

SHURE®

LEGENDARY
PERFORMANCE™

PORTABLE LISTENING
AMPLIFIER

SHA900 USER GUIDE

Le Guide de l'Utilisateur

Bedienungsanleitung

Guia del Usuario

Guida dell'Utente

Manual do Usuário

Руководство пользователя

Gebruikershandleiding

取扱説明書

사용자 안내서

用户指南

消費者指南

Panduan Pengguna



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Portable Listening Amplifier

	This symbol indicates that dangerous voltage constituting a risk of electric shock is present within this unit.
	This symbol indicates that there are important operating and maintenance instructions in the literature accompanying this unit.

IMPORTANT SAFETY INSTRUCTIONS

1. READ these instructions.
2. KEEP these instructions.
3. HEED all warnings.
4. FOLLOW all instructions.
5. DO NOT use this apparatus near water.
6. CLEAN ONLY with dry cloth.
7. ONLY USE KSE earphones with KSA1500 amplifier.
8. UNPLUG this apparatus during lightning storms or when unused for long periods of time.
9. PROTECT the power cord from being walked on or pinched, particularly at plugs, convenience receptacles, and the point where they exit from the apparatus.
10. ONLY USE attachments/accessories specified by the manufacturer.
11. REFER all servicing to qualified service personnel. Servicing is required when the apparatus has been damaged in any way, such as power supply cord or plug is damaged, liquid has been spilled or objects have fallen into the apparatus, the apparatus has been exposed to rain or moisture, does not operate normally, or has been dropped.
12. DO NOT expose the apparatus to dripping and splashing. DO NOT put objects filled with liquids, such as vases, on the apparatus.
13. The MAINS plug or an appliance coupler shall remain readily operable.
14. To reduce the risk of fire or electric shock, do not expose this apparatus to rain or moisture.
15. Do not attempt to modify this product. Doing so could result in personal injury and/or product failure.
16. Operate this product within its specified operating temperature range.
17. PROTECT the earphone cable from being pinched or cut.
18. DO NOT use this apparatus if the earphone cable, housing, or connector is damaged.

WARNING: Voltages in this equipment are hazardous to life. No user-serviceable parts inside. Refer all servicing to qualified service personnel. The safety certifications do not apply when the operating voltage is changed from the factory setting.

Changes or modifications not expressly approved by Shure Incorporated could void your authority to operate this equipment.

WARNING: This product contains a chemical known to the State of California to cause cancer and birth defects or other reproductive harm.

WARNING

LISTENING TO AUDIO AT EXCESSIVE VOLUMES CAN CAUSE PERMANENT HEARING DAMAGE. USE AS LOW A VOLUME AS POSSIBLE. Over exposure to excessive sound levels can damage your ears resulting in permanent noise-induced hearing loss (NIHL). Please use the following guidelines established by the Occupational Safety Health Administration (OSHA) on maximum time exposure to sound pressure levels before hearing damage occurs.

90 dB SPL at 8 hours	95 dB SPL at 4 hours	100 dB SPL at 2 hours	105 dB SPL at 1 hour
110 dB SPL at ½ hour	115 dB SPL at 15 minutes	120 dB SPL Avoid or damage may occur	

Note: Use only with the included power supply or a Shure-approved equivalent.

WARNING

- Battery packs may explode or release toxic materials. Risk of fire or burns. Do not open, crush, modify, disassemble, heat above 140°F (60°C), or incinerate.
- Follow instructions from manufacturer
- Do not short circuit; may cause burns or catch fire
- Do not charge with products other than those specified in this user guide.
- Dispose of battery packs properly. Check with local vendor for proper disposal of used battery packs.
- Batteries (battery pack or batteries installed) shall not be exposed to excessive heat such as sunshine, fire or the like

Note: Battery replacement to be performed only by Shure authorized service personnel.

