Mediant™ 1000

VoIP Media Gateway

SIP Protocol

Hardware Installation Manual

Version 6.6

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![AudioCodes]

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Notice

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Abbreviations and Terminology

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

Throughout this manual and unless otherwise specified, the term *device* refers to the Mediant 1000 gateway.

Related Documentation

Document Name
SIP Release Notes
Mediant 600 and Mediant 1000 SIP User's Manual
CPE Configuration Guide for IP Voice Mail

Notes and Warnings

> **Note:** The device is an **indoor** unit and therefore, must be installed **only** indoors.

> ### 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.

> **Warning:** Disconnect the gateway from the mains and Telephone Network Voltage (TNV) before servicing.

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Regulatory Information

1. This equipment complies with Part 68 of the FCC Rules and the requirements adopted by the ACTA. On the bottom of the unit or on the Interface card of this equipment is a label that contains among other information, a product identifier in the format US:AC1IS00BM1KMIX or US:AC1ISNANM1000 and ringer equivalence. If requested, this number must be provided to the telephone company.

2. This equipment is designed to be connected to the telephone network using an RJ-48C and/or RJ-11C connector, which is Part 68 compliant. The service order codes (SOC) are 6.0F for digital interfaces and 9.0Y for analog interfaces and the Facility interface codes (FIC) are: 04DU9.1SN, 04DU9.1KN, 04DU9.BN, 04DU9.DN, 02LS2, O2GS2 .

3. The REN is used to determine the number of devices that may be connected to a telephone line. Excessive RENs on a telephone line may result in the devices not ringing in response to an incoming call. In most but not all areas, the sum of RENs should not exceed five (5.0). To be certain of the number of devices that may be connected to a line, as determined by the total RENs, contact the local telephone company. For products approved after July 23, 2001, the REN for this product is 0.01.

4. Should the product cause harm to the telephone network, the telephone company will notify you in advance that temporary discontinuance of service may be required. If advance notice is not practical, you will be notified as soon as possible. In addition, you will be advised of your right to file a complaint with the FCC if it is necessary.

5. The telephone company may make changes in its facilities, equipment, operations or procedures that could affect the operation of the equipment. If this happens the telephone company will provide advance notice in order for you to make necessary modifications to maintain uninterrupted service.

6. If trouble is experienced with this equipment, for repair or warranty information please contact AudioCodes Inc. 27 World's Fair Drive, Somerset, NJ 08873, Tel: +1-888-586-4743, Fax: +1-732-469-2298. If the equipment is causing harm to the telephone network, the telephone company may request to disconnect the equipment until the problem is resolved.

7. Connection to Telephone Company Provided coin service is prohibited. Connection to party lines service is subject to state tariffs.

Reader's Notes

1   Introduction

This document provides a hardware description of the Mediant 1000 (hereafter referred to as *device*) and step-by-step procedures for cabling the device.

> **Note:**   For information on configuring the device, refer to the device's *User's Manual*.

Reader's Notes

2   Unpacking Package Contents

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:

- One or two AC power cables
- Four anti-slide bumpers for desktop installation option
- Two-meter length RS-232 DB-9 adaptor cable (for direct serial connection to computer)

5.   Check, retain and process any documents.

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

Reader's Notes

3   Physical Description

This section provides a physical description of the device. The device is designed with a 19-inch industrial platform chassis, 1U high and 13.8 inch deep. The device supports a scalable, modular architecture providing replaceable modules.

3.1   Front Panel Description

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

Figure 3-1: Front Panel
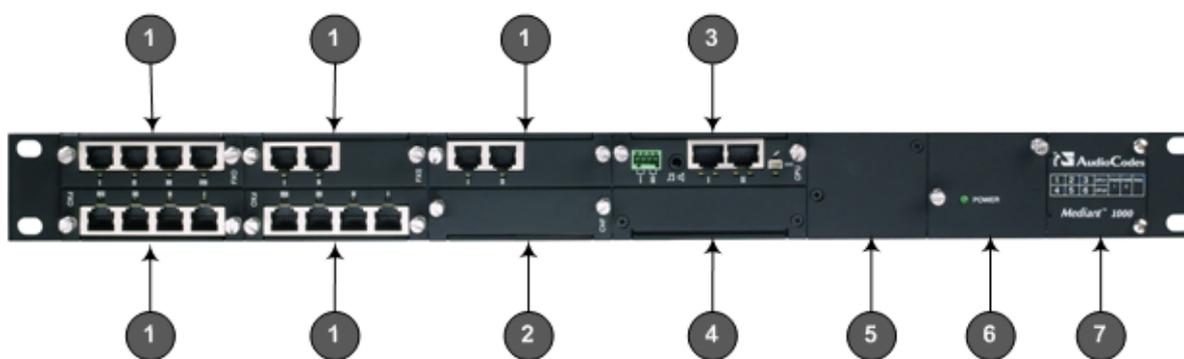
Notes:

- The figure above is used only as an example. The number and type of interface modules depends on the ordered configuration.
- For module slot assignment, see Section 6.1.1 on page 41.

Table 3-1: Front Panel Description

Item #	Label/ Module	Component Description
1	FXS	FXS module – see Section 3.1.1 on page 16 for a description.
	FXO	FXO (or FXO G) module – see Section 3.1.2 on page 17 for a description.
	BRI	BRI module – see Section 3.1.3 on page 18 for a description.
	TRUNKS	TRUNKS (E1/TE/J1) module – see Section 3.1.4 on page 19 for a description.
2	MPM	MPM module – see Section 3.1.5 on page 20 for a description.
3	CPU	CPU module – see Section 3.1.6 on page 21 for a description.
4	-	This slot can house one of the following: ▪ A spare CPU module ▪ Connection module for the OSN server platform (see Section A on page 47) If not used, this slot is covered by a blank panel.

Item #	Label/ Module	Component Description
5	**Power 1**	(Optional) Spare Power Supply module slot. The device can provide two extractable power supply units (Power 1 and Power 2). Each power supply unit provides an AC power connector on its rear panel. If both Power 1 and Power 2 units are used, the load is shared between them. This (optional) load-sharing feature enables power failure protection (redundancy). When using this feature, you are advised to connect each power supply unit to a different AC supply circuit.
6	**Power 2**	Main Power Supply module (see description above).
7	**Schematic**	Removable Fan Tray module with a schematic displayed on its front panel showing the chassis' slot numbers. The Fan Tray module cools the device's components. For more information, see Section 6.2 on page 45.

3.1.1   FXS Module

The FXS module provides the Foreign eXchange Subscriber (FXS) interfaces. Up to six FXS modules can be installed in the device. Each FXS module can provide up to four FXS interfaces and therefore, the device can support up to 24 FXS interfaces (i.e., 6 modules x 4 ports).

⚠️ **Note:**   The FXS modules support both loop- and ground-start signaling.

3.1.1.1   Port Description

Each FXS module provides up to four analog RJ-11 ports. The ports are labeled **I**, **II**, **III**, and **IIII**.

Figure 3-2: FXS Module
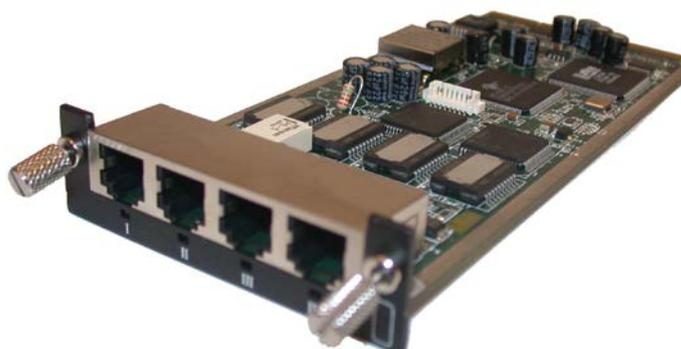
3.1.1.2   LED Description

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

Table 3-2: FXS Module LED Description

Color	State	Description
Green	On	Phone connected to the port is off-hooked.
	Blinking	Phone connected to the port rings.
Red	On	Error - malfunction in line or out of service due to Serial Peripheral Interface (SPI) failure.

3.1.2   FXO Module

The FXO module provides the Foreign eXchange Office (FXO) interfaces. Up to six FXO modules can be installed in the device. Each FXO module can provide up to four FXO interfaces and therefore, the device can support up to 24 FXO interfaces (i.e., 6 modules x 4 ports).

> **Notes:**
>
> - The standard FXO module supports outdoor and indoor (lightning protection) loop-start signaling. The **FXO G** module supports both loop- and ground-start signaling (but only supports indoor protection).
>
> - To enable ground-start signaling, use the *ini* file parameter GroundKeyDetection (refer to the *User's Manual*).

3.1.2.1   Port Description

Each FXO module provides up to four analog RJ-11 ports. The ports are labeled **I**, **II**, **III**, and **IIII**.

Figure 3-3: FXO Module
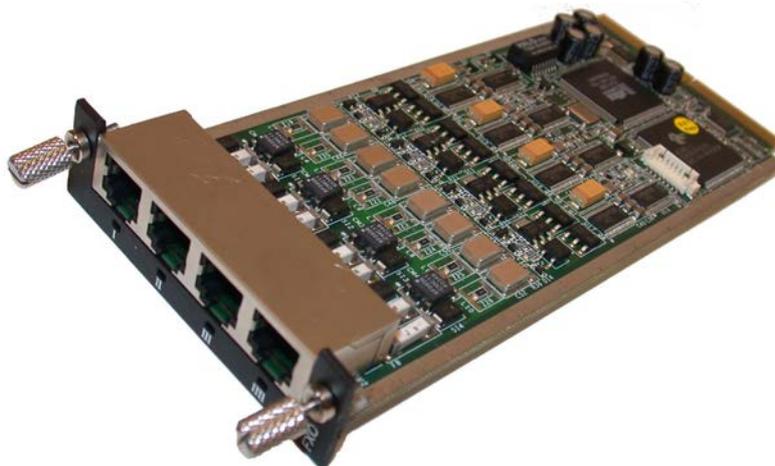
3.1.2.2 LED Description

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

Table 3-3: FXO Module LED Description

Color	State	Description
Green	On	Off-hooks the line toward the PBX.
	Blinking	Detects a ring signal from the PBX.
Red	On	Error - malfunction in line or out of service due to Serial Peripheral Interface (SPI) failure.

3.1.3 BRI Module

The BRI module provides the Integrated Services Digital Network (ISDN), Basic Rate Interface (BRI) interfaces. Up to five BRI modules can be installed in the device. Each BRI module can provide up to four BRI line interfaces and therefore, the device can support up to 20 BRI interfaces (i.e., 5 modules x 4 ports).

