

Mediant 800 Gateway and E-SBC



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Notes and Warnings



Read and adhere to all warning statements in this document before installing the device.



The device is an **INDOOR** unit and therefore, must be installed only indoors. In addition, FXS and Ethernet port interface cabling must be routed only indoors and must not exit the building.



IC (Industry Canada) Warning

- **IC Guidelines for Human Exposure** This equipment complies with IC radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with minimum distance of 20 cm between the radiator and your body.

Directives IC concernant l'exposition humaine Cet équipement est conforme aux limites d'exposition aux rayonnements IC définies pour un environnement non contrôlé. Cet équipement doit être installé et utilisé à une distance minimale de 20 cm entre le radiateur et votre corps.

- This product does not contain any user serviceable components and is to be used with approved antennas only. Any product changes or modifications will invalidate all applicable regulatory certifications and approvals.

Ce produit ne contient aucun composant réparable par l'utilisateur et doit être utilisé uniquement avec des antennes approuvées. Toute modification ou modification apportée au produit invalidera toutes les certifications et approbations réglementaires applicables.

- We, AudioCodes Ltd., 6 Ofra Haza Street, Naimi Park, Or Yehuda, 6032303, Israel, declare under our sole responsibility that the **Mediant 800B SBC / Mediant 800C SBC** complies with Industry Canada licence-exempt RSS standard(S). Operation is subject to the following two conditions:

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

Nous, AudioCodes Ltd., 6 Ofra Haza Street, Naimi Park, Or Yehuda, 6032303, Israel, déclarons sous notre seule responsabilité que le **Mediant 800B SBC / Mediant 800C SBC** est conforme à la norme RSS (S) sans licence d'Industrie Canada. Le fonctionnement est soumis aux deux conditions suivantes:

- Cet appareil ne doit pas causer d'interférences nuisibles, et
- Cet appareil doit accepter toutes les interférences reçues, y compris celles susceptibles de provoquer un fonctionnement indésirable.



This product meets the applicable **Innovation, Science and Economic Development Canada** technical specifications.

Le présent produit est conforme aux spécifications techniques applicables **d'Innovation, Sciences et Développement économique Canada**.



The **Ringer Equivalence Number (REN)** indicates the maximum number of devices allowed to be connected to a telephone interface. The termination of an interface may



consist of any combination of devices subject only to the requirement that the sum of the RENs of all the devices not exceed five.

L'indice d'équivalence de la sonnerie (IES) sert à indiquer le nombre maximal de dispositifs qui peuvent être raccordés à une interface téléphonique. La terminaison d'une interface peut consister en une combinaison quelconque de dispositifs, à la seule condition que la somme des IES de tous les dispositifs n'excède pas cinq.



Caution Electrical Shock: Do not open or disassemble this device. The device carries high voltage and contact with internal components may expose you to electrical shock and bodily harm.



The device must be installed and serviced only by qualified service personnel.



The device must be installed **ONLY** in restricted access locations that are compliant with ETS 300 253 guidelines where equipotential bonding has been implemented.



Disconnect the device from the mains and Telephone Network Voltage (TNV) before servicing.



Open source software may have been added and/or amended for this product. For further information, contact your AudioCodes sales representative.

Related Documentation

Document Name
Mediant 800 Datasheet
Mediant 800 E-SBC User's Manuals

Document Revision Record

LTRT	Description
10259	FXO warning statement.
10260	Power amperage updated.
10261	E1 cabling warning statement regarding STP.

LTRT	Description
10262	Max. power consumption.
10263	Power surge warnings; AC input current.
10265	Miscellaneous formatting.
10266	E1/T1 PSTN fallback added.
10267	AC power cable warning (Japanese).
10680	BRI cabling warning; LED label for console port; Status LED state typo.
10681	Download URL for CentOS driver.
10682	Typo fixed re 19-inch rack mounting brackets.
10683	Logo updated; fallback updated.
10684	Lifeline splitter cable – not supplied.
10685	Wall mounting added; Mediant 800C added; Mediant 800A removed; logos updated; CENTOS removed.
10687	Power fuse updated; AC power rating updated; warnings added for grounding; cable type for LAN updated.
10688	PRI PSTN fallback hardware note updated; OSN driver download note removed.
10689	Logo updated on front panel.
10690	Mediant 800C rear panel updated with correct Amps.
10691	Button press duration updated for reset to defaults; trademarks.
10692	Mediant 800C rear-panel figure callout numbering corrected.
10693	Cooling guidelines when mounting device.
10694	Physical dimensions update
10695	OSN removed
10696	Device replacement
10697	IC warning statement; REN statement; Innovation, Science and Economic Development Canada statement

LTRT	Description
10698	EN 55024 replaced with EN 55035
10699	Power (watts) updated for Mediant 800C; IEC 60417-6042 and IEC 60417-6172 for Mediant 800C
10700	Typo

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1 Introduction

This document provides a hardware description of the Mediant 800 Gateway and E-SBC (hereafter referred to as device) and step-by-step procedures for mounting and cabling the device.

The device supports the following interfaces (customer ordered):

- E1/T1 (PRI):
 - Mediant 800B: Up to 2 E1/T1 port interfaces (over single copper wire pair).
 - Mediant 800C: Up to 4 E1/T1 port interfaces
- Up to 8 BRI ports (supporting up to 16 voice channels).
- Up to 12 FXS port interfaces.
- Up to 12 FXO port interfaces.
- 12 LAN Ethernet interfaces - up to 4 Gigabit Ethernet ports and up to 8 Fast Ethernet ports. These ports operate in port-pair redundancy, providing up to 6 port-pair groups.
- Power:
 - Mediant 800B: Single AC power inlet
 - Mediant 800C: Single AC power inlet, and a DC power inlet (optional, customer ordered)



- Mediant 800 includes two hardware revisions which differ as follows:
 - ✓ Mediant 800B: Max. 2 E1/T1; AC power only
 - ✓ Mediant 800C: Max. 4 E1/T1; AC and DC power (optional)
- Hardware configurations may change without notice. Currently available hardware configurations are listed in AudioCodes Price Book. For available hardware configurations, contact your AudioCodes sales representative.
- The Fast Ethernet ports are available only on "pure" SBC Mediant 800 (i.e., without PSTN / Gateway interfaces).
- For software configuration, refer to the *User's Manual*.

2 Unpacking the Device

Follow the procedure below for unpacking the carton in which the device is shipped.

➤ **To unpack the device:**

1. Open the carton and remove packing materials.
2. Remove the chassis from the carton.
3. Check that there is no equipment damage.
4. Ensure that in addition to the chassis, the package contains the following items:
 - Four anti-slide bumpers for desktop installation
 - Two mounting brackets for 19-inch rack mounting
 - One AC power cord
 - (Mediant 800C) One AC/DC power adaptor (optional, separate orderable item)
5. Check, retain and process any documents.

If there are any damaged or missing items, notify your AudioCodes sales representative.

3 Physical Description

This section provides a physical description of the device.

Physical Dimensions and Operating Environment

The device's physical dimensions and operating environment are listed in the following table:

Table 3-1: Physical Dimensions and Operating Environment

Physical Specification	Description
Dimensions (H x W x D)	1U x 345 mm x 320 mm (13.6 x 12.6 inches)
Weight	2.5 kg (5.5 lbs.)
Environmental	<ul style="list-style-type: none"> ■ Operational: 5 to 40°C (41 to 104°F) ■ Storage: -25 to 85°C (-13 to 185°F) ■ Humidity: 10 to 90% non-condensing

Front Panel Description

The front panel provides the telephony port interfaces, various networking ports, reset pinhole button, and LEDs.

Ports and Buttons

The device's front panel is shown in the following figure and described in the subsequent table.

Figure 3-1: Mediant 800B Front Panel

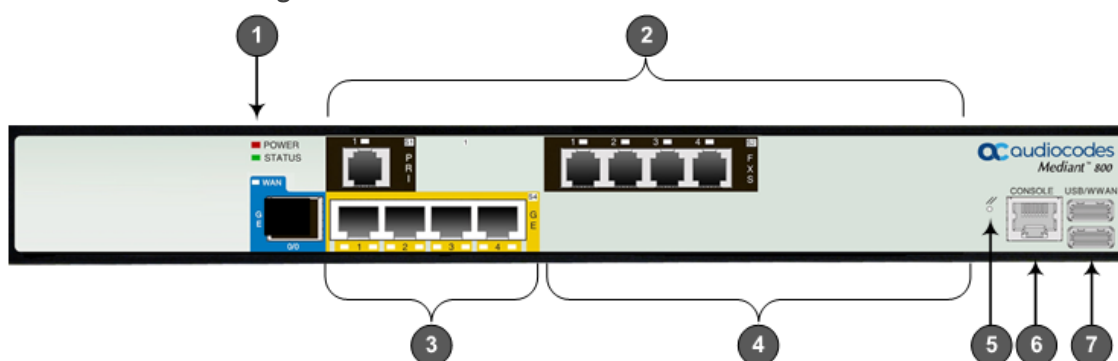
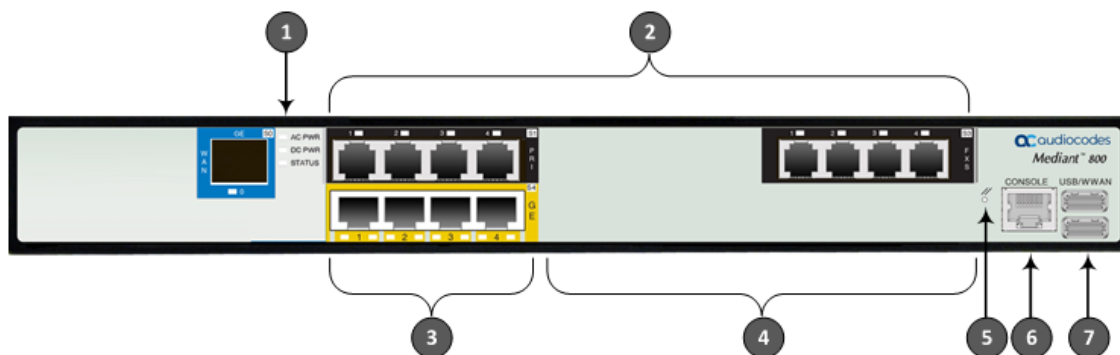


Figure 3-2: Mediant 800C Front Panel



The figures above are used only as an example. The number and type of port interfaces depends on the ordered model.

