

Total Access 238 Installation and Maintenance Practice

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P/N: 1200630L2

P/N: 1200632L1

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Revision History

Revision	Date	Description
A	August 2005	Initial release
B	January 2006	Error Corrections
C	December 2006	Updated LED descriptions and PVC provisioning command structure. Also, the 1200630L2 and 2300632L1 have been added to this document.

Conventions

The following typographical conventions are used in this document:

[This font](#) indicates a cross-reference link.

This font indicates screen menus, fields, and parameters.

THIS FONT indicates keyboard keys (ENTER, ESC, ALT). Keys that are to be pressed simultaneously are shown with a plus sign (ALT+X indicates that the ALT key and X key should be pressed at the same time).

This font indicates references to other documentation and is also used for emphasis.

This font indicates on-screen messages and prompts.

This font indicates text to be typed exactly as shown.

This font indicates silk-screen labels or other system label items.

This font is used for strong emphasis.

NOTE

Notes inform the user of additional, but essential, information or features.

CAUTION

Cautions inform the user of potential damage, malfunction, or disruption to equipment, software, or environment.

WARNING

Warnings inform the user of potential bodily pain, injury, or death.

Training

ADTRAN offers training courses on our products. These courses include overviews on product features and functions while covering applications of ADTRAN product lines. ADTRAN provides a variety of training options, including customized training and courses taught at our facilities or at customer sites.

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Contents

Introduction	1
Description	2
Features	2
Compliance	3
Domestic	3
Total Access 238 (Annex A) DC-Powered (P/N 1200630L1)	3
Total Access 238 (Annex A) AC-Powered (P/N 1200630L2)	5
FCC Part 68/ACTA Requirements	7
IC CS-03 Requirements	8
International - Total Access 238 (Annex B) DC-Powered (P/N 1200632L1)	8
Back-to-Back Application	9
Connections	9
Installation	13
Shipping Contents	13
Cables Required	13
Mounting the Total Access 238	13
Wallmount Installation	15
Grounding Instructions	17
Supplying Power to the Unit	18
DC Power (P/N 1200630L1 and 1200632L1)	18
AC Power (P/N 1200632L1)	18
Front Panel Operation	19
Connecting via the CRAFT Interface	19
CLI Command Primer	20
General	20
Change Default Login	20
SHDSL	20
SHDSL Configuration	20
Configure the SHDSL	21
SHDSL Status Link	21
SHDSL Performance History	21
IMA	21
IMA Configuration	21

Configure the IMA	21
IMA Parameters	21
IMA Status	22
IMA Status Link	22
IP Address	22
Ethernet	22
Current/Startup Configuration	22
Current Configuration	22
Saved Configuration	22
Save Current Configuration	22
Craft Port	23
Firmware Upgrade	23
Total Access 238 Initial Setup	23
Private Virtual Channels (PVC)	23
Back-to-Back Application	24
Maintenance	25
Replacing the Fuse	25
Specifications	25
Appendix A	
Warranty	A-1
Warranty and Customer Service	A-1
ADTRAN Sales	A-1
ADTRAN Technical Support	A-1
ADTRAN Repair/CAPS	A-1
Repair and Return Address	A-1

Figures

Figure 1.	Total Access 238	1
Figure 2.	Total Access 238 Functional Overview	2
Figure 3.	Back-to-Back Application	9
Figure 4.	Total Access 238 Front Panel	9
Figure 5.	Total Access 238 Rear Panel (DC)	10
Figure 6.	Total Access 238 Rear Panel (AC)	10
Figure 7.	Repositioning the Brackets for 23-inch Racks	14
Figure 8.	Repositioning the Brackets for Wallmounting	15
Figure 9.	Wallmounting the Total Access 238	16
Figure 10.	-48 VDC Connector	18

Tables

Table 1.	Total Access 238 Part Numbers	1
Table 2.	Compliance Codes	3
Table 3.	Compliance Codes	5
Table 4.	Leased Line Facilities Requirements	7
Table 5.	Craft Pinout	10
Table 6.	10/100Base-T Pinout	11
Table 7.	SHDSL Pinout	11
Table 8.	DC Power Pinout	12
Table 9.	IEC (AC Power) Pinout	12
Table 10.	LED Descriptions	19
Table 11.	Total Access 238 Specifications (P/N 1200630L1)	26
Table 12.	Total Access 238 Specifications (P/N 1200630L2)	27
Table 13.	Total Access 238 Specifications (P/N 1200632L1)	28

Total Access 238

INTRODUCTION

This practice provides installation and maintenance information for the Total Access® 238 series of products. The Total Access 238 is illustrated in [Figure 1](#).



Figure 1. Total Access 238

The products supported in this document are listed in [Table 1](#).

Table 1. Total Access 238 Part Numbers

Part Number	Description	CLEI
1200630L1	Total Access 238 8-Port SHDSL (Annex A) Ethernet Bridge, DC-Powered	VAMF400A_ _
1200630L2	Total Access 238 8-Port SHDSL (Annex A) Ethernet Bridge, AC-Powered	VAMF500A_ _
1200632L1	Total Access 238 8-Port SHDSL (Annex B) Ethernet Bridge, DC-Powered (international)	N/A

DESCRIPTION

The ADTRAN Total Access 238 is a network terminating unit that uses enhanced Symmetric High-Bitrate Digital Subscriber Line (eSHDSL) technology to transport up to 5.696 Mbps of data per loop on up to eight copper loops. The Total Access 238 interfaces between the incoming IMA-bonded ITU G.991.2 (SHDSL) service and the customer's 10/100Base-T network for LAN-to-LAN bridging. Figure 2 provides a functional block diagram for the Total Access 238.

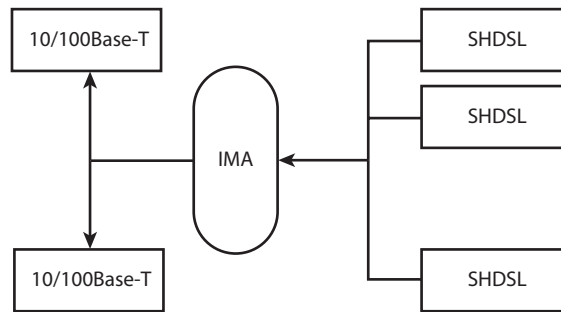


Figure 2. Total Access 238 Functional Overview

The Total Access 238 can be deployed in back-to-back pairs or to a Line Terminating Unit (LTU) located in a Central Office (CO), such as the Total Access 3000 16-Port SHDSL IMA Access Module (P/N 1181429L1) for traditional data service applications.

