

## innkeeper 1x

### Digital Hybrid



#### [Product Overview](#)

**New and improved version available September 2006**

The innkeeper 1x gets audio in and out of telephone lines. Its excellent caller audio does not exhibit the transmit / receive crosstalk common to analog hybrids, making it perfect for radio or television talk shows, teleconferencing, or auto-answer IFB feeds.

A digital hybrid such as the innkeeper 1x connects audio signals to a standard analog telephone line without the variations in quality found with analog hybrids. The main function of a hybrid is to bring in the caller's voice, as clear and clean as possible. In the real world, when you send your voice down the telephone line it will bleed over into the caller's audio. The hybrid must adapt to the phone line in order to properly separate transmit and receive audio. We use a 16 bit DSP to monitor the phone line and audio signals continuously in order to deliver excellent separation. Our dual - convergence algorithm can achieve excellent trans - hybrid loss typically exceeding 50 dB, without any setup.

This wouldn't be a JK Audio product without its fill of common-sense features. Check out the front-panel headphone jack and volume control. You can monitor either the send signal, the caller's voice, or a mix of the two. This output is also sent to the rear panel screw terminals so you can easily add a monitor speaker. As a matter of fact, all of the remote features can be found on real screw terminals for ease of installation. And, of course, the audio connections: mic/line switchable XLR input, XLR caller output and an additional, user-defined XLR output. Now press the "Presence" button and you'll get a richer sound from the caller's voice. This digital filter brings back some of the low-end lost in transmission. And possibly the coolest feature: The Innkeeper 1x can be remote controlled by either the optional Guest Module 1, RIU-IP remote interface or the included RS-232 cable. The Guest Module 1 allows call / drop and dialing functions to be controlled remotely while the RIU-IP allows control of all functions of the innkeeper 1x through any web browser whether it is directly connected or via the internet from around the world. The RS-232 cable allows similar control using simple ASCII commands.

## innkeeper 1rx

innkeeper 1rx is the 19" rackmount version of the innkeeper 1x.



# innkeeper 1x

## Digital Hybrid

### Features

You will find the same features on the desktop and rackmount versions with a physical layout that makes a lot of sense. From the front panel you can control on-hook / off-hook, and adjust headphone volume. Front-panel LEDs display signal levels and option status. The Send and Caller Volume controls are hidden behind an access panel to discourage unauthorized "tweaking". AGC, Ducking, Presence, Auto-Answer and tone generator switches are also hidden behind the access panel. The mic/line switch is located on the back of the unit, along with all audio and phone line connections.

**AutoAnswer** is pretty self explanatory. When enabled the innkeeper 1x will automatically answer an incoming call on the first ring and automatically disconnect after the calling party has hung up.

**Voice Presence Compensation** is a custom equalizer that gives the caller's voice a "richer" sound. This digital filter brings back some of the low-end lost in the telephone transmission.

**Caller Automatic Gain Control (AGC)** is no small feat on a noisy telephone line. The goal is to get the quiet caller's voice lifted up without boosting noise between words. AGC must suppress loud callers, boost quiet callers, and leave the good calls alone. This must be done without adding artifacts to the caller's voice. We've spent many hours developing an algorithm that learns and adapts to the signal and noise floor to accomplish these feats. Innkeeper1x AGC is a feature that you will want to turn on and leave on.

**Caller Ducking** is a feature that simply drops the caller's voice by 9dB whenever the talent is talking. Ducking is one of those features that some talk show hosts swear by, while others try it and walk away. The 9dB drop allows the host to overpower the caller during the conversation, but not totally mute the caller. Your console fader has ultimate control, but ducking provides faster response and recovery.



