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BR1/10 ISDN CHANNEL BANK TURN-UP GUIDE

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1. INTRODUCTION

This Guide contains Turn-Up procedures for the following ADTRAN BR1/10 Channel Banks:

- 1150081L2, 23" (2X) Chassis
- 1150119L1, 19" (1X) Chassis
- 1150219L1, Wall Mount Chassis

Revision History

This is the initial release of this Turn-Up Guide. Future revisions will be described in this section.

Safety Notes

- WARNING: implies conditions or actions that may cause personal pain, injury, or death.
- CAUTION: Implies conditions or actions that may cause damage to equipment, software, or the environment, or disrupt service.
- NOTES: Contain additional but not essential information.

2. OVERVIEW

The processes and procedures described in this Guide are in table format and should be followed in the sequence presented.

Table 1 lists all BR1/10 common cards and channel units, their associated part numbers, and the Bellcore CLEI codes.

NOTE

Individual Practice Sections should be on hand for Turn-Up. They contain information that may need to be referenced during system Turn-Up.

Table 2 lists the particular procedure Section number required to "Turn-Up" the associated BR1/10 System. Table 3 lists typical system configurations and part numbers.

Table 1. Common Cards & Channel Units

ADTRAN P/N	Description	CLEI Code
1150078L2	Power & Alarm Unit (PAU)	D4CIJ8Y2AA
1150079L2	Line Interface Unit (LIU)	D4CIPT02AA
1150080L1	Bank Controller Unit (BCU)	D4CIS7Z2AA
1150077L1	U-BR1TE	D4C1A2T2AA

Craft personnel should thoroughly understand both the equipment and this document prior to installation and turn-up of the BR1/10 ISDN Channel Bank.

Turn-Up Sequence

The Turn-Up process has been divided into specific procedures that should be accomplished in numerical sequence. Table 2 lists those procedures and where in this Guide they are located.

1X or 2X Configuration

The 1X configuration is designed for a 19 inch bay and can house either an eight or ten unit system plus commons. The 2X configuration is for a 23 inch bay and can house two, eight or ten unit systems side by side each with its own commons. Several system configurations are available for convenience. Table 3 lists the part number for common configurations. Figure 1 illustrates the 1X and 2X configurations.

Table 2. Turn-Up Procedures

Procedure Number	Guide Section	Task Description
1	3	Visually inspect: BR1/10 Chassis
2	4	Provision & Install: Bank Controller Unit
3	5	Install: Line Interface Unit
4	6	Install: Power & Alarm Unit
5	7	Install: Mini U-BR1TEs

CAUTION

Common cards should be inserted into a powered-up backplane in BCU, LIU, PAU sequence. The BCU and LIU should not be inserted into a powered-up backplane that has the PAU installed.

3. VISUAL INSPECTION

Procedure 1 provides for visually inspecting the BR1/10 for damage. If damage is noted contact your installation group for resolution before continuing with the Turn-Up process.

WARNING

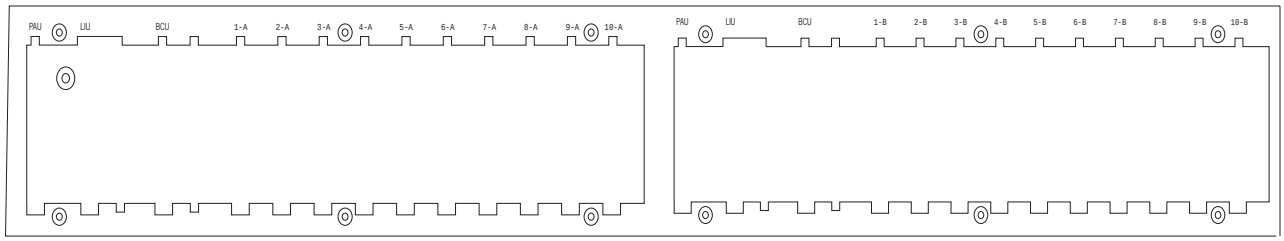
Ensure the equipment under inspection is isolated from electric power or any other electrical source.

CAUTION

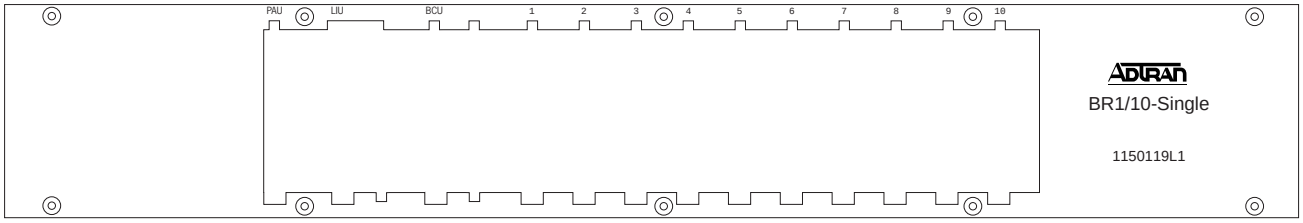
The devices and equipment described in this document are subject to ESD damage. Follow all static control measures when working with this equipment.

