

# Introduction

## The ShoreGear-E1 Voice Switch package contains:

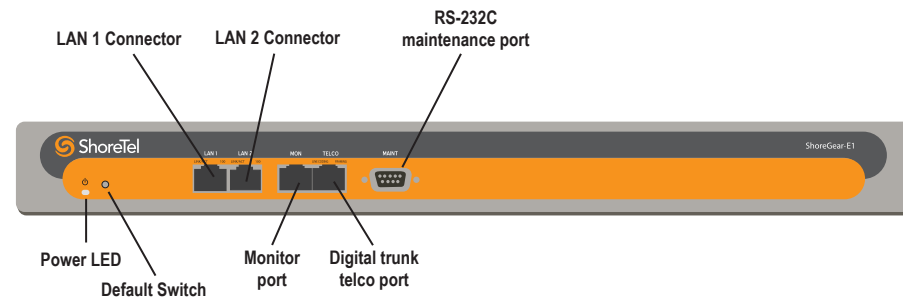
- ShoreGear-E1 Voice Switch
- a power cord
- stick-on feet (for surface installation)

## About The ShoreGear-E1

The ShoreGear-E1 Voice Switch is an IP-based Private Branch Exchange (IPBX) that connects internal extensions to an central office (CO) analog trunk line.

The switch provides connectivity through:

- two RJ-45 LAN connectors
- one RJ-45 E1 port for connecting the switch to a telephone company line
- one RJ-45 E1 monitor port for connecting test equipment
- one DB-9, RS-232C maintenance port (19200 bps, 8 bits, no parity, 1 stop bit, no handshake) for serial communications



## 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 and telco lines
- #1 Phillips screwdriver

# Installation

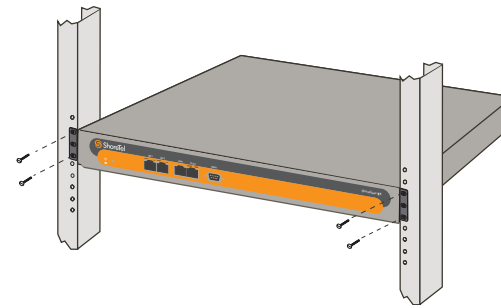
## Choosing a Location

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.)

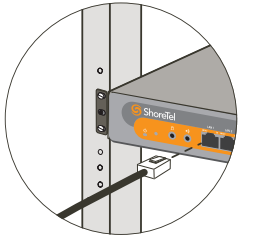
# Connections

## Connecting the ShoreGear Voice Switch to the Network

Once the ShoreGear-E1 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>.

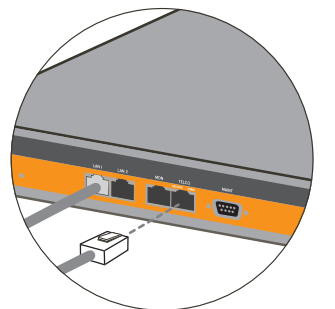
The LAN ports auto-sense the network transport rate. When the network connection is established, the network LED indicates a transport rate of 10 Mbps or 100 Mbps, and whether the switch is receiving and transmitting data.

## Connecting Trunk and Telephone Lines

After setting up the network connections and configuring the ShoreGear-E1 Voice Switch for operations, you can connect your E1 line to the switch.

- Use an RJ-45 E1 cable to connect your E1 line to the Telco port.

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



## 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.

## 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	1A max.
Humidity	0-90% relative humidity (non-condensing)
Operating temperature	0-50° C

## 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 <i>ShoreTel Administration Guide</i> for details on other flash patterns.
Off	The switch is not powered on, or the software is not running.

## Network LEDs

The ShoreGear-E1 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.

## E1 LEDs

The voice switch's E1 LED lights provide information about line coding, network framing, and loopback status.

LED	Color/State	Description
Line coding	Green	The HDB3 line coding signal is good.
Line coding	Yellow	This switch is receiving bipolar violations (BPV) at one-second intervals.
Line coding	Red	A loss of signal (LOS) has occurred.
Line coding	Off	The switch has no power.
Framing	Green	The E1 signal is in frame (synchronized)
Framing	Yellow	The CO has sent a yellow alarm.
Framing	Yellow (Flashing)	The frame-bit error rate has exceeded its limits
Framing	Red	E1 signal is out-of-frame (OOF).
Framing	Off	The switch has no power.
LC/Framing	Red (Flashing)	Loopback is enabled. (You can enable loopback from ShoreTel Director.)

## ShoreGear-E1 Voice Switch

# Quick Install Guide