



switch back PLUSTM

Contents

• Safety Information	5
◦ Connection Warning	5
◦ English	5
▪ Applicable to Power Supply	6
▪ Important Safety Instructions	7
◦ Electromagnetic Compatibility	8
◦ Declaration of Conformity	9
◦ FCC Statement	10
• Overview	12
◦ The Switch Back PLUS System	12
◦ Personal Mixer	13
◦ Audio Interface	13
◦ MIDI 2.0 Control Surface	13
◦ Advantages / Features	13
• System	15
◦ Detail Diagram	15
◦ Construction	16
◦ OLED Displays & LEDs	16
▪ Main Screen Display	16
▪ Channel Screen Displays	17
▪ Metering	17
▪ Clipping Detection	18
▪ Brightness	18
▪ Screensaver	18
◦ Status Logo	19
◦ Local Audio Inputs	19
▪ Metering	20
▪ Microphone Input	20
▪ Instrument Input	21
▪ Line Inputs	21

○ Dante Audio Inputs	22
○ Banks	23
○ Local Audio Outputs	23
▪ Headphone Outputs	23
▪ Line Outputs	23
○ Dante Audio Outputs	24
▪ Broadcast	24
○ Mixing	26
▪ Channel Volume	26
▪ Channel Panning	27
▪ Stereo Width	27
▪ Master Volume	27
○ Audio Limiter	28
○ Parametric EQ	28
▪ Bands	29
▪ Filter Types	29
▪ Parameters	29
▪ Bypass	30
▪ EQ Graph Display	30
○ Solo Mode	30
○ MIDI	31
▪ Setup	31
▪ Knob Types	33
▪ MIDI 2.0	34
▪ Manual Setup	34
○ Menu Operation	34
▪ Menu Controls	35
○ Sample Rate	36
○ Lockouts	37
○ Factory Reset	37
○ Zero Mix	38
○ Remote Control, Session Management, and Advanced Configuration	38
▪ Session Management	39

▪ Knob Assignments	39
• Quick Start	41
◦ Connecting the System	41
◦ Mixer Adjustment	41
◦ Input Adjustment	42
• Dante Network	43
◦ Multicast Transmit Flows	44
◦ Channels Transmitted to Dante	44
◦ Channels Received from Dante	46
• Hook-Up Diagrams	47
◦ Home Studio	47
◦ Live Performance	47
• System Notes	49
◦ CAT6 Cables	49
• Firmware Updates	50
◦ Normal Firmware Update	50
◦ FAILSAFE Recovery	50
• Technical Specifications	51
◦ Microphone Input	51
◦ Instrument Input	51
◦ Line Inputs 1 & 2	52
◦ Input Propagation Delay	52
◦ Headphone Power	53
◦ Analog Outputs	53
◦ Physical	54
◦ Power	54
• Troubleshooting	56
◦ Further Assistance	59
• PRO Connect	60
◦ Getting Started with PRO Connect	60
▪ STEP 1: Install PRO Connect	60
▪ STEP 2: Connect Dante to Computer	60
▪ STEP3: Configure Dante Network	60

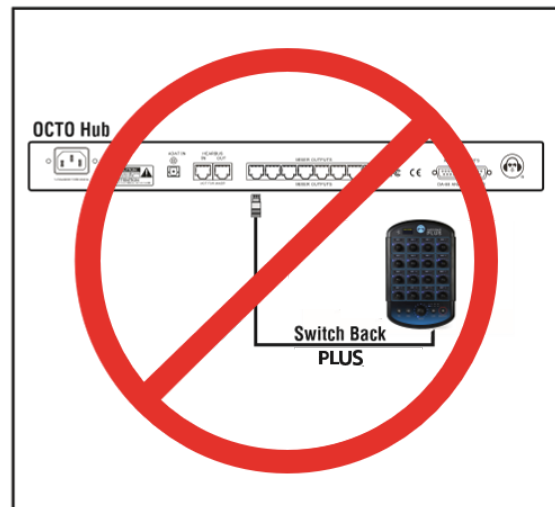
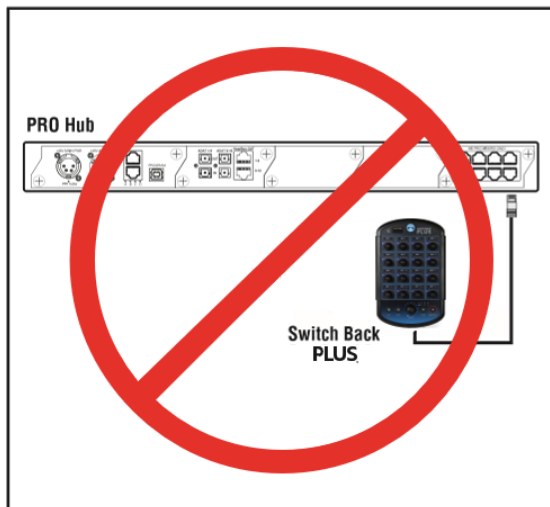
▪ STEP 4: Select the Dante Mode	61
▪ STEP 5: Select Devices Interface	61
▪ STEP 6: Wait for Devices	62
▪ STEP 7: Update Switch Back PLUS	62
▪ Troubleshooting	63
• System Accessories	65
◦ PRO Distro	65
◦ Gigabit PoE Power Injector	65
◦ AM12 Ambient Microphone	66
◦ Mixer Tilt Adapter	67
◦ Microphone Stand Adapter	67
◦ Tote Back	67
• Legal	69
◦ Limited Warranty	69
◦ Trademarks	70
◦ Copyright	70
◦ Contact	70

Safety Information

Connection Warning

WARNING

DO NOT CONNECT THE PLUS TO A PRO HUB OR OCTO HUB. Damage to either system can occur!



English

DANGER

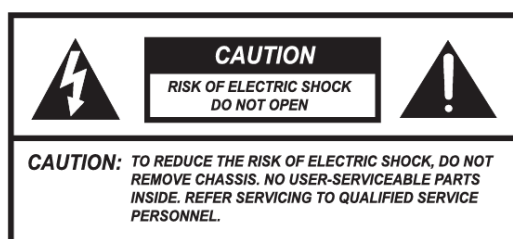
Exposure to extremely high noise levels may cause a permanent hearing loss. Individuals vary considerably to noise induced hearing loss but nearly everyone will lose some hearing if exposed to sufficiently intense noise for a sufficient time.

The U.S. Government's Occupational Safety and Health Administration (OSHA) has specified the following permissible noise level exposures:

DURATION PER DAY (HOURS)	8	6	4	3	2	1
SOUND LEVEL (dB)	90	93	95	97	100	103

According to OSHA, any exposure in the above permissible limits could result in some hearing loss. Ear plugs or protectors in the ear canal or over the ears must be worn when operating this amplification system in order to prevent a permanent hearing loss. If exposure in excess of the limits as put forth above, to insure against potentially harmful exposure to high sound pressure levels, it is recommended that all persons exposed to equipment capable of producing high sound pressure levels, such as this amplification system, be protected by hearing protectors while this unit is in operation.

Applicable to Power Supply



AVIS: RISQUE DE CHOC ELECTRIQUE-NE PAS OUVRIR.



THIS SYMBOL IS INTENDED TO ALERT THE USER TO THE PRESENCE OF NON-INSULATED "DANGEROUS VOLTAGE" WITHIN THE PRODUCT'S ENCLOSURE THAT MAY BE OF SUFFICIENT MAGNITUDE TO CONSTITUTE A RISK OF ELECTRIC SHOCK TO PERSONS.



THIS SYMBOL IS INTENDED TO ALERT THE USER TO THE PRESENCE OF IMPORTANT OPERATING AND MAINTENANCE (SERVICING) INSTRUCTIONS IN THE LITERATURE ACCOMPANYING THE UNIT.

Important Safety Instructions

1. Read all safety and operating instructions before using this product.
2. All safety and operating instructions should be kept for future reference.
3. Read and understand all warnings listed on the operating instructions.
4. Follow all operating instructions to operate this product.
5. This product should not be used near water, i.e. bathtub, sink, swimming pool, wet basement, etc.
6. Only use dry cloth to clean this product.
7. Do not block any ventilation openings. It should not be placed flat against a wall or placed in a built-in enclosure that will impeded the flow of cooling air.
8. Do not install this product near any heat sources; such as, radiators, heat registers, stove or other apparatus (including heat producing amplifiers) that produce heat.
9. Protect the ethernet cable being walked on or pinched, particularly at the connector from the apparatus.
10. Only use attachments specified by the manufacturer.
11. Use only with the stand, tripod, or bracket specified by the manufacturer or sold with the apparatus. Use caution when moving the apparatus/accessory combination to avoid injury from tip-over.
12. Unplug this apparatus during lightning storms or when unused for long periods of time.
13. Care should be taken so that objects do not fall and liquids are not spilled into the unit through the ventilation ports or any other openings.
14. Refer all servicing to qualified service personnel. Servicing is required when the apparatus has been damaged in any way; such as, liquid has been spilled or objects have fallen into the apparatus, the apparatus has been exposed to rain or moisture, does not operate normally, or has been dropped.
15. Detailed installation instruction in user manual.

⚠ WARNING

To reduce the risk of fire or electric shock, do not expose this apparatus to rain or moisture.

Electromagnetic Compatibility

This device complies with part 15 of the FCC Rules and the Product Specifications noted on the Declaration of Conformity. Operation is subject to the following two conditions:

- this device may not cause harmful interference, and
- this device must accept any interference received, including interference that may cause undesired operation.

Operation of this unit within significant electromagnetic fields should be avoided.

- use only shielded interconnecting audio cables.

⚠ WARNING

Care should be taken so that the PLUS's ventilation holes remain unblocked, allowing adequate airflow through both sides of the unit.



If you want to dispose this product, do not mix it with general household waste. There is a separate collection system for used electronic products in accordance with legislation that requires proper treatment, recovery and recycling.

Private household in the 25 member states of the EU, in Switzerland and Norway may return their used electronic products free of charge to designated collection

facilities or to a retailer (if you purchase a similar new one).

For countries not mentioned above, please contact your local authorities for a correct method of disposal.