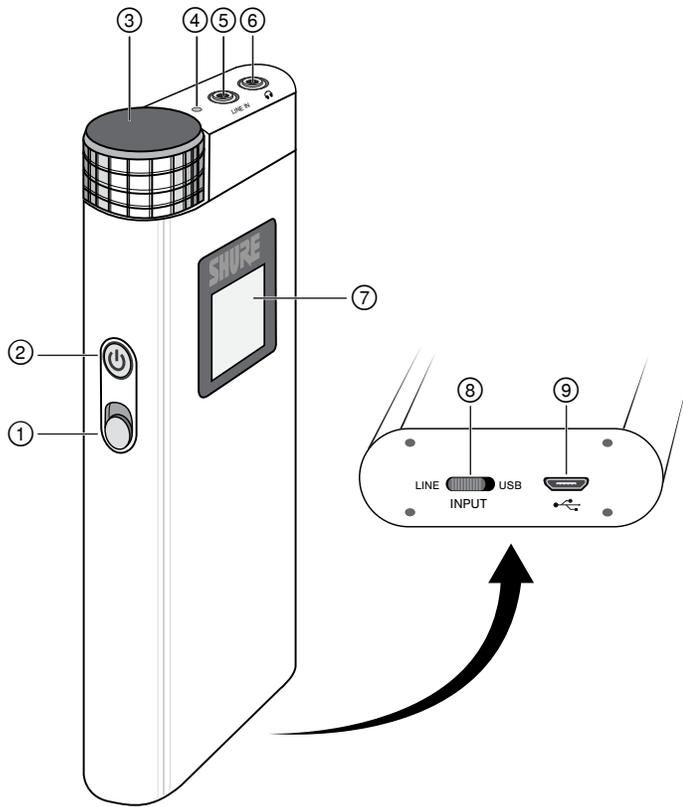
Please follow your regional recycling scheme for batteries, packaging, and electronic waste.

General Description

The Shure SHA900 is a compact, portable headphone amplifier that is compatible with both analog and digital audio sources. Audiophile-quality conversion delivers an exceptionally detailed audio signal over a micro-B USB connection, while premium analog components provide a clean, uncolored signal path for analog audio sources. A full set of furnished accessories includes a Lightning® cable, micro-B USB cable, two 3.5 mm cables, and an AC power adapter.

Features

- Connects to digital (USB) and analog audio sources
- Supports up to 24-bit, 96 kHz digital audio
- Powered by an internal, rechargeable Lithium-ion battery
- Four band parametric equalizer, limiter, and input pad
- Factory and custom user presets



① Hold Switch

Locks the power button and control knob to prevent accidental adjustment

② Power / Back Button

- **Long press:** turns power on and off
- **Short press:** returns to previous menu screen

③ Control Knob

Rotate to adjust volume and press to navigate through the menu

④ Power LED Indicator

- **Red:** The amplifier is off. Or the amplifier is connected to power and the battery is charging.
- **Green:** The amplifier is powered on. Or the amplifier is off; battery is connected to power and fully charged.
- **Off:** The amplifier is off and not connected to power.

⑤ Line In Audio Input

3.5 mm stereo input for connecting to analog audio sources

⑥ Earphone Output

3.5 mm stereo output for connecting headphones

⑦ OLED Display

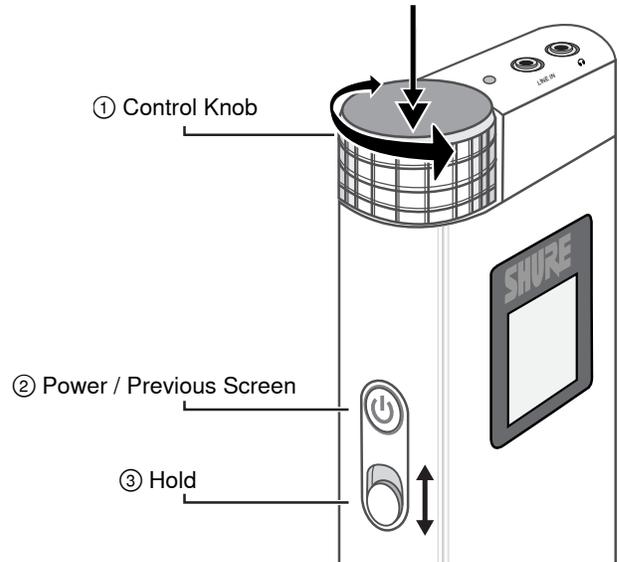
Displays system information

⑧ Input Source Selector

Selects line (analog) or micro-B USB (digital) audio input

⑨ Micro-B USB port

Connects to a computer or portable audio device to receive audio or to the micro-B USB power adapter to charge the rechargeable battery.



Powering on / off: Long press the power button ②

Adjusting volume: Turn the control knob ①

Accessing the menu: Double-click the control knob ①

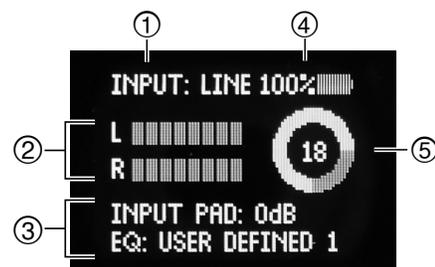
Scroll through the menu: Turn the control knob ①

Select an item: Press the control knob button ①

Return to previous screen: Press the power button ②

Lock / unlock the controls: Slide the hold switch ③ to lock and unlock the power button and control knob. When switch displays red background, hold is enabled.

