Interloop™
Intercom-to-Wireless Bridge

User Guide

JK Audio

Welcome

Thank You

Thank you for purchasing the
JK Audio Interloop.
Please read this guide for instructions
on using it.

Getting Assistance

If you have technical or application
questions:
In the US & Canada, call us toll free
at: **800-552-8346**
All other countries dial: **815-786-2929**
(M-F 8:30-5:00pm Central Time Zone)
Email us at: support@jkaudio.com
Or, check out our FAQ section
for answers to common questions.

Limited Warranty

Interloop is covered by a 2 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.**

⚠ **Use Caution to Prevent Hearing Loss**

 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.

Note: While Interloop 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*	PTT Button
Bluetooth Wireless Technology	Connects to Bluetooth Headsets, Phones, & Notebooks
3-pin XLR Male and Female Intercom Jacks	Intercom Powered with 9 Volt Battery Backup
Send and Receive Volume Controls	

* **HD Voice**. While standard phone calls have a narrow bandwidth of 300 to 3400 Hz, 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. 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.

Bluetooth®   **7 kHz HD VOICE**

Overview

Introducing the Interloop

JK Audio combines Bluetooth Wireless Technology with Two-Wire Intercom systems in a rugged new belt pack design.

Interloop™ works with industry standard Two-Wire, Party-Line intercoms, connecting to the existing intercom system like any other belt pack. Using Bluetooth Wireless Technology, Interloop™ allows wireless connection to a variety of audio devices. A rear panel switch selects **<Headset>** or **<Phone>** connection. **<Headset>** mode allows you to connect to a Bluetooth enabled headset for wireless freedom. **<Phone>** mode allows you to connect to a wireless phone to let others join in, or connect to a notebook or laptop to provide remote voice access using communications applications such as Skype™.

HD Voice 7 kHz audio bandwidth for rich,natural voice clarity is available on many third party headsets and cell phones. Bluetooth devices that are not HD Voice compatible will only have a bandwidth of 3.4 kHz.

Powered by the intercom system, yet uses less current than a typical belt pack. Includes 9 VDC battery backup, holding the wireless connection while changing cables.

While Interloop™ will work with any Bluetooth enabled headset, most headsets were designed to work a short distance from the phone. JK Audio BSET-HS1 Bluetooth Headset offers increased range and performance making it the perfect match.

Applications

Headset Mode
Connect to a Bluetooth enabled headset and leave your beltpack behind.

Phone Mode
Connect to a Bluetooth enabled wireless phone or computer to provide remote voice access to the party-line.

Controls & Indicators

1) Send Control
Controls the audio level from the Bluetooth device into the intercom.

2) Bluetooth LED
See section on Bluetooth Wireless Technology.

3) Talk LED

4) Receive Control
Controls the audio level from the intercom into your Bluetooth device.

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

6) Talk Button
Push-on, push-off operation with solid state logic.

7) Power Button
The **<Power>** button applies power to the belt pack and immediately starts the Bluetooth radio in *Idle mode*, searching for the last connected device.

Getting Connected

1) Role Switch

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

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

2) Pair button

Momentary MFB (Multi Function Button).

3) Intercom

Male and Female loop-through XLR jacks.

Intercom Audio

In bridging mode, Interloop provides minimal loading to the intercom audio line, typically >15k ohms impedance.

In talk mode, a soft start solid state relay engages audio transmission with a nominal 200 ohms output impedance into the intercom line. A temporary loss in intercom power will automatically release the solid state talk relay even if the 9V battery backup is installed.

Send Level Control

Most Intercom Belt Packs do not include front panel transmit level controls. However, most belt packs use industry standard headsets with known sensitivity characteristics. 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 allows fine tuning of the intercom hybrid circuit to remove or minimize echo. This adjustment is made by connecting Interloop to a powered intercom circuit, and engaging the **<Talk>** button while monitoring the Bluetooth return signal. While speaking into the Bluetooth device, insert a small flat blade screwdriver and adjust the null trim pot back and forth to find the minimum or desired sidetone level.

Configuring your Interloop

XLR connections
Pin 1 = Common
Pin 2 = Intercom Power
(optional power + audio)
Pin 3 = Audio (default)

Audio Channel Selection
An internal slide switch selects either Pin 3 or Pin 2 as the audio channel. Interloop uses an electronic inductor based voltage regulator to carefully extract power from the intercom, and a high pass filter to send and receive audio from either Pin 3 or Pin 2.

To access the channel select switch:
1. First turn off the Interloop **<Power>** switch and disconnect the XLR cables.

2. Remove the battery drawer.
3. Remove the two screws that secure the battery drawer housing.
4. Carefully slide the battery housing out from the aluminum chassis, just enough to allow access to the circuit board. The battery box wiring will remain connected during this operation.
5. Locate the slide switch located near the XLR jacks.
   a. Slide the switch *towards* the XLR jacks to select **Pin 3** audio.
   b. Slide the switch *away* from the XLR jacks to select **Pin 2** audio.
6. Carefully return the battery box to its original position, then reinstall the screws and battery drawer.

