

EarAmp

WIRED IN EAR MONITOR



OWNERS MANUAL

SAMSON[®]

Table of Contents

Introduction 3

EarAmp™ Features 4

Guided Tour 5

Setting Up and Using Your EarAmp™ 8

Using 2 CH Mode 10

Appendix A: Hirose Wiring Diagram
and Chart 11

Appendix B: Using Third-Party Earpieces 12

Specifications 13

Introduction / System Features

We know you don't like reading owners manuals, but you've just purchased one of the most unique audio products around, and we want to tell you about it! So, before you plug in and start making music, we'd like to suggest you take just a few moments out to scan these pages. We'll make it as painless as possible, we promise—and, who knows, you might just pick up a tip or two.

The Samson EarAmp™ is designed to bring professional in-ear monitoring to a wide range of users. By eliminating the need for loud onstage “wedge” monitors, it allows you to hear yourself better, greatly reduces feedback problems, and makes the overall sound coming from the stage significantly cleaner. You'll find that this portable, lightweight system provides superlative audio quality and extensive control at an extremely affordable price. Capable of operating in both stereo and dual mono “2-channel” mode, the EarAmp™ includes all required cabling, individual volume and balance controls for the best possible mix, a 15 dB attenuation pad and separate bass and treble controls to fine-tune the signal, and a built-in adjustable limiter to protect your ears.

In these pages, you'll find an overview of EarAmp™ features, followed by a guided tour of its various controls. Then we'll describe how to set up and connect the EarAmp™ to your existing equipment (all required wiring is included) as well as how to adjust it for the best sound quality. Finally, we'll wrap things up with reference appendices and full specifications. You'll also find a warranty card enclosed—please don't forget to fill it out and mail it so that you can receive online technical support and so we can send you updated information about other Samson products in the future. Also, be sure to check out our website (<http://www.samsontech.com>) for complete information about our full product line.

SPECIAL NOTE: Should your EarAmp™ ever require servicing, a *Return Authorization* number (RA) is necessary. Without this number, the unit will not be accepted. Please call Samson at 1-800-372-6766 for a Return Authorization number prior to shipping your unit. Please retain the original packing materials and, if possible, return the EarAmp™ in its original packing materials.

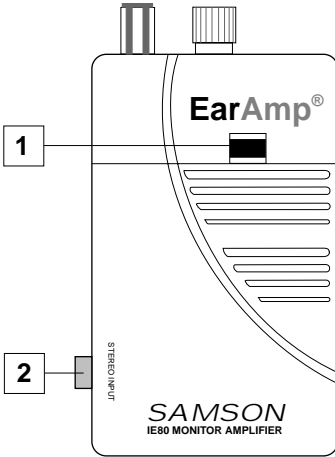
EarAmp™ Features

The Samson EarAmp™ system provides a high performance, cost effective solution to personal monitoring. Its main features include:

- Wired system for reliable performance in all environments.
- All required cabling included.
- Convenient belt clip for and flesh-colored ear buds for unobtrusive, nearly “invisible” usage.
- Dedicated volume and balance controls allow you to set up the optimum in-ear mix.
- Stereo and dual mono (“2 CH”) modes for maximum flexibility. In “2 CH” mode, the balance control enables you to adjust the blend of the two incoming signals, which are mixed internally to mono and routed to both ear buds.
- Independent bass and treble controls for additional customization of the in-ear mix.
- Loudness switch for improved legibility when operating at low signal levels.
- High-powered 200 mW headphone output.
- Built-in adjustable limiter helps protect your ears from transients and signal overloads.
- Switchable 15 dB pad allows the EarAmp™ to be used with a wide variety of input signal sources.
- Operates on a standard 9-volt battery, with battery life of five hours or more.*
- Battery LED indicator shows you when the battery needs to be replaced.
- Rugged aluminum die-cast metal casing makes the EarAmp™ eminently roadworthy.

