Mitel AG4100 Analog Gateways

03/2025
QUICK INSTALLATION GUIDE

![Mitel logo]

Contents

1 PRECAUTIONARY GUIDELINES

1.1 ABOUT THE MITEL AG4100 ANALOG GATEWAYS

The Quick Installation Guide provides the information for the hardware installation of the Mitel AG4124 and AG4172.

The following guides provide complete information about the Mitel AG4100 Analog Gateways:

- **AG4124/AG4172 Analog Gateway Administration Guide**: https://www.mitel.com/document-center/devices-and-accessories/networking-equipment/ag4100-analog-gateway/ag4124

- **Mitel Sweden Documentation Libraries** (for the MX-ONE 7.6 and later, Mitel AG4124 only): https://mitel365.sharepoint.com/sites/MX-ONE-Documentation/CPIDocumentation/index.aspx

- **Mitel EX Controller, Mitel GX Gateway, TA7100 and AG4124 – Installation and Configuration** (for the MiVoice 5000 only): https://www.mitel.com/document-center/business-phone-systems/mivoice-5000

- **MiVoice 5000 Release 8.1 Personal Data Protection and Privacy Controls**: https://www.mitel.com/document-center/business-phone-systems/mivoice-5000

- **Mitel AG4100 Series Gateway Information and Safety Recommendations:** https://www.mitel.com/document-center/devices-and-accessories/networking-equipment/ag4100-analog-gateway/ag4124/all-releases/en/mitel-ag4100-series-gateway-information-and-safety-recommendations

The other documents for the Mitel AG4100 Analog Gateways and Mitel® products are available on the Mitel Document Center web site. https://www.mitel.com/document-center

⚠️ **ATTENTION: The Mitel AG4172 is available for the MiVoice Business and the MiVoice 5000 products only.**

1.2 GENERAL GUIDELINES

To ensure that the Mitel AG4100 Analog Gateways works well, adhere to the following guidelines:

- Follow the safety recommendations. refer to the document **Mitel AG4100 Series Information and Safety Recommendations** delivered with the Mitel AG4124 and AG4172 and available on the Mitel Document Center: https://www.mitel.com/document-center/devices-and-accessories/networking-equipment/ag4100-analog-gateway/ag4124,

- Allow only the authorized personnel to install and maintain the Analog Gateway,

- Make sure the network bandwidth is sufficient to maintain a stable Analog Gateway operation. Refer to the section **7.4 - Network Requirements** in the document **AG4124/AG4172 Analog Gateway Administration Guide** available on the Mitel Document Center: https://www.mitel.com/document-center/devices-and-accessories/networking-equipment/ag4100-analog-gateway/ag4124

1.3 LOCATION GUIDELINES

To avoid premature aging of the controller; ensure user security; and facilitate access, upgrades, and maintenance, adhere to the following guidelines to choose the Analog Gateway location:

- Install the Analog Gateway in a 19 inches (48,26 cm) rack or on a flat, horizontal surface,

- Maintain a minimum of 25 mm (1 in.) clearance around the perimeter of the Analog Gateway, exclusive of the Analog Gateway mounting points (rack or benchtop).

- Install the Analog Gateway in a restricted and secure location where it is only accessible by authorized personnel.

- Install the Analog Gateway in a well-ventilated location, away from high humidity and elevated temperatures:
  - Humidity inferior to 85% and non-condensing,
  - Storage temperature: -20 °C to +80 °C (-4 Deg F to 170 Deg. F),
  - Operating temperature: 0 °C to +45 °C (32 Deg. F to 110 Deg. F).

1.4   WIRING GUIDELINES

These guidelines apply to any type of cables used with the Analog Gateway.