Bluetooth Status LED

The blue LED on the front of the unit flashes in different sequences to indicate the current connection status. **When attempting to put the unit into Pairing mode, you should power the unit off then hold the <Pair> button as you are turning the unit on**. If you put the unit into the wrong state due to releasing the button at the wrong time, holding it again for "X" seconds will not put it into the desired mode.

Pairing Mode

In *Pairing Mode*, any *Bluetooth* wireless technlogy enabled device within range can pair with your Outerloop. The blue LED will flash rapidly at a rate of **100ms** *off,* **100ms** *on*. Once the pairing process is complete the unique device ID is stored in Connection History. Subsequent connections can be made from *Idle Mode*.

Idle Mode

When the **<Power>** switch is turned on, Outerloop starts in Idle Mode.

In *Idle Mode*, Outerloop searches for paired devices. The blue LED will flash at a rate of **2** seconds *off,* **200ms** *on*.

Connected Mode

After bonding is complete, the blue LED will flash at a slower rate of **2** secs *off,* **1** second *on* **(2 secs *off*, 4 secs *on* for HD Voice).** The connection to that device is secure. Outerloop returns to *Idle Mode* when a connection is dropped or terminated.

Bluetooth Wireless Technology

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. Starting with the **<Power>** switch *Off*, set the **<Phone/Headset>** switch to the **<Phone>** position.

2. Press and hold the **<Pair>** button on the Interloop while turning the **<Power>** switch On. Hold the **<Pair>** Button for **5** full seconds. After you release the button, the blue LED should flash rapidly if

Interloop is in *Pairing Mode*.

3. 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 of "**JKINTxxxx**" where: **xxxx** = last four digits of the serial number.

4. If asked for a pin, enter "**0000**".

5. When bonding is complete, the blue LED will flash at a rate of **2** secs *off*, **1** sec *on* **(2 secs *off*, 4 secs *on* for HD Voice)**. Once Interloop has been added to your cell phone, subsequent connections can be made more quickly from *Idle Mode*.
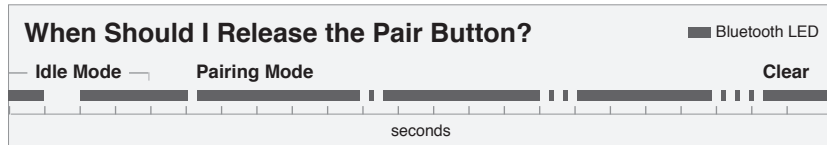
Pairing to a Headset with Bluetooth Wireless Technology

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. Starting with the **<Power>** switch *Off*, set the **<Phone/Headset>** switch to the **<Headset>** position.

2. Following manufacturer's instructions, set your Headset to *Pairing Mode*.

3. Press and hold the **<Pair>** button on the Interloop while turning the **<Power>** switch On. Hold for **5** full seconds. After you release the **<Pair>** button, the blue LED should flash rapidly if Interloop is in *Pairing Mode*.

4. Interloop 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*.

When Should I Release the Pair Button?	■ Bluetooth LED
— Idle Mode — **Pairing Mode**	**Clear**

seconds

Bluetooth Wireless Technology

Connection History

Interloop retains a history of the 16 most recent devices. To clear the connection history and return to factory reset, hold the **<Pair>** button in for at least **20** seconds. After resetting, Interloop will return to *Pairing Mode*.

Disconnecting from a device with Bluetooth Wireless Technology

Since Interloop 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 Interloop 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, Interloop 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 Interloop'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 Interloop should be set to **<Phone>** and the Interloop should be turned on first.

When reconnecting to your Bluetooth headset, the switch on Interloop 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?

Interloop will transmit and receive audio signals up to 65 feet 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 Interloop as close as possible to your Bluetooth device to conserve battery power.

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

No, your Interloop 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?

The 9V battery is only for backup power while the unit is disconnected from an intercom system. 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 Interloop?

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

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

If this is the first time you have paired the Interloop 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 Interloop while turning the **<Power>** switch On. Hold for 5 seconds then release to reach pairing mode the first time you connect.

Technical Information

Specifications

XLR Intercom Channel

Output Level:	0 dBv (775 mV) nominal
Terminating Impedence:	200 ohms
Bridging Impedence:	>15k ohms
Pin 1:	Common
Pin 2:	Power (optional Power + Audio)
Pin 3:	Audio

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:	+12 to +35 VDC, 55 mA Intercom Power with 9 VDC battery backup
Size:	4.7" x 3.75" x 1.65" (12 x 9.5 x 4.2 cm)
Weight:	10 oz (275 g)

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.

Declaration of Conformity

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:	Interloop™ Wired / Wireless Belt Pack
Model Numbers:	Interloop

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

Declaration of Conformity

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 2002/95/EC

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
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Interloop™
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