OWNER'S MANUAL

SAMSON®

Samson Technologies Corp.
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Important Safety Information

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. Do not block any ventilation openings. Install in accordance with the manufacturer's instructions.
8. Do not install near any heat sources such as radiators, heat registers, stoves, or other apparatus (including amplifiers) that produce heat.
9. Do not defeat the safety purpose of the polarized or grounding type plug. A polarized plug has two blades with one wider than the other. A grounding type plug has two blades and a third grounding prong. The wide blade or the third prong are provided for your safety. If the provided plug does not fit into your outlet, consult an electrician for replacement of the obsolete outlet.
10. Protect the power cord from being walked on or pinched particularly at the plugs, convenience receptacles, and at the point where they exit from the apparatus.
11. Only use attachments/accessories specified by the manufacturer.
12. Use only with the cart, stand, tripod, bracket, or table specified by the manufacturer, or sold with the apparatus. When a cart is used, use caution when moving the cart/apparatus combination to avoid injury from tip-over.

13. Unplug the apparatus during lightening storms, or when unused for long periods of time.
14. Refer all servicing to qualified personnel. Service 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 has been exposed to rain or moisture, does not operate normally, or has been dropped.
15. This appliance shall not be exposed to dripping or splashing water and that no object filled with liquid such as vases shall be placed on the apparatus.
16. Caution-to prevent electrical shock, match wide blade plug wide slot fully insert.
17. Please keep a good ventilation environment around the entire unit.
18. The direct plug-in adapter is used as disconnect device, the disconnect device shall remain readily operable.
19. Batteries (battery pack or batteries installed) shall not be exposed to excessive heat such as sunshine, fire or the like.

If you want to dispose this product, do not mix it with general household waste. There is a separate collection system for used electronic products in accordance with legislation that requires proper treatment, recovery and recycling.
Private household in the 27 member states of the EU, in Switzerland and Norway may return their used electronic products free of charge to designated collection facilities or to a retailer (if you purchase a similar new one).
For Countries not mentioned above, please contact your local authorities for a correct method of disposal.
By doing so you will ensure that your disposed product undergoes the necessary treatment, recovery and recycling and thus prevent potential negative effects on the environment and human health.

Important Safety Information

FCC Rules and Regulations

Samson wireless receivers are certified under FCC Rules part 15 and transmitters are certified under FCC Rules part 74. Licensing of Samson equipment is the user's responsibility and licensability depends on the user's classification, application and frequency selected.

This device complies with Part 15 of the FCC rules Class B and RSS-210 of Industry & Science Canada.

Operation is subject to the following two conditions:

(1) This device must not cause harmful interference, and

(2) This device must accept any interference received including interference that may cause undesired operation. Suitable for home or office use.

NOTE: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced Radio/TV technician for help.

WARNING: Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

This equipment is intended for use in wireless microphone applications.

Equipment is intended for sale in: AT, BE, CH, CY, CZ*, DK, EE, FI*, FR*, DE*, GR*, HU, IE, IS, IT, LV, LT*, LU, MT*, NL, NO*, PL* PT, RO, SK, SI, ES, SE, UK

*Subject to license. Please contact your national frequency authority for information on available legal use in your area. Any changes or modifications not expressly approved by Samson Technologies Corp. could void your authority to operate the equipment.

Hereby, Samson Technologies Corp., declares that this CRXD2 and CHXD2/CBXD2 is in compliance with the essential requirements and other relevant provisions of Directive 2014/53/EU.

Introduction

Welcome to Samson Wireless!

The Samson EarAmp EWM100 stereo wireless system provides professional sound quality and complete freedom on stage.

In these pages, you'll find a detailed description of the features of the EarAmp EWM100, as well as step-by-step instructions for its setup and use. If your wireless system was purchased in the United States, you'll also find a registration card enclosed—don't forget to follow the instructions so that you can receive online technical support and so that we can send you updated information about this and other Samson products in the future. Also, be sure to check out our website www.samsontech.com for complete information about our full product line.