By doing so, you will ensure that your disposed product under goes the necessary treatment, recovery and recycling and thus prevent potential negative effects on the environment and human health.

Declaration of Conformity

Manufacturer's Name:

Hear Technologies

Manufacturer's Address:

991 Discovery Dr.

Huntsville, AL 35806, USA

Declares that the product:**Product Name:**

Switch Back PLUS

Product Option:

All (requires Class II power adapter that conforms to the requirements of EN60065, EN60742, or equivalent.)

Conforms to the following Product Specifications:**Safety:**

IEC 60065 -01+Amd 1

EMC:

EN 55022:2010

55024:2010

FCC Part 15

Supplementary Information:

The product herewith complies with the requirements of the:

Low Voltage Directive 2006/95/EC
EMC Directive 2004/108/EC
RoHS Directive 2002/95/EC
WEEE Directive 2002/96/EC
EC Regulation 278/2009

With regard to Directive 2005/32/EC and EC Regulation 1275/2008 of 17 December 2008, this product is designed, produced, and classified as Professional Audio Equipment and thus is exempt from this Directive.

Nason Tackett
Senior Design Engineer
Hear Technologies
991 Discovery Drive
Huntsville, AL 35806, USA
Date: October 15, 2025

FCC Statement

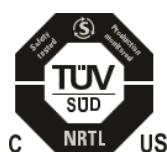
** NOTE**

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 in a commercial installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or

television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.



Overview



The Switch Back PLUS System

The Switch Back PLUS is an all-in-one Dante audio interface, mixer, and MIDI 2.0 control surface in a compact device. The PLUS consolidates what would typically require multiple pieces of hardware into a single unique tool. As your studio's interface and controller or your personal mixer and stage box at a live event, the PLUS' hybrid functionality provides space-conscious flexibility.

Simply connect the Switch Back PLUS via a [CAT6](#) Ethernet cable to a PoE+ network switch, and you're integrated with your Dante-enabled devices – whether it's a front of house console or your laptop running Dante Virtual Soundcard. Plug in your headphones or speakers, route your audio channels through Dante, and let the creativity flow.

From the studio to the stage, the Switch Back PLUS fits effortlessly into a wide range of workflows. With seamless Dante connectivity, setup is simple and sound is crystal clear.

Personal Mixer

Control volume, panning, and stereo width of up to 32 stereo or mono Dante audio channels. Features zero-latency, master volume control, balanced stereo outputs, two headphone jacks, and sharp OLED screens which display channel names and status.

Audio Interface

The Switch Back PLUS features four local inputs including an XLR microphone input with switchable phantom power, a high-impedance instrument input with adjustable gain, and two balanced line-level inputs. Route these inputs, along with the main stereo mix, to other devices on the Dante network. Additionally, the PLUS presents four more default-muted Dante channels which mirror the four inputs and can be unmuted by pressing the BROADCAST button, allowing any of the inputs to be used as an intercom (talk back).

MIDI 2.0 Control Surface

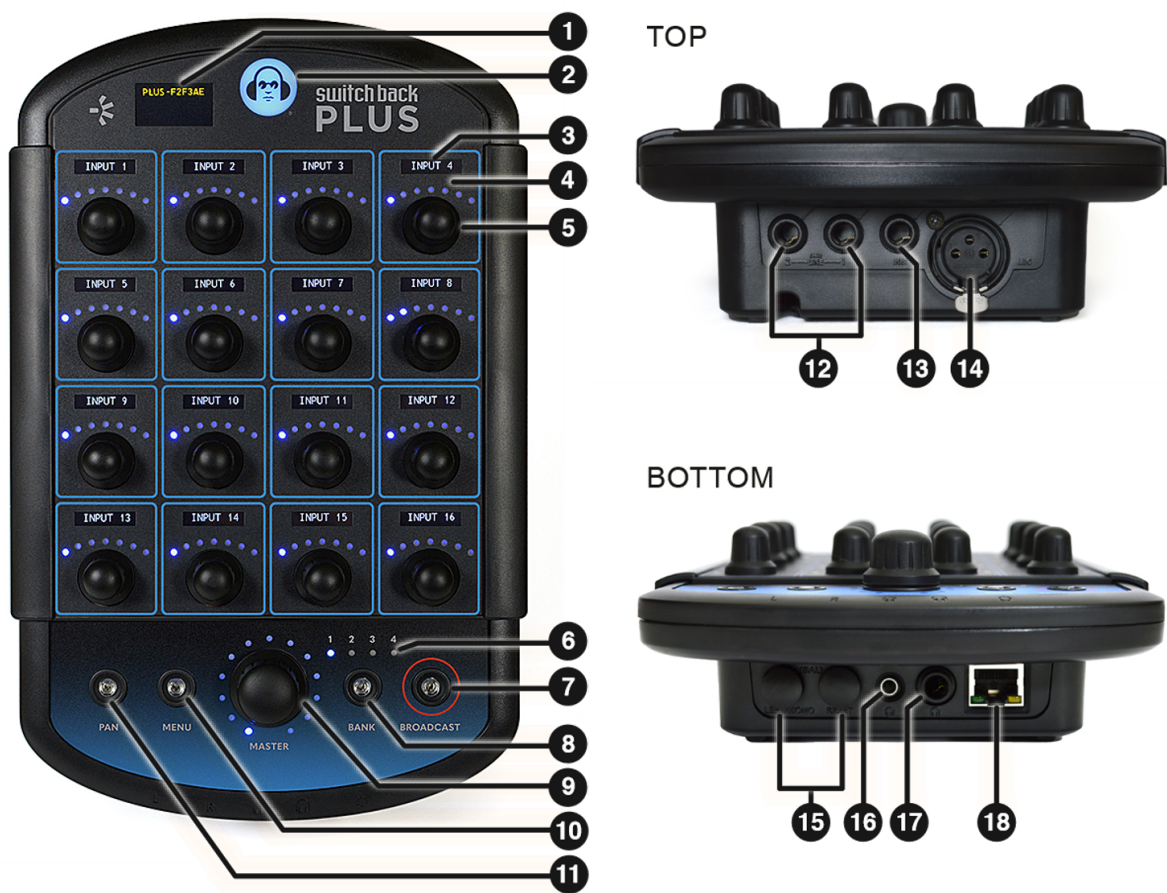
MIDI control shares the same network connection as Dante to send and receive CCs. This allows the knobs to be used for controlling software and external hardware. Get real-time feedback of CC values via the LEDs above each knob.

Advantages / Features

- Blend up to 32 stereo or mono Dante channels along with 4 local inputs to a stereo mix
- Volume, panning, and width control of all channels
- Transmits 10 Dante channels: mic, instrument, 2 line-level inputs, internal stereo mix, plus 4 channels that broadcast local inputs only by pressing the BROADCAST button for intercom
- Network MIDI to use knobs for Control Change messages
- 4 channel banks of 16 knobs each that can be assigned any combination of Dante channels, local input monitoring, MIDI controls, and device settings (64 total)
- 4-band parametric master EQ with integrated graphical UI
- XLR microphone input with selectable 48-volt phantom power, studio-quality preamplifier with 50 dB of adjustable gain, and selectable 100Hz high-pass filter
- High impedance 1/4" instrument input with 33 dB of adjustable gain and selectable 100Hz high-pass filter
- 2 line-level 1/4" balanced inputs
- 2 line-level 1/4" balanced outputs
- 5-watt capable headphone output with both 1/8" and 1/4" jacks available
- Digital OLED graphical displays for channel labeling and status with brightness control
- Internal software compressor/limiter
- Firmware updates and features via the PRO Connect software
- Standard mic stand receptacle (5/8" 27 threads per inch) for easy mounting
- Streamlined Ethernet cable relief channel for Ethernet cable routing
- 1000Base-T Ethernet
- Powered by PoE+

System

Detail Diagram



1	Main Screen Display	10	"MENU" Button
2	LED Status Indicator	11	"PAN" Button
3	Channel Screen Display	12	1/4" Line 1 & 2 Inputs (Balanced)

4	LED Level Indicators	13	1/4" High Impedance Instrument Input
5	Channel Volume/Pan Control and Settings Knob	14	XLR Microphone Input with Switchable 48V Phantom Power
6	LED Bank Indicator	15	1/4" Left/Mono and Right Outputs (Balanced)
7	Input "BROADCAST" Button	16	1/8" TRS Headphone Output
8	16 Channel "BANK" Button	17	1/4" TRS Headphone Output
9	"MASTER" Volume Control Knob	18	Gigabit Ethernet (GbE) Connection with PoE+ (Power over Ethernet)

Construction

The Switch Back PLUS is made from a durable, UV-stabilized ABS plastic. A built-in 3/8" threaded insert is provided for mounting the device to a microphone stand. The PLUS also has a cable strain-relief channel to greatly reduce the stress on the CAT6 cable connection.

OLED Displays & LEDs

The 17 OLED displays allow for electronic labeling of your Dante channels, viewing status messages, and updating settings. The LEDs, surrounding the knobs, display mix levels and settings values.

Main Screen Display

The large OLED display will generally show the Dante device name on the top line. The device name can be changed via Dante control software such as Dante Controller.

The screen will also display status messages including but not limited to:

- Volume / pan / width changes
- Settings value changes
- PLUS mode changes
- Firmware update messages
- Audio clipping messages

Channel Screen Displays

The smaller channel displays above each knob will show the configured names for each channel. See [this table](#) to explain labels for different channel types.

Any of these labels can be [customized in PRO Connect](#). The smaller channel displays are only capable of showing up to a maximum of nine characters (letters, numbers, or symbols). Names longer than 9 characters will scroll on the screen.

Metering

The audio level will automatically be displayed as a meter on the right edge of the main OLED display. This meter portrays the real-time output level of the PLUS' local mix (post master volume). This meter can be hidden via the Display settings menu (accessed via the **MENU** button).

A second meter will be displayed if the limiter is enabled to show the amount of master output limiting. This meter is displayed on the left side of the main screen and grows from top to bottom. This meter can also be displayed / hidden via the Display settings menu. See the [Limiter section](#) for more details on limiting.

The channel OLED displays also show meters for their respective channels. A horizontal meter displays beneath every channel name. This meter is pre-fader—the audio level before volume settings are applied. To turn off this feature, disable the Channel Meters setting in the Display Settings menu.