It can be locally or remotely provisioned. Local provisioning is accomplished through the V.28 **CRAFT** interface (DB-9) using a dumb terminal or PC with terminal emulation software. Remote provisioning is accomplished using the Embedded Operations Channel (EOC) or the Command Line Interface (CLI), and can initiate and respond to local and remote loopbacks on the network interfaces.

Features

Features of the Total Access 238 include the following:

- Compact design
- Versatile mounting arrangements
- Inclusion of mounting hardware
- Built-in fuse
- Multi-feature status LED

Compliance

The Total Access 238 compliance information is dependent on the unit part number.

Domestic

Total Access 238 (Annex A) DC-Powered (PIN 1200630L1)

Table 2 lists the compliance codes for the Total Access 238. The Total Access 238 is NRTL Listed to the applicable UL standards. The Total Access 238 meets or exceeds all the applicable requirements of NEBS, Telcordia GR-63-CORE and GR-1089-CORE.

The Total Access 238 is intended for deployment in Central Office (CO) type facilities, EEEs, EECs, and locations where the NEC applies. Install the Total Access 238 in a restricted access location.

Table 2. Compliance Codes

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

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

1. This device can not cause harmful interference.
2. This device must accept any interference received, including interference that can cause undesired operation.

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

CAUTION

Per GR-1089-CORE the Total Access 238 System is designed and intended for installation as part of a Common Bonding Network (CBN). The Total Access 238 is not designed nor intended for installation as part of an Isolated Bonding Network (IBN).

CAUTION

Per GR-1089-CORE Section 9, the Total Access 238 is designed and intended only for installation in a DC-C (common) bonding and grounding system. The chassis ground wire must be of equal or greater ampacity than the wire connected to the –48 VDC return. The Total Access 238 is not intended or designed for installation in a DC-I (isolated) bonding and grounding system.

CAUTION

The Total Access 238 frame ground terminal must be connected to a reliable earth ground to ensure that the front panel of the Total Access 238 is properly grounded via the backplane connector.

CAUTION

When installing the Total Access 238 utilizing mounting hardware to bond the equipment to frame ground, all bonding surfaces must be cleaned of paint and contamination and have an anti-oxidant applied before being joined. This is not necessary when using the protective earthing terminal or means to ground the equipment.

NOTE

The SHDSL ports are classified as Type 1, 3, and 5, as defined in Appendix B of GR-1089-CORE Issue 4, and meets the lightning and power fault criteria with any primary protector that meets any of the voltage limits of GR-974-CORE or GR-1361-CORE (i.e., carbon blocks, gas tubes, solid states, etc.).

NOTE

The Ethernet Ports (10Base-T) of the Total Access 238 are classified as Type 2 or 4 as defined in Appendix B of GR-1089-CORE, Issue 4 and are suitable for connection to intra-building or unexposed wiring or cabling only. Do not metalically connect these ports to interfaces which connect to the Outside Plant (OSP) or to the OSP wiring. The 10Base-T ports are designed for use as an intra-building interface only (Type 2 or Type 4 ports as described in GR-1089-CORE, issue 4) and require isolation from exposed OSP cabling. The addition of Primary Protectors are not sufficient protection in order to connect these interfaces metalically to OSP wiring.

NOTE

Current limiting protectors are not required.

NOTE

The Total Access 238 is designed to operate with the a nominal operating voltage of -48 VDC nominal (-42 VDC to -54 VDC). The Total Access 238 will not be damaged by any steady state voltage below 56.7 VDC.

Total Access 238 (Annex A) AC-Powered (PIN 1200630L2)

Table 2 lists the compliance codes for the Total Access 238. The Total Access 238 is NRTL Listed to the applicable UL standards. The Total Access 238 meets or exceeds all the applicable requirements of NEBS, Telcordia GR-63-CORE and GR-1089-CORE.

The Total Access 238 is intended for deployment in Central Office (CO) type facilities, EEEs, EECs, and locations where the NEC applies. Install the Total Access 238 in a restricted access location.

Table 3. Compliance Codes

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

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

1. This device can not cause harmful interference.
2. This device must accept any interference received, including interference that can cause undesired operation.

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

CAUTION

Per GR-1089-CORE the Total Access 238 System is designed and intended for installation as part of a Common Bonding Network (CBN). The Total Access 238 is not designed nor intended for installation as part of an Isolated Bonding Network (IBN).

CAUTION

When installing the Total Access 238 utilizing mounting hardware to bond the equipment to frame ground, all bonding surfaces must be cleaned of paint and contamination and have an anti-oxidant applied before being joined. This is not necessary when using the protective earthing terminal or means to ground the equipment.

NOTE

The Total Access 238 requires the use of an external AC Surge Protection Device.

NOTE

The SHDSL ports are classified as Type 1, 3, and 5, as defined in Appendix B of GR-1089-CORE Issue 4, and meets the lightning and power fault criteria with any primary protector that meets any of the voltage limits of GR-974-CORE or GR-1361-CORE (i.e., carbon blocks, gas tubes, solid states, etc.).

NOTE

The Ethernet Ports (10Base-T) of the Total Access 238 are classified as Type 2 or 4 as defined in Appendix B of GR-1089-CORE, Issue 4 and are suitable for connection to intra-building or unexposed wiring or cabling only. Do not metallicly connect these ports to interfaces which connect to the Outside Plant (OSP) or to the OSP wiring. The 10Base-T ports are designed for use as an intra-building interface only (Type 2 or Type 4 ports as described in GR-1089-CORE, issue 4) and require isolation from exposed OSP cabling. The addition of Primary Protectors are not sufficient protection in order to connect these interfaces metallicly to OSP wiring.

NOTE

Current limiting protectors are not required and may adversely affect performance if utilized.

FCC Part 68/ACTA Requirements

For Compliance with FCC Part 68/ACTA requirements, the following information must be provided:

- The Total Access 238 complies with Part 68 of FCC rules and requirements adopted by ACTA. On the equipment housing is a label that contains, among other information, a product identifier. If requested, provide this information to the telephone company. The product identifier format is US: AAAEQ##TXXXX.
- If this equipment causes harm to the telephone network, the telephone company can 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.
- The telephone company can make changes in its facilities, equipment, operations, or procedures that could affect the proper operation of this equipment. Advance notification and the opportunity to maintain uninterrupted service is given.
- 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.
- This unit contains no user-serviceable parts.
- An FCC compliant telephone cord with a modular plug is provided with this equipment. This equipment is designed to be connected to the telephone network or premises wiring using an FCC compatible modular jack, which is compliant with Part 68 and requirements adopted by ACTA.
- [Table 4](#) provides information that can be required when applying to the local telephone company for leased line facilities.