We recommend you keep the following records for reference, as well as a copy of your sales receipt:

Receiver Serial number(s): _____

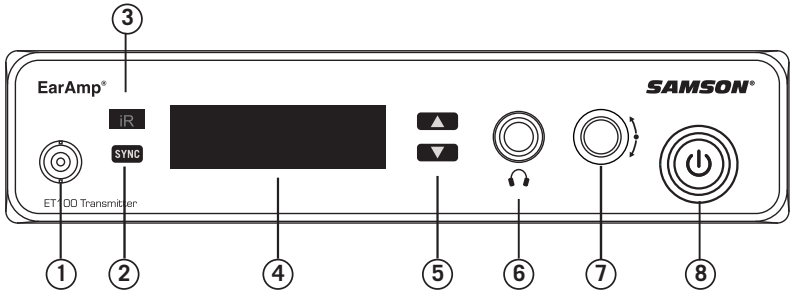
Transmitter Serial number: _____

Date of purchase: _____

If you have any questions or comments regarding the EarAmp or any other products from Samson, do no hesitate to contact us at **support@samsontech.com**.

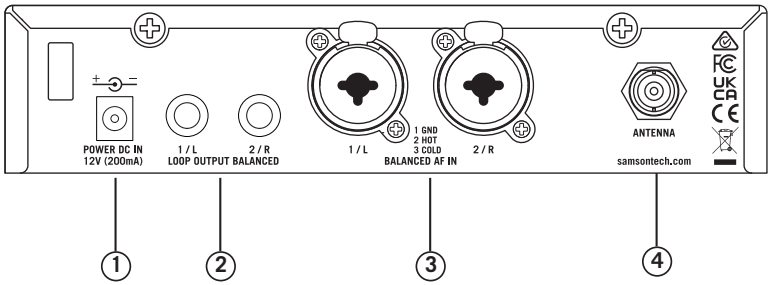
With proper care and maintenance, your EarAmp will operate trouble-free for many years. Should your EarAmp ever require servicing, a Return Authorization (RA) number must be obtained before shipping your unit to Samson. Without this number, the unit will not be accepted. Please visit **www.samsontech.com/ra** for an RA number prior to shipping your unit. Please retain the original packing materials and, if possible, return the unit in its original carton. If your EarAmp was purchased outside of the United States, contact your local distributor for warranty details and service information.

ET100 Transmitter Front Panel Functions



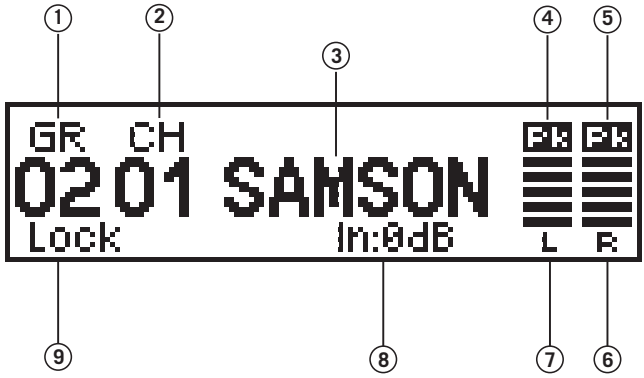
1. **BNC Antenna connector -** Connect the supplied antenna here by pushing it onto the connector. Turn the knurled ring until it locks in place (NOTE - not a full turn).
2. **SYNC Button -** Press this button send channel/group setting to the ER100 receiver. NOTE - SYNC will flash while transmitting IR from the IR window (see number 3 below).
3. **IR Lens -** ET100 will transmit/receive settings to/from the ER100 receiver through the IR Window once the ET100's "SYNC" button is pressed.
4. **OLED DISPLAY Screen -** Displays settings of the EarAmp system, including Group/Channel, input level, Frequency, name, etc.
5. **UP/DOWN Volume Buttons -** Adjusts the input level of signal sent to the ET100 for the signal source (such as a mixer).
6. **HEADPHONE Output -** This indicator lights red when the transmitted audio signal is overloaded.
7. **FUNCTION Rotary/Push Knob -** Push and hold this knob for >3 seconds to enter menu options. This knob is used to scroll through menu options by turning clockwise. Push the knob to select your menu option. (NOTE - as you turn the knob clockwise/counter-clockwise you will see each transmitter menu function with arrows next to them. Up/Down arrows are the next function, while the right arrow indicates the function you will enter after pushing the FUNCTION knob).
8. **POWER Button -** Turns power on/off. Quick press to power on, button will illuminate in an amber color to indicate the ET100 is ready to use. Press and hold the POWER button for >2 seconds to power off the ET100.

