



hear
TECHNOLOGIES®

hear back PRO





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This is it – the simplest, most affordable digital solution to get everyone the mix they need to perform their best. This new system platform is completely modular and infinitely expandable, which means it has become **the last personal monitoring system you'll ever need.**

Introducing the latest addition to the Hear Technologies family – Hear Back PRO.

With this system, there is no learning curve. Whether or not you've ever used a personal monitor mixer, the simple layout of this powerful system makes getting the right mix a quick and effortless experience. Based in Gigabit Ethernet, this framework paves the way for an impressive range of future possibilities.

The Hear Back PRO System: Hub & Mixers

The Hear Back PRO system consists of two main components: the Hub and the Mixer. The modular Hub consists of four card slots, which can be populated with any configuration of input and/or output cards to fit your exact needs. Each Hub has the ability to supply signal and power to as many as 32 Mixers (8 per Network Card), each over a single standard CAT5e cable. And with the built-in HBus In/Out ports, multiple Hubs can be daisy-chained together, allowing for truly unlimited system expansion.

The standard Hub (included in the "4-pack") comes pre-loaded with one Network Card and two 8-channel Analog Input Cards which can accept input signals from an audio mixer via auxiliary, matrix, monitor, and/or direct outputs.

The **Hear Back PRO** boasts many key advantages, including:

- Side-mounted card slot on Mixer for future expansion
- Large master knob controls overall main mix, AUX, and intercom levels independently
- Volume and panning control of all 16 channels
- Direct and immediate visual feedback of all 16 channels
- Up to 8 pairs of stereo-linked channels
- Support for sampling rates up to 192 kHz
- Selectable XLR or 1/8" Mixer AUX input
- Built-in intercom broadcasts the AUX source (mic, MP3 player, click, etc.)
- Intercom auto adjusts its own level so even the quietest message never goes unheard
- Modular I/O Hub card system lets you customize the system to match your configuration, and can adapt to your needs
- Supports secondary power supply to provide redundancy and power to up to 32 Mixers
- USB port on Hub makes updating firmware for future features and upgrades a simple drag-and-drop operation
- Status indicating logos on Hub and Mixers make it easy to detect and diagnose problems, should they arise
- Write session info and channel settings on storable Mixer overlays for an unlimited number of presets
 - Instantly store and recall presets from memory with the push of a button
 - Most recent configuration is saved, even after power-down



hear back PRO

Hub Features:

- **Three switch selectable 16-channel input sources:**
 - Input A (Slots 1 & 2)
 - Input B (Slots 3 & 4)
 - HBus
- **24-bit Delta-Sigma A/D converters**
- **Six user-selectable sample rates, indicated by LEDs: 44.1 kHz, 48 kHz, 88.2 kHz, 96 kHz, 176.4 kHz, and 192 kHz**
- **Less than .25 milliseconds total system delay (latency) from analog input to output**
- **16 RGB LEDs intuitively display signal / peak levels for channel metering**
- **Standard CAT5e cabling delivers power and signals to Mixers**
- **Daisy-chain via HBus for very large systems**
- **1 RU chassis**
- **Modular I/O card-slot configurable mainframe**
- **Gigabit Ethernet network fabric**
- **48V Power Over Ethernet supply**

Mixer Features:

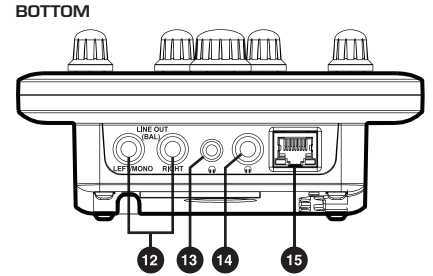
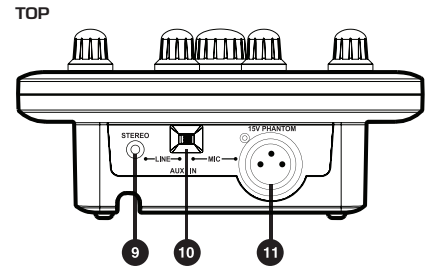
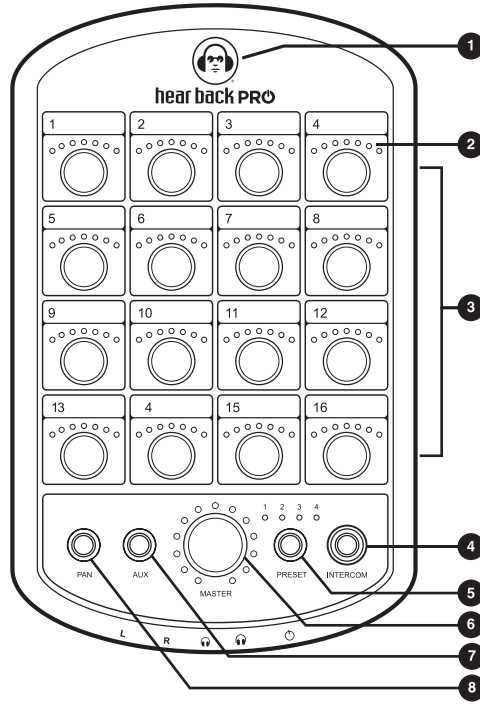
- **Local control of up to 18 channels of audio (16 mono channels + AUX IN + Intercom IN)**
- **Receive power and audio over one Ethernet cable, up to 500' from Hub to each Mixer**
- **24-bit Delta-Sigma D/A and A/D converters**
- **Volume/panning/stereo link control of all 16 channels of audio**
- **Store up to 4 recallable presets**
- **Intercom allows communication to anyone with a Hear Back PRO Mixer**
- **Selectable 1/8" TRS stereo unbalanced and XLR mono balanced (with 15V phantom power) AUX inputs:**
 - Microphone input for crowd / ambiance mic or intercom use
 - Drum module / metronome or local mix input
- **1/8" and 1/4" headphone jacks**
- **Balanced mono/stereo, line level outputs**



Hear Back PRO is proudly designed & assembled in the U.S.A. by musicians and audio engineers.

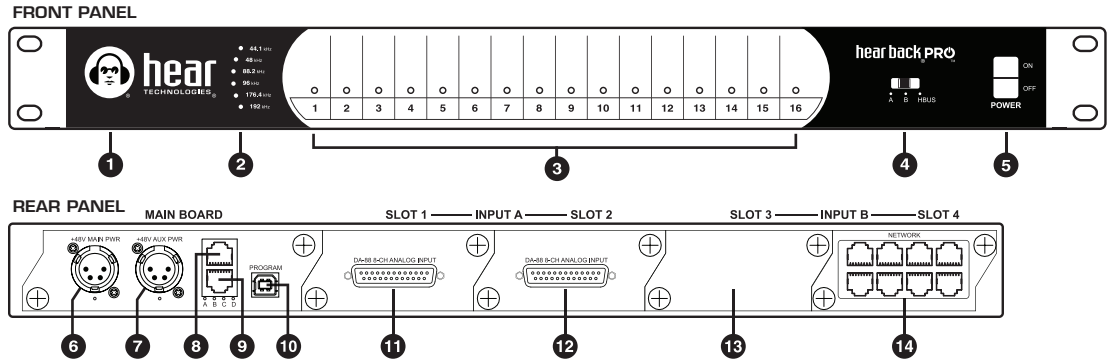
hear back PRO | mixer

- 1 - LED Status Indicator
- 2 - LED Level Indicators
- 3 - Volume/Pan Control Knob for Each Audio Channel
- 4 - "Intercom" Button
- 5 - "Preset" Button
- 6 - "Master" Control Knob (Volume / Aux / Pan)
- 7 - "Aux" Input Button
- 8 - "Pan" Button
- 9 - Auxiliary 1/8" Stereo Unbalanced Audio Input
- 10 - Auxiliary Input Switch
- 11 - Auxiliary Balanced XLR Microphone Input with 15V Phantom Power
- 12 - 1/4" Balanced Left/Mono and Right Outputs
- 13 - 1/8" Headphone Output
- 14 - 1/4" Headphone Output
- 15 - Gigabit Ethernet (GbE) Connection with PoE+ (Power over Ethernet)