Table 4. Leased Line Facilities Requirements

Product	Reg. Number	Service Type	REN/SOC	FIC	USOC
TA 238 DC, 1200630L1	HDCDLNAN1200630L2	DSL	N/A	N/A	RJ 21X
TA 238 AC, 1200630L1	HDCDLNAN1200630L2	DSL	N/A	N/A	RJ 21X

- The Ringer Equivalence Number (REN) is useful in determining the quantity of devices that can connect to a telephone line and still have all of those devices ring when a 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 that can connect to a line as determined by the REN, call the telephone company to determine the maximum REN for the calling area.

IC CS-03 Requirements

For Compliance with IC CS-03 requirements, the following information must be provided:

- 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.
- 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.

International - Total Access 238 (Annex B) DC-Powered (P/N 1200632L1)

The following compliance standards apply to the international version of the Total Access 238:

- EN 300 386-2
- EN 55022 Class A
- IEC 60950-1, EN 60950-1, and AS/NZS 60950.1
- IEC 1000
- S016
- S043.2
- ITU K.21 Enhanced

The Total Access 238 is designed to meet the following environmental classes:

- ETSI EN 300 019-1-1 "Classification of environmental conditions; Storage", Class 1.2
- ETSI EN 300 019-1-2 "Classification of environmental conditions, Transportation", Class 2.3
- ETSI EN 300 019-1-3 "Classification of environmental conditions, Stationary use at weatherprotected locations", Class 3.3

The equipment is designed to function without degradation during exposure to all test severities per Class 3.3 in ETSI EN 300 019-1-3.

CAUTION

The grounding conductor must be of equal or greater size than the ungrounded branch-circuit supply conductor.

CAUTION

The provided 10/100Base-T Ethernet LAN interfaces are for use as intra-building interfaces only.

Back-to-Back Application

One Total Access 238 is configured as a Network Termination Unit (NTU); the other Total Access 238 is configured as a Line Termination Unit (LTU). A copper pair connects each of the desired SHDSL lines between the two Total Access 238 devices. The network connected to the 10/100Base-T connector of the NTU device is bridged to the network connected to the 10/100Base-T connector of the LTU, thus forming a single Local Area Network (LAN). [Figure 3](#) shows a typical back-to-back application.

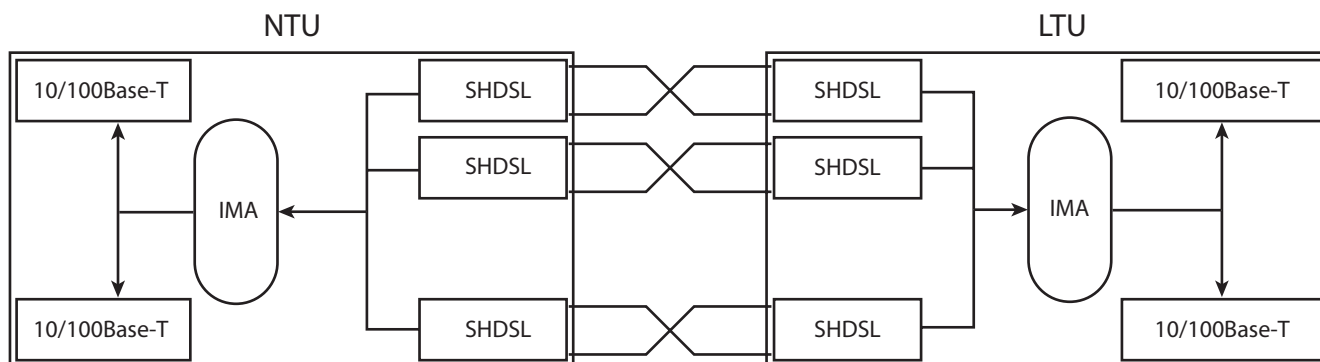


Figure 3. Back-to-Back Application

For back-to-back applications, one Total Access 238 must be configured as an LTU. Refer to [“Connecting via the CRAFT Interface”](#) on page 19 for Command Line Interface (CLI) commands to provision a unit as an LTU. For detailed information, refer to the *Total Access 238 Command Line Interface Guide* (P/N 61200630L1-35).

Connections

The Total Access 238 is a locally powered standalone unit. It provides the following:

- A single IEC 320 power connector
- Eight ITU G.991.2 (SHDSL) single-pair interfaces via a 50-pin amphenol connector
- Two IEEE 802.3 (10/100Base-T) interfaces via RJ-45 connectors
- One V.28 control port via a DB-9 connector (CRAFT).

The Total Access 238 front panel is illustrated in [Figure 4](#).

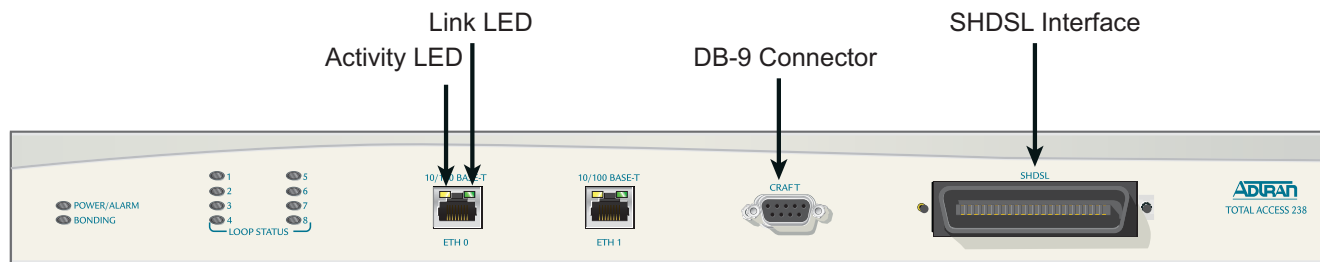


Figure 4. Total Access 238 Front Panel

The Total Access 238 DC powered rear panel (P/N 1200630L1 and 1200632L1) is illustrated in [Figure 5](#).



Figure 5. Total Access 238 Rear Panel (DC)

The Total Access 238 AC powered rear panel (P/N 1200630L2) is illustrated in [Table 6](#).