Table 3. BR1/10 System Configurations

ADTRAN P/N	Description
4150BR1X10L1	BR1/10 Common Card Set: 1 PAU, 1 LIU, 1 BCU
4150BR1X10L2	Common Card Set + 8 Mini U-BR1TEs
4150BR1X10L3	Common Card Set + 10 Mini U-BR1TEs
4150BR1X10L5	19" Chassis + 1 Common Card Set
4150BR2X10L1	23" Chassis + 1 Common Card Set
4150BR2X10L2	23" Chassis + 2 Common Card Sets
4150BR2X10L8	23" Chassis + 1 Common Card Set + 8 Mini U-BR1TEs
4150BR2X10L10	23" Chassis + 1 Common Card Set + 10 Mini U-BR1TEs
4150BR2X10L16	23" Chassis + 2 Common Card Sets + 16 Mini U-BR1TEs
4150BR2X10L20	23" Chassis + 2 Common Card Sets + 20 Mini U-BR1TEs



23-inch, 2X Chassis



19-inch, 1X Chassis

Figure 1. BR1/10 ISDN Channel Banks

Procedure 1. Visual Inspection of Chassis

Step	Action	Defects Yes	Defects No
1	Ensure the chassis is in the correct bay location and position.		
2	Verify that the chassis is securely mounted and free of visible defects or damage.		
3	Inspect for chassis alignment as follows: A) Insert appropriate circuit cards into the shelf at the far left, far right and center slots. Circuit cards should not bind upon insertion or removal. B) Firmly seat the card into the backplane. When doing this do not push on switches or LEDs, only push on metal surfaces. C) Push in the locking lever to securely latch the card into the backplane. The card should not be able to be pulled from the backplane when latched. D) Pull down on the locking lever ensuring the locking lever disengages the card from the backplane.	____ ____ ____ ____	____ ____ ____ ____
4	Validate electrical integrity of the backplane as follows: A) Inspect for damaged connectors, pins, straps, or switches. B) Verify that all wiring is secure and without breaks, and that there are no loose wires. C) Ensure electrical insulation is intact and effective.	____ ____	____ ____
5	Verify the protective plastic cover is securly in place and that all fasteners are engaged.		
6	Initial and date this procedure complete: _____, Date: _____		

4. BANK CONTROLLER INSTALLATION

Procedure 2 provides instructions for inserting the BCU circuit card (Figure 2). Table 4 provides provisioning information for DIP switches SW1 and SW2 on the BCU card. This provisioning must be accomplished while the card is withdrawn from the channel bank.

After insertion, if -48VDC is applied to the backplane the BCU will not display activity until the PAU card is installed. During operation DIP switch SW3 is used to sectionalize trouble at the DS-1 circuit level. These dipswitch selections can be made during troubleshooting procedures. Refer to BCU I&M Practice, 61150080L1-5, for SW3 information.

5. LINE INTERFACE INSTALLATION

The LIU (Figure 2) does not have pre insertion provisioning. During system Turn-Up it normally follows the BCU for installation. If -48VDC is applied to the backplane the LIU will not show activity until the PAU is inserted. Procedure 3 provides Turn-Up instructions.

During operation the two faceplate rotary switches are used for obtaining ISDN circuit level performance and for sectionalizing trouble with use of an external test set via the faceplate access ports. Refer to LIU I&M Practice, 61150079L2-5, for circuit performance status and troubleshooting informaton.

