

**MediaPack 516 (MP-516)**

**MediaPack 524 (MP-524)**

**MediaPack 532 (MP-532)**



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## Table of Contents

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<b>Notice.....</b>	<b>iv</b>
Security Vulnerabilities .....	iv
WEEE EU Directive .....	iv
Customer Support.....	iv
Stay in the Loop with AudioCodes.....	iv
Abbreviations and Terminology .....	iv
General Notes and Warnings.....	v
Safety Precautions .....	v
Related Documentation.....	v
Document Revision Record .....	vi
Documentation Feedback.....	vi
<b>1 Introduction.....</b>	<b>7</b>
<b>2 Unpacking the Device .....</b>	<b>8</b>
<b>3 Physical Description .....</b>	<b>9</b>
3.1 Physical Dimensions and Operating Environment .....	9
3.2 Front Panel Description .....	9
3.2.1 POWER LED Description .....	10
3.2.2 STATUS LED Description .....	10
3.2.3 AC LED Description .....	10
3.2.4 DC LED Description .....	10
3.2.5 FXS LEDs Description .....	11
3.2.6 LAN LED Description .....	11
3.3 Rear Panel Description .....	12
3.3.1 WAN LED Description .....	12
<b>4 Mounting the Device .....</b>	<b>13</b>
4.1 Desktop / Shelf Mounting .....	13
4.2 19-Inch Rack Mounting .....	13
<b>5 Cabling the Device.....</b>	<b>17</b>
5.1 Grounding and Surge Protection.....	17
5.2 Connecting LAN Interface.....	19
5.3 Connecting WAN Interfaces .....	20
5.4 Connecting FXS Analog Interfaces.....	21
5.4.1 Connecting FXS Interfaces using RJ-11 Ports.....	21
5.4.2 Connecting FXS Interfaces using 50-Pin D-Sub Connector .....	22
5.4.2.1 Connecting FXS Interfaces using AudioCodes FXS Patch Panel .....	25
5.4.2.2 Connecting FXS Interfaces using 50-Pin D-Sub to Open Leads Cable .....	28
5.5 Connecting a USB Device.....	30

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5.6	Connecting Serial Interface .....	31
5.7	Connecting Power .....	33
5.7.1	Connecting to AC Power.....	33
5.7.2	Connecting to DC Power .....	35

## Notice

Information contained in this document is believed to be accurate and reliable at the time of printing. However, due to ongoing product improvements and revisions, AudioCodes cannot guarantee accuracy of printed material after the Date Published nor can it accept responsibility for errors or omissions. Updates to this document can be downloaded from <https://www.audiocodes.com/library/technical-documents>.

This document is subject to change without notice.

Date Published: July-09-2025

## Security Vulnerabilities

All security vulnerabilities should be reported to [vulnerability@audiocodes.com](mailto:vulnerability@audiocodes.com).

## WEEE EU Directive



Pursuant to the WEEE EU Directive, electronic and electrical waste must not be disposed of with unsorted waste. Please contact your local recycling authority for disposal of this product.

## Customer Support

Customer technical support and services are provided by AudioCodes or by an authorized AudioCodes Service Partner. For more information on how to buy technical support for AudioCodes products and for contact information, please visit our website at <https://www.audiocodes.com/services-support/maintenance-and-support>

## Stay in the Loop with AudioCodes



## Abbreviations and Terminology

Each abbreviation, unless widely used, is spelled out in full when first used.

Throughout this manual, unless otherwise specified, the term *device* refers to the MediaPack 516 (MP-516), MediaPack 524 (MP-524), and MediaPack 532 (MP-532) analog voice gateway.

## General Notes and Warnings



The device must be installed only **indoors**.



**Warning:** To power off the unit, disconnect both AC and DC power cords before service.



IEC 60417-6042 (2010-11)



IEC 60417-6172 (2012-09)



The device must be installed only in a restricted access location that is compliant with ETS 300 253 guidelines where equipotential bonding has been implemented.



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

## Safety Precautions

- Do not open or dismantle the device.
- Do not expose the device to water or moisture.
- Make sure the device is installed in a well-ventilated location to avoid overheating of internal components and subsequent damage.
- Make sure that sufficient clearance from the front and rear sides is maintained to ensure proper airflow to avoid overheating of internal components.
- Operate the device in an ambient temperature (Ta) that does not exceed 40°C (104°F).



**Warning:** In case of a malfunction, do not attempt to fix the power adapter and do not use any other type of power adapter.

## Related Documentation

Document Name
<a href="#">MediaPack 5xx User's Manual Ver. 7.2</a>
<a href="#">MSBR and MediaPack 5xx Series CLI Reference Guide Ver. 7.2</a>
<a href="#">MSBR and MediaPack 5xx Series Release Notes Ver. 7.2</a>

## Document Revision Record

LTRT	Description
11421	RJ-11 connector pinouts for FXS
10619	DC power wiring updated
10618	Power label updated
10617	Note for grounding negative (-) of DC power supply
10616	MP-516 added; FXS cabling using RJ-11 ports for MP-516 and MP-524
10615	Initial document release.

## Documentation Feedback

AudioCodes continually strives to produce high quality documentation. If you have any comments (suggestions or errors) regarding this document, please fill out the Documentation Feedback form on our website at <https://online.audiocodes.com/documentation-feedback>.

# 1 Introduction

This document provides a hardware description of the device and step-by-step procedures for mounting and cabling the device.

The device provides the following interfaces:

- 2 x Gigabit Ethernet (10/100/1000Base-T) copper WAN port interfaces (RJ-45)
- 1 x Gigabit Ethernet (1000Base-T) LAN port interface (RJ-45)
- FXS telephony interfaces:
  - **MP-516 model:** 16 x RJ-11 ports, providing 1-16 FXS port interfaces.
  - **MP-524 model:**
    - ◆ 1 x 50-pin D-Sub connector, providing 1-24 FXS port interfaces.
    - Or -
    - ◆ 24 x RJ-11 ports, providing 1-24 FXS port interfaces.
  - **MP-532 model:** 2 x 50-pin D-Sub connectors, providing 1-24 and 25-32 FXS port interfaces, respectively.
- 1 x Serial console port (RJ-45) for device management
- 1 x USB Type-A for storage

## 2 Unpacking the Device

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

### To unpack the device:

1. Open the carton and carefully 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
  - 2 x front-mounting brackets for 19-inch rack mounting
  - Coupling nuts for 50-pin D-Sub connector(s):
    - ◆ MP-532: x 4 (2 per connector)
    - ◆ MP-524: x 2
  - 1 x DC terminal block
  - 1 x AC power cable



## 3 Physical Description

This section provides a physical description of the device.

### 3.1 Physical Dimensions and Operating Environment

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

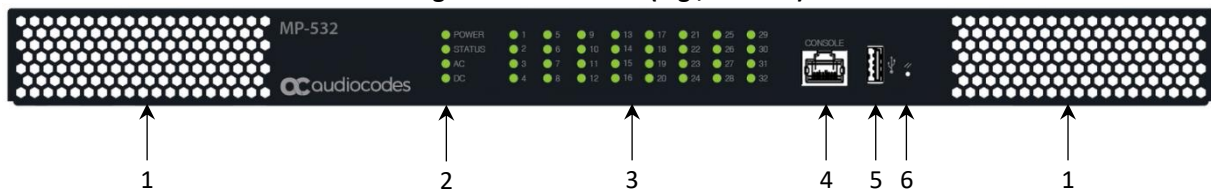
**Table 1: Physical Dimensions and Operating Environment**


Specification	Value
<b>Dimensions (W x H x D)</b>	443 mm x 1U (44.45 mm) x 288 mm (17.44 x 1.75 x 11.34 in.)
<b>Weight</b>	2.34 kg (5.16 lbs.)
<b>Operating Environment</b>	<ul style="list-style-type: none"> <li>■ Operational: 0 to 40°C (32 to 104°F)</li> <li>■ Storage: -40 to 70°C (-40 to 158°F)</li> <li>■ Relative Humidity: 5 to 95% non-condensing</li> </ul>

### 3.2 Front Panel Description

The front panel provides LEDs for indicating the status of various functionalities. The LEDs are shown in the figure below and described in the subsequent tables.

**Figure 1: Front Panel (e.g., MP-532)**



- |   |   |  |
|---|---|--|
| 1 | -   | Air openings   |
| 2 | <b>POWER / STATUS / AC / DC</b>   | LEDs indicating status of the following: <ul style="list-style-type: none"> <li>■ Power (see POWER LED Description)</li> <li>■ Status (see STATUS LED Description)</li> <li>■ AC (see AC LED Description)</li> <li>■ DC (see DC LED Description)</li> </ul>  |
| 3 | <b>1-16 (MP-516)<br/>1-24 (MP-524)<br/>1-32 (MP-532)</b>                            | LEDs indicating the status of the FXS ports (see FXS LEDs Description).  |
| 4 | <b>CONSOLE</b>  | Console port (RJ-45) for RS-232 serial communication with the device.  |
| 5 |  | USB 3.0 Type-A port interface for storage capabilities to a third-party, external USB storage device.  |
| 6 | <b>//</b>   | Reset pinhole button. Use a paper clip or any other similar pointed object to press the button: <ul style="list-style-type: none"> <li>■ Short press (less than 15 sec.): Resets the device.</li> <li>■ Pressing for more than 15 sec, but less than 30 sec: Restores the device to factory default.</li> <li>■ Pressing for longer than 30 sec: Device enters Rescue mode, where it attempts to download a new firmware file (.cmp). You should avoid this mode, unless done by qualified personnel.</li> </ul> |

### 3.2.1 POWER LED Description

The **POWER** LED on the front panel indicates the device's power status.

