General Description

The ANIUSB-MATRIX Audio Network Interface provides connections for USB, Dante™ , and analog audio sources. Collaborate and connect with all audio devices on a single network, with support for wireless microphones, computers, mobile devices, video codecs, and loudspeaker systems. Connect with a single network cable to receive audio and power through Power over Ethernet (PoE). A browser-based web application controls audio and network settings from any computer connected to the same network.

Safety Information

IMPORTANT SAFETY INSTRUCTIONS

1. READ these instructions.
2. KEEP these instructions.
3. HEED all warnings.
4. FOLLOW all instructions.
5. DO NOT use this apparatus near water.
6. CLEAN ONLY with dry cloth.
7. DO NOT block any ventilation openings. Allow sufficient distances for adequate ventilation and install in accordance with the manufacturer's instructions.
8. DO NOT install near any heat sources such as open flames, radiators, heat registers, stoves, or other apparatus (including amplifiers) that produce heat. Do not place any open flame sources on the product.
9. DO NOT defeat the safety purpose of the polarized or grounding type plug. A polarized plug has two blades with one wider than the other. A grounding type plug has two blades and a third grounding prong. The wider blade or the third prong are provided for your safety. If the provided plug does not fit into your outlet, consult an electrician for replacement of the obsolete outlet.
10. PROTECT the power cord from being walked on or pinched, particularly at plugs, convenience receptacles, and the point where they exit from the apparatus.
11. ONLY USE attachments/accessories specified by the manufacturer.
12. USE only with a cart, stand, tripod, bracket, or table specified by the manufacturer, or sold with the apparatus. When a cart is used, use caution when moving the cart/apparatus combination to avoid injury from tip-over.

13. UNPLUG this apparatus during lightning storms or when unused for long periods of time.
14. REFER all servicing to qualified service personnel. Servicing is required when the apparatus has been damaged in any way, such as power supply cord or plug is damaged, 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. DO NOT expose the apparatus to dripping and splashing. DO NOT put objects filled with liquids, such as vases, on the apparatus.
16. The MAINS plug or an appliance coupler shall remain readily operable.
17. The airborne noise of the Apparatus does not exceed 70dB (A).
18. Apparatus with CLASS I construction shall be connected to a MAINS socket outlet with a protective earthing connection.
19. To reduce the risk of fire or electric shock, do not expose this apparatus to rain or moisture.
20. Do not attempt to modify this product. Doing so could result in personal injury and/or product failure.
21. Operate this product within its specified operating temperature range.

|	
⚡	This symbol indicates that dangerous voltage constituting a risk of electric shock is present within this unit.
⚠	This symbol indicates that there are important operating and maintenance instructions in the literature accompanying this unit.

Getting Started

This device features a browser-based web application, which controls audio and network properties. Upon completing this basic setup process, you will be able to:

• Access the web application to customize audio settings, signal routing, and network properties
• Use Dante™ Controller software to connect with other Dante devices and pass audio
• Access additional configuration information

## Step 1: Connect to a Network

1. Use an Ethernet cable (CAT5e or higher) to connect the ANIUSB-MATRIX to a network switch.

   Note: The network switch must provide Power over Ethernet (PoE). Make sure to connect to a PoE port, since many switches do not supply power on all ports.

2. Connect a computer to the network switch with an Ethernet cable
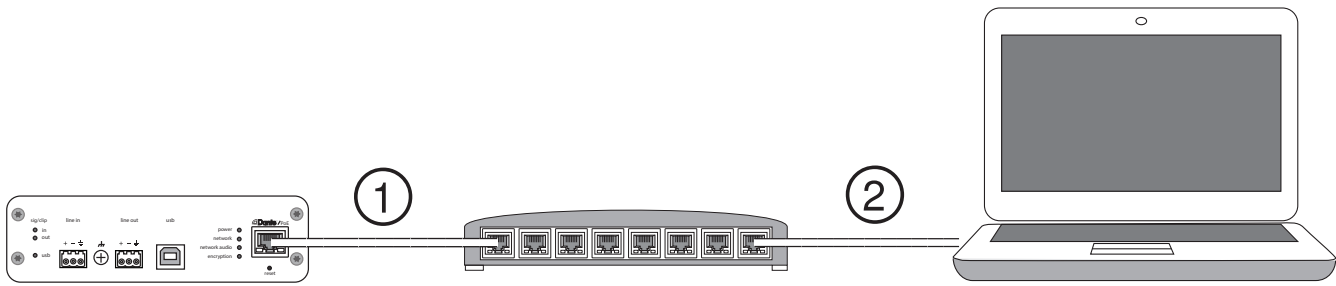
Step 2: Access the Web Application

1. Download and install the **Shure Device Discovery application** (http://www.shure.com)
2. Open the Shure Device Discovery application
3. Double-click the device to open the web application.