Procedure 2. Bank Controller Unit Installation

Step	Action	Initial OK
1	Visually inspect the card for noticible defects.	
2	Refer to Table 4 for provisioning information. Ensure required options are correctly set. Options are referenced from BR1/10 BCU I&M Practice 61150080L1-5 (series).	
3	Align the card to its designated slot and slide into the shelf. When seating into the backplane edge connector do not push on switches or LEDs, only push on metal surfaces. When the card is seated into the edge connector, engage the locking lever by pushing it in.	
4	Initial and date this procedure complete: _____, Date: _____	

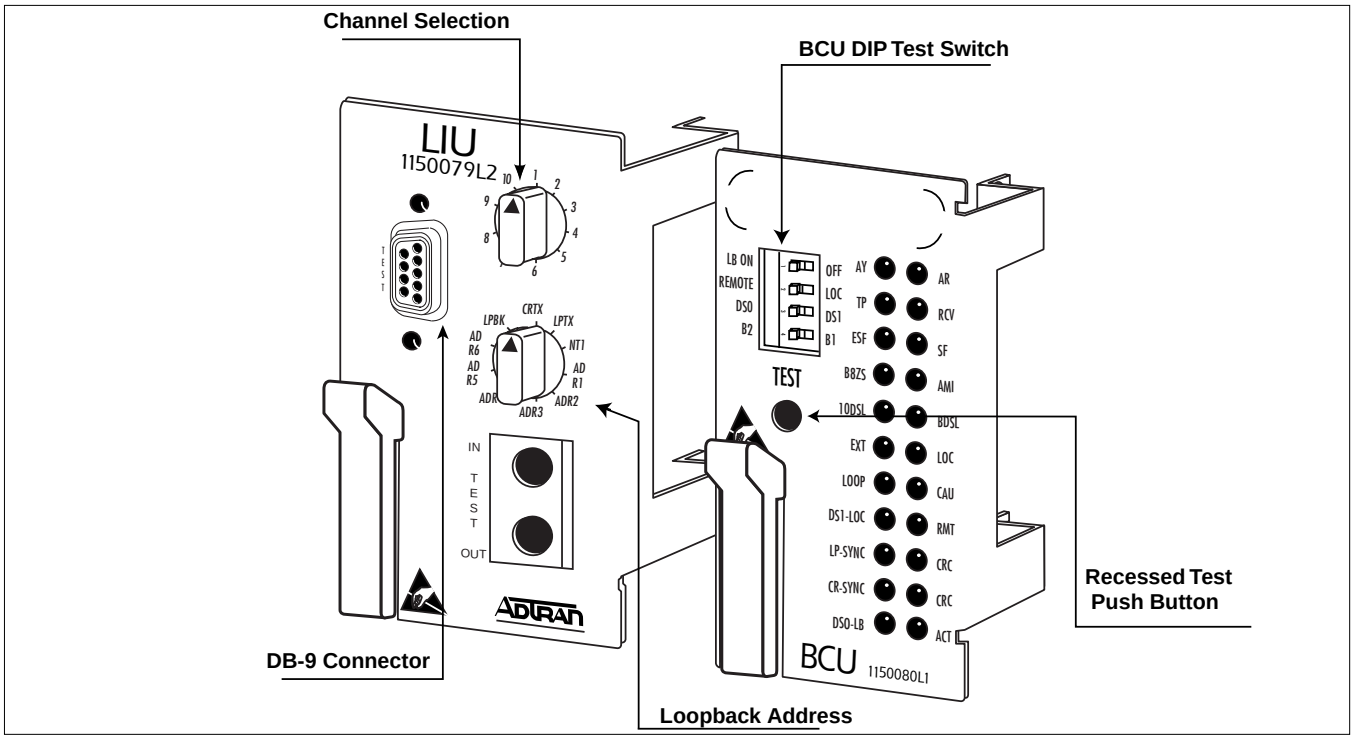


Figure 2. LIU & BCU Common Cards

Procedure 3. Line Interface Unit Installation

Step	Action	Initial OK
1	Visually inspect the card for noticible defects	
2	Align the card to its designated slot and slide into the shelf. When seating into the backplane edge connector do not push on switches or LEDs, only push on metal surfaces. When the card is seated into the edge connector, engage the locking lever by pushing it in.	
3	Initial and date this procedure complete: _____, Date: _____	