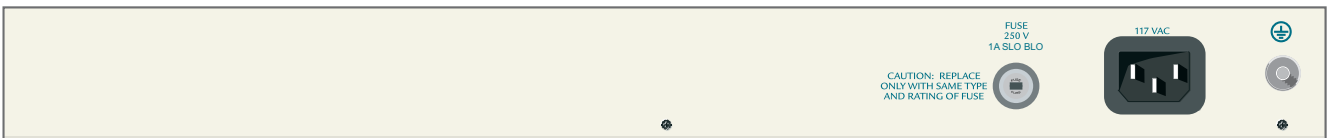


Figure 6. Total Access 238 Rear Panel (AC)

The following tables list the pinouts for the Total Access 238:

- [Table 5](#) lists the Craft pinout
- [Table 6](#) lists the 10/100Base-T pinout
- [Table 7](#) lists the SHDSL pinout
- [Table 8](#) lists the DC power pinout
- [Table 9](#) lists the IEC (AC) power pinout

[Table 5](#) displays the Craft pinout.

Table 5. Craft Pinout

Pin	Name	Description
1	DCD	Data Carrier Detect – Internally connected to DTR and DSR
2	RXD	Receive Data
3	TXD	Transmit Data
4	DTR	Data Terminal Ready – Internally connected to DCD and DSR
5	GND	Signal Ground
6	DSR	Data Set Ready – Internally connected to DCD and DTR
7	RTS	Ready To Send – Internally connected to CTS
8	CTS	Clear To Send – Internally connected to RTS
9	N/A	Unused

Table 6 displays the 10/100Base-T pinout.

Table 6. 10/100Base-T Pinout

Pin	Name	Description
1	TX+	Transmit Data Positive
2	TX-	Transmit Data Negative
3	RX+	Receive Data Positive
4-5	N/A	Unused
6	RX-	Receive Data Negative
7-8	N/A	Unused

Note: The 10/100Base-T interfaces are designed for use as intra-building interfaces only.

Table 7 displays the SHDSL pinout.

Table 7. SHDSL Pinout

Pin	Name	Description
1	Tip1	Tip Loop 1
26	Ring1	Ring Loop 1
2	Tip2	Tip Loop 2
27	Ring2	Ring Loop 2
3	Tip3	Tip Loop 3
28	Ring3	Ring Loop 3
4	Tip4	Tip Loop 4
29	Ring4	Ring Loop 4
5	Tip5	Tip Loop 5
30	Ring5	Ring Loop 5
6	Tip6	Tip Loop 6
31	Ring6	Ring Loop 6
7	Tip7	Tip Loop 7
32	Ring7	Ring Loop 7
8	Tip8	Tip Loop 8
33	Ring8	Ring Loop 8
Other	N/A	Unused

Table 8 displays the DC power pinout.

Table 8. DC Power Pinout

Pin	Name	Description
1	-48V	VDC Power Source, range -42 VDC to -54 VDC
2	RTN	DC Voltage Return

Table 9 displays the IEC (AC Power) pinout.

Table 9. IEC (AC Power) Pinout

Pin	Name	Description
1	N	Neutral (-)
2	E	Earth Ground
3	L	Line (+)

INSTALLATION



After unpacking the Total Access 238, inspect it for damage. If damage has occurred, file a claim with the carrier then contact ADTRAN Customer Service. Refer to [“Appendix A, Warranty”](#) for further information. If possible, keep the original shipping container for returning the unit for repair or for verification of shipping damage.

Shipping Contents

The contents include the following items:

- Total Access 238
- Total Access 238 Job Aid

CAUTION

Electronic modules can be damaged by ESD. When handling modules, wear an antistatic discharge wrist strap to prevent damage to electronic components. Place modules in antistatic packing material when transporting or storing. When working on modules, always place them on an approved antistatic mat that is electrically grounded.

Cables Required

The following cables are required for installation:

- Ethernet cable
- SHDSL connection (via the 50-pin amphenol)

Mounting the Total Access 238

The Total Access 238 comes with mounting brackets that can be used to mount the Total Access 238 in either a 19-inch or 23-inch configuration. Brackets for the 19-inch rackmount installation are already installed.

To mount the Total Access 238 in a 23-inch configuration, perform the following steps:

1. Remove the mounting brackets. Attach mounting brackets so that the smaller portion of the bracket attaches to the side of the chassis ([Figure 7](#)).

