

See table for position descriptions.

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

### DIP Switch SW5

- Selects the following:
- NORMAL or PTRN (SW5-1) for normal operation or test pattern generator for tests.
  - Channel B1 or B2 (SW5-2) selects either channel B1 or B2 for testing.

### Pushbutton TEST Switch SW4

Depressing SW4 will initiate the test setup with SW2 and SW5. Refer to *Status LEDs* for test result indication. After initiating a test, depressing SW4 a second time will inject a bit error into the data stream causing the ERR LED to flash. To deactivate loopback tests, depress SW4 for 2 seconds (or position SW5-1 to NORMAL).

### 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 bridged tap length should not exceed 2 kft.

### INSTALLATION & TURNUP

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

- Wire T/R pair, pins 51 and 24, to the D4/SLC-96 backplane.
- Select required/desired options on circuit board switches SW1, SW3, and SW6.
- Insert the U-BR1TE V into its designated slot ensuring the edge connector seats firmly into the backplane, observe time slot allocation.
- After insertion the U-BR1TE V 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.

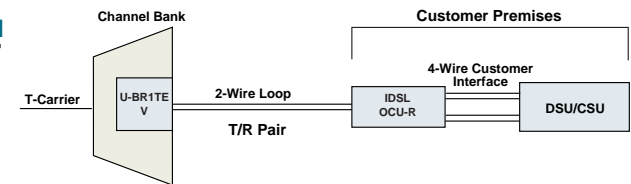
If LEDs in step 5 are as noted, proceed with loop testing per specifications.

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

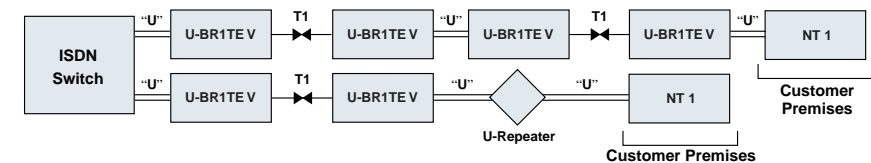
### SPAN POWER

The U-BR1TE V span powers the IDSL OCU-R or a U-Repeater. Voltage measurements 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 V 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 (with no termination), tip to ring = -118 to -122 VDC (with no termination), tip to GND = 0. The U-BR1TE V is not polarity sensitive.
- If SW6 is in POWER 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

In DDS mode the U-BR1TE V 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.

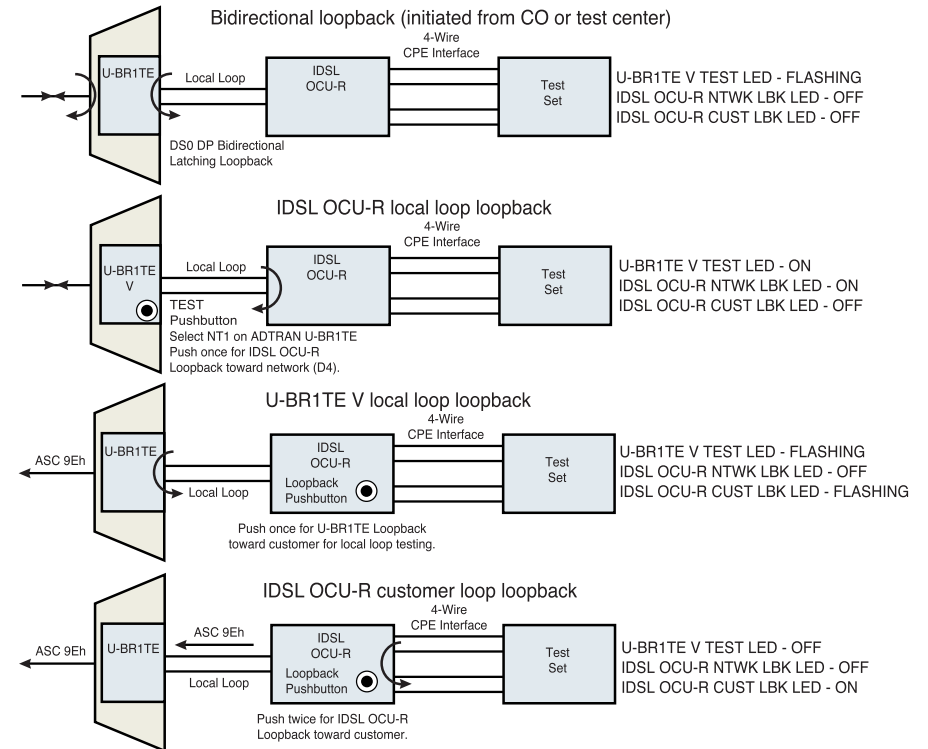
## TESTING

The U-BR1TE V 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).
- ecoc remapping of subsequent DS0 DP latching loopbacks to downstream elements.
- Front panel initiated tests using SW2 for test selection, SW5 for channel selection and pattern generator, and TEST pushbutton SW4 to initiate the test. 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 LBK pushbutton.
- Externally initiated tests via front panel bantam 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 TEST/LBK pushbuttons 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 copy of ADTRAN's *U.S. and Canada Carrier Networks Equipment Warranty*, P/N 60000087-10, call: (877) 457-5007, faxback 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.