- Use cables that are long enough, with no side pressure or pressure on connectors.
- Keep cables away from:
  - Sources of electrical noise such as radios, radio transmitters, and broadband amplifiers,
  - Power lines,
  - Fluorescent lighting fixtures,
  - Liquids or moisture,
  - Heat sources.
- Make sure the mains power supply provides 100-240 VAC 50/60Hz.
- Make sure the Analog Gateway power supply is connected to a dedicated mains AC circuit with a grounded connection.
- For the Mitel AG4124 hardware maintenance, unplug the RJ11 (Front) and RJ21 (Rear) cables of the Mitel AG4124 at first. Unplug the Mitel AG4124 power supply from the mains power next.
- For the Mitel AG4172 hardware maintenance, unplug the RJ21 (Rear) cables of the Mitel AG4172 at first. Unplug the Mitel AG4172 power supply from the mains power next.

For additional information, refer to the documents **Ethernet Twisted Pair Cabling Plant, Power and Grounding Guidelines** and the local wiring code for guidelines on routing data cables.

2 PRESENTATION OF THE MITEL AG4100 ANALOG GATEWAYS

2.1 MITEL AG4124 ANALOG GATEWAY

2.1.1 MITEL AG4124 FEATURES

The Mitel AG4124 is an Analog Gateway with:

- 24 FXS interfaces, accessible from:
    o Either the front panel with 24 RJ11 connectors,
    o Or the rear panel with 1 RJ21 connector.
- 3 LAN ports, 1 AUX port and 1 Console port (rear panel)
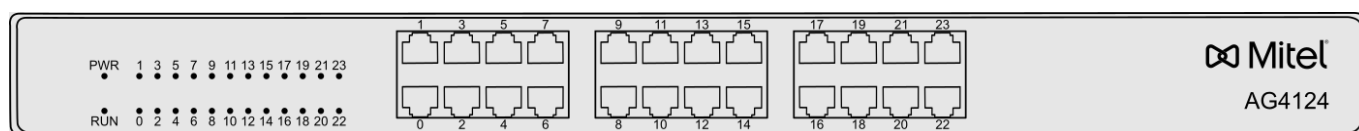
Front panel

Rear panel

2.1.2 MITEL AG4124 DIMENSIONS AND WEIGHT

Dimensions

- Width: 44 cm (17,3")
- Depth: 25 cm (9,8")
- Height: 4,4 cm (1 ¾")

Weight

- 3,2 kg (7lbs)

2.1.3 MITEL AG4124 LIMITATIONS

- Up to 12 lines out of the 24 lines supported by the Mitel AG4124 can ring or light MWI lights at the same time.

2.1.4   MITEL AG4124 PORT TYPES AND PLUGS

Front panel	24 RJ11 FXS analog ports, from 0 to 23
Rear panel	IEC-950 receptacle for the power cable
	Grounding lug
	RJ48 RS232 Console port
	3 RJ45 10/100Mb/s LAN ports
	1 AUX port
	1 RJ21 connector for connecting up to 24 FXS analog ports, from 0 to 23.

c 📝 **Note : The rear panel RJ21 connector may be used as an alternative to the front panel RJ11 connectors for connecting terminals.**

2.1.5   MITEL AG4124 INDICATORS

Indicator	Definition	Status	Description
PWR	Shows if the Mitel AG4124 Analog Gateway is on	On	The Mitel AG4124 Analog Gateway is on.
		Off	The Mitel AG4124 Analog Gateway is off, or the power supply is defective
RUN	Shows if the Mitel AG4124 Analog Gateway is working well	Slow flash	The Mitel AG4124 Analog Gateway works properly
		Fast flash	The SIP service is launched
		Off	The Mitel AG4124 Analog Gateway is working improperly
FXS	Shows if the port is in use	On	The FXS port is in use
		Off	The FXS port is inactive or defective
LAN	Shows if the Mitel AG4124 Analog Gateway is connected to the network	Flash	The Mitel AG4124 Analog Gateway is connected to the network
		Off	The Mitel AG4124 Analog Gateway is disconnected from the network, or the network is defective
	Network speed	Slow flash	100Mbs
		Fast flash	10Mbs

2.2   MITEL AG4172 ANALOG GATEWAY

2.2.1   MITEL AG4172 FEATURES

The Mitel AG4172 is an Analog Gateway with:

- 72 FXS interfaces, accessible from the rear panel with 3 RJ21 connectors.