3.1.3.1 Port Description

Each BRI module provides up to four analog RJ-45 ports. The ports are labeled **I**, **II**, **III**, and **IIII**.

Figure 3-4: BRI Module
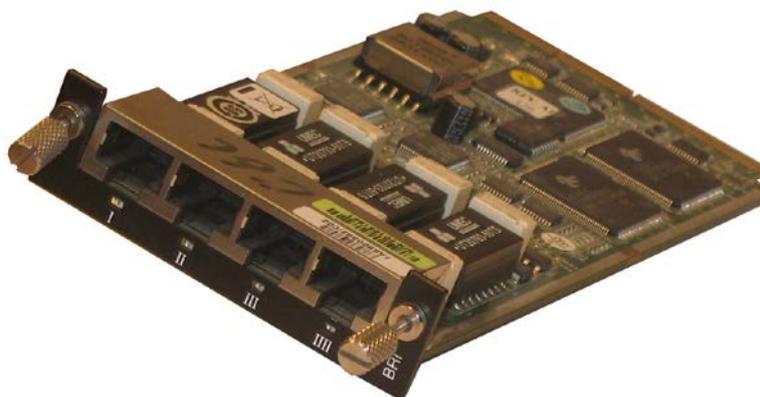
3.1.3.2 LED Description

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

Table 3-4: BRI Module LED 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.

3.1.4   TRUNKS (E1/T1) Module

The device supports up to four digital E1/T1/J1 trunks. If the power fails, a relay connects Trunk 1 to Trunk 2 (in the same module) acting as a fallback for PSTN trunk.

3.1.4.1   Port Description

The module is available in 1-, 2-, or 4-span configurations, providing RJ-48c ports. The ports are labeled **I**, **II**, **III**, and **IIII**.

Figure 3-5: TRUNKS Module
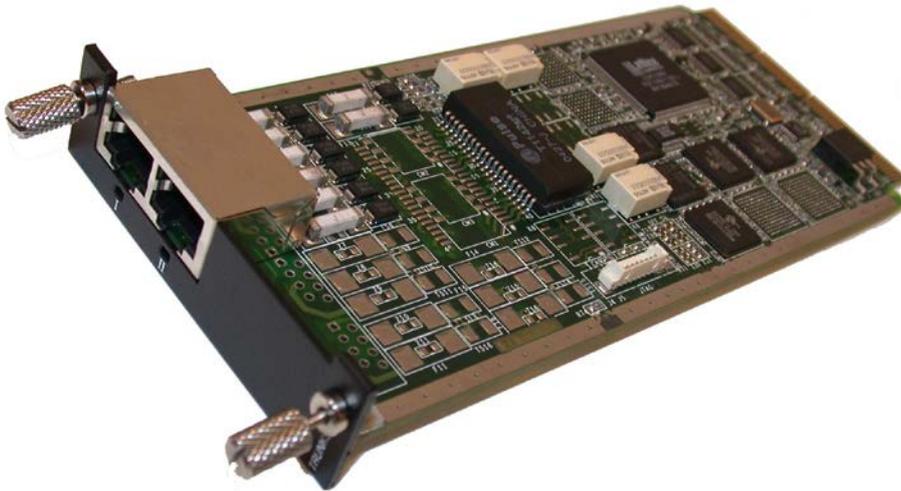
3.1.4.2   LED Description

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

Table 3-5: E1/T1 PRI TRUNKS Module LED Description

Color	State	Description
Green	On	Trunk is synchronized (normal operation).
Red	On	Loss due to any of the following signals: ▪ 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.

3.1.5 Media Processing Module (MPM)

The device supports up to three MPMs for IP media server capabilities (i.e., conferencing, SBC, and IP-to-IP routing applications). Depending on required configuration, the MPM module can be housed in chassis slots 3, 4, 5, or 6.

> ⚠ **Note:** For a description on channel resources using MPMs, see the device's *User's Manual*.

Figure 3-6: Media Processing Module (MPM)

The module features a LED, described in the table below.

Table 3-6: MPM LED Description

Color	Description
Green	Following insertion of the MPM into the slot and an automatic hardware compatibility check, the LED lights up green to indicate (1) that the general status of the MPM is 'OK' and (2) that the device supports the module.
Red	If the LED lights up red following insertion of the MPM into the slot and the automatic hardware compatibility check, it indicates that the status of the MPM is 'General Failure', i.e., a hardware compatibility problem occurred or the DSPs cannot be identified. Contact support@audiocodes.com if you purchased the device / MPM from AudioCodes or if you're subscribed to AudioCodes Customer Technical Support (ACTS).

3.1.6   CPU Module

The CPU module is the central processing unit that provides various port interfaces.

3.1.6.1   Port Description

The CPU module provides various port interfaces, as shown in the figure below and described in the subsequent table.

Figure 3-7: CPU Module
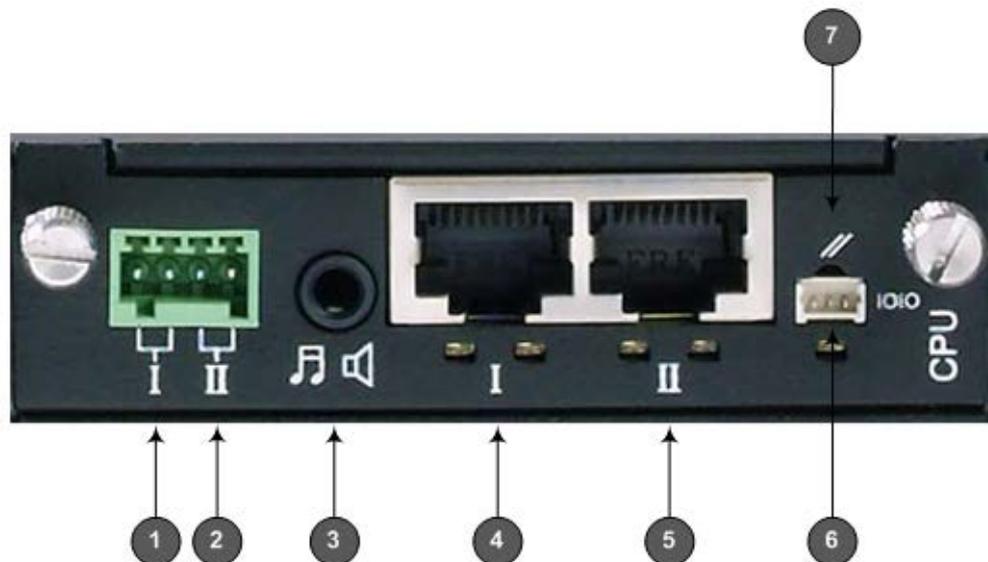
Table 3-7: CPU Module Port Description

Item #	Label	Component Description
1	**I**	Dry contact port (normally open), This port can be connected to an external audible or visual alarm system (e.g., bell, siren, hooter, or light).
2	**II**	Dry contact port (normally closed). This can be connected to an external audible or visual alarm system (bell, siren, hooter, or light).
3	♫	Audio IN/OUT. **Note:** This functionality will be supported in the next applicable release.
4	**I**	10/100Base-TX Ethernet port. . These ports support auto-negotiation, half- and full-duplex modes, and straight-through and crossover cable detection.
5	**II**	10/100Base-TX Ethernet port. **Note:** Two Ethernet ports provide Ethernet redundancy, protecting against failure such as a disconnection of any cable or associated LAN switch port.
6	**I0I0**	RS-232 port for accessing the CLI and for receiving error/notification messages. A 9-pin DB adapting cable is supplied.
7	**//**	Reset pinhole button for resetting the device or restoring the device to factory defaults (for more information, refer to the *User's Manual*).

3.1.6.2 LED Description

The CPU module provides two LEDs for each of the Ethernet ports (located below the ports), as described in the table below:

Table 3-8: CPU Module LEDs Description

LED	Color	State	Description
Left LED	Orange	Blinking	Activity.
Right LED	Green	On	Link OK.
	Yellow	Blinking	Data is being received.
	-	Off	No link.

3.1.7 Power Supply Module and LED Description

The device can house up to two extractable power supply modules (Power 1 and Power 2), each providing an AC power connector on the device's rear panel. The dual power option provides the device with power redundancy.

Figure 3-8: Power Supply Module
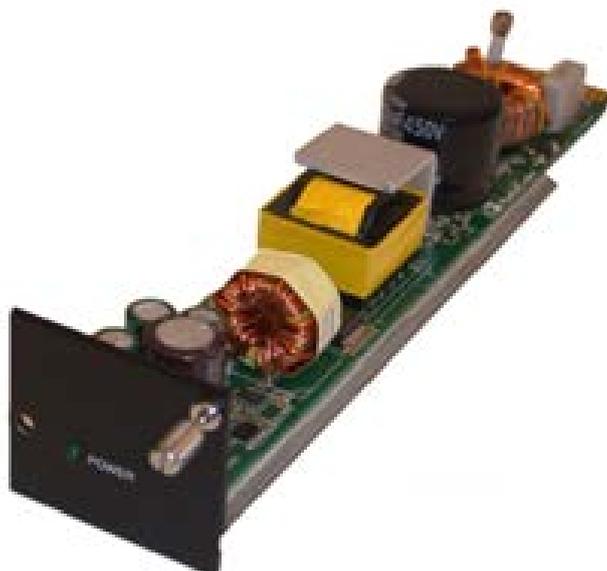
Table 3-9: Power Supply Module LED Description

LED	Color	State	Description
POWER	Green	On	Power supply is operating correctly.
	-	Off	Failure / disruption in the AC supply, or the power is currently not being supplied to the device through the AC power supply entry.

