



Interchange™

INTERCOM PHONE BRIDGE



User Guide

Welcome

Thank You

Thank you for purchasing a JK Audio Interchange™ Intercom Phone Bridge. Please read this guide for instructions on setting up and using your new product.

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

The Interchange 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.

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Features

Male And Female 3 Pin
XLR Intercom Loop Jacks

Male And Female 3 Pin
XLR 4-Wire Jacks

Male XLR Mix Line Out for Monitoring

Send and Receive LED Metering

Front Panel Screwdriver
Level Controls

Front Panel Channel Select

Front Panel Mobile Phone Interface

Listen Always,
Talk When Talk-Enabled

Intercom and Phone Hybrid Powered

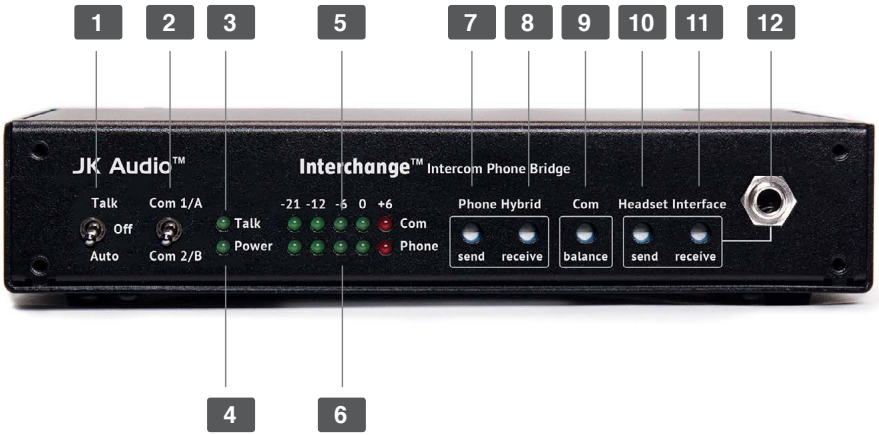
Introducing the Interchange™

Interchange allows remote access to your party line intercom through select JK Audio POTS and VoIP phone hybrids. This professional half rack interface provides a four wire audio interface and remote control connection for JK Audio innkeeper LTD, innkeeper 1x/1rx™, or innkeeper 2™ Digital Hybrids for POTS lines. Likewise, couple a JK Audio PBXport™ with an Interchange™ for PBX/VoIP lines, or connect a JK Audio AutoHybrid IP2™ for VoIP or AoIP connections. The front panel headset interface jack allows easy connection of your mobile phone, tablet, or computer allowing remote access through a wireless phone or conferencing app.

Interchange contains a sophisticated intercom hybrid in a low noise pro audio design. The Listen-Always design allows both the phone hybrid / 4-wire connection and the mobile phone headset interface to monitor the intercom just like any other belt pack. Listen mode is a high impedance bridging tap on the intercom line. Talk mode is enabled via a front panel switch, either **Off**, **On**, or **Auto**. **Auto** follows the phone hybrid Auto-Answer mode. Talk mode uses a solid state relay to properly couple Talk audio from the phone line and mobile phone interfaces, to the intercom channel.

The Innkeeper 2 and AutoHybrid IP2 conference features allows two callers to share one intercom connection. Alternatively, the included cables allow Line 1 and Line 2 of the Innkeeper 2 or AutoHybrid IP2 to be connected to two separate Interchange units, allowing connection to separate intercom loops.

Getting to Know Your Interchange



Controls & Indicators

1. Talk Control

The position of the three position toggle switch determines when Interchange will send audio into the Party Line intercom.

Up = Talk: Interchange sends and receives audio (simultaneously). Use this position with the headset interface, or as a general purpose 4-wire interface.

Center = Off: Interchange functions as a listen-only device. No audio will be sent into the Party Line intercom.

Down = Auto: Talk function follows the hook state of the innkeeper Phone Hybrid.

2. Intercom Channel

Up = Audio on Intercom Channel 1/A (Pin 2)

Down = Audio on Intercom Channel 2/B (Pin 3)

3. Talk LED

Indicates audio transmission into the Party Line intercom.

4. Power LED

Indicates intercom power detected.