- 2 LAN ports, 1 AUX port, 1 Management port and 1 Console port (front panel)
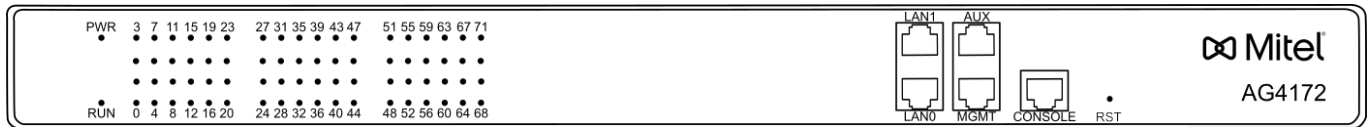
Front panel
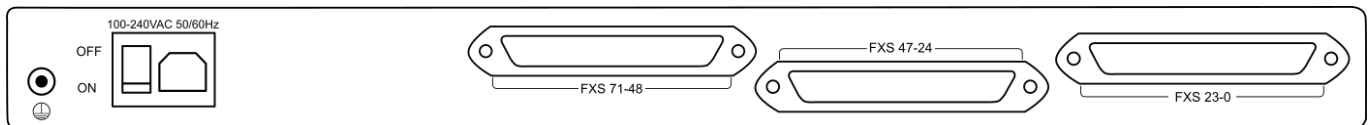
Rear panel

2.2.2   MITEL AG4172 DIMENSIONS AND WEIGHT

Dimensions

- Width: 44 cm (17,3")

- Depth: 32,8 cm (13")

- Height: 4,4 cm (1 ¾")

Weight

- 4,25 kg (9,4lbs)

2.2.3   MITEL AG4172 LIMITATIONS

- Up to 36 lines out of the 72 lines supported by the Mitel AG4172 can ring or light MWI lights at the same time.

2.2.4   MITEL AG4172 PORT TYPES AND PLUGS

Front panel	1 RJ48 RS232 Console port
	2 RJ45 10/100Mb/s LAN ports
	1 RJ45 10/100Mb/s Management port
	1 AUX port
Rear panel	IEC-950 receptacle for the power cable
	Grounding lug
	3 RJ21 FXS analog ports for connecting up to 24 FXS analog ports, from/ • 0 to 23, • 24 to 47, • 48 to 71

2.2.5   MITEL AG4172 INDICATORS

Indicator	Definition	Status	Description
PWR	Shows if the Mitel AG4172 Analog Gateway is on	On	The Mitel AG4172 Analog Gateway is on.
		Off	The Mitel AG4172 Analog Gateway is off, or the power supply is defective
RUN	Shows if the Mitel AG4172 Analog Gateway is working well	Slow flash	The Mitel AG4172 Analog Gateway works properly
		Fast flash	The SIP service is launched
		Off	The Mitel AG4172 Analog Gateway is working improperly
FXS	Shows if the port is in use	On	The FXS port is in use
		Off	The FXS port is inactive or defective
MGMT	Left LED: Shows if the Mitel AG4172 Analog Gateway is connected to the network	Flash	The Mitel AG4172 Analog Gateway is connected to the network
		Off	The Mitel AG4172 Analog Gateway is disconnected from the network, or the network is defective
	Right LED: Network speed	On	100Mbs
		Off	10Mbs
LAN	Left LED: Shows if the Mitel AG4172 Analog Gateway is connected to the network	Flash	The Mitel AG4172 Analog Gateway is connected to the network
		Off	The Mitel AG4172 Analog Gateway is disconnected from the network, or the network is defective
	Right LED: Network speed	On	100Mbs
		Off	10Mbs

3 BEFORE INSTALLING

3.1 REQUIRED TOOLS AND EQUIPMENT

Tools

- Phillips #2 screwdriver for the rack mount brackets.