    Tip: If setting up multiple Shure devices, use the Identify button in the application to flash the lights on the device.
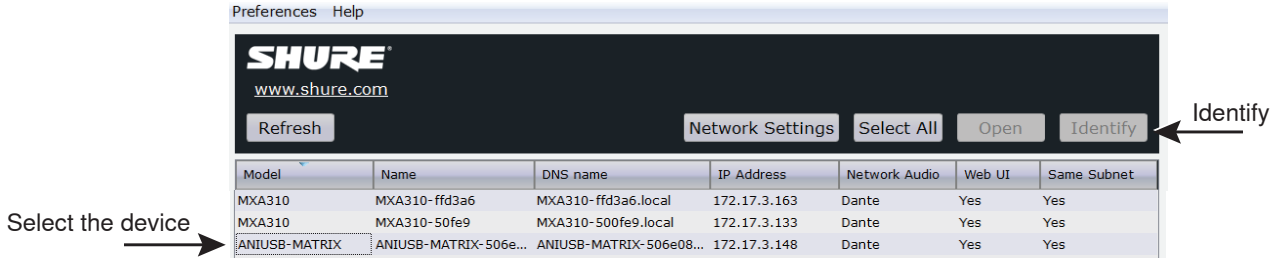

Step 3: Connect Devices in Dante Controller Software

1. Download and install Dante Controller Software from http://www.audinate.com
2. Use Dante Controller to create connections with other Dante devices

Note: Refer to the Dante Controller user guide for more information on channel routing (available at http://www.audinate.com/resources/technical-documentation)

Example: Connecting the ANIUSB-MATRIX and Shure MXA310
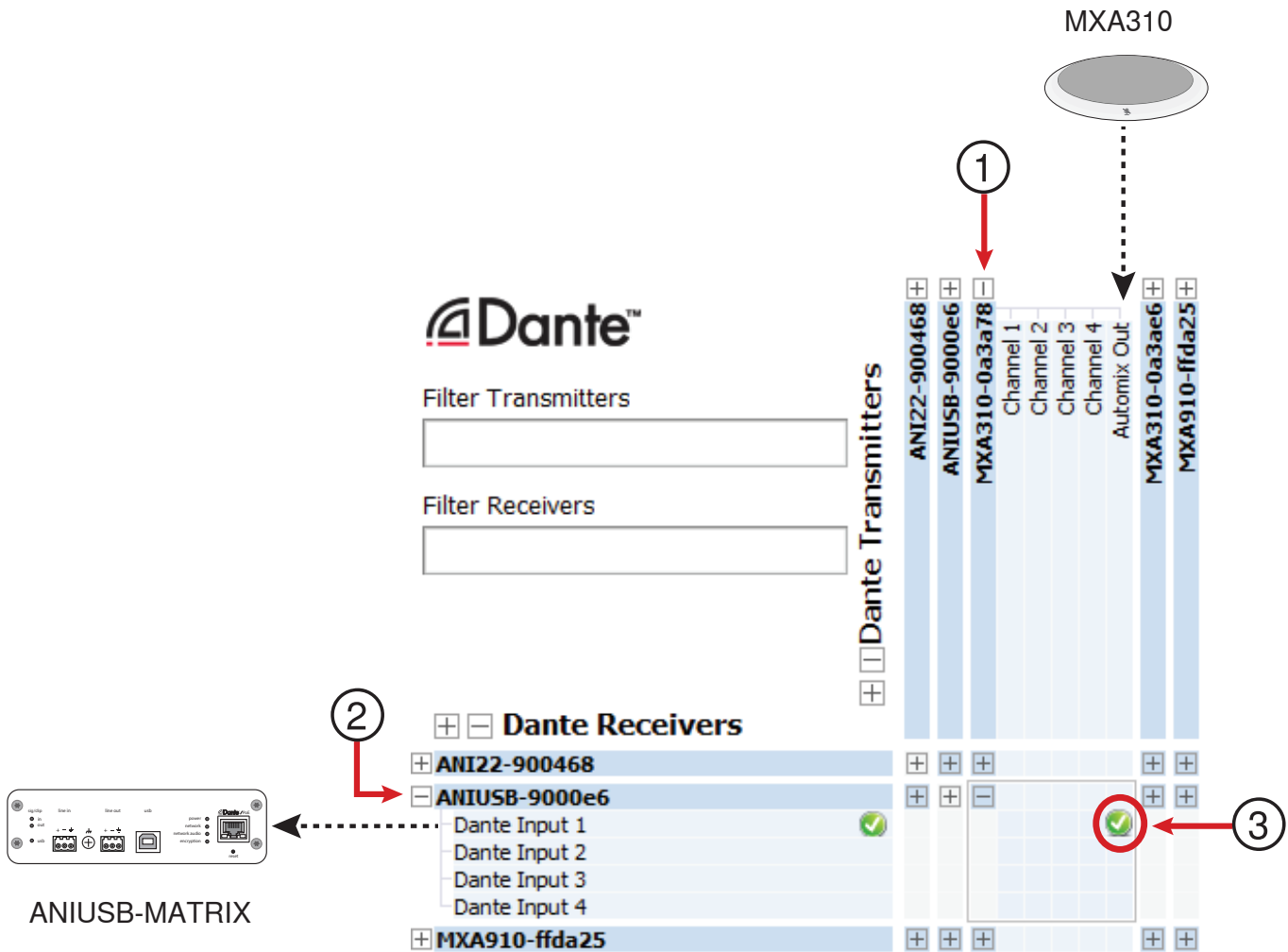
1. Find the MXA310 in the list of Dante transmitters, and select the plus sign (+) to show all channels.
2. Find the ANIUSB-MATRIX in the list of Dante receivers, and select the plus sign (+) to show all channels.
3. Check the box where the MXA310 **AUTOMIX OUT** and the ANIUSB-MATRIX **DANTE INPUT 1** intersect

Step 4: Configure Audio

The final configuration steps will vary, depending on the devices used with the ANIUSB-MATRIX. These steps may include:

- Connecting analog and USB audio devices
- Using the matrix mixer to customize signal routing
- Adjusting input and output levels
- Viewing the entire signal path and modifying settings in schematic view
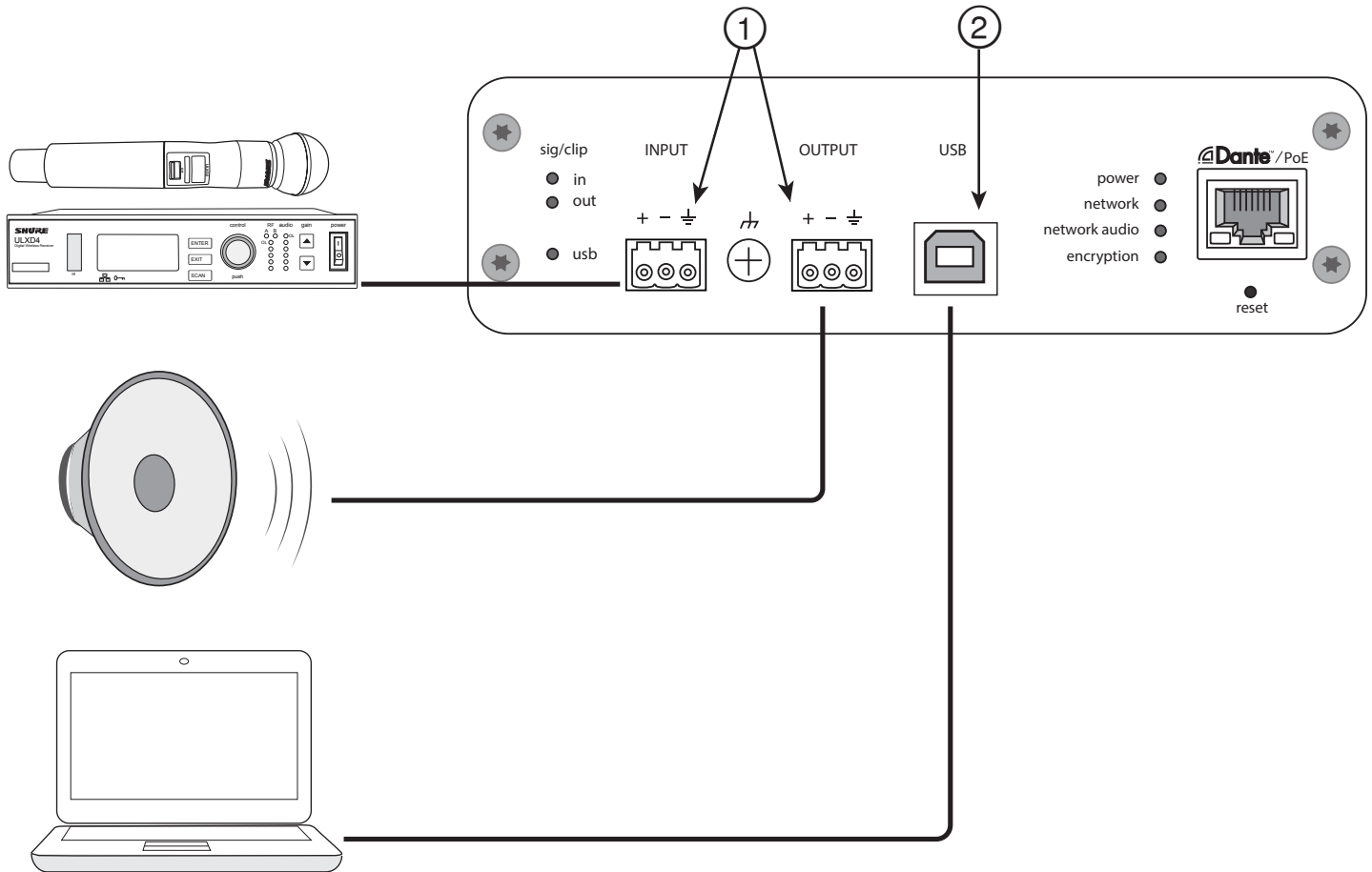- Applying equalization to maximize speech clarity

For these steps, comprehensive information is available in the help section of the web application.

Access the help section

Example: Connecting Loudspeakers, Wireless Microphones, and a Computer

1. Connect analog equipment (such as loudspeakers or wireless microphone systems) to the analog input and output. Refer to the hardware section in this guide for information on connections and LED metering.
2. Connect a computer to the USB port
3. In the ANIUSB-MATRIX web application, open the matrix mixer to make connections between devices.
   Note: Some connections are established in the matrix mixer by default. Refer to the matrix mixer help topic in the web application for additional information.
4. In the ANIUSB-MATRIX web application, adjust input and output levels and perform a sound check. Refer to the help topics in the web application for additional information.

