



## 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:

**Call us at:**  
**815-786-2929**

**Email us at:**  
**[support@jkaudio.com](mailto:support@jkaudio.com)**

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

## Warnings & Safety Precautions

- Read and keep these instructions.
- Follow all instructions.
- Clean only with a soft dry cloth.
- Refer all servicing to qualified service personnel.
- Heed all warnings.



**Warning:** Do not install near any heat sources such as radiators, heat registers, stoves, or other apparatus (including amplifiers) that produce heat.



**Warning:** Do not defeat the safety purpose of the three-prong grounding type plug. If the provided plug does not fit into your outlet, consult an electrician for replacement of the obsolete outlet.



**Warning:** Do not use this unit if the electrical power cord is frayed or broken. The power cord should be routed so that it is not likely to be walked on or pinched by items placed upon or against it.



**To reduce the risk of fire:** Use only No. 26 AWG or larger telecommunication line cord.



**To reduce the risk of fire or electric shock:** Do not expose this apparatus to rain or moisture.

## Contents

Overview	1
Getting to know your Interchange™	2
2 Controls and Indicators	
4 Inputs & Outputs	
Getting Connected	5
5 Intercom	
5 Mobile Device	
6 Single Line Phone	
7 Multi-Line Phone	
Operation	8
FAQs	9
Technical Information	10

## Limited Warranty

The Interchange 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.**

## Features

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Male and Female 3 Pin  
XLR Intercom Loop Jacks

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Male and Female 3 Pin  
XLR 4-Wire Jacks

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Male XLR Mix Line Out for Monitoring

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Send and Receive LED Metering

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Front Panel Screwdriver  
Level Controls

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Front Panel Channel Select

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Front Panel Cell Phone Interface

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Listen Always,  
Talk When Talk-Enabled

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Intercom Powered

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## What's in the Box?

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3.5 mm TRRS Headset Interface  
Cable (Part# CN113)

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RJ50 Cable

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(2) XLR Cables

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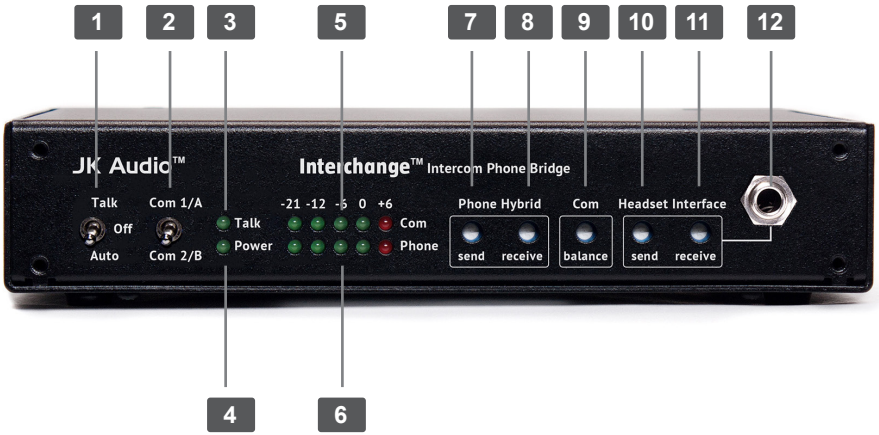
## Introducing the Interchange™

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 level 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 level 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.

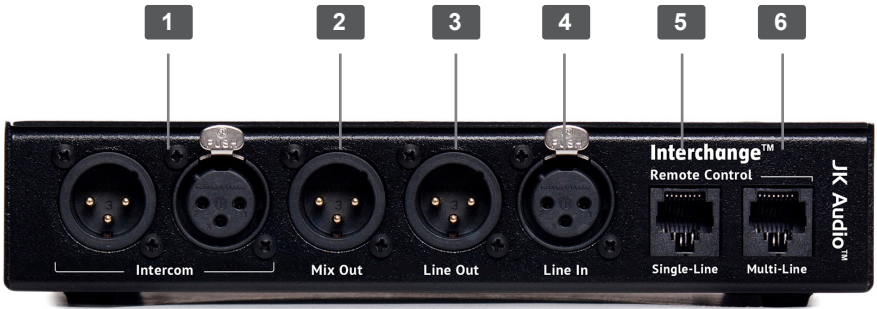
### **11 Headset Interface Receive Level**

Adjusts audio signal level coming from the mobile device.

### **12 Headset Interface Jack**

Connect to the headset jack of your mobile device with with supplied CN113 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 the supplied CN113 interface cable 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 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.

