Total Access 900e Series
Hardware Installation Guide

Total Access 908e

Total Access 916e

Total Access 924e

64240916L1-34D
November 2006

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Conventions

Notes provide additional useful information.

Cautions signify information that could prevent service interruption or damage to equipment.

WARNING

Warnings provide information that could prevent injury or endangerment to human life.

Safety 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 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.
5. The socket-outlet shall be installed near the equipment and shall be easily accessible.

Save These Important Safety Instructions

Changes or modifications to this unit not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

FCC-Required Information

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

1. This equipment complies with Part 68 of FCC rules and requirements adopted by ACTA. Each registered interface has a label that contains, among other information, a product identifier in the format US:AAAEQ##TXXXX. If requested, provide this information to the telephone company.
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 effect the proper operation of this equipment. Advance notification and the opportunity to maintain uninterrupted service are 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. This equipment is designed to connect to the telephone network or premises wiring using an FCC-compatible modular jack, which is compliant with Part 68 and requirements adopted by ACTA.
7. The following information may be required when applying to the local telephone company for leased line facilities:

Part Number	Registration Number	Service Type	REN/SOC	FIC	USOC
Total Access 908e T1 Products Total Access 916e/924e T1 Products	US: HDCIT01A4240916E1	1.544 Mbps - SF 1.544 Mbps - SF and B8ZS 1.544 Mbps - ESF 1.544 Mbps - ESF and B8ZS	N/A / 6.0N	04DU9-BN 04DU9-DN 04DU9-1KN 04DU9-1SN	RJ-48C
Total Access 924e with optional FXO ports		Analog Loop Start / Ground Start	0.1A / 9.0F	02LS2/02GS2	RJ-11C

8. The REN is useful in determining the quantity of devices you may connect to your telephone line and still have all of those devices ring when your number is called. In most areas, the sum of the RENs of all devices should not exceed five. To be certain of the number of devices you may connect to your line as determined by the REN, call your telephone company to determine the maximum REN for your calling area.
9. This equipment may not be used on coin service provided by the telephone company. Connection to party lines is subject to state tariffs. Contact your state public utility commission or corporation commission for information.

FCC 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 equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio frequencies. 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 interference at his own expense.

Industry Canada Compliance Information

Notice: The Industry Canada label applied to the product (identified by the Industry Canada logo or the "IC:" in front of the certification/registration number) signifies that the Industry Canada technical specifications were met.

Notice: The Ringer Equivalence Number (REN) for this terminal equipment is supplied in the documentation or on the product labeling/markings. The REN assigned to each terminal device indicates the maximum number of terminals that can be connected to a telephone interface. The termination on an interface may consist of any combination of devices subject only to the requirement that the sum of the RENs of all the devices should not exceed five (5).

Canadian Emissions Requirements

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

Cet appareil numérique respecte les limites de bruits radioelectriques applicables aux appareils numériques de Class A prescrites dans la norme sur le materiel brouilleur: "Appareils Numériques," NMB-003 edictee par le ministre des Communications.

Service and Warranty

For information on the service and warranty of ADTRAN products, visit the ADTRAN website at http://www.adtran.com/support.

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1. INTRODUCTION

The Total Access 900e Series products are Integrated Access Devices (IAD) designed for cost-effective deployment of up to 6 Mbps of data or 48 channels of Voice over IP (VoIP) services. The Total Access 900e Series combines voice and data services into a single platform creating the fourth generation of ADTRAN IADs for Internet Protocol (IP) telephony service providers (such as CLECs, ILECs, and ISPs).

Total Access 900e Series products are built on the ADTRAN Operating System (AOS) platform and include the AOS built-in IP router and firewall features. The units include 4 DS1 network interfaces (**NET 1, T1 0/1** through **NET 4, T1 0/4**), a **VOICE** interface (up to 24 FXS ports or 16 FXS plus 8 FXO ports), 2 10/100BaseT interfaces (**ETH 0/1**, **ETH 0/2**), a single FXO trunk (**FXO 0/0**), and a **CRAFT** port (management interface). An optional battery backup is also available for the Total Access 900e Series. The last two digits of the product name indicate the number of on-board FXS ports. The Total Access 908e contains 8 FXS ports, the Total Access 916e contains 16 FXS ports, and the Total Access 924e contains 24 FXS ports or 16 FXS ports plus 8 FXO ports with octal FXO daughter board. The units can provision, test, and provide status for any of the voice and data interfaces. All connections are made via the rear panel.