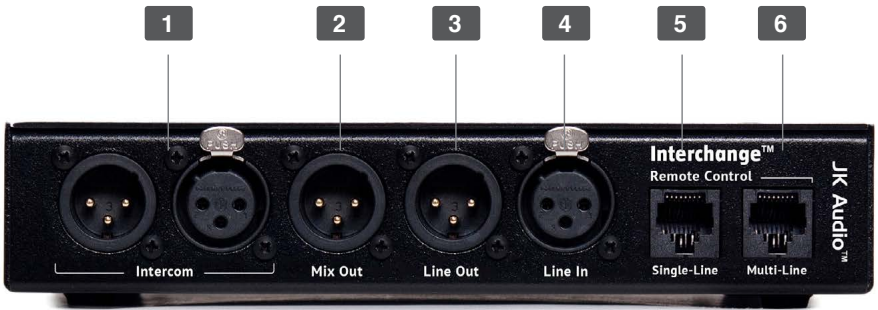
5. COM Level LEDs

Indicates audio signal power on/from the Intercom channel. The 0dB LED corresponds to a nominal level of -10 dBu on the intercom channel.

Controls Cont'd

- 6.** Phone Level LEDs
Indicates audio signal power on/from the phone interface.
- 7.** Phone Hybrid Send Level
Adjusts audio signal level going to the phone hybrid / 4-wire interface.
- 8.** Phone Hybrid Receive Level
Adjusts audio signal level coming from the phone hybrid / 4-wire interface.
- 9.** Com Balance
Fine tuning for the intercom hybrid function. Optimizes separation between send and receive when pushing audio into the intercom with the Talk function.
- 10.** Headset Interface Send Level
Adjusts audio signal level to the mobile device.
- 11.** Headset Interface Receive Level
Adjusts audio signal level coming from the mobile device.
- 12.** Headset Interface Jack
Connect to the headset jack of your mobile device with supplied interface cable.

Getting to Know Your Interchange



Inputs & Outputs

- 1.** Party Line Intercom Jack
Connect to one or two channel 3-pin unbalanced Party Line intercom system.
- 2.** Mix Out XLR Jack
Contains a line level mix of both the phone and intercom audio.
- 3.** Line Out Jack
Line level audio output from the intercom to the phone hybrid or audio device.
- 4.** Line In Jack
Line level audio from the phone hybrid to the intercom.
- 5.** Single Line Remote Jack
Connects to JK Audio single line digital hybrids.
- 6.** Multi-Line Remote Jack
Connects to JK Audio multi line digital hybrids.

Start by Connecting to the Intercom

1. Set the Talk switch to the **Off** position, and the Com switch to the desired channel.
2. Connect Interchange to your intercom network using one or both of the Intercom XLR jacks.
3. As soon as Interchange becomes connected to the intercom system, the Power LED will light, and the Com LEDs will indicate any audio signal present on the intercom channel.

If using a Mobile Device (If using a phone line, please skip to page 6.)

1. Connect one of the supplied mobile device adaptor cords between the front panel Headset Interface jack and your mobile phone headset jack.
2. Using your mobile phone, place a call to a remote location. You should be able to immediately monitor the intercom signal from the remote location.
3. Adjust the Headset Interface Send level control for desired signal level at the remote location.
4. Change the Talk toggle switch to the **Talk** position to allow the remote location to be heard on the intercom channel.
5. The return audio path from the remote location into the intercom can be adjusted two ways. The front panel Headset Interface Receive level control provides adjustment suitable for most mobile devices. However, most mobile devices also have a headphone level control which works along with the Interchange controls.
6. It is best to set the headphone level on your mobile device first, then set the level on Interchange for final adjustment. This signal will appear on the Interchange Phone LEDs. Not necessarily on the Com LEDs. **Monitor receive levels by listening on an intercom belt pack.**

Com Balance with Headset Interface

Interchange features an active hybrid to separate the unbalanced 2-wire wire intercom audio channel into separate (4-wire) send and receive audio paths. While nominal separation is achieved with typical operation, the separation can be fine tuned if the intercom loop offers additional challenges. Perform the tuning operation when the intercom network is not in use. Using your mobile device, play or generate a fixed level tone or white noise into the intercom system. Adjust the signal level to 0 dB on the Interchange Phone LED display. Be sure that the Talk control switch is in the **Talk** position. Adjust the Com Balance control while observing the Com LEDs, to find the minimum (the position where the fewest Com LEDs are lit). Remove the test signal and proceed with normal operation.