Table 3-2: Front Panel Description

Item #	Label	Description
1	Mediant 800B: POWER / STATUS Mediant 800C: AC PWR / DC PWR / STATUS	Power and operating status LEDs. For more information, see LEDs Description on the next page.
2	FXS / FXO / BRI / PRI	Telephony port interfaces that can include one or a combination of the following, depending on the ordered model: <ul style="list-style-type: none"> ■ FXS port interfaces (RJ-11) ■ FXO port interfaces (RJ-11) ■ ISDN BRI port interfaces (RJ-45) ■ ISDN PRI (E1/T1) port interfaces (RJ-48) Note: <ul style="list-style-type: none"> ■ The FXS/FXO interfaces support loop-start signalling (indoor only). ■ For supported hardware configuration options, refer to the Release Notes.
3	GE	Up to four 10/100/1000Base-T (Gigabit Ethernet) LAN ports for connecting IP phones, computers, or switches. These ports support the following features:

Item #	Label	Description
		<ul style="list-style-type: none"> ■ 1+1 LAN port redundancy: These ports are grouped in pairs, where one port is active and the other redundant. When a failure occurs in the active port, a switchover is done to the redundant port. ■ Half- and full-duplex modes ■ Auto-negotiation ■ Straight or crossover cable detection
4	FE	<p>Eight Fast Ethernet (10/100Base-TX) RJ-45 LAN ports for connecting IP phones, computers, or switches. The supported port features are the same as the GE ports (see Item #6 above).</p> <p>Note: The Fast Ethernet ports are available only on "pure" SBC Mediant 800 (i.e., without PSTN / Gateway interfaces).</p>
5	//	Reset pinhole button for resetting the device and optionally, for restoring the device factory defaults. To restore the device to factory defaults, with a paper clip or any other similar pointed object, press and hold down the Reset pinhole button for at least 15 seconds (but no more than 25 seconds).
6	CONSOLE	RS-232 port (RJ-45) for serial communication.
7	USB/WWAN	Two USB ports that can be used for various functionality such as saving debug captures to a USB storage device.

LEDs Description

The front panel provides various LEDs depending on the device's hardware configuration (e.g., the available telephony interfaces). These LEDs are described in the subsequent subsections.

LAN Interface LEDs

Each LAN port provides a LED (located on its left) for indicating LAN operating status, as described in the following table.

Table 3-3: LAN LEDs Description

LED Color	LED State	Description
Green	On	Ethernet link established.

LED Color	LED State	Description
	Flashing	Data is being received or transmitted.
-	Off	No Ethernet link.

FXS LEDs

Each FXS port provides a LED for indicating operating status, as described in the following table.

Table 3-4: FXS LEDs Description

LED Color	LED State	Description
Green	On	Phone is off-hooked.
	Flashing	Rings the extension line.
Red	On	<ul style="list-style-type: none"> Port malfunction. Disabled port initiated by user (using the CLI command, <code>analog-port-enable</code>)
	Off	Phone is on hook.
-	Off	No power received by the device.

FXO LEDs

Each FXO port provides a LED for indicating operating status, as described in the following table.

Table 3-5: FXO LEDs Description

LED Color	LED State	Description
Green	On	FXO line is off-hooked toward the PBX.
	Flashing	Ring signal detected from the PBX.
Red	On	<ul style="list-style-type: none"> Port malfunction. Disabled port initiated by user (using the CLI command, <code>analog-port-enable</code>)
	Off	Line is on hook.
-	Off	No power received by the device.

BRI LEDs

Each BRI port provides a LED for indicating operating status, as described in the following table:

Table 3-6: BRI LEDs Description

Color	State	Description
Green	On	Physical layer (Layer 1) is synchronized (normal operation).
Red	On	Physical layer (Layer 1) is not synchronized.
-	Off	Trunk is not active.

E1/T1 (PRI) LEDs

Each trunk port provides a LED for indicating operating status, as described in the following table:

Table 3-7: E1/T1 LEDs Description

Color	State	Description
Green	On	Trunk is synchronized (normal operation).
Red	On	Loss due to any of the following signals: <ul style="list-style-type: none"> ■ LOS - Loss of Signal ■ LOF - Loss of Frame ■ AIS - Alarm Indication Signal (the Blue Alarm) ■ RAI - Remote Alarm Indication (the Yellow Alarm)
-	Off	Failure / disruption in the AC power supply or the power is currently not being supplied to the device through the AC power supply entry.

STATUS LED

The **STATUS** LED indicates the operating status, as described in the following table.

Table 3-8: STATUS LED Description

LED Color	LED State	Description
Green	On	The device is operational and in Standalone mode (not in High-Availability mode).
	Fast	■ Initial rebooting stage.

LED Color	LED State	Description
Green	Flashing	■ Software upgrade (.cmp file) in process (supported only from Software Version 7.2).
	Slow Flash	HA mode - LED on Active device.
	Slow-Fast Flash	HA mode - LED on Redundant device.
Red	On	Boot failure.
	Off	Advanced rebooting stage.

Power LEDs

The power LEDs depend on the Mediant 800 model.

Power LED

The **POWER** LED indicates the power supply status, as described in the following table.

Table 3-9: POWER LED Description

LED Color	LED State	Description
Green	On	Power is received by the device.
-	Off	No power received by the device.



The **POWER** LED is applicable only to Mediant 800B.

AC PWR LED

The **AC PWR** LED indicates the AC power supply status, as described in the following table.

Table 3-10: AC PWR LED Description

Color	State	Description
Green	On	AC power is received by the device.
-	Off	No power received by the device.



The **AC PWR** LED is applicable only to Mediant 800C.

DC PWR LED

The **DC PWR** LED indicates the DC power supply status, as described in the following table.

Table 3-11: DC PWR LED Description

Color	State	Description
Green	On	DC power is received by the device.
-	Off	No power received by the device.



The **DC PWR** LED is applicable only to Mediant 800C.

Rear Panel Description

The device's rear panel is shown in the following figure and described in the subsequent table.

Figure 3-3: Mediant 800B Rear Panel



Figure 3-4: Mediant 800C Rear Panel



Table 3-12: Rear Panel Description

Item #	Label	Description
1		Protective earthing screw.
2	Mediant 800B: 100-240V~4A 50-60Hz Mediant 800C: 100-240V~1.5A 50-60Hz	3-Prong AC power supply entry.

Item #	Label	Description
3	DC IN 12V 10A	<p>DC power inlet for accepting a DC terminal block plug.</p> <p>Note:</p> <ul style="list-style-type: none">■ DC power is applicable only to Mediant 800C.■ Use only the AC/DC power adaptor that is supplied by AudioCodes to connect the DC inlet.

4 Mounting the Device

The device can be mounted in one of the following ways:

- Placed on a desktop – see [Desktop Mounting](#) below
- Mounted on a wall – see [Wall Mounting](#) below
- Installed in a standard 19-inch rack – see [19-Inch Rack Mounting](#) on page 14

Desktop Mounting

The device can be placed on a desktop when its four anti-slide bumpers (supplied) are attached to the underside of the device.



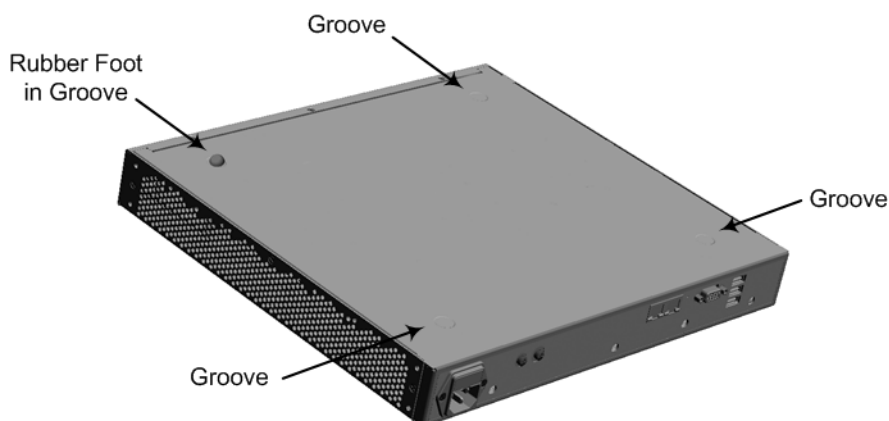
To ensure proper cooling and prevent over-heating of internal components:

- Do not place any equipment directly on top of the device.
- The side panels of the chassis, where the air vents are located, must remain unobstructed to ensure adequate airflow through the chassis. Make sure that clearance from the ventilation openings is at least 13 cm.

➤ To attach the anti-slide rubber bumpers to the device:

1. Flip the device over so that its underside faces up.
2. Locate the four anti-slide grooves on the underside - one in each corner.
3. Peel off the adhesive, anti-slide rubber feet and stick one in each anti-slide groove.