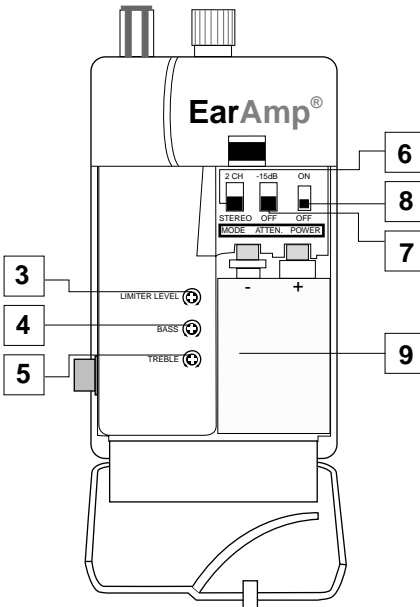
** Typical usage. Actual battery life may vary depending upon headphone output level.*

Guided Tour



1: Battery door release - Press this latch gently upwards in order to open the battery door and access the controls contained within. When closing the battery door, swing it gently upwards until you hear this latch click.

2: Stereo input connector - Using the included Y-cable (which terminates at dual XLR plugs), connect incoming line-level signal (normally from your mixer's aux, cue or line outputs) to the EarAmp™ via this 6-pin "Hirose" connector. See page 9 in this manual for more information.



3: Limiter level control (trimpot) - Use the supplied screwdriver to adjust this as necessary. The EarAmp's built-in limiter circuitry is designed to protect your ears against signal overload. As the limiter level control is turned clockwise, the limiter threshold is reduced, causing the limiting circuitry to "kick in" at lower input signal strengths. As it is turned counterclockwise, the limiter threshold is increased, so that the limiting circuitry only operates at relatively high input signal strengths.

4. Bass control (trimpot) - Use the supplied screwdriver to adjust this as necessary. As the bass control is turned counterclockwise, bass response is reduced by up to 10 dB; as it is turned clockwise, bass response is increased by up to 10 dB. The bass control affects frequencies at around 150 Hz.

5: Treble control (trimpot) - Use the supplied screwdriver to adjust this as necessary. As the treble control is turned counterclockwise, treble response is reduced by up to 10 dB; as it is turned clockwise, treble response is increased by up to 10 dB. The treble control affects frequencies at around 5 kHz.

6. 2 CH / Stereo switch - When set to the down, "Stereo" position, incoming left channel signal is routed to the left earbud and incoming right channel signal is routed to the right earbud. In "Stereo" mode, the Balance control (see #14 on the following page) can be used to increase the relative level of one channel or the other. When set to the up, "2 CH" position, both incoming channels are internally mixed to mono and routed to both the left and right earbuds. The Balance control (see #14 on the following page) is then used to regulate the relative amounts of the two incoming signals. See page 9 in this manual for more information about the use of 2 CH mode..

7. Attenuation On/Off switch - This switch activates a 15 dB "pad." Set it to the up, "On" position when incoming signal is overloading; otherwise, leave it at the down, "Off" position.

8. Power On/Off switch - As you might have guessed, this is what you use to turn the EarAmp™ on or off. To conserve battery strength, leave the unit off when it is not being used.

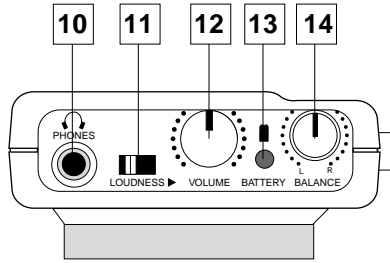
9. Battery holder - Insert a standard 9-volt alkaline battery here, observing the plus and minus polarity markings shown. We recommend the Duracell MN 1604 type battery. Although rechargeable Ni-Cad batteries can be used, they do not supply adequate current for more than two hours. **WARNING:** Do not insert the battery backwards; doing so can cause severe damage to the EarAmp™ and will void your warranty.

10: Headphone jack - Connect the supplied stereo earbuds (or third-party earpieces*) to this standard 1/8" (3.5 mm) mini-phone jack in order to monitor the signal being output by the EarAmp™. The level of the headphone signal is set by adjusting the Volume control (see #12 on the next page). Maximum output is 200 mW @ 32 ohms.

11: Loudness switch - At normal listening levels, this should be left off (with the switch to the left). When using the EarAmp™ at low signal levels, turning this on (placing the switch on the right) will improve legibility by boosting both bass and treble frequencies.

** See page 11 in this manual for information about using third-party and custom earpieces with your EarAmp™.*

Guided Tour

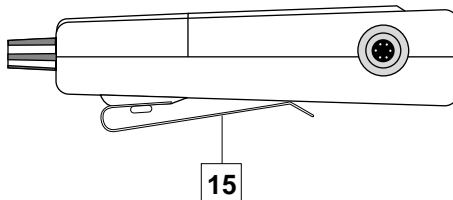


12: Volume control - Used to set the level of the signal in connected earbuds.