Clipping Detection

The PLUS detects digital audio clipping on local analog inputs and the overall mix. If clipping is detected, a warning message displays on the main screen identifying the clipping source. To resolve clipping for a local input, reduce the input gain, trim, or the source level. For the main mix, reduce channel volume levels.

Brightness

The brightness of both the displays and LEDs can be adjusted in the Display Settings menu (accessible via the **MENU** button). Brightness levels will be stored on the device and recalled between power cycles.

Auto-Dim

By default, the PLUS will dim the displays after 30 minutes of inactivity. Pressing a button or moving a knob will cause the PLUS to return to normal brightness.

You can adjust the timeout for dim in the Display Settings menu accessed via the **MENU** button.

Screensaver

The displays and LEDs will enter a screensaver mode after 2 hours of inactivity by default. This helps to extend their lifetime and reduce wear. Pressing a button or moving a knob will exit screensaver mode.

The screensaver times can be adjusted, or even disabled, in the Display Settings menu (accessible via the **MENU** button). However, it is not recommended to disable the screensaver as it may severely shorten the lifespan of the displays.

Text Shift

The displays will automatically shift the displayed text very slowly over time in order to more evenly wear the pixels.

Status Logo

The illuminated Hear Technologies logo (we call him "Jack") serves as a general status indicator. This indicator will be illuminated SOLID **BLUE** during proper device operation. The indicator will be SOLID **RED** to indicate internal hardware or software errors. The indicator will be illuminated BLINKING **RED** to indicate a headphone amplifier short-circuit or overheating. Check the troubleshooting section for further information.

Local Audio Inputs

The four studio-quality inputs (MIC, INST, LINE 1, and LINE 2) located on the top of the PLUS are accessible on the Dante network as discrete transmit channels and also as local inputs that can be monitored on the PLUS itself. To assign a local input monitoring channel to a knob, use Dante Controller to [route the PLUS's transmit channel](#) for the desired input locally to a receive channel on the same device. Alternatively, [configure a local channel in PRO Connect](#). You can also mix local inputs without assigning them to knobs in the main grid by accessing their corresponding settings menus using the **MENU** button.

i NOTE

Adjusting any of the local input volumes, pans or widths for the local mix will not affect the output levels of the Dante transmit channels for those local inputs. The settings that do affect the Dante outputs are listed in each section below.

Metering

A pre-fader meter for each analog input is shown on the "LOCAL VOL" screen on its respective settings page. This meter will also show when a local channel is assigned to a mix knob and channel meters are enabled.

Microphone Input

The XLR microphone input has user-selectable settings accessible via the Mic/Inst Settings menu page. The following settings will affect the signal in the Dante transmit channel and the PLUS' internal mix:

- +48 V phantom power on/off
- 100 Hz high-pass filter on/off
- Analog gain (coarse, increments shown on main screen)
- Digital trim (fine, amount shown on main screen)

i NOTE

The main analog gain setting is the primary way to set up the microphone input, and is applied before the signal passes into the ADC. It is divided into coarse steps of several dB each, so it isn't ideal to change during a live performance. There is an additional digital trim setting that enables finer adjustments and an extra gain boost if the analog gain isn't adequate. The trim adjustments are small enough to be nonintrusive when changed live. This second gain stage is applied digitally after the ADC. To avoid adding unnecessary noise, we recommend setting the analog gain first before adding a boost with digital trim.

Instrument Input

The ¼" TRS instrument input is meant for high-impedance instruments such as those with a passive pickup or other instruments requiring extra gain. This input has the following user-selectable settings, accessible via the Mic/Inst Settings menu page, which will affect the signal in the Dante transmit channel and the mixer's internal mix:

- 100 Hz high-pass filter on/off
- Analog gain (increments shown on main screen)

Line Inputs

The ¼" TRS balanced line-level inputs have no additional filtering or gain staging and are converted directly to a digital signal. The line inputs are transmitted as mono channels in their discrete Dante transmit channels (Dante channels, by design, are single channels). However, the line inputs can be treated as a stereo input to the PLUS' internal mix by linking the two channels together via the Line In Settings menu. Line 1 becomes the left side and Line 2 the right side of the stereo pair. Note that this stereo setting cannot be directly disabled if the line inputs are

routed back to the same device as a stereo pair in Dante Controller; one must be unrouted first because Dante routing controls linking.

Dante Audio Inputs

The Switch Back PLUS supports 64 Dante receive channels, allowing you to route up to 32 stereo inputs from other Dante-enabled products (or straight from your computer via Dante Virtual Soundcard). The PLUS takes a left input and a right input from Dante for each mix channel. Use Dante Controller to configure Dante routing. To set up a stereo channel, route the desired left and right sources from Dante to the corresponding "L/Mono" and "R" inputs for the desired channel number. To set up a mono channel, route the source channel only to the "L/Mono" input for the desired channel number. Each pair of Dante channels (or mono channel) routed to the mixer will occupy one knob, allowing you to adjust volume, panning, and stereo-width control of the channel within the Switch Back PLUS's mix.

NOTE

The PLUS's own transmit channels may be routed back to itself using this method in Dante Controller. There are a few rules for valid self-routing:

- Local inputs may only be self-routed once for each local input
- The microphone and instrument inputs may not be a part of a stereo pair with other channels.
- The line inputs may only be in a stereo pair with each other.
- Line 1 must be routed to L/Mono and Line 2 must be routed to R.
- Mix L and Mix R may not be routed locally, to prevent feedback.

If you accidentally attempt to perform an invalid routing, it will be blocked to prevent unexpected behavior.

Banks

There are 4 pages of 16 channels each accessible by pressing the **BANK** button. Each bank may contain a mixture of Dante channels, local input channels, MIDI controls, and select device settings (see [Knob Assignments](#)). The LED corresponding to the currently selected bank be illuminated bright **BLUE**. Each other bank LED will be dimly lit if its bank is available, and disabled if its bank is unavailable. The channel labels will update to display the corresponding channel names when switching banks.

Channel count available is constrained by the mixer's sample rate. See the [Dante Network](#) page for information on the number of Dante channels.

Local Audio Outputs

Headphone Outputs

The Switch Back PLUS comes with two parallel headphone outputs, one 1/8" TRS and one 1/4" TRS, each optimized for 50Ω. Total load should not be lower than 16Ω when using both outputs. The headphone amplifiers have an over-temperature warning that will cause the logo at the top of the mixer to illuminate **BLINKING RED** if an over-temperature condition is detected. This can occur if there is a short circuit in the connected headphones.

CAUTION

Exercise great care when adjusting the master volume. At 50Ω, the amplifier is capable of sustaining 2 watts of power per ear which could damage your equipment, or worse, your ears.

Line Outputs

Two balanced stereo ¼" TRS line-level outputs are provided. These outputs allow you to send your mix to wireless in-ear transmitters, powered speakers, or any other equipment that accepts a line-level input.

If nothing is plugged into the right output, the left output will be a mono sum of both left and right channels. This can be used to send the mix to a subwoofer or other mono device.

The line-level outputs may be used simultaneously with the headphone outputs. Both sets of outputs share the same mix and are set with the same master volume level. When using both simultaneously, be sure to set the volume of the mix appropriately for the headphones. Then use the volume adjustment of the line-level receiving equipment to further set its level.

In the event of ground loops, when connecting the line-level outputs to other devices that have an earth ground, it may be necessary to lift the shield at the mixer outputs. However, never lift or disconnect the high voltage AC power supply ground of any device.

Dante Audio Outputs

The Switch Back PLUS sends a total of 10 channels to the network as Dante transmit channels. This includes the four local inputs (MIC, INST, LINE 1, and LINE 2), the mixer's pre-master volume MIX L & MIX R, and a normally-muted copy of each local input that is unmuted when the Broadcast function is enabled (see below).

Broadcast

The **BROADCAST** button unmutes four dedicated Dante outputs from the local analog inputs that are normally muted: BC Mic, BC Inst, BC Line 1, and BC Line 2.

Among other applications, this enables setting up an intercom (talk back) system between Dante devices using inputs connected to PLUS devices.

The **BROADCAST** button unmutes the broadcast channels until it is released. Quick-pressing the **BROADCAST** button latches it to stay active until the button is pressed again. In either case, the **BROADCAST** button will illuminate **RED** to indicate that the broadcast channels are "active" and unmuted.

There is an additional option to mute the normal outputs from the analog inputs while broadcast is active. For example, this is useful if you want to seamlessly use the same microphone for performance and talk back. A musician could press the **BROADCAST** button to mute their microphone from going to the PA and unmute it in the talk back line simultaneously. To configure, open [PRO Connect](#). In the settings page for a PLUS, in the Inputs Muted when Broadcast Active dropdown, select the analog input you want to switch off when broadcast is active, or all, or none.

See the [Dante Network page](#) for more information on the Dante output channels.

EXAMPLE SETUP

There are many possible ways to use the Broadcast outputs. To set up a full intercom system that allows multiple people to talk, here is a recommended setup:

- Connect a microphone to every PLUS that will transmit intercom
- Set each PLUS microphone gain to a useful level, and for microphones that are exclusively used for talk back, set local microphone volumes to zero to prevent constant monitoring
- For microphones that will also be used for performance, set them to mute on broadcast in PRO Connect
- Route the BC Mic outputs from all transmitting PLUS devices to a single mixing device (e.g. a Dante-enabled mixing console, a DAW, or even a dedicated PLUS)
- Mix down all of the intercom channels to one channel, and send it back to Dante (if using a dedicated PLUS to mix, use its Mix L channel)
- Route the new intercom channel back to each PLUS

Now every PLUS will have a dedicated intercom channel. Every PLUS user will hear everyone else who is pressing their **BROADCAST** button, or anything else included in the intercom mix you created.

Mixing

Channel Volume

Each knob assigned to an audio channel (Dante or local) can control the volume of its respective channel within the mix. Volume operation is indicated by **BLUE** LEDs above the knobs and is the normal mode of operation. Other modes such as

panning or viewing settings will time out and return to volume control after 40 seconds.

Volume scales from 0% to 100% when spinning the knobs from left to right, respectively.