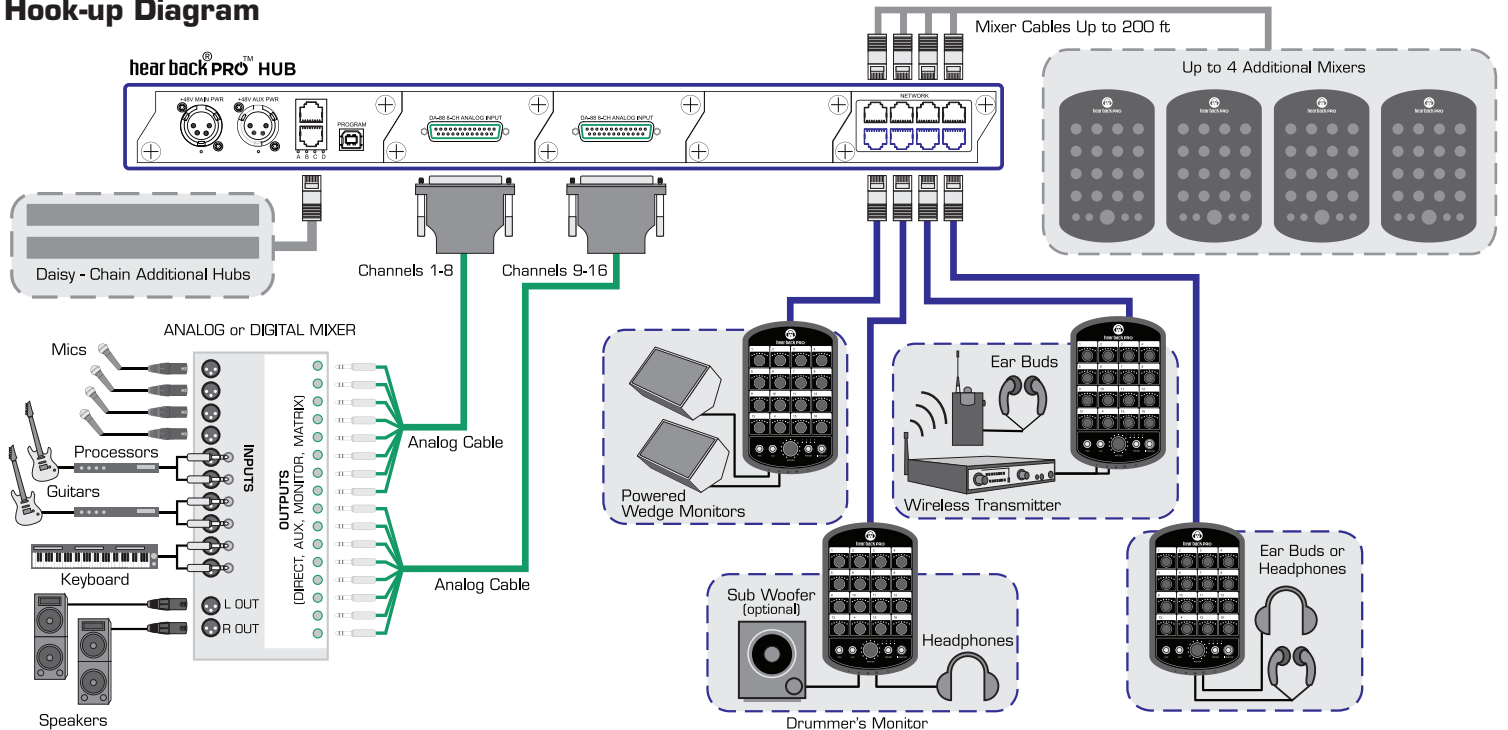


hear back PRO | hub

- 1 - LED Status Indicator
- 2 - Sample Rate LED Indicators
- 3 - Audio Input Channels 1-16 Level LED Metering
- 4 - Input Selector Switch
- 5 - AC Power Switch
- 6 - Main 48V Power Input
- 7 - Secondary 48V Power Input
- 8 - HBus Input
- 9 - HBus Output
- 10 - USB Connection
- 11 - Card Slot 1, 8-channel Analog Input
- 12 - Card Slot 2, 8-channel Analog Input
- 13 - Card Slot 3 (future input/output card)
- 14 - Card Slot 4, 8-port Network Input