13: Battery LED - This LED lights red when battery level is low and the battery needs to be replaced.

14: Balance control - Adjusts the relative levels of the two signals arriving at the EarAmp stereo input (see #2 on page 4). When set at the center 12 o'clock position, both signals are presented to connected earbuds at equal strength. When the EarAmp™ is operating in "Stereo" mode (that is, when the 2 CH/Stereo switch [see #6 on page 5] is set to "Stereo,") turning the balance control clockwise increases the relative amount of right channel signal (that is, the signal in your right ear) and turning it counterclockwise increases the relative amount of left channel signal (that is, the signal in your left ear). When the EarAmp™ is operating in "2 CH" mode (that is, when the 2 CH/Stereo switch [see #6 on page 5] is set to "2 CH,") both channels are internally mixed to mono and routed to both earbuds. In 2 CH mode, turning the balance control clockwise increases the relative amount of right channel signal (though it will be heard in both ears) and turning it counterclockwise increases the relative amount of left channel signal (again, heard in both ears).

15: Belt clip - Use this to clip the EarAmp™ to your belt for convenient operation.



Setting Up and Using Your EarAmp™

Setting up your EarAmp™ is a simple procedure which takes only a few minutes:

1. Remove the EarAmp, included earbuds and all included cables from the packing materials (we recommend you save the packing materials in case of need for future service).
2. Press gently up on the EarAmp's battery door release (see #1 on page 4) and swing the door open in order to access the battery compartment. Note that the door is hinged and is not intended to be removed from the case. Insert a 9-volt alkaline battery, being careful to observe the polarity markings. **Warning: Reversing the battery polarity may cause permanent damage to your EarAmp.**
3. Turn the power switch "On" (see #8 on page 5). The Battery LED (see #13 on page 6) will light red if the battery is weak and needs to be replaced. Once you've verified battery strength, turn the power switch "Off" again.
4. Close the battery door by swinging it gently upwards until you hear the door release click.
5. Turn off your mixer and all connected power amplifiers.
6. Using the supplied Y-cable, make a connection between two aux sends, cue sends or line outputs of your mixer and the EarAmp's six-pin Hirose input connector (see #2 on page 4). If the signal to be monitored is mono, connect only the "left" XLR connector to one aux send, cue send or line output. **Warning: Be sure to connect only line-level inputs to the EarAmp; connecting amplifier outputs or other powered ("speaker") outputs to the EarAmp can cause severe damage and will void your warranty.**
7. Turn on your mixer and all connected power amplifiers. Set the level of the signal you're sending to the EarAmp to unity gain (0 vu).
8. Turn the EarAmp's volume control (see #12 on page 6) fully counterclockwise.
9. Set the 2 CH/Stereo mode switch as desired. In Stereo mode, the two incoming signals are routed to the left and right earbuds, respectively. In 2 CH mode, the two incoming signals are internally

Setting Up and Using Your EarAmp™

mixed to mono and both signals are routed to both earbuds. If the signal to be monitored is mono (that is, if only the “left” XLR connector is plugged in, as per step 6 on the previous page), set the 2 CH / Stereo switch to the up, “2 CH” position. See page 9 in this manual for more information about the use of 2 CH mode.

10. Unless the signal being monitored is mono, set the EarAmp’s Balance control (see #14 on page 6) to its center, 12 o’clock position. If the signal being monitored is mono (that is, if only the “left” XLR connector is plugged in, as per step 6 on the previous page), set the balance control fully counterclockwise.

11. Turn the EarAmp’s Loudness switch off (see #11 on page 5).

12. Once again, press gently up on the EarAmp’s battery door release and set the Attenuation switch (see #7 on page 5) off (down position).

13. Connect the supplied earbuds (or third-party earpiece) to the EarAmp’s headphone jack (see #10 on page 5) and then place them in your ears.