In common packet-based applications, the WAN (**NET 1, T1 0/1** through **NET 4, T1 0/4**) connects to the ISP or carrier's network and transmits packetized voice and data over a SIP trunk(s). The customer's voice is presented as TDM to the FXS ports or PRI/CAS to the remaining DS1 interfaces (**NET 3, T1 0/3** and **NET 4, T1 0/4**), and the data is routed out the LAN (**ETH 0/1** and **ETH 0/2**).

Features and Specifications

The Total Access 900e Series products have the following features:

- Support for 4 DS1 (or 3 DS1 plus 1 PRI/CAS, or 2 DS1 plus 2 PRI/CAS) interfaces
- Support for a single built-in FXO interface
- Support for up to 24 FXS ports with octal FXS daughter board
- Support for up to 16 FXS ports and 8 FXO ports with octal FXO daughter board (Total Access 924e only)
- Supports Primary Rate ISDN (PRI) or Robbed Bit Signaling (RBS) on the PRI/CAS interfaces
- Support for a two auto MDI/MDX 10/100BaseT Ethernet ports (RJ-48C)
- Full-featured AOS IP router/firewall
- QoS/NAT/DHCP client, server, and relay
- Support for SIP trunks
- Support for up to 6 Mbps of multi-link Frame Relay, multi-link PPP
- Support for optional VPN - 500 IPSec tunnels using DES/3DES/AES encryption
- Support for 3-way conferencing
- Support for caller ID, message waiting, and stutter dial tone
- Fax and analog modem compatible (V.90)
- Support for local station to station calls
- Up to 48 channels of G.711 (μ-law)
- Up to 48 channels on G.726 (32K ADPCM)
- Up to 48 channels on G.729
- Up to 48 channels of DTMF detection/generation

- Support for 16 ms echo cancellation
- Support for up to 48 channels of caller ID
- Provides 100 ms jitter buffer per channel
- User-friendly Web GUI, familiar AOS CLI interface, and SNMP
- LEDs for system status information
- Total Access 900e Series chassis dimensions: 1.75-inch H x 17.0-inch W x 10-inch D
- AC power: 90 to 120 VAC, 60 Hz

This hardware installation guide describes the Total Access 900e Series units, details basic functionality, gives installation instructions, and lists unit specifications. For more information on a specific application, refer to the quick start documents provided on your *ADTRAN OS System Documentation* CD.

The Total Access 900e Series system is intended to be installed, maintained, and serviced by qualified personnel only.

Unpack and Inspect the System

Each Total Access 900e Series unit is shipped in its own cardboard shipping carton. Open the carton carefully and avoid deep penetration into the carton with sharp objects.

After unpacking the unit, inspect it for possible shipping damage. If the equipment has been damaged in transit, immediately file a claim with the carrier and contact ADTRAN Customer and Product Service (refer to *Warranty and Customer Service* and *Product Support Information*, on page 10).

Contents of ADTRAN Total Access 900e Series Shipments

Shipments of the Total Access 900e Series units include the following items:

- Total Access 900e Series base unit
- A detachable power cable with a grounded IEC three-prong power plug
- Two brackets and six screws for wall mounting
- *ADTRAN OS System Documentation* CD

*For additional documentation, refer to the **ADTRAN OS System Documentation** CD shipped with the unit and available online at www.adtran.com.*

2. PHYSICAL DESCRIPTION

Reviewing the Front Panel Design

Figure 1 shows the Total Access 908e which contains 8 FXS ports.

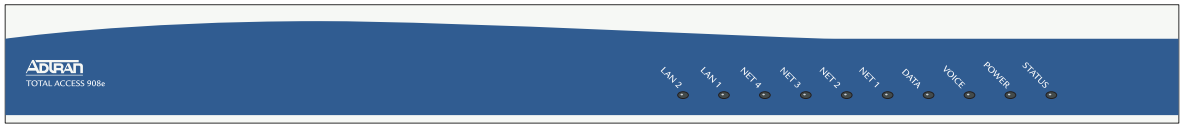

Figure 1. Total Access 908e Front Panel Layout

Figure 2 shows the Total Access 916e front panel which contains 16 FXS ports.