Table 4. Bank Controller Unit Provisioning for Procedure 2

Switch	Function	Description
SW1-1 SW1-2 SW1-3	**Line Buildout**	Selects Line buildout in feet, attenuation in Decibles (dB). Distance / SW1-1 / SW1-2 / SW1-3 0-133Ft/0dB: ON / ON / ON 133'-266': ON / ON / OFF 266'-399': ON / OFF / ON 399'-533': ON / OFF / OFF 533'-655': OFF / ON / ON -7.5dB: OFF / ON / OFF -15dB: OFF / OFF / ON -22.5dB: OFF / OFF / OFF
SW2-1	**Line Code Format**	SW2-1: ON = B8ZS; OFF = AMI
SW2-2	**Framing Format**	SW2-2: ON = ESF; OFF = SF
SW2-3	**Remote Loopback Location**	SW2-3: ON = Payload; OFF = Line
SW2-4 SW2-5	**Timing Source**	Timing Source / SW2-4 / SW2-5 External Input from BITS: OFF / OFF Local Clock from LIU: OFF / ON Loop Clock from T1 Bit Stream: ON / OFF CAU from Slot One (1): ON / ON
SW2-6	**Bank Mode**	SW2-6: ON = 8 DSL; OFF = 10 DSL (If 10 DSL is selected, SW2-1 & SW2-2 must both be ON to select B8ZS and ESF .)
SW2-7 SW2-8 SW2-9	**Terminal Mode & Counting**	Terminal Mode / Counting / SW2-7 / SW2-8 / SW2-9 BR1/10 to BR1/10: Proprietary / NA / NA / NA BR1/10 to D4: D4 / ON / ON / ON BR1/10 to D4: D1D / ON / ON / OFF BR1/10 to SLC: Mode 1 / ON / OFF / OFF BR1/10 to SLC: Mode 3 / OFF / ON / ON
SW2-10	**CSU Loopback**	SW2-10: ON = Enable; OFF = Disable ON also enables SW3 on the BCU faceplate to sectionalize DS-1 trouble between BR1/10 channel banks. Refer to BCU I&M Practice, 61150080L1-5, for SW3 information.

6. POWER AND ALARM INSTALLATION

The PAU (Figure 3) does not have pre insertion provisioning. There is a faceplate 1 Amp cricket fuse that must be inserted before operation can begin. During system Turn-Up the PAU normally follows the BCU and LIU for installation.

NOTE

To prevent damage during shipment and unpackaging the 1 Amp fuse is shipped in a separate anti-static bag.

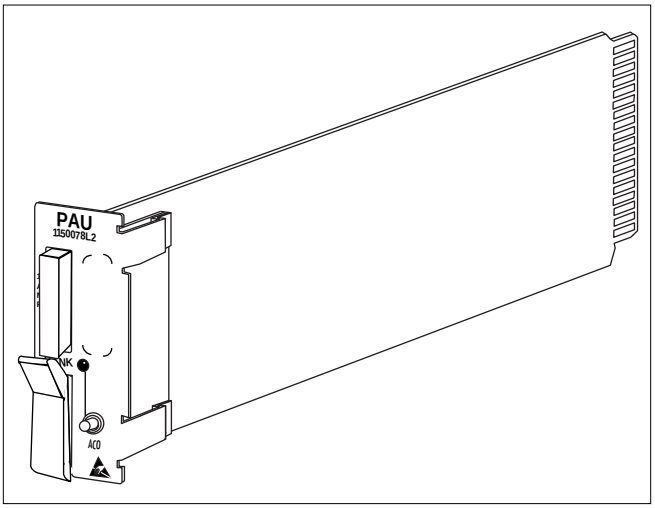


Figure 3. Power and Alarm Unit

Procedure 4. Power & Alarm Unit Installation

Step	Action	Initial OK
1	Visually inspect the card for noticible defects.	
2	Insert the 1 Amp cricket fuse in the PAU faceplate slot. Do not force the fuse in. The fuse is keyed for correct insertion and requires very little effort to insert.	
3	Align the card to its designated slot and slide into the shelf. When seating the backplane edge connector do not push on switches or LEDs, only push on metal surfaces. When the card is seated into the edge connector, engage the locking lever by pushing it in.	
4	With -48VDC applied to the backplane, inserting the PAU will cause a variety of LEDs on the BCU to illuminate. Verify that the lit LEDs match the BCU's SW2 dip switch settings. If LEDs do not match switch selection repeat Procedures 2, 3, and 4. If the results are still unsatisfactory refer to Technical Support in Section 9 of this document.	
5	Initial and date this procedure complete: _____, Date: _____	

7. CHANNEL UNIT TURN-UP

Procedure 5 describes the Turn-Up process for the U-BR1TE (Figure 4). Table 5 provides provisioning information for individual U-BR1TE cards. U-BR1TEs can be inserted or removed from a powered-up backplane without interfering with the network.

NOTE

For detailed test procedures for the U-BR1TE Channel Unit refer to I&M Practice 61150077L1-5 (series).