Channel Panning

To control panning of channels, press the **PAN** button one time while in volume control. The **PAN** button and the LEDs above each audio knob will illuminate **GREEN** to indicate that the knob now controls the panning position of its respective audio channel within the stereo field.

To return to volume control, press the **PAN** button twice or wait 40 seconds after the last adjustment for the system to automatically return.

Stereo Width

Stereo Width only applies for stereo channels. Stereo channels are configured through the routing in Dante Controller and indicated by horizontal bars on either end of a channel screen.

To control the stereo spread of stereo channels, press the **PAN** button twice while in volume control. The LEDs above each stereo knob will illuminate **AQUA**. Turning a knob counterclockwise will decrease the stereo spread until the channel becomes mono, then continue by reversing the left and right in an inverted stereo. Turning a knob clockwise will increase the stereo spread.

Master Volume

The **MASTER** volume knob is used to set the level of the mix to the local outputs. Changes to the master volume will not affect the MIX L & MIX R Dante output channels. These outputs are sent pre-master level.

Audio Limiter

The Switch Back PLUS has a user-configurable, software-controlled audio limiter. This limiter will limit the audio peaks to the local outputs. Setting the threshold, attack, and release of the compressor is possible from the Output Settings menu, accessed via the **MENU** button. During normal operation, a meter corresponding to the amount of reduction in audio level will be shown on the left side of the main screen if the limiter is enabled and over the set threshold.

The limiter is not applied to the remote output (Dante transmit) channels. It only applies to the mix output heard in the headphone and line outputs.

The limiter's adjustable settings are as follows:

Threshold:

The level that the overall mix must reach before the limiter activates

Attack:

The speed at which the limiter reduces the mix level once the input level surpasses the threshold

Release:

The speed at which the limiter restores the mix level after the input level falls under the threshold

Parametric EQ

The Switch Back PLUS features a 4-band parametric equalizer for shaping the tonal balance of your mix. The EQ is applied to both the analog outputs and the Dante mix transmit channels. The EQ controls are available in the EQ Settings menu, accessed via the **MENU** button. The menu includes individual controls for the four bands, one band per knob row, and the main OLED display shows the frequency response graph of the EQ curve.

Bands

Each EQ band has a specific frequency range and supports two different filter types that can be selected.

Band	Default Type	Alternate Type	Frequency Range
1	Low Shelf	High Pass	20 Hz – 500 Hz
2	Bell	Notch	250 Hz – 6,000 Hz
3	Bell	Notch	250 Hz – 6,000 Hz
4	High Shelf	Low Pass	4,000 Hz – 15,000 Hz

Filter Types

Low Shelf:

Boosts or cuts below the selected frequency

High Shelf:

Boosts or cuts above the selected frequency

Bell:

Boosts or cuts a range around the selected center frequency

Notch:

Applies a narrow, deep cut to eliminate the selected frequency

High Pass:

Cuts below the selected cutoff frequency

Low Pass:

Cuts above the selected cutoff frequency

Parameters

Each band has the following adjustable parameters:

Type:

Toggles between the two available filter types for the band (see table above)

Frequency:

Sets the center or cutoff frequency of the filter

Gain:

Sets the amount of boost or cut from -15 dB to +6 dB. Only available for Bell and Shelf filters.

Q (Quality):

Controls the shape of the filter. For Bell filters, the Q inversely affects the bandwidth—a higher Q represents a narrower affected frequency range. For Shelf and High Pass/Low Pass filters, Q controls the slope of the filter: a lower Q yields a gentler slope. When Q is increased, it will eventually add a resonant peak near the cutoff frequency.

Bypass

The entire EQ has a hardware bypass that can be toggled in the Output Settings menu, accessed via the **MENU** button. While EQ is bypassed, EQ parameters may not be modified.

EQ Graph Display

While in EQ Mode, the main OLED display shows the EQ's frequency response graph. The horizontal axis ranges from 20 Hz to 15 kHz and the vertical axis ranges from -18 dB to +18 dB. The dotted horizontal line indicates the 0 dB reference. Each band is labeled with its number on the graph.

Solo Mode

To isolate audio from a single channel, enter the Solo Mode menu, accessed via the **MENU** button. All audio channels will be shown with their knobs flashing **AQUA**. Spin the knob corresponding to the desired solo channel to temporarily mute all other channels. While a channel is soloed, its volume can be adjusted as normal by turning its knob. This volume change *will* affect the level in the main mix once Solo Mode is exited. To exit Solo Mode and return to the main mix, press and hold the **MENU** button.

MIDI

The PLUS can function as a MIDI control surface and an audio mixer simultaneously. Each knob **can be assigned** to be a MIDI control instead of an audio channel. Both MIDI 1.0 and 2.0 are supported. Adjusting a MIDI knob will send a value 0-127 with its selected Control Change message (CC). Each CC can be mapped to your DAW, hardware MIDI device, or any other other MIDI application to control any parameter you choose. MIDI knobs can be configured to operate in several different modes depending on use case.

The potential uses for MIDI controls are virtually unlimited. For example, you might use a MIDI knob to remotely control...

- a channel volume fader in a DAW
- the threshold in a compressor plugin
- the ADSR envelope on a synthesizer
- the color of a stage light

Setup

The PLUS supports the two major network MIDI protocols: Network MIDI 2.0 and RTP-MIDI. Both use UDP packets to send and receive MIDI commands over a network.

i NOTE

We cannot guarantee compatibility with any future operating system or software version. If you have difficulty setting up MIDI on your computer, first consult the official documentation for your operating system or network MIDI software.

Network MIDI support comes standard in macOS. RTP-MIDI has been supported since Mac OS X 10.4 (Tiger), and Network MIDI 2.0 is supported as of macOS 26.4 (Tahoe). See [here](#) for help configuring MIDI network connections on a Mac. For Windows, you will need to install a separate unofficial RTP-MIDI driver (we recommend [rtpMIDI](#) by Tobias Erichsen). When Microsoft releases Network MIDI 2.0 support in a future version of Windows 11, the third-party RTP-MIDI driver will no longer be required.

Basic computer setup steps

1. Connect your computer to the same network as the PLUS.
2. Open the MIDI Network Setup window
 - For Mac:
 - a. Open the Audio MIDI Setup application
 - b. Click Window > Show MIDI Studio
 - c. In the MIDI Studio window, click the globe icon on the right of the top toolbar to open MIDI Network Setup
 - For Windows using the suggested rtpMIDI driver:
 - a. Open the rtpMIDI application
3. If no sessions are listed under "My Sessions", click the plus sign to create one. If given the choice between RTP and Network MIDI 2, we recommend choosing Network MIDI 2.
4. Configure the session names and port number as desired.
5. Check the box next to the new session to enable it.

6. Select the name of the PLUS in the Directory list on the bottom left. Then click "Connect".
7. If connection was successful, the PLUS's name will appear in the list of connections on the right.

The computer should now see your network session as a MIDI device that can be used just like a hardware MIDI device. The PLUS can send control change messages to any other MIDI-compatible programs or hardware devices that are routed to the network session. The PLUS also supports receiving incoming CCs from the network for keeping MIDI knobs in sync. This behavior requires that the DAW or other application is configured to send back to the network session.

By default there are no MIDI controls configured on knobs on the PLUS. To setup knobs to control MIDI signals, use the PRO Connect control software (see [Knob Assignments](#)). There are four knob types for different kinds of MIDI controls:

Knob Types

- Level: Send the position of the knob (from 0 to 127) as indicated on its LEDs. Intended for controlling a MIDI parameter.
- On/Off Toggle: Turn the knob to switch between on and off. On sends a value of 127; off sends 0.
- Single Trigger: Turn the knob to send a value of 127. When the knob is turned again, 127 is sent again. Intended for activating single actions.
- Relative: Knob position defaults to the center. When the knob is turned left, it sends a stream of 0 messages. When turned right, it sends a stream of 127 messages. Intended for updating something by a relative amount (e.g., scrubbing through a DAW timeline).

MIDI 1.0 supports 16 **channels** which (for example) allow multiple devices to use the same message types without interfering with each other. The PLUS defaults to MIDI Channel 1, but can be set to a different channel in the MIDI Settings menu.

i NOTE

Using a wired Ethernet connection to the MIDI network is recommended. MIDI control has been successfully tested with a Wi-Fi connection, but there is a higher risk of dropped packets and additional lag.

MIDI 2.0

The PLUS supports the new MIDI 2.0/Universal MIDI Packet specification. This enables compatibility with future MIDI 2.0 devices. At present, the only practical difference for the PLUS is that MIDI 1.0 uses CC values from 0 to 127 and MIDI 2.0 uses 0 to 4294967295. The larger value range should be automatically handled by the computer connection software. MIDI 2.0 also supports **groups**. The PLUS is set to always communicate on MIDI Group 1.

Manual Setup

Some network MIDI applications will allow connecting to a MIDI device by IP address and port number. Audio MIDI Setup, for example, has a + button in the list of available devices for manual entry. Use this method if a PLUS isn't showing up automatically or if the network MIDI software you use doesn't support automatic discovery.

IP address: found in the Device Info tab of Dante Controller. You can also see the device's IP address in the Dante Settings menu on the PLUS itself.

The port number depends on the protocol:

- RTP-MIDI UDP port: 5004
- Network MIDI 2.0 UDP port: 5006

Menu Operation

The Switch Back PLUS's menus are accessed via the **MENU** button. The **MENU** button will illuminate **RED** when the device is on a menu page.

To enter a menu page or access other actions, press the **MENU** button once. The navigation menu will be listed on the OLED channel displays. Spin a channel knob corresponding to the desired menu page or action.

To exit a menu, press and hold the **MENU** button to return to the main screen, or press the **MENU** button to display the navigation menu again. Most menus (other than Solo Mode) will also time out after 40 seconds and automatically exit to the normal mixing mode.