Figure 2. Total Access 916e Front Panel Layout

Figure 3 shows the Total Access 924e front panel which can contain 24 FXS ports or 16 FXS ports plus 8 FXO ports with octal FXO daughter board

Figure 3. Total Access 924e Front Panel Layout

Front Panel LEDs

Table 1 describes the front panel LEDs.

Table 1. Total Access 900e Series LEDs

LEDs	Color	Indication
STATUS	Off	Bootstrap mode - The boot code cannot be booted. During bootstrap mode, **VOICE**, **DATA**, **NET 1-4** LEDs will be red.
	Green (flashing)	Unit is powering up. On power-up the **STATUS** LED flashes rapidly for 5 seconds, during which time the user may escape to bootstrap mode from the **CRAFT** port.
	Green (solid)	Power is on and the unit is functioning normally.
POWER	Off	No power.
	Green	AC power is operational.
	Amber	AC power has failed. Battery backup is active.
VOICE	Off	All ports are inactive.
	Green (solid)	At least one port is off hook.
	Green (flashing)	At least one port is ringing.
	Amber	At least one port is in test.
	Red	Fault condition.
DATA	Off	Port is administratively shut down.
	Green	Layer 2 is up on a NET interface.
	Red	Layer 2 is down on a NET interface.
NET 1-4	Off	Port is administratively shut down.
	Green	Link is up and in normal operation.
	Amber	Port is in test.
	Red	An alarm condition is present.
LAN 1-2 **ETH 0/1-0/2** **(Rear Panel)**	Off	Link is down or port is administratively shut down.
	Green (solid)	10BaseT link is up.
	Green (flashing)	10BaseT link is up and traffic is flowing.
	Amber (solid)	100BaseT link is up.
	Amber (flashing)	100BaseT link is up and traffic is flowing.

Reviewing the Rear Panel Design

Figure 4 shows the Total Access 900e Series products' rear panel, which contains identical interfaces regardless of the model.

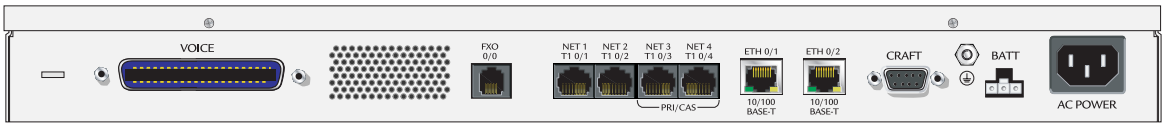

Figure 4. Total Access 908e, 916e, 924e Rear Panel Layout

Rear Panel Interfaces and LEDs

Power Supply

The Total Access 900e Series products have a 90 to 125 VAC power supply with an IEC connector. The appropriate three-prong cable is included in the shipment.

Battery Backup Connection

An optional battery backup system is available for the Total Access 900e Series (P/N 1175044L1 or L2). The connection port is labeled **BATT**. Refer to the documentation available for your specific battery backup unit for more information on this connection, or refer to *Battery Backup Unit* on page 25 for a more details.

CRAFT Interface

The **CRAFT** interface is an EIA-232 serial port (DCE) that provides for local management and configuration (via a DB-9 female connector). Table A-5 on page 31 shows the **CRAFT** port pinouts.

> NOTE *Connection directly to an external modem requires a cross-over cable.*

10/100BaseT Ethernet Interfaces and LEDs

The Ethernet ports (**ETH 0/1** and **ETH 0/2**) are RJ-48C connectors with LEDs. The amber LEDs flash when the 100BaseT links are up and data traffic is being sent or received on the Ethernet ports. The green LEDs flash when the 10BaseT links are up and data traffic is being sent or received on the Ethernet ports. See Table A-4 on page 30 for the Ethernet port pinouts.

Network Interfaces

The **NET 1** through **NET 4 (T1 0/1** through **T1 0/4)** interfaces are DS1 RJ-48C pin connections. See Table A-3 on page 30 for the network interface pinouts.

DSX-1 Interfaces

To utilize **NET 3** or **NET 4** interfaces to function as DSX-1 interfaces requires an RJ-48C crossover cable. See Table A-3 on page 30 for the cable interface pinouts.

