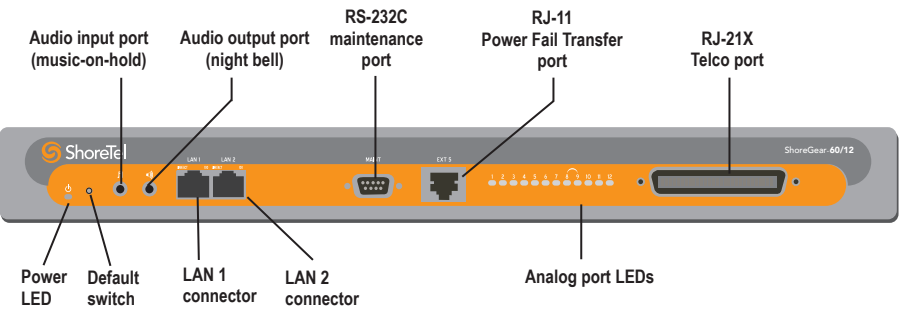**The ShoreGear-60/12 Voice Switch package contains:**
- **ShoreGear-60/12 Voice Switch**
- **Power cord**
- **Stick-on feet** (for surface installation)
- **ShoreGear-60/12 Telco cable**
- **Cable retainer for the ShoreGear-60/12 Telco cable** (a metal bracket with a Velcro strap)

About the ShoreGear-60/12

The ShoreGear-60/12 Voice Switch connects enterprise telephone extensions through an internal IP network, or to any central office (CO) analog trunk line.

The switch provides connectivity through:
- Two RJ-45 local area network (LAN) connectors
- One RJ-21X port for connecting the switch to a telephone company punch-down block, patch panel, or 12-port harmonica connector.
- One RJ-11 port for connection to the extension side of the Power Fail Transfer Unit (Extension 9)
- One DB-9, RS-232C maintenance port (19200 bps, 8 bits, no parity, 1 stop bit, no handshake) for serial communications
- One audio input port (3.5 mm stereo) for connecting a music-on-hold source
- One audio output port (3.5 mm stereo) for connecting the switch to a corporate paging system or night bell

Audio input port (music-on-hold)
Audio output port (night bell)
RS-232C maintenance port
RJ-11 Power Fail Transfer port
RJ-21X Telco port
Power LED
Default switch
LAN 1 connector
LAN 2 connector
Analog port LEDs

What You Need for Installation

To install the switch, you need the following equipment:
- AC surge protector for the power connection
- RJ-45 cable for connecting the switch to the local area network
- Music-on-hold source with a standard mini-headphone Y-adapter (optional)
- Permanent earthing connector for grounding the device
- RJ-21 telephone cable for telephone- and trunk-line connections (optional)
- RJ-21 to RJ-11 patch panel for connecting telephones and trunk lines
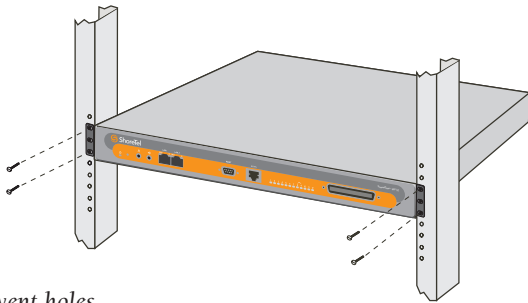- #1 Phillips screwdriver

Choosing a Location

To ensure optimum operating conditions for the ShoreGear voice switch, make sure that its operating environment is adequately ventilated, free of gas or airborne particles, and isolated from electrical noise.

Installing the ShoreGear Voice Switch (Rack Mount)

The ShoreGear voice switch is equipped with pre-installed rack-mount ears for easy installation into a standard 19-inch rack.