- Anti-static wrist strap to protect the Mitel AG4124 or AG4172 Analog Gateway from electrostatic discharges (ESD).

Equipment

For the Mitel AG4124 Analog Gateway:

- RJ11 and RJ21 cables to connect the analog terminals.

For the Mitel AG4172 Analog Gateway:

- RJ21 cables to connect the analog terminals.

For more information about the RJ21 cable, refer to section **6.1 – RJ21 Cable**.

3.2 CHECK LIST OF THE ITEMS IN THE BOX

⚠️ **ATTENTION:** **For the power supply, you must order an AC power cord separately as they are not included in the box.**

3.2.1 AG4124 ANALOG GATEWAY BOX

Equipment	In the box	Date
1 Mitel AG4124		
1 RJ11 cable		
1 RJ45 cable		
1 console cable		
1 earth grounding cable + 1 screw		
2 rack mount brackets + 8 M3 screws		
4 silicone adhesive bumper pads		
5 screws and captive nuts for the rack		
3 threaded stand-offs + 2 cable tie wraps		

3.2.2 AG4172 ANALOG GATEWAY BOX

Equipment	In the box	Date
1 Mitel AG4172		
1 RJ45 cable		
1 console cable		
1 earth grounding cable + 1 screw		
2 rack mount brackets + 8 M3 screws		
4 silicone adhesive bumper pads		
5 screws and captive nuts for the rack		
7 threaded stand-offs + 4 cable tie wraps		

3.3   CHECK LIST OF THE INSTALLATION PROCESS

Task	Done by	Date
Identify a suitable location to install the Analog Gateway guidelines. Refer to the section **1.3 – Location guidelines**.		
Ensure that the required equipment and tools for the installation are available.		
Review the information and safety recommendations document included in the Analog Gateway shipping container.		
Install the Analog Gateway into an equipment rack or place the Analog Gateway on a flat surface. Refer to the section **4 – Hardware Installation**		
Check the AC voltage of the site and verify that the Analog Gateway is correctly grounded before plugging in the Analog Gateway.		
Verify that the length of the cables is suitable for the installation location.		
Gather the network information for the installation from the IT department or the System Administrator.		
Configure the Analog Gateway with the documentation of the required software. Refer to section **5 – Software installation and configuration**.		
Make sure that the Analog Gateway works properly: - Check the Analog Gateway front panel indicators. Refer to the sections **2.1.4 – Mitel AG4124 Indicators** or **2.2.4 – Mitel AG4172 Indicators** for more information. - Check that the required telephony capabilities function as required.		

4 HARDWARE INSTALLATION

⚠️ **REMINDER:** **The Mitel AG4172 is available for the MiVoice Business and the MiVoice 5000 only.**

4.1 PRELIMINARY OPERATIONS

- Write down or take a photo of the serial number of the Analog Gateway. The label with the information is on the bottom of the Analog Gateway.

- Read the safety guidelines carefully. Refer to section **1 – Precautionary guidelines**.

4.2 INSTALLING THE ANALOG GATEWAY

- Unpack the Analog Gateway and make sure all the equipment is in the package by following the check list. Refer to the section **3.1 – Check list of the items in the box**.

When installing on a flat surface:

- Stick the self-adhesive bumpers on the bottom part of the Analog Gateway.

📝 **Note: The bumpers provide a better air circulation under the Analog Gateway.**

- Make sure that the Analog Gateway is 25 mm (1 in.) away from the maintenance display or any other device.