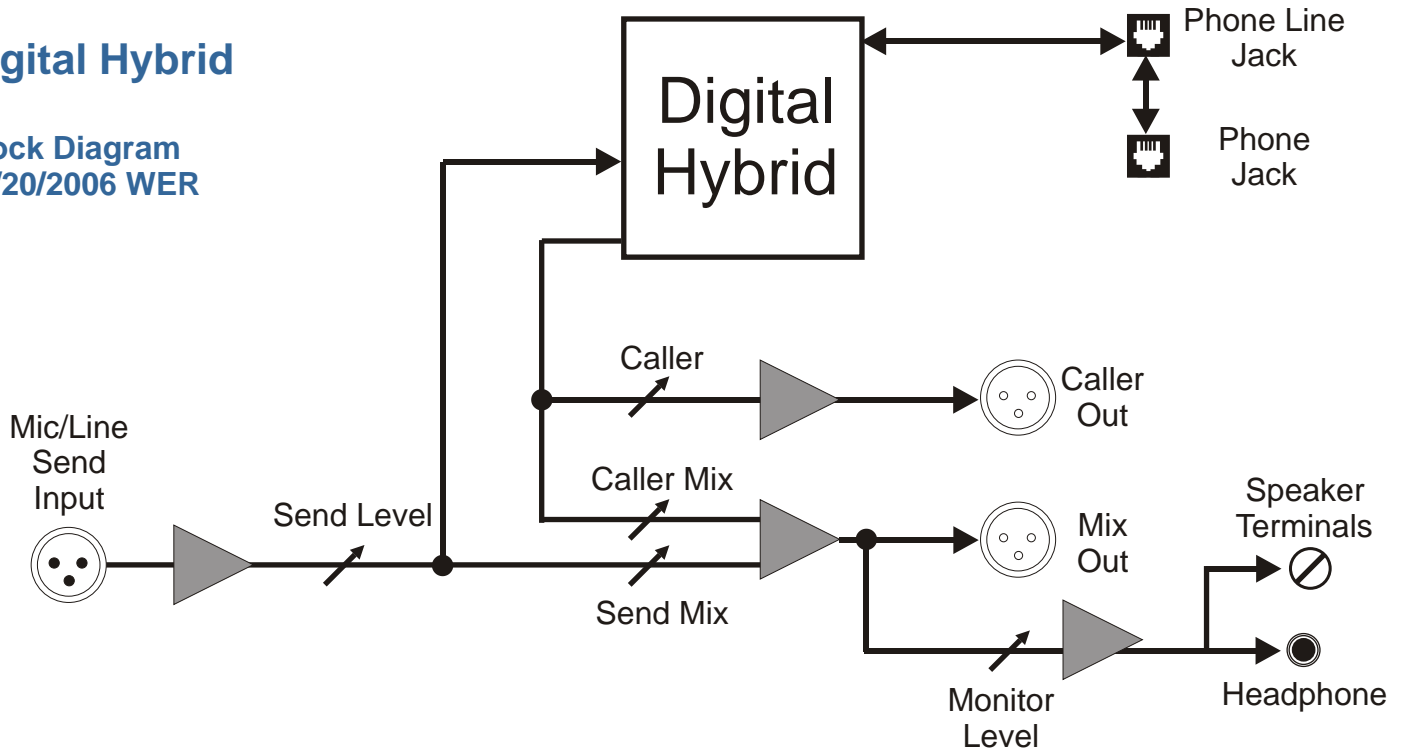
- Excellent separation of caller & talent voice.
- 16 bit DSP technology.
- Proprietary auto null algorithm, 50 dB null.
- Balanced XLR mic / line input.
- Balanced XLR caller output.
- Balanced XLR user defined output.
- Front panel headphone jack.
- Monitor speaker terminals on back.
- Voice Presence Compensation.
- Automatic Gain Control
- Caller Ducking
- 1 kHz tone generator
- Input / output LEDs.
- Remote control screw terminals.
- Remote jack for Guest Module 1, RS-232 or RIU-IP remote IP interface
- Works with standard and "dry" phone lines.
- Auto answer / disconnect

**The 1 kHz tone generator** is a three-state button. One press and you are sending a tone down the phone line at full level. A second press and you are now sending the tone out the caller XLR jacks. A third press turns the generator off. The tone generator is for your convenience in setting levels on recording equipment. Innkeeper Digital Hybrids use your actual transmit signal to auto-null to the phone line, no tones or noise bursts are sent down the line during call setup.

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### Digital Hybrid

Block Diagram  
03/20/2006 WER



### Specifications:

Input  
Mic / Line: Female XLR 1kohm, 15 mV RMS  
(-34 dBu) nom  
Mic / Line pad switch, Line = +6 dBu max

Outputs  
Caller Out: Male XLR 200 ohms, 500 mV RMS  
(-4 dBu) nom. +14 dBu max

Mix Out: Male XLR 200 ohms, 500 mV RMS  
(-4 dBu) nom. +14 dBu max

Headphone: 1/4" Stereo 8 ohms, 250 mW per channel

Speaker: Screw Terminals 8 ohms, 1 watt

Phone Line  
Connector: RJ11C

Remote  
Jack: RJ-50

Isolation: 1500 VAC

Ringer: 0.8B REN

Frequency  
Response  
Telephone Side: 200 Hz - 3600 Hz

Universal AC  
Power Input: 120-240 VAC, 50-60 Hz

Size: 1x 1.75" x 7.3" x 10.5" (4.5 x 18.6 x 26.7cm)  
1x 1.75" x 7.3" x 19" (4.5 x 18.6 x 48.3cm)

Weight: 1x 5.2 pounds  
1x 5.7 pounds

## Guest Module 1

### Remote Keypad

#### GM1 Features

Guest Module 1 gives you remote access to the on-hook / off-hook and dial features of all our innkeeper digital hybrids. This little time saver gives you call control you simply can't get with an auxiliary telephone and a couple of switches. Connect Guest Module 1 to your innkeeper using an 8 pin RJ45 modular cable. This cable provides remote power so there is no need for batteries or an external power pack. The Call button will flicker when a call comes in. Press this button to answer or place a call. The button will stay lit when a call is present. When you dial on-air, the tones go out on the line, and do not come back mixed with the dial tone or caller signal. Guest Module 1 was designed exclusively for JK Audio innkeeper Digital Hybrids.



