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Total Access™ 750 Bank Controller Unit
TA 750 BCU
Installation and Operation

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1. GENERAL

This practice provides installation and operation procedures for the ADTRAN Total Access™ 750 Bank Controller Unit (BCU) common module, List 1. The TA 750 BCU module is designed specifically for the ADTRAN Total Access 750 and is not used in any other product. **Figure 1** is an illustration of the TA 750 BCU.

Revision History

This document has been revised to include Windows Hyperterminal PASSWORD information, and update Switch settings.

Features

The TA 750 BCU, part number 1175012L1, includes the following features:

- Controls all common equipment and access modules.
- T1 network termination.
- Built-in Channel Service Unit (CSU).
- Provides VT 100 craft interface via faceplate DB-9 connector.
- Bantam Jacks provide access to Network T1.
- LED network status indication.

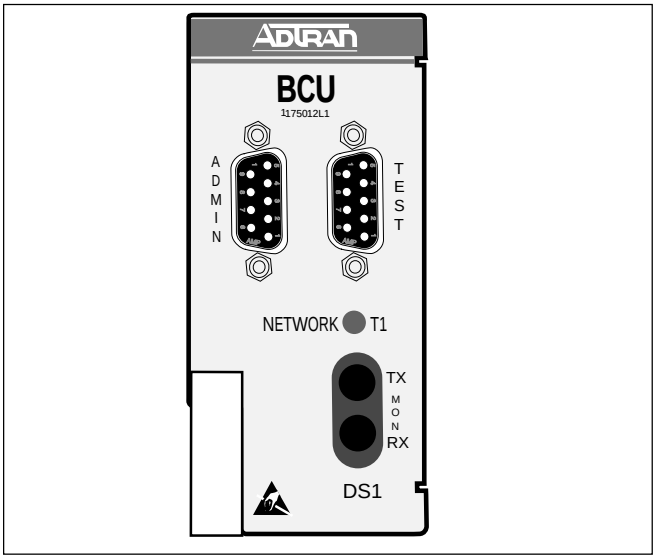


Figure 1. TA 750 BCU

- T1 performance monitoring.
- Supports TR-08 signaling.
- UL 1950 compliant.
- Meets NEBS Level 3 requirements.

General Description

The TA 750 BCU is a common module plug-in unit designed for the TA 750. The BCU, with a built-in CSU, provides all control functions for the TA 750 common units and all individual access modules. A faceplate ADMIN DB-9 provides access for a VT 100 terminal for screen menu provisioning, and bantam test jacks provide, transmit, and receive monitoring. An additional TEST DB-9 provides timing for DS0 test equipment. A network LED shows status information for the network T1. The unit is comprised of a main circuit board and daughter card and inserts directly in the BCU slot on the TA 750 shelf. An 8-position DIP switch is mounted on the daughter card and is used for T1 provisioning and clocking.

This device complies with Part 15 of the FCC rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

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Changes or modifications not expressly approved by ADTRAN could void the user's authority to operate this equipment.

Functional Description

The TA 750 BCU provisions, operates, monitors, and tests all TA 750 access modules including Quad FXS, Quad FXO, OCU DP, DS0 DP, and Nx56/64 DSU DP. The BCU programs T1 bandwidth use between the various access modules and data ports.

2. INSTALLATION/OPERATION



After unpacking the unit, inspect it for damage. If damage is noted, file a claim with the carrier, then notify ADTRAN Customer Service, see section 7.

The TA 750 BCU plugs directly into the BCU slot in the common module area of the TA 750 chassis. To insert, hold the unit by the faceplate while supporting the bottom side. Align the card edges to the guide grooves for the designated slot. Insert into the chassis until the edge connector seats firmly into the backplane. Lock the unit in place by pushing in on the locking lever.

Compliance Codes

This product is intended to be installed in products providing Type "B" or "E" enclosure, and in a Restricted Access Location. Refer to **Table 1**.

Table 1. Compliance Codes

Code	Input	Output
PC	C	C
TC	–	X
IC	A	–

3. OPTIONS

The TA 750 BCU can be provisioned from either an 8-position Dual In-line Package (DIP) switch (S1) mounted on the PCB, or through screen menus accessed via the faceplate craft interface port. Basic T1 provisioning, clock source, and CSU loopback options are found on the DIP switch. Refer to **Table 2** for DIP switch S1 provisioning information. Additional and more in-depth provisioning options for the BCU as well as access modules are available through the craft ADMIN interface.

DIP switch S1 must be provisioned while the BCU is withdrawn from the chassis. Once installed, any software provisioning made will override the DIP switch settings. If the unit is withdrawn and reinserted (power cycled) the software options remain in effect. If a DIP switch setting is changed while withdrawn then the new DIP switch setting takes effect. If none of the DIP switch settings were changed then the unit will be provisioned for the last software settings.

