Outerloop™

Universal Intercom Belt Pack

User Guide

JK Audio

Welcome

Thank You

Thank you for purchasing the JK Audio Outerloop. Please read this guide for instructions on setting up and using your new product.

Getting Assistance

If you have any questions, call us **M-F: 8:30am-5:00pm (CT)**

In the US & Canada (Toll-Free)
800-552-8346

All other countries dial:
815-786-2929

Email us at:
support@jkaudio.com

Or, check out our FAQ section for answers to common questions.

Limited Warranty

Outerloop is covered by a 1 year warranty to be free from defective workmanship and materials. To obtain service, contact JK Audio by phone or email for return authorization. Once authorized, you will carefully pack and ship the faulty product and all accessories to us. You will pay for shipping to us and we will pay for return back to you.

This warranty does not cover damages due to accident, weather, fire, flood, earthquake, misuse, unauthorized repairs or modifications, or damages occurred in shipping, only defective workmanship or materials.

There are no expressed or implied warranties which extend beyond the warranty here made.

Caution: To prevent possible hearing damage, avoid listening at high volume levels for long periods.

Outerloop contains a headphone amplifier that is more powerful than the typical consumer product.

JK Audio products are designed for the broadcast industry. The broadcast professional must be able to hear headphone signals over the ambient noise level. From the cheering crowd at a football game to trackside at a car race, the program material or cues must be heard at high volumes without distortion.

Road Safety

Never use headphones while driving or cycling, etc. It can be dangerous to turn up the volume even while walking. Doing so may hinder your hearing and can be hazardous on the roadways or at pedestrian crossings.

Handle with Care

While Outerloop was designed to be very rugged and durable, it is not waterproof and care should be taken to keep the unit dry.

Contents

Features

HD Voice*

Bluetooth Wireless Technology

Uses Standard Intercom Headsets

PTT Button

4-Pin and 5-Pin Male or Female Headset Jacks

>10 Hours on one 9 Volt Alkaline Battery

HD Voice

While standard phone calls have a narrow bandwidth of 300 Hz to 3.4 kHz, HD Voice calls offer 50 Hz to 7 kHz bandwidth. The additional 1.5 octaves on the low end gives voice a more natural sound, while the additional upper octave dramatically improves speech clarity and intelligibility.

Wireless HD Calls

HD Voice is available on many third party headsets and cell phones. To take advantage of this extended bandwidth, both phones on the call must support HD Voice, and both phones must be on the same carrier, in coverage areas that support HD Voice.

Overview

Introducing Outerloop

Outerloop™ functions as a wireless link to your intercom system. This universal belt pack provides connections for your existing 4-pin or 5-pin intercom headset, routing audio through your mobile device over a Bluetooth wireless connection. Use your cell phone to call into your intercom phone bridge or station phone coupler for a global wireless link.

Model OTL-F features both 4-pin and 5-pin Female XLR headset jacks, while model OTL-M features both 4-pin and 5-pin Male XLR headset jacks. Easy-to-use send and receive level controls, a push-on, push-off **<Talk>** button, as well as a recessed sidetone level control. All the comforts of a standard belt pack whether you are around the corner or around the world. Outerloop also features a switch that selects between pairing to a phone or to a headset. In **<Phone>** mode, Outerloop pairs to your cell phone, notepad, or computer just like any other Bluetooth headset. In **<Headset>** mode, you can pair to another Outerloop or to a standard Bluetooth headset, providing a short range secure wireless point-to-point intercom. Outerloop to Outerloop connections default to HD Voice (120 Hz to 7 kHz) bandwidth. Many new Bluetooth wireless cell phones and headsets also provide HD Voice bandwidth.

Phone Mode

Connect to a Bluetooth enabled mobile phone to provide remote voice access to the party-line with your 4-pin or 5-pin intercom headset.

Headset Mode

Connect to a Bluetooth enabled headset or another Outerloop for a short range secure wireless point-to-point intercom.

Controls & Indicators

1. **Send Level**
   Controls the level of your microphone input.

2. **Bluetooth LED**
   See page 7.

3. **Talk LED**
   Lit green when mic is enabled.

4. **Receive Level**
   Sets the level of audio sent to the headphone output jack.

5. **Power Indicator**
   LED indicates when the power is turned on and dims when the battery charge is getting low.

6. **Push-to-Talk Button (PTT)**

7. **Power Button**
   The **<Power>** button applies power to the belt pack and immediately starts the Bluetooth radio in *Idle mode*.

Getting Connected

1. Role Select Switch

Select **<Headset>** if you will be using Outerloop with a Bluetooth enabled headset or any device that emulates a headset.

Select **<Phone>** if you will be using Outerloop with a cell phone or other master device.

2. Pair Button

Momentary MFB (Multi-Function Button).

3. Headset

OTL-F: 4-pin or 5-pin Female XLR headset jacks.

OTL-M: 4-pin or 5-pin Male XLR headset jacks.

Send Level Control

Most Intercom Belt Packs do not include front panel transmit level controls. However, Bluetooth devices encompass a wide range of sensitivities, and therefore require an extra degree of flexibility.