ET100 Transmitter Rear Panel Functions



1. **DC Input -** Connect the supplied power adapter here.
   WARNING: Do not substitute any other kind of power adapter. Doing so can cause severe damage to the ET100 and will void your warranty.
2. **LOOP Output L/R -** Use these 1/4" TRS balanced output jacks when to route signal to other EarAmp systems, or other audio equipment as needed.
3. **COMBO Balanced Audio Input L/R -** Connect a monitor output/send from your mixer to left/right or left only (mono) COMBO input jacks using either balanced XLR or 1/4" cables. Pin wiring is as follows: Pin 1 ground, Pin 2 high (hot), and Pin 3 low (cold).
4. **BNC Antenna Connector -** Connect the supplied antenna here by pushing it onto the connector. Turn the knurled ring until it locks in place (NOTE - not a full turn). HINT - Use of this rear antenna mounting option depends on your application. If the ET100 is mounted in a 19" rack case mount antenna on front (see #1 on page 6). If your application involves extending the antenna (with generic paddle antenna/amps) you can use this rear BNC Antenna Connector.

ET100 Transmitter Display Screen



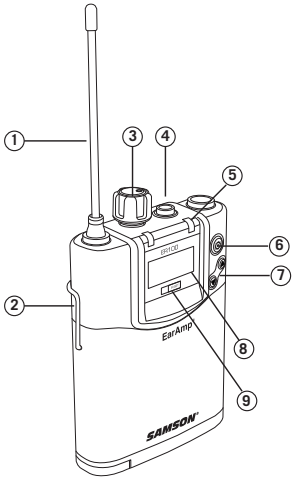
1. **GROUP NUMBER -** GROUP selected by the ER100 (once they are IR synced to each other), or manually selected by the user.
2. **CHANNEL NUMBER -** CHANNEL selected by the ER100 (once ET100 and ER100 are IR set), or manually selected by the user (NOTE - there are factory default channel/group, as well as user selectable frequencies that can be saved, display will be PR and two digit number).
3. **SYSTEM NAME -** The ET100/ER100 provides the ability to assign names, making it easier for the operator of this equipment to quickly fine tune or troubleshoot issues for the performer (in a case of multiple singers on a stage, all with their own ER100, each bodypack can have the user's name, or if there are multiple systems each ET100 can have the performer's name displayed). HINT - name is displayed when first powered on, and when you quick press/push the menu button/knob.
4. **PEAK INDICATOR (LEFT) -** Shows that there is clipping at the transmitter input's left channel. Adjust input level so that peaks only happen occasionally .
5. **PEAK INDICATOR (RIGHT) -** Same as above for right channel input.
6. **RIGHT CHANNEL METER -** Meter shows audio level to right channel audio signal strength.
7. **LEFT CHANNEL METER -** Meter shows audio level to left channel audio signal strength.
8. **INPUT LEVEL (dB) -** Used to maximize the signal quality, depending on user application and signal feed from mixer/sound source.
9. **LOCK FUNCTION -** Indicates that the ET100 is locked (cannot be edited). You can access menu options in the ET100 to lock button controls, for applications where users are not familiar with the equipment this feature prevents accidental changes to system settings.

ET100 Transmitter Menu Options

The EarAmp system is a fully menu driven, feature rich in-ear wireless monitoring system. The menu options are intuitive, and easy to navigate. The details below explain each function within the ET100's user editable menu:

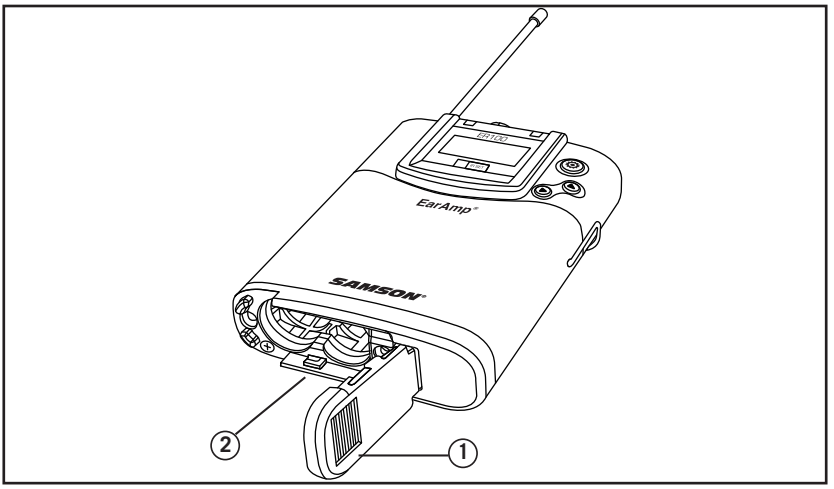
1. **MONITOR LEVEL**
2. **GR-CH SELECT**
3. **LOCK**
4. **USER PRESET**
5. **DISPLAY**
6. **HELP**
7. **EXIT**