3.2   Rear Panel Description

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

Figure 3-9: Rear Panel
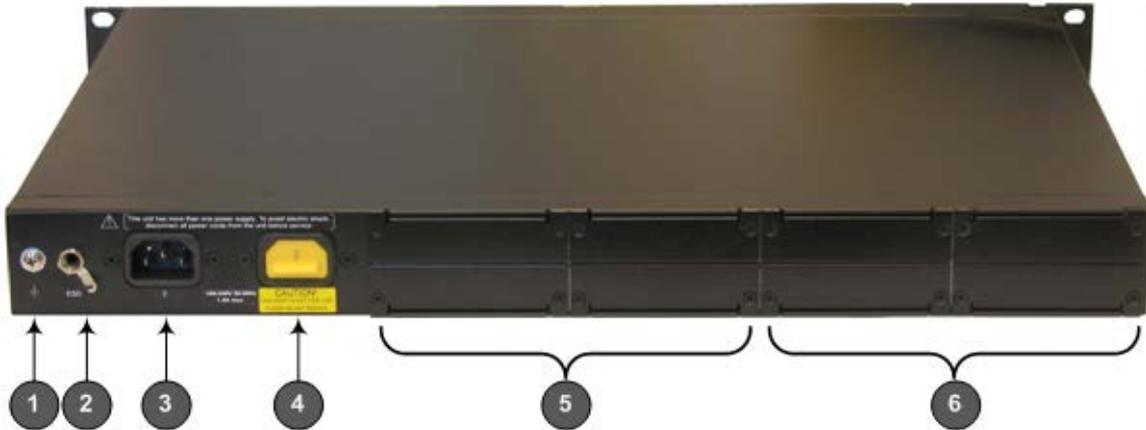
Table 3-10: Rear Panel Description

Item #	Label	Component Description
1	⏚	Protective earthing screw.
2	ESD	Electrostatic Discharge (ESD) socket.
3	2 100-240V~1A	Main AC power supply entry.
4	1 100-240V~1A	Optional, second AC power supply entry for dual power, providing load sharing (failure protection / redundancy).
5	-	Slots for housing the optional OSN server modules – see Section A on page 47).
6	-	Slots reserved for future use.

Reader's Notes

4   Mounting the Device

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

- Placed on a desk top – see Section 4.1 on page 25
- Installed in a standard 19-inch rack – see Section 4.2 on page 26

4.1   Desktop Mounting

The device can be mounted on a desktop by attaching the four anti-slide bumpers (supplied) to the underside of the device. Once you have attached these bumpers, simply place it on a desktop in the desired position.

➢ **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 on each of the four corners.

Figure 4-1: Location of Grooves for Rubber Bumpers
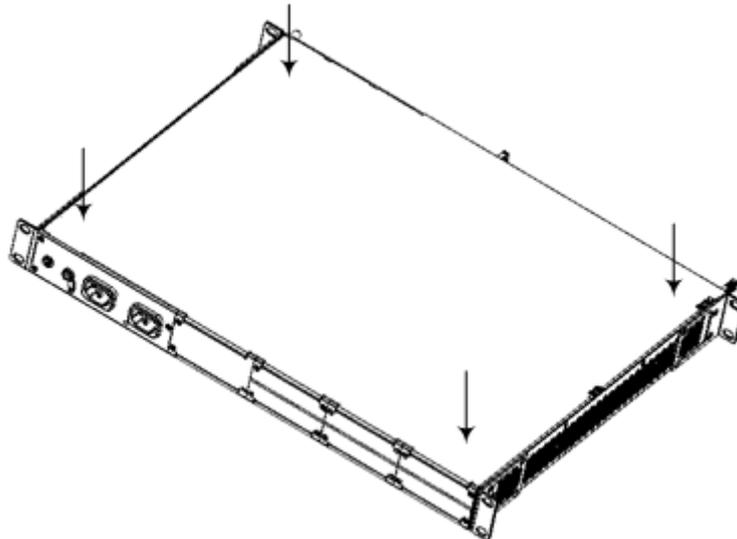
3. Peel off the adhesive, anti-slide rubber bumpers and stick one in each anti-slide groove.
4. Flip the device over again so that it rests on its underside and place it in the required position on a desktop.

4.2 Installing the Device in a 19-inch Rack

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

■ Placing it on a pre-installed shelf in a 19-inch rack (recommended method).

■ Attaching it directly to the rack's frame.

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 compatible with the maximum ambient temperature (Tma) of 45°C (113°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.)

4.2.1 Mounting on a Pre-Installed Shelf in a 19-inch Rack

The device can be placed on a pre-installed shelf in a 19-inch rack, as described below.

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

1. Place the device on the pre-installed shelf in the rack.

2. Attach the device's integral front-mounting brackets to the rack's frame to prevent it from sliding off the shelf. Use standard 19-inch rack bolts (not provided) to fasten the front of the device to the frame of the rack.

4.2.2   Mounting in a 19-inch Rack Frame

The device can be mounted in a 19-inch rack by attaching it to the rack's frame, as described below.

➢ **To mount the device directly to the rack frame:**

1. Position the device in a 19-inch rack and align the front and rear (see note below) bracket holes to the holes (of your choosing) in the vertical tracks of the 19-inch rack.

2. Use standard 19-inch rack bolts (not provided) to fasten the device's integral front-mounting brackets to the frame of the rack.

3. Attach third-party rear-mounting brackets to the device and to the rack frame (see the note below).

Note: The rear-mounting brackets are **not** provided by AudioCodes and must be purchased from a third-party vendor of your choosing. In addition, note the following:

- The distance between the screws on each bracket is 28 mm (1.1 inches).
- To attach the brackets, use 4-40 screws with a maximal box penetration length of 3.5 mm (0.14 inch).

Reader's Notes

5   Cabling the Device

This section describes how to cable the device:

- Connecting to earth or ground – see Section 5.1 on page 29
- Connecting to the IP / Ethernet network – see Section 5.2 on page 30
- Connecting to FXS interfaces – see Section 5.3 on page 30
- Connecting to FXO interfaces – see Section 5.3.1 on page 31
- Connecting the analog FXS Lifeline telephone – see Section 5.3.2 on page 31
- Connecting the BRI lines – see Section 5.4 on page 33
- Connecting the E1/T1 trunks – see Section 5.5.1 on page 35
- Connecting the E1/T1 trunks for PSTN Fallback – see Section 5.5.2 on page 36
- Connecting the Dry Contact Relay Alarm System – see Section 5.6 on page 37
- Connecting to a PC for serial communication – see Section 5.7 on page 39
- Connecting to power – see Section 5.8 on page 40

5.1   Grounding the Device

The procedure below describes how to ground the device.

Protective Earthing

The equipment is classified as Class I EN60950 and UL60950 and must be earthed at all times (using an equipment-earthing conductor).

For Finland: "Laite on liitettava suojamaadoituskoskettimilla varustettuun pistorasiaan."

For Norway: "Apparatet rna tilkoples jordet stikkontakt."

For Sweden: "Apparaten skall anslutas till jordat uttag."

➢ **To ground the device:**

1. Connect an electrically earthed strap of 16 AWG wire (minimum) to the chassis' earthing screw (located on the rear panel), using the supplied washer.

Figure 5-1: Grounding the Device

Earthing Connection

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.

5.2   Connecting to the IP Network

The procedure below describes how to connect to the IP / Ethernet network.

An RJ-45 cable connector with the following pinouts is used:

Figure 5-2: RJ-45 Connector Pinouts for IP / Ethernet Network
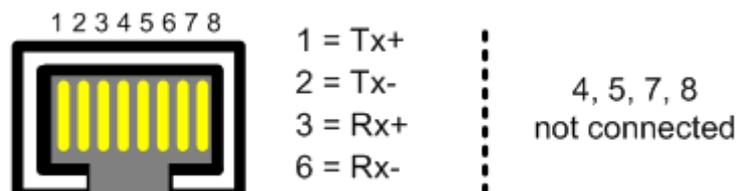
➤ **To connect to the IP / Ethernet network:**

1. On the CPU module, connect the first Ethernet port (labeled **I**) directly to the Ethernet network, using a straight-through RJ-45 Ethernet cable.

2. Optionally, for Ethernet redundancy, connect the second Ethernet port (labeled **II**) to the Ethernet network.

> **Note:** For Ethernet redundancy, it's recommended to connect each of the Ethernet ports to a different switch.

5.3   FXS Interfaces

The procedure below describes how to connect to FXS interfaces such as fax machines, modems, and plain old telephone system (POTS) telephones.

> **Warnings:**
> - Ensure that FXS ports are connected to the appropriate external devices; otherwise, damage to the device may occur.
> - The FXS ports are considered as TNV-2.

> **Note:** This section is applicable only if your device is installed with an FXS module.

An RJ-11 cable connector with the following pinouts is used:

Figure 5-3: RJ-11 Connector Pinouts for FXS
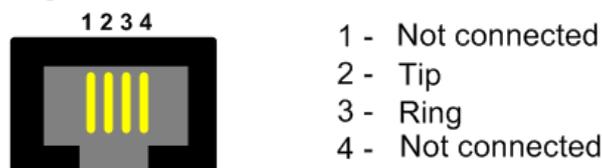
➤ **To connect to FXS interfaces:**

■ Using an RJ-11 connector, connect the FXS port to the required telephone interface.

5.3.1   Connecting to Analog Devices

The procedure below describes how to connect the FXO port interfaces to telephone exchange analog lines or PBX extensions.

> **Warnings:**
> - To protect against electrical shock and fire, use a 26 AWG min wire to connect FXO ports to the PSTN.
> - Ensure that FXO ports are connected to the appropriate external devices; otherwise, damage to the device may occur.
> - FXO ports are considered as TNV-3.

> **Note:**   This section is applicable only if your device is installed with an FXO module.

An RJ-11 cable connector with the following pinouts is used:

Figure 5-4: RJ-11 Connector Pinouts for FXO

1 2 3 4

1 - Not connected
2 - Tip
3 - Ring
4 - Not connected
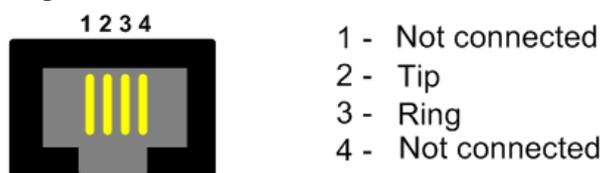
➢ **To connect to FXO interfaces:**

■ Using an RJ-11 connector, connect the FXO port to the required telephone interface.

5.3.2   Connecting the Analog Lifeline

The device supports an analog Lifeline phone feature, whereby upon a power outage, physical disconnection of the network cable, or loss of IP network connectivity, IP calls are redirected to the PSTN.

The Lifeline is provided by Port **I** on the FXS module. This port connects to the analog POTS phone and the PSTN / PBX, using a splitter cable.

> **Notes:**
> - Analog Lifeline is supported only on FXS modules.
> - An analog Lifeline can be setup for each FXS module installed in the chassis.
> - The scenario upon which Lifeline is triggered is configured by the LifeLineType parameter. For more information, see the *User's Manual*.