**Table 2: POWER LED Description**

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

### 3.2.2 STATUS LED Description

The **STATUS** LED on the front panel indicates the operating status of the device.

**Table 3: STATUS LED Description**

LED Color	LED State	Description
Green	On	Device is operational.
	Flashing	<ul style="list-style-type: none"> <li>Initial rebooting stage.</li> <li>Software upgrade (.cmp file) in process.</li> </ul>
Red	On	Boot failure.
-	Off	Advanced rebooting stage or no power.

### 3.2.3 AC LED Description

The **AC** LED on the front panel indicates the status of the AC power supply.

**Table 4: AC LED Description**

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

### 3.2.4 DC LED Description

The **DC** LED on the front panel indicates the status of the DC power supply.

**Table 5: DC LED Description**

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

### 3.2.5 FXS LEDs Description

The front panel provides LEDs for indicating the status of the FXS interfaces.

**Table 6: LED Description of FXS Ports**

LED Color	LED State	Description
Green	On	Phone is in off-hook state.
Red	On	<ul style="list-style-type: none"><li>■ Port malfunction.</li><li>■ Port disabled (using CLI command <code>analog-port-enable</code>)</li></ul>
-	Off	Phone is in on-hook state (or power not received by device).

### 3.2.6 LAN LED Description

The LAN port on the front panel provides a LED for indicating the status of the LAN interface.

**Table 7: LED Description of LAN Port**

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

### 3.3 Rear Panel Description

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

Figure 2: Rear Panel with RJ-11 Ports (e.g., MP-516)

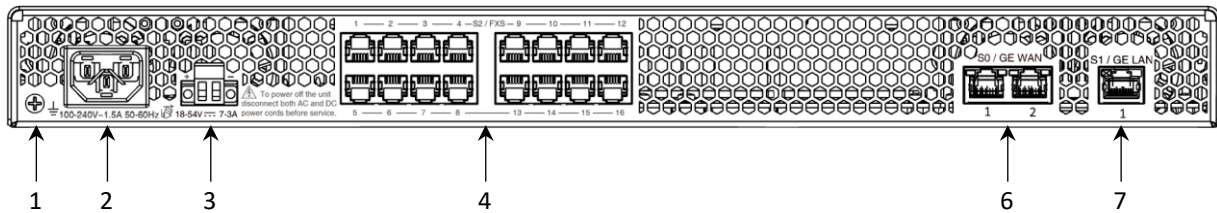
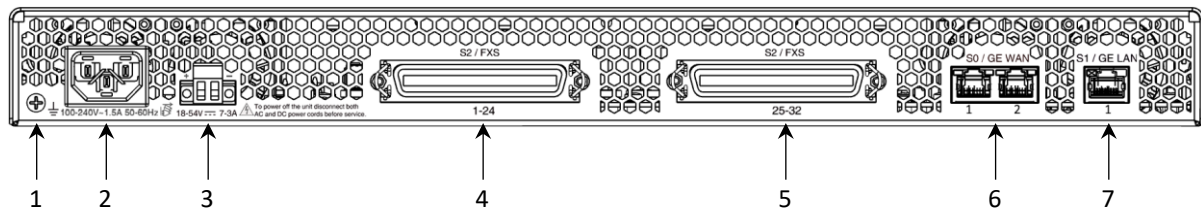



Figure 3: Rear Panel with 50-Pin D-Sub Connectors (e.g., MP-532)



- |   |   |  |
|---|---|--|
| 1 |  | Protective earthing (grounding) screw.   |
| 2 | 100-240V~1.5A 50-60Hz   | AC power inlet.  |
| 3 | 18-54V 7-3A   | DC power input.  |
| 4 | S2 / FXS  | Port interface depends on MP-5xx model: <ul style="list-style-type: none"> <li>■ <b>MP-524/MP-532:</b> 50-Pin D-Sub female connector for FXS ports 1-24.</li> <li>■ <b>MP-516/MP-524:</b> 16/24 RJ-11 ports for FXS ports 1-16/1-24, respectively.</li> </ul> <b>Note:</b> MP-524 can be ordered with D-Sub connectors or RJ-11 ports. |
| 5 | S2 / FXS  | 50-Pin D-Sub female connector for FXS ports 25-32.<br><b>Note:</b> This connector is available only on MP-532.   |
| 6 | S0 / GE WAN   | Two Gigabit Ethernet (GbE) ports (RJ-45) for WAN copper interfaces.  |
| 7 | S1 / GE LAN   | GbE (10/100/1000Base-T) port (RJ-45) for LAN interface.  |

#### 3.3.1 WAN LED Description

The WAN ports on the rear panel provide LEDs that indicate the status of the WAN interface.

Table 8: WAN Port LED Description

LED Color	LED State	Description
Green	On	WAN GE link established.
	Flashing	Data is being received or transmitted.
-	Off	No WAN GE link or power not received by the device.

## 4 Mounting the Device

You can mount the device using one of the following methods:

- Desktop/shelf mounting
- 19-inch Rack mounting



The device must be installed only in a restricted access location that is compliant with ETS 300 253 guidelines where equipotential bonding has been implemented.

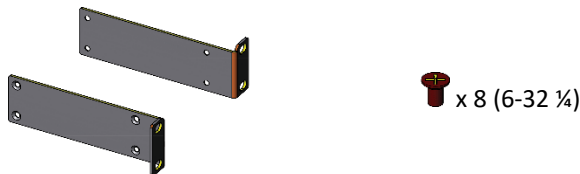
### 4.1 Desktop / Shelf Mounting

Place the device on a desktop/shelf using the four anti-slide bumpers (supplied), which you need to stick on the grooves located on the underside of the device. The bumpers avoid involuntary movement of the unit on the desktop/shelf.

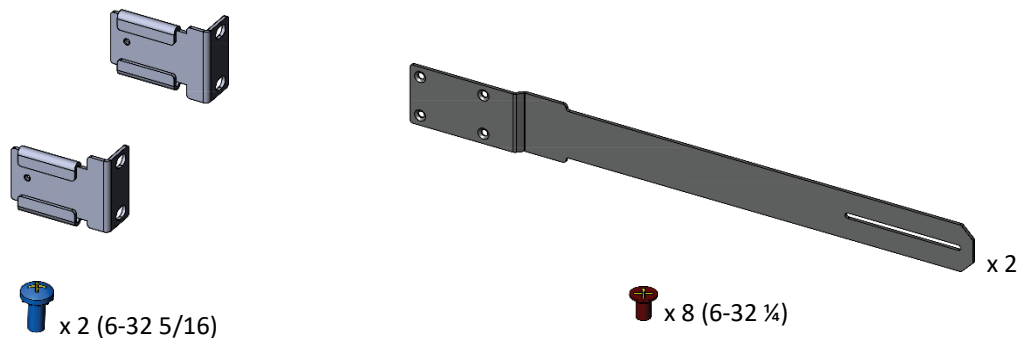
### 4.2 19-Inch Rack Mounting

You can mount the device in a standard 19-inch rack. This is done by using front-mounting brackets (supplied) and rear-mounting kit (not supplied). The length of the rear-mounting brackets can be adjusted to suit the distance between the device and the rear rack post.

- **Front-mounting brackets (supplied):**



- **Rear-mounting kit / brackets (not supplied – orderable):**



#### Warning:

- **Elevated Operating Ambient:** If installed in a closed or multi-unit rack assembly, consideration should be given to installing the equipment in an environment compatible with the maximum ambient temperature (Tmax) of 40°C (104°F).
- **Reduced Air Flow:** Installation should be such that the amount of air flow required for safe operation on the equipment is not compromised. Do not stack equipment one on top of the other and keep the ventilation openings on the front and rear panels free from cables or any objects to allow free air flow.
- Only one device can be mounted per rack mount shelf.

- The minimum vertical rack space for mounting the device in a 19-inch rack must be 2Us (3.5 in. or 88.9 mm).

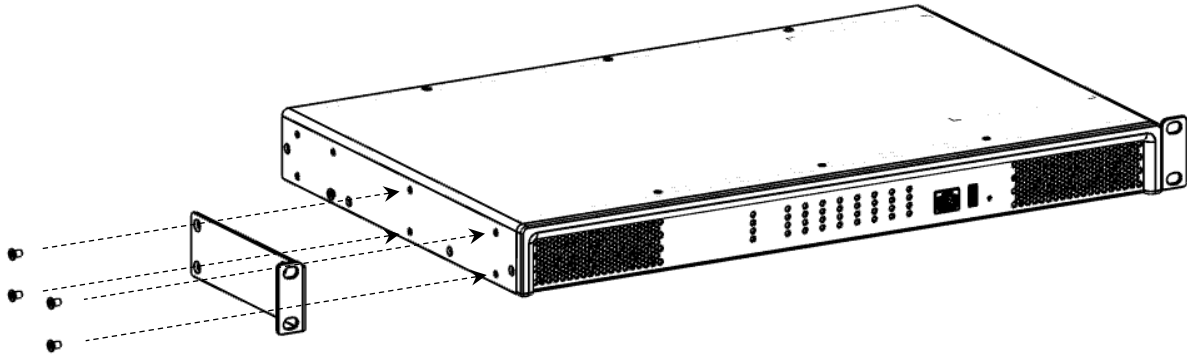


At least two people are required to mount the device in the 19-inch rack.