Electronic Provisioning

The ADMIN interface on the TA 750 BCU is used to change factory selected options and obtain access module status through menu screens. To access the menu screens, connect a VT 100 terminal or computer running a terminal emulation program to the craft interface port using a standard male-to-female RS-232 DB-9 cable. Craft port settings are as follows:

- 9600 Baud
- No parity
- 8 Data bits
- 1 Stop bit

CAUTION

The BCU retains provisioning setup when removed from the chassis. If inserted into another chassis, the provisioning setup is invoked on that chassis' access modules.

WINDOWS HYPERTERMINAL

Windows Hyperterminal can be used as a VT 100 terminal emulation program. Open Hyperterminal by selecting PROGRAMS / ACCESSORIES / HYPERTERMINAL. Refer to the Help section of Hyperterminal for additional questions.

NOTE

To ensure proper display background in Windows Hyperterminal, select VT 100 terminal emulation under SETTINGS.

PASSWORD

Upon initial connection, the password option is factory disabled. To enable the password, select Bank Controller (1)/ Password Control (8) /Enable Password (2). The factory default is PASSWORD in all capital letters. The password can be changed to a user-selected password if desired. If the password is

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enabled, after approximately eight minutes of keyboard inactivity, the terminal times out and returns to the password login screen.

MENU NAVIGATION

To traverse through the menus, select the desired entry and press ENTER. To work backwards in the menu press the ESC (escape) key.

Connections

All TA 750 BCU connections are made through the backplane connector. With the exception of power and the V.35 connector, all of the TA 750 rear panel connectors terminate on the BCU. These include Network T1, Clock source, Alarms, Fractional T1, and Management. Refer to the TA 750 Chassis Installation and Maintenance Practice, part number 61175001L1-5, for additional information on rear panel connections. **Table 3** describes the T1 pinout connections.

Faceplate LED

The faceplate network LED labeled NETWORK T1 provides status information for the network T1 using a color coded message format. Refer to **Table 4.**

Table 2. DIP Switch S1 Options

Switch	Function	Description		
		S1-1	S1-3	Setting
S1-1	Framing Format	Off	Off	ESF*
S1-3	TR-08 Signaling	On	Off	SF
		Off	On	TR-08 Digroup A
		On	On	TR-08 Digroup B, C, or D
S1-2	Line Code Format	Enables Bipolar Eight-Zero Substitution (B8ZS) which allows for Clear Channel operation for the T1 carrier system, or Alternate Mark Inversion (AMI). This option must be configured identically with all other T1 network equipment on this circuit.		
		On ..... AMI		
		Off * B8ZS		
S1-4	CSU Loopback	Enables the CSU Loopback Function. Unit will respond to CSU loopback sent from a remote network device or test equipment.		
		Off * ..... Enabled		
		On ..... Disabled		
	Timing Mode	Determines clock source for TA 750.		
S1-5	Timing A	S1-5	S1-6	Function
S1-6	Timing B	Off *	Off *	Loop timing: Derives timing from T1
		On	Off	External timing: Derives timing from external BITS clock
		Off	On	Local timing: Clock generated from internal timing source
		On	On	Loop timing: Derives timing from T1
	DS1 Attenuation.....	Selects attenuation to set receiver sensitivity in decibels (dB).		
S1-7	LBO A	S1-7	S1-8	Setting
S1-8	LBO B	Off *	Off *	0 dB / 0-133 ft (LBO)
		On	Off	-7.5 dB
		Off	On	-15 dB
		On	On	-22.5 dB
		(Note: additional LBO settings can be provisioned through the menu interface.)		

* Denotes factory default settings.

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Table 3. Pinout Connectors for RJ-48 T1 Interface

PIN	NAME	DESCRIPTION
1	R1 - RING1	Receive data from Network DS1
2	T1 - TIP1	Receive data from Network DS1
3	UNUSED	-
4	R - RING	Transmit data to Network DS1
5	T - TIP	Transmit data to Network DS1
6, 7, 8	UNUSED	-

Table 4. LED Indication

LED	Condition	Description
Network T1	Off: Red: Yellow: Green: Flashing Green:	No power. Unit in Red Alarm (T1 down or not connected). Receiving Yellow Alarm (far end unit in Red alarm). Normal Operation. Network T1 in Test.

4. TESTING

The TA 750 BCU provides a variety of test options for both the Network T1 and DS0 access modules. The faceplate of the BCU provides a bantam jack for local T1 test access. DS0 test access for the digital access modules (OCU DP, DS0 DP, U-BR1TE) is provided via bantam jacks on the faceplate of each unit.

Faceplate Bantam Jack

The faceplate bantam jack provides a means to monitor the network T1 connected to the rear of the TA 750 chassis. The jacks accept standard 310-type bantam plugs. **Figure 2** displays where the bantam jacks monitor the T1.

Faceplate TEST connector

The faceplate DB-9 female TEST connector provides the necessary clock output required by standard DS0 Logic Test equipment such as a TPI 108/109 test set. Specifically, the TEST connector outputs 8 kHz and 64 kHz clock reference signal. **Figure 3** illustrates the DB-9 TEST connector.