The analog Lifeline is provided only by Port **I** on an FXS module. This port connects to the POTS phone and the PSTN or PBX, using a splitter cable. The splitter cable connects pins 1 and 4 to another source of an FXS port, and pins 2 and 3 to the POTS phone, as shown in the figure below:

Figure 5-5: RJ-11 Connector Pinouts for Analog Lifeline

1 2 3 4

1 - Not connected
2 - Tip
3 - Ring
4 - Not connected
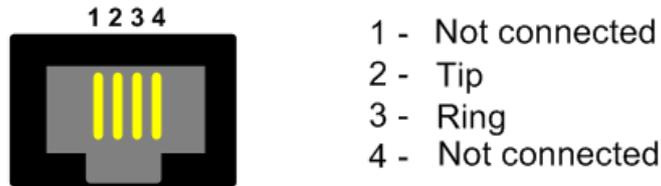
➢ **To cable the analog Lifeline:**

1. Connect the Lifeline Splitter (supplied) to Port **I** on an FXS module.

2. Connect the Lifeline POTS phone to Port **A** on the Lifeline Splitter.

3. Connect an analog PSTN line to Port **B** on the Lifeline Splitter.

Figure 5-6: Connecting the Analog Lifeline
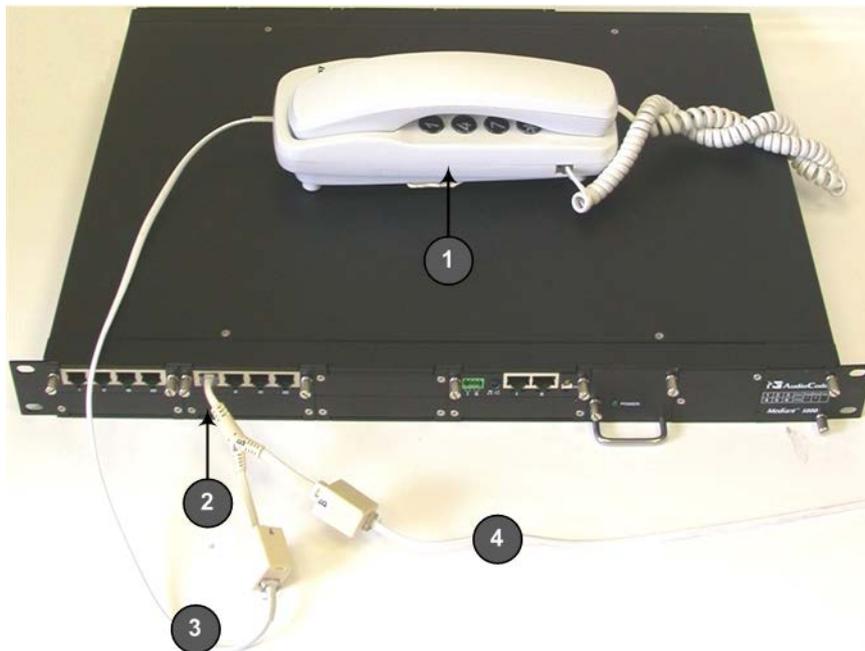
Table 5-1: Analog Lifeline Connection

Item #	Component Description
1	Lifeline phone.
2	Lifeline connected to FXS module Port **I**.
3	Splitter (A) to Lifeline phone.
4	Splitter (B) to PSTN or PBX extension analog line.

5.4   ISDN BRI Interfaces

5.4.1   Connecting to BRI Lines

The procedure below describes how to connect to BRI lines.

> **Warning:** To protect against electrical shock and fire, use a 26 AWG min wire to connect the BRI ports to the PSTN.

> **Note:**   This section is applicable only if your device is installed with a BRI module.

➢ 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.

A BRI port can be configured either as TE (Termination Equipment/user side) or NT (Network Termination/network side). The connector pinouts vary according to the configuration, as detailed in the following figure:

Figure 5-7: RJ-45 Connector Pinouts for BRI
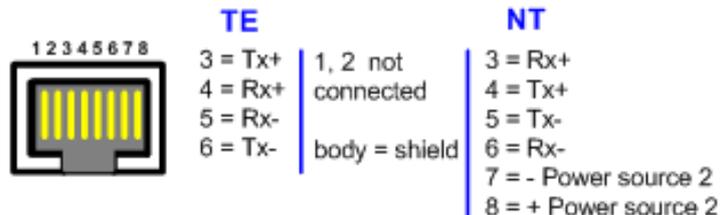
When configured as NT, the BRI port drives a nominal voltage of 38 V with limited current supply of up to 100 mA. The voltage is of Power Source 1 type (line voltage). Power Source 2 is optional.

5.4.2   Connecting the PSTN Fallback for BRI Lines

The device supports a PSTN Fallback feature for BRI lines, whereby if a power outage or IP connectivity problem (e.g., no ping) occurs, IP calls are re-routed to the PSTN. This guarantees call continuity.

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**), and / or line Port 3 (**III**) to Port 4 (**IIII**) of the same 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.

> ➢ **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 5-8: Cabling (Ports 1 and 2) PSTN Fallback
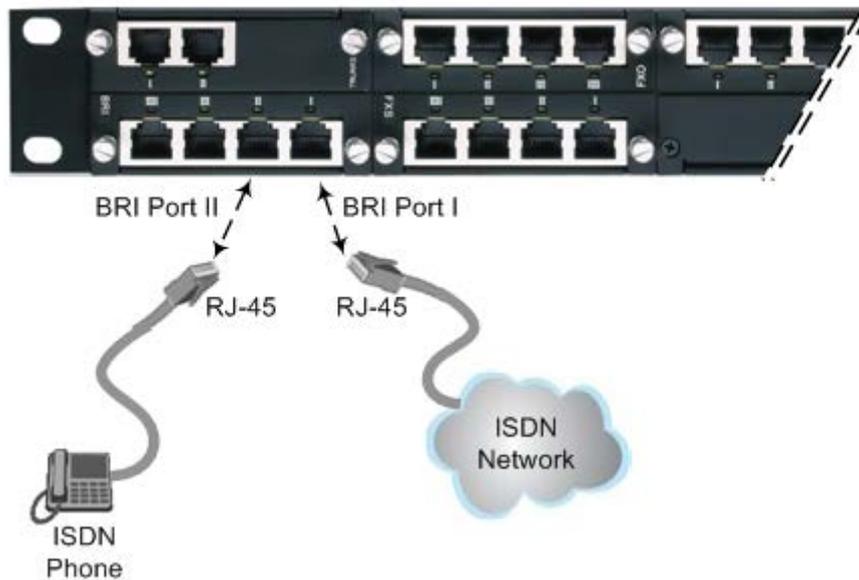
	Notes:
⚠	• PSTN Fallback is supported only on the BRI module.
	• PSTN Fallback is supported only between ports on the same BRI module.
	• The scenarios that trigger PSTN Fallback (i.e., power outage and/or IP network loss) are configured by the **TrunkLifeLineType** parameter. For more information, see the *User's Manual*.
	• This PSTN Fallback feature has no relation to the PSTN Fallback Software Upgrade Key.

5.5   ISDN E1/T1 Interfaces

5.5.1   Connecting to E1/T1 Trunks

The procedure below describes how to connect to E1/T1 trunks.

**Warning:** To protect against electrical shock and fire, use a 26 AWG min wire to connect T1 or E1 ports to the PSTN.

Note: This section is applicable only if your device is installed with a TRUNKS module.

An RJ-48c trunk cable connector with the following pinouts is used:

Figure 5-9: RJ-48c Connector Pinouts for E1/T1


```
1 2 3 4 5 6 7 8        1 = Rx RING      3, 6, 7, 8
                       2 = Rx TIP       Not Connected
                       4 = Tx RING
                       5 = Tx TIP       Body = Shield
```

➢   **To connect to E1/T1l trunks:**

1.   Connect the E1/T1 trunk cables to the ports on the device's TRUNKS module(s).
2.   Connect the other ends of the trunk cables to a PBX/PSTN switch.

5.5.2 Connecting the PSTN Fallback for E1/T1 Trunks

The device's PSTN Fallback feature redirects IP calls to the PSTN upon a power outage, LAN disconnection, or IP connectivity problems (i.e., no ping).

PSTN Fallback is supported if the device houses one or two E1/T1 TRUNKS modules, where each module provides two or four spans. In the event of a PSTN fallback, the module's metallic relay switch automatically connects trunk Port 1 (**I**) to Port 2 (**II**), and / or trunk Port 3 (**III**) to Port 4 (**IIII**) of the same 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.

➢ **To connect the digital trunk interfaces for 1+1 or 2+2 PSTN Fallback:**

■ On the same TRUNKS module, connect Trunk 1 and Trunk 3 to your PBX, and Trunk 2 and Trunk 4 to the PSTN.

Figure 5-10: Cabling (Ports 1 and 2) for PSTN Fallback
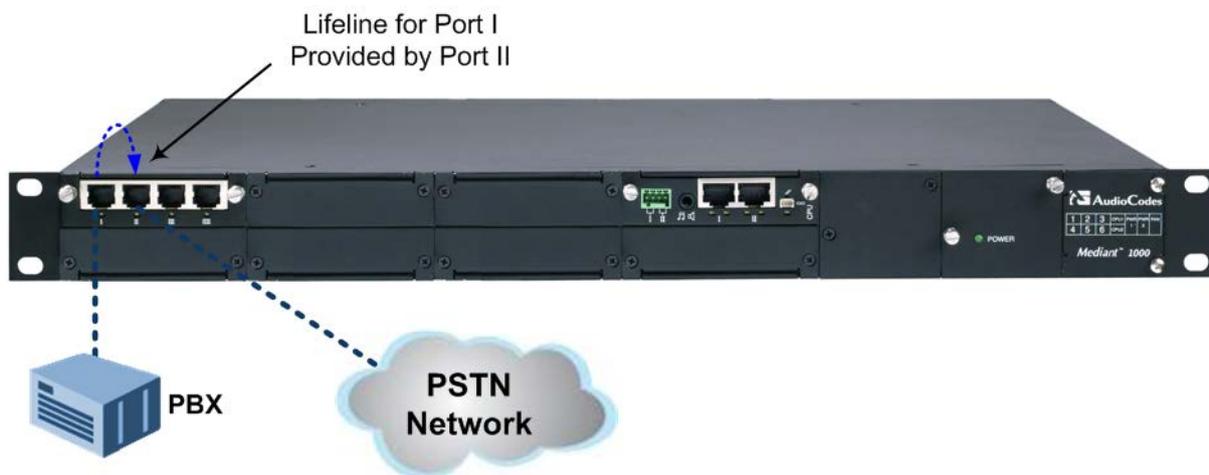
Notes:

- PSTN Fallback is supported only by the TRUNKS module.
- PSTN Fallback is supported only between ports on the same TRUNKS module.
- PSTN Fallback is supported only for ISDN when the number of supported channels (e.g., 30) is less than the maximum number of possible channels provided by the physical ports (e.g., two E1 trunks). When the number of supported channels (e.g., 60) equals the maximum number of channels provided by the physical ports (e.g., two E1 trunks), then other protocols such as CAS are also supported.
- The scenario upon which PSTN Fallback is triggered is configured by the TrunkLifeLineType parameter. For more information, see the *User's Manual*.
- This PSTN Fallback feature has no relation to the PSTN Fallback Software Upgrade Key.