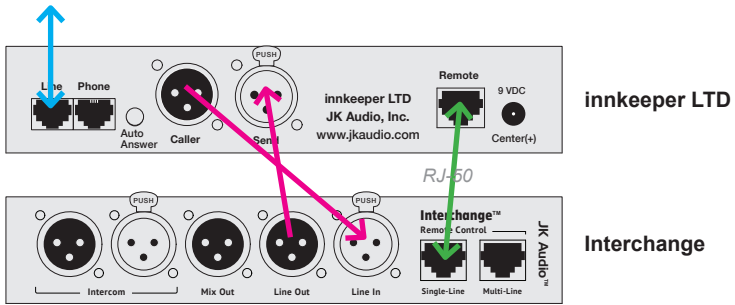
# Getting Connected

## 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



## Multi-Line Phone Hybrids

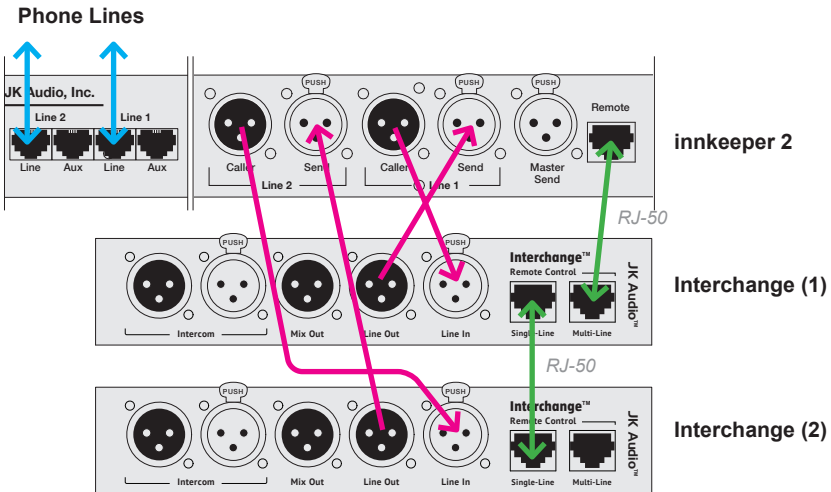
Connect the supplied cables as follows:

### 1. innkeeper 2: Line 1

- Interchange (1) <Line Out> XLR to the hybrid's <Send 1> input XLR.
- Interchange (1) <Line In> XLR to the hybrid's <Caller 1> output XLR.
- Using the supplied 10 pin RJ50 cable, connect the Interchange (1) <Multi-Line> Remote jack to the innkeeper 2 <Remote> control jack.
- Connect innkeeper 2 <Line 1> to an analog phone line or VoIP analog phone line port.

### 2. innkeeper 2: Line 2

- Interchange (2) <Line Out> XLR to the hybrid's <Send 2> input XLR.
- Interchange (2) <Line In> XLR to the hybrid's <Caller 2> output XLR.
- Using another 10 pin RJ50 cable, connect the Interchange (1) <Single-Line> Remote jack to the Interchange (2) <Single-Line> Remote control jack.
- 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 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.

**1. Does Interchange work with any phone line hybrid besides those listed in this user guide?**

No. Interchange is only compatible with JK Audio Digital Hybrids.

**2. I've lost my CN113 cable. Can I use any 3.5mm TRRS to 1/4" TRS cable to use a cell phone with Interchange?**

No. CN113 is specifically designed to connect a smartphone to our product. If you misplace this cable you will have to purchase a new one from us directly or from an authorized dealer.

**3. Can Interchange alone connect to a phone line directly?**

No. Interchange can only connect to a digital hybrid.

**4. Can I use Interchange with a VoIP line?**

Yes. You can access a VoIP line by connecting Interchange to a JK Audio AutoHybrid IP2.

**5. How do I power up my Interchange? No power supply was provided.**

There is no power supply, Interchange is powered by the intercom. When it is connected to the intercom system, the <Power> LED will light indicating that it is receiving power.

**6. Can I use the Interchange with both a cell phone AND a phone line call at the same time?**

Yes. The two calls will not be conferenced together so they would not hear each other, but there could be some faint crosstalk through the intercom.

# 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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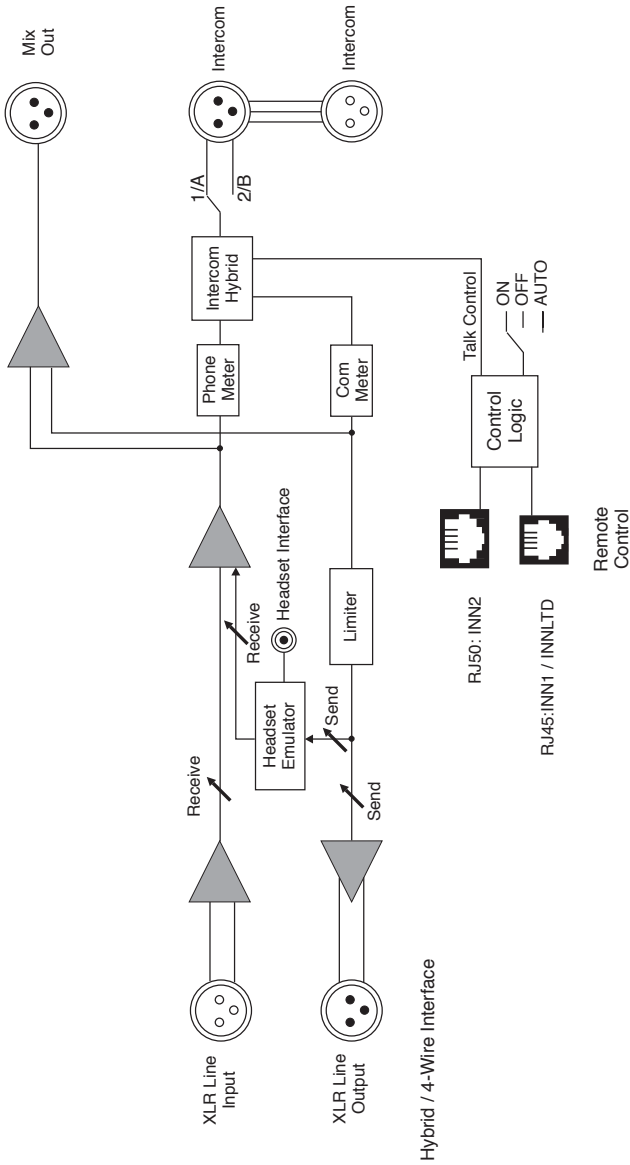
### Output

Balanced Male XLR	200 ohms / 500 mV RMS (-4 dBu nom) +12 dBu max
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### Misc

Remote Control	RJ50
Size	7.75" x 6.5" x 2.3"
Weight	2.1 lbs (960 g)

Interchange Block Diagram



**Interchange™**

Intercom Phone Bridge



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