1 Lift the ShoreGear voice switch to the desired height and attach it to the frame with four standard rack screws.

2 Insert the screws in both the upper and lower positions on the rack-mount ears.

NOTE: *Make sure there is at least two inches of open space around all vent holes.*

Mounting the ShoreGear Voice Switch on a Flat Surface

If you plan to mount the switch on a flat surface, first attach the provided rubber feet to the bottom corners of the device. (You can stack up to three switches in a surface installation.)
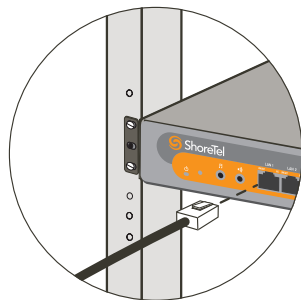
Attaching an Earthing Connector

To meet UL requirments for proper grounding, you must connect a permanent earthing protector between the ShoreGear voice switch and the wiring system ground.

1 Connect a ground wire (#16 AWG wire or larger) to the screw on the back of the unit and to the right of the product label.

2 Connect the other end of the ground wire to the wiring system ground.

CAUTION: *Always connect the permanent earthing connector before attempting to connect the switch to a LAN segment and telecommunication lines.*

Connecting the ShoreGear Voice Switch to the Network

Once the ShoreGear-60/12 Voice Switch is secured to a rack or surface-mounted, you can connect it to the data network.

- Use an RJ-45 Ethernet cable to connect one or both of the LAN ports to the network subnet.

NOTE: *While both ports can detect and respond to link status, the switch uses only one LAN port at a time.*

Powering on the ShoreGear Voice Switch

After connecting the switch to the network, power on the device by connecting it to an AC power source.

1 Plug an AC surge protector (not provided) into a grounded AC power source.

2 Plug one end of the provided power cord into the receptacle on the back of the switch, then plug the other end into the AC surge protector.

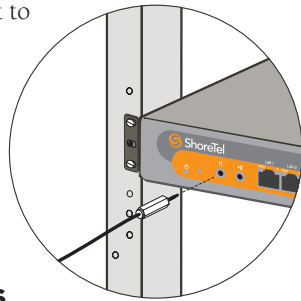The power LED flashes momentarily, and remains lit.

- If the LED is not lit, make sure the power cord is plugged into the switch and the power source.
- If the LED continues flashing, there is an internal error. Unplug the switch to power it off, then power it back on. Refer to the "Configuring Switches" chapter in the *ShoreTel Administration Guide* for information on flash patterns, or contact the ShoreTel Customer Response Center at http://www.shoretel.com.

The LAN ports auto-sense the network transport rate. When the network connection is established, the network LED indicates a transport rate of 10 Mbps or 100 Mbps, and whether the switch is receiving and transmitting data.
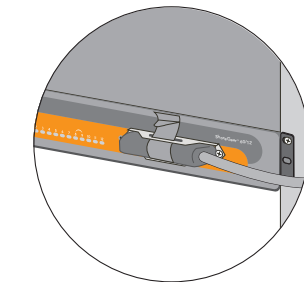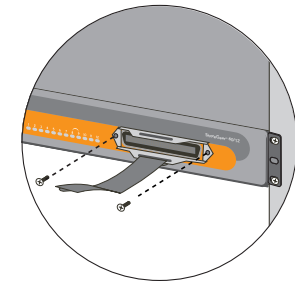
Optional Connections

After connecting the voice switch to the LAN, you can make optional connections, including input from a music-on-hold source or output to your internal paging system.

1 Connect a music-on-hold source (CD player or other audio source) to the audio input port.

2 Connect your site's paging system to the audio output port.

Connecting Trunk and Telephone Lines

Use the provided ShoreGear-60/12 Telco cable and cable retainer to connect the voice switch to the telephone company's punch-down block or patch panel.

1 Use a #1 Phillips screwdriver to remove the two screws on either side of the RJ-21X port, then place the retainer on the port and re-attach the screws.

2 Plug the Telco cable into the port, then pull the Velcro strap tightly around the cable connector and fasten it.

3 Connect the other end of the Telco cable to the punch-down block or patch panel.

CAUTION: *To reduce risk of fire, always use #26 AWG or larger telecommunications line cable.*

NOTE: *For detailed information on switch port and trunk configuration, see the sections "Configuring Switches" and "Configuring Trunks" in the* ShoreTel Administration Guide.