5.6   Connecting to Dry Contact Relay Alarm System

The dry contact ports **I** and **II** located on the device's CPU module, allows you to connect the device to an external audible or visual alarm system. The table below describes the operational status of these dry contact ports.

Table 5-2: Dry Contact Operational Description

Port	Normal State	Alarm Severity State
I	During normal operation, the dry contact is open.	If a Major alarm is generated, the dry contact closes.
II	During normal operation, the dry contact is closed.	If a Critical alarm is generated, the dry contact opens.

The external alarm system is connected to the device's dry contact connector on the CPU module, using a dry contact wires mate consisting of a four spring-cage terminal block connector (not supplied). The figure below shows an example of such a mate (labeled 4, 3, 2 and 1, from left to right). These connections correspond to the four pins of the dry contact connector on the CPU module.

Figure 5-11: Dry Contact Wires' Mate
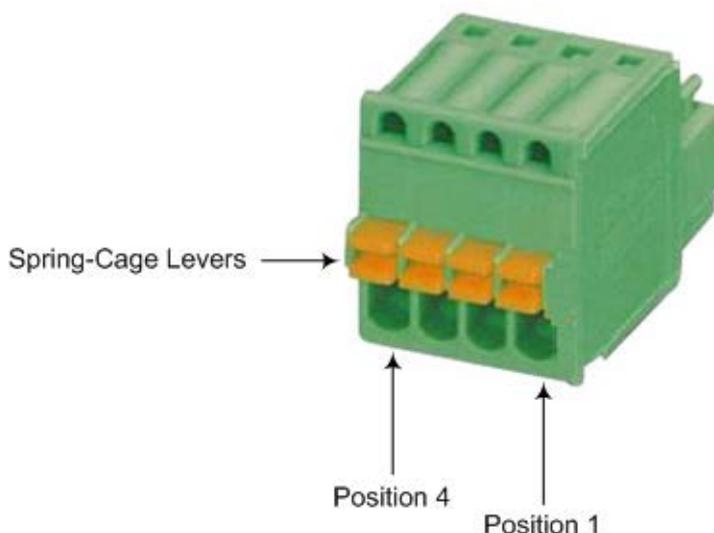
> ⚠ **Note:** It is recommended to use the dry contact mate of Phoenix Contact type FK-MC 0,5/ 4-ST-2,5, or any other vendor providing similar specifications.

You need to supply your own wiring (for connecting to the mate's spring-cage connections) as well as a visual and/or audible alarm system attached at the other end of the wires. The size of the cable gauge that connects to the dry contact ports must be in the range of 20 to 28 AWG. The dry contact system can receive a current of up to 1.5A. Its nominal switching capacity is 2A 30V DC.

	Note: The dry contact alarm provided on the CPU must be connected only to SELV (Safety Extra-Low Voltage) non-energy hazard sources (Class 2) as per UL 60950 and EN 60950.

➢ **To set up a dry contact system:**

1. Insert two wires into the mate's spring-cage wire connectors in position 4 and 3 for the device's dry contact Port **I**, and two wires in position 2 and 1 (for the device's dry contact Port **II**), by performing the following:

   a. With a sharp, pointed object, press the position's corresponding orange button; the cage of the connection opens.
   b. Insert the wire into the connector, and then release the orange button; the cage closes, securing the wire in place.

2. Connect the other ends of the dry contact wiring to the alerts system (alarm, siren, or light) according to your preferences and requirements.

5.7   Connecting RS-232 Serial Interface to a PC

The devices RS-232 interface port is used to access the CLI for serial communication and to receive error/notification messages. A 9-pin DB adaptor cable is supplied for connecting this port to a computer, as described in the procedure below.

Figure 5-12: RS-232 Cable Adaptor
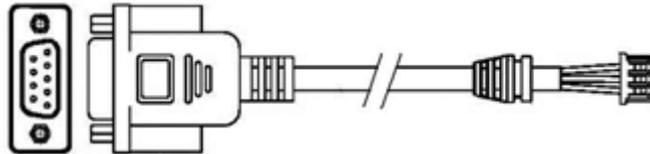
➢   **To connect the device's serial interface port to a PC:**

1.   Connect one end of the crossover RS-232 cable (supplied) to the device's RS-232 port (located on the CPU module and labeled I0I0).

2.   Connect the other end of the crossover RS-232 cable (i.e., the DB-9 connector) to either the COM1 or COM2 RS-232 communication port of your computer.

> **Notes:**
> - The RS-232 port is not intended for permanent connection.
> - CLI configuration is currently not supported.

5.8   Connecting to Power

The procedure below describes how to connect the device to the AC power supply.

> **Warnings:**
>
> - Units must be connected (by service personnel) to a socket-outlet with a protective earthing connection.
> - Use only the AC power cord supplied with the device.

> **To connect the device to the power supply:**

- On the device's rear panel, connect the left (active) 100-240V~50-60 Hz power socket to a standard electrical outlet using the supplied AC power cord.

When the device receives powers, the **POWER** LED on the front panel of the Power Supply module is lit green. Any power supply malfunction results in the LED being off.

> **Notes:**
>
> - You can install up to two Power Supply modules (Power 1 and Power 2), each providing an AC power connector on the device's rear panel. The dual power option provides the device with power redundancy. If both power units are used (for load sharing - failure protection / redundancy), ensure that you connect each power supply unit to a different AC supply circuit.
> - The two AC power sources must have the same ground potential.

6   Hardware Maintenance

The device is a modular chassis and allows you to order any module as a Field Replacement Unit (FRU). This section describes the procedures for installing or replacing modules.

> **Warning:** To prevent static electrical damage to the module's printed circuit board, do not touch the components on the module. Instead, hold the module only on the edges where no electrical components are located.

> **Note:** Cover all unoccupied module slots with blank panels. This ensures optimal internal airflow pressure within the chassis.

6.1   Installing and Replacing Modules

This section describes step-by-step procedures for installing or replacing modules.

6.1.1   Module Slot Assignment

The device's front-panel chassis provides slots (numbered as shown in the figure below) for housing the main input/output (I/O) interface modules (i.e., TRUNKS, BRI, FXS, FXO, and MPM).

Figure 6-1: Front-Panel Slot Assignment for Modules

Slot #1 I/O Module	Slot #2 I/O Module	Slot #3 I/O Module	Main CPU	Spare Power Supply Slot	Main Power Supply Unit	Fan Tray Unit
Slot #4 I/O Module	Slot #5 I/O Module	Slot #6 I/O or MPM Module	Spare CPU Slot			

The guidelines for slot assignment for these modules include the following:

■   The TRUNKS, BRI, FXS, and FXO modules must be housed in consecutive slots. In other words, if the device houses three modules, then they must occupy slots 1, 2, and 3 (no skipping of slots).

■   It is recommended to assign the TRUNKS, BRI, FXS, and FXO modules to the slots (starting from Slot 1) according to the order of priority listed below:

   1.   TRUNKS
   2.   BRI
   3.   FXS and/or FXO

For example, if the device requires one TRUNKS module and two FXS modules, then you must insert the TRUNKS module in Slot 1 and the two FXS modules in slots 2 and 3 respectively. If at a later stage, you wish to add a BRI module (for example), then you must replace the FXS module in Slot 2 with the new BRI module, and then re-insert this replaced FXS module in Slot 4. The figure below displays an example illustration of correct module slot assignment:

Figure 6-2: Recommended Priority Module Slot Assignment (Example)

| Slot #1
TRUNKS Module | Slot #2
TRUNKS Module | Slot #3
BRI Module | Main CPU | Spare
Power
Supply
Slot | Main
Power
Supply
Unit | Fan
Tray
Unit |
| Slot #4
FXO Module | Slot #5
FXS Module | Slot #6
MPM Module | Spare CPU Slot | | | |

■ The MPM module provides IP media channels for applications such as announcements, conferencing, and IP-to-IP call routing:

- When no other modules are used, up to three MPM modules can be housed in the device.

- For conferencing, one MPM module must be housed in Slot 6, providing 20 media channels. For additional media channels, you can add MPM modules to slots 4 (40 channels) and 5 (40 channels) as well, thereby providing a total of 100 media channels for conferencing.

- For applications other than conferencing (e.g., IP-to-IP routing and announcements), the MPM modules can be housed in slots 3, 4, and 5. Each module provides 40 channels; therefore, providing a total of 120 channels (60 for IP-to-IP call sessions).

- The device can acquire additional media channel resources (for IP-to-IP routing and conferencing) from the TRUNKS modules. For a description of this configuration, refer to the device's *User's Manual*.

6.1.2   Installing Modules into Previously Empty Slots

The procedure below describes how to install modules to previously empty slots in the device's chassis.

> **Warning:** Ensure that you power down the device before installing a module to a previously empty slot.

➢ **To install a module into a previously empty slot:**

1. Power off the device.

2. On the device's front panel, using a Phillips screwdriver, remove the black metal cover plate protecting the module slot.

3. Insert the required module into the empty slot, aligning the module with the rails in the slot in the following module orientation depending on whether you are inserting it in the top- or bottom-row slots:

- **Top-row slots:** ensure that the module is orientated such that the port number labels are located at the bottom of the module's front panel. This module orientation is considered as facing up.

- **Bottom-row slots:** ensure that the module is orientated such that the port number labels are located at the top of the module's front panel. This module orientation is considered as facing down.

4. Push the module into the slot and press on it firmly to ensure it has been fully inserted.

5. Using a flathead screwdriver, tighten the module's mounting pins.

6. Power on the device.

6.1.3 Replacing Modules

This section describes how to replace front-panel modules. The device's input/output (I/O) modules (e.g., TRUNKS and FXS) are hot-swappable (except for the OSN Server modules). The physical replacement of the I/O modules is performed together with a software replacement procedure using the device's Web interface. Once you have 'software-removed' the module, you can then physically remove the module and replace it with a new module. Once the new module is inserted in the chassis slot, you then need to 'software-insert' it.