The PLUS has the following menu pages, but more pages and options may be added in future firmware updates:

- Solo Mode (Solo)
- EQ Mode (EQ)
- Microphone / Instrument Settings (Mic/Inst)
- Line In Settings
- Output Settings
- Display Settings
- Dante Settings
- MIDI Settings
- Device Information (Info)

The navigation menu also provides access to the following actions:

- Zero Mix

Menu Controls

The menus consist of differing types of controls, with different colors and indicators for certain operations:

Type of Control	Color	User Interaction
ON / OFF Control	Flashing AQUA	Spin fast to Enable / Disable
Settings Level Control	Solid AQUA	Spin to Increase / Decrease
Volume Control	Solid BLUE	Spin to Increase / Decrease
Pan Control	Solid GREEN	Spin to adjust pan position
Width Control	Solid AQUA	Spin to adjust stereo pan width

Sample Rate

The Switch Back PLUS will automatically follow the sample rate of the Dante Grandmaster (current preferred leader). If the leader's sample rate is changed, the PLUS's sample rate will change automatically. This can be disabled by switching off the "FOLLOW" setting in the Dante Settings menu. The Mixer is capable of being assigned as the Leader and will become the Leader automatically when no other Dante device is present on the network or no other device is set to be the Preferred Leader. In this case, the sample rate is freely assignable from 44.1kHz to 192kHz. However, due to Dante limitations, higher sampling rates reduce the number of receive channels available:

Sample Rate	Max Number of Dante Receive Channels	Max PLUS Stereo or Mono Channels
44.1 kHz	64	32
48 kHz	64	32

Sample Rate	Max Number of Dante Receive Channels	Max PLUS Stereo or Mono Channels
88.2 kHz	32	16
96 kHz	32	16
176.4 kHz	16	8
192 kHz	16	8

See the [Dante Network](#) page for information on the Dante channels.

Lockouts

Specific functions can be locked from on-device access via the [PRO Connect](#) remote control software. When the user attempts to use a locked function, the main screen displays "FUNCTION LOCKED". These functions can still be accessed remotely in PRO Connect. Individual lockout options include Pan Button, Menu Button, Bank Button, Broadcast Button, Channel Knobs, Master Knob, and Advanced Functions. Advanced Functions covers most settings in the settings menus, including input gain, filters, phantom power, line input stereo link, EQ parameters, limiter parameters, screen saver options, sample rate following, and MIDI channel selection.

Factory Reset

To return all volumes, pans, settings, and knob assignments to their factory defaults:

- Enter the Info menu

- Press and hold the **BANK** button for 5 seconds.
- Factory reset will begin.
- Once finished, the PLUS will return to Normal Mode.

Zero Mix

To quickly reset the mix, select "Zero Mix" in the navigation menu. All volume levels will be set to zero, all pan settings to center, and all stereo width settings to full.

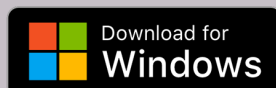
Remote Control, Session Management, and Advanced Configuration

All PLUS features and settings can be remotely controlled by a computer using the PRO Connect software. The Dante mode must be selected in the application's settings page, and the computer must be connected to the same network as the PLUS. The correct Dante network interface must also be selected in settings. Either wired or wireless connections are acceptable for remote control, but wired is strongly recommended.

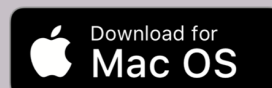


New interface. New level of control.

PRO Connect provides a web-based interface to update, configure, and control your Hear Back PRO and Switch Back PLUS systems.



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Session Management

Session Management is in the Sessions tab. Save all current settings across all or a selection of connected PLUS mixers to a single file with the Save Current Session button. Restore a saved session with the Load Previous Session button. When loading a session, there are options to only restore certain settings and to switch which mixer gets which saved mixer's settings.

Knob Assignments

What is assigned to each knob on the PLUS may be customized in PRO Connect. There are 64 assignable knobs total: 16 each across four banks. To edit a knob, click the black bar with the downward arrow above the knob. A dialog will appear for selecting what the knob will control and setting a custom display name. If a custom name isn't set, the default name for the source will be used (see below). A knob can also be unassigned using the UNMAP button, which makes the knob blank and disables its LEDs. When done configuring a knob, click the APPLY button or press the Enter key to save changes. The following table explains the different knob options:

Channel Type	Description	Default Name
Dante	A channel from the Dante network. An icon like a chain link is shown beside a stereo channel; otherwise it is mono. If a Dante channel option in the list is marked as unavailable, it is either not currently routed to the PLUS or there is a Dante issue (sample rate mismatch, network unavailability, etc.). The assignment for a Dante channel does not have to correspond to the knob number; for	The Dante subscribed channel's TX name. For a stereo pair, the left name is used.

Channel Type	Description	Default Name
	example, Dante channel 3 may be assigned to knob 24. See Dante Audio Inputs .	
Local	A monitoring channel for one of the four local analog inputs. If the line inputs are stereo linked, an icon like a chain link is shown beside them, and only one channel needs to be assigned to control both. See Local Audio Inputs .	The name of the local input
MIDI	A control to send values for a selected MIDI CC. Choose from CC 0 to 119. The text explanation in the list indicates the suggested use for each CC per the MIDI specification, but you can use any CC for any purpose you choose. There are multiple knob types depending on whether you want to adjust a parameter, trigger an event, or something else. See MIDI Knob Types .	The CC number
Setting	A local PLUS device setting. When you adjust a knob assigned a setting, it changes that setting as if you set it in the proper settings menu. Only some device settings can be assigned to a knob.	An abbreviated description of the device setting

By default, knobs 1-32 on the PLUS are assigned Dante channels 1-32 (the first two banks), and banks 3 and 4 are left blank. This initial setup can be restored by using the [factory reset](#) function or the reset assignments button in PRO Connect.

Quick Start

WARNING

- ALWAYS turn down the **MASTER** volume before putting on in-ear headsets or headphones. The Switch Back PLUS is capable of driving most headphones to extreme levels that can damage your HEARING!
- It is the user's responsibility to prevent hearing damage from excessive headphone **MASTER** volume settings.

Connecting the System

1. **Connect the appropriate input(s)** as shown in the hook-up diagram.
2. **Connect the PRO to PoE+ power** such as an in-line PoE+ power injector or PoE+ network switch using unshielded Cat6 cabling.
3. **Set all Mixer Channels and Master Volume levels to 0%.**
4. **Connect the headphones, in-ear monitors, and/or line outputs** for connecting to wireless in-ear systems, powered monitors, or other devices requiring line-level inputs.

Mixer Adjustment

1. **Route Audio Channels** from any other Dante-enabled source to the PLUS using Dante Controller. To create a stereo channel, route the left Dante channel to "L/Mono" on the PLUS and route the right to "R". To create a mono channel, route the single Dante channel to a "L/Mono" input.
2. **Name each source TX channel** in Dante Controller to display names on the PLUS's Channel Screen Displays.

3. **Turn the MASTER volume up to about 10 o'clock.**
4. **Raise each channel's volume** to a comfortable level via the channel knobs.
5. **Avoid adjusting the MASTER volume too high** and running the inputs too low.
6. To **pan any channels** within the stereo field, press the **PAN** button and adjust.

Input Adjustment

1. **Adjust monitoring level of the PLUS's inputs** by navigating to the Mic/Inst Settings or Line In Settings menus via the **MENU** Button. Use the appropriate channel knob to raise or lower the volume of the input in the mix.

NOTE

This will *NOT* affect the level of the Dante Transmit audio stream.

2. **Adjust Microphone or Instrument Gain and High-Pass Filter settings**, by navigating to the Mic/Inst Settings menu via the **MENU** Button. Use the appropriate channel knob to raise or lower input gain level or toggle the high-pass filter on/off.

NOTE

These *WILL* affect the level and tone of the Dante Transmit audio stream as they are applied directly to the input's signal.

3. **Toggle 48 V Phantom Power for the microphone input**, by navigating to the Mic/Inst Settings menu page via the **MENU** button. Use the appropriate channel knob to toggle the phantom power setting on/off.

Dante Network

With hundreds of professional audio manufacturers now supporting Dante, it is an easy way to route multiple channels of high quality audio at a very low latency between two or more pieces of equipment (including directly out of a PC or Mac using only its Ethernet port.) Dante (Digital Audio Network Through Ethernet) is a standard audio-over-Ethernet protocol developed and supported by Audinate Pty Ltd.

Please note that we did not develop the Dante protocol. We are simply an endpoint. In this manual, we just barely scratch the surface of Dante's capabilities. The creators of Dante know their protocol better than anyone!

Please visit www.getdante.com for a vast wealth of training videos, example setups, and documentation.

Our Switch Back PLUS is able to receive up to 64 channels of audio from other Dante devices on the network and also outputs 10 channels of audio that can be routed to other Dante enabled equipment using a standard Ethernet network connection and Cat6 cabling. Dante will work with standard network switches and routers and is safe to combine with your existing computer network, if necessary. 100BaseT network speed is supported.

A Dante network requires at least two devices that support the Dante protocol and a single Cat6 network connection between the two devices. Before you can send audio over the Dante network, you must first connect a Windows PC or Mac running the Dante Controller software (download from www.getdante.com) in order to configure audio channel routing. You must choose what you want to send to the input channels of the PLUS and also if you want to route any of the audio from the PLUS to any other Dante device.

After configuration, the computer can be disconnected. If you want to send and receive audio with a PC or Mac, you can connect the computer's Ethernet cable directly into the PLUS (using an in-line PoE+ power injector to power the PLUS) or into a PoE+ network switch to which the other Dante devices are also connected. And you must purchase a copy of the Dante Virtual Soundcard software (download from www.getdante.com) which makes the Dante audio inputs and outputs show up as standard sound devices on your computer.

NOTE

If using Wi-Fi, Dante Controller will allow you to configure the routing of the audio on the Dante network, but you cannot send and receive Dante audio with your computer over Wi-Fi. You must have a hard wired Ethernet connector to send and receive audio.

Multicast Transmit Flows

To send channels to multiple PLUS mixers, we recommend using multicast transmit flows. The transmitting device may otherwise run out of available flows and not be able to send audio to all receiving devices. See [Multicast Transmit Flow Configuration](#) (external) for information on how to configure this.