Sidetone Null

A screwdriver slot on the side of the unit adjusts the amount of Sidetone (your voice coming back to you in your headset). This adjustment is made while speaking into the headset with the **<Talk>** button engaged. Simply insert a small flat blade screwdriver and adjust the trim pot to set the desired sidetone level.

Bluetooth Wireless Technology

Pairing Mode

In *Pairing Mode*, any *Bluetooth Wireless Technlogy* enabled device within range can pair with your Outerloop. Once the pairing process is complete the unique device ID is stored in Connection History. Subsequent connections can be made from *Idle Mode*.

For instructions on how to activate Pairing Mode, see pages 8 and 9.

If you put the unit into the wrong state due to releasing the **<Pair>** button at the wrong time, restart from a powered off state. Holding the **<Pair>** button again for "X" seconds will not put it into the desired mode.

Idle Mode

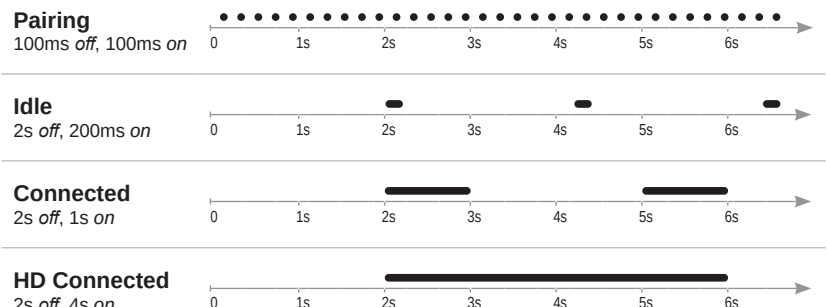
When the **<Power>** switch is turned on, Outerloop starts in *Idle Mode*.
In *Idle Mode*, Outerloop searches for paired devices.

Connected Mode

After bonding is complete, the connection to that device is secure. Outerloop returns to *Idle Mode* when a connection is dropped or terminated.

Bluetooth Status LED

The blue LED on the front of the unit flashes in different sequences to indicate the current connection status.



Pairing to a Cell Phone with Bluetooth Wireless Technology

When you are first connecting to a new device, you should be in an environment with no other *Bluetooth Wireless Technology* enabled devices within range that might also be in *Pairing Mode.*

1. While Outerloop is off, set the **<Role>** switch to **<Phone>.**
2. Press and hold the **<Pair>** button before turning on the Outerloop.
3. While still holding the **<Pair>** button, power on the Outerloop by pressing the **<Power>** button.
4. After releasing the **<Power>** button, continue holding the **<Pair>** button in for **5** full seconds.
5. After releasing the **<Pair>** button, the blue LED should flash rapidly if Outerloop is in *Pairing Mode*.
6. On your device, find and select the option to set up a connection. When the cell phone has found the new device, select from the list the device ID. Depending on the gender of model, the device ID is "**JKOTLFxxxx**" **or** "**JKOTLMxxxx**" where: **xxxx** = last four digits of the serial number.
7. If asked for a pin, enter "**0000**".
8. When bonding is complete, the blue LED will flash at a rate of **2** seconds *off,* **1** second *on.* (**2 s** *off*, **4 s** *on* for HD Voice). Once Outerloop has been added to your cell phone, subsequent connections can be made more quickly from *Idle Mode*.

Pairing to a Headset with Bluetooth Wireless Technology

When you are first connecting to a new device, you should be in an environment with no other *Bluetooth* wireless technology enabled devices within range that might also be in *Pairing Mode.*

1. While Outerloop is off, set the **<Role>** switch to **<Headset>.**
2. Following manufacturer's instructions, set your Headset to *Pairing Mode*.
3. Press and hold the **<Pair>** button before turning on the Outerloop.
4. While still holding the **<Pair>** button, power on the Outerloop by pressing the **<Power>** button.
5. After releasing the **<Power>** button, continue holding the **<Pair>** button for 5 full seconds.
6. After releasing the **<Pair>** button, the blue LED should flash rapidly if Outerloop is in *Pairing Mode*.
7. Outerloop will automatically pair to the first device it finds that is in *Pairing Mode*. The next time you pair to the same headset, you can connect from *Idle Mode* instead of *Pairing Mode*.

Connection History

Outerloop retains a history of the 16 most recent devices. To clear the connection history and return to factory reset, follow the steps below. After resetting, Outerloop will return to *Pairing Mode.*

1. Press and hold the **<Pair>** button before turning on the Outerloop.
2. While still holding the **<Pair>** button, power on the Outerloop by pressing the **<Power>** button.
3. After releasing the **<Power>** button, continue holding the **<Pair>** button in for **20** full seconds. *The LED will flash 4 times at 20 seconds.*
4. After releasing the **<Pair>** button, the blue LED should flash rapidly if Outerloop is in *Pairing Mode*.

Disconnecting from a device with Bluetooth Wireless Technology

Since Outerloop has no other function when Bluetooth is powered down, you may simply turn off the **<Power>** switch to disconnect from the Bluetooth device.