Get More Information

Now that the basic setup is complete, you should have access to the web application and be able to pass audio between devices. More comprehensive information is available online and in the help section, including:

- Maximizing audio quality with the built-in parametric equalizer
- External control system command strings
- Signal routing
- System scenario diagrams
- Software configuration
- Networking information
- Troubleshooting
- Replacement parts and accessories

The complete user guide is available at http://pubs.shure.com/guide/ANIUSB-MATRIX

Hardware and Installation

Rear Panel
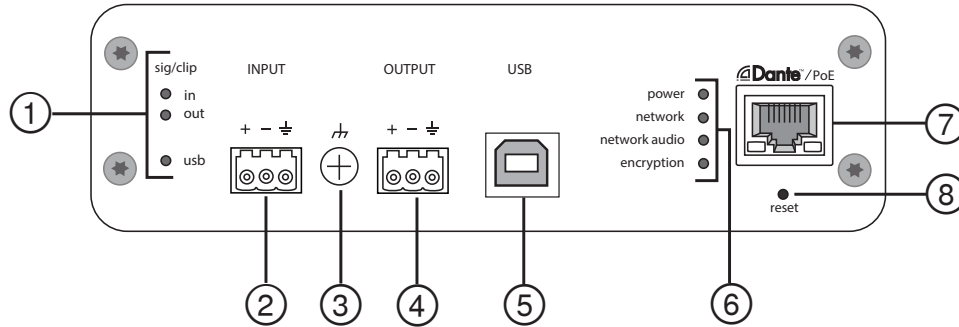
① Level Indicators (Signal/Clip)

Tri-color LEDs indicate the audio signal level for the analog channels and connectivity status for the USB channel. Adjust output levels in the web application to avoid clipping.

LED State	Audio Signal Level
Off	less than -60 dBFS
Green	-60 dBFS to -18 dBFS
Yellow	-18 dBFS to -6 dBFS
Red	-6 dBFS or more

Note: The input and output LEDs stay off when metering is set to Post Fader and the channel is muted in the web application.

LED State	Status
Off	No USB device connected
Green	USB device operating successfully
Red (flashing)	Problem detected with connected USB audio device

② Audio Input (Block Connector)
Block Pin Assignments:

+	Audio +
−	Audio -
⏚	Audio ground

③ Chassis Ground Screw
Provides an optional connection for microphone shield wire to chassis ground.

④ Audio Output (Block Connector)
Balanced audio output connects to an analog device. Set the output level in the web application to match the input sensitivity of the analog device.

Note: See front panel labels for block connector assignments.

⑤ USB Port
Connects to a computer to send and receive any combination of input and output audio channels.

⑥ LED Indicators
Power: Power over Ethernet (PoE) present
Note: Note: Use a PoE injector if your network switch does not supply PoE.

Network: Network connection active

Network Audio: Dante™ audio present on the network
Note: Error details are available in the event log in the web application.

LED Status	Activity
Off	No active signal
Green	Device is operating successfully
Red	Error has occurred. See event log for details.

Encryption:

LED Status	Activity
Off	Audio not encrypted
Green	Successful encrypted audio connection with another device
Red	Encryption error. Possible causes: Encryption is enabled on one device and not on another Passphrase mismatch

⑦ **Dante Network Port**
Connects to a network switch to receive Dante™ audio, Power over Ethernet (PoE), and data from the control software.

⑧ **Reset Button**
Resets the device settings back to the factory default

Power Over Ethernet (PoE)

Power Over Ethernet
This device requires PoE to operate. It is compatible with both **Class 0** and **Class 3** PoE sources.

Power over Ethernet is delivered in one of the following ways:

- A network switch that provides PoE
- A PoE injector device

Reset

The reset button is located inside a small hole in the rear panel. Use a paperclip or other small tool to press the button.

There are two hardware reset functions:

Network reset (press button for 4-8 seconds)
Resets all Shure control and audio network IP settings to factory defaults

Full factory reset (press button for longer than 8 seconds)
Restores all network and web application settings to the factory defaults.

Software Reset Options

To simply revert settings without a complete hardware reset, use one of the following options:

Reboot Device: In the web application (settings > factory reset), there is a Reboot Device button, which simply power-cycles the device as if it were unplugged from the network. All settings are retained when the device is rebooted.

Default Settings: To revert audio settings back to the factory configuration (excluding Device Name, IP Settings, and Passwords), select Load Preset and choose the default settings preset.

Installation and Rack Mounting

Two mounting solutions are available for installing the Audio Network Interface:

CRT1 19" Rack Tray (optional accessory): Supports up to 3 devices; mountable in a rack or under a table

Single-unit Mounting Tray (included accessory): Supports a single device for mounting under a table