> **Warnings:**
>
> - Replace the module with the same module type and in the same chassis slot. For example, a damaged TRUNKS module with two digital spans in Slot 1 must be replaced with a TRUNKS module with two digital spans in Slot 1.
> - When only one I/O module is housed in the chassis, the software-removal procedure is not applicable; instead, power down the device, physically replace the module, and then power up the device.

➢ **To replace I/O modules:**

1. Software-remove the module, using the device's Web interface's 'Home' page (refer to the device's *User's Manual*).

2. Disconnect the cables from the module that you want to replace.

3. Physically remove the module from the device's front-panel slot, by performing the following:
   a. Using a flathead screwdriver, loosen the module's two mounting screws.
   b. Gently extract the module from the slot.

4. Physically insert the new module into the same slot from where the module that you are replacing resided, by performing the following:
   a. Insert the module into the empty slot, with the orientation of the module as follows:
      ♦ **Top-row slots:** ensure that the module is orientated such that the port number labels are located at the bottom of the module's front panel. This module orientation is considered as facing up.

♦ **Bottom-row slots:** ensure that the module is orientated such that the port number labels are located at the top of the module's front panel. This module orientation is considered as facing down.

Figure 6-3: Module Orientation in Chassis Top- and Bottom-Row Slots

Top-Row Modules with Port Numbers below Ports

Bottom-Row Modules with Port Numbers above Ports

b. Align the module with the slot rails.

c. Gently push the module into the slot and press on it firmly to ensure it has been fully inserted.

d. Using a flathead screwdriver, tighten the module's mounting pins.

5. Reconnect the cables to the module

6. Software-insert the module, using the device's Web interface's 'Home' page (refer to the device's *User's Manual*).

6.2   Replacing the Air Filter

The Fan Tray module includes six integrated fans, which cool the device's internal components. The Fan Tray module draws in air through a perforated grill on the right side of the chassis. The incoming air passes through an air filter, whose honeycombed design prevents radio frequency (RF) interference. The filtered air passes through the entire set of modules, cooling each one, and then exits the device through perforated vents on the left side of the chassis.

The Fan Tray module includes a removable air filter (located within the fan assembly, immediately inside the perforated grill). The air filter should be replaced approximately every three months and should be checked weekly to ensure that it is not saturated and that it does not require cleaning/replacement. You should clean the air filter no more than three times, after which the air filter should be replaced. Cleaning or replacing the air filter can be carried out while the system is fully functioning.

> **Warnings:**
>
> - When removing the Fan Tray module while the power is on (or after it has recently been switched off), the blades may still be rotating at high speeds. Therefore, to avoid bodily harm ensure that you don't touch the fan blades.
>
> - Before removing the Fan Tray module for cleaning the air filter, prepare all the required equipment. It is imperative that the chassis does not remain without the Fan Tray module for a lengthy period. Ensure that you re-insert the Fan Tray module (without the air filter) while you are cleaning the air filter, and then re-insert the air filter as soon as it is clean.

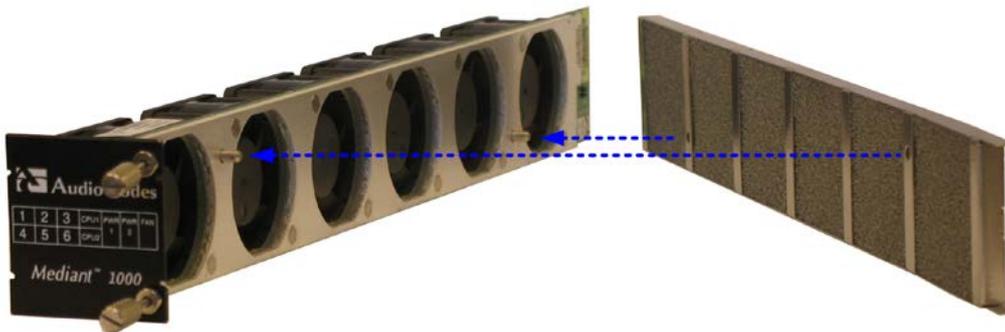➢ **To clean or replace the air filter:**

1. Release the two screws on the top right-hand corner and the bottom right-hand corner of the front panel of the Fan Tray module.

2. Pull the Fan Tray module outward. The figure below shows the Fan Tray module partially removed.

Figure 6-4: Partially Removed Fan Try Unit
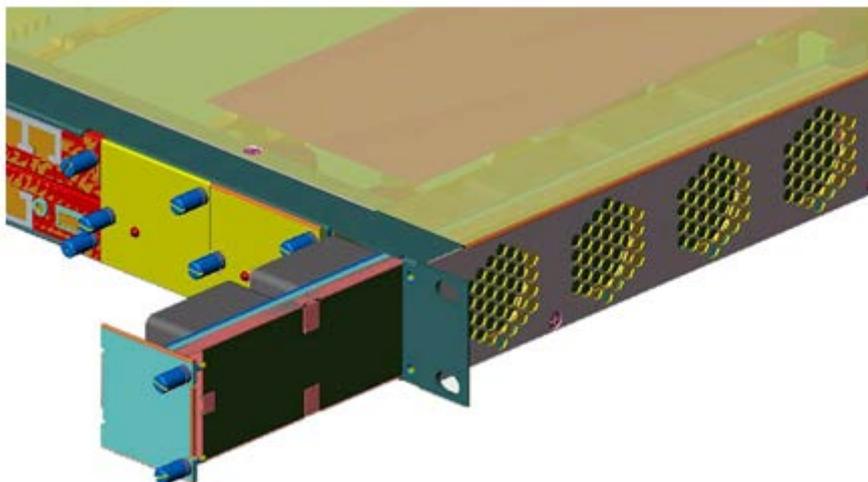
3. With your fingertips, grasp the steel frame of the air filter and separate it from the Fan Tray module; you should be able to remove it relatively easily. The figure below shows the air filter removed from the Fan Tray module.

Figure 6-5: Air Filter Removed from Fan Tray

4. Take one of the following steps:

- If you are cleaning the filter, use a vacuum cleaner (set to light suction) to remove dust particles from the filter.

- If you are replacing the filter, discard the old air filter and replace it with an air filter purchased from AudioCodes.

5. Attach the (new or cleaned) air filter to the Fan Tray module; position the two holes on the filter over the pins on the Fan Tray.

6. Insert the Fan Tray module into its slot, until the front panel is flush with the chassis plate.

7. Fasten the two screws on the top right-hand corner and the bottom right-hand corner of the front panel of the Fan Tray module.

A　Open Solution Network (OSN) Server Platform

This section is intended for customers who wish to install the optional Open Solution Network (OSN) server platform functionality. The device's chassis houses a plug-in OSN Server module for hosting third-party, VoIP applications such as IP-PBX, Pre-Paid, and IP-PBX redundancy. The OSN server is a standalone entity, integrated within the device, using a separate Ethernet interface and IP configuration from that used by the device. The OSN platform includes a powerful processor and hard disks allowing you to host third-party applications such as IP-PBX, Pre-Paid, and IP-PBX redundancy.

The OSN server is available in one of the following models:

- **OSN Server Ver. 1 (OSN1):** based on Intel Celeron (16 MHz) and uses the Connection Module (CM) for the interface to the IP network
- **OSN Server Ver. 2 (OSN2):** based on Intel Pentium (1.4 GHz) and uses the iPMX for the interface to the IP network

A.1　OSN Server Modules Description

This section describes the OSN server modules.

> **Note:**　The Connection Module (CM), which provides connectivity to the IP network is only implemented for OSN1.

A.1.1　Connection Module (CM)

The Connection module (CM) is installed in the chassis front panel.

Figure A-1: Connection Module

> **Note:**　The CM module is applicable only to OSN1.

A.1.2   iPMX Module

The iPMX module is housed in the chassis rear panel. This module is slightly different for the OSN1 and OSN2 platforms, as shown in the figures below.

Figure A-2: iPMX Module for OSN1

Figure A-3: iPMX Module for OSN2

A.1.3   HDMX Module

The HDMX module provides the hard drive functionality for the OSN platform, and is housed in the chassis rear panel.

Figure A-4: HDMX Module

A.2   Hardware Installation

This section describes the hardware installation of the OSN server modules.

> **Warning:** Before installing the OSN server modules, ensure that the device is disconnected from the power supply. These modules are not hot-swappable and damage to these modules can occur if replaced under voltage.

A.2.1   Required Working Tools

The following tools are required for installing the OSN Server module:
- Phillips screwdriver
- Flathead screwdriver
- Wire cutter

A.2.2   Installing the CM Module

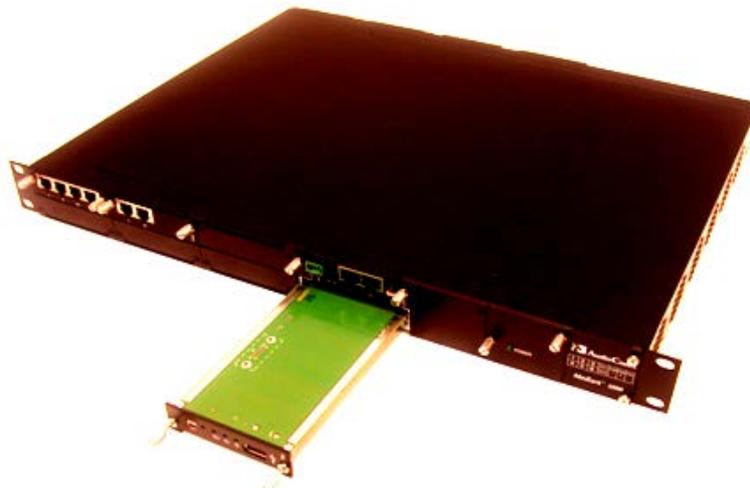The procedure below describes how to install the CM module.

> **Note:**   The CM module is applicable only to OSN1.

> ➤ **To install the CM module:**

1. On the device's front panel, use a Phillips screwdriver to remove the black metal cover plate from the slot located below the CPU module.
2. Insert the CM module into the empty slot, with the **plain** side of the Printed Circuit Board (PCB) facing up. Ensure the PCB slides into the slot rails, by aligning the CM with the rails in the slot.

Figure A-5: Inserting CM Module in Front-Panel Slot

3. Gently push the CM module into the slot until it is fully inserted.
4. Using a flathead screwdriver, tighten the module's mounting pins.

A.2.3   Installing the iPMX Module

The procedure below describes how to install the iPMX module.

➤ **To install the iPMX module:**

1. On the device's rear panel, remove the black metal cover plates in the first and second slots located on the right side of the power connection, as shown in the figure below.