Figure 4-1: Rubber Foot Attached to Underside of Device



4. Flip the device over again so that it rests on the rubber feet and place it in the required position on a desktop.

Wall Mounting

The device can be mounted on a wall using side mounting brackets (separate orderable item).



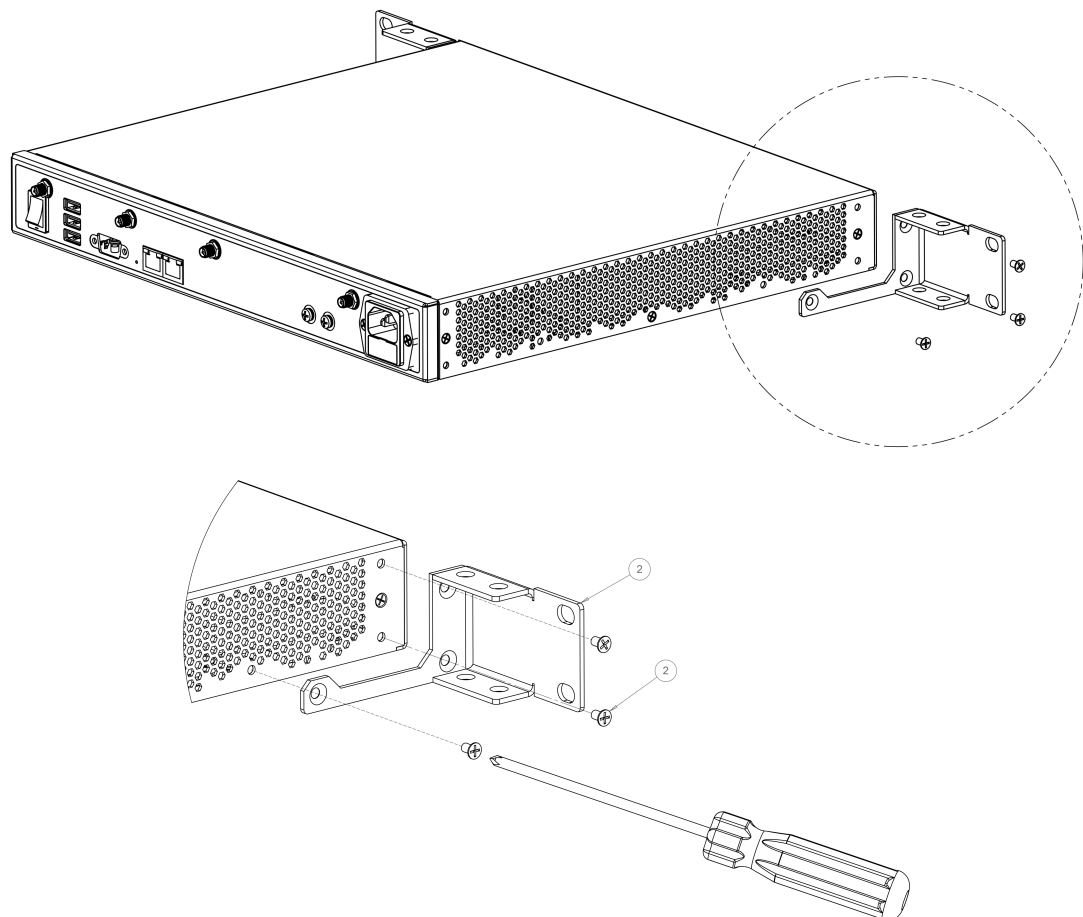
To ensure proper cooling and prevent over-heating of internal components:

- Do not place any equipment directly on top of the device.
- The side panels of the chassis, where the air vents are located, must remain unobstructed to ensure adequate airflow through the chassis. Make sure that clearance from the ventilation openings is at least 13 cm.

➤ **To mount the device on a wall:**

1. Using a Philips-head screwdriver, attach the mounting brackets (supplied) to both sides of the chassis using the screws (supplied), as shown in the following figure. Each bracket is secured to the chassis using three screws.

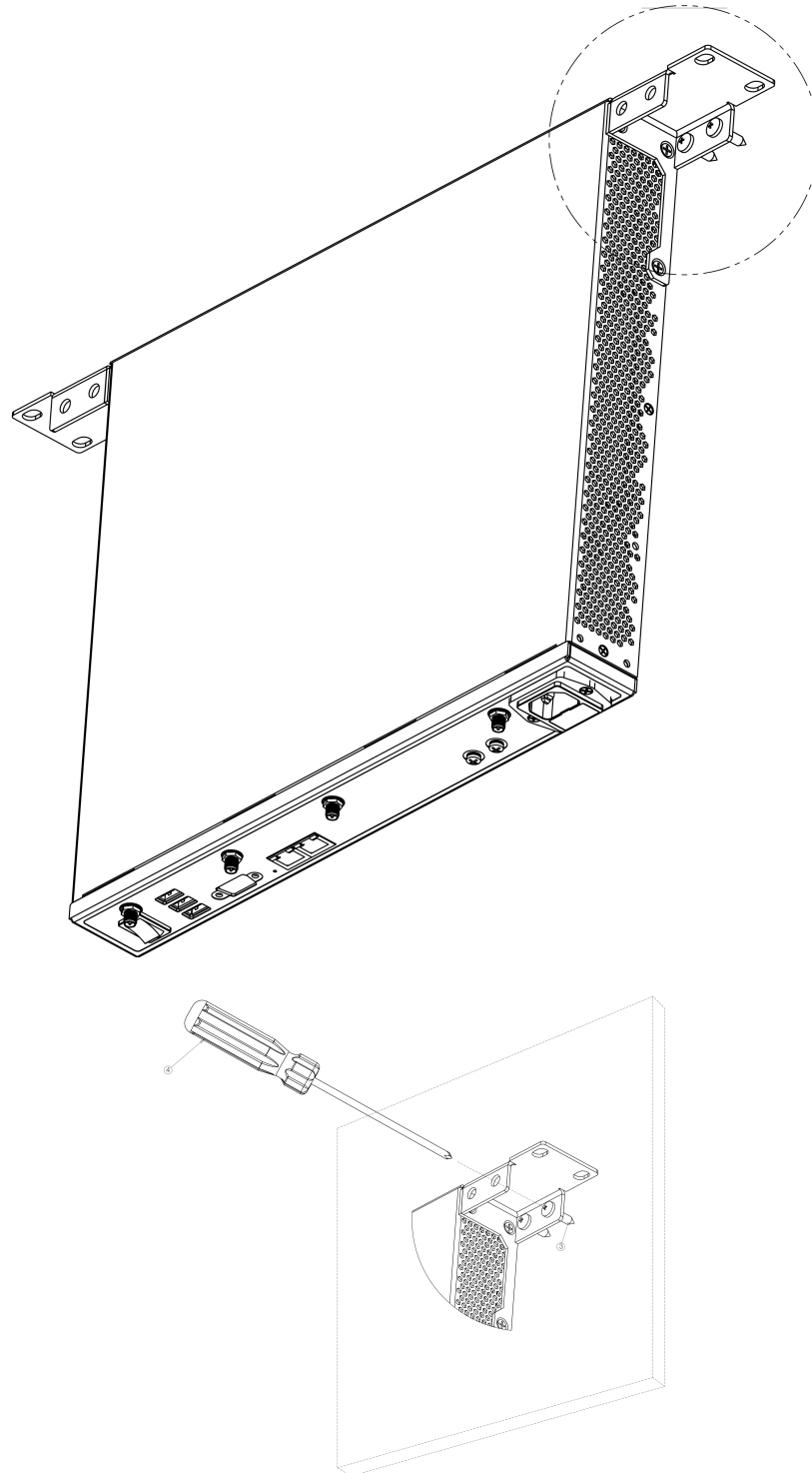
Figure 4-2: Attaching the Mounting Brackets to Chassis



2. Mark the drilling locations of the four mounting holes on the wall. You can use the chassis with the attached wall-mounting brackets as a template. For this two people are needed, one to hold the chassis and one to mark the holes. Hold the chassis so that the mounting brackets are flush against the wall. Make sure that the orientation of the chassis is correct – front panel facing up (toward the ceiling). Make sure that the chassis is horizontal with the floor (you can use a level). With a pencil, stencil the mounting brackets' keyholes on the wall.
3. Remove the chassis and place it on a horizontal surface.

4. Drill holes in the wall where you marked the keyholes.
5. Insert wall anchors (not supplied) of appropriate size into each drilled hole.
6. With one person holding the chassis flush against the wall with the mounting brackets' keyholes aligned with the wall anchors, Philips pan-head wood screws of 20-mm length (not supplied) to secure the brackets to the wall.

Figure 4-3: Attaching the Chassis with Mounting Brackets to Wall



19-Inch Rack Mounting

The device can be installed in a standard 19-inch rack by implementing one of the following mounting methods:

- Placing it on a pre-installed shelf in a 19-inch rack – see [Using a Pre-Installed Rack Shelf](#) below
- Attaching it directly to the rack's frame using the device's mounting brackets (supplied) that need to be attached to the chassis – see [Using Mounting Brackets](#) on the next page



To ensure proper cooling and prevent over-heating of internal components:

- Do not place any equipment directly on top of the device.
- The side panels of the chassis, where the air vents are located, must remain unobstructed to ensure adequate airflow through the chassis. Make sure that clearance from the ventilation openings is at least 13 cm.
- Ensure that at least a 1U separation is maintained between the device and other mounted devices or equipment in the rack.