Securing the Devices

Use the included screws from the mounting hardware kit to secure the Audio Network Interfaces. Audio Network Interfaces can be mounted to face either direction. Insert the screws from the bottom in the appropriate holes, according to the following diagrams:
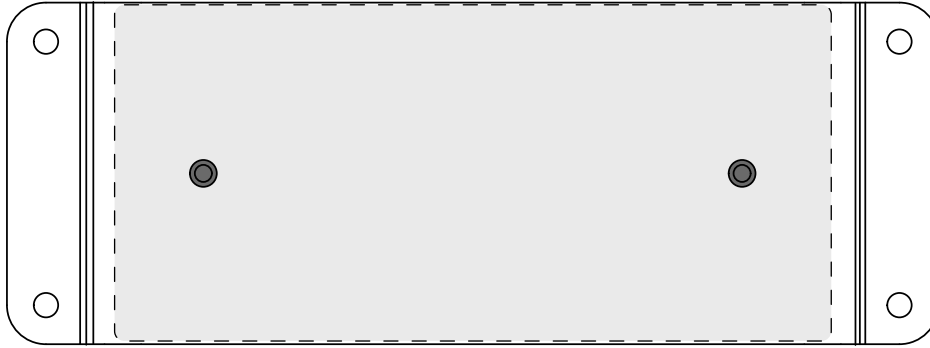
Align the holes as shown for securing a single device in the single-unit mounting tray
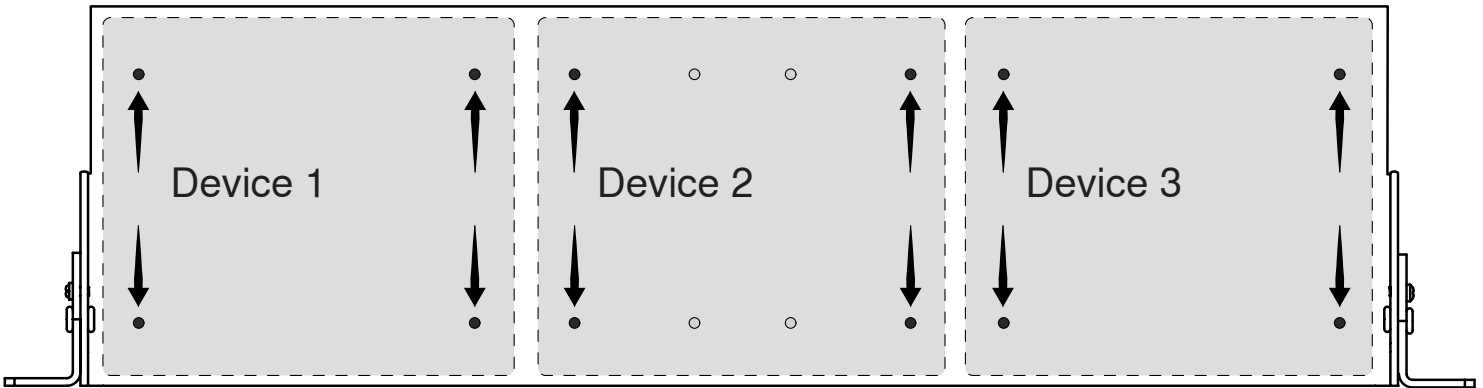
Align the holes as shown for securing up to three devices in the 19" rack tray.

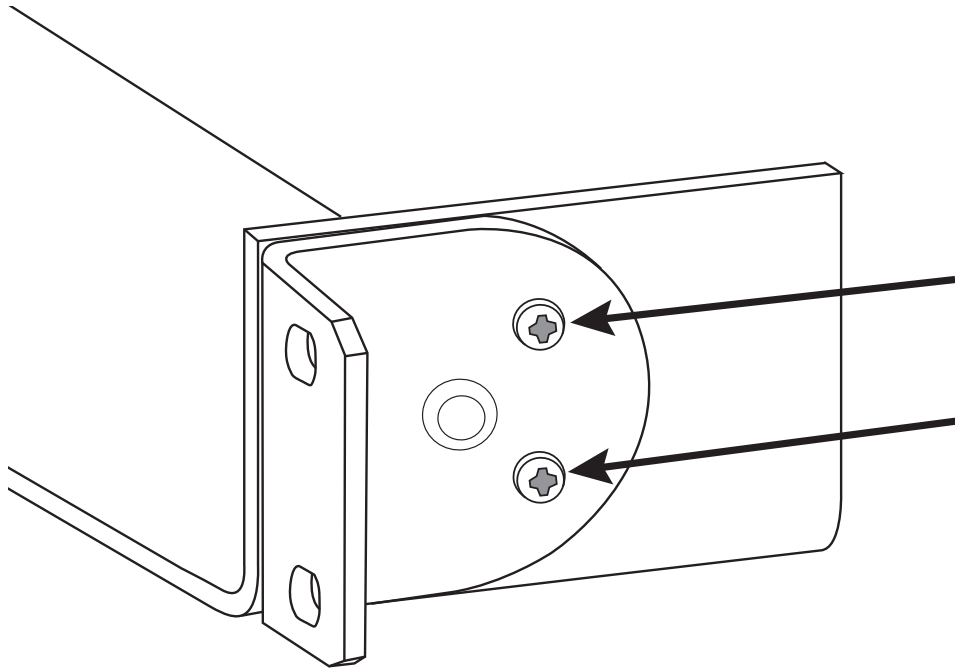### Rack Ear Configuration

A combination of up to 3 Audio Network Interfaces can be mounted in a single 19-inch rack space. The adjustable rack ears support mounting in a standard equipment rack or underneath a table.