Figure A-6: Cover Plates Removed

2. Use the cutter tool to remove the small metal strip between the upper and lower slots, as shown in the figure below.

Figure A-7: Cutting Metal Strip

3. Insert the iPMX module into the first slot, closest to the power connection, as shown in the figure below.

Figure A-8: Inserting iPMX Module in Rear-Panel Slot

4. Push the iPMX module into the slot and press on it firmly to ensure it has been fully inserted.

5. Using a flathead screwdriver, tighten the module's two captive mounting screws located on the bottom right and left corners.

6. Using a Philips screwdriver, tighten the module's two Philips screws located on the top right and left corners.

A.2.4 Installing the HDMX Module

The procedure below describes how to install the HDMX module.

➢ **To install the HDMX module:**

1. Place the device so that the rear panel is facing you.
2. Remove the black metal cover plates in the first and second slots located on the right side of the power connection.
3. Use the cutter tool to remove the small metal strip between the upper and lower slots.
4. Insert the HDMX module into the second slot, as shown in the figure below.

Figure A-9: Inserting HDMX Module in Rear-Panel Slot

5. Push the HDMX module into the slot and press on it firmly to ensure it has been fully inserted.
6. Using a flathead screwdriver, tighten the module's mounting pins.

A.2.5 Replacing the iPMX Module's Lithium Battery

The iPMX module is equipped with a 3-volt CR-1225 Lithium battery (AudioCodes product number: ACL P/N RBAT00001). Typically, battery life is estimated at two years. However, for various reasons, the battery may last for a shorter duration.

Warnings:

- When replacing the battery, all BIOS settings revert to factory defaults.
- When removing and inserting the battery, be careful not to touch other components on the iPMX printed circuit board (PCB) with the extracting tool. This may cause irreversible damage to the iPMX module.
- Dispose of used batteries according to the manufacturer's instructions. Failure to do so could result in environmental damage.
- The Lithium battery must only be replaced with an identical or equivalent battery, as recommended by the manufacturer.


Electrical Component Sensitivity

Electronic components on printed circuit boards are extremely sensitive to static electricity. Normal amounts of static electricity generated by clothing can damage electronic equipment. To reduce the risk of damage due to electrostatic discharge (ESD) when installing or servicing electronic equipment, it is recommended that anti-static earthing straps and mats be used.

The following procedure describes how to replace the Lithium battery in the iPMX module.

➢ **To replace the Lithium battery in the iPMX:**

1. Remove the iPMX module from the slot in which it's housed in the device rear panel, by performing the following:

    a. Using a flathead screwdriver, loosen the module's two lower mounting captive screws.

    b. Using a Philips screwdriver, loosen the two upper screws.

    c. Holding the two mounting captive screws, gently pull the module out of the slot.

2. Flip the module over so that it lies face down with the PCB visible.

3. Locate the Lithium battery in its battery holder on the circuit board.

4. Using a tweezer-like tool (or small flathead screwdriver), carefully leverage the battery out of the battery holder. Be careful not to touch other components on the board with your tool.

Figure A-10: Removing Lithium Battery from iPMX Module
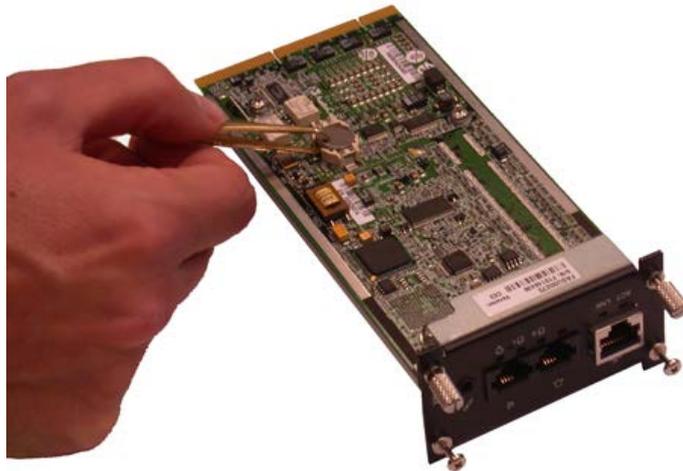
5. For installing the new battery, simply push the battery into the battery holder using your fingers. Ensure that you install the battery in the correct orientation such that the positive side is facing up (i.e., the side containing the battery description is visible).

6. Re-insert the iPMX module into the slot of the device's chassis as described in the previous section.

A.3 Installing Linux™ on the OSN Server

This section describes the installation of the Linux operating system on the OSN server. The OSN server supports the following Linux OS distributions:

- Linux RedHat (and Fedora)
- Linux Debian
- Linux SUSE
- Linux CentOS

A.3.1 Requirements

Before installing Linux on the device's OSN Server, ensure the following hardware and software requirements are fulfilled:

- **Hardware requirements:**
  - Ethernet cable cord
  - External USB CD ROM or DVD ROM (not supplied)
  - USB cable (not supplied) to connect the external USB CD ROM to the device
  - RS-232 cable (supplied)
  - Linux Distributions Installation CDs
- **Software requirements:**
  - RS-232 console / terminal software (e.g., HyperTerminal)

A.3.2 Cabling OSN1

The procedure below describes how to cable the OSN1 for installing Linux.

➢ **To cable OSN1:**

1. On the device's CM module, perform the following:
   a. Connect the RS-232 port to a PC running Windows™, using the RS-232 cable.
   b. Connect the USB port to an external CD-ROM drive, using the USB cable.

Figure A-11: Cabling OSN1 (CM Module)

Connect RS-232 Port to Computer Running Windows OS

Connect USB Port to External CD-ROM Drive

2. On the device's iPMX module, connect the RJ-45 Ethernet port, using the Ethernet cable.
3. Connect the external CD-ROM to the power supply.
4. Connect the device to the power supply.

A.3.3   Cabling OSN2

The procedure below describes how to cable the OSN2 for installing Linux.

> **Note:**   If you want to use the VGA port, you can order the VGA cable separately from AudioCodes.

➤ **To cable OSN2:**

1. On the device's iPMX module, perform the following:
   a. Connect to the PC using one of the following methods:
      ♦ Connect the RS-232 port to a PC, using the RS-232 cable.
      ♦ Connect the VGA port to the monitor
   b. Connect the USB port to an external CD-ROM drive, using the USB cable.
   c. Connect the RJ-45 Ethernet port, using the Ethernet cable.
2. Connect the external CD-ROM to the power supply.
3. Connect the device to the power supply.

FigureA-12: Cabling OSN2 (iPMX Module)
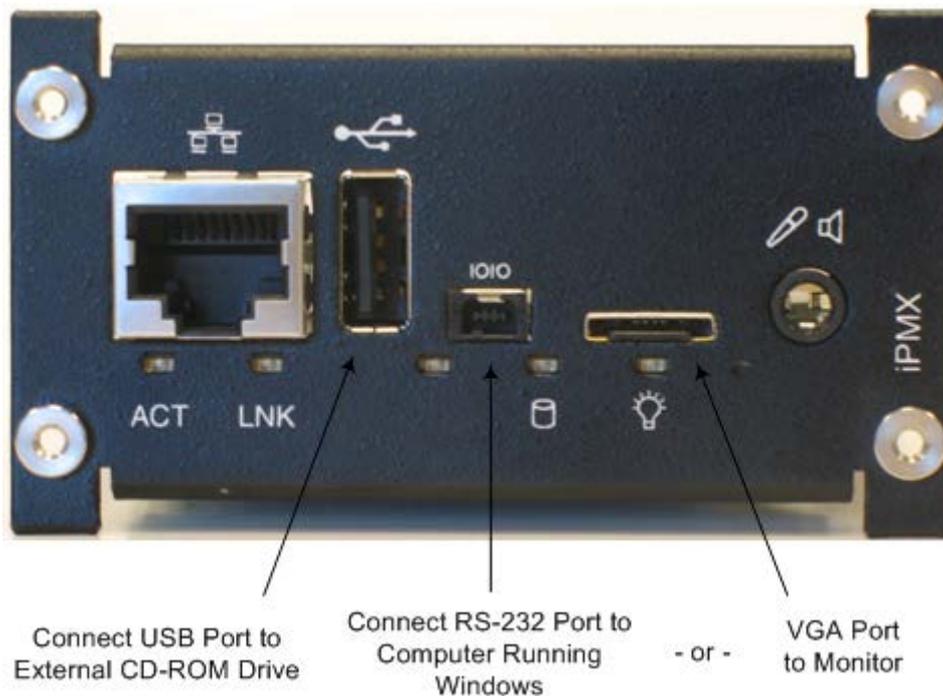
A.3.4 Installing Linux Software

Once you have cable the device as described in the previous section, you can install the Linux OS.

➢ **To install Linux on the OSN server:**

1. Start a terminal application (e.g. HyperTerminal) on your PC, and create a new connection with the following settings:

   - Connect Port: COM1
   - Baudrate: 115200 (bits per second)
   - Data Bits: 8
   - Parity: None
   - Stop Bits: 1
   - Flow Control: None