Home Screen



① Audio Input Source

- **LINE:** Analog audio (3.5 mm input)
- **USB:** Digital audio

② Audio Input Meter

Indicates the input level of the audio signal

③ Audio Settings

Displays settings for the input pad and equalizer

④ Battery Meter

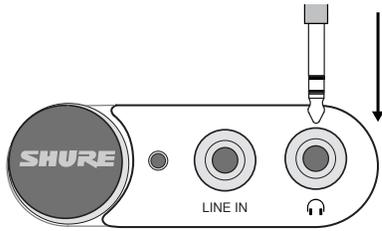
Displays remaining battery life

⑤ Volume

Indicates the output level

Step 1: Connect a pair of headphones or earphones to the amplifier

Plug into the amplifier with the amplifier powered off.



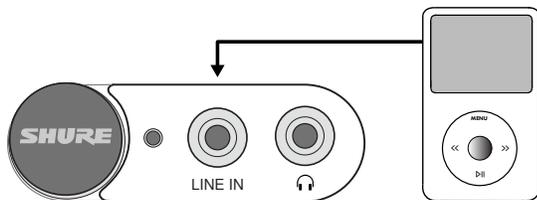
Step 2: Connect a sound source to the amplifier

Set the **INPUT** switch to **LINE** for analog 3.5 mm sources or **USB** for digital sources.

3.5 mm input (analog audio)

Plug the audio device into the **LINE IN** input and set the **INPUT** switch to **LINE**.

To charge the battery while using an analog source, connect the amplifier to a computer or external battery.

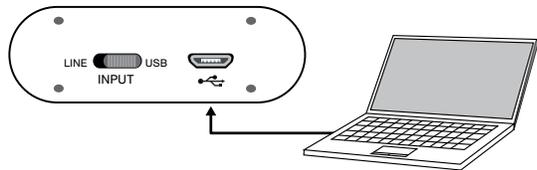


Connecting to an Analog Source

USB (digital audio and power)

Use the USB cable when listening to music from a computer or other USB-equipped device and set the **INPUT** switch to **USB**. When connected to a computer, USB simultaneously streams digital audio and charges the amplifier battery.

Note: You have the option to disable automatic charging in the Utilities menu.



Connecting to a USB Source

Step 3: Power on the amplifier

The driver automatically installs when the amplifier is first plugged into a device. The SHA900 should take over as the default audio device.

Note: Volume controls are disabled on Windows, Mac, and iOS. Volume should be adjusted only by using the amp volume knob for best performance. Ensure that volume is maximized in iTunes or the Windows Media Player.

EQUALIZER

Displays equalizer settings. Use the control wheel to adjust values

FLAT/BYPASS:

The equalizer is bypassed

PRESET 1 - 4:

Four adjustable 4-band equalizer presets: low boost, vocal boost, loudness, and de-ess

USERDEFINED 1 - 4:

Four adjustable 4-band parametric equalizer that you can customize to your listening preferences

AUDIO

OUTPUT GAIN:

Choice of low or high output gain

LIMITER:

Turn limiter on for ear protection from unexpected volume spikes

INPUT PAD:

Choice of 0, -10 dB or -20 dB pads (available in line input mode.)

SAMPLE RATE:

Available in USB input mode.

UTILITIES

Control the device parameters

DISPLAY:

Adjust screen brightness, timeout length, and flip screen

BATTERY INFO:

Displays battery status

FACTORY RESET:

Restores all settings to the factory default

FIRMWARE:

Displays software version information and allows for updates

HARDWARE:

Contains device information for reference and service

DISABLE CHARGING:

Turn automatic charging on or off

Equalizer

The 4-band parametric equalizer is used to adjust the volume of independent, adjustable frequency ranges, to precisely shape the frequency response. Four user-defined presets can be saved in addition to four factory defined presets. The equalizer can be bypassed for a flat frequency response.

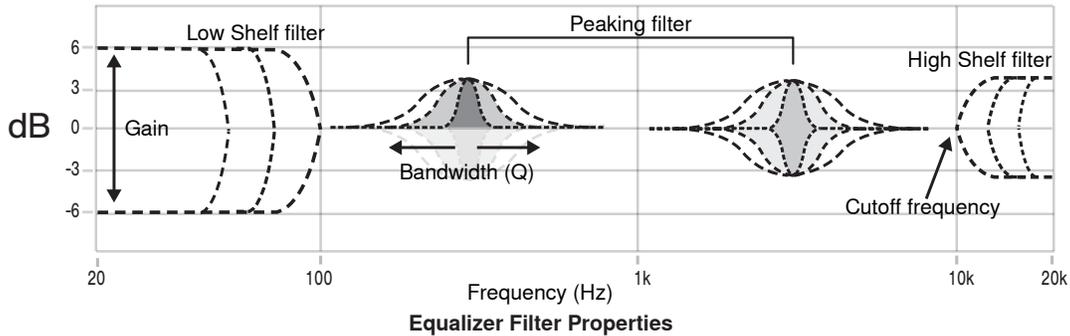
To view or edit an equalizer setting, select:

MENU > EQUALIZER

Custom Equalizer Settings

The equalizer consists of two filter types:

- **Peaking filters** target a specific frequency range for making gain adjustments (applies to the two middle frequency bands).
- **Shelving filters** adjust the gain of all frequencies above or below the selected cutoff point. In the low-shelf filter, adjustments affect all frequencies below the selected cutoff point. In the high-shelf filter, adjustments affect all frequencies above the cutoff point.



The following parameters are adjustable when creating an equalizer setting:

① Frequency Point or Range

Four independent frequency points used to select specific frequency ranges.

② Frequency (Hz)

The numeric value of the selected frequency.

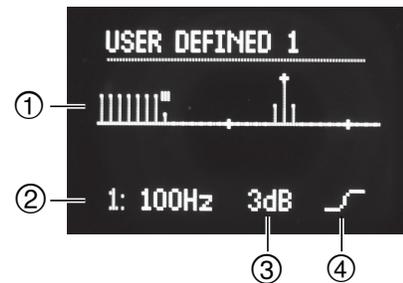
③ Gain / Cut

Adjusts the volume (± 6 dB) of the selected frequency band.

④ Bandwidth / Q

Adjusts the width of the frequency band affected by gain settings

- **Middle bands:** Adjusts the width of the peaking filters
- **High and low bands:** Adjusts the cutoff frequency of the shelving filters



Flat (Bypass)

In this mode the equalizer is bypassed for an unchanged frequency response. When using an analog input source, bypassing the equalizer maintains a 100% analog signal path. For digital audio sources, the equalization section of the digital signal processor is simply disabled.

Audio

Output Gain

MENU > AUDIO > OUTPUT GAIN

Select a high or low level output gain.

Limiter

MENU > AUDIO > LIMITER

The limiter protects your ears from unexpected volume spikes at the ear-phone output.

Sample Rate

MENU > AUDIO > SAMPLE RATE

Sample rate information is displayed here.

Input Pad

MENU > AUDIO > INPUT PAD

The input pad feature is available when the amplifier is receiving analog audio in line input mode. The pad attenuates the analog input signal to prevent clipping from high output audio sources. Enable the pad when the audio meter indicates clipping.

- Begin with the -10 dB pad. If clipping persists, use the -20 dB pad.
- Attenuate the source volume if the signal continues to clip with the -20 dB pad engaged.

Utilities

MENU > UTILITIES

Display

Adjust screen brightness and timeout length. Flip the display up or down for visibility in either direction

Battery Info

Provides battery status: percentage charge, cycle count, temperature

Factory Reset

Restores all settings to the factory default

Firmware

Displays software version information and allows for updates

Hardware

Contains device data for reference and service

Enable / Disable Charging

When connected to a USB source, the amplifier automatically recharges the battery. Utilize the disable charging feature when you don't want to drain your laptop or USB source. The next time you turn on the amplifier, it will default to enable charging.

Lithium-ion Rechargeable Batteries

Storing Batteries

To avoid degrading battery health, keep the storage temperature range between 10°C to 25°C (50°F to 77°F).

Battery Repair and Replacement

Lithium-ion batteries have no “memory effect”, and instead experience a more linear reduction in capacity. Contact Shure Service and Repair to replace the batteries when the capacity is no longer acceptable.

Troubleshooting

Issue	Solution
The device appears to be working but no sound is audible	<ul style="list-style-type: none">• Check that cable connections are secure• Ensure that input switch is set to the correct input source
Audio is distorted	<ul style="list-style-type: none">• Confirm the audio from the source is not distorted before entering the amplifier• Check that cable connections are secure• Check the amplifier input meter to make sure the amplifier input is not overloading
Amplifier does not power on	<ul style="list-style-type: none">• The battery may require recharging• If the amplifier is plugged in, try a different USB port (or AC outlet if plugged into the power adapter)
Battery no longer holds charge	<ul style="list-style-type: none">• Check that Disable Charging is not selected• Contact Shure Service and Repair to arrange to have the battery replaced. There are no user-serviceable parts.