Rack Mount Safety Instructions: When installing the chassis in a rack, implement the following safety instructions:

- **Elevated Operating Ambient Temperature:** If installed in a closed or multi-unit rack assembly, the operating ambient temperature of the rack environment may be greater than room ambient temperature. Therefore, consideration should be given to installing the equipment in an environment with maximum ambient temperature (Ta) of 40°C (104°F).
- **Reduced Air Flow:** Installation of the equipment in a rack should be such that the amount of air flow required for safe operation on the equipment is not compromised.
- **Mechanical Loading:** Mounting of the equipment in the rack should be such that a hazardous condition is not achieved due to uneven mechanical loading.
- **Circuit Overloading:** Consideration should be given to the connection of the equipment to the supply circuit and the effect that overloading of the circuits might have on over-current protection and supply wiring. Appropriate consideration of equipment nameplate ratings should be used when addressing this concern.
- **Reliable Earthing:** Reliable earthing of rack-mounted equipment should be maintained. Particular attention should be given to supply connections other than direct connections to the branch circuit (e.g., use of power strips). For earthing the device, see [Grounding and Surge Protection](#) on page 16.

Using a Pre-Installed Rack Shelf

The procedure below describes how to place the device on a pre-installed shelf in a 19-inch rack.

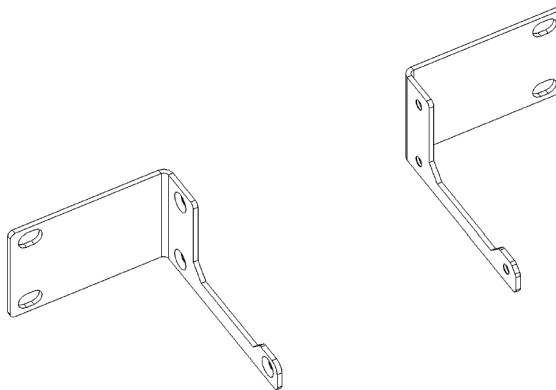
➤ **To mount the device on a pre-installed shelf in the rack:**

1. Before installing it in the rack, ensure that you have a pre-installed rack shelf on which the device can be placed.
2. Place the device on the pre-installed shelf in the rack.

Using Mounting Brackets

The procedure below describes how to mount the device in a 19-inch rack. Rack mounting involves placing the device on a pre-installed rack shelf (not supplied) and then securing the device to the rack frame using mounting brackets (supplied).

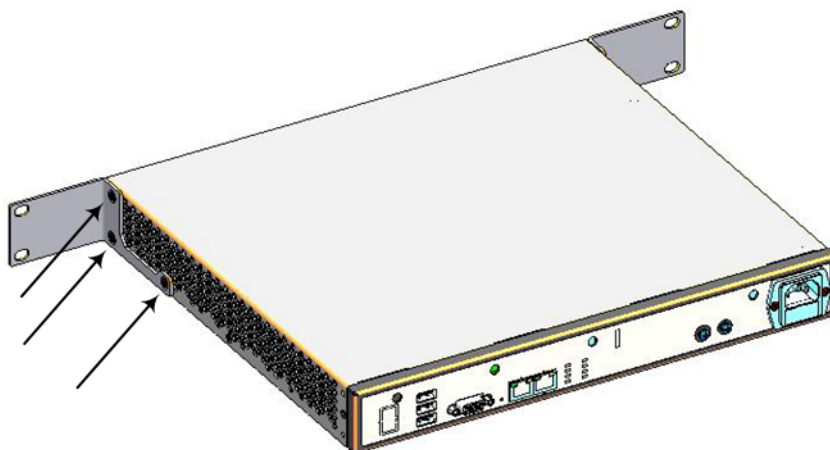
Figure 4-4: Mounting Brackets



➤ **To mount the device in a 19-inch rack using mounting brackets:**

1. Attach the two mounting brackets (supplied) to each side of the device's chassis, using the supplied screws, as shown in the following figure:

Figure 4-5: Attaching the Mounting Brackets



2. Place the device on a pre-installed shelf in the rack.
3. Attach the ends of the mounting brackets (that you installed in Step 1) to the vertical track of the rack's frame, using standard 19-inch rack bolts (not supplied).

5 Cabling the Device

This chapter describes the cabling of the device.

Grounding and Surge Protection

The device must be connected to earth (grounded) using an equipment-earthing conductor.



Protective Earthing

The equipment is classified as Class I EN 62368-1 and UL 62368-1 and must be earthed at all times.

Finland: "Laite on liltettava suojamaadoituskoskettimilla varustettuun pistorasiaan."

Norway: "Apparatet rna tilkoples jordet stikkontakt."

Sweden: "Apparaten skall anslutas till jordat uttag."



Grounding and Power Surge Protection

- The device must be installed only in telecommunication sites / centers in compliance with ETS 300-253 requirements "Earthing and Bonding of Telecommunication Equipment in Telecommunication Centers".
- Prior to installation, earth loop impedance test must be performed by a certified electrician to ensure grounding suitability at the power outlet intended to feed the unit. It is essential that the impedance will be kept below 0.5 ohms!
- Proper grounding is crucial to ensure the effectiveness of the lightning protection, connect the device permanently to ground (as described in the procedure below). The device's grounding screw must be connected to the equipotential grounding bus bar located in the Telecommunication rack or installation site, using a wire of 6 mm² surface wire. If the device is installed in a rack with other equipment, the rack must be connected to the equipotential grounding bus bar of the Telecommunication room, using a stranded cable with surface area of 25 mm². The length of this cable must be as short as possible (no longer than 3 meters).
- The device does not include primary telecom protection! When the FXO telephone lines are routed outside the building, additional protection - usually a 350V three-electrode Gas Discharge Tube (GDT) as described in ITU-T K.44 - must be provided at the entry point of the telecom wires into the building (usually on the main distribution frame / MDF), in conjunction with proper grounding. The center pin of the GDT (MDF grounding bar) must be connected to the equipotential grounding bus bar of the Telecommunication room.
- Failing to install primary surge protectors and failing to comply with the grounding instructions or any other installation instructions, may cause permanent damage to the device!
- As most of the installation is the responsibility of the customer, AudioCodes can assume responsibility for damage only if the customer can establish that the device does not comply with the standards specified above (and the device is within the hardware warranty period).
- The device complies with protection levels as required by EN 55035 / EN 300386. Higher levels of surges may cause damage to the device.



- To protect against electrical shock and fire, use a minimum of 26-AWG wire size to connect the FXO ports.

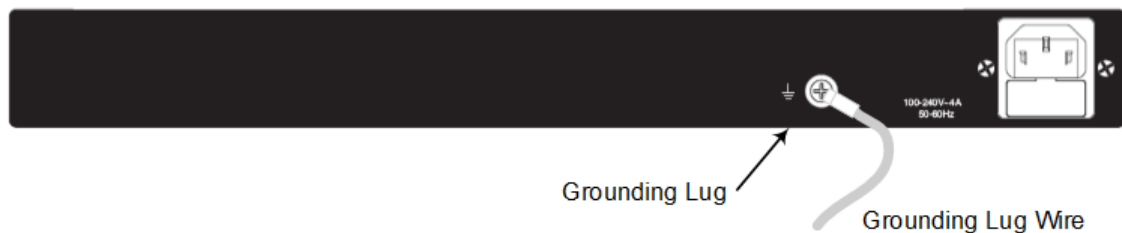


- To avoid electric shock and/or damage to ports due to over-voltage phenomena, you must connect the device to a reliable ground using the grounding termination located on the device's rear panel.
- When the device is powered only from the 12V DC supply (utilizing the external power adaptor), the device is not grounded!
- Ground the device prior to connecting the telephony port interfaces (FXO, FXS, E1/T1 and BRI).
- When powering off the device, prior to disconnecting the ground cable at the rear panel ((if required), remove all telephony interface cables.

➤ To ground the device:

1. Connect an electrically earthed strap of 16 AWG wire (minimum) to the chassis' grounding screw (located on the rear panel), using the supplied washer and fasten the wire securely using a 6-32 UNC screw.

Figure 5-1: Grounding the Device



2. Connect the other end of the strap to a protective earthing. This should be in accordance with the regulations enforced in the country of installation.

Connecting to LAN

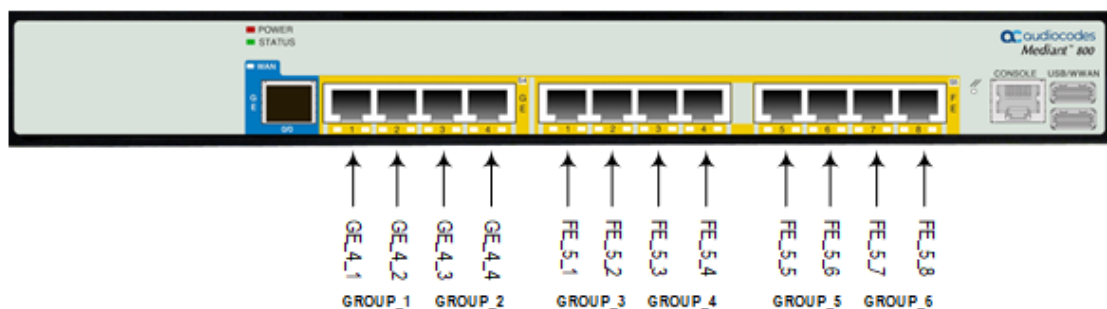
The device provides up to four 10/100/1000Base-T (Gigabit Ethernet) RJ-45 ports and up to eight 10/100Base-TX (Fast Ethernet) RJ-45 ports for connection to the LAN. These Ethernet ports can operate in pairs (groups) to provide 1+1 port redundancy. In each pair, one port serves as the active port while the other as standby. When the active port fails, the device switches to the standby port.



- The type and number of Ethernet ports depends on ordered hardware configuration.
- The Fast Ethernet ports are available only on "pure" SBC Mediant 800 (i.e., without PSTN / Gateway interfaces).