Standard 19" Rack Mount

1. Align the ears with the mounting holes pointed forward.
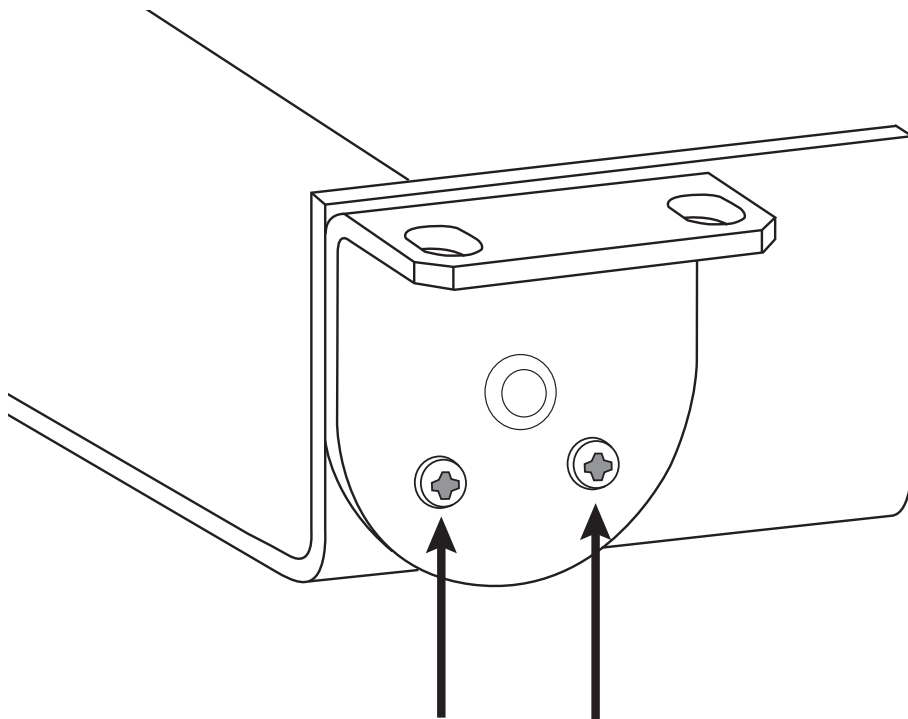2. Install the two screws that hold the ear to the tray as shown.

Under-table Mounting

1. Align the ears with the mounting holes pointed upward.
2. Install the two screws that hold the ear to the tray as shown.

Installing Underneath a Table

1. Hold the tray in the desired location under a table
2. Use a pencil to mark the location of the mounting holes on the table.

3. Drill 4 holes for the screws. The diameter of the holes in the tray are 7.1 mm.

4. Install the components into the tray

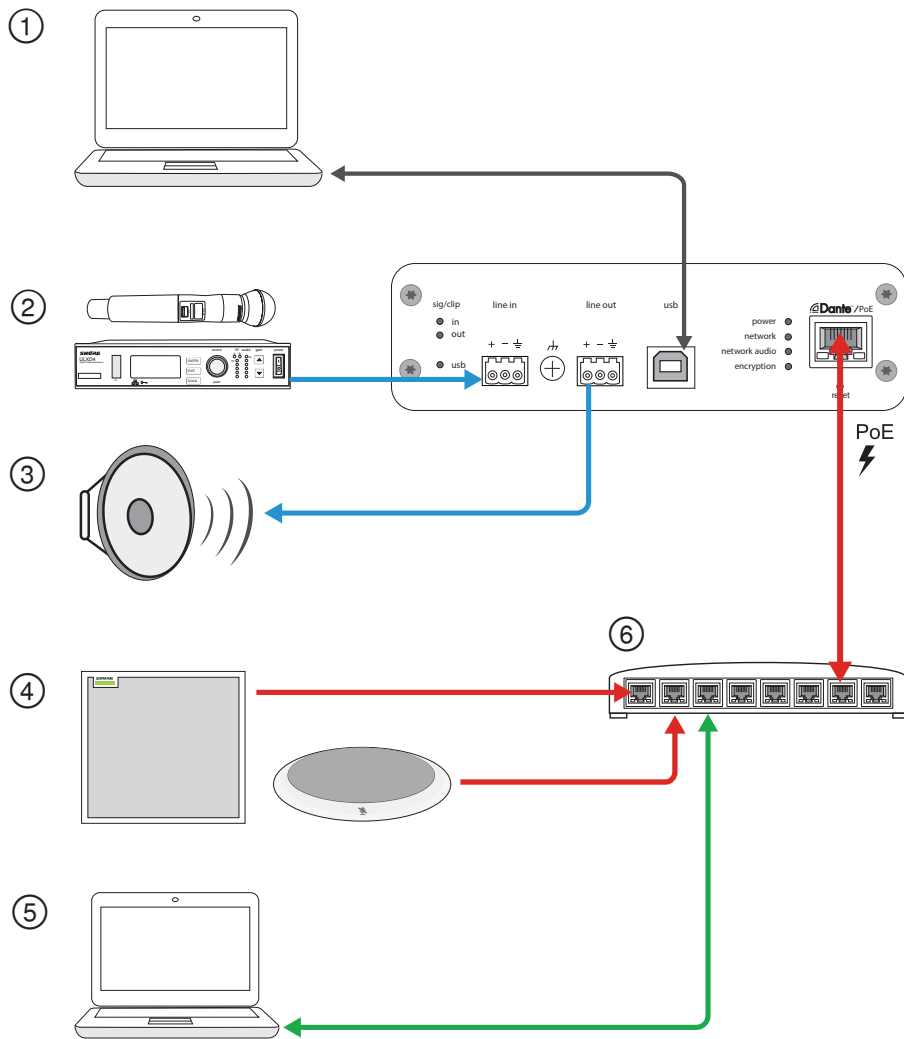5. Install with 4 screws to secure the tray underneath the table

Device Identification

Device Identify
To identify the hardware by flashing the lights, select the Identify button in
the device options section.

Signal Flow and Connections

Connections and Signal Flow

① **Computer**
Compatible with Mac and PC

The host computer sends and receives audio through conferencing software. All signals are passed through a single USB connection, with input sources and output devices (dante and analog) routed through Dante Controller.

② **Analog Input Sources**
Analog sources (such as wireless microphones or any line-level devices) connect to the analog line input.