Device Reset

In the event that the amplifier malfunctions, reboot it by pressing the control knob button and the power button simultaneously for approximately 10 seconds until the device powers down.

Firmware

Firmware is embedded software in each component that controls functionality. Periodically, new versions of firmware are developed to incorporate additional features and enhancements. To take advantage of design improvements, new versions of the firmware can be downloaded and installed using the Shure Update Utility tool. Software is available for download from <http://www.shure.com/americas/products/software/utilities/shure-update-utility>.

Updating the Firmware

CAUTION! Ensure that amplifier power remains on during a firmware update. Do not turn off the amplifier until the update is complete.

The Shure Update Utility will find the latest versions of firmware. You can download the updates to your computer. Once the download is complete, the amplifier automatically begins the firmware update, which overwrites the existing firmware.

1. From Shure Update Utility software, click the **Updates Available** button.
2. To download firmware to your computer (but not to devices), check the box next to the updates you want and select **Download**.
3. Connect the amplifier to your computer with the USB cable.
4. From the amplifier menu, select **UTILITIES > FIRMWARE > ENABLE FWUPDATE**
Note: **ENABLE FWUPDATE** must be enabled in order for the firmware update to work.
5. Confirm that you want to download the latest firmware to the amplifier.

Note: The battery should be charged before updating firmware. Do not attempt to update firmware if battery percentage is less than 10%.

System Requirements and Compatibility

Windows	<ul style="list-style-type: none">• Windows XP• Windows 7• Windows 8.1
Macintosh	<ul style="list-style-type: none">• Mac OS X 10.4 or later

Accessories

Furnished Accessories

- Square zipper pouch
- Leather amplifier case
- Fit Kit with assorted sleeves
- USB cable, Micro-B "On The Go"
- USB cable, Type A to Micro-B
- USB cable, Micro-B to Lightning
- 6-inch male to male 3.5mm cable
- 36-inch male to male 3.5mm cable
- ¼-inch (6.3mm) to ⅛-inch (3.2mm) stereo adapter
- Airline adapter
- Inline volume control
- Rubber amp security bands

Optional Accessories

- USB cable, Micro-B to 30-pin

Specifications

Bit Depth

16-bit / 24-bit

Sampling Rate

44.1 / 48 / 88.2 / 96 kHz

Frequency Response

10 Hz to 50 kHz

Signal-to-Noise Ratio

up to 107 dB A-weighted

Adjustable Gain Range

-60 dB to +17 dB

THD+N

0.05% (1 kHz)

Output Power

Maximum, 1% THD

16 Ω	135 mW + 135 mW
42 Ω	95 mW + 95 mW

Output Impedance

0.35 Ω

Headphone Impedance Range

6 Ω to 600 Ω

Limiter

Selectable Analog RMS Limiter

Equalizer

4-band Parametric

USB Input

USB Micro-B Receptacle

Line-In Input

3.5 mm (1/8")

Headphone Output

3.5 mm (1/8")

Charging Requirements

USB-powered: 5 V, 0.5 A to 1 A

Housing

Chrome Plated Aluminum

Net Weight

182.0 g (6.42 oz.)

Dimensions

111 x 59 x 21 mm H x W x D

Operating Temperature Range

-18 to 57 °C (0 to 135 °F)

Battery Specifications

Battery Type

Rechargeable Li-Ion

Nominal Voltage

3.6V DC

Battery Life

Analog in (BYPASS EQ mode)	up to 20 hours
USB Input (EQ mode)	up to 10 hours

Battery Charging Temperature Range

0 to 45 °C (32 to 113 °F)

Certifications

Industry Canada ICES-003 Compliance Label: CAN ICES-3 (B)/NMB-3(B)

Note: Testing is based on the use of supplied and recommended cable types. The use of other than shielded (screened) cable types may degrade EMC performance.

This product meets the Essential Requirements of all relevant European directives and is eligible for CE marking.

The CE Declaration of Conformity can be obtained from: www.shure.com/europe/compliance

Authorized European representative:

Shure Europe GmbH

Headquarters Europe, Middle East & Africa

Department: EMEA Approval

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Android Compatibility

The Portable Listening Amplifier is compatible with Android devices that support USB Audio Class 2.0 and Micro-B OTG (On-The-Go) connectivity. Not all Android devices are compatible. Android is a trademark of Google Inc.

"Made for iPod," "Made for iPhone," and "Made for iPad" mean that an electronic accessory has been designed to connect specifically to iPod, iPhone, or iPad, respectively, and has been certified by the developer to meet Apple performance standards. Apple is not responsible for the operation of this device or its compliance with safety and regulatory standards. Please note that the use of this accessory with iPod, iPhone, or iPad may affect wireless performance.

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