**To mount device in 19-inch rack:**

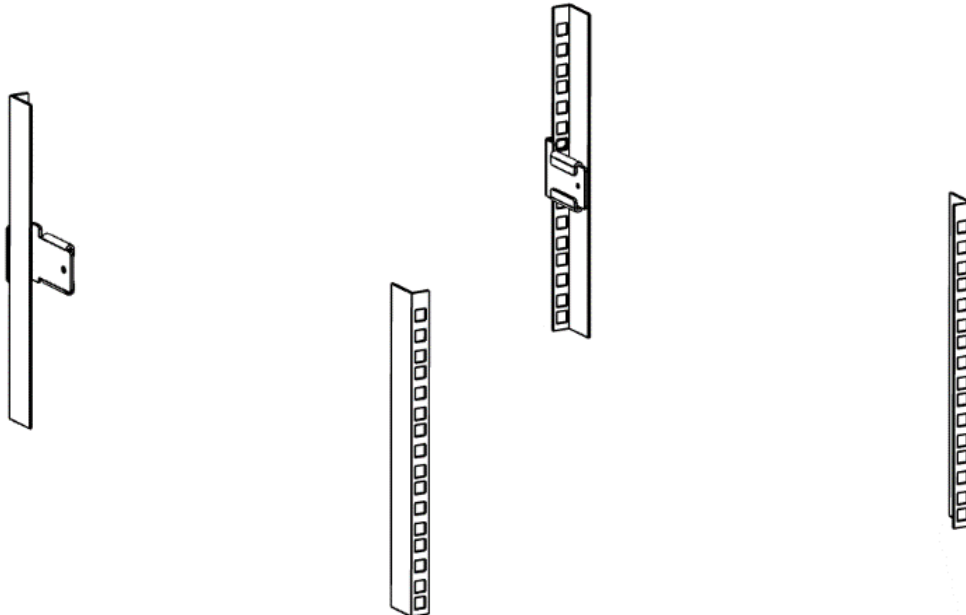
1. Attach the left and right front-mounting brackets to the chassis, as shown below:

**Figure 4: Attaching Left and Right Front-Mounting Brackets**



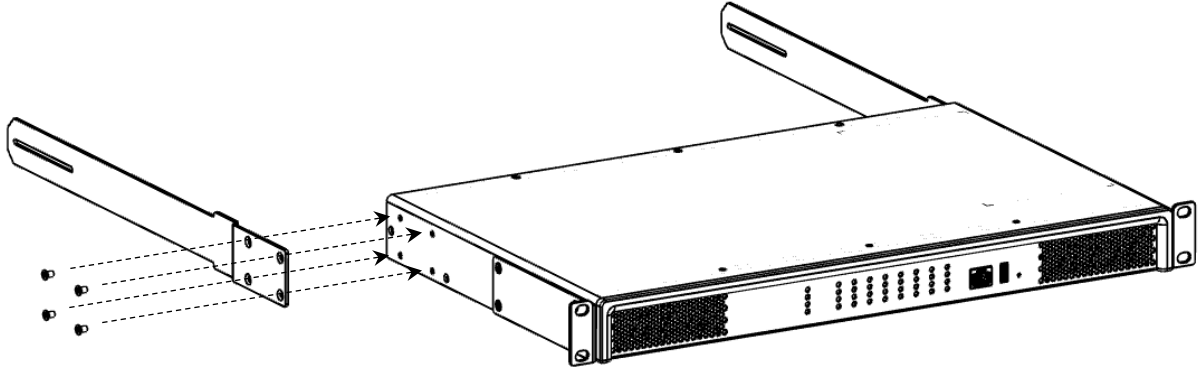
2. Attach the two rear-mounting brackets to the two-rear rack posts, using two screws per bracket. Make sure that you attach the brackets at the same height level in the rack. See the figure below for correct orientation of the brackets when attaching them to the posts.

**Figure 4-5: Attaching Rear-Mounting Brackets to Rear-Rack Posts**



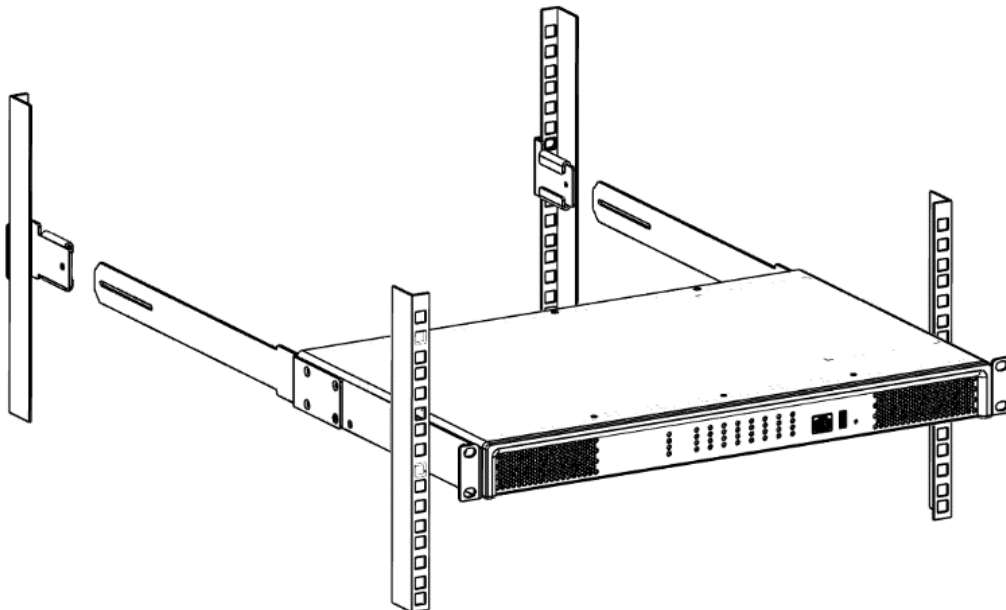
3. Attach the rear-mounting flanges to the rear sides of the chassis, using the screws.

**Figure 4-6: Attaching Rear-Mounting Flange to Chassis Rear-Side Mounting Holes**



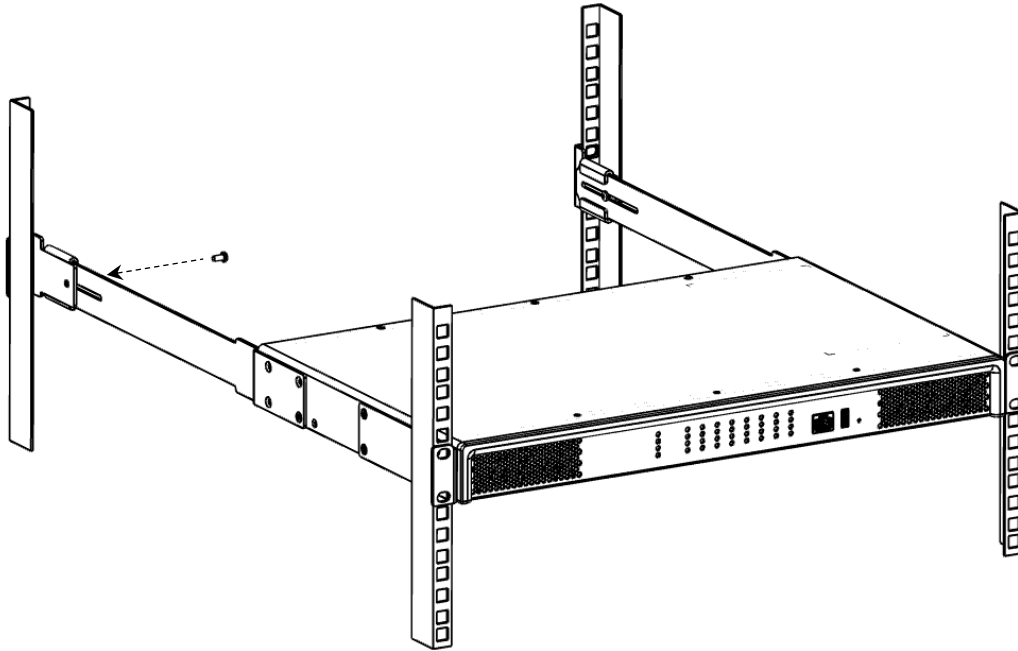
4. With two people, lift the chassis into the rack from the front of the rack.
5. Slide the two rear-mounting bracket flanges into the slide rails of the rear-mounting brackets that you previously attached to the rear posts.

**Figure 4-7: Sliding Rear-Mounting Flanges into Rear-Mounting Brackets**



6. Hold the chassis in position while the second person secures the rear-mounting flanges to the rear-mounting brackets. Insert the screws from the inside of the rack, through the flange's grid and into the screw hole on the rear-mounting bracket. Finger-tighten the screws but make sure that the screws are **NOT fully tightened** and that the flange can freely move on the slide rails of the rear-mounting bracket.

**Figure 4-8: Fastening Rear-Mounting Flange to Rear-Mounting Bracket**



7. Hold the chassis for support while the second person positions the chassis so that the front-mounting brackets are flush against the front-rack posts and that the holes of the front-mounting brackets align with the holes on the front-rack posts. Secure the two front-mounting brackets to the front posts, by finger-tightening 19-inch rack bolts (not supplied) to the rack posts.
8. Tighten the bolts on the front-mounting brackets.
9. With a Philips screwdriver, tighten the screws securing the rear-mounting flanges to the rear-mounting brackets.



- Make sure that all the mounting brackets are attached at the same level to the mounting posts so that the chassis is supported in a horizontal position.
- If the depth of the rack exceeds the maximum length of the adjustable rear-mounting brackets, install an additional side rack post to accommodate the length of the Rear-Mounting Bracket



## 5 Cabling the Device

This chapter describes device cabling.