2. Power up the device.

3. Enable console installation from the system BIOS:

   a. When the system starts, press the Delete key; after several seconds, the following BIOS setup window is displayed:
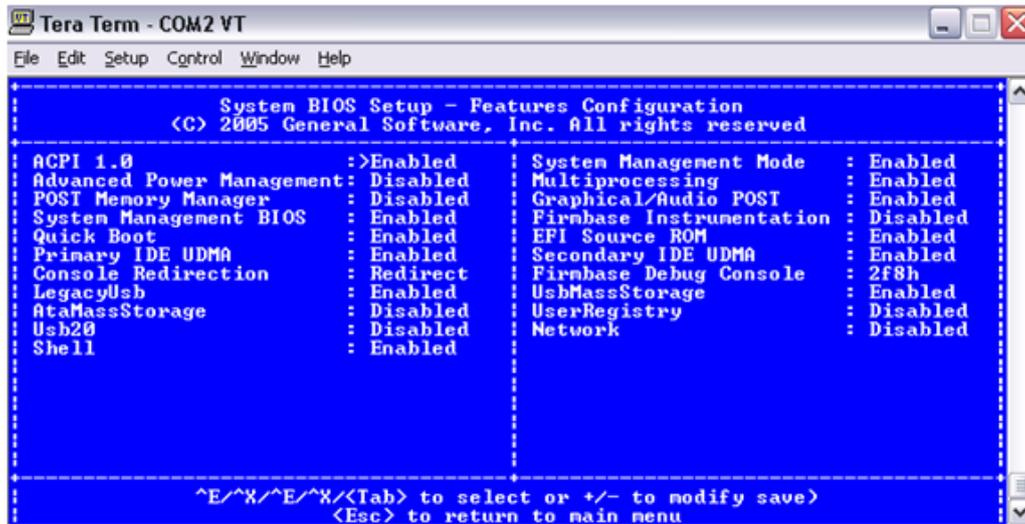
Figure A-13: System BIOS Setup Window
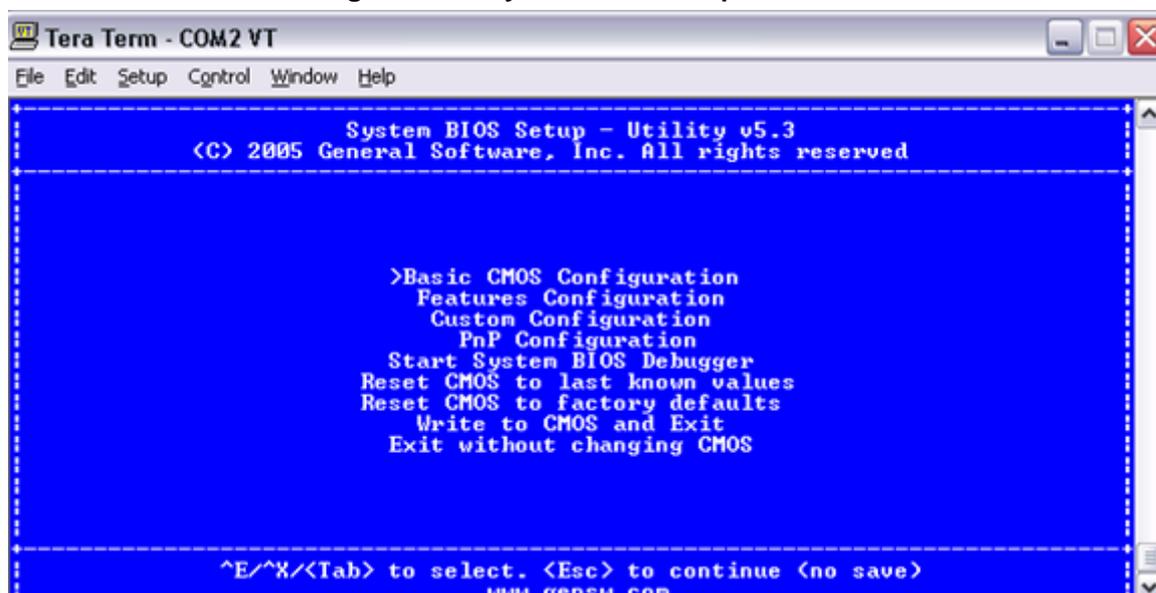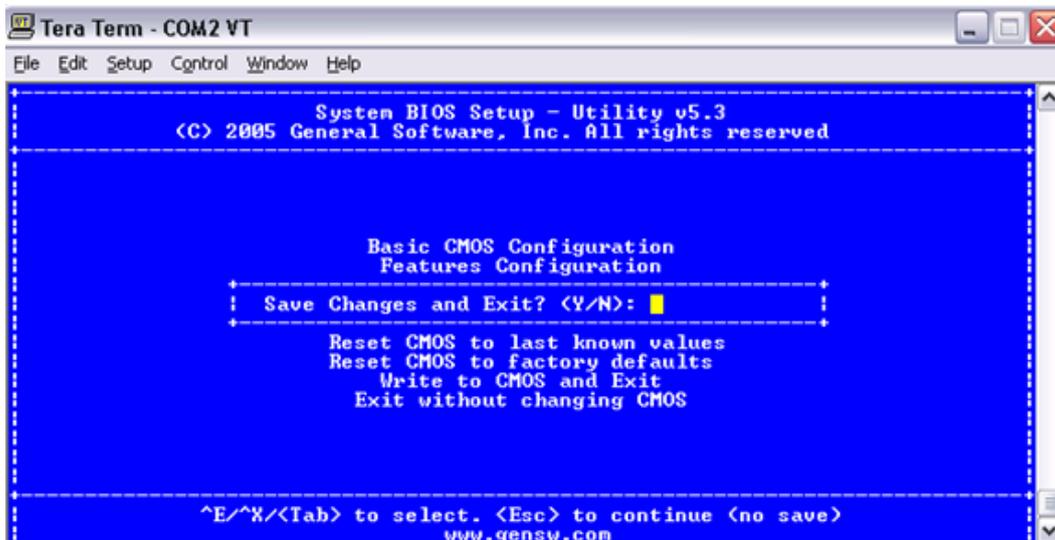

   b. Select the **Features Configuration** option.

c.   Change the System Management BIOS parameter to "Enabled".

Figure A-14: Enabling System Management BIOS

d.   Press the Esc key to return to the main BIOS window:

Figure A-15: Saving BIOS Settings

e.   Choose the **Write to CMOS and Exit** option, and then press the <Y> key to save changes and exit.

4.   Insert the Linux installation CD into the USB CD-ROM drive; the terminal application prompt appears.

5.   At the prompt, type the following:

```
linux text console=ttyS0,115200#
```

> **Note:**   Only one character is displayed each time you press a key.

6.   Press the Enter key; the Linux installation begins.

7.   Continue installation according to the Linux installation instructions.

A.4 Connecting Remotely to OSN Server using Windows

Typically, for customers requiring Microsoft Windows® operating system (OS), the OSN Server is provided with Windows pre-installed. You can connect to the OSN Server using Microsoft's Remote Desktop Connection program.

> **Notes:**
>
> - To connect remotely to the OSN server running Windows, ensure that Remote Desktop is enabled.
> - The remote PC must be in the same subnet as the OSN server (default IP address 10.10.12).

A.4.1 Cabling

Before you can connect remotely to the OSN Server, you need to cable a PC (running Remote Desktop Connection) to the OSN Server's IP interface. The OSN2 server connects to the IP network through the LAN port of the iPMX module.

➢ **To cable OSN2 for remote desktop connection:**

■ Connect the Ethernet LAN port of the device's iPMX module, to the LAN network, by performing one of the following:

- **Remote PC connection:** using a straight-through cable, connect the iPMX LAN port to a switch that is connected to the IP network.
- **Local PC connection:** using a crossover cable, connect the iPMX LAN port directly to the PC's LAN port.

Figure A-16: Cabling iPMX for Remote Connection from PC with Windows XP
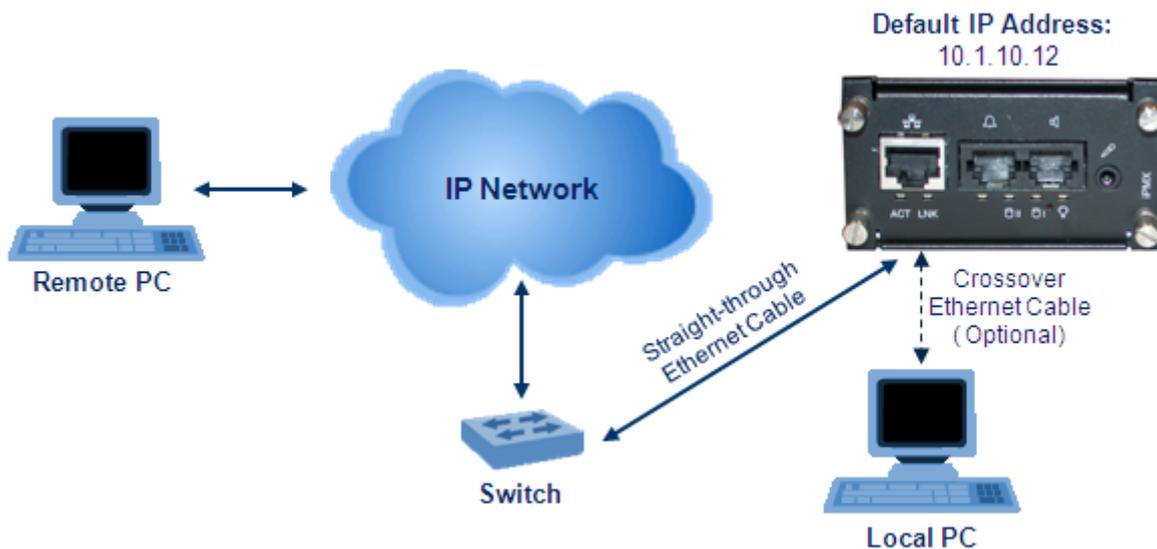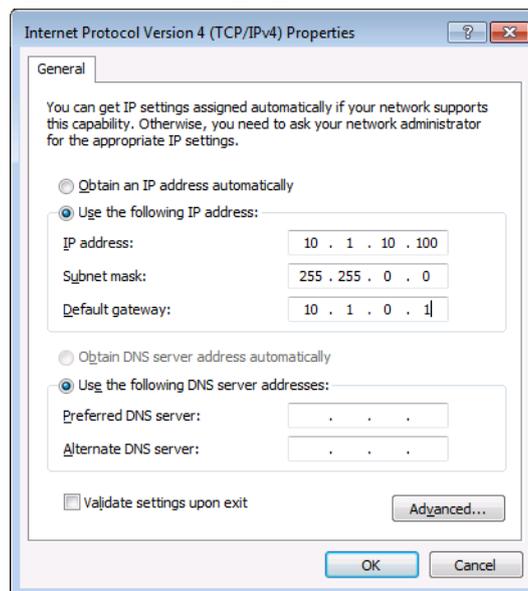
A.4.2   Connecting Using Remote Desktop Connection

Once you have cabled the PC to the OSN Server, perform the procedure below for connecting the PC remotely to the OSN Server (running Windows) using the Remote Desktop Connection program.

➢ **To remotely connect a PC to the OSN Server running Windows:**

1. Change the PC's IP address so that it is in the same subnet as the default OSN Server's IP address (i.e., 10.1.10.12). The figure below displays an example of a changing a PC's IP address:

Figure A-17: Changing the PC's IP Address

2. Start Microsoft's Remote Desktop Connection program - from the **Start** menu, point to **Programs**, to **Accessories**, to **Communications**, and then click **Remote Desktop Connection**.

Figure A-18: Entering IP Address in Remote Desktop Connection

3. In the 'Computer' field, enter the OSN Server's default IP address (i.e., 10.1.10.12).

4. Click **Connect**.

Figure A-19: Entering User Name and Password in Remote Desktop Connection

5. Enter the OSN Server's default user name (i.e., "administrator") and password (i.e., "123456").

6. Click **OK**; Remote Desktop Connection connects you to the desktop of the device's OSN server.

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