ShoreGear-60/12 Voice Switch RJ-21X Port Pinout

The ShoreGear-60/12 Telco cable is custom wired to allow connection of the voice switch to a standard 12-port patch panel or 12-port harmonica block. If you are connecting the ShoreGear-60/12 Voice Switch to a 24-port patch panel with a generic RJ-21 cable, the voice switch's twelve analog channels map to ports 1 through 12 on the patch panel. (The Power Fail Transfer Unit provides an electrical connection between trunk channel 8 and the extension on channel 9.)

Pin No.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
Port No.	1	2	3	4	5	6	7	8	9	10	11	12													X
Port Type	U	U	U	U	U	U	U	U	E	E	E	E													X
Pin No.	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50

Pin pairs	Assignment
1,26 8,33	Eight universal ports (**U**) for telephones or trunks.
9,34 10,35 11,36 12,37	Four extension ports (**E**) for telephones.

ShoreGear-60/12 Voice Switch Telco Cable Pinout

The figure below shows the modified pinout of the ShoreGear-60/12 Voice Switch RJ-21X Telco cable when it is connected to the ShoreGear voice switch Telco port.

Pin No.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
Port No.	1		2		3		4		5		6		7		8		9		10		11		12		X
Port Type	U		U		U		U		U		U		U		U		E		E		E		E		X
Pin No.	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50

Network Configuration

Once the ShoreGear voice switch is installed and powered on, it must be configured for network operations. A voice switch gets a network configuration by assignment from a DHCP or BOOTP server, or directly from an administrator console (see procedure below).

NOTE: *For more information on setting up a switch for automatic configuration by a DHCP or BOOTP server, see the* ShoreTel Planning and Installation Guide.

Configuring the Voice Switch from a Console

1 Use a straight-through serial cable to connect the switch to a console PC.

2 On the PC or laptop, start a terminal emulation program and connect to the voice switch using these serial communication settings: 19200 bps, 8 data bits, no parity, one stop bit, no handshake.

3 At the ShoreTel login prompt, press ENTER to display the Switch Options menu.

4 Type 3 and press ENTER to display a menu of configuration options.

5 Choose Menu Options and follow the onscreen instructions for setting network parameters, including IP address, subnet mask, and gateway.

Power LED

The power LED indicates the operating status of the switch.

Light	Description
Steady	The switch is powered on, and the internal software is running.
Flashing	Two flashes indicates a failed internal self-test (i.e. hardware failure). Refer to "Configuring Switches" in the *ShoreTel Administration Guide* for details on other flash patterns.
Off	The switch is not powered on, or the software is not running.

Analog Port LEDs

The twelve analog port LEDs provide status information for trunk lines and extensions.

Color	Activity	Description
Off		The port is unassigned (or reserved for IP phone capacity).
Green	Steady	Configured as an extension, the port is idle.
Green	Flash 2 seconds, steady 4 seconds	Configured as an extension, the port is ringing.
Green	Flashing-Slow	Configured as an extension, the port is idle and off-hook.
Green	Flashing-Fast	Configured as an extension, the port is in use.
Yellow	Steady	Configured as a trunk, the port is idle.
Yellow	Flashing-Slow	Configured as a trunk, the port is dialing.
Yellow	Flashing-Fast	Configured as a trunk, the port is in use.
Yellow/ Green	Yellow-Green burst every two seconds	The port is out of service.

Network LEDs

The ShoreGear-60/12 network LED lights provide information on network communications speed and network activity.

LED	Color/State	Description
Link/Act	Off	This switch cannot detect an Ethernet network.
Link/Act	Green-Steady	This switch is connected to an Ethernet network.
Link/Act	Green-Flashing	This switch detects network data traffic.
10/100	Off	Network interface is operating at 10 Mbps.
10/100	Green	Network interface is operating at 100 Mbps.

Specifications

Feature	Specification
Dimensions	1.72 x 17.16 x 14.28 inches (43.68 x 435.86 x 362.71 mm)
Weight	9 lb (4.08 kg)
Input voltage	100-240 VAC, 50-60 Hz
Power consumption	2A max.
Humidity	0-90% relative humidity (non-condensing)
Operating temperature	0-50° C

ShoreGear-60/12 Voice Switch

Quick Install Guide

ShoreTel™