By default, the Ethernet ports are grouped into pairs as shown in the following figure. You can change this port assignment, including assigning only a single port to an Ethernet Group. For more information, refer to the User's Manual.

Figure 5-2: LAN Port-Pair Groups and Web Interface String Names



These ports support half- and full-duplex modes, auto-negotiation, and straight or crossover cable detection.

Cable specifications:

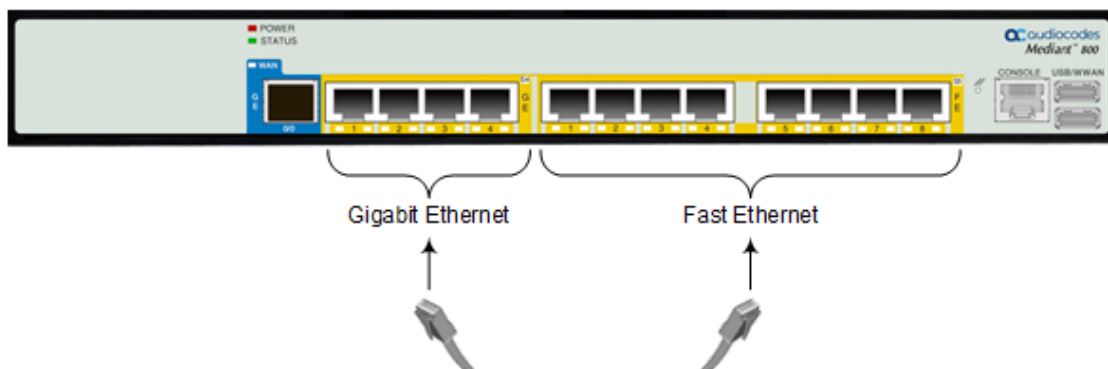
- Cable: Category 5e or Category 6 shielded twisted pair (STP) straight-through
- Connector Type: RJ-45
- Connector Pinouts:

Table 5-1: RJ-45 Connector Pinouts for GbE/FE

Pin	Signal Name
1	Ethernet signal pair (10/100/1000Base-T)
2	
3	Ethernet signal pair (10/100/1000Base-T)
6	
4	Ethernet signal pair (1000Base-T)
5	
7	Ethernet signal pair (1000Base-T)
8	
Shield	Chassis ground

➤ **To connect the device to the LAN:**

1. Connect the RJ-45 connector on one end of the Ethernet cable to one of the device's Ethernet ports, labeled **GE** (for Gigabit Ethernet ports) and **FE** (for Fast Ethernet ports).

Figure 5-3: Connecting the LAN Ports

2. Connect the other end of the cable to the Gigabit Ethernet network (for the GE ports) and/or Fast Ethernet network (for the FE ports).
3. For 1+1 LAN protection, repeat steps 1 and 2 for the standby port, but connect it to another network (in the same subnet).



If you are implementing LAN port-pair redundancy, make sure that each port in the Ethernet Group is connected to a different network (but in the same subnet).

Connecting to Analog Devices

This section describes how to connect the device to analog equipment.

Connecting the FXS Interfaces

The procedure below describes how to cable the device's FXS interfaces.



- The device is an INDOOR unit and therefore, must be installed only indoors.
- FXS port interface cabling must be routed only indoors and must not exit the building.
- Make sure that the FXS ports are connected to the appropriate, external devices; otherwise, damage to the device may occur.
- FXS ports are considered TNV-2.

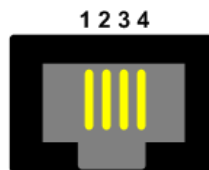


- FXS interfaces are a separate orderable item.
- FXS is the interface replacing the Exchange (i.e., the CO or the PBX) and connects to analog telephones, dial-up modems, and fax machines. The FXS is designed to supply line voltage and ringing current to these telephone devices. An FXS VoIP device interfaces between the analog telephone devices and the Internet.
- FXS interfaces are a separate orderable item.
- FXS is the interface replacing the Exchange (i.e., the CO or the PBX) and connects to analog telephones, dial-up modems, and fax machines. The FXS is designed to supply line voltage and ringing current to these telephone devices. An FXS VoIP device interfaces between the analog telephone devices and the Internet.

Cable specifications:

- Cable: Standard straight-through RJ-11-to-RJ-11 telephone cable
- Connector Type: RJ-11
- Connector Pinouts:

Figure 5-4: RJ-11 Connector Pinouts for FXS Interface

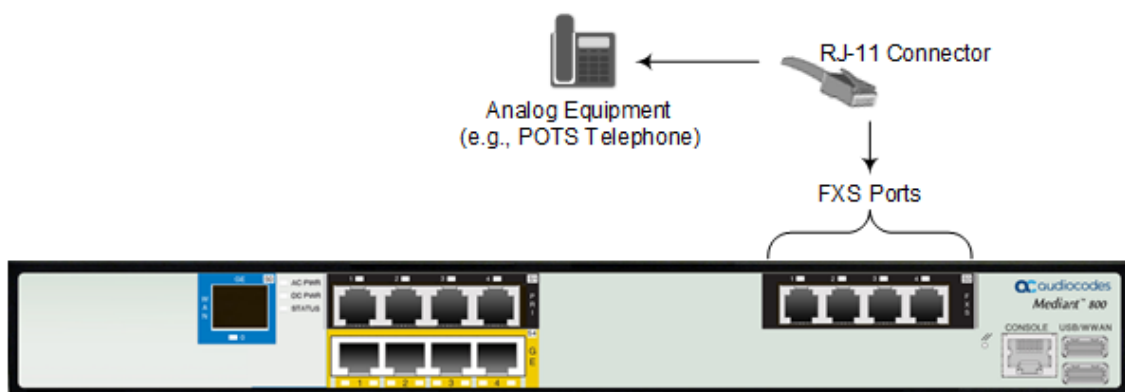


- 1 - Not connected
- 2 - Tip
- 3 - Ring
- 4 - Not connected

➤ To connect the FXS interfaces:

1. Connect one end of an RJ-11 cable to the FXS port (labeled **FXS**).

Figure 5-5: Connecting FXS Interfaces



2. Connect the other end of the cable to the required telephone interface (e.g., fax machine, dial-up modem, and analog POTS telephone).

Connecting the FXO Interfaces

The procedure below describes how to cable the device's FXO interfaces.



- The device does not include primary telecom protection! When the FXO telephone lines are routed outside the building, additional protection - usually a 350V three-electrode Gas Discharge Tube (GDT) as described in ITU-T K.44 - must be provided at the entry point of the telecom wires into the building (usually on the main distribution frame / MDF), in conjunction with proper grounding. The center pin of the GDT (MDF grounding bar) must be connected to the equipotential grounding bus bar of the Telecommunication room.
- To protect against electrical shock and fire, use a minimum 26-AWG wire to connect FXO ports to the PSTN.
- Ensure that the FXO ports are connected to the appropriate, external devices; otherwise, damage to the device may occur.
- FXO ports are considered TNV-3.

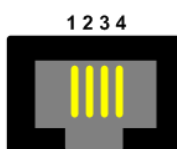


- FXO interfaces are a separate orderable item.
- FXO is the interface replacing the analog telephone and connects to a Public Switched Telephone Network (PSTN) line from the Central Office (CO) or to a Private Branch Exchange (PBX). The FXO is designed to receive line voltage and ringing current, supplied from the CO or the PBX (similar to an analog telephone). An FXO VoIP device interfaces between the CO/PBX line and the Internet.

Cable specifications:

- Cable: 26 AWG min
- Connector Type: RJ-11
- Connector Pinouts:

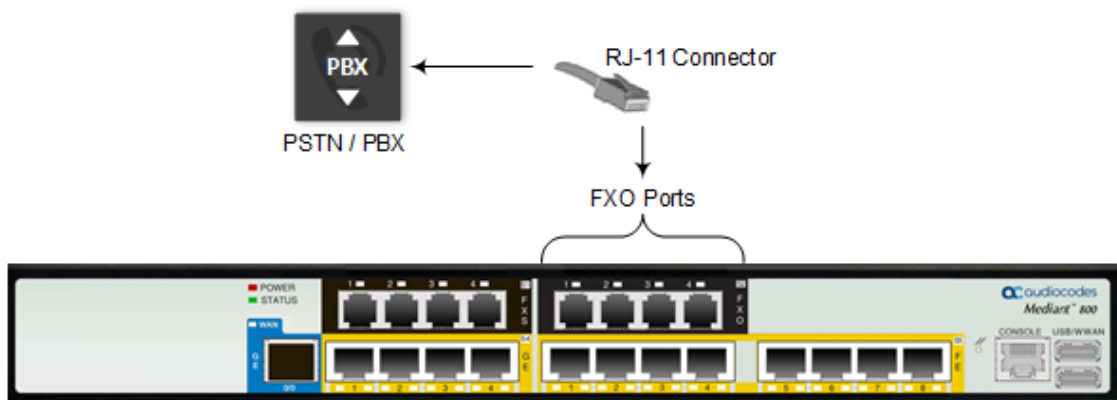
Figure 5-6: RJ-11 Connector Pinouts for FXO Interface



- 1 - Not connected
- 2 - Tip
- 3 - Ring
- 4 - Not connected

➤ **To connect the FXO interfaces:**

1. Connect one end of an RJ-11 cable to the FXO port (labeled **FXO**).

Figure 5-7: Connecting FXO Interfaces

2. Connect the other end of the cable to the required telephone interface: (e.g., telephone exchange analog lines or PBX extensions).

Connecting the FXS Analog Lifeline

The device supports Analog Lifeline. If the device loses power, for example, due to a power outage or the unplugging of its power cable, it automatically routes calls from a POTS telephone ("lifeline" phone), connected to an FXS port, to the PSTN (instead of the IP network).