14. Turn the EarAmp’s power switch “on” and, while playing or singing at a normal performance level, *slowly* turn up the EarAmp volume control until you achieve the desired level. **The EarAmp should always be used at as low a volume as possible. If you hear ringing in your ears, turn down the volume control and operate it at a lower level!**

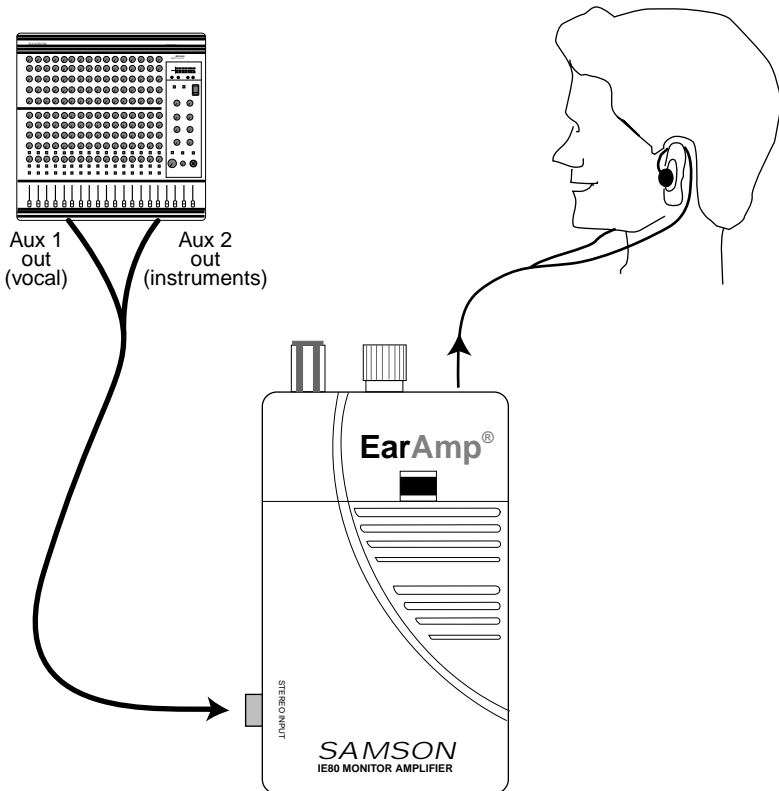
15. Adjust the EarAmp’s balance control as needed in order to get the best blend of the incoming signals. If necessary, use the supplied screwdriver to adjust the Limiter Level, Bass and Treble trimpots (see #3, 4 and 5 on pages 4 - 5) in order to optimize the sound you’re hearing. If you’re operating at low signal levels, turning the loudness control on will help improve legibility.

16. Close the battery door and clip the EarAmp to your belt. That’s all there is to setting up the EarAmp!

If you encounter difficulty with any aspect of setting up or using your EarAmp, you can call Samson Technical Support (1-800-372-6766) between 9 AM and 5 PM EST.

Using 2 CH Mode

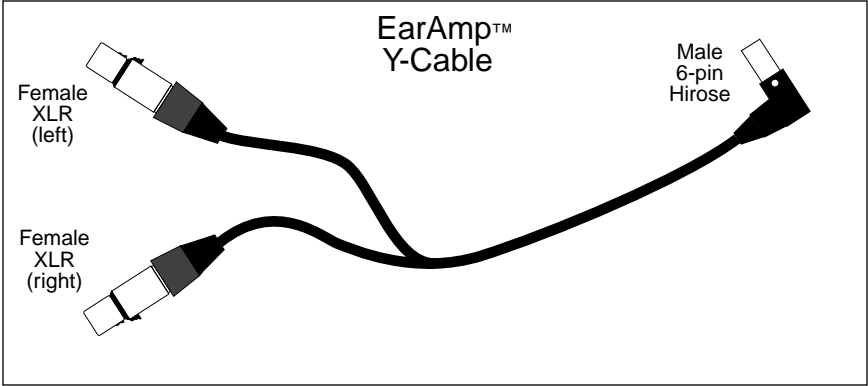
The EarAmp™'s unique dual mono “2 CH” mode makes it possible for you to have direct control over the blend of two separate signals, simply by turning the Balance knob. If you're a vocalist, the most typical application is to route the vocal signal only to one mixer aux send and the instrument accompaniment signal to the other aux send, as shown in the illustration below. This way, by turning the Balance knob one way, you'll hear more of your vocal and less of the instruments; by turning it the other way, you'll hear less of your vocal and more of the instruments.



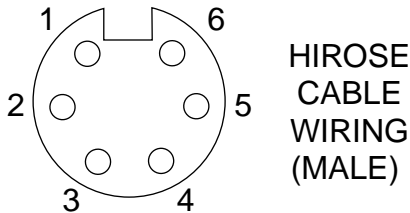
Similarly, if you're a guitarist, you can route guitar signal only to one mixer aux send and a mix of all other signals to the other mixer aux send; the EarAmp™ Balance control will then give you the ability to hear as much or as little of your instrument—relative to the overall mix—as you like.