ER100 Beltpack Receiver Callouts



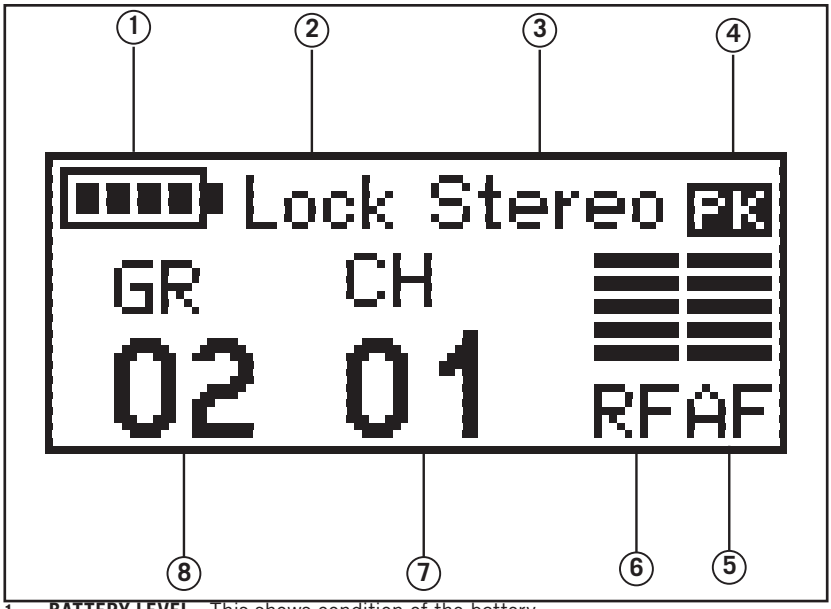
1. **ANTENNA -** This permanently attached antenna should be fully extended during normal operation.
2. **BELT CLIP -** Use this belt clip to fasten the ER100 receiver to a belt or guitar/instrument strap.
3. **VOLUME/POWER Rotary Knob -** This rotary knob controls both power and receiver's overall volume level. Rotate the knob clockwise to power on (you'll hear a click) and to turn volume level up. Rotate counter-clockwise to lower volume level, and to power the receiver off.
4. **HEADPHONE Output -** This window is used to capture the infrared signal sent from the receiver during the IR SET to channelize the transmitter. The IR Lens is only active for the first 10 seconds when the transmitter is powered on.
5. **ANTENNA LED -** Illuminates blue when ER100 is powered on, shows antenna is ready to receive signal from an ET100 transmitter.
6. **MENU Button -** Press and hold >2 seconds to access and edit functions/features. NOTE - once you have found the function, select by pushing the MENU button again. HINT - there are three arrows, up/down and center button facing right. This right arrow is your selected function. Push the button once more to select, use UP/DOWN buttons to edit. Once you've made changes push the MENU button one last time to save your changes.
7. **UP/DOWN Buttons -** Scroll through menu functions/features by pressing up or down. NOTE - default UP/DOWN controls L/R balance.
8. **OLED DISPLAY Screen -** Shows Frequency Group/Channel, battery level, RF level, etc.
9. **IR Lens -** Sends group/channel information to the ET100 transmitter, when in IR set mode.

ER100 Beltpack Receiver Callouts Continued



1. **BATTERY Door -** Open by pushing to the left of the ER100 (when held with display screen facing you).
2. **BATTERY Compartment -** Insert two "AA" batteries, being mindful of the polarity markings (HINT - you will see "+" symbol in the battery compartment).

ER100 Beltpack Receiver Display Screen



1. **BATTERY LEVEL -** This shows condition of the battery.
2. **LOCK -** Indicates that the receiver functions have been locked to prevent accidental changes to settings.
3. **STEREO/MONO -** Indicates whether you have a stereo feed from the mixer, or a mono feed for the mixer.
4. **PK -** When the audio signal is too hot (loud) this icon will illuminate. NOTE - only appears during signal peaks.
5. **AF LEVEL -** An abbreviation for "Audio Frequency", meaning the level of sound sent from the ET100 transmitter to the ER100 receiver.
6. **RF LEVEL -** Indicates the amount of radio signal between ET100 and ER100.
7. **CHANNEL NUMBER -** Indicates the selected channel.
8. **GROUP NUMBER -** Indicates the selected group of frequencies.

ER100 Menu Functions

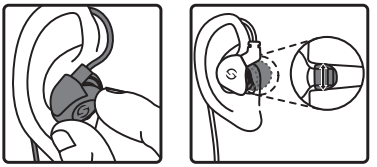
The EarAmp system is a fully menu driven, feature rich in-ear wireless monitoring system. The menu options are intuitive, and easy to navigate. The details below explain each function within the ER100's user editable menu:

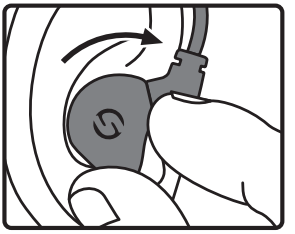
1. **BALANCE -** Adjusts the left and right side signal levels, for when your monitor mix is in stereo, and the mixer has split the instruments and voice on separate sends (so that L could be voice only, and R could be instruments only for example). A performer can adjust their L/R balance to achieve a "more me" type of mix.
2. **St/MON -** The user has the option to have their mix in mono or stereo, depending on their use case.
3. **VOLUME BOOST -** Options are 0dB, +3dB, +6dB. Useful if your overalll sound level is too low, or for when you're using over-ear or on-ear headphones instead of earbuds.
4. **HIGH EQ -** Activates a hi-shelf EQ to boost high frequencies, if the sound in your ears happens to be muddy/boomy or otherwise unintelligble.
5. **LIMITER -** If your mix sounds distorted when the band becomes louder, you can activate the preset limiter function. Options are off, -6dB, -12dB, and -18dB.
6. **DISPLAY -** Select if you want to adjust the display's brightness, name, as well as selected GR-CH, or frequency (in MHz). Default name is SAMSON, but you can select any 6 character alpha-numeric name to suit your application. Main displays can be selected to select operating frequency (in MHz), or GR-CH (Group and Channel).
7. **RF TOOLS -** Includes Squelch, and User Preset functions. Squelch can be left at the factory preset condition, only adjust if there is static noise in the event of RF/AF dropouts.
8. **AUTO SCAN -** You can scan and find the clearest frequency either by GR or CH, depending on your arrangement. Meaning, if multiple systems are operated simultaneously you can scan the first by GR (Group) so the ER100 automatically finds unoccupied frequencies, and all other ER100's can be scanned by CH (Channel) within the selected GR.
9. **FREQ TX > -** Useful in case the ET100 frequency is changed accidentally, select if you want to sync the ER100's frequency to the ET100 (meaning, change the ET100 frequency to match the ER100 frequency).
10. **FREQ TX < -** Useful in case the ER100 frequency is changed accidentally, select if you want to sync the ET100's frequency to the ER100 (meaning, change the ER100 frequency to match the ET100 frequency).
11. **LOCK -** Indicates that the ER100 has been locked, thus preventing accidental adjustments to functions (HINT - when menu button or up/down arrow buttons are pressed you will see a lock icon on the display screen)
12. **HELP -** You can check firmware version number, and reset the ER100 to factory default condition.
13. **EXIT -** Returns to the default main display screen.

Zi150 Earphones

Fitting the Zi150 Earphones

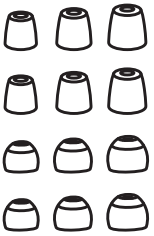
Pictorial below explains how to properly put these earphones in your ear:

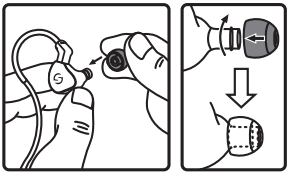


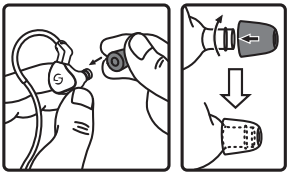


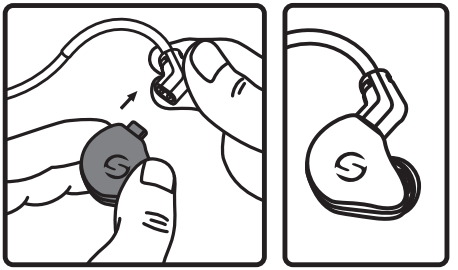
Zi150 earbud tips installation & ear bud/wire installation

Samson Zi150 include foam and silicone earbud tips, provided in small, medium, and large sizes. Pictorial below shows how to install the tips.









Basic EarAmp System Setup

1.

User Presets

1.

Specifications

System

Operating Range	300' (100m) line of sight
RF Carrier Range	470 MHz~502 MHz
RF Channels	10 groups, 18 channels per group
User Preset Channels	5 configurable groups 10 configurable channels per group
Maximum FM Deviation	± 50 kHz
Modulation Mode	FM MPX (Stereo)
Oscillation Mode	PLL phase locked frequency synthesis
MPX Tone Control Frequency	19 kHz
Frequency Stability (0°C - 50°C)	± 0.005%
Zi150 Earbuds	32Ω impedance
Frequency Response	38 Hz - 15 kHz (+0/-3 dB) 32Ω Load
THD+N	<0.5% (typ.) ref. 1 kHz @ -6 dBu TX input level pad set to -12 dB 32Ω Load
Dynamic Range	90 dB (typ.) ref. 1 kHz @ +6 dBu TX input level pad set to -12 dB 32Ω Load
ET100 and ER100 AF Meter Levels (ET100 Input Level pad set to -12 dB)	
	Peak...+16 dBu input, 5 % THD+N 5.....+4 dBu input 4.....+1 dBu input 3.....-1 dBu input 2.....-6 dBu input 1.....-16 dBu input

ET100 Transmitter

Chassis Type	1/2 EIA Standard 1U
RF Output Power	10 mW
RF Harmonic Radiation Rejection	>60 dB
Audio Input	2 x XLR + 1/4" TRS combi balanced
Audio Output	2 x 1/4" TRS balanced loop outputs 1/4" TRS stereo headphone monitor output
Power Supply	12 V DC, 1000 mA, center positive, sleeve negative
Current Consumption	160 mA (typ.)
Dimensions (LxWxH)	214 x 200 x 44 mm 8.4 x 7.9 x 1.7 in
Weight	961 g 34 oz

ER100 Receiver

Power Supply	2 x AA Batteries
Current Consumption	150 mA (typ.)
Battery Life	8 hours (typ.)
Audio Ooutput	1/8" TRS stereo headphone output
Dimensions (LxWxH)	102 x 65 x 23 mm 4 x 2.6 x 0.9 in
Weight (without batteries)	95 g 3.4 oz

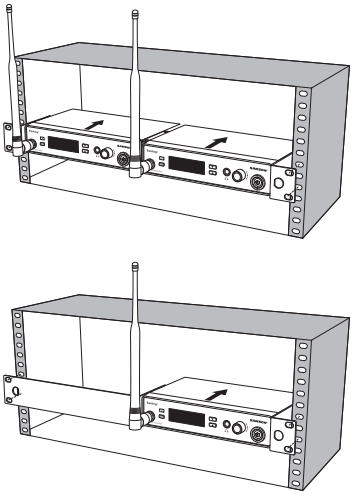
Specifications Continued

ET100 Transmitter Audio Performance

Input Impedance	100 kΩ (hot to ground, cold to ground)
Frequency Response	Balanced loop output: ≥600Ω Load 7 Hz - 50 kHz (+0/-0.05 dB) Headphone output: 32Ω Load 20 Hz - 20 kHz (+0/-3 dB)
Maximum Output Level (Re. 1 kHz, 1% THD+N)	Balanced loop output: 10kΩ Load +24.8 dBu in = +24 dBu / 12.2 Vrms out Headphone output: 32Ω Load -2.6 dBu in = +6 dBu / 1.6 Vrms out
Dynamic Range (Re. 1 kHz, 1% THD+N)	Balanced loop output: 10kΩ Load 138 dB re. +24 dBu (A-wt.) Headphone output: 32Ω Load 91 dB re. +6 dBu (A-wt.)

ET100 Rack Mounting

The ET100 transmitter can be installed into a standard 19" rack for ease of transport or as part of a permanent installation. Use the provided rack mount hardware following the illustrations below. NOTE - you can rack two ET100 side by side, or individually:



Having Trouble with your EarAmp In Ear Wireless System?
We can help!

CONTACT OUR SUPPORT TEAM: support@samsontech.com
Our experts can help you resolve any issues.

Follow us:

@samson **@samsontech** **@samson_technologies**

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