### 5.1 Grounding and Surge Protection



#### 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.

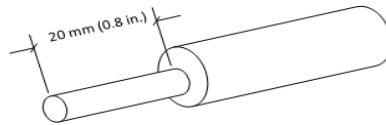


#### Grounding and Power Surge Protection

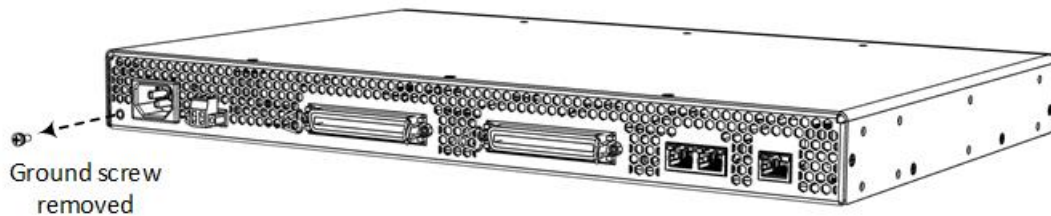
- The device must be installed only in telecommunication sites / centers in compliance with ETS 300-253 requirements "Earthing and Bonding of Telecommunication Equipment in Telecommunication Centers".
- Prior to installation, earth loop impedance test must be performed by a certified electrician to ensure 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. 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 mm<sup>2</sup> 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 mm<sup>2</sup>. The length of this cable must be as short as possible (no longer than 3 meters).
- 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 connect device to an earth ground:**

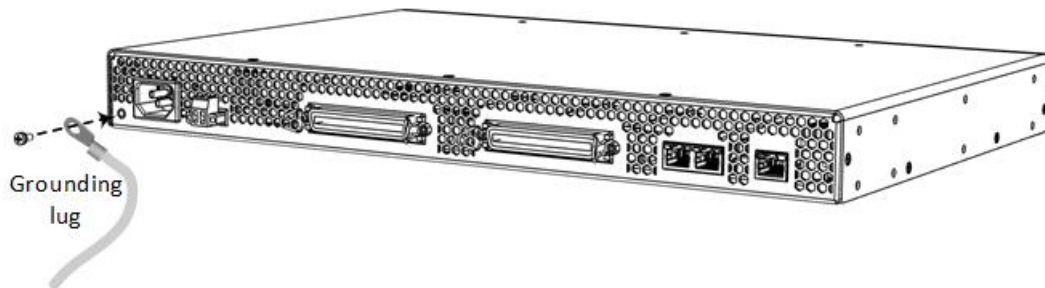
1. Prepare an adequate length (maximum 20 mm or 0.8 in.) of stranded grounding wire (16 AWG minimum size) for the ground connection, as shown in the following figure:

**Figure 9: Stripped Grounding Wire**

2. Using a Philips-head screwdriver, remove the ground screw located on the rear panel, as shown below:

**Figure 10: Removing Ground Screw (e.g., MP-532)**

3. Insert one end of the grounding wire into the grounding lug, and then use a crimping tool (not supplied) to secure the wire to the grounding lug.
4. Attach the grounding lug to the chassis using the grounding screw.

**Figure 11: Attaching Grounding Lug to Chassis with Grounding Screw (e.g., MP-532)**

5. Connect the other end of the grounding wire to the building protective earth. This should be in accordance with the regulations enforced in the country in which the device is installed.

## 5.2 Connecting LAN Interface

The device provides a single Gigabit Ethernet (100/1000Base-T) port for connecting to the IP network (e.g., LAN).

Cabling specifications:

- **Cable:** Straight-through, Category (Cat) 5/5e/6 cable
- **Connector:** Standard RJ-45
- **Connector Pinouts:**

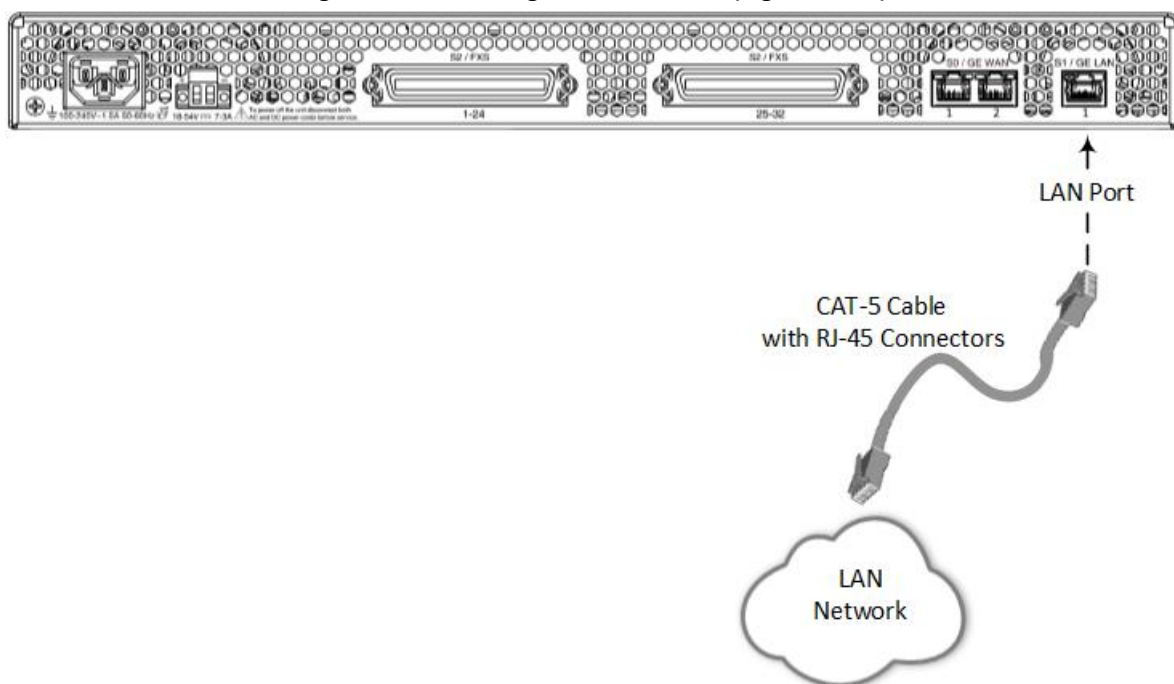
**Table 9: RJ-45 Connector Pinouts for Ethernet Port**

Pin	Signal Name
1	Ethernet signal pair
2	
3	Ethernet signal pair
6	
4	Ethernet signal pair
5	
7	Ethernet signal pair
8	
Shield	Chassis ground

**To connect to LAN interface:**

1. Connect the RJ-45 connector at one end of the straight-through Ethernet cable to the Ethernet port labeled **S1 / GE LAN**, located on the rear panel:

**Figure 12: Connecting to LAN Interface (e.g., MP-532)**



2. Connect the other end of the Ethernet cable to your LAN network.

## 5.3 Connecting WAN Interfaces

The device provides two copper Gigabit Ethernet (GbE) port interfaces (10/100/1000Base-T).



Currently, only Port #1 can be used (Gigabit Ethernet 0/0). Port #2 will be enabled in a future software release (which will provide WAN active-standby redundancy).

Cable specification:

- **Cable:** straight-through Ethernet cable
- **Connector:** RJ-45
- **Connector Pinouts:**

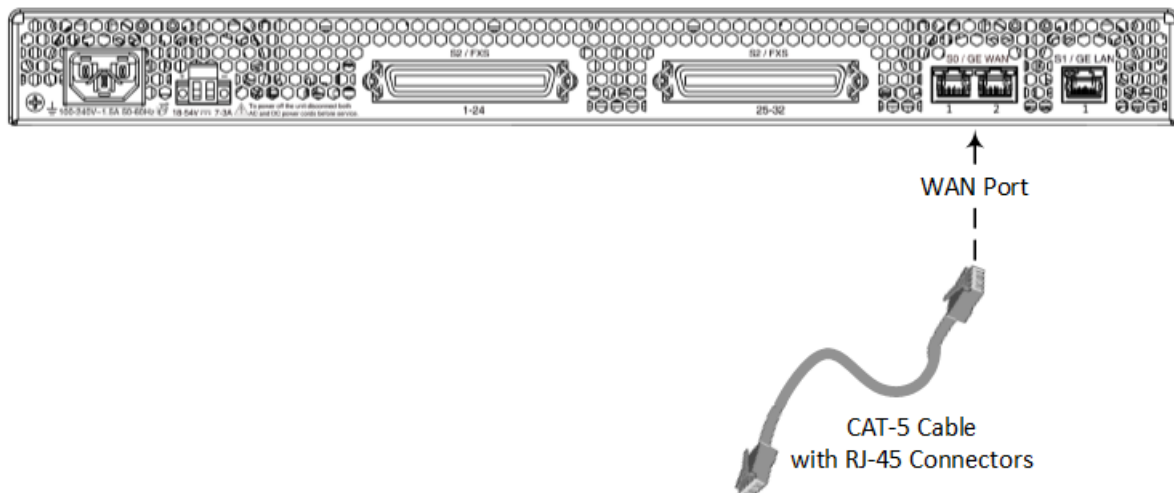
**Table 10: RJ-45 Connector Pinouts for Copper GbE WAN**

Pin	Signal Name
1	Ethernet signal pair
2	
3	Ethernet signal pair
6	
4	Ethernet signal pair
5	
7	Ethernet signal pair
8	

**To connect device to WAN:**

1. Connect one end of a straight-through RJ-45 Ethernet cable to one of the RJ-45 ports labeled **S0 / WAN GE**, located on the rear panel.

**Figure 13: Connecting to WAN (e.g., MP-532)**



2. Connect the other end of the cable to the WAN network (e.g., ADSL or Cable modem).

## 5.4 Connecting FXS Analog Interfaces

Depending on MediaPack model, the device connects to FXS analog telephone equipment (e.g., fax machines, modems, or telephones) through the following FXS interfaces:

- **MP-516:** 16 x RJ-11 ports
- **MP-524:** 24 x RJ-11 ports or 1 x 50-Pin D-Sub female connector (depending on ordered hardware)
- **MP-532:** 2 x 50-Pin D-Sub female connectors for FXS ports 1-24 and 25-32, respectively.