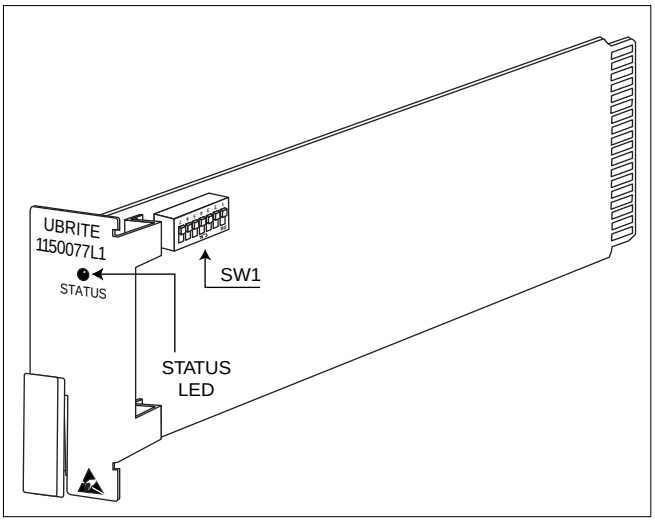


Figure 4. U-BR1TE

Procedure 5. Mini U-BR1TE Installation

Step	Action	Initial OK
1	Visually inspect the subject card for noticible defects.	
2	Refer to Table 5 for provisioning information. Ensure required options are correctly set. Options are referenced from U-BR1TE I&M Practice 61150077L1-5 (series).	
3	Align the card to its designated slot and slide into the shelf. When seating into the backplane edge connector do not push on switches or LEDs, only push on metal surfaces. When the card is seated into the edge connector, engage the locking lever by pushing in.	
4	When the U-BR1TE is inserted into a powered backplane with a PAU card installed the Status LED should illuminate Red.* If the LED does not illuminate repeat the procedure with a U-BR1TE known to function correctly. If results are not satisfactory refer to Technical Support in Section 9 of this document.	
5	Initial and date this procedure complete: _____, Date: _____	

NOTE:
* If inserted in slot 9 or 10 of a 10 unit chassis ensure B8ZS, ESF, and 10 DSL are selected on dip switches SW2-1, SW2-2, and SW2-6 on the BCU.

Table 5. U-BR1TE Provisioning for Procedure 5

Switch	Function	Description/Position
SW1-1 SW1-2 SW1-3	**Service Level**	Service Level / SW1-1 / SW1-2 / SW1-3 2B+D / ON / ON / ON B1+D / ON / OFF / ON B2+D / OFF / ON / ON D Only / OFF / OFF / ON 2B / ON / ON / OFF B1 only / ON / OFF / OFF B2 only / OFF / ON / ON
SW1-4	**DC Sealing Current** Both SW1-5 & SW1-6 must be ON to enable sealing current.	SW1-4 / ON / OFF Enabled / Disabled Enable for U-BR1TE nearest to customer premise. Disable all other U-BR1TEs in circuit.
SW1-4	**Periodic Wake-Up Tone** Both SW1-5 & SW1-6 must be OFF to enable Periodic Wake-Up Tone.	SW1-4 / ON / OFF Provided / Not Provided Not selectable in LULT mode. Periodic wake-up tones are only used when the U-BR1TE is interfacing with a Newbridge switch.
SW1-5 SW1-6	**Termination Mode**	Termination Mode / SW1-5 / SW1-6 LULT / ON / ON LUNT / OFF / OFF Set U-BR1TE nearest switch to LUNT, set U-BR1TE nearest to customer premise to LULT. Any U-BR1TE in between must alternate this arrangement: LUNT to LULT to LUNT to LULT, etc.
SW1-7	**Zero Byte Suppression**	SW1-7 / ON / OFF Enabled / Disabled Enable if BCU is set for AMI (see option LED on BCU faceplate). Disable if BCU is set for B8ZS.

8 MAINTENANCE

TheBR1/10 ISDN Channel Bank does not require programmed maintenance for normal operation. Test and maintenance for the specific plug-ins should be conducted in accordance with the recommendations and procedures prescribed in associated Installation and Maintenance Practices.

ADTRAN does not recommend that repairs be performed in the field. Repair services are obtained by returning the defective unit to ADTRAN's Customer Service.

9. WARRANTY AND CUSTOMER SERVICE

ADTRAN will replace or repair this product within ten years from the date of shipment if it does not meet its published specifications or fails while in service (see: *ADTRAN Equipment Warranty, Repair, and Return Policy and Procedure*, document : 60000087-IOA).

Contact Customer And Product Service (CAPS) prior to returning equipment to ADTRAN.

For service, CAPS requests, or further information, contact one of the following numbers:

ADTRAN Technical Support

(800) 726-8663
Standard hours: Monday-Friday, 7am-7pm CST
Emergency Support: 7 days/week, 24 hours/day

ADTRAN Sales

(800) 827-0807

ADTRAN Repair/CAPS

(256) 963-8722

Repair and Return Address

ADTRAN, Inc.
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901 Explorer Boulevard
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