Hook-up Diagram



Technical Specifications

Mixer Aux Input		
Line Input Configuration/Impedance:	1/8" Stereo, unbalanced, 10K ohms typical	
Line Input Level:	0 dBu optimal, +18 dBu max	
Mic Input Configuration/Impedance:	XLR Mono, balanced, 150 ohms typical, 150 Hz high pass	
Mic Input Level:	-42 dBu optimal, -30 dBu max	
Mixer Headphone Power		
Load Impedance:	THD less than 0.01%*	THD less than 0.1%
8 Ohms:	1.2 W*	1.5 W
	*THD AT 8 Ohms = 0.015% typical	
16 Ohms:	1.6 W	1.8 W
25 Ohms:	2.0 W	2.2 W
32 Ohms:	1.8 W	2.0 W
50 Ohms:	1.5 W	1.6 W
100 Ohms:	1.1 W	1.2 mW
200 Ohms:	500 mW	650 mW
600 Ohms:	220 mW	250 mW
Inter Modulation Distortion:	Typically less than 0.03%	
Mixer Line Output		
Frequency Response:	20 Hz to 20 kHz, +/-0.15 dB	
THD+N:	0.004% typical at 1 kHz, +15 dBu 0.008% typical, 20 Hz – 20 kHz, +4 dBu	
Inter Modulation Distortion:	0.02% typical at +4 dBu, 60 Hz / 7 kHz	
Crosstalk:	Less than -93 dB @ 1 kHz	
Propagation Delay:	Less than 0.25 mSec @ 192 kHz sample rate	
System Noise Performance		
Noise, A-Weighted:	-93 dBu @ 192 kHz sample rate	
Dynamic Range:	117 dB typical	

Note: 0 dBu = 0.775 Vrms. Specifications and features subject to change without notice.
**Hub is capable of powering up to 32 Mixers with an additional power supply.

System I/O	
Hub Line In, 2x Analog Input Cards:	16 Balanced inputs on 2x DB-25 female (DA-88 pinout)
Hub Maximum Input Level, Analog:	+18 dBu
Hub HBus In, Out:	8-pin RJ45 jack (standard Ethernet pinout)
Hub USB Port:	USB 2.0 (for firmware updates)
Hub Card Slots (4x):	Each slot can accept an analog or digital input card, output card, or 8 port Mixer network card
Mixer to Hub Connection:	8-pin RJ45 jack (8x Mixer connections per network card)
Mixer Headphone Out:	TRS 1/4" and 1/8" unbalanced stereo
Mixer Line Out:	TRS 1/4" balanced (2 connections: left/mono and right)
Mixer Max Output Level, Analog:	+24 dBu (mixed output)
Mixer Aux Input:	TRS 1/8" unbalanced stereo and XLR balanced mono (with 15 volts phantom power)
Mixer Card Slot:	For future digital or analog input/output expansion capabilities or side-car add-on
Physical, Mixer	
Size:	9.5" (241 mm) H x 5.95" (152 mm) W x 2.71" (68.8 mm) D
Unit Weight:	1.6 lb. (0.72 kg)
Mounting:	Standard mic stand (5/8" 27 threads per inch) or desk mounted
Physical, Hub	
Size:	1.75" (44.5 mm) H x 19" (483 mm) W x 8.5" (216 mm) D
Unit Weight:	6.3 lb. (2.8 kg)
Mounting:	Standard rack mount, 1 RU
Power	
Hub Power Requirements:	48VDC, 150 Watts (each external power supply powers up to 16 Mixers)**
Mixer Power Requirements:	Power over Ethernet (PoE) 36-52 volts DC, 15 Watts max provided by Hub through Cat5e network cabling
External Power Supply Requirements:	Input Voltage: 90VAC to 264VAC 50/60 Hz

OTHER HEAR TECHNOLOGIES PRODUCTS

hear back

- Unlimited system size
- Local control of 8 audio channels (stereo mix and six "more-me's")
- ADAT, analog, HearBus inputs are switch-selectable from front panel
- Built-in DSP Limiter with threshold adjustment
- Master Volume
- Stereo AUX In
- Balanced Line-Outputs
- Built-in Mic Stand Mount
- Standard CAT5e power



mix back

- Affordable 16 x 12 x 2 x 2 monitor mixer
- 16 Mic/Line inputs each with passive split and 2 stereo and 12 mono level controls
- 16 master outputs each available as analog, ADAT, and HearBus
- Pin 1 lift and Mic phantom power switches
- Dual switch-selectable effects sends
- Stereo Aux inputs
- Channel Inserts
- Four-band EQ with dual sweepable mids
- Talkback with intercom and optional remote control



freedom back

- High quality UHF Wireless Stereo In-Ear Monitor system
- Available in UA (584 – 608 MHz) and UB (655 – 679 MHz) bands
- 120 digitally selectable UHF channels



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