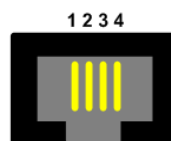
The Lifeline is provided by FXS Port # 1. This port connects to the analog POTS phone and the PSTN / PBX using a splitter cable (not supplied). The Lifeline splitter connects pins 1 and 4 to another source of an FXS port, and pins 2 and 3 to the POTS phone.



- The lifeline splitter cable is a separate orderable item.
- Analog Lifeline cabling is applicable only if the device is ordered with FXS interfaces.
- The number of supported Lifelines depends on the device's hardware configuration. For the combined FXS/FXO configuration, one Lifeline is available; for the 12-FXS configuration, up to three Lifelines are available.

Cable specifications:

- Cable: Splitter cable with RJ-11 connector on one end and two RJ-11 jacks (plugs) on the other end
- Connector Type: RJ-11
- Connector Pinouts:

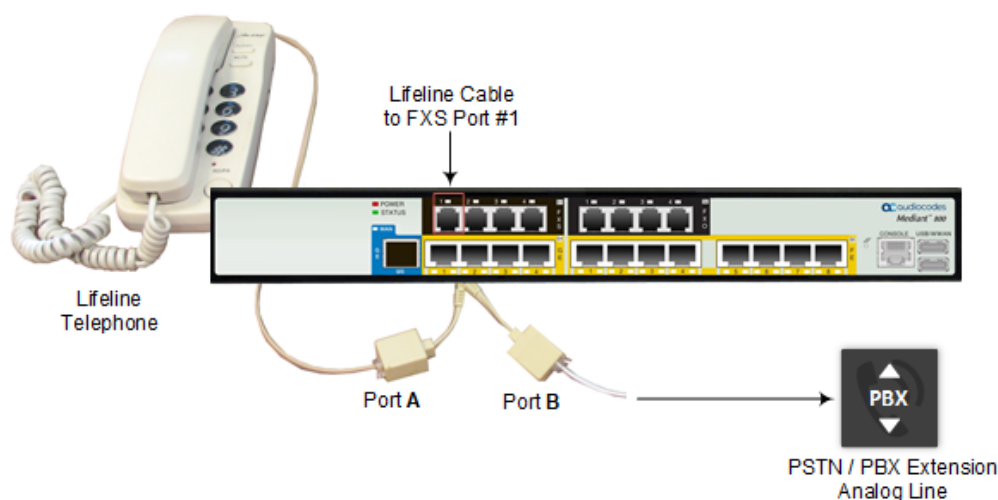
Figure 5-8: RJ-11 Connector Pinouts for FXS Lifeline

- 1 - Not connected
- 2 - Tip
- 3 - Ring
- 4 - Not connected

➤ **To cable the FXS Lifeline:**

1. Connect the lifeline splitter to FXS Port 1.
2. On the lifeline splitter cable, do the following:
 - a. Connect the analog telephone to Port A.
 - b. Connect an analog PSTN line to Port B.

Figure 5-9: Cabling FXS Lifeline



ISDN BRI Interfaces

This section describes how to cable the BRI interfaces.

Connecting to BRI Lines

The device provides up to eight BRI S/T ports. These ports connect to ISDN terminal equipment such as ISDN telephones. Each BRI port can be configured either as termination equipment/user side (TE) or network termination/network side (NT). Up to eight terminal equipment (TE) devices can be connected per BRI S/T port, using an ISDN S-bus that provides eight ISDN ports. When configured as NT, the BRI port drives a nominal voltage of 38 V with limited current supply of up to 100 mA.



- BRI port cabling must be routed only indoors and must not exit the building.
- To protect against electrical shock and fire, use a 26 AWG min wire to connect the BRI ports to the PSTN.



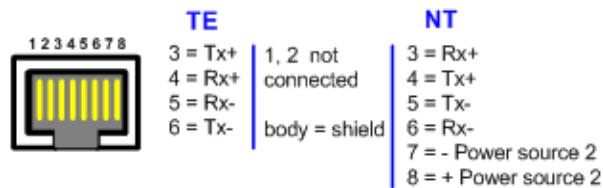
BRI interfaces are a separate orderable item.

Cable specifications:

- Cable: 26 AWG min.

- Connector Type: RJ-45
- Connector Pinouts:

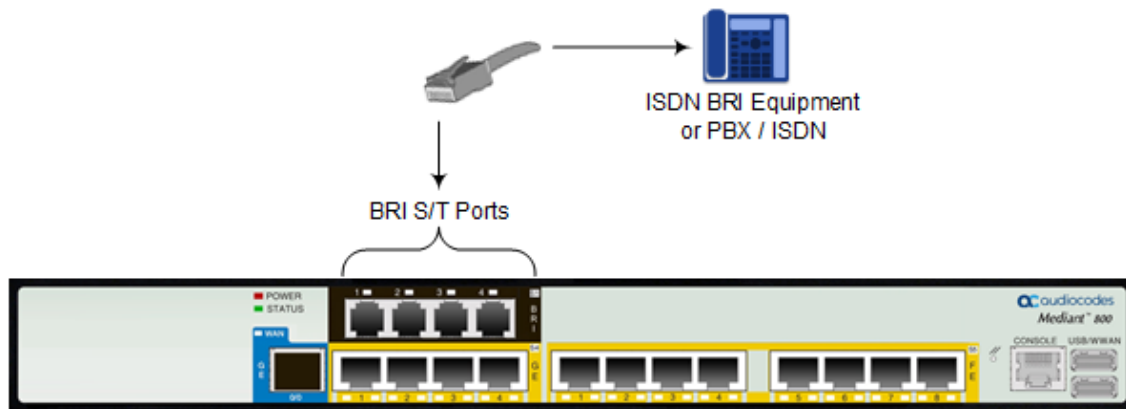
Figure 5-10: RJ-45 Connector Pinouts for BRI Ports



➤ **To connect the BRI ports:**

1. Connect the BRI cable to the device's BRI RJ-45 port.
2. Connect the other end of the cable to your ISDN telephone or PBX/PSTN switch.

Figure 5-11: Cabling BRI Ports



Connecting PSTN Fallback for BRI Lines

The device supports PSTN Fallback for BRI lines. If the device loses power, for example, due to a power outage or the unplugging of its power cable, it automatically routes calls from the Tel side to the PSTN (instead of the IP network).

PSTN Fallback is supported if the device houses one or more BRI modules, where each BRI module provides two or four spans.

In the event of a PSTN fallback, the BRI module's metallic relay switch automatically connects line Port 1 (I) to Port 2 (II) of the BRI module.

For example, if a PBX trunk is connected to Port 1 and the PSTN network is connected to Port 2, when PSTN Fallback is activated, calls from the PBX are routed directly to the PSTN through Port 2.



- BRI port cabling must be routed only indoors and must not exit the building.
- To protect against electrical shock and fire, use a 26 AWG min wire to connect the BRI ports to the PSTN.

Cable specifications:

- Cable: 26 AWG min.
- Connector Type: RJ-45
- Connector Pinouts:

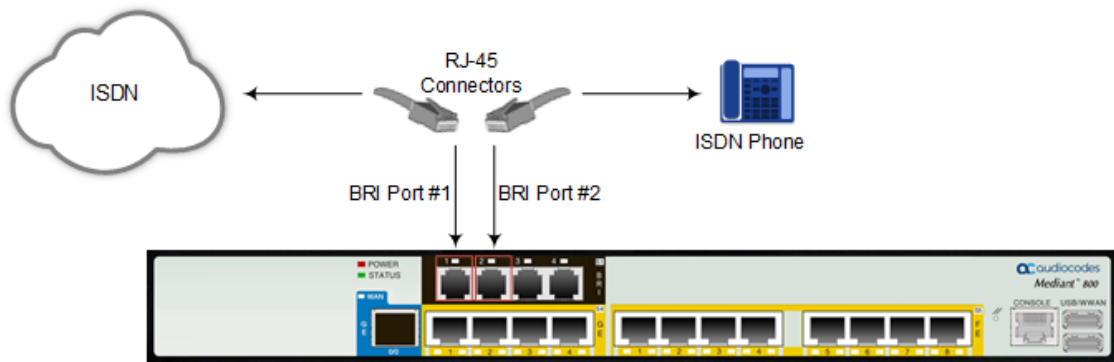
Table 5-2: RJ-45 Connector Pinouts for BRI PSTN Fallback

	TE	NT
1 2 3 4 5 6 7 8	3 = Tx+	3 = Rx+
	4 = Rx+	4 = Tx+
	5 = Rx-	5 = Tx-
	6 = Tx-	6 = Rx-
	1, 2 not connected	7 = - Power source 2
	body = shield	8 = + Power source 2

➤ To connect the BRI line interfaces for 1+1 PSTN Fallback:

1. Connect line 1 to a PBX.
2. On the same BRI module, connect line 2 to the PSTN.

Figure 5-12: Cabling (Ports 1 and 2) PSTN Fallback



- PSTN Fallback is supported only on BRI interfaces.
- PSTN Fallback is supported only between ports on the same BRI module.
- This PSTN Fallback feature has no relation to the PSTN Fallback Software Upgrade Key.

Connecting ISDN E1/T1 Interfaces

This section describes how to cable the PRI interfaces.

Connecting to ISDN PRI (E1/T1) Trunks

The procedure below describes the cabling of the device's E1/T1 (PRI) trunk interfaces.



- PRI port cabling must be routed only indoors and must not exit the building.



- To protect against electrical shock and fire, use a 26 AWG min wire to connect T1 or E1 ports to the PSTN.
- To comply with EMC rules and regulations, use shielded twisted pair (STP) cables for E1 interfaces.