When installing in a rack:

- Use the provided rack mount brackets and M3 screws to install the Analog Gateway.
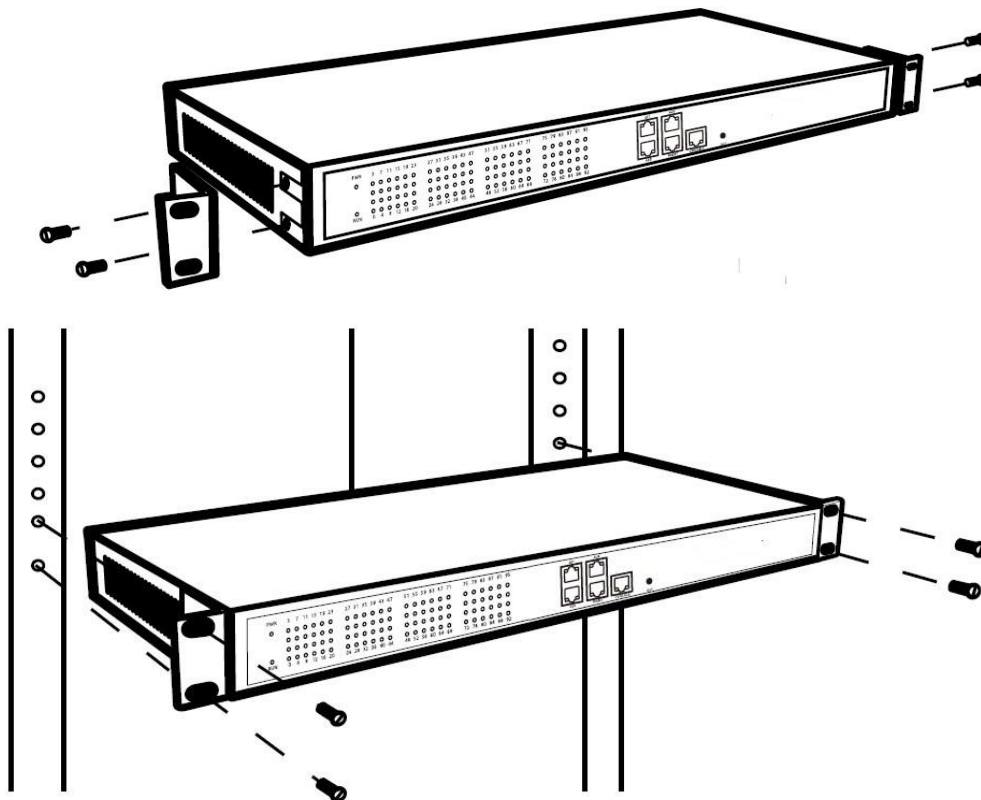
4.3 WIRING THE ANALOG GATEWAY

- Connect the grounding plug of the Analog Gateway to a grounding point in the site with the grounding cable.

ATTENTION: **Make sure that the grounding cable is well-connected to avoid any damage or injury.**

- Put on the anti-static wrist band, and make sure the wrist band is in contact with your skin.

- Connect the anti-static wrist band to a grounding point.

- Make sure that the ON/OFF button is on OFF.

- Connect the Analog Gateway to an AC outlet with the AC power cord.

- Connect the terminals to the Analog Gateway.

  For the Mitel AG4124 Analog Gateway: There are two options for connecting up to 24 terminals to the AG 4124:

  o The terminals may be connected to the RJ11 connectors located on the front panel of the Mitel AG4124.

  o The terminals may be connected to the RJ21 connector located on the rear panel of the Mitel AG4124.

  For the Mitel AG4172 Analog Gateway: The terminals may only be connected to the RJ21 connector located on the rear panel of the Mitel AG4172.

- Connect the Ethernet network cable to the LAN port.

ATTENTION: **The Mitel AG4124 and AG4172 Analog Gateways support only one LAN connection. Connecting more than one LAN port to the Ethernet LAN could trigger a network broadcast storm and degrade the network.**

For more information, refer to the document **AG4124/AG4172 Analog Gateway Administration Guide** available on the Mitel Document Center: https://www.mitel.com/document-center/devices-and-accessories/networking-equipment/ag4100-analog-gateway/ag4124

4.4 FEATURE CODES OF THE ANALOG GATEWAYS

The Analog Gateways allow using feature codes to make the installation procedure easier:

- *158#: Feature code to inquire what the LAN IP address of the Analog Gateway is,

- *114#: Feature code to inquire what the phone number of a specific terminal is,

- *115#: Feature code to inquire what the port number of a specific terminal is.