Channels Transmitted to Dante

Transmit Channels			
#	Channel Name	Description	Notes
1	Mic	Always on microphone input from the XLR	Impacted by selectable gain and high pass filter
2	Inst	Always on high impedance instrument input from the 1/4" connector	
3	Line 1	Always on balanced line level Line 1 input	Even if the line stereo link setting is enabled, these are mono individual left and right outputs
4	Line 2	Always on balanced line level Line 2 input	
5	Mix L	The Left stereo channel of the entire PLUS's internal mix	Not impacted by the Master volume or limiter settings
6	Mix R	The Right stereo channel of the entire PLUS's internal mix	
7	BC Mic	Normally muted microphone input	These channels are unmuted by pressing the "BROADCAST" button
8	BC Inst	Normally muted instrument input	

Transmit Channels			
#	Channel Name	Description	Notes
9	BC Line 1	Normally muted Line 1 input	
10	BC Line 2	Normally muted Line 2 input	

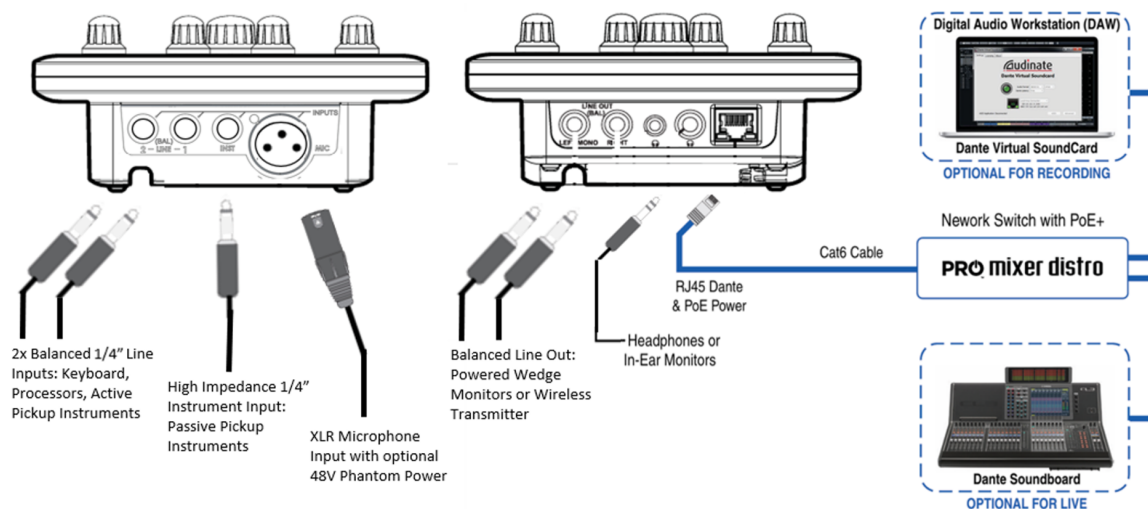
Channels Received from Dante

Receive Channels		
Stereo Channel #	Available at Sample Rates	Channel Name
1-8	44.1kHz, 48kHz, 88.2kHz, 96kHz, 176.4kHz, 192kHz	Assigned in Dante Controller
9-16	44.1kHz, 48kHz, 88.2kHz, 96kHz	
17-32	44.1kHz, 48kHz	

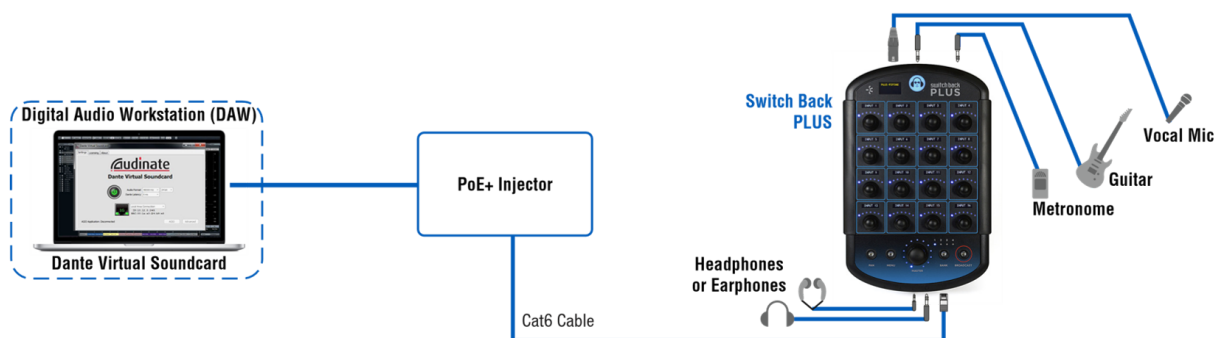
NOTE

The PLUS can only receive audio from 16 different Dante devices (16 different receive streams) at any one time.

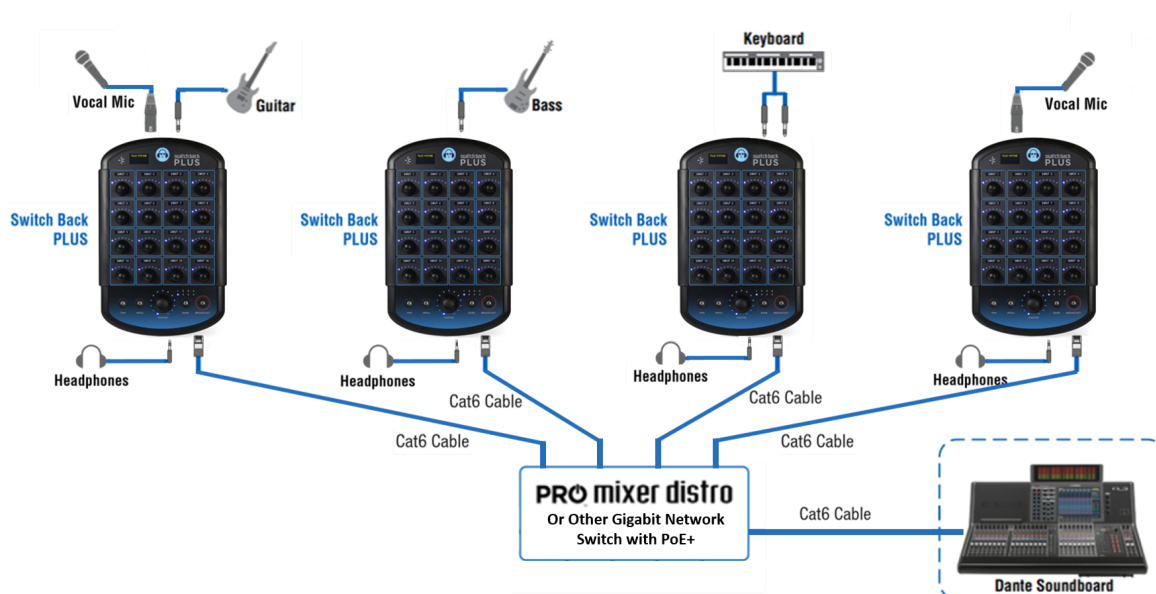
Hook-Up Diagrams



Home Studio



Live Performance



System Notes

- If the PLUS detects that the headphone amplifier is over-heating, which is typically caused by a short-circuit in the headphones or headphone connector, it will display a RED flashing logo. The headphone amplifier will continue to work, but you should unplug the headphones and turn down the master volume to allow it to cool off. Then try a different pair of headphones.
- Gigabit Ethernet speed is recommended. Dante networks also support 100 Mbps networks, but gigabit is required for higher channel counts and lower latency.

CAT6 Cables

Cable complying with the National authorities (cable with an outer jacket or sleeving rated VW-1 or better).

Firmware Updates

Network firmware updates are available for your Switch Back PLUS.

Normal Firmware Update

1. Open the PRO Connect software.



New interface. New level of control.

PRO Connect provides a web-based interface to update, configure, and control your Hear Back PRO and Switch Back PLUS systems.



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2. Select Dante Mode from the Settings page in PRO Connect.
3. Navigate to the Updates Tab > Switch Back PLUS page.
4. Connect your PLUS to the same network as your computer.
5. Follow the on-screen instructions to update your Switch Back PLUS.

FAILSAFE Recovery

A device in the FAILSAFE mode can be recovered normally through PRO Connect. Just follow the instructions in [Normal Firmware Update](#).

Technical Specifications

Microphone Input

tested from analog input to Dante output @ 48kHz sampling rate

Input Configuration:

Mono, Balanced XLR, 3k Ω input impedance

Input Frequency Response:

20Hz – 20kHz +/-0.85dB, 30Hz – 20kHz +/-0.32dB

Input THD+N:

0.003% @ 150mV input, +24dB gain setting, 1kHz, A-weighted

Input IMD:

0.01% @ 150mV input, 60Hz & 7kHz (SMPTE/DIN)

Input X-TALK:

-106dB @ 150mV into Instrument Input, 1kHz, A-weighted

Input Sensitivity (Max Gain):

-36dBu input yields 0 dBFS full-scale output

Input Sensitivity (Min Gain):

+13.8dBu input yields 0 dBFS full-scale output

Instrument Input

tested from analog input to Dante output @ 48kHz sampling rate

Input Configuration:

1/4" Tip-Sleeve, 1M Ω High Impedance, Unbalanced

Input Frequency Response:

20Hz – 20kHz +/-0.76dB, 30Hz – 20kHz +/-0.33dB

Input THD+N:

0.003% @ 150mV input, +12dB gain setting, 1kHz, A-weighted

Input IMD:

0.006% @ 150mV input, 60Hz & 7kHz (SMPTE/DIN)

Input X-TALK:

-82dB @ 150mV into Microphone Input, 1kHz, A-weighted

Input Sensitivity (Max Gain):

-33.5dBu input yields 0 dBFS full-scale output

Input Sensitivity (Min Gain):

-1dBu input yields 0 dBFS full-scale output

Line Inputs 1 & 2

tested from analog input to Dante output @ 48kHz sampling rate

Input Configuration:

1/4" Tip-Ring-Sleeve, Balanced, 20K ohms input impedance

Input Frequency Response:

20Hz - 20kHz +/-0.74dB, 30Hz - 20kHz +/-0.32dB

Input THD+N:

0.005% @ 1V input, 1kHz, A-weighted

Input IMD:

0.008% @ 1V input, 60Hz & 7kHz (SMPTE/DIN)