Appendix A: Hirose Wiring Diagram and Chart

The illustration below shows the connectors used in the Y-cable supplied with your EarAmp™.



The wiring used by the 6-pin Hirose stereo input connector is as follows:



Pin wiring is as follows:

Hirose pin	XLR pin
1	Right 1 (ground)
2	Right 2 (hot)
3	Right 3 (cold)
4	Left 1 (ground)
5	Left 2 (hot)
6	Left 3 (cold)

Appendix B: Using Third-Party Earpieces

If you listen to the earbuds supplied with the Samson EarAmp™ on their own, they may sound a little overbright to you. That's because they have been specifically designed to allow a certain degree of outside sounds to enter so as to yield a natural sound onstage, where bass frequencies will “leak in” to make for a full-spectrum tone.

If you prefer, you can substitute the earpiece of your choice for these earbuds—even standard “Walkman™”-type headphones will work well. You may even want to use an earbud that has been custom-molded to your ear. Feel free to contact the following manufacturers for information about the custom earpieces they offer. **Note that Samson makes no claims, representations or warranties regarding these manufacturers or their products.**

Sensaphonics
660 North Milwaukee
Chicago, IL 60622
312-432-1714

Precision Earmold Laboratories
830 Sunshine Lane
Altamonte Springs, FL 32714
800-327-4792

Westone Labs
P.O. Box 15100
Colorado Springs, CO 80935
719-540-9333

The Earmold Company, Ltd.
P.O. Box 3320
Salem, VA 24153
800-798-2196

Ultimate Ears
2657 Windmill Parkway #391
Henderson, NV 89014
702-263-7805

Great Lakes Earmold Laboratory
750 Ken-Mar Industrial Parkway
Broadview Heights, OH 44147
800-842-8184

Firehouse Productions
RR2 Box 256
Red Hook, NY 12571
914-758-9898

Microsonic
1421 Merchant Street
Ambridge, PA 15003
800-523-7672

Specifications

Audio Input Level:

15 dB attenuator out	-10 dBu nominal, + 5 dBu maximum
15 dB attenuator in	+ 4 dBu nominal, + 19 dBu maximum

Audio Output Power: (32 Ohm loads)

- > 200 mW per channel @ 1 % T.H.D. (9VDC supply)
- > 125 mW per channel @ 1 % T.H.D. (7VDC supply)
- > 75 mW per channel @ 1 % T.H.D. (6VDC supply)

Power Limit Control:

Adjustable from > 200 mW to < 50 mW output power into 32 Ohms.

Frequency Response:

20 Hz to 20 kHz +1, -3 dB

T.H. D.: (@ 60 mW)

less than 0.50 %

Low Frequency EQ:

150 Hz, +/- 10 dB

High Frequency EQ:

5 kHz, +/- 10 dB

Loudness Switch:

+ 8 dB @ 100 Hz and +6 dB @ 10 kHz
when volume is set 30 dB below maximum

Channel Separation:

45 dB minimum at 100 Hz and 1 kHz

S/N Ratio:

80 dB (EQ flat, contour flat)

Operating Voltage:

7.0 VDC to 9.0 VDC (125 mW max. output),
9V alkaline battery recommended

Battery Life:

5 hours typical

WARNING!

This product is capable of causing permanent damage to your hearing if used at excessive volumes!

To protect your hearing, the Samson EarAmp™ should always be used at as low a volume as possible. We recommend that you stringently follow the guidelines established by the U.S. Occupational Safety Health Administration (OSHA) regarding maximum time exposure at various sound pressure levels:

- *Don't use this product for more than 8 hours at 90 dB SPL*
- *Don't use this product for more than 4 hours at 95 dB SPL*
- *Don't use this product for more than 2 hours at 100 dB SPL*
- *Don't use this product for more than 1 hour at 105 dB SPL*
- *Don't use this product for more than 1/2 hour at 110 dB SPL*
- *Don't use this product for more than 15 minutes at 115 dB SPL*
- ***Don't operate at listening levels of greater than 120 dB SPL!***

Pay attention to what your ears are telling you! Ringing is a sign that you have set the gain levels too high and that damage may result. We recommend that you consult with a qualified audiologist if you exhibit this or any other symptoms.

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