5 SOFTWARE INSTALLATION AND CONFIGURATION

⚠️ **REMINDER:** **The Mitel AG4172 is available for the MiVoice Business and the MiVoice 5000 only.**

📝 **Note :** **If there is an issue with an expired certificate, the browser should still allow to access the Analog Gateway via a lower security.**

If the issue persists, doing a factory reset will make the Analog Gateway accessible via the default certificate again.

5.1 MIVOICE 5000

Refer to the document **Mitel EX Controller, Mitel GX Gateway, Mitel AG4124 and TA7100 – Installation and configuration** available on the Mitel Document Center: https://www.mitel.com/document-center/business-phone-systems/mivoice-5000

5.2 MIVOICE BUSINESS

Refer to the section **Configuring MiVoice Business for use with Mitel AG4124 Gateway (Single Line)** in the document **AG4124/AG4172 Analog Gateway Administration Guide** available on the Mitel Document Center: https://www.mitel.com/document-center/devices-and-accessories/networking-equipment/ag4100-analog-gateway/ag4124.

5.3 MIVOICE MX-ONE

Refer to the section **Configuring MiVoice MX-ONE for use with Mitel AG4124 Gateway** in the document **AG4124/AG4172 Analog Gateway Administration Guide** available on the Mitel Document Center: https://www.mitel.com/document-center/devices-and-accessories/networking-equipment/ag4100-analog-gateway/ag4124.

6   APPENDIX

6.1   RJ21 CABLE

6.1.1   RJ21 CABLE RECOMMENDATION

The RJ21 cable reference to use with the Mitel AG4100 gateways is **25 Pair Telco Cable with 180 Degree, 50-Pin RJ21, Male, Bail Lock, Amphenol Connector**.

6.1.2   RJ21 WIRE SEQUENCE

The recommended RJ21 cable has 25 pairs of wires but the Analog Gateways only supports 24 pairs, from Pair 0 to Pair 23. The figure below shows the RJ21 wire sequence required:
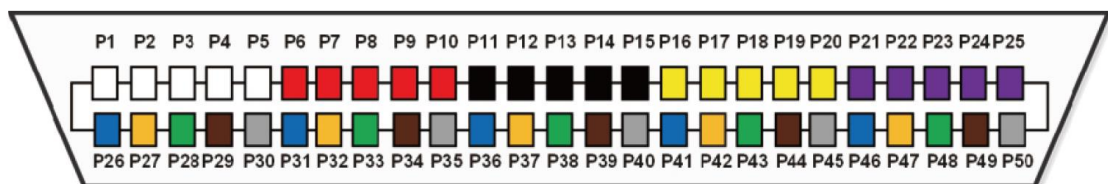
Pair No.	0		1		2		3		4	
Color	White	Blue	White	Orange	White	Green	White	Brown	White	Slate
PIN No.	P1	P26	P2	P27	P3	P28	P4	P29	P5	P30

Pair No.	5		6		7		8		9	
Color	Red	Blue	Red	Orange	Red	Green	Red	Brown	Red	Slate
PIN No.	P6	P31	P7	P32	P8	P33	P9	P34	P10	P35

Pair No.	10		11		12		13		14	
Color	Black	Blue	Black	Orange	Black	Green	Black	Brown	Black	Slate
PIN No.	P11	P36	P12	P37	P13	P38	P14	P39	P15	P40

Pair No.	15		16		17		18		19	
Color	Yellow	Blue	Yellow	Orange	Yellow	Green	Yellow	Brown	Yellow	Slate
PIN No.	P16	P41	P17	P42	P18	P43	P19	P44	P20	P45

Pair No.	20		21		22		23		24	
Color	Violet	Blue	Violet	Orange	Violet	Green	Violet	Brown	Violet	Slate
PIN No.	P21	P46	P22	P47	P23	P48	P24	P49	P25	P50

6.1.3 MIVB RJ-21 MALE-TO-MALE ADAPTER CABLE (OPTIONAL)

Customers with an existing MiVoice Business environment in the process of update with an AG4100 Analog Gateway can order an RJ-21 male-to-male adapter cable from Mitel.