FXO 0/0 Interface

The **FXO 0/0** interface provides a single analog trunk for local call routing. See Table A-2 on page 30 for the FXO port pinouts.

VOICE Connection

A single 50-pin female amphenol connector provides the interconnect wiring for the analog FXS/FXO circuits. Figure 5 shows the **VOICE** connector pin assignments.

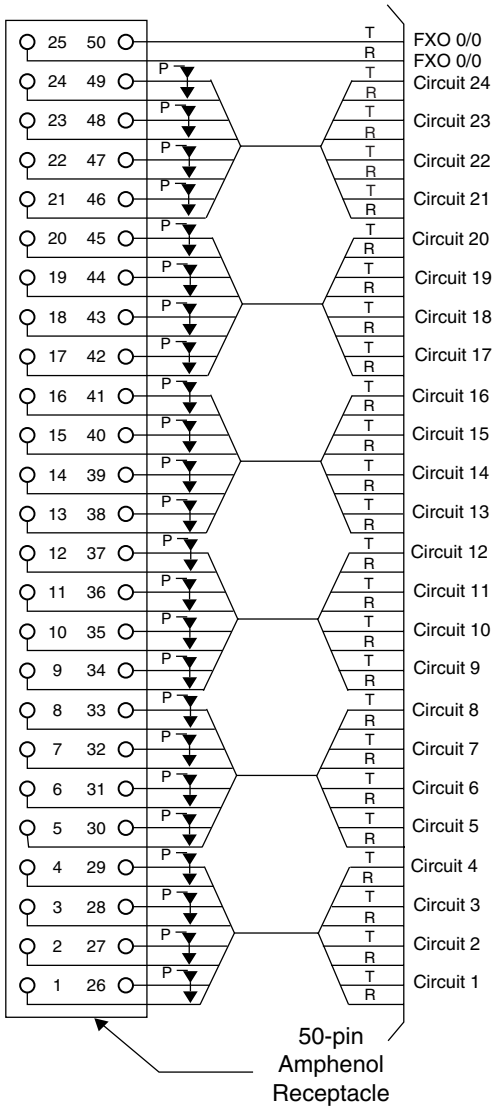

Figure 5. Voice Connector Pin Assignments

NOTE

The Total Access 908e only uses circuits 1 through 8. The Total Access 916e only uses circuits 1 through 16. The Total Access 924e uses all circuits (1 through 24), and the FXO interfaces are on circuits 17 through 24.

3. UNIT INSTALLATION

The instructions and guidelines provided in this section cover hardware installation topics such as wall mounting, rack mounting, and installing the unit. Refer to *Unpack and Inspect the System* on page 20 before getting started. The instructions are presented as follows:

- *Tools Required* on page 21
- *Mounting Options* on page 22
- *Grounding Instructions* on page 23
- *Supplying Power to the Unit* on page 24

For information on configuring a specific application, refer to the quick configuration documents provided on your *ADTRAN OS System Documentation* CD.

WARNING *To prevent electrical shock, do not install equipment in a wet location or during an electrical storm.*

Tools Required

The following customer-provided tools are required for installation of the Total Access 900e Series hardware:

- Two wood screws, 3/32-inch to 1/8-inch (1 1/2-inches length)
- Drill and drill bit set
- Screwdriver (medium)
- 25-pair male amphenol cable (customer connection)
- Selected punch-down block and tool

To access the command line interface (CLI) of the Total Access 900e Series, you must have a VT100 terminal or PC with terminal emulation software and a **CRAFT** *port cable. Instructions on how to access the CLI are given in the* ***AOS Command Reference Guide*** *(provided on the* ***ADTRAN OS System Documentation*** *CD).*

To access the Web-based GUI of the Total Access 900e Series, you must have a PC connected to an IP network. Instructions on how to access the Web-based GUI are given in the ***Web GUI Configuration Guide****, document number 61210916L1-42.1 and on the Quick Start Guide, document number 61210916L1-13 (provided on the* ***ADTRAN OS System Documentation*** *CD).*

Mounting Options

The Total Access 900e Series may be installed in a wallmount, rackmount, or tabletop configuration. The following sections provide step-by-step instructions for rack mounting and wall mounting.