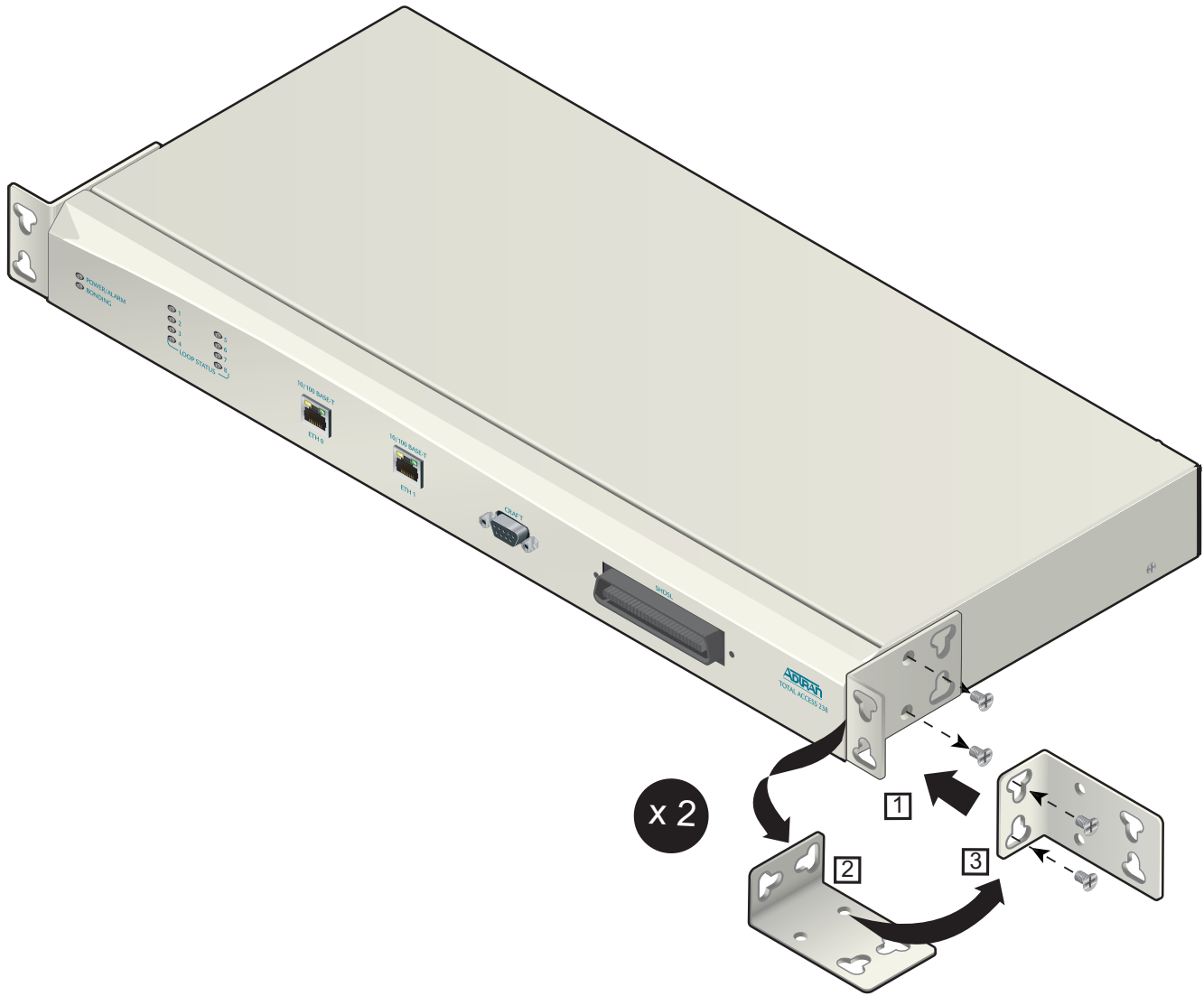


Figure 7. Repositioning the Brackets for 23-inch Racks

NOTE

To avoid damaging the unit, use only the screws included in the shipment when attaching mounting brackets to the chassis.

2. Position the Total Access 238 in a stationary equipment rack. This unit takes up 1 RU of space. To allow proper grounding, scrape the paint from the rack around the mounting holes where the Total Access 238 will be positioned.
3. Hold the unit in position while the two mounting screws are installed through the brackets and into the equipment rack. Use a #2 phillip's screwdriver to tighten the screws.

Wallmount Installation

For a wallmount installation, perform the following steps:

1. Remove the mounting brackets. (The Total Access 238 ships with mounting brackets attached for a 19-inch rackmount installation.) Rotate them 90° so that the portion of the bracket with the mounting holes (shorter side) is flush with the bottom of the chassis, and reattach them to the chassis (Figure 8).

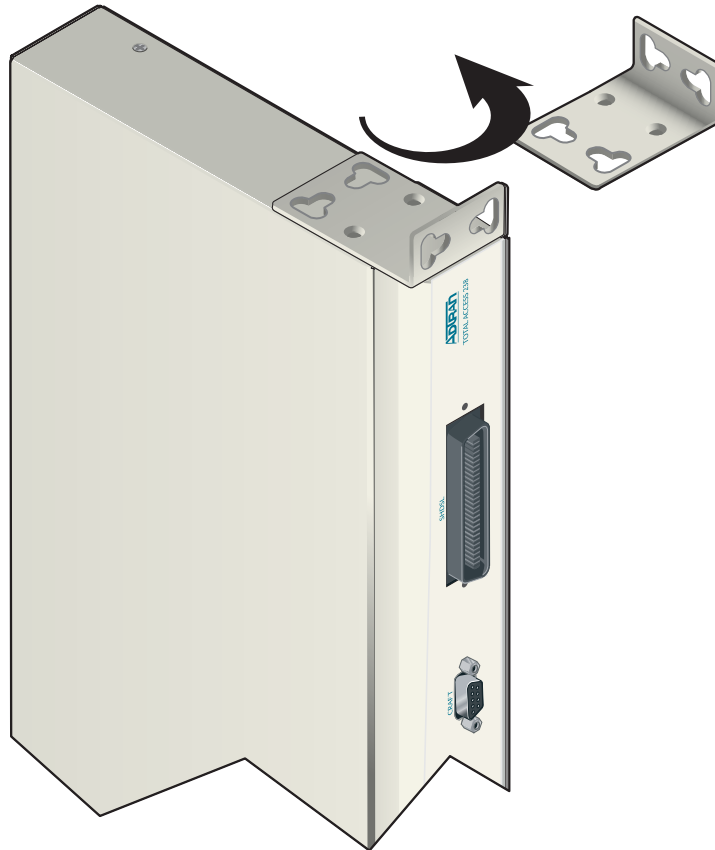


Figure 8. Repositioning the Brackets for Wallmounting

NOTE

To avoid damaging the unit, use only the screws included in the shipment when attaching mounting ears to the chassis.

2. Prepare the mounting surface by attaching a board (typically plywood, 3/4-inch to 1-inch thick) to a wall stud.

CAUTION

Mounting to a stud ensures stability. Sheet rock anchors can not provide sufficient long-term stability.

3. Hold the unit in position. Insert two 3/32-inch to 1/8-inch (1 1/2-inch or greater in length) wood screws through the brackets and into the mounted board (Figure 9).