DS0 test equipment is used to test DS0 access modules such as the OCU DP, DS0 DP, or U-BR1TE. Once the test equipment is connected to the reference clock source, individual tests can be performed on DS0 access modules using the faceplate bantam jacks on each unit.

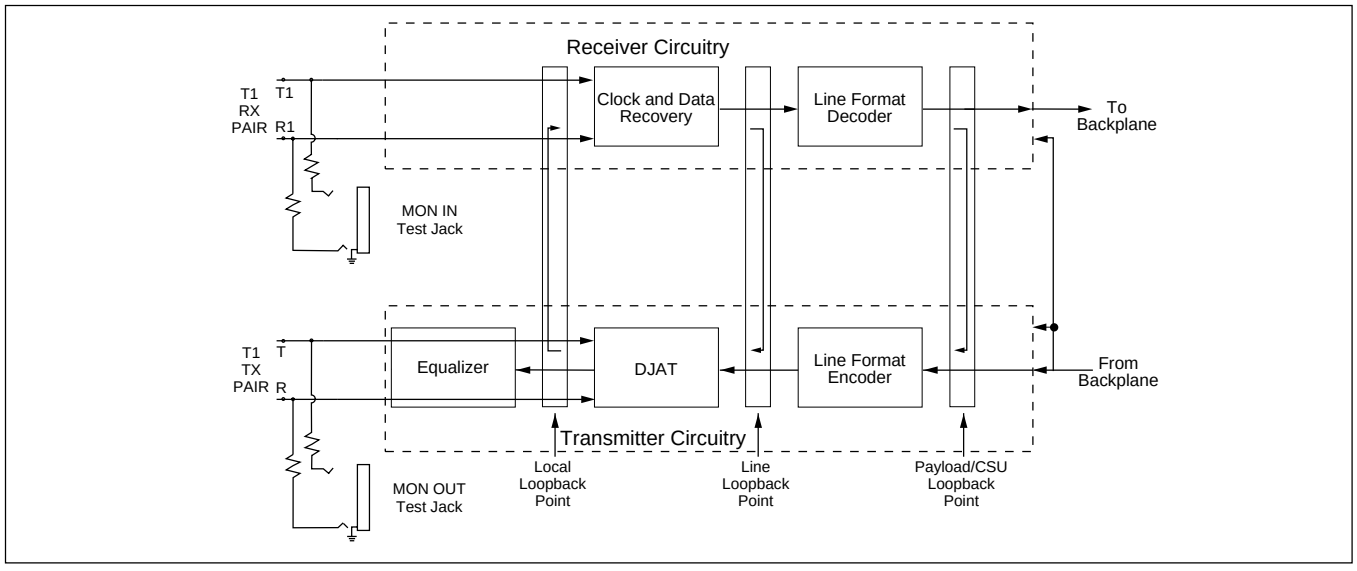


Figure 2. Bantam Jack Monitoring Points

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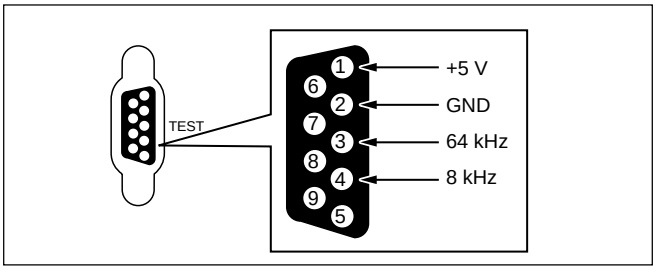


Figure 3. DB-9 Connector Pinout

T1 Loopbacks

The TA 750 supports several T1 loopbacks via the craft interface. These loopbacks include:

- Initiating a remote payload or line loopback command (ESF mode only).
- Responding to a remote payload or line loopback command (ESF mode only).
- Responding to a remote CSU loopback command.

Figure 2 displays where the various loopbacks occur in the TA 750 BCU circuitry.

Self Test

The BCU goes into self test when inserted into an active TA 750 chassis. The self test checks internal BCU circuitry. A failed test causes the faceplate Network T1 LED to blink red.

5. SPECIFICATIONS

Refer to **Table 5** for TA 750 BCU specifications.

Table 5. Specifications

Mechanical	
Size:	1 11/16" W x 3" H x 10"L
Weight:	1 lb.
Environmental	
Operating Temperature:	-40º to 65º C
Storage Temperature:	-40º to 85º C
Relative Humidity:	Up to 95% non-condensing
Configuration Codes	
Power Code (PC):	IN: F, OUT: C
Telecommunication Code (TC):	IN: X, OUT: X
Installation Code (IC):	IN: A, OUT: -

6. MAINTENANCE

The TA 750 BCU does not require routine maintenance for design operation.

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

7. WARRANTY AND CUSTOMER SERVICE

ADTRAN will replace or repair this product within 10 years from the date of shipment if it does not meet its published specifications or fails while in service (see: *ADTRAN Carrier Networks Equipment Warranty, Repair, and Return Policy and Procedure*, document: 60000087-10A).

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:

Part Number

1175012L1

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(888) 4-ADTRAN

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