Wall Mounting Total Access 900e Series

Instructions for Wall Mounting Total Access 900e Series	
Step	**Action**
1	Attach the wallmount brackets to the unit using the supplied screws.
2	Decide on a location for the Total Access 900e Series. Keep in mind that the unit needs to be mounted at or below eye level so that the LEDs are visible. ***Warning! Do not mount the chassis with the LEDs facing up (see Figure 6).***
3	Prepare the mounting surface by attaching a board (typically plywood, 3/4-inch to 1-inch thick) to a wall stud. ***Important!*** *Mounting to a stud ensures stability. Using sheetrock anchors may not provide sufficient long-term stability.*
4	Have an assistant hold the unit in position as you install two 3/32-inch up to 1/8-inch (1 1/ 2-inch or greater length) wood screws through the unit's brackets and into the mounted board.
5	Proceed *Grounding Instructions* on page 29.

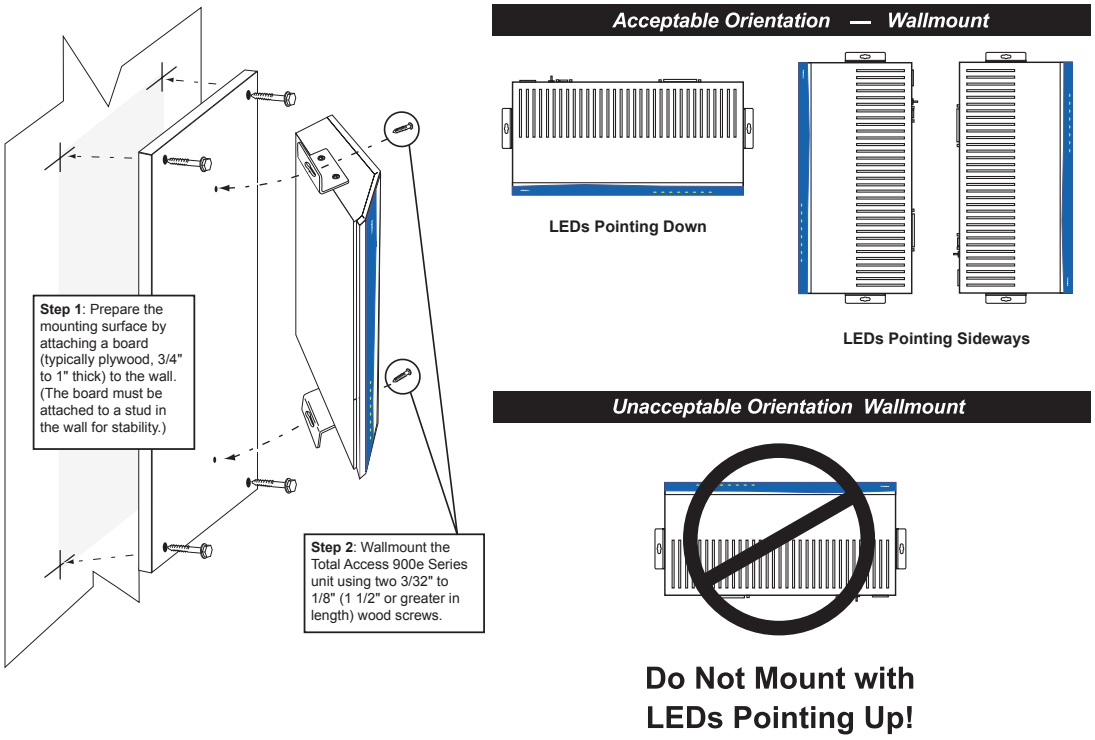

Figure 6. Wall Mounting the Unit

Rack Mounting Total Access 900e Series

The Total Access 900e Series products are housed in a 1U-high, rack mountable chassis which can be installed into 19-inch or 23-inch equipment racks. For a rackmount installation, optional rackmount brackets must be purchased (19-inch – P/N 1200927L19, 23-inch – P/N 1200927L23).

The Total Access 900e Series products mount and connect with standard fasteners and hand tools.

ADTRAN recommends 1U (1.75 inches) of separation above and below the Total Access 900e Series unit. This spacing allows the unit to dissipate heat. The design of the Total Access 900e Series uses the chassis to distribute heat generated by the unit's internal cards. This design allows the unit to operate without a cooling fan, thus creating overall reliability of the unit.