Input X-TALK:

-99dB @ 1V into adjacent line input, 1kHz, A-weighted

Input Sensitivity:

+18dBu (fixed gain)

Input Propagation Delay

Analog Input to Dante:

0.542ms @ 48 kHz

0.396ms @ 96 kHz

0.318ms @ 192 kHz

Analog Input to Analog Output:

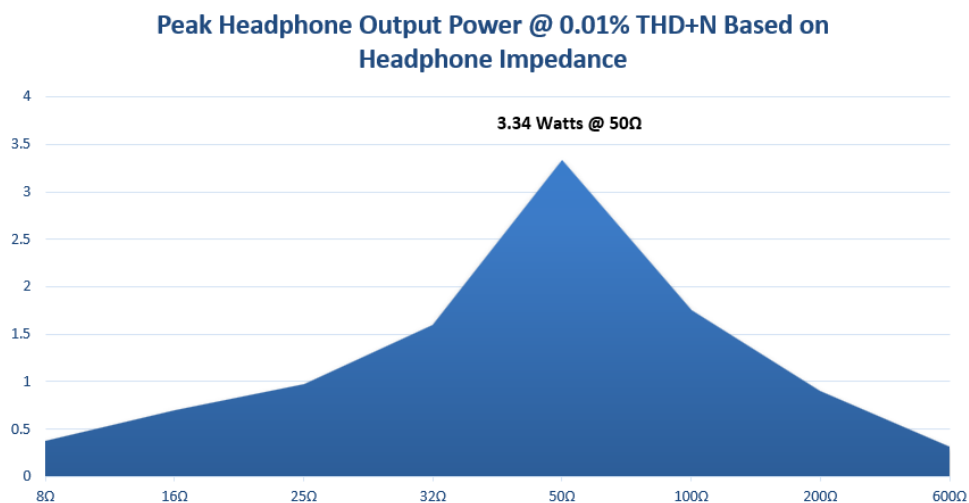
0.662ms @ 48 kHz

0.349ms @ 96 kHz

0.182ms @ 192 kHz

Headphone Power

Mixer Headphone Power (Per Channel):



Inter Modulation Distortion:

Typically less than 0.08% (SMPTE/DIN)

Analog Outputs

Frequency Response:

20Hz – 20kHz +/-0.15dB

THD+N:

0.005% @ +18 dBu, 1kHz, A-weighted

IMD:

0.009% @ +18 dBu, 60Hz & 7kHz (SMPTE/DIN)

X-TALK:

-94dB @ +18dBu, 1kHz, A-weighted

Noise, A-Weighted:

-92 dBu (line output & headphone out: @ 48 kHz, master volume at 100%, no inputs)

Dynamic Range:

112.6 dBu (headphone output)

114.3 dBu (line output)

SNR:

100.5dBu (headphone output)

105dBu (line output)

Propagation Delay:

Dante to Analog Output:

0.792ms @ 48 kHz

0.563ms @ 96 kHz

0.438ms @ 192 kHz

Physical

Size:

9.5" H x 5.95" W x 2.71" D (241 mm H x 151 mm W x 69 mm D)

Unit Weight:

1.6 lb. (0.72 kg)

Mounting:

Standard mic stand (5/8" 27 threads per inch) or desk mounted

Power

Power Requirements:

Power over Ethernet (PoE+) 36-52 volts DC, 15 Watts max provided by Hear Technologies PRONET or equivalent network switch with PoE+ capability

Troubleshooting

**TIP**

Upgrading to the latest firmware version is strongly recommended!

No Signal for Analog Input

- Verify the Switch Back PLUS has power (Jack logo is illuminated or main OLED display has visible text)
- Check input connections, input gain, input volume controls, and master volume control.
- Check output devices, headphones, wireless transmitter/receiver, monitor amplifiers, etc.
- Test input source and output device with other known good equipment to rule out the fault through a process of elimination.
- If the input is the microphone input, the microphone may require phantom power in which case you will need to verify that phantom power is turned on under the Microphone/Instrument Settings page.

No Signal for Dante Input

- Verify volume knob and master volume knob are turned up enough.
- Enable Channel Meters in Display Settings ([info](#)) and see if there is a meter bar underneath the channel name. If not, then the channel is not receiving audio signal or is very quiet.
- Check routing in the Dante Controller software and make sure there are green check marks on the receive channels to indicate the source is routed. It is possible that Dante is currently muting the audio due to the two devices

being at different sampling rates, or a clock synchronization problem. The Dante Controller software can help identify these problems.

Device Showing Up with the Name FAILSAFE

- A firmware update has failed. Open the PRO Connect software and attempt to update the device to recover it from FAILSAFE mode.

No Audio Output

- Check your headphones, wireless transmitters/receivers, monitor amplifiers, etc., to verify they are functioning properly. Try connecting them to another known working device to test them.

Power Goes Out When Volume Is Turned Up

- The Switch Back PLUS requires 15 watts of power. If you are using a PoE power supply that is not PoE+ it will typically turn off the power to the port that the mixer is plugged into whenever it exceeds 13 watts. You must make sure to use PoE+ network switches and power injectors.

Unable to Route Audio in Dante Controller

- Verify that the PLUS and the source you are trying to send are set to the same sampling rate.
- Make sure you are not attempting to route from more than 16 different Dante devices at once. You can route up to 64 channels but these 64 channels must come from 16 or less unique Dante devices.

OLED Screens Are Too Dim to Read

- Check the brightness setting in Display Settings.

- If a screensaver is active, using any button or knob will exit the screensaver.

OLED Screens Are All Blank

- Make sure channels are routed to the PLUS. When the PLUS is powered up for the very first time, it will start off with nothing routed to it and all screens will be blank until channels are routed in the Dante Controller software. Any invalid or un-routed channel will remain blank.
- Make sure the correct channel bank is selected. Cycle through banks with the **BANK** button.
- Check that any input channels have the same sample rate as their sources. Channels with invalid sources will remain blank.

Device Logo Is Solid RED

- This indicates a hardware or software problem with the mixer. Attempt to reboot the device first. If that does not return the device to normal operation please contact customer support.

Device Logo Is Flashing RED

- Internal headphone circuit is overheating.
 - Check to verify headphone load is stereo (not mono).
 - Verify ¼" and/or 1/8" plug is tip-ring-sleeve(TRS), not tip-sleeve(TS)
 - Look for shorted cables
 - Verify total load is not below 8 ohms per channel

When I Connect Line Level Device to the Line Outputs, I Hear a Buzz

- Wire TRS outputs using only black (ring -) and red (tip +) wires

- Disconnect shield at the device and terminate at receiving end only
- For unbalanced inputs, wire the ring (- black) to the receiving end sleeve and tie the shield at the receiving end only. Connect the tip (+ red) to the tip at the receiving end.

The Instrument Input Has a Low Frequency Buzz

- This can be caused by a poor-quality active instrument pickup combined with a poor quality PoE+ power switch. Utilizing the PRO Mixer Power distro for PoE power can improve this situation.

Further Assistance

If you need further assistance, feel free to contact Hear Technologies technical support by phone at +1-256-922-1200 or visit our website at www.HearTechnologies.com.

PRO Connect

Getting Started with PRO Connect

If you are having problems communicating with your Switch Back PLUS from the PRO Connect Application please follow this guide to get started with your system.

STEP 1: Install PRO Connect

The PRO Connect Application can be obtained here:

- 64 bit Mac Version:
https://storage.googleapis.com/ht_firmware/pro_connect_app/pro-connect.dmg
- 64 bit Windows Version:
https://storage.googleapis.com/ht_firmware/pro_connect_app/pro-connect-setup.exe

STEP 2: Connect Dante to Computer

- Connect your Dante network to a physically wired Ethernet port on your computer
- Make a note of which interface you selected

STEP3: Configure Dante Network

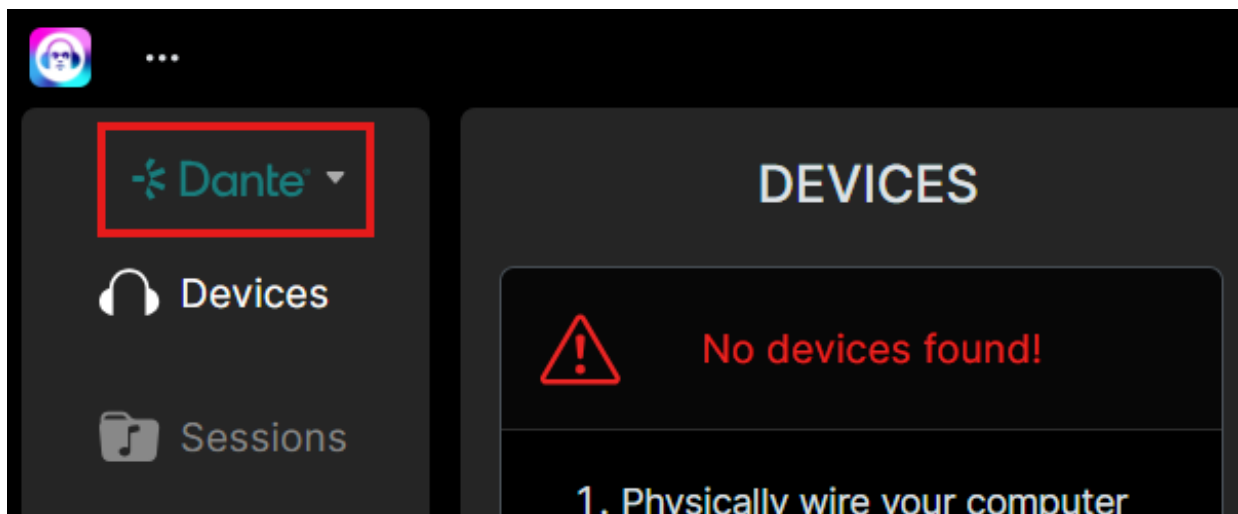
Use Dante controller to select the interface you connected to in STEP 2.

i NOTE

The Dante interface should most likely be the same as the **PRIMARY** interface.