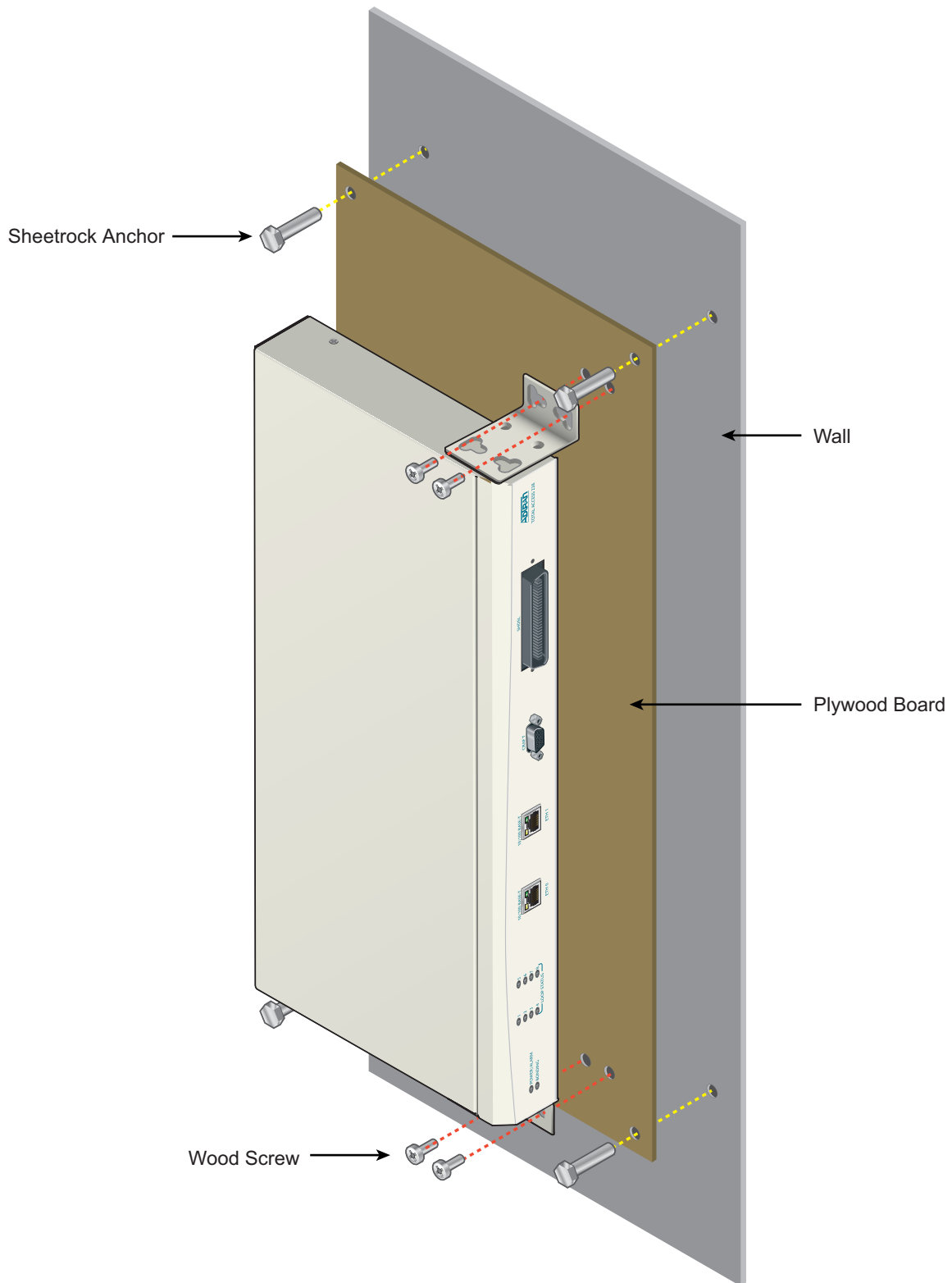


Figure 9. Wallmounting the Total Access 238

Grounding Instructions

CAUTION

An equipment grounding conductor that is not smaller in size than the ungrounded branch-circuit supply conductor is to be installed as part of the circuit that supplies the product or system.

To ensure safe operation of the equipment, an equipment grounding conductor that is not smaller in size than the ungrounded branch-circuit supply conductors is to be installed as part of the circuit that supplies the product or system. Bare, covered, or insulated grounding conductors are acceptable. Individually covered or insulated equipment grounding conductors shall have a continuous outer finish that is either green, or green with one or more yellow stripes. The equipment grounding conductor is to be connected to ground at the service equipment.

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.

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 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 power is removed from the product. The connection to ground of the equipment grounding conductor shall be in compliance with the rules for terminating bonding jumpers in Article 250 of the National Electrical Code, ANSI/NFPA 70. Termination of the 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 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.)

Supplying Power to the Unit

As shipped, the Total Access 238 is set to factory default conditions. After installing the unit, the Total Access 238 is ready for power-up.

DC Power (P/N 1200630L1 and 1200632L1)

To apply DC power to the unit, ensure that it is properly connected to an appropriate –48 VDC power source.

To connect the power, perform the following steps:

1. Using a flat-blade screwdriver, attach the leads from the –48 VDC power source.

NOTE

The connector may be removed from the Total Access 238 to facilitate connection of the wires.

2. If removed, re-insert the connector into the plug on the rear panel. See [Figure 10](#).

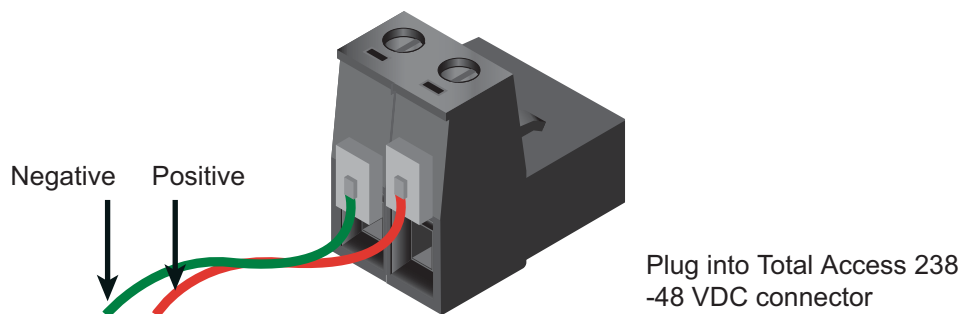


Figure 10. –48 VDC Connector

AC Power (P/N 1200632L1)

To apply AC power to the unit, ensure that it is properly connected to an appropriate power source.

CAUTION

Power to the Total Access 238 must be from a grounded branch circuit supplying 117 VAC nominal, 60 Hz source.

FRONT PANEL OPERATION

Front panel mounted LEDs provide status information for the SHDSL loops, bonding operation, and the alarms. Ethernet activity LEDs, located on the Ethernet RJ-45 connectors, provide link status and traffic indications. All LED operations are listed in [Table 10](#).

Table 10. LED Descriptions

Label	Status	Description
POWER/ ALARM	○ Off	Main power off
	● Green	No active alarm present on the system
	● Red	Active alarm present on the system
BONDING	● Green	IMA active and operating normally
	● Yellow	IMA interface in test
	● Red	IMA interface not active
LOOP STA- TUS	● Green	Loop trained
	✱ Green Flashing	Loop training
	● Yellow	Loop in test
	● Red	Loop not trained
	○ Off	Loop not part of IMA group
ETHERNET ACTIVITY *	○ Off	No data traffic being sent/received on the Ethernet interface
	✱ Yellow	Data traffic is being sent or received on the Ethernet interface
ETHERNET LINK *	○ Off	No active 10/100Base-T link
	● Green	Active 10/100Base-T link is present

* Located on the Ethernet RJ-45 connector (see [Figure 4](#) on page 9).

CONNECTING VIA THE CRAFT INTERFACE

The Total Access 238 management and provisioning features can be accessed by a CLI using the DB-9 **CRAFT** interface located on the front panel of the unit. Refer to “[CLI Command Primer](#)” on page 20 to preview of the Command Line Interface management structure.

Establish CLI communication with the Total Access 238 using the following steps:

1. Connect to the **CRAFT** interface using a VT100 dumb terminal or PC with VT100 emulation software configured with the following parameters:
 - Data rate: 9600 baud
 - Data bits: 8
 - Parity bits: 0
 - Stop bits: 1
 - No flow control
2. Once connected, press ENTER to access the CLI.
3. Enter the username and password at the login prompt.
 - The default username is **admin**.
 - The default password is **password**.