### 5.4.1 Connecting FXS Interfaces using RJ-11 Ports

This section describes how to connect the device to FXS equipment using the RJ-11 ports.



This section is applicable only to MP-516, and to MP-524 when ordered with RJ-11 ports.



#### FXS Outdoor Cabling and Power Surge Protection

- FXS port interface cabling must be routed only indoors and must not exit the building.
- Make sure that you connect the FXS ports to appropriate external devices; otherwise, damage to the device may occur.
- FXS ports are considered TNV-2.

Cable specifications:

- **Cable:** Straight-through RJ-11-to-RJ-11 telephone cable
- **Connector Type:** RJ-11
- **Connector Pinouts:**

Figure 14: RJ-11 Connector Pinouts

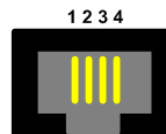
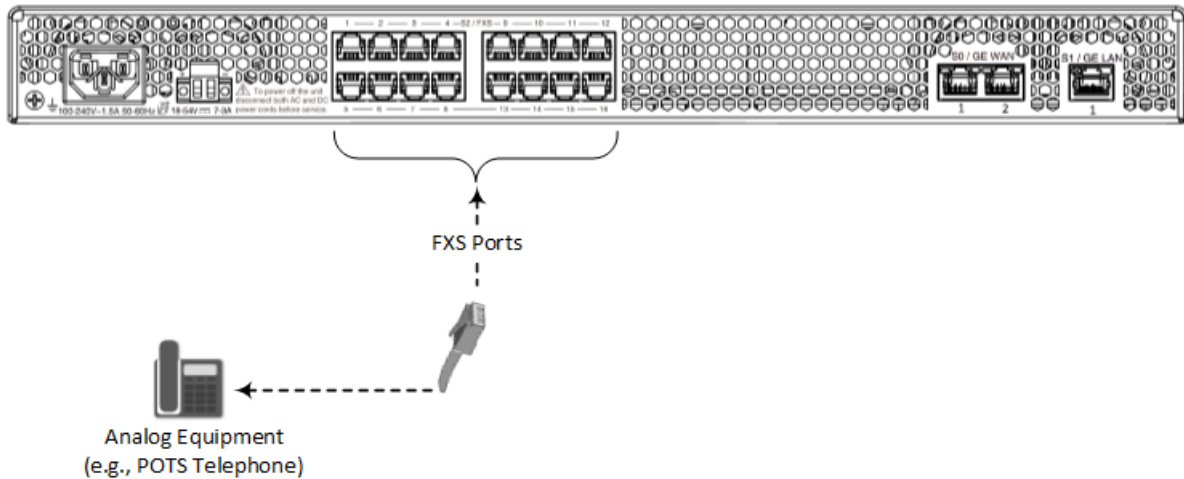


Table 11: RJ-11 Connector Pinouts

Pin	Description
1	Not connected
2	Ring
3	Tip
4	Not connected

#### To connect FXS interfaces:

1. Connect one end of an RJ-11 cable (not supplied) to one of the FXS ports (labeled **S2/FXS**).
2. Connect the other end of the cable to the telephone equipment (e.g., fax machine, dial-up modem, and analog POTS telephone).

**Figure 15: Connecting FXS Interfaces (e.g., MP-516)**

### 5.4.2 Connecting FXS Interfaces using 50-Pin D-Sub Connector

This section describes how to connect the device's 50-pin D-Sub connector(s) to FXS equipment.



- This section is applicable only to MP-524 (if ordered with the D-Sub connector) and MP-532.
- Make sure that you connect the FXS ports to appropriate external devices; otherwise, damage to the device may occur.
- FXS ports are considered TNV-2.



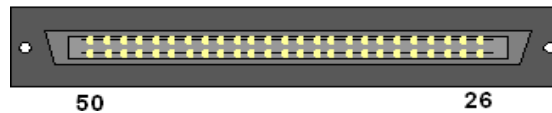
#### **FXS Outdoor Cabling and Power Surge Protection**

- The device includes an integrated secondary surge protection, but not a primary telecom protection! When the FXS 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 or 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.
- Failure to install primary surge protectors and failure to comply with the grounding instructions or any other installation instructions may cause permanent damage to the device.
- 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 FXS ports

FXS cabling specifications:

- **Cable:** You can use any of the following cables:
  - AudioCodes orderable FXS Patch Panel (see Connecting FXS Interfaces using AudioCodes FXS Patch Panel on the next page)
  - AudioCodes orderable 50-Pin D-Sub connector cable (10 m) to open leads, which needs to be connected to a distribution panel (see Connecting FXS Interfaces using Centronics Cable on page 28)
- **Connector Type:** 50-Pin D-Sub

**Figure 16: 50-Pin D-Sub Connector**  
Pin Numbers



- **Connector Pinouts:**

**Table 12: 50-Pin D-Sub Connector Pinouts**

50-Pin D-Sub Connector for FXS Ports 1-24		50-Pin D-Sub Connector for FXS Ports 25-32	
FXS Phone Channel (Ports)	Connector Pins	FXS Phone Channel (Ports)	Connector Pins
1	1/26	25	1/26
2	2/27	26	2/27
3	3/28	27	3/28
4	4/29	28	4/29
5	5/30	29	5/30
6	6/31	30	6/31
7	7/32	31	7/32
8	8/33	32	8/33
9	9/34	-	-
10	10/35	-	-
11	11/36	-	-
12	12/37	-	-
13	13/38	-	-
14	14/39	-	-
15	15/40	-	-
16	16/41	-	-
17	17/42	-	-
18	18/43	-	-
19	19/44	-	-
20	20/45	-	-
21	21/46	-	-

50-Pin D-Sub Connector for FXS Ports 1-24		50-Pin D-Sub Connector for FXS Ports 25-32	
FXS Phone Channel (Ports)	Connector Pins	FXS Phone Channel (Ports)	Connector Pins
22	22/47	-	-
23	23/48	-	-
24	24/49	-	-
25 (not used)	25/50	-	-

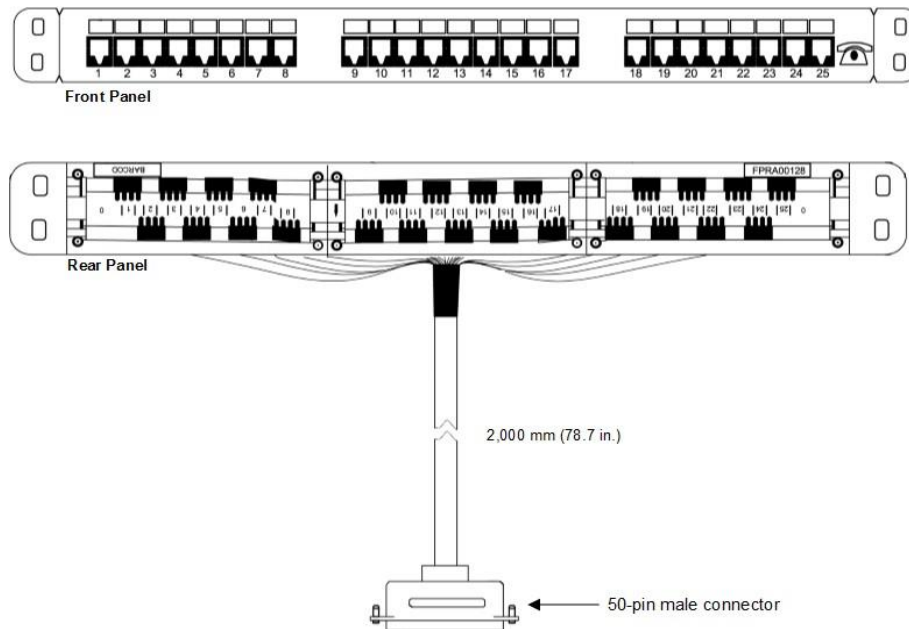


### 5.4.2.1 Connecting FXS Interfaces using AudioCodes FXS Patch Panel

You can purchase AudioCodes' 24-FXS ports patch panel to connect the FXS interfaces to your FXS equipment. The patch panel provides a 2-meter (78.7 in.) extension cable with a 50-Pin D-Sub male connector for connecting to the 50-Pin D-Sub connector on the device's rear panel. All incoming wires from the 50-Pin D-Sub connector are terminated to the back of the patch panel. The FXS endpoints (e.g., telephones) can be plugged into the corresponding RJ-11 jacks on the front of the patch panel.

You can mount the patch panel in a 19-inch rack, using the integrated mounting brackets.