Mitel Part Number: 51320615 MiVB AG41xx RJ-21 M-M Adapter Cable, 2M

The RJ-21 Male-to-Male Adapter Cable configuration includes:

- 1 RJ-21 180-Degree Male Connector, with Bail Lock Retention Clip (Analog Gateway Side)
- 1 RJ-21 90-Degree Male Connector, with Screw Lock Retention (Site Wiring Side)
- 1 25-Pair Cable, 2 Meter Long
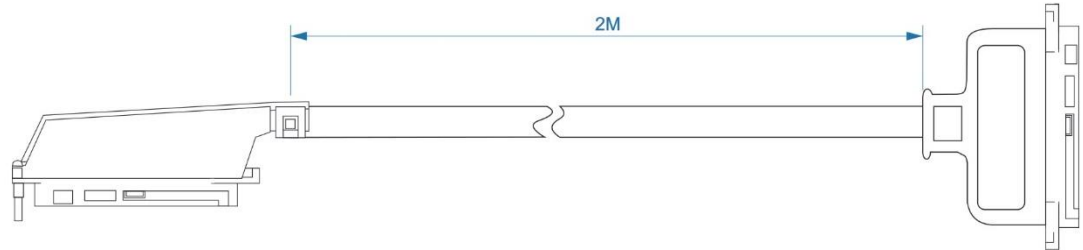
6.2   LONG LINE SUPPORT CONFIGURATION

The Mitel AG4100 Analog Gateways supports long lines, for loops longer than 800 meters.

Note: In this case, it is recommended to use cables with a diameter equal or greater than the AWG-26 cable (0,405 mm diameter).

To enable this option:

- Access the Analog Gateway Web Admin with a browser.

    The default IP address is **192.168.11.1**.

    The default login/password are **admin/admin**.

- Menu **Advanced>FXS Parameter**

    For the Mitel AG4124:

    o   Click on the checkbox **Enable** of the **Long Line Support** line.

    For the Mitel AG4172:

    There are 3 checkboxes for each RJ21 line, from Slot 0 et Slot 2.

    Slot 0 supports FXS port 0 to 23.

    Slot 1 supports FXS port 24 to 47.

    Slot 2 supports FXS port 48 to 71.

    o   Under **Long Line Support**, click on the required checkboxes on the **Enable** lines.

- Click the **Save** button.

6.3   UPGRADE PROCEDURES

This section gives the update files to use to upgrade the Analog Gateway to version 33.83.12.15, according to your current version.

For more information on the file upload process, refer to the documentation dedicated to the target Mitel product in section **5 – Software Installation and Configuration**.

Note: Before upgrading the Analog Gateway:

- **create a backup of the current Analog Gateway configuration,**
- **for an Analog Gateway in prior versions than version 33.83.12.07, make sure the admin password does not contain the following special characters:**

  . ~ ! @ # ¥ ^ & * ( ) _ + [ ] \ { } | ; ' : " , . ? / - = % < >

  If it does, change the password before updating the Analog Gateway.