Follow these steps to rackmount the Total Access 900e Series:

Instructions for Rack Mounting Total Access 900e Series	
Step	**Action**
1	Position the Total Access 900e Series in a stationary equipment rack. This unit takes up 1U of space. To allow proper grounding, scrape the paint from the rack around the mounting holes where the Total Access 900e Series will be positioned.
2	Have an assistant hold the unit in position as you install two mounting bolts through the unit's brackets and into the equipment rack.
3	Proceed to *Grounding Instructions* below.

Be careful not to compromise the stability of the equipment mounting rack when installing this product.

Grounding Instructions

The following provides grounding instructions for the Underwriters' Laboratory UL 60950 Standard for Safety of Information Technology Equipment Including Electrical Business Equipment, with revisions dated March 15, 2002.

A supplementary equipment grounding conductor shall be installed between the product or system and ground that is in addition to the equipment grounding conductor in the power supply cord. The supplementary equipment grounding conductor shall not be smaller in size than the ungrounded branch-circuit supply conductors. The supplementary equipment grounding conductor shall be connected to the product at the terminal provided, and shall be connected to ground in a manner that will retain the ground connection when the product is unplugged from the receptacle. The connection to ground of the supplementary equipment grounding conductor shall be in compliance with the rules for terminating bonding jumpers at Part K or Article 250 of the National Electrical Code, ANSI/NFPA 70. Termination of the supplementary equipment grounding conductor is permitted to be made to building steel, to a metal electrical raceway system, or to any grounded item that is permanently and reliably connected to the electrical service equipment ground.

The supplemental grounding conductor shall be connected to the equipment using a number 8 ring terminal and should be fastened to the grounding lug provided on the rear panel of the equipment. The ring terminal should be installed using the appropriate crimping tool (AMP P/N 59250 T-EAD Crimping Tool or equivalent).

Grounding for AC Power

The attachment-plug receptacles in the vicinity of the product or system are all to be of a grounding type, and the equipment grounding conductors serving these receptacles are to be connected to earth ground at the service equipment.

Supplying Power to the Unit

As shipped, each Total Access 900e Series product is set to factory default conditions. After installing the unit, the Total Access 900e Series product is ready for power-up. To power the unit, ensure that the unit is properly connected to an appropriate power source (as outlined in the sections below).

The Total Access 900e Series comes equipped with a 90 to120 VAC, 60 Hz power supply. The maximum power consumption is 50 W. A grounded, three-plug detachable cable is included with the shipment.

- *Use only copper conductors when making power connections.*
- *Install unit in accordance with Article 400 and 364.8 of the NEC NFPA 70.*
- *A readily accessible disconnect device, that is suitably approved and rated, shall be incorporated in the field wiring.*
- *Maximum recommended ambient operating temperature is 50°C.*

4. BATTERY BACKUP UNIT

The ADTRAN Battery Backup Unit (BBU) is an optional device designed as a backup DC power supply for the Total Access 900e Series.

Total Access 900e Series BBU (P/N 1175044L1/L2)

The BBU connects to the Total Access 900e Series through a 6-foot charge/discharge, 2-conductor wire with a keyed modular plug (included with the BBU). The 1175044L1 BBU is a low profile wallmount configuration. It can be rack mounted with the appropriate 19-inch (P/N 117547L1) or 23-inch (P/N 1175048L1) rackmount adapter brackets. The 1175044L2 is an equivalent BBU with a hinged front access door.

Features of the BBU, P/N 1175044L1/L2, include the following:

- No-spill battery design
- Compact wallmount or rackmount box
- Double BBU rack mounting available
- 7 Ahr battery (up to 8 hours of backup, depending on load)
- Modular plug (provides quick and easy installation)
- All mounting hardware included

Unpack and Inspect the Battery Backup Unit

Removing the Battery Backup Unit covers could allow batteries to fall out.

After unpacking the BBU unit, inspect it for damage. If damage is noted, file a claim with the carrier; then contact ADTRAN Customer Service.

The Battery Backup Unit (P/N 1175044L1/L2) weighs in excess of 30 pounds. Arrange for assistance when handling the BBU for mounting.