If you wish to leave Outerloop powered up while Bluetooth is powered down, simply press and hold the **<Pair>** button for **5** seconds.

When a Bluetooth connection is dropped or terminated, Outerloop returns to *Idle Mode*. If the unit is in *Idle Mode* for >2 minutes without a connection, Bluetooth will automatically shut off. You may restart Bluetooth by either turning the **<Power>** switch off and on again, or pressing the **<Pair>** button for **2** seconds.

Reconnecting to a Device

When reconnecting to a device that is still in Outerloop's pairing history, the device that will be in Headset mode should be powered up first and both devices should be in *Idle Mode*. When the Master device is turned on, it will find the Headset device during its power up cycle.

When reconnecting to your cell phone, the switch on Outerloop should be set to Phone and the Outerloop should be turned on first.

When reconnecting to your Bluetooth headset, the switch on Outerloop should be set to **<Headset>** and the headset should be turned on first.

Switching Between Phone and Headset

The Role Select switch is only monitored during the power-up sequence. You must power-down, select the desired function, then power-up for the change to take effect.

FAQs

What is the range of the Bluetooth transmitter/ receiver?

Outerloop will transmit and receive audio signals up to 66 feet (20 meters) from your Bluetooth device. The actual range is limited to the device with the shortest range. Transmitting signals over longer distances will require more power, therefore you should keep Outerloop as close as possible to your Bluetooth device to conserve battery power.

Can I pair my Outerloop to two cell phones and send my audio to two locations simultaneously?

No, your Outerloop can only connect to one Bluetooth enabled device at a time. Paired devices remain in the history for easy connection later.

How long will the battery last?

Based on our tests using a standard alkaline battery, the battery should last for >10 hours. Lithium batteries can significantly increase the battery life, but at a higher cost. As an indicator of low battery, the red power LED will grow dim and then extinguish a short while before the battery is completely exhausted and the unit shuts down.

Can I use my Bluetooth headset with my cell phone while I have my phone connected to the Outerloop?

No, your cell phone can only be connected to one Bluetooth enabled device at a time.

My Outerloop will not pair with my cell phone. Why will it not accept the PIN?

If this is the first time you have paired the Outerloop with this cell phone, make certain you are in *Pairing Mode* and not *Idle Mode*. You must press and hold the **<Pair>** button on the Outerloop while turning the **<Power>** switch On. Hold for **5** seconds then release to reach pairing mode the first time you connect.

Make certain that the Outerloop **Role Select** switch is set to **<Phone>** and not **<Headset>**. If the Outerloop is set to **<Headset>**, it might be discovered by the phone, but will be unable to connect when selected.

Technical Information

Specifications

Headset Microphone	
Impedance:	50-2000 ohms
Headset Earpiece	
Load Impedence:	50-600 ohms
Power:	>50 mW into 150 ohms
4-pin Male or Female	
Pin 1:	Mic -
Pin 2:	Mic +
Pin 3:	Headphone -
Pin 4:	Headphone +
5-pin Male or Female	
Pin 1:	Mic -
Pin 2:	Mic +
Pin 3:	Headphone -
Pin 4:	Headphone B +
Pin 5:	Headphone A +

Bluetooth Wireless Technology	
Standard:	Bluetooth 3.0
Range:	66 feet (20 meters)
Frequency Response:	Hands-Free (Full Duplex): 300 Hz– 3.4 kHz Hands-Free (Full Duplex HD): 50 Hz– 7 kHz
Power:	9 VDC battery
Size:	4.7” x 3.75” x 1.65” (12 x 9.5 x 4.2 cm)
Weight:	10 ounces (275 grams)

Declaration of Conformity

Manufacturer's Name	JK Audio, Inc.
Manufacturer's Address	1311 E 6th Street Sandwich, Illinois 60548 USA
Declares that the product:	
Product Name	Outerloop™ Universal Intercom Belt Pack
Model Numbers	OTL-F, OTL-M
Conforms to the following Product Specifications:	
ESD	ESD: EN 61000-3-2, 3-3, 4-3, 4-4, 4-5, 4-6, 4-11 EN 301 489-17 V1.2.1
Emissions	EN 55022:1998, +A, 2000+A3, 2003 Class B ETSI EN 300.328 V1.6.1: 2000 FCC Part 15 FCC ID QOQWT32AE IC Radio Standards
The product herewith complies with the requirements of the following Directives and carries the CE marking accordingly:	
	R&TTE Directive 1999/5/EC EMC Directive 89/336/EEC, 92/31/EEC, 93/68/EEC RoHS Directive 2015/863

The Technical File containing supporting documentation is maintained at:

JK Audio, Inc (Corporate Headquarters)
Compliance Manager
1311 E 6th Street
Sandwich, Illinois 60548 USA
815-786-2929 phone
815-786-8502 fax

FCC Part 15 Compliance

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense. Changes or modifications not expressly approved by JK Audio can void the user's authority to operate the equipment.

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CE

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