- DTMF keypad.
- Keypad disable switch.
- Talk / Dial Button.
- Hangup Button.
- Ring / Call LED.



#### Specifications:

Size: 4.5" x 4.0" x 2.0"  
(11.4 x 10.1 x 5 cm)

Weight: 12 ounces

RJ-45 Pinout:

- |   |                     |
|---|---------------------|
| 1 | Ground              |
| 2 | Call / Drop Control |
| 3 | Ring / OH LED       |
| 4 | DTMF Output         |
| 5 | +5 VDC              |
| 6 | reserved            |
| 7 | reserved            |
| 8 | reserved            |

## RIU-IP

### Remote IP Interface



#### Product Overview

The RIU-IP is a remote control interface designed for innkeeper 1x, innkeeper 2 and innkeeper 4 digital hybrids. This unit contains a web server which allows the user to send and receive control data through their web browser. RIU-IP can be connected to the user's computer NIC card for direct control, to a switch or hub for network control, or to an ethernet port with internet access for control from anywhere in the world.

#### Features

- Connects to innkeeper 1x and innkeeper 2 or 4 Digital Hybrid
- RJ45 Ethernet port
- RS-232 remote control port with simple ASCII protocol
- No external power required

#### Specifications:

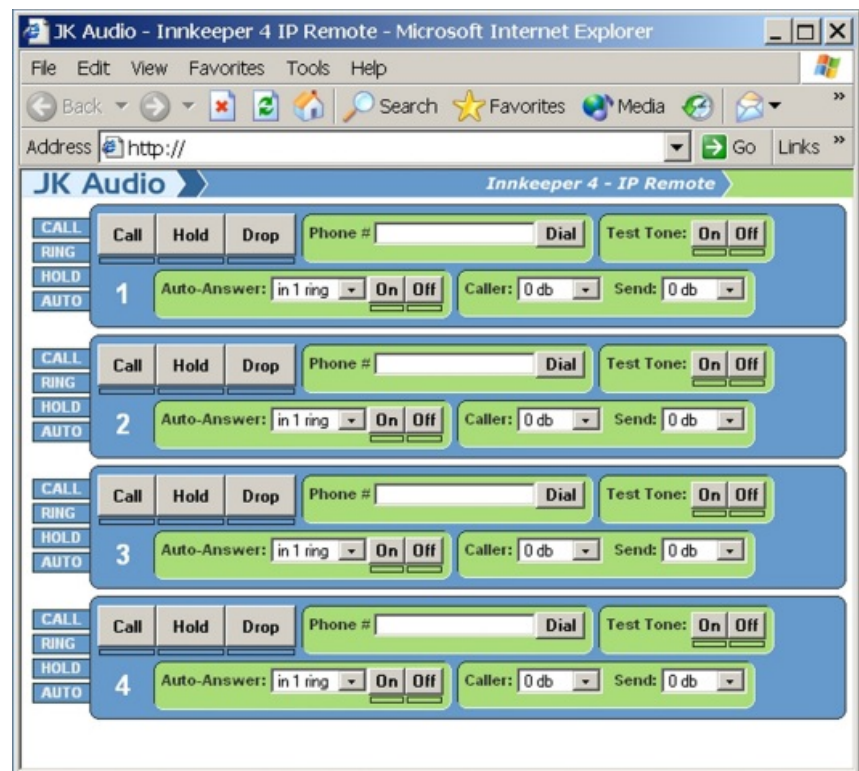
Control connection: RJ-45 Ethernet port

Digital Hybrid connection: RJ-50 (36" RJ-50 cable included)

RS-232 Serial connection: DB-9 (9600,8,N,1)

Size: 5.7" x 3.5" x 1.125"

Weight: 1 lbs.



4 line screen version shown.

#### Remote Control Capabilities

- Indication of incoming ring per line.
- On-Hook and Off-Hook
- Confirmation of Off-Hook on On-Hook transition per line.
- Place call on hold or release hold.
- Dial (number) (line).
- Start and stop Conference (innkeeper 2).
- Adjust transmit and receive level per line (innkeeper 2 and 4).
- Auto-Answer on/off
- Auto-Answer ring count (innkeeper 2 and 4)
- Test tone start / stop per line.
- Address book upload / download (innkeeper 2 and 4).
- Master Send configuration (innkeeper 2 and 4).
- Presence on/off (innkeeper 1x)
- Caller Ducking on/off (innkeeper 1x)
- Automatic Gain Control on/off (innkeeper 1x)