Batteries are retained and pre-wired in the BBU in a specific pattern. Battery position is maintained by foam spacers press-fitted against the housing walls. Removing batteries or disconnecting wires compromises correct reassembly and should not be attempted.

Battery Backup Unit Safety Notices

CAUTION

The Battery Backup Unit should only be used in specified ADTRAN applications.

This device complies with Part 15 of the FCC rules. Operation is subject to the following two conditions:

- This device may not cause harmful interference.
- This device must accept any interference received, including that which may cause undesired operation.

Wall Mounting the Battery Backup Unit

For a wallmount installation, the BBU installs on heavy plywood (3/4-inch minimum) using two #10 x 3/4-inch pan-head wood screws. Install the BBU as follows:

Figure 7 shows the BBU mounting dimensions for the Total Access 900e Series.

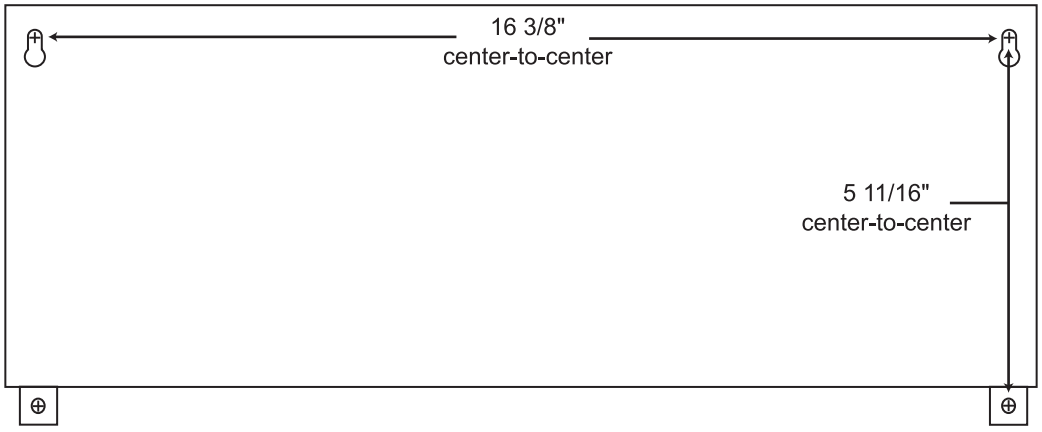

Figure 7. Wall Mounting the BBU

For a wallmount installation, the BBU installs on heavy plywood (3/4-inch minimum) using four #10 x 3/4-inch pan-head wood screws. Install the BBU as follows:

Instructions for Wall Mounting the BBU	
Step	**Action**
1	Determine the preferred unit layout to ensure cable plugs reach their designated sockets.
2	Ensuring a plumb measurement, mark where the pilot holes are to be drilled according to the dimensions given in the documentation included with your shipment.
3	Drill all four pilot holes using a size 1/16-inch drill bit.
4	Screw in the top two pan-head screws that fit the keyhole openings. Let the head of each screw protrude 1/16 inch from the plywood to engage the keyhole slot.

Do not let the weight of the Battery Backup Unit rest on the two keyhole screws. Maintain support until the lower two screws are fully inserted.

5	Lift the BBU with an assistant and position to engage the screw heads. Allow the unit to slide down until the slot end rests against the screws.
6	Insert the two lower screws through the tabs and tighten securely.
7	Use cable ties as appropriate. The battery connection from the BBU should be directly connected to the **BATT** port on the rear of the chassis.

Maintenance

- The BBU does not require routine maintenance for normal operation. The life expectancy of the BBU is 3 to 5 years on standby use when used at room temperature.
- Excessive heat decreases battery power and life. Extreme low temperature also decreases battery capacity. Ideal ambient temperature for battery life and capacity is 20°C.
- Battery shelf life is extended in cooler temperatures.
- To order replacement batteries, reference the following part number: 1975044L1 (12 V replacement batteries).

ADTRAN is an environmentally-friendly company. Therefore, we encourage the proper recycling and handling of the batteries. Federal and state laws prohibit the improper disposal of all lead acid batteries. The customer is responsible for the handling of their batteries from the day of purchase through their ultimate disposal. For more information on battery replacement and recycling, reference ADTRAN document number 60000120-36 online at www.adtran.com. (Enter the document number in the search field to display a link to the document.)