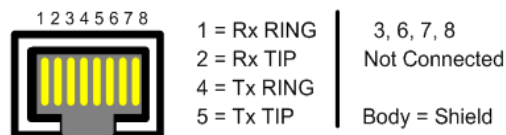


PRI interfaces are a separate orderable item.

Cable specifications:

- Cable: STP cable of 26 AWG min.
- Connector Type: RJ-48c
- Connector Pinouts:

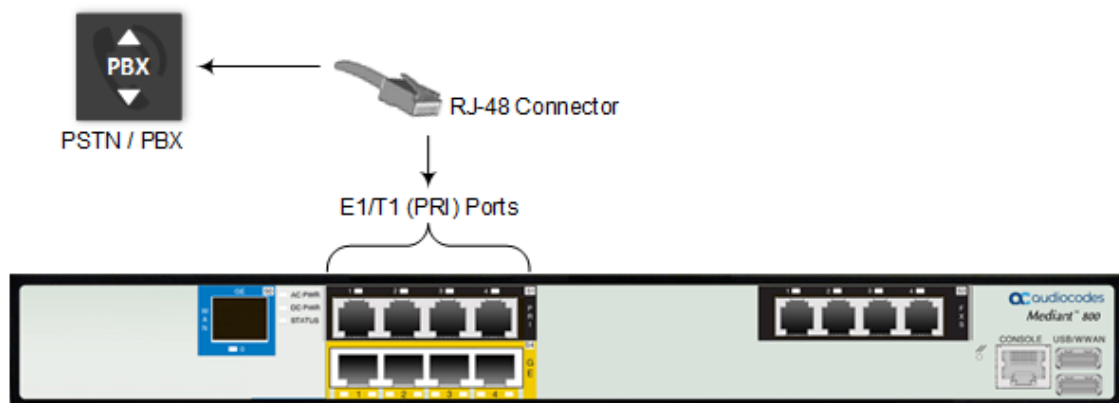
Figure 5-13: RJ-48c Connector Pinouts for E1/T1



➤ **To connect the E1/T1 trunk interface:**

1. Connect the E1/T1 trunk cable to the device's E1/T1 port.
2. Connect the other end of the trunk cable to your PBX/PSTN switch.

Figure 5-14: Cabling E1/T1 Ports



Connecting PSTN Fallback for E1/T1 Trunks

The device supports PSTN Fallback for E1/T1 lines. If the device loses power, for example, due to a power outage or the unplugging of its power cable, it automatically routes calls that are received from the Tel side (e.g., PBX) directly to the PSTN (instead of to the IP network).

Support for PSTN fallback:

- **Mediant 800B:** PSTN Fallback is supported only when using a module with dual E1/T1 ports. In the event of a PSTN fallback, the module's metallic relay switch automatically connects Port #1 with Port #2 to route calls between the Tel and PSTN side.
- **Mediant 800C:** In the event of a PSTN fallback, the module's metallic relay switch automatically connects Port #1 with Port #2 (and Port #3 with Port #4 for the four E1/T1 port module) to route calls between the Tel and PSTN side. These ports must be on the same module.

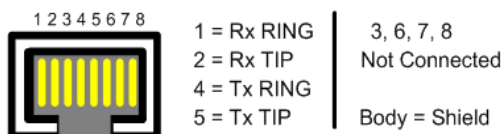


- PRI port cabling must be routed only indoors and must not exit the building.
- To protect against electrical shock and fire, use a 26 AWG min. wire to connect the PRI ports to the PSTN.
- To comply with EMC rules and regulations, use shielded twisted pair (STP) cables for E1 interfaces.

Cable specifications:

- Cable: STP cable of 26 AWG min.
- Connector Type: RJ-48c
- Connector Pinouts:

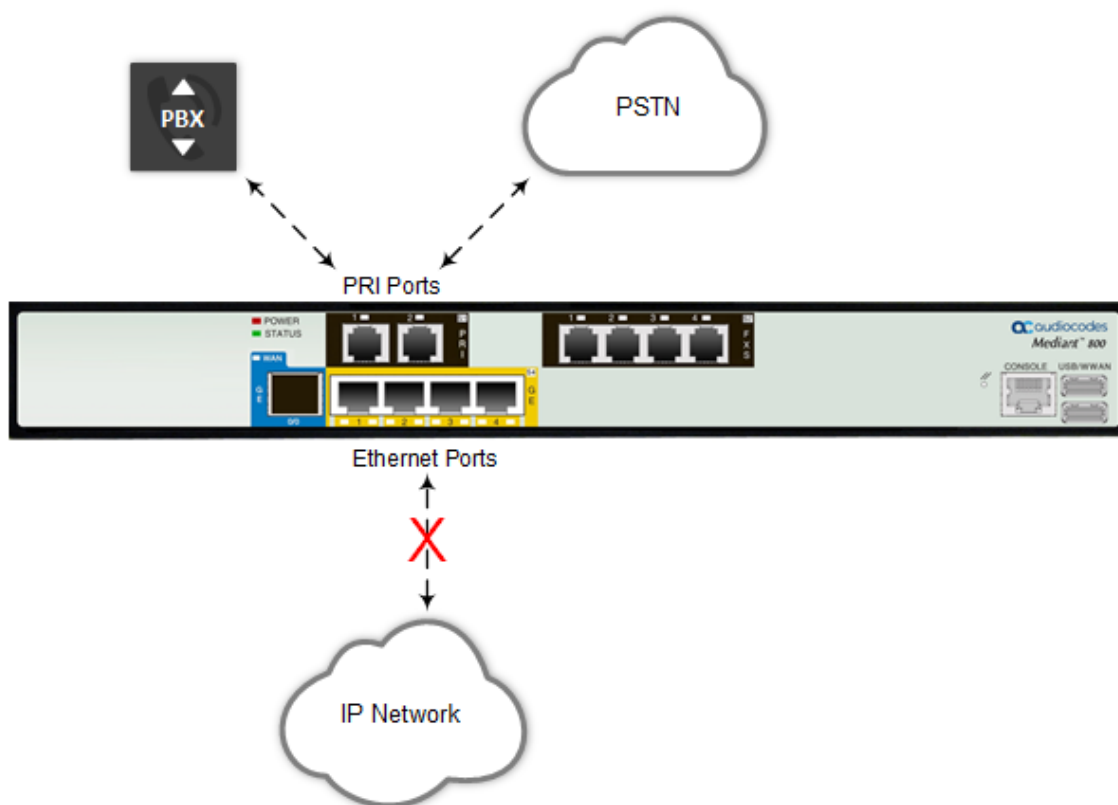
Figure 5-15: RJ-48c Connector Pinouts for E1/T1 PSTN Fallback



➤ **To connect the PRI ports for PSTN Fallback:**

1. Connect one of the PRI ports to the PBX.
2. Connect the second PRI port to the PSTN.

Figure 5-16: Cabling PRI Ports for PSTN Fallback



It doesn't matter which PRI port you use to connect to a Tel entity (i.e., PBX or PSTN).

Connecting to a Computer for Serial Communication

The device provides an RS-232 serial interface port on its front panel for serial communication with a PC.

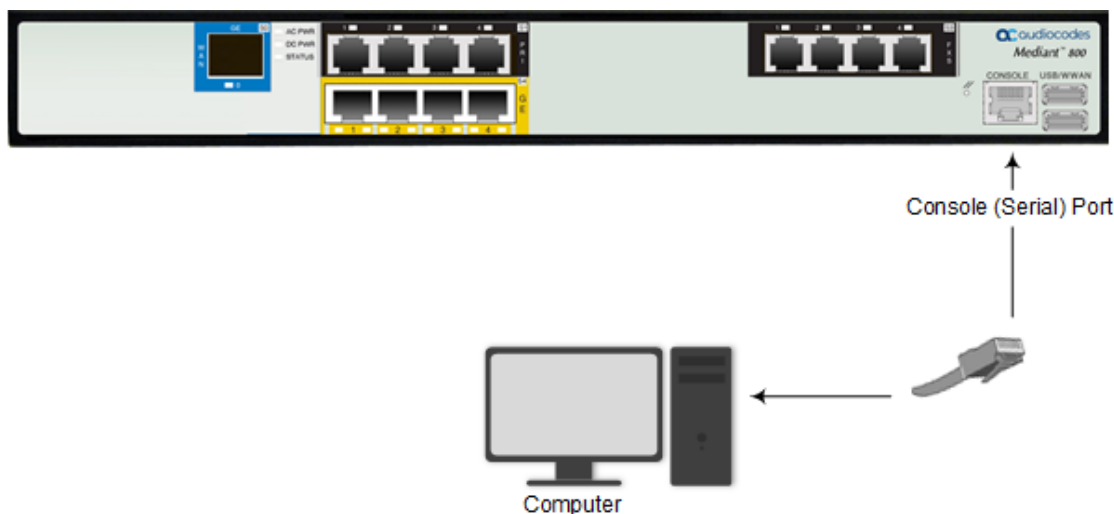
Cable specifications:

- Connector Type: RJ-45
- Cable: RJ-45 to DB-9 cable adaptor

➤ To connect the device's serial interface to a computer:

1. Connect the RJ-45 cable connector to the device's serial port, labeled CONSOLE.
2. Connect the other end of the cable to the COM1 or COM2 RS-232 communication port on your PC.

Figure 5-17: Cabling Serial Interface



Connecting to Power

The supported power type depends on the Mediant 800 hardware revision:

- **Mediant 800B:** Only AC power.
- **Mediant 800C:** AC and DC redundant power. When both power supplies are used (AC and DC), the device is powered from the AC power source only. The DC source starts feeding the device only upon an AC power outage.