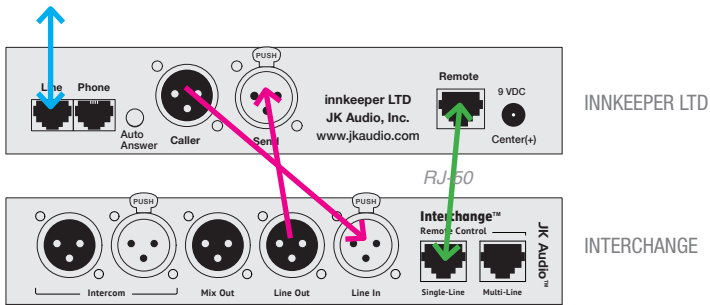
Getting Connected

Single Line Phone Hybrids

Connect the supplied cables as follows for innkeeper LTD or innkeeper 1x/1rx:

1. INTERCHANGE **Line Out** XLR to the HYBRID'S **Send** input XLR.
2. INTERCHANGE **Line In** XLR to the HYBRID'S **Caller** out XLR.
3. Using the supplied 10 pin RJ50 cable, connect the INTERCHANGE **Single-Line** Remote jack to the INNKEEPER **Remote** control jack.
4. Set the INNKEEPER rear panel **Send** level switch to Line Level.
5. Connect the INNKEEPER to an analog phone line or VoIP analog phone line port.

PHONE LINES



INNKEEPER LTD

INTERCHANGE

Multi-Line Phone Hybrids

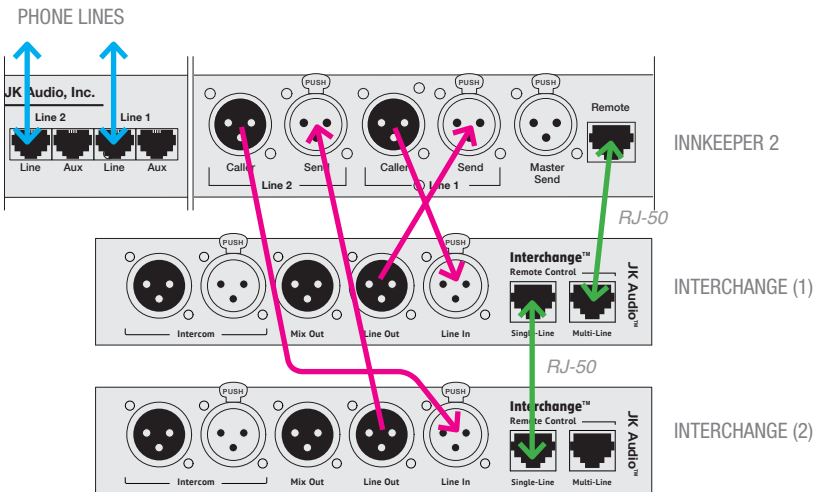
Connect the supplied cables as follows:

1. innkeeper 2: Line 1

1. INTERCHANGE (1) **Line Out** XLR to the HYBRID'S **Send 1** input XLR.
2. INTERCHANGE (1) **Line In** XLR to the HYBRID'S **Caller 1** output XLR.
3. Using the supplied 10 pin RJ50 cable, connect the INTERCHANGE (1) **Multi-Line** Remote jack to the INNKEEPER 2 **Remote** control jack.
4. Connect INNKEEPER 2 **Line 1** to an analog phone line or VoIP analog phone line port.

2. innkeeper 2: Line 2

1. INTERCHANGE (2) **Line Out** XLR to the HYBRID'S **Send 2** input XLR.
2. INTERCHANGE (2) **Line In** XLR to the HYBRID'S **Caller 2** output XLR.
3. Using the supplied 10 pin RJ50 cable, connect the INTERCHANGE (1) **Single-Line** Remote jack to the INTERCHANGE (2) **Single-Line** Remote control jack.
4. Connect INNKEEPER 2 **Line 2** to an analog phone line or VoIP analog phone line port.



Operation

Operation with Phone Hybrids

1. Place the Interchange Talk switch in the **Off** position. Apply power to the phone hybrid and place a call from a remote location. You should be able to immediately monitor the intercom signal from the remote location.
2. Adjust the phone hybrid Send level and interchange Phone Hybrid Send level controls for desired signal level at the remote location.
3. Change the Talk toggle switch to the **Auto** position to allow Interchange to follow the call status of the phone hybrid. During an active call, the remote location can now be heard on the intercom channel.
4. The return audio path from the remote location into the intercom can be adjusted using the digital hybrid 'Caller' level and Interchange 'Receive' level controls. This signal will appear on the Interchange Phone LEDs. Not necessarily on the Com LEDs. Monitor receive levels by listening on an intercom belt pack.
5. Changing the Talk switch to **Off** returns the system to a remote Listen-Only configuration.