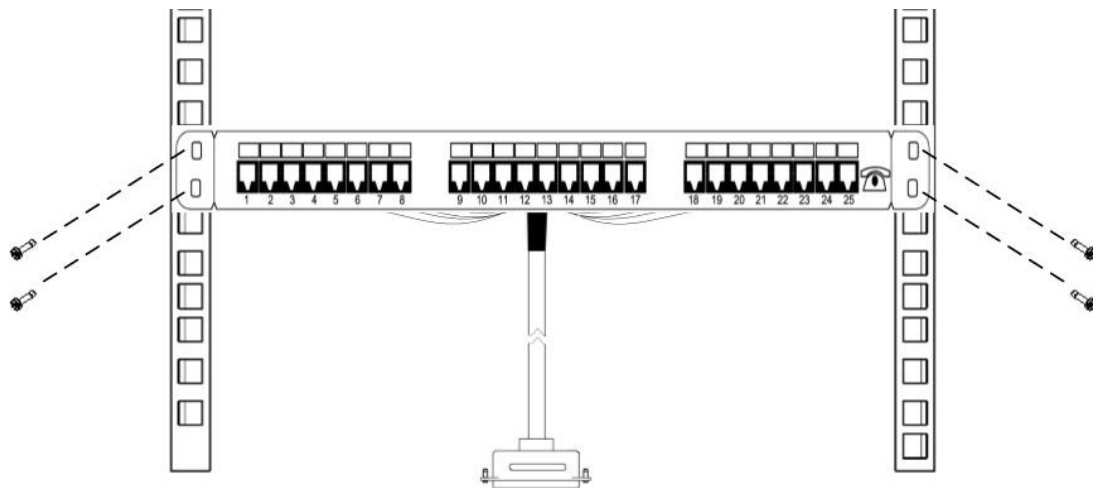
**Figure 17: Orderable AudioCodes FXS Patch Panel**



#### To connect FXS interfaces using AudioCodes FXS Patch Panel:

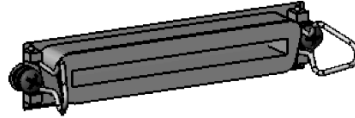
1. Mount the Patch Panel in a 19-inch rack, using the integrated mounting brackets, located on either side of the Patch Panel. Use four 19-inch rack bolts (not supplied) to securely attach the brackets to the front-rack posts. Make sure that the left and right mounting brackets are attached to the rack posts at the same level so that the patch panel is supported in a horizontal position.

**Figure 18: Mounting AudioCodes Patch Panel in Rack**



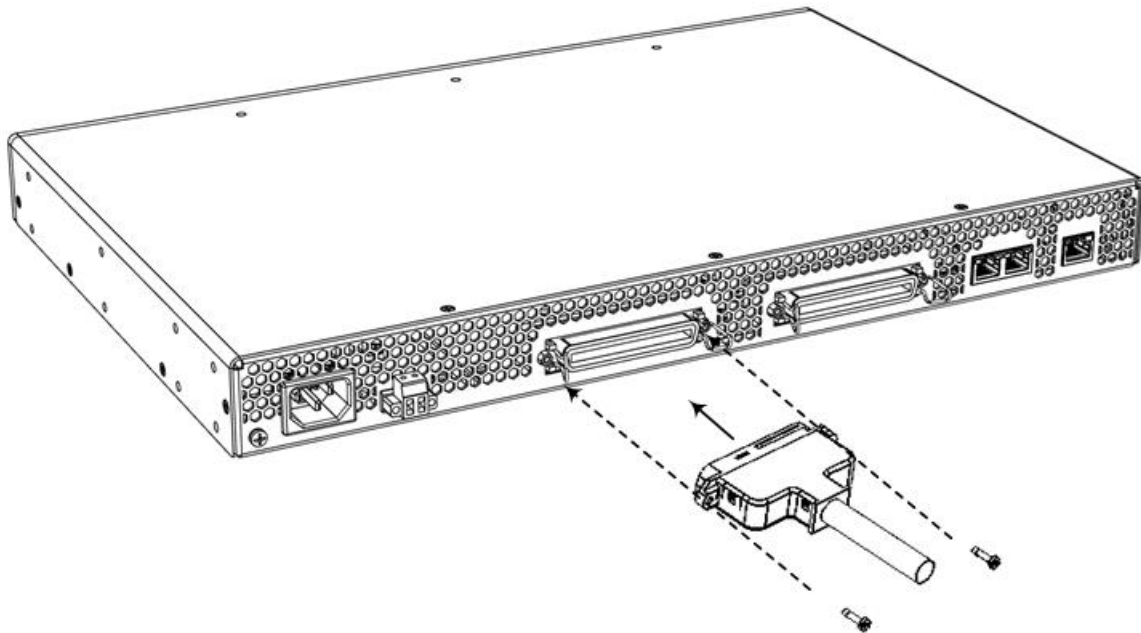
2. Connect the Patch Panel's 50-Pin D-Sub male connector to the device's 50-Pin D-Sub female connector, located on the rear panel. Depending on the connector, secure it to the device's connector using one of the following methods:
  - **Bail Locks:**
    - a. Flip the two bail locks, located on either side of the connector, outwards.
    - b. Plug the male connector into the device's female connector.
    - c. Flip the two bail locks inwards onto the male connector.

**Figure 19: Bail Locks on 50-Pin D-Sub Connector**



- **Coupling Nuts and Screws:**
  - a. Using a Philips-head screwdriver, remove the two screws that are located on either side of the connector.
  - b. Screw the coupling nuts (supplied) into the holes from where you removed the screws.
  - c. Plug the male connector into the device's female connector.
  - d. Secure the connector by screwing the male connector's captive screws to the coupling nuts.

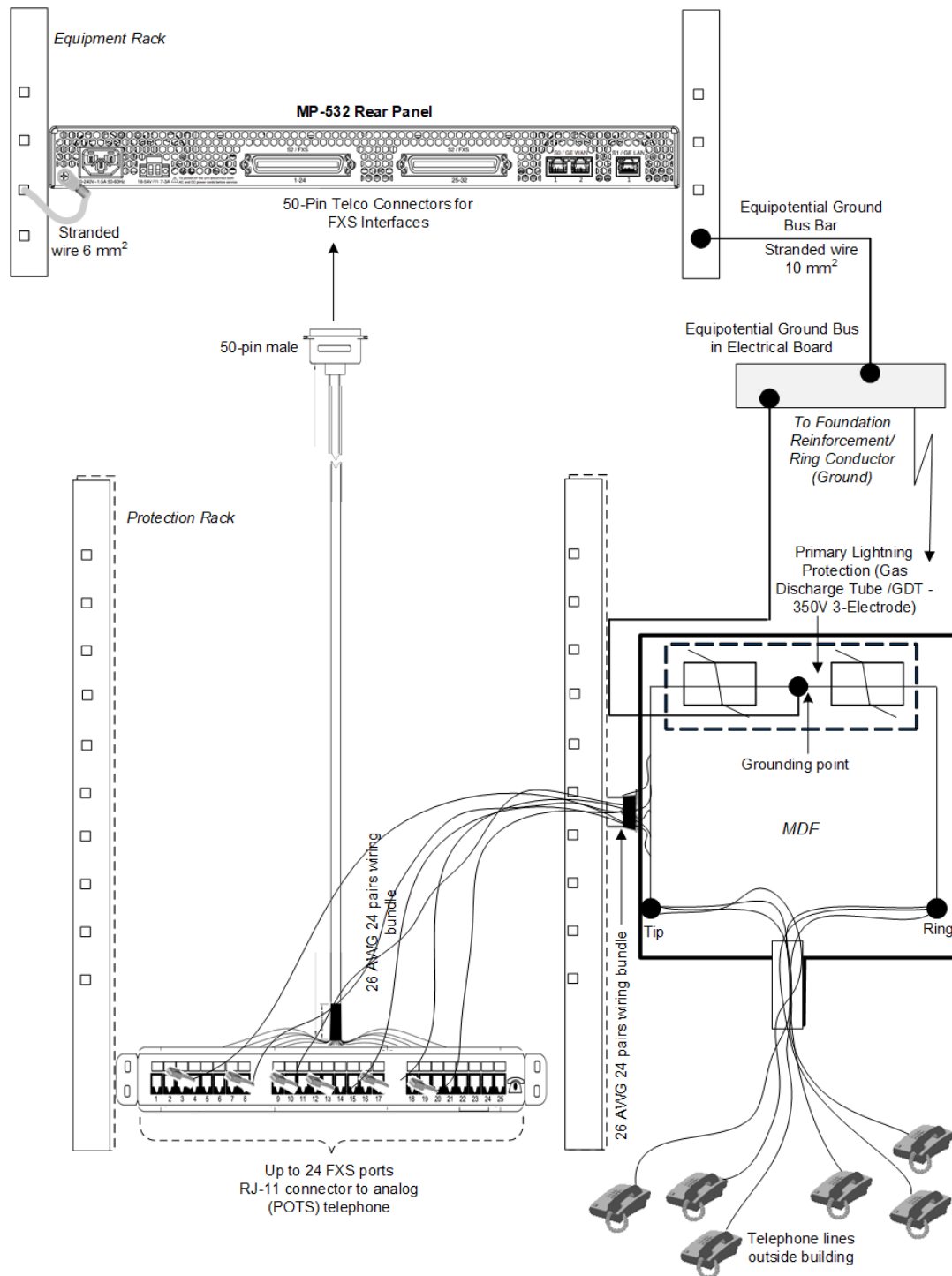
**Figure 20: Connecting Patch Panel to Device's 50-Pin D-Sub Connector (e.g., MP-532)**



3. Connect your analog equipment to the Patch Panel, by plugging the analog equipment's RJ-11 connectors into the RJ-11 sockets on the Patch Panel's front panel.

For outdoor FXS cabling installation, you **MUST** install additional power surge protection, as illustrated in the following figure. (For indoor FXS cabling installation, there is no need for primary lightning protection usage.)