6.3.1   UPGRADING THE MITEL AG4124 ANALOG GATEWAY

Current Version	Upgrade steps
33.83.11.25 (Release 1)	Upload the firmware file '**33.83.11.29.tar.gz**' Reboot the Mitel AG4124 Analog Gateway. Upload the firmware file '**33.83.12.08.tar.gz**'.
33.83.11.29 (Release 2)	Reboot the Mitel AG4124 Analog Gateway. Upload the Image file '**Mitel-1215-image.bin.ldf**'. The Mitel AG4124 Analog Gateway automatically reboots.
33.83.12.07 (Release 3)	Upload the Image file '**Mitel-1215-image.bin.ldf**'. The Mitel AG4124 Analog Gateway reboots automatically.

6.3.2   UPGRADING THE MITEL AG4172 ANALOG GATEWAY

Current Version	Upgrade steps
33.83.12.07 (Release 3)	Upload the Image file '**Mitel-1215-image.bin.ldf**'. The Mitel AG4172 Analog Gateway reboots automatically. Upload the file **'DTUFirmware v1.8.tar.gz'** to update the UserCard firmware. Reboot the Mitel AG4172 Analog Gateway.

6.4   DOWNGRADE PROCEDURES

This section gives the update files to use to downgrade the Analog Gateway to any previous version.

For more information on the file upload process, refer to the documentation dedicated to the target Mitel product in section **5 – Software Installation and Configuration**.

6.4.1   DOWNGRADING THE MITEL AG4124 ANALOG GATEWAY

Target Version	Downgrade steps	Notes
33.83.12.07 (Release 3)	Upload the firmware file '**33.83.12.07.tar.gz**'. Reboot the Mitel AG4124 Analog Gateway.	It is recommended to do a factory reset and reconfigure the Analog Gateway.

33.83.11.29 (Release 2)	Flash the Mitel AG4124 Analog Gateway using TFTP.	The Analog Gateways use different DMS and firmware.
33.83.11.25 (Release 1)		

6.4.2   DOWNGRADING THE MIITEL AG4172 ANALOG GATEWAY

Target Version	Downgrade steps	Notes
33.83.12.07 (Release 3)	Upload the firmware file '**33.83.12.07.tar.gz**'. Reboot the Mitel AG4172 Analog Gateway.	It is recommended to do a factory reset and reconfigure the Analog Gateway.

6.5   MITEL AG4100 SYSTEM ENGINEERING INFORMATION

6.5.1   VOLTAGE & POWER RATINGS

Analog Gateway Model	VAC	Operating State	Current (mA)	Power (W)	Volt-Amperes (VA)	Heat dissipation (W)
Mitel AG4124	120VAC	Idle	169	10.7	40.55	1
		Ringing (Vrms, 4REN)	213	14.4	51.1	2.4
		Active / Active (mA, 200R)	413	28.2	99.09	4.6
	240VAC	Idle	116	11.4	55.66	2.2
		Ringing (Vrms, 4REN)	145	15.2	69.58	3.8
		Active / Active (mA, 200R)	257	28.3	123.32	5.6
Mitel AG4172	120VAC	Idle	463	30.9	56	2.4
		Ringing (Vrms, 4REN)	1507	106.5	181	4.5
		Active / Active (mA, 200R)	1327	84.9	159	6.5
	240VAC	Idle	269	30.9	65	3.6
		Ringing (Vrms, 4REN)	881	99.3	211	5.2
		Active / Active (mA, 200R)	783	81.3	188	7.4

6.5.2   FXS PORT CURRENT (MA) CHARACTERISTICS

Product Number	Mitel Description	FXS Port On-Hook Leakage Current (mA max.)	FXS Port Loop Current (mA)
50008403	AG4124 Universal (w/o AC cord)	0.06	19.5 (min.) 20 (nominal) 40 (max)
50008407	AG4172 Universal (w/o AC cord)	0.06	19.5 (min.) 20 (nominal) 40 (max)

6.5.3 RELIABILITY

Product Number	Mitel Description	MTBF 25 deg C (hours)*	MTBF 40 deg C (hours)*
50008403	AG4124 Universal (w/o AC cord)	105820	70380
50008407	AG4172 Universal (w/o AC cord)	104960	70420

*: With All Ports Active