The TA238# prompt displays.

CLI COMMAND PRIMER

This section provides a preview of the Command Line Interface management structure. Refer to *Total Access 238 Command Line Interface Reference Guide* (P/N 61220630L1-35) for detailed information.

General

For a list of all possible command sequences, press ? while entering a command.

An example of this follows:

```
TA238(config)#i? [the i? is input from the keyboard]
```

The response from the system would indicate the following:

```
interface ip
```

Press ? at any other place to display all possible commands that can be entered at that point.

```
TA238#?
```

The ? returns the following display:

```
configure      - Enter configuration mode
copy           - Copy files and configuration data
erase          - Erase configuration
logout         - Exit from the EXEC
ping           - Send echo messages
reload         - Perform a cold restart
show           - Show system information
write          - Write configuration to memory, network, or terminal
```

Change Default Login

Change the default login using the following steps:

1. Enter configuration mode using the following command:

```
TA238#configure
```

2. Create a new username using the following command:

```
TA238(config)#login username <new username>
```

3. Create a new password using the following command:

```
TA238(config)#login password <new password>
```

SHDSL

The Total Access 238 provides commands to interface with the SHDSL.

SHDSL Configuration

View the current SHDSL configuration using the following command:

```
TA238#show interfaces shdsl config
```

Configure the SHDSL

Configure the SHDSL interface using the following steps:

1. Enter configuration mode using the following command:

```
TA238#configure
```

2. From configuration mode, use the following command to interface with SHDSL:

```
TA238(config)#interfaces shdsl
```

3. View the parameters using the following command:

```
TA238(config-shdsl)#?
```

SHDSL Status Link

View the status of a SHDSL link using the following command:

```
TA238#show interfaces shdsl status link n (where n is the number)
```

SHDSL Performance History

View the performance history of a SHDSL link using the following steps:

1. Show the SHDSL link performance for a 15-minute interval using the following command:

```
TA238#show interfaces shdsl performance 15-minute link (where n is the number)
```

2. Show the SHDSL link performance for a 24-hour interval using the following command:

```
TA238#show interfaces shdsl performance 24-hour link (where n is the number)
```

IMA

The Total Access 238 provides commands to interface with the SHDSL.

IMA Configuration

View the current IMA configuration using the following command:

```
TA238#show interfaces ima config
```

Configure the IMA

Configure the IMA group using the following steps:

1. Enter the Global Configuration Mode using the following command:

```
TA238#configure
```

2. Enter the IMA Configuration using the following command:

```
TA238(config)#interfaces ima
```

IMA Parameters

View the IMA parameters using the following command:

```
TA238(config-ima)#?
```

IMA Status

View the status of the IMA group using the following command:

```
TA238#show interfaces ima status group
```

IMA Status Link

View the status of an IMA link using the following command:

```
TA238#show interfaces ima status link n (where n is the number)
```

IP Address

Configure the IP address using the following steps:

1. Enter the Global Configuration Mode using the following command:

```
TA238#configure
```

2. Enter the IP address and subnet mask using the following command:

```
TA238(config)#ip address "IP address" "subnet mask" "gateway"
```

Ethernet

Configure the Ethernet interface using the following steps:

1. Enter the Global Configuration Mode using the following command:

```
TA238#configure
```

2. Enter the Ethernet Interface Configuration using the following command:

```
TA238(config)#interfaces ethernet n (where n is 0 or 1)
```

3. View the list of parameters using the following command:

```
TA238(config-eth0)#?
```

Current/Startup Configuration

The Total Access 238 provides commands to view the current and saved configurations.

Current Configuration

View the current configuration using the following command:

```
TA238#show running-config
```

Saved Configuration

View the startup (saved) configuration using the following command:

```
TA238#show startup-config
```

Save Current Configuration

Save the current configuration using the following command:

```
TA238#write memory
```

Craft Port

To change craft port speed, perform the following steps:

1. Enter the Global Configuration Mode using the following command:

```
TA238#config
```

2. Enter the console number using the following command:

```
TA238 (config)#line console 0
```

3. Change the craft port speed using the following command:

```
TA238 (config-con0)#speed 115200 (or 9600, 19200, 38400, 57600)
```

Firmware Upgrade

Start the download using the following steps:

1. Enter the following command:

```
TA238#copy xmodem flash
```

The following message is displayed:

```
This operation may disrrupt traffic. Proceed? [y or n]
```

2. Select “y” to begin the download.

When the download is complete, the unit will automatically reboot.

The XMODEM or 1K-XMODEM can be used to download the new file. The unit automatically reboots after completion.

NOTE

For a faster download, use the 1K-XMODEM.

Total Access 238 Initial Setup

Initial setup of the Total Access 238 includes the following topics:

- [“Private Virtual Channels \(PVC\)”](#)
- [“Back-to-Back Application”](#)

Private Virtual Channels (PVC)

To set up the PVC, perform the following steps:

1. Enter the Global Configuration Mode using the following command:

```
TA238#config
```

2. Enter the IMA Interface Configuration using the following command:

```
TA238(config)#interfaces ima
```

3. Enter the IMA PVC Interface Configuration using the following command:

```
TA238(config-ima)#pvc 0/32 <vpc/vci>
```

4. Set the encapsulation to RFC2684 using the following command:
`TA238(config-ima-vc0/32)#encapsulation llc <or vc-mux>`
5. Set the IMA interface peak cell rate and minimum cell rate using the following command:
`TA238(config-ima-vc0/32)#ubr+ <maximum cell rate> <minimum cell rate>`
6. Set the management using the following command:
`TA238(config-ima-vc0/32)#management enabled (or disabled)`

Back-to-Back Application

To use two Total Access 238 units in a back-to-back application, one unit must be configured as an LTU. To configure the unit as an LTU, perform the following steps:

1. Enter the Global Configuration Mode using the following command:
`TA238#config`
2. Enter the SHDSL Interface Configuration using the following command:
`TA238(config)#interfaces shdsl`
3. Terminate the LTU using the following command:
`TA238(config-shdsl)#termination ltu`
4. When ENTER is pressed, the system responds with the following prompt:
`This change will cause a system reboot. Continue?[y/n]`
5. Press y to reboot the unit and reconfigure for the LTU.

MAINTENANCE

The Total Access 238 does not require routine maintenance for normal operation.

If power is lost, check the fuse on the rear panel. Refer to [“Replacing the Fuse”](#) on page 25.