③ **Analog Output Devices**
Loudspeakers, amplifiers, or recording devices connect to the analog line output.

④ **Dante-enabled Equipment**
Dante microphones, such as the Shure Microflex Advance ceiling and table arrays connect to the network switch and can be routed through the USB channel on the ANIUSB.

⑤ **Control CPU**
A computer connected to the network accesses the web application to control the channel levels and processing.

⑥ **Network Switch**
The network switch provides Power over Ethernet (PoE) to the ANIUSB, while also supporting all other Dante-enabled audio equipment.

Connecting a USB Device

The USB port connects the host computer to the entire room audio system, including microphones and loudspeakers.

When the ANIUSB-MATRIX is connected for the first time, the computer recognizes it as a USB audio device. You may need to select it as the input/output (recording/playback) device to pass audio. Assign the ANIUSB-MATRIX as the default device to ensure it passes audio every time it is plugged in. Refer to the manual for your computer to configure the audio settings.

Adapter Compatibility

This device is compatible with USB-B to USB-C adapters. Using an adapter is only recommended for desktop and laptop computers, as many mobile devices do not support bi-directional audio through USB or lightning ports.

Routing Audio Channels Through the USB Port

Audio channel routing is managed through Dante™ Controller software and the matrix mixer in the ANIUSB-MATRIX web application.

Step one: Dante Controller

1. Open Dante Controller and route Dante-enabled devices (such as Microflex® Advance™ and Microflex® Wireless microphones) to the ANIUSB-MATRIX Dante receive channels. Name the channels in the ANIUSB-MATRIX web application to keep track of devices.

2. If the ANIUSB-MATRIX needs to send channels to Dante-enabled devices (such as an amplifier, loudspeaker, or recording device on the network), route the ANIUSB-MATRIX Dante transmit channels to the appropriate receiving devices in Dante Controller.

Step two: matrix mixer

1. Open the matrix mixer section in the ANIUSB-MATRIX web application to route Dante and analog channels through the USB port.

2. Assign the USB Input channel (far-end audio) to the appropriate outputs. If recording a meeting, be sure to route the near end microphones in addition to the USB input to the recording device.

Note: Refer to the matrix mixer topic for additional information and signal routing examples.

Encryption

Audio is encrypted with the Advanced Encryption Standard (AES -256), as specified by the US Government National Institute of Standards and Technology (NIST) publication FIPS-197. Shure devices that support encryption require a passphrase to make a connection. Encryption is not supported with third-party devices.

To activate encryption:

1. Open the Settings menu and select the General tab.

2. Select the Enable Encryption checkbox.

3. Enter a passphrase. All devices must use the same passphrase to establish an encrypted connection.

Important: For encryption to work:

• Encryption must be universally enabled or disabled on all connected Shure devices

• AES67 must be disabled in Dante Controller to turn encryption on or off. AES67 encryption is currently not supported.

Audio Settings

Schematic View

The schematic view in the web application provides an overview of the entire signal chain, with the ability to adjust settings and monitor signals.

Adjusting Settings

Right-click an input, output, or processing block to access the following options:

Per Channel
Copy / paste

Copy and paste settings between items. For example, set the equalizer curve on the USB output, and then use the same setting for the analog output. Or, copy the gain and mute status from one input channel to several others.

Mute / **unmute**
Mutes or activates the channel

Enable / **disable**
Turns processing on or off (applies to equalizer and limiter only)

Edit
Opens the dialog to adjust parameters

Global (right-click in blank area)
Mute all inputs
Mutes all input channels

Mute all outputs
Mutes all output channels

Close all dialogs
Clears all open dialogs from the workspace

Customizing the Workspace

Create a custom environment to monitor and control a set of inputs, outputs, and processing blocks from a single screen. There are two ways to break out dialogs:

- Right click > edit
- Double-click the input, output, or processing block.

Open as many dialogs as you need to keep important controls available.

Metering and Signal Flow

A meter appears underneath each input and output to indicate signal levels (dBFS).

The lines connecting inputs and outputs to the matrix mixer appear colored when connections are established. When a signal is not routed, the line appears gray. Use these tools to troubleshoot audio signals and verify connections and levels.

Matrix Mixer

The matrix mixer routes audio signals between inputs and outputs, for simple and flexible routing:

- Send a single input channel to multiple outputs
- Send multiple input channels to a single output

Routing Channels

Connect inputs and outputs by selecting the box where they intersect.

Important: Dante devices must be routed in Dante Controller software to pass audio to or from a Dante device.

Default Setting

- All Dante input channels and analog Input channel > USB output
- USB input channel and analog input channel > analog output