**Figure 21: Connecting FXS Interfaces using FXS Patch Panel for Outdoor FXS Cabling (e.g., MP-532)**

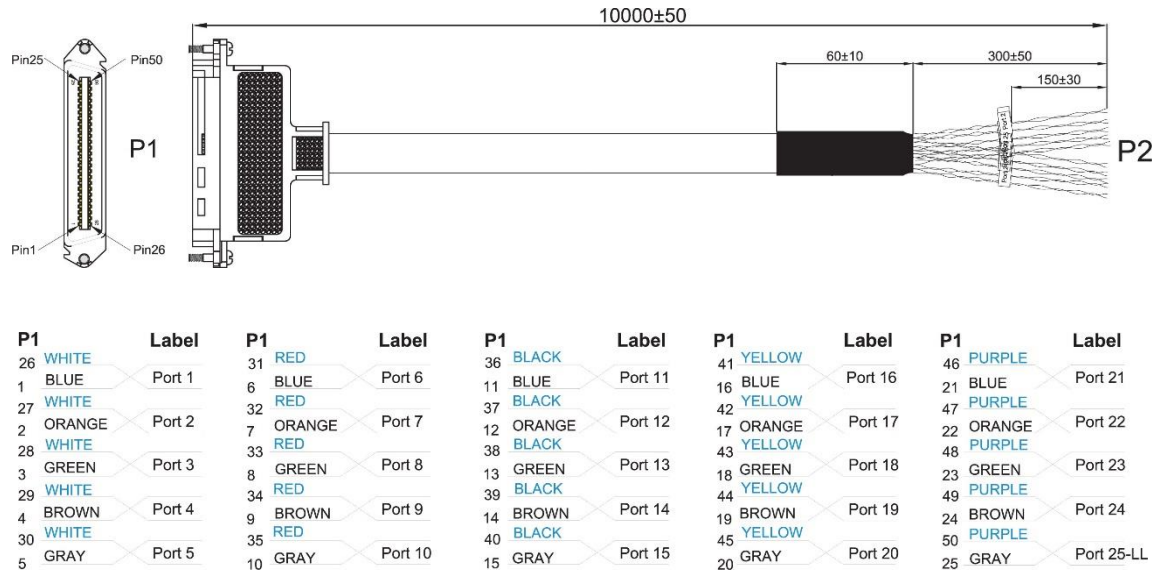


### 5.4.2.2 Connecting FXS Interfaces using 50-Pin D-Sub to Open Leads Cable

You can use a cable with a 50-Pin D-Sub connector on one end and open leads on the other end (separately ordered from AudioCodes), as shown in the following figure, to connect the FXS interfaces to FXS equipment.

The cable is 10 meters in length (32.8 ft.) and provides a 50-Pin D-Sub male connector on one end and open leads on the other end. The open leads need to be connected to your patch panel or distribution frame.

**Figure 22: AudioCodes 50-Pin D-Sub to Open Leads Cable and Pinouts**



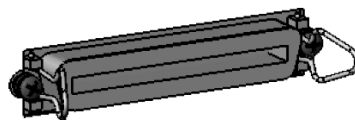
#### To connect FXS interfaces using 50-Pin D-Sub to open leads cable:

1. Connect the Patch Panel's 50-Pin D-Sub male connector to the device's 50-Pin D-Sub female connector, located on the rear panel. Depending on the connector, secure it to the device's connector using one of the following methods:

- **Bail Locks:**

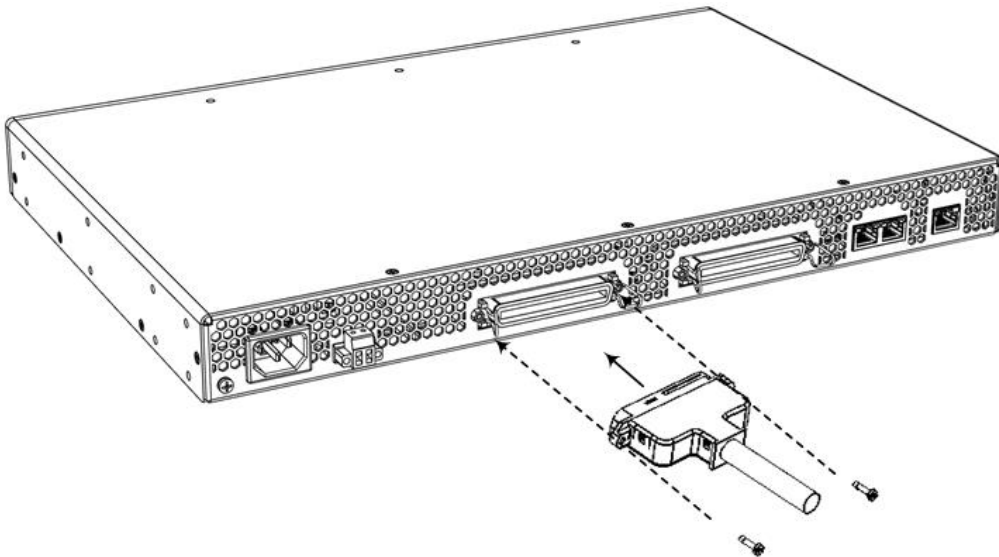
- a. Flip the two bail locks, located on either side of the connector, outwards.
- b. Plug the male connector into the device's female connector.
- c. Flip the two bail locks inwards onto the male connector.

**Figure 23: Bail Locks on 50-Pin D-Sub Connector**



- **Coupling Nuts and Screws:**

- a. Using a Philips-head screwdriver, remove the two screws that are located on either side of the connector.
- b. Screw the coupling nuts (supplied) into the holes from where you removed the screws.
- c. Plug the male connector into the device's female connector.
- d. Secure the connector by screwing the male connector's captive screws to the coupling nuts.

**Figure 24: Connecting 50-Pin D-Sub Connector (e.g., MP-532)**

2. Terminate the wires on the other end of the cable to your patch panel or distribution frame. The wires are grouped in pairs with labels that indicate the FXS channels. Make sure that you connect the wires according to the correct channels as labelled on the wires.
3. Connect your analog equipment to your patch panel or distribution frame, by plugging their RJ-11 connectors into the RJ-11 sockets on the patch panel or distribution frame.

## 5.5 Connecting a USB Device

The device supports USB storage capabilities using an external USB drive (*stick*) connected to the device's USB 3.0 Type-A port.

USB storage capabilities include the following:

- Saving network captures to USB
- Upgrading software firmware from USB
- Updating configuration from USB
- Saving current configuration to USB

**To connect a USB storage device:**

- Connect your USB storage device to the USB port labeled , located on the front panel.

**Figure 25: Connecting USB Device (e.g., MP-532)**



## 5.6 Connecting Serial Interface

The device provides an RS-232 serial interface port for accessing the device's command line interface (CLI) for serial communication.



The RS-232 serial port is not intended for permanent connection.

Cable specifications:

- **Port Type:** RJ-45
- **Cable:** RJ-45 to DB-9 female cable adapter

**Figure 26: RJ-45 to DB-9 Female Cable Adapter**



This cable is a separate orderable item from AudioCodes.

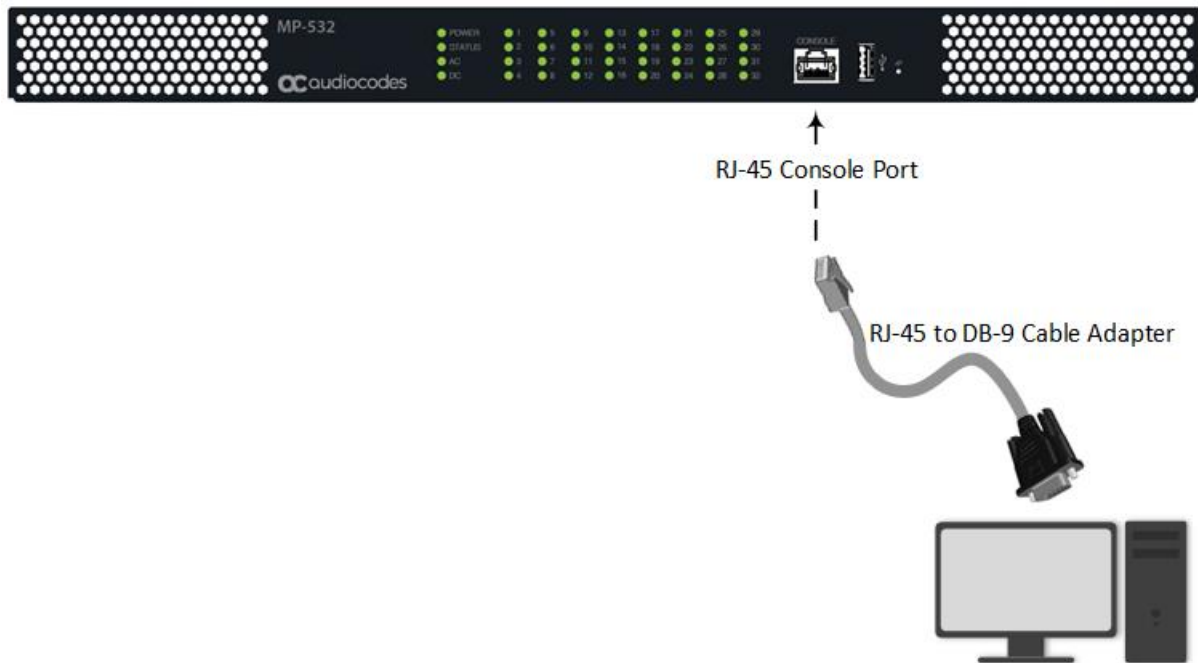
- **Connector Pinouts:**

**Table 13: RJ-45 to DB-9 Serial Cable Connector Pinouts**

RJ-45		DB-9 Female	
Pin	Signal	Pin	Signal
1	Internally used	8	Not used
2	Ground (GND)	6	Ground (GND)
3	Transmit Data (TXD)	2	Receive Data (RXD)
4	Internally used	5	Not used
5	Internally used	5	Not used
6	Receive Data (RXD)	3	Transmit Data (TXD)
7	Ground (GND)	4	Ground (GND)
8	Internally used	7	Not used

**To connect serial interface:**

1. Connect the RJ-45 connector, at one end of the cable adapter to the device's serial port labeled **CONSOLE**, located on the front panel.

**Figure 27: Connecting to Serial Interface (e.g., MP-532)**

2. Connect the DB-9 connector at the other end of the cable to the COM RS-232 communication port on your computer.



## 5.7 Connecting Power

The device can be powered from an AC or a DC power source.