Com Balance with Phone Hybrids

Interchange features an active hybrid to separate the unbalanced 2-wire wire intercom audio channel into separate (4-wire) send and receive audio paths. While nominal separation is achieved with typical operation, the separation can be fine tuned if the intercom loop offers additional challenges. Perform the tuning operation when the intercom network is not in use. Using the Test Tone function on innkeeper 1x or innkeeper 2, adjust the signal level to 0 dB on the Interchange Phone LED display (innkeeper LTD does not have a test tone feature, therefore an alternate tone generator must be used). Be sure that the Talk control switch is in the **Talk** position. Adjust the Com Balance control while observing the Com LEDs, to find the minimum (the position where the fewest Com LEDs are lit). Remove the test signal and proceed with normal operation.

Technical Information

Specifications

Intercom Channel

Connection	Male & Female 3-pin XLR
Output Level	-10 dBu (250 mV RMS) nominal
Terminating Impedance	200 ohms
Bridging Impedance	>15k ohms
Pin 1	Common
Pin 2	Audio + 30 VDC (+12 VDC min) 50 mA
Pin 3	Audio

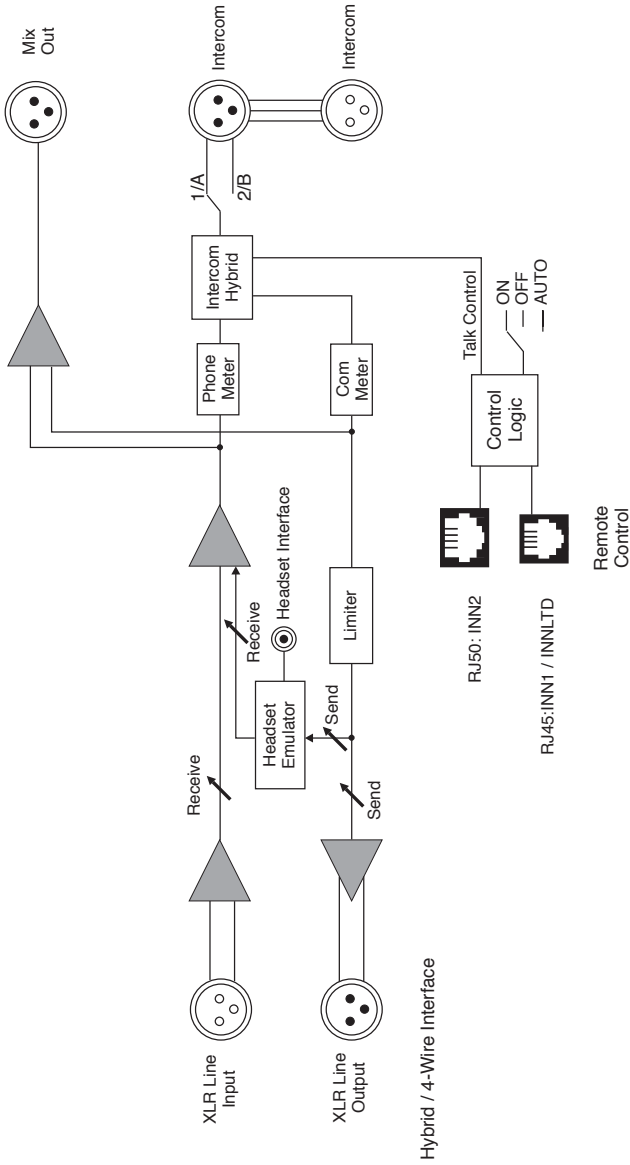
Input

Balanced Female XLR	20k ohms / 500 mV RMS (-4 dBu nom) +12 dBu max
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Output

Balanced Male XLR	200 ohms / 500 mV RMS (-4 dBu nom) +12 dBu max
Size	7.75" x 6.5" x 2.3"
Weight	2.1 lbs (960 g)

Interchange Block Diagram



Hybrid / 4-Wire Interface

Interchange™

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