Crosspoint Gain

Crosspoint gain adjusts the gain between a specific input and output, to create separate submixes without changing input or output fader settings. Select the dB value at any crosspoint to open the gain adjustment panel.
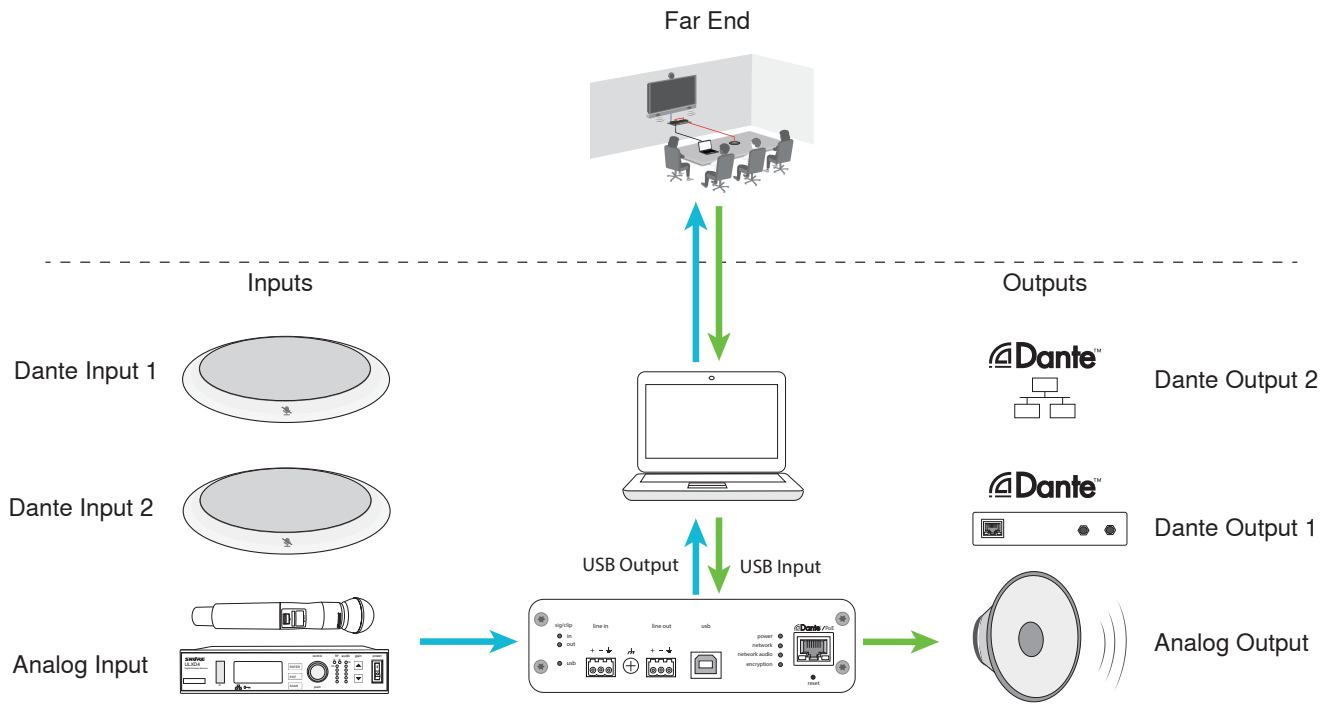
Gain staging: input fader > crosspoint gain > output fader

Example Scenario

Hosting a meeting with a computer:
Near-end audio from Dante microphones (Shure MXA 310) and an analog source (Shure wireless microphone system) are both routed to the USB input and sent to the far end.
Far-end audio from the computer (USB input in the matrix mixer) can be sent to analog or Dante-enabled amplifiers and loudspeakers.
Record meeting audio from all locations by routing all sources to a recording device or computer on the network.

Far End

Inputs   Outputs

Dante Input 1

Dante Input 2

Analog Input

USB Output   USB Input

Dante Output 2

Dante Output 1

Analog Output

	Dante output 1	Dante output 2	USB output	Analog output 1
Dante input 1	☐ 10	☐ 10	☑ 10	☐ 10
Dante input 2	☐ 0	☐ 0	☑ 0	☐ 0
Dante input 3	☐ 0	☐ 0	☐ 0	☐ 0
Dante input 4	☐ 20	☐ 20	☐ 20	☐ 20
USB input	☑ 0	☑ 0		☑ 0
Analog input 1	☐ 0	☐ 0	☑ 0	☐ 0

Mute and Fader Groups

Mute Groups
Check the Mute group box to add the channel to a group. Muting any channel within the Mute group mutes all channels in the group.

Fader Groups
Check the Fader group box to add the channel to a group. All faders within the group are linked, and move together when a single fader is adjusted.

Adjusting Input levels

Input Levels
Levels for analog and Dante™ channels are adjustable in the Input tab.

To monitor input levels before they reach the ANIUSB-MATRIX, set the metering to pre-fader in the settings menu. When adjusting the faders, set metering to post-fader.

Dante™ Sources

1. **Check the source level before it reaches the Network Interface:**
   - Verify that the networked microphones or other Dante™ sources are operating at nominal output levels.
   - Levels for Microflex Advance™ microphones are adjustable through their web application.
2. **Adjust the digital gain in the Network Interface web application:**
   - Use the faders or manually enter a gain value.
   - The digital gain adjusts the level of the signal before it reaches the matrix mixer.
   - Mix the levels as high as possible without the loudest channel reaching the peak level (0 dB) on the meter.

Note: The matrix mixer provides crosspoint gain, to adjust separate submixes for different outputs.

Analog Sources

Before you begin, verify that levels from the analog devices with adjustable output levels are operating at nominal levels. The fader adjusts the digital gain before the signal reaches the matrix mixer.

1. Match the analog input level setting according to the incoming signal level:
   Line (+4 dBu)
   Aux (-10 dBV)
2. Use the fader (digital gain) to adjust the mix going to the USB or Dante output channels.

Adjusting Output Levels

Output Levels
Tip: Set the metering to post-fader in the settings menu to adjust output levels.

Adjust faders in the Outputs section as high as necessary, but make sure to avoid clipping (when the signal reaches 0 