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› Debra EST-12 Pro UHF Stereo Wireless In-Ear Monitor System User Manual

D Debra EST-12

Debra EST-12 Pro UHF Stereo Wireless In-Ear Monitor System User Manual

Model: EST-12

1. INTRODUCTION

The Debra EST-12 Pro UHF Stereo Wireless In-Ear Monitor System provides high-fidelity audio monitoring for various applications, including live performances, recording, and conferences. This portable and rechargeable system features 20 adjustable channels, ensuring stable and clear audio transmission with ultra-low latency. This manual provides detailed instructions for setup, operation, and maintenance of your EST-12 system.



Figure 1: Debra EST-12 Pro UHF Stereo Wireless In-Ear Monitor System components.

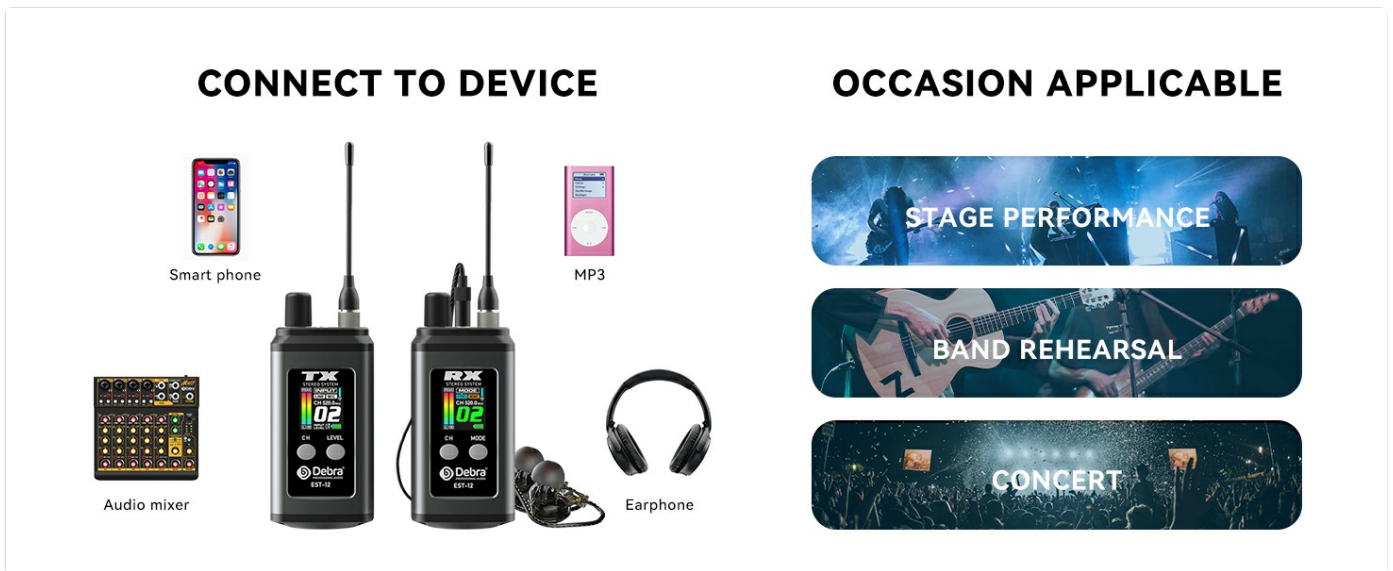


Figure 2: Overview of the EST-12 Stereo Portable Wireless IEM System.



Figure 3: Applicable scenarios for the EST-12 system.

2. PRODUCT FEATURES

- **Hi-Fi Stereo/Mono Switchable:** Delivers 24bit/48KHz HD audio with DSP noise reduction. Easily switch between stereo and mono modes for diverse monitoring needs.
- **UHF Long-Range Stability:** Utilizes UHF digital technology (560-590MHz) for stable transmission up to 80 meters (approximately 260 feet) with strong anti-interference capabilities and obstacle penetration.
- **20 Adjustable Channels:** Offers 20 manually adjustable channels to avoid signal interference and allows for unlimited matching of multiple receivers to a single transmitter.
- **Extended Battery Life & Portable Charging:** Receiver provides over 6 hours of operation, and the transmitter over 5 hours, with convenient USB-C charging.
- **User-Friendly Design:** Lightweight (0.1Kg per unit) with comfortable earpieces and a durable metal casing.

EST-12

UHF Portable System

FEATURES



Figure 4: Key features of the EST-12 system.

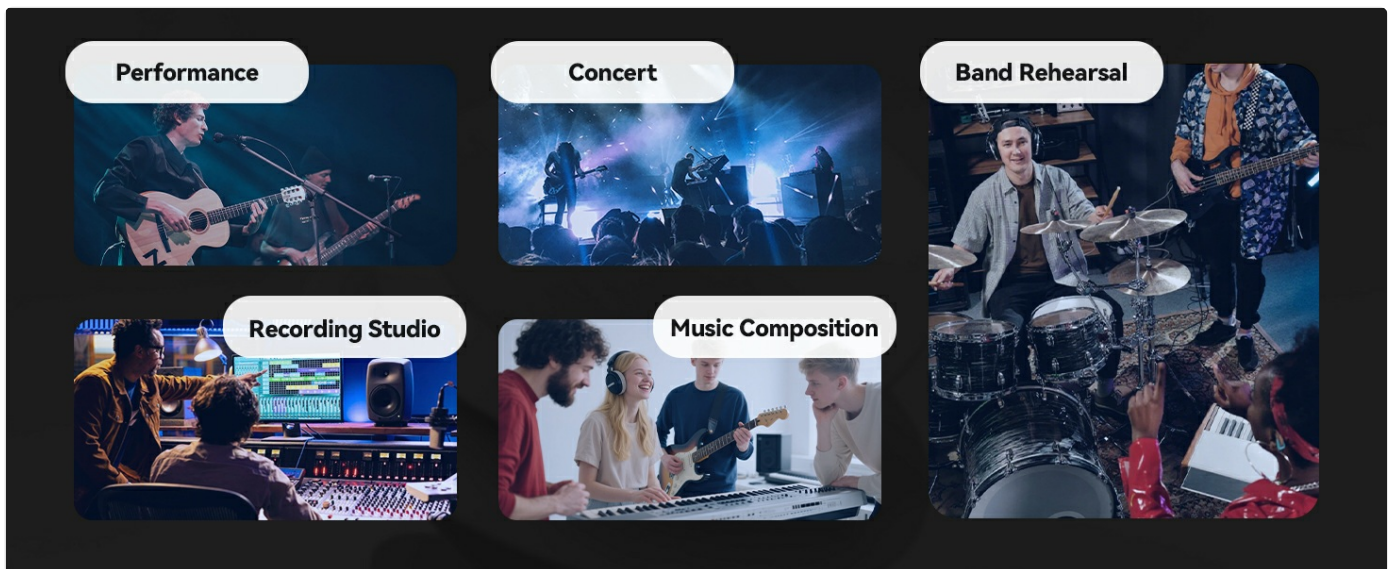


Figure 5: Ultra-low latency performance of the system.



Figure 6: UHF signal transmission range of up to 260 feet.

3. PACKAGE CONTENTS

Verify that all items listed below are included in your package:

- 1 x Transmitter
- 1 x Receiver
- 1 x Bracket (for transmitter)
- 1 x Monitor Earphone
- 1 x 3.5mm Cable
- 1 x User Manual (this document)
- 1 x Type-C Cable (for charging)
- 1 x Zipper Bag (for storage)

1 TRANSMITTER + 1 RECEIVER



Transmitter	*1
Bracket	*1
Monitor earphone	*1
TypeC cable	*1

Receiver	*1
3.5mm cable	*1
Manual	*1
Zipper bag	*1

Figure 7: Complete package contents.

4. SETUP GUIDE

- 1. Charge Devices:** Before first use, fully charge both the transmitter and receiver using the provided USB-C cable. Connect the cable to a 5V power adapter (not included). The charging time is approximately 2 hours.
- 2. Connect Transmitter:**
 - Attach the antenna to the transmitter.
 - Connect your audio source (e.g., mixer, phone, MP3 player) to the transmitter's 3.5mm input jack using the supplied 3.5mm cable.
 - Optionally, attach the transmitter to the included bracket/stand for stable placement.
- 3. Connect Receiver:**
 - Attach the antenna to the receiver.
 - Plug the monitor earphone into the receiver's 3.5mm headphone jack.

4. **Power On:** Turn on both the transmitter and receiver. The TFT display will illuminate.
5. **Pairing:** The transmitter and receiver should automatically pair. If not, ensure they are on the same channel. Refer to the "Operating Instructions" section for channel adjustment.



Figure 8: Connection examples and applicable scenarios.



Figure 9: Audio input and bracket connection details.

5. OPERATING INSTRUCTIONS

5.1. Power On/Off

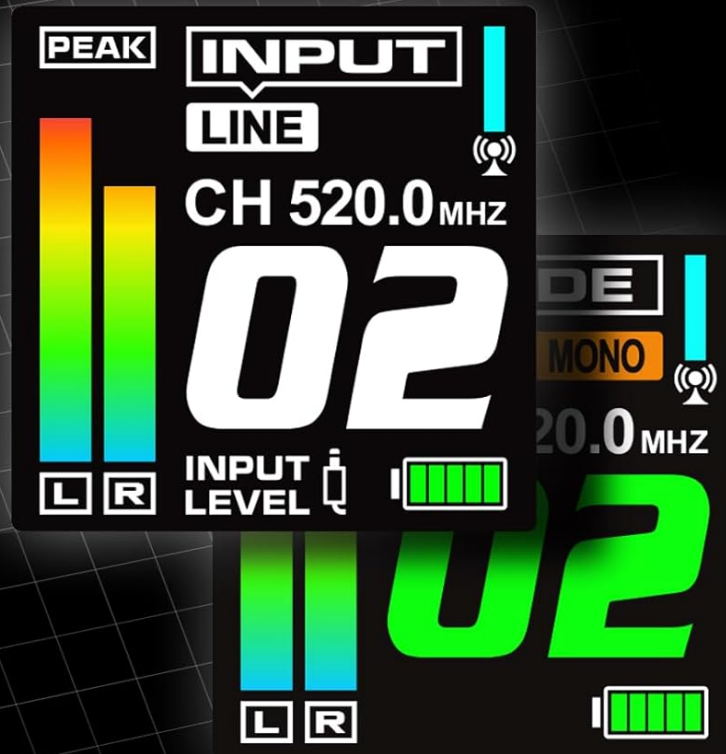
Press and hold the power button on both the transmitter (TX) and receiver (RX) units to turn them on or off. The TFT display will illuminate.

5.2. TFT Display Information

The high-definition TFT display provides dynamic information about the system's status, including channel number, input level, stereo/mono mode, and battery level.

TFT

HIGH-DEFINITION DYNAMIC
INFORMATION DISPLAY



INDEPENDENT MCU DESIGN
creates high-definition information dynamic display effect

Figure 10: High-definition dynamic information display (TFT).

5.3. Channel Adjustment

The EST-12 system offers 20 adjustable channels (560-590MHz) to prevent interference. To change the channel:

1. On the transmitter or receiver, locate the "CH" button.
2. Press the "CH" button to cycle through the available channels.
3. Ensure both the transmitter and all connected receivers are set to the same channel for proper operation.



Figure 11: Channel switching functionality.



Figure 12: Visual representation of 20 switchable channels.

5.4. Stereo/Mono Mode Switching

The system supports both stereo and mono audio output. To switch modes:

1. On the receiver unit, locate the "MODE" button.
2. Press the "MODE" button to toggle between Stereo and Mono modes. The current mode will be displayed on the TFT screen.



Figure 13: Stereo/Mono mode switch on the receiver.



Figure 14: Switching between Stereo and Mono modes.

5.5. Volume Adjustment

Adjust the volume on the receiver unit using the dedicated volume control knob or buttons, if present. Ensure the input level from your audio source is appropriate to avoid distortion.

5.6. Multiple Receiver Connection

The EST-12 system supports connecting multiple receivers to a single transmitter. Simply set all additional receivers to the same channel as the transmitter for simultaneous monitoring.



Figure 15: Connecting multiple receivers to one transmitter.

6. TECHNICAL SPECIFICATIONS

System Parameters

RF Carrier Frequency	560-590MHz
Total Number of Channels	20
Frequency Stability	0.005%

Effective Working Distance	≥80 meters (optimal environment)
Audio Compression & Expansion	DSP Digital Audio
Audio Sampling Depth	24bit, 48KHz
Audio Frequency Response	60Hz~20KHz
Dynamic Range	95 dB
Audio Signal-to-Noise Ratio	120dB
Total Harmonic Distortion	≤0.8% @1KHz
Operating Temperature Range	-10°C ~ +50°C

Receiver Technical Parameters

Receiver Bandwidth	560-590MHz
Receiving Mode	Dual-channel, superheterodyne
Image Suppression	45dBm
Receiving Sensitivity	<-99dBm
Frequency Synchronization Mode	FM
Audio Output	1 Stereo headphone output
Headphone Output Power	80mW@16Ω
Power Supply	Built-in 3.7V lithium battery; supports external power bank
Normal Working Current	130mA
Battery Use Time	≥6 hours

Transmitter Technical Parameters

Carrier Bandwidth	560-590MHz
Oscillation Mode	PLL frequency synthesis
Transmit Power	10mW
Carrier Error	0.005%
Harmonic Radiation	-32dBm
Modulation Mode	GFSK
Frequency Error	≤10ppm
Stereo Input Interface	Φ3.5mm
Input Impedance	2.2KΩ
Frequency Setting	FM

Power Supply	Built-in 3.7V lithium battery; supports external power bank
Normal Working Current	160mA
Battery Use Time	≥4 hours

SYSTEM TECHNICAL PARAMETERS

RF carrier frequency range: 560~590MHz;
 Total number of channels: 20
 Frequency stability: 0.005%;
 Effective working distance (optimal environment): ≥80 meters;
 Audio compression and expansion: DSP digital audio
 Audio sampling depth: 24bit, 48K
 Audio frequency response: 60Hz~20KHz;
 Dynamic range: 95 dB;
 Audio signal-to-noise ratio: 120dB;
 Total harmonic distortion: ≤0.8%,@1KHz;
 Operating temperature range: -10℃~ +50℃;

RECEIVER TECHNICAL PARAMETERS

Receiver bandwidth: 560~590MHz(the actual version shall prevail)
 Receiving mode: dual-channel, superheterodyne;
 Image suppression: 45dBm;
 Receiving sensitivity: <-99dBm;
 Frequency synchronization mode: FM;
 Audio output: 1 stereo headphone output
 Headphone output power: 80mW@16Ω;
 Power supply: built-in 3.7V lithium battery; can also support external power bank power supply
 Normal working current: 130mA;
 Battery use time: ≥6 hours;

TRANSMITTER TECHNICAL PARAMETERS

Carrier bandwidth: 560~590MHz
 Oscillation mode: PLL frequency synthesis;
 Transmit power: 10mW;
 Carrier error: 0.005%;
 Harmonic radiation: -32dBm;
 Modulation mode: GFSK;
 Frequency error: ≤10ppm
 Stereo input interface: Φ3.5mm
 Input impedance: 2.2KΩ;
 Frequency setting: FM;
 Power supply: built-in 3.7V lithium battery ; It can also support external power bank power supply
 Normal working current: 160mA;
 Battery use time: ≥4 hours;

PARAMETERS AND SIZE



Figure 16: Technical parameters and physical dimensions.

7. TROUBLESHOOTING

This section addresses common issues you might encounter with your EST-12 system.

Problem	Possible Cause	Solution
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Problem	Possible Cause	Solution
No sound from earphones.	<ul style="list-style-type: none"> ◦ Receiver not powered on. ◦ Earphones not properly connected. ◦ Volume too low. ◦ Transmitter not powered on or not sending signal. ◦ Transmitter and receiver on different channels. ◦ Audio source not connected or muted. 	<ul style="list-style-type: none"> ◦ Ensure receiver is powered on. ◦ Check earphone connection. ◦ Increase receiver volume. ◦ Ensure transmitter is powered on and connected to audio source. ◦ Verify transmitter and receiver are on the same channel. ◦ Check audio source connection and volume.
Interference or poor sound quality.	<ul style="list-style-type: none"> ◦ Nearby wireless devices causing interference. ◦ Transmitter and receiver too far apart. ◦ Obstacles blocking signal. ◦ Low battery on transmitter or receiver. 	<ul style="list-style-type: none"> ◦ Change to a different channel (refer to Section 5.3). ◦ Reduce distance between transmitter and receiver. ◦ Ensure clear line of sight between units. ◦ Recharge both units.
Short battery life.	<ul style="list-style-type: none"> ◦ Units not fully charged. ◦ Aging battery. 	<ul style="list-style-type: none"> ◦ Ensure full charge before use (approx. 2 hours). ◦ Consider battery replacement if performance significantly degrades over time.

8. MAINTENANCE

Proper care and maintenance will ensure the longevity and optimal performance of your Debra EST-12 system.

- **Cleaning:** Use a soft, dry cloth to clean the units. Avoid using harsh chemicals or abrasive materials.
- **Storage:** Store the system in a cool, dry place, away from direct sunlight and extreme temperatures. Use the provided zipper bag for protection during transport and storage.
- **Battery Care:** For optimal battery health, fully charge the units before long periods of storage and recharge them every 3-6 months if not in use.
- **Antennas:** Handle antennas with care to prevent bending or breaking.



Figure 17: Charging and battery life information.

9. WARRANTY AND SUPPORT

The Debra EST-12 Pro UHF Stereo Wireless In-Ear Monitor System comes with a standard manufacturer's warranty. Please refer to the warranty card included in your package or contact Debra customer support for specific warranty terms and conditions.

For technical assistance, troubleshooting, or service inquiries, please visit the official Debra website or contact their customer support team. Contact information can typically be found on the product packaging or the manufacturer's website.

Note: Keep your purchase receipt as proof of purchase for warranty claims.

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This manual is subject to change without notice.