Specifications

Table 2 provides BBU specifications.

Table 2. BBU Specifications

Battery	
Part Number: Suppliers: Batteries: Voltage: Backup Time: Wire Gauge:	311212V02 YUASA and Panasonic 7 Ahr per battery -12 VDC per battery Up to 8 hours 18 AWG
Environmental	
Operating Temperatures: Preferred:	Charge: -15°C to 50°C Discharge: -20°C to 60°C 20°C
Physical Dimensions	
P/N 1175044L1/L2: Weight:	17-inch W x 6.5-inch H x 3.5-inch D 30 lb

Appendix A. Pin Assignments

Table A-1. VOICE Connector Pinouts

Pins	50-pin Amphenol Connector	Description
1, 26	Circuit 1	FXS 0/1 Ring, Tip
2, 27	Circuit 2	FXS 0/2 Ring, Tip
3, 28	Circuit 3	FXS 0/3 Ring, Tip
4, 29	Circuit 4	FXS 0/4 Ring, Tip
5, 30	Circuit 5	FXS 0/5 Ring, Tip
6, 31	Circuit 6	FXS 0/6 Ring, Tip
7, 32	Circuit 7	FXS 0/7 Ring, Tip
8, 33	Circuit 8	FXS 0/8 Ring, Tip
9, 34	Circuit 9	FXS 0/9 Ring, Tip
10, 35	Circuit 10	FXS 0/10 Ring, Tip
11, 36	Circuit 11	FXS 0/11 Ring, Tip
12, 37	Circuit 12	FXS 0/12 Ring, Tip
13, 38	Circuit 13	FXS 0/13 Ring, Tip
14, 39	Circuit 14	FXS 0/14 Ring, Tip
15, 40	Circuit 15	FXS 0/15 Ring, Tip
16, 41	Circuit 16	FXS 0/16 Ring, Tip
17, 42	Circuit 17	FXS 0/17 Ring, Tip or FXO 0/1 Ring, Tip
18, 43	Circuit 18	FXS 0/18 Ring, Tip or FXO 0/2 Ring, Tip
19, 44	Circuit 19	FXS 0/19 Ring, Tip or FXO 0/3 Ring, Tip
20, 45	Circuit 20	FXS 0/20 Ring, Tip or FXO 0/4 Ring, Tip
21, 46	Circuit 21	FXS 0/21 Ring, Tip or FXO 0/5 Ring, Tip
22, 47	Circuit 22	FXS 0/22 Ring, Tip or FXO 0/6 Ring, Tip
23, 48	Circuit 23	FXS 0/23 Ring, Tip or FXO 0/7 Ring, Tip
24, 49	Circuit 24	FXS 0/24 Ring, Tip or FXO 0/8 Ring, Tip
25, 50	FXO 0/0	FXO 0/0 Ring, Tip

Table A-2. FXO 0/0 Pinouts

Pin	Name	Description
1,2	—	Unused
3	Ring	Ring lead of the 2-wire interface
4	Tip	Tip lead of the 2-wire interface
5,6	—	Unused

Table A-3. NET 1 through NET 4 (T1 0/1 through T1 0/4) Pinouts

Pin	Name	Description
1	R1	Receive data from the network (Ring 1)
2	T1	Receive data from the network (Tip 1)
3	—	Unused
4	R	Transmit data toward the network (Ring)
5	T	Transmit data toward the network (Tip)
6-8	—	Unused

Table A-4. 10/100BaseT (ETH 0/1 through ETH 0/2) Pinouts

Pin	Name	Description
1	TX1	Transmit Positive
2	TX2	Transmit Negative
3	RX1	Receive Positive
4, 5	—	Unused
6	RX2	Receive Negative
7, 8	—	Unused

Table A-5. CRAFT Port Pinouts

Pin	Name	Description
1	DCD	Data Carrier Detect (output)
2	RD	Receive Data (output)
3	TD	Transmit Data (input)
4	DTR	Data Terminal Ready (input)
5	GND	Ground - connected to unit chassis
6	DSR	Data Set Ready (output)
7	RTS	Request To Send - flow control (input)
8	CTS	Clear To Send - flow control (output)
9	RI	Ring Indicate (output)

Connection directly to an external modem requires a cross-over cable.

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