Mediant 800C: The device is always shipped with AC power support. DC power is an optional, orderable item (AC/DC power adaptor is provided).



Mediant 800C:  IEC 60417-6042 (2010-11)



Mediant 800C:  IEC 60417-6172 (2012-09)

Connecting to AC Power

The device receives power from a standard alternating current (AC) electrical outlet. The connection is made through the supplied AC power cord.

Table 5-3: AC Power Specifications

Physical Specification	Value
Input Voltage	Single universal AC power supply 100 to 240V
AC Input Frequency	50 to 60 Hz
AC Input Current	<ul style="list-style-type: none"> ■ Mediant 800B: 4 A (max.) ■ Mediant 800C: 1.5 A (max.)
Max. Power Consumption	<ul style="list-style-type: none"> ■ SBC Only (no PSTN): <ul style="list-style-type: none"> ✓ Mediant 800B: 27W ✓ Mediant 800C: 32W ■ Gateway: 60W (power consumption varies according to assembled hardware configuration)



- The device must be connected to a socket-outlet providing a protective earthing connection.
- To avoid electric shock or fire, use only the AC power cord that is supplied by AudioCodes with the device.
- For replacing the power fuse, see [Replacing the Power Fuse](#) on page 34.

**ご注意**

本製品に添付の電源ケーブルは、Mediant 800 Gateway & E-SBC に専用設計されているため、汎用性はありません。本電源ケーブルを他の機器に使用されないよう、ご注意ください。

➤ **To connect the device to AC power:**

1. Connect the plug of the AC power cord (supplied) to the device's AC power socket (labeled 100-240V ~ 4A 50-60Hz), located on the rear panel.

Figure 5-18: Connecting to the Power Supply



2. Connect the plug at the other end of the AC power cord to a standard electrical outlet. The **POWER** LED, located on the front panel, lights up green.

Connecting to DC Power

DC power is cabled using the AC/DC power adaptor (supplied) which is connected to a standard AC electrical wall outlet. Typically, the DC power source is used for power redundancy with the AC power source (see note below).



- DC power support is a separate orderable item.
- When both power supplies are used (AC and DC), the device is powered from the AC power source only. The DC source starts feeding the device only upon an AC power outage.

Table 5-4: DC Power Specifications

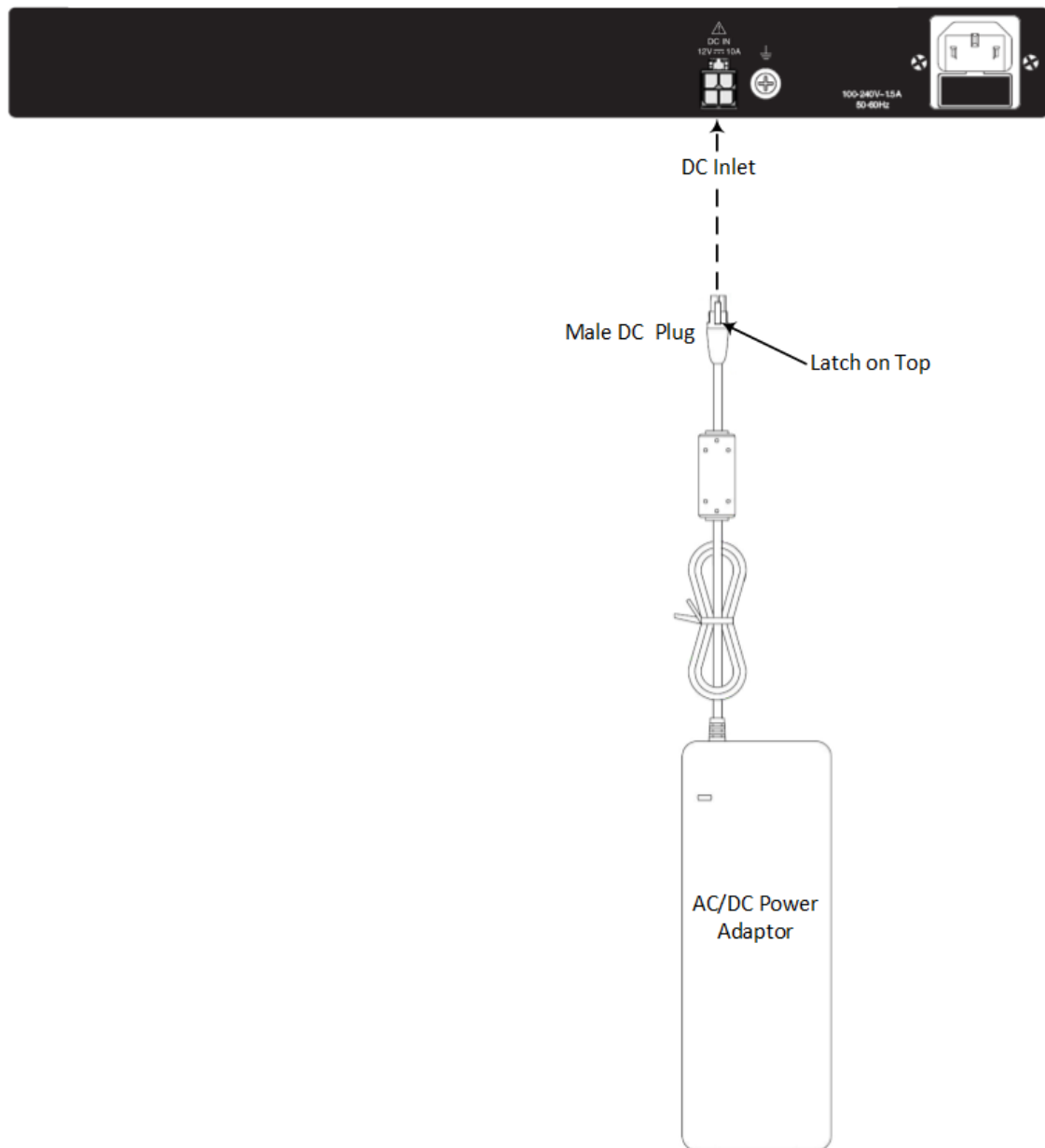
Physical Specification	Value
Input Voltage	12VDC / 10A



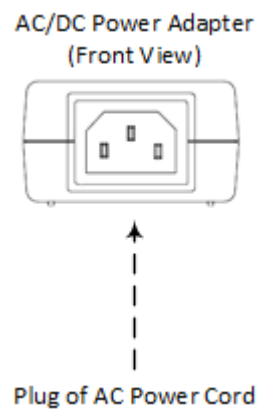
Use only the AC/DC power adaptor that is provided by AudioCodes when ordering DC power.

➤ To connect the device for DC power:

1. Insert the male DC plug into the DC inlet connector located on the device's rear panel. When inserting the DC plug, make sure that the latch faces up (see following figure). Make sure that the latch snaps into the inlet, indicating that the terminal block has been firmly plugged in.

Table 5-5: Connecting DC Power Plug to DC Inlet

2. Plug the female connector that is located on one end of the AC power cord (supplied), into the AC/DC power adaptor.

Figure 5-19: Plugging AC Power Cord into AC/DC Adaptor

3. Plug the other end of the AC power cord (supplied) into a standard electrical wall outlet. The device's DC PWR LED, located on the front panel, lights up green.

6 Maintenance

This section describes hardware maintenance.

Replacing the Power Fuse

The device contains a fuse that protects the device from excessive AC current. The fuse is located on the rear panel, below the power socket. To replace the fuse, use only one of the following fuses described in the following table:

Table 6-1: Allowed Fuses for the Device

Manufacturer	Manufacturer Part Number
LITTEFUSE	215 06.3 (6.3A/250V)



For continuous protection, replace only with the same fuse type and rating fuse.



The power fuse is applicable only to AC power.

➤ To replace the fuse:

1. Unplug the power cord from the electrical outlet.
2. Using a small flathead screwdriver, gently pries open the fuse cavity as illustrated in the following figure:

Table 6-2: Opening the Fuse Cavity



3. Carefully remove the fuse from the fuse cavity.

Table 6-3: Removed Power Fuse

4. Insert the new fuse securely into the fuse cavity until you hear a click sound.
5. Reconnect the power cord and verify that the power LED is lit green.

Replacing a Faulty Device

If you need to replace a faulty device, for whatever reason, with a new device having the same hardware configuration, follow the below procedure:

➤ To replace a faulty device:

1. Make sure that you have a new License Key for the device. If not, ask your AudioCodes sales representative for the License Key.
2. Disconnect the faulty device from your power supply, and then unplug all cables connected to it.
3. Plug all the relevant cables into the new device, and then power it up.
4. From your local computer, access the device's Web interface with the device's default IP address (192.168.0.2/24), through GE Port 1.

the rear pane

5. Load the software file (.cmp) to the device. If you don't have the file, ask your AudioCodes sales representative for it.
6. Load the License Key file to the device.
7. **Standalone** device: Load your backup (saved) Configuration Package file or individual files (e.g., ini file, certificate files, Dial Plan file, and CPT file), if you have, to the device.
HA device: Load only the ini file (the other files are transferred to the device from the active device when you connect it to the network - see below).
8. **Standalone** device: Check that the required certificate is installed on the device (TLS Context). If not, load it.
9. Disconnect your computer from the device, and then connect the device's Ethernet port to your network. If the device is part of an HA system, it synchronizes with the active device (and obtains all the configuration files etc. from it).
10. Verify that the device is operating correctly (e.g., alarms are cleared and call traffic is being routed) and that it is successfully communicating with third-party equipment (e.g., monitoring system, billing system, or routing system), if relevant.

11. If the device is monitored by OVOC, access the OVOC web-based management interface, remove the device from the OVOC topology, and then re-add it.

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