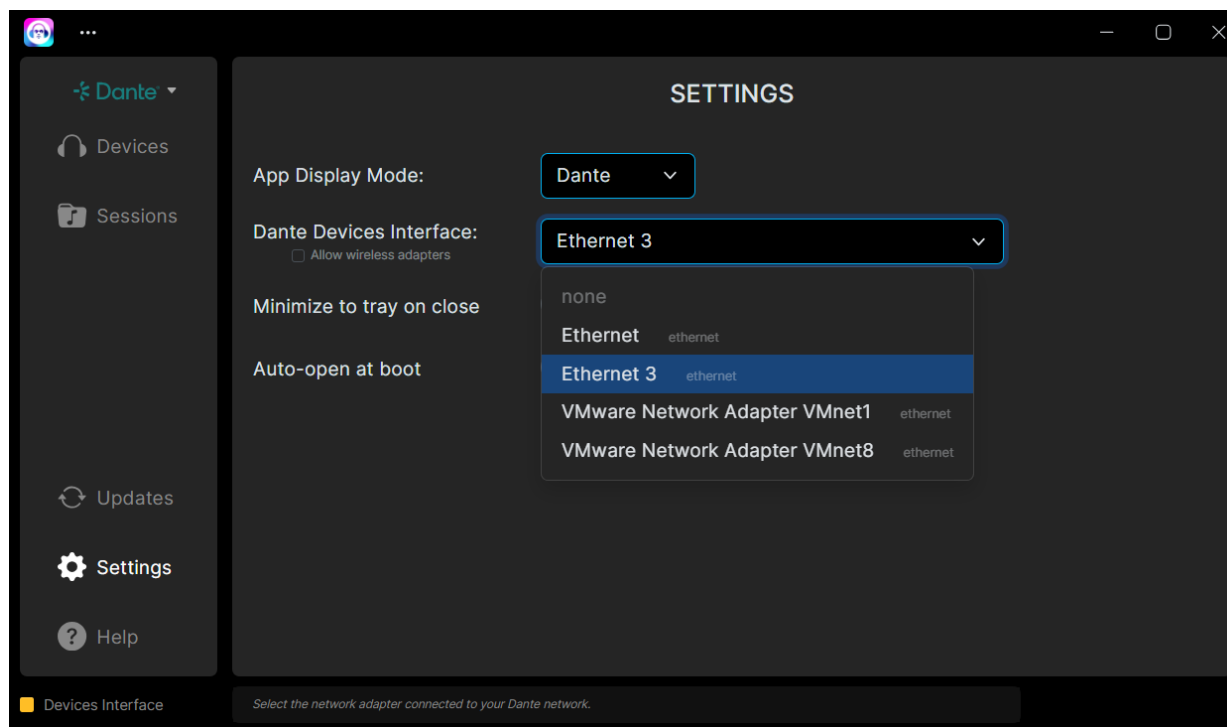
STEP 4: Select the Dante Mode

Ensure you are in PRO Connect's **Dante** mode of operation (not PRO mode). Use the dropdown here:



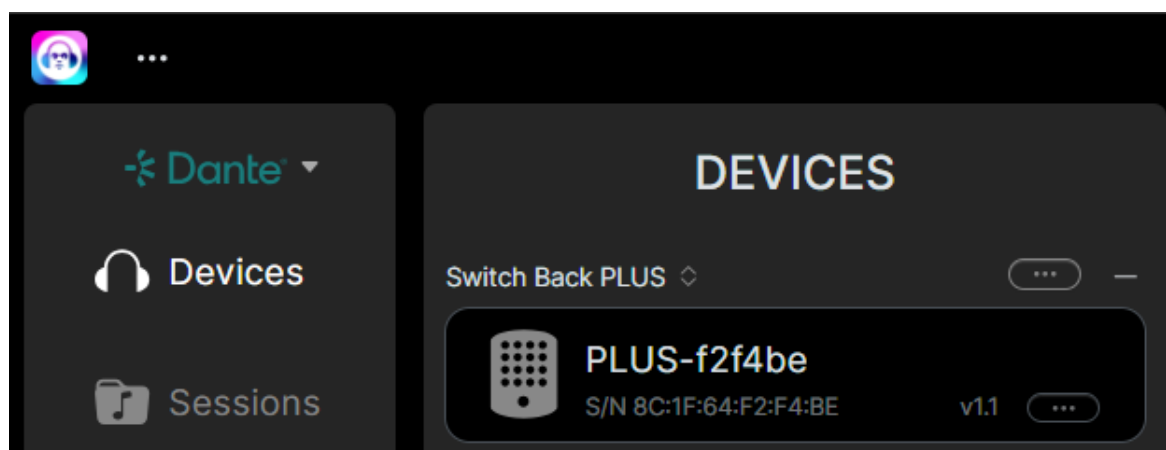
STEP 5: Select Devices Interface

- Select the correct ethernet port in the PRO Connect application for your **Dante Devices Interface** in the app's Settings page. This should be the Ethernet interface that your Dante network is connected to.



STEP 6: Wait for Devices

Wait until your PLUS device is displayed in the PRO Connect device list.



STEP 7: Update Switch Back PLUS

Use the Updates tab to perform an update of any Switch Back PLUS devices on your network.

- Your PLUS firmware will automatically be checked against the latest version in the cloud.
- Plan at least 15 minutes to complete this update.
- **Follow all in-app instructions.**

Troubleshooting

Here are some notes that can help with troubleshooting your network.

1. Make sure you follow all of Audinate's [Network Requirements](#)
2. Your **Device Interface** in PRO Connect must match the device interface you have selected in Dante controller.
3. The PRO Connect Application uses the following network ports to communicate with Switch Back PLUS devices. Ensure your IT infrastructure allows access to these ports:

WARNING

These protocols and ports **MUST BE** enabled when you install the PRO Connect Application. The App should request certain permissions during the install process or on its first boot. You must allow these network permissions.

- To manage network permissions for an app on a Mac, go to System Settings > Privacy & Security > Local Network to toggle access for specific apps

Protocol	Port	Information
MDNS	UDP port 5353	Network discovery on multicast address 224.0.0.251
OSC	TCP port 3032	Control and status between PRO Connect and the PLUS device
HTTP	TCP port 80	Firmware updates utilize <code>ws://{device IP}/ws</code> and <code>http://{device IP}/upload</code>

System Accessories

PRO Distro

- A rugged PoE+ gigabit network switch for Dante, Waves SoundGrid, or any other Ethernet application.
- Works with our Hear Back PRO, Switch Back M8RX, and Switch Back PLUS.
- When used with the Hear Back PRO system, allows a single CAT6 cable to be run from a Hear Back PRO Hub to the stage/studio where the PRO Mixers are located (unlimited daisy-chaining possible with multiple Distros).
- Provides (8) RJ45 gigabit Ethernet ports with PoE+ power for powering up to 8 PoE+ devices. A ninth port is included to link multiple Distros together, connecting to another network switch, or when using with the Hear Back PRO system, it can connect to the HBUS out on a Hear Back PRO Hub.
- Durable anodized housing available in black or silver finish.
- Not compatible with original Hear Back or OCTO Mixers.



Gigabit PoE Power Injector

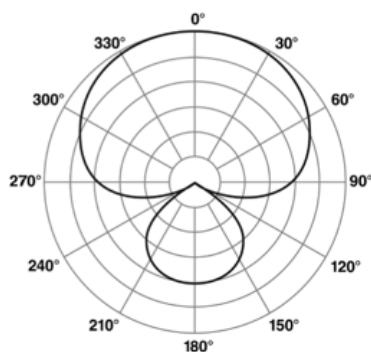
- Works with the Switch Back PLUS, Switch Back M8RX, and Hear Back PRO mixers.
- The Gigabit POE Power Injector provides 18 watts of 48 volt PoE+ power @ 375mA.
- The supply is universal, and can handle voltage inputs anywhere from 90 to 264 VAC, 50 or 60Hz.
- Includes (1) Universal Power Supply, (1) Power Cord, and (1) RJ45 Breakout Cable (standard T-568-B pinout).



AM12 Ambient Microphone

12 inch condenser gooseneck mic with super cardioid pattern for use with Hear Back PRO Mixer as an ambient or intercom microphone.

The AM12 features 15 volt phantom power, 30Hz – 16kHz frequency response, and -40dB sensitivity.



Mixer Tilt Adapter

The Mixer Tilt Adapter is for all Hear Back Mixers adding a ball joint with 5/8" 27 male threading to any standard mic stand to get the perfect angle with 360° rotation and 180° tilt.



Microphone Stand Adapter

Mount the Hear Back Mixer to the side of any mic stand or standard music stand using the MSA Mic Stand Adapter.

This clamp-on adjustable width bracket attaches to the built-in 5/8" threaded socket located on the back of the Mixer.



Tote Back

This soft-side nylon carrying case is perfect for carrying (8) Hear Back Mixers or Switch Back M8RXes. It can also carry (4) Mixers and (1) Hub. Adjustable dividers allow you the freedom to customize the compartments.



Legal

Limited Warranty

Hear Technologies warrants the equipment against defects in materials and labor for a period of one year from the original date of purchase. The duration of this warranty is limited to claims made to Hear Technologies within the periods stated with respect to parts and labor from the date of purchase. During the warranty period, defective equipment will be replaced or repaired to the general condition as received, at the discretion of Hear Technologies.

All transportation is the responsibility of the purchaser or owner. Equipment should be shipped in the original shipping box.

This warranty applies only to defects in materials and workmanship and does not cover failure or damage due to shipping loss or damage, abuse, misuse, misapplication, incorrect or varying power line voltages, lack of proper maintenance, natural disasters, acts of God, or unauthorized modifications, repairs, or any alterations done without the expressed written consent by Hear Technologies. Hear Technologies shall not be liable for any loss of use of the equipment, or consequential damages, including damages to other parts of the installation in which the equipment is a part.

Hear Technologies does not make any warranty, express or implied, other than the warranty contained herein. No agent, representative, or employee has the authority to increase or alter the liability, obligations, and terms of this warranty or sale of the equipment.

** NOTE**

It is strongly recommended that any equipment returned to Hear Technologies be properly packaged and insured for its full value in case of loss, handling or shipping damage.

Hear Technologies shall not be responsible for damage or loss of equipment during shipment.

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