ADTRAN does not recommend that repairs be attempted in the field. Repair services may be obtained by returning the defective unit to ADTRAN. Refer to [“Appendix A, Warranty”](#) for further information.

Replacing the Fuse

To replace the fuse, perform the following steps:

1. Disconnect the power source.
2. Insert a flat blade screwdriver into the fuse cover, turn the cover 1/3 turn counter clockwise, and remove the fuse holder.
3. Remove the blown fuse.
4. Insert a new fuse into the fuse holder and insert the fuse holder back into the unit.

CAUTION

Replace the fuse only with the exact type and rating as removed from the fuse holder.

5. Insert a flat blade screwdriver into the fuse cover and apply moderate pressure while turning the cover 1/3 turn clockwise to lock in place.
6. Re-apply power to the Total Access 238.

SPECIFICATIONS

The following tables list the specifications for the Total Access 238:

- [Table 11](#) lists the specifications for the Total Access 238 8-Port SHDSL (Annex A) Ethernet Bridge, DC-Powered (P/N 1200630L1)
- [Table 12](#) lists the specifications for the Total Access 238 8-Port SHDSL (Annex A) Ethernet Bridge, AC-Powered (P/N 1200630L2)
- [Table 13](#) lists the specifications for the International Total Access 238 8-Port SHDSL (Annex B) Ethernet Bridge, DC-Powered (P/N 1200632L1)

Table 11. Total Access 238 Specifications (P/N 1200630L1)

Specification	Description
Interfaces	
Network:	10/100Base-T Octal SHDSL (50-pin Amphenol)
Management:	EOC Craft interface (using CLI) Telnet
Ethernet:	Full/half duplex 10/100 Mbps (10/100Base-T only) 1550 bytes frame size
DSL:	ANSI T1.417-2001 spectrum compliant Sealing current termination SHDSL rates to 5.676 Mbps
ATM:	UBR+QoS 1 PVC LLC and VC mux Ethernet encapsulation
Data Protocols:	RFC 2684 bridging over ATM Inverse Multiplexing ATM
Power	
Voltage Requirement:	-48 VDC nominal (-42 to -54 VDC)
Heat dissipation:	10 W
Fusing:	3 A, 250 V, SLO-BLO, 3 AG (user accessible)
Environmental	
Operating Temperature:	0°C to +50°C
Storage Temperature:	-20°C to +85°C
Relative Humidity:	95 % maximum @ 50°C, noncondensing
Compliance	
	GR-1089-CORE GR-63-CORE FCC Part 15 FCC Part 68/ACTA IC CS-03 UL 60950
Physical	
Dimensions:	Height: 1.72 inches Width: 17.22 inches Depth: 9.75 inches
Weight:	6.5 pounds (2.9 kg)
Part Number	
Total Access 238	1200630L1

Table 12. Total Access 238 Specifications (P/N 1200630L2)

Specification	Description
Interfaces	
Network:	10/100Base-T Octal SHDSL (50-pin Amphenol)
Management:	EOC Craft interface (using CLI) Telnet
Ethernet:	Full/half duplex 10/100 Mbps (10/100Base-T only) 1550 bytes frame size
DSL:	ANSI T1.417-2001 spectrum compliant Sealing current termination SHDSL rates to 5.676 Mbps
ATM:	UBR+QoS 1 PVC LLC and VC mux Ethernet encapsulation
Data Protocols:	RFC 2684 bridging over ATM Inverse Multiplexing ATM
Power	
Voltage Requirement:	117 VAC, 60 Hz (120 VAC nominal)
Heat dissipation:	10 W
Fusing:	1 A, 250 V, SLO-BLO, 3 AG (user accessible)
Environmental	
Operating Temperature:	0°C to +50°C
Storage Temperature:	-20°C to +85°C
Relative Humidity:	95 % maximum @ 50°C, noncondensing
Compliance	
FCC Part 15 FCC Part 68/ACTA IC CS-03 UL 60950	
Physical	
Dimensions:	Height: 1.72 inches Width: 17.22 inches Depth: 9.75 inches
Weight:	6.5 pounds (2.9 kg)
Part Number	
Total Access 238	1200630L2

Table 13. Total Access 238 Specifications (P/N 1200632L1)

Specification	Description
Interfaces	
Network:	10/100Base-T Octal SHDSL (50-pin Amphenol)
Management:	EOC Craft interface (using CLI) Telnet
Ethernet:	Full/half duplex 10/100 Mbps (10/100Base-T only) 1550 bytes frame size
DSL:	ANSI T1.417-2001 spectrum compliant Sealing current termination SHDSL rates to 5.676 Mbps
ATM:	UBR+QoS 1 PVC LLC and VC mux Ethernet encapsulation
Data Protocols:	RFC 2684 bridging over ATM Inverse Multiplexing ATM
Power	
Voltage Requirement:	-48 VDC nominal (-42 to -54 VDC)
Heat dissipation:	10 W
Fusing:	3 A, 250 V, SLO-BLO, 3 AG (user accessible)
Environmental	
Operating Temperature:	0°C to +50°C
Storage Temperature:	-20°C to +85°C
Relative Humidity:	95 % maximum @ 50°C, noncondensing
Compliance	
	EN 300 386-2 EN 55022 Class A IEC 60950-1, EN 60950-1, and AS/NZS 60950.1 IEC 1000 S016 S043.2 ITU K.21 Enhanced
Physical	
Dimensions:	Height: 1.72 inches Width: 17.22 inches Depth: 9.75 inches
Weight:	6.5 pounds (2.9 kg)
Part Number	
Total Access 238:	1200632L1

Appendix A

Warranty

WARRANTY AND CUSTOMER SERVICE

ADTRAN will replace or repair this product within the warranty period if it does not meet its published specifications or fails while in service. Warranty information can be found at www.adtran.com/warranty.

Refer to the following subsections for sales, support, Customer and Product Service (CAPS) requests, or further information.

ADTRAN Sales

Pricing/Availability:

800-827-0807

ADTRAN Technical Support

Pre-Sales Applications/Post-Sales Technical Assistance:

800-726-8663

Standard hours: Monday - Friday, 7 a.m. - 7 p.m. CST

Emergency hours: 7 days/week, 24 hours/day

ADTRAN Repair/CAPS

Return for Repair/Upgrade:

(256) 963-8722

Repair and Return Address

Contact CAPS prior to returning equipment to ADTRAN.

ADTRAN, Inc.

CAPS Department

901 Explorer Boulevard

Huntsville, Alabama 35806-2807



Carrier Networks Division
901 Explorer Blvd.
Huntsville, AL 35806