For power redundancy, you can connect the device to both an AC and a DC power source. In this setup, the device gets its power from the AC power source. Only if there is an outage in the AC power source does the device use the DC power source for power.



IEC 60417-6042 (2010-11)



IEC 60417-6172 (2012-09)



**Warning:** To power off the unit, disconnect both AC and DC power cords before service.

### 5.7.1 Connecting to AC Power

The device can be powered from a standard alternating current (AC) electrical outlet. The connection is made using the supplied AC power cord.

**Table 5-14: AC Power Specifications**

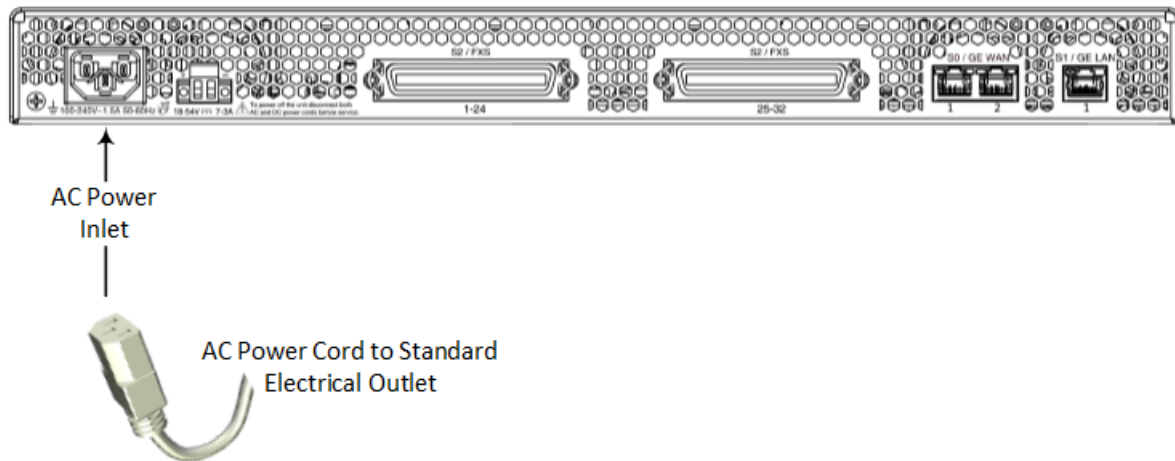
Physical Specification	Value
Input Voltage	Single universal AC power supply 100-240V
AC Input Frequency	50-60 Hz
Max. AC Input Current	1.5 A



- The device must be connected to a socket-outlet providing protective earthing connection.
- To avoid electric shock or fire, use **only** the AC power cord that is supplied by AudioCodes.

**To connect device to AC power:**

1. Connect the line socket of the AC power cord (supplied) to the device's AC power socket, located on the rear panel.

**Figure 5-28: Connecting to AC Power (e.g., MP-532)**

2. Connect the plug at the other end of the AC power cord to a standard electrical outlet. The **POWER** and **AC** LEDs on the front panel should light up green.

## 5.7.2 Connecting to DC Power

You can power the device from a DC power source.

**Table 15: DC Power Specification**

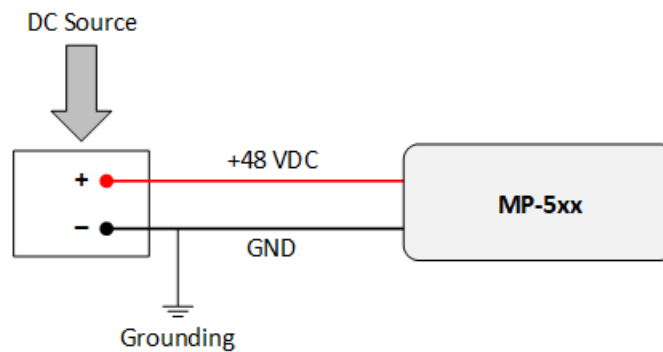
Physical Specification	Value
DC Input Ratings	+18 to +54 VDC; 7 to 3 A; Typical +48 VDC
Connection to DC Mains Supply	Terminal block (supplied)



### DC Power Safety Notice:

- Do not connect the device to a regular Telecom -48V source.
- Connect the device to a safety extra-low voltage (SELV) source that is sufficiently isolated from the mains.
- Make sure that the negative (-) side of the power supply is grounded (earthed), as shown in Figure 29 below.
- The device must be **permanently** connected to earth (ground), as described in Grounding and Surge Protection.
- Connection of the device to the DC mains power must be done only by a certified electrician and in accordance with local national electrical regulations.

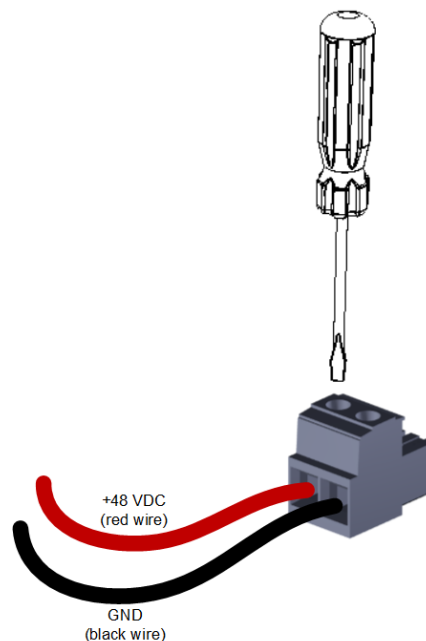
**Figure 29: Ground Negative (-) Side**



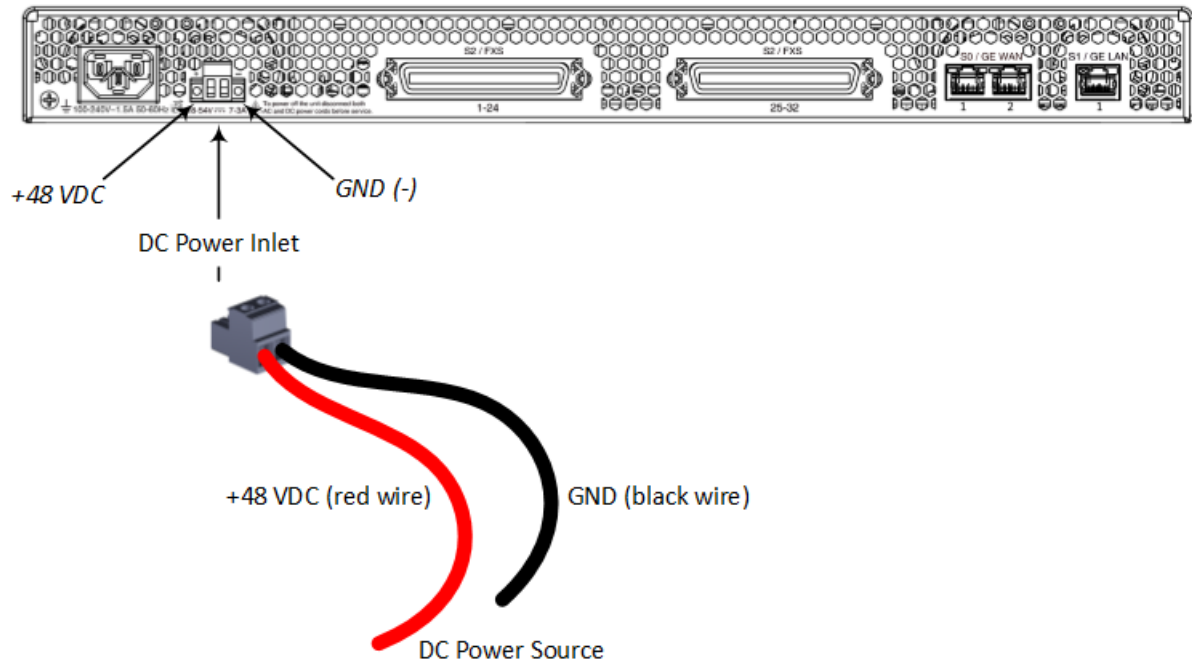
The device is shipped with a DC terminal block plug. You need to connect two 6-AWG power leads (one positive and one negative) to the terminal block.

**To connect device to DC power:**

1. Disconnect your DC wires from your DC power source.
2. Using a wire-stripping tool, strip the ends of the two wires (6-AWG) to a length that is sufficient for inserting into the supplied terminal block. Make sure that you do not strip too much of the insulation so that wire is not exposed when it exits the terminal block plug after it has been secured to the terminal block.
3. Identify the polarity (negative and positive) of the two DC power feed wires. Polarity of power feed wires are typically color-coded, where red is positive (+48 VDC) and black is negative (GND).
4. Insert the exposed wire of one of the two DC-input power source wires into the correct opening (according to polarity) on the terminal block plug (supplied), as shown in the figure. Make sure that only wire with insulation exits the terminal block. Using a Philips or flat-head screwdriver, tighten the captive screw located above the installed wire lead to secure the wire to the terminal block. Repeat steps 1 through 5 for the second wire.

**Figure 30: Wiring DC Power Leads to Terminal Block**

2. Make sure that no wire strands are left outside the connector and that all strands have been clamped under the terminal block screw.
3. Gently try and pull the wires from the terminal block. Only if the wires remain secured to the terminal block may you continue to the next step; otherwise, if the wires become free, repeat Step 5 to secure the wires to the terminal block.
4. Insert the DC terminal block plug into the DC inlet located on the device's rear panel.

**Figure 31: Connecting Terminal Block to DC Inlet (e.g., MP-532)**

2. Connect the DC power leads to a +48 VDC power source.

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