



Industrial-grade AI noise-cancellation Solution Integrator



2.4G Wireless Headset Kit for Two-Way Radios User Manual

AI-noise reduction | Hands-free | More Stable

1. Introduction and Technology Overview

This 2.4G Wireless Headset Kit is a professional-grade communication solution specially designed for two-way radios without Bluetooth function, serving as a replacement for traditional wired headsets. Equipped with a built-in AI noise reduction chip, it delivers clear voice transmission even in noisy and reverberant environments, greatly enhancing communication experience without replacing your current radio .

By removing physical tethering, operators gain significant mobility and safety in the field. Unlike consumer Bluetooth alternatives, this system utilizes a dedicated 2.4G wireless protocol. This provides a more stable, low-latency connection with superior immunity to interference in high-RF environments typical of industrial and public safety settings.

2. Key Special Features

Say goodbye to howling

Anti-Howling Technology:

Multiple communication devices operating within the same space easily trigger such high-frequency feedback loops, resulting in interference and discomfort to the human ear. Our AI-driven anti-howling feature is engineered to detect and suppress these loops, protecting your hearing and ensuring a smooth conversation.

Clear audio even in corridors

Anti-Reverberation: Hard surfaces in large halls, tiled lobbies, or long corridors often create muddy, echoing audio. The V8H/A8H neutralizes these sound reflections, ensuring your sound like you are in a quiet, carpeted office even when you are in a high-echo environment.

Powerful Noise Reduction

Voice Isolation in Noise: Built for the real world, this headset excels in noisy environments. It is capable of perfect speech extraction while providing up to 20dB of active noise suppression. Whether you are navigating a busy transit hub or a loud office floor, the AI processor identifies your speech patterns and extracts your voice from surrounding noise.

3. Package Contents

Item	Quantity
2.4G Adapter (Dongle)	1 pc
Wireless Headset	1 pc
Wireless PTT Ring	1 pc
2-in-1 Type C Charging Cable	1 pc
Finger Ring Strap	1 pc
Silicone Ear Tips for Headset	2 pc
User Manual	1 pc



Headset



Finger Ring



Adapter



Charging Cable



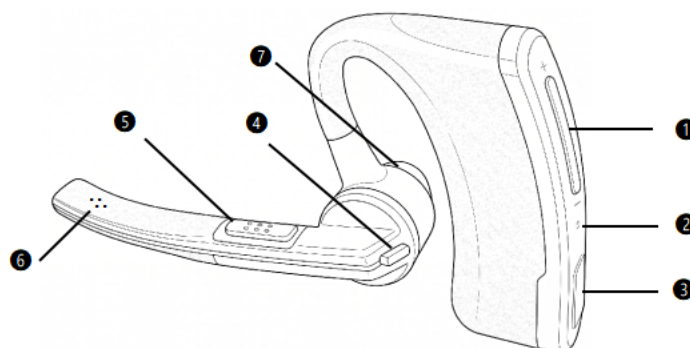
Silicone Ear Tips



Strap

4. Device Overview

4.1 Wireless Headset



❶ **Volume Button:** Increases / Decreases audio output level.

❷ **LED Indicator:** Visual feedback for power, pairing, and battery status.

- Disconnected: Flashing blue light
- Connected (Standby): Pulsing blue light
- Transmitting: Solid blue light
- Low battery: Flashing red light
- Charging: Solid red light
- Fully charged: Solid green light

❸ **Type-C Charging Port:** DC input for charging.

❹ **Power/Pairing Button:** Controls power states and initiates the wireless link.

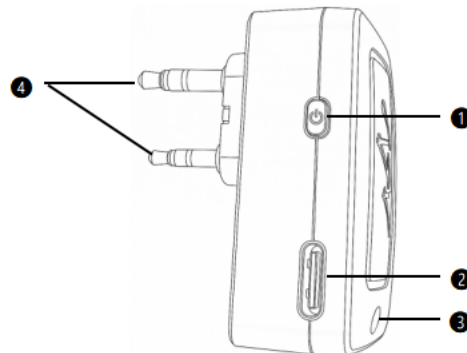
- Hold for 2s: Power on
- Hold for 4s: Enter Bluetooth pairing mode
- Hold for 10s: Power off

⑤**PTT Button:** Push to talk, release to stop/receive. Equipped with chip-level AI noise reduction.

⑥**Microphone:** Captures sound, including background sound and human voices

⑦**Earphone:** High-fidelity driver for monitoring incoming radio traffic.

4.2 2.4G Adapter (Dongle)



①**Power/Pairing Button:** Controls power states and initiates the wireless link.

- Hold for 2s: Power on
- Hold for 4s: Enter Bluetooth pairing mode
- Hold for 10s: Power off

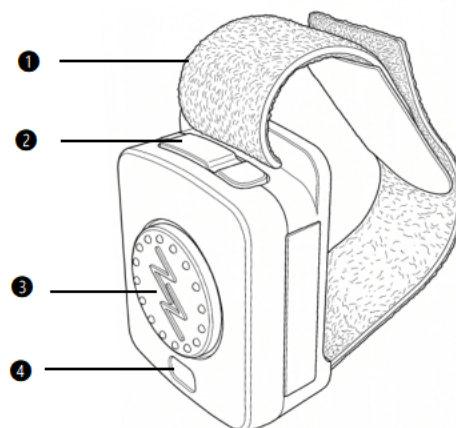
②**Type-C Charging Port:** DC input for charging.

③**LED Indicator:** Visual feedback for power, pairing, and battery status.

- Disconnected: Flashing blue light
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- Transmitting: Solid blue light
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- Charging: Solid red light
- Fully charged: Solid green light

④ **Two-way radio connector:** Traditional K-type / M-type plugs available, customization supported.

4.3 Wireless PTT Ring



①Adjustable finger ring strap

②**Type-C Charging Port:** DC input for charging.

③**PTT Button:** Push to talk, release to stop/receive. Equipped with chip-level AI noise reduction.

● **LED Indicator:** Visual feedback for power, pairing, and battery status.

- Transmitting: Solid blue
- Low battery: Flashing red
- Charging: Solid red
- Fully charged: Solid green

5. Setup and Installation

To install the 2.4G adapter (with a traditional M-type or K-type connector, or a custom type), locate the accessory port on the side of your two-way radio. Align the two-pin connector and insert the adapter firmly until it is fully seated. **Technical Note:** For optimal range, ensure the adapter is not obstructed by large metallic objects or directly shielded by the radio chassis's antenna placement.

6. Operating Instructions

6.1 Powering On and Off

Manage device power using the following timed press actions:

Device	Power ON	Power OFF
Headset	Long press (2s)	Long press (10s)
Adapter	Long press (2s)	Long press (10s)

6.2 2.4G Wireless Pairing

For a secure link, the headset and adapter must be synchronized.

1. Ensure both devices are currently powered OFF.
2. Long-press the **Power Button** on both devices for **over 5 seconds**.
3. The LED indicators will flash **Alternating Red and Blue**, indicating Pairing Mode.
4. Once the devices locate each other, they will pair automatically. The LEDs will transition to a **Breathing Blue** pulse.

6.3 Transmitting and Receiving

- **Transmitting (Uplink):** Press and hold the **PTT button** (Headset or Ring). This triggers the radio's transmit mode.
- **Receiving (Downlink):** Release the PTT button. The system automatically returns to monitoring mode, routing incoming audio to the headset earphone.

6.4 AI Noise Reduction

The kit features "Always-on" chip-level AI Noise Reduction dedicated to **Uplink audio**. This ensures that the voice you send to others is filtered for background noise.

6.5 Volume Control

Adjust audio levels using the **Volume +** and **Volume -** buttons on the headset. Each press modifies the output in discrete increments to accommodate varying ambient noise levels.

7. Charging Information

Components are charged via the included Type-C cables.

- **Charging State:** The LED remains **Solid Red** on all devices.

- **Charge Completion:** The LED remains **Solid Green** light on all devices.
- **Low Battery:** A **Blinking Red** light indicates the device has reached its minimum voltage threshold and requires immediate charging.

8. Technical Specifications

The system operates according to a logic-gate priority to ensure critical communications are never missed:

1. **Uplink (Transmit):** Highest operational priority. Engaging the PTT will immediately interrupt any incoming Downlink audio.
2. **Downlink (Receive):** Active whenever a signal is detected from the radio.
3. **Standby:** Idle monitoring state.
4. **Smart Power-Saving:** The system features an automated power-management protocol to extend battery life. The Headset enters standby mode if no downlink voice command or PTT activation signal is received from the dongle for over **30 seconds**. The Adapter enters standby mode if does not receive a transmission command from the PTT ring or headset for more than **5 minutes**.
5. General Specifications

Item	Battery capacity	Estimated standby sleep time (hours)	Transmit power consumption	Receive power consumption	*Estimated continuous operation time (hours)
Adaptor	400mAh	97	42.8mA	18.01mA	18.5
Headset	150mAh	45	16.01mA	41mA	7.5
Finger Ring	100mAh	2000	7.14mA	-	41.5

*Continuous operation estimated under conditions: Transmit for 1 minute, rest for 30 seconds, receive for 1 minute, rest for 30 seconds.

6. Size & Weight

Item	Size	Weight
Adaptor	43mmx38mmx24.3mm	18.2g
Headset	103.1mmx55.5mmx25.5mm	24.6g
Finger Ring	33.4mmx14.2mmx25.2mm	8.8g

9. Troubleshooting

Problem	Recommended Action
Pairing Failure	Ensure both devices are completely powered OFF before starting. You must hold the power buttons for more than 5 seconds. If the Red and Blue LEDs do not flash alternately, the device has not entered pairing mode; power off and retry.
No Incoming Audio / Downlink Fails	First, verify that the 2.4G Adapter (Dongle) is firmly and fully seated in the accessory port of your two-way radio, ensuring it is not obstructed by the radio chassis or antenna. Second, use the Volume + button on the headset to increase the audio output level.

	Lastly, check if your two-way radio is set to the correct communication channel.
Wireless PTT Ring Unresponsive	Ensure the ring is within range of the adapter(max. 10m, 5m recommended) and check the Adapter LED; if it does not turn Solid Blue when the ring is pressed, the ring battery may be depleted.
My Voice is Filtered Out or Cannot be Heard Clearly	This headset is equipped with an advanced AI Neural Network (DNN) chip trained on over 500 million voice samples to extract only human speech. If you whisper too quietly, make non-speech sounds, or if the microphone is completely blocked by heavy protective gear, the AI may misinterpret your audio as background noise and filter it out. Please speak clearly at a normal volume and ensure the microphone is unobstructed.
Certain Loud Noises are Still Transmitted	The built-in AI noise reduction provides up to 20dB of suppression against mechanical and environmental noises (e.g., motors, wind, impacts, machinery). However, because the algorithm is specifically designed to isolate and preserve human voice patterns, loud human shouting or conversations immediately adjacent to you might still be partially transmitted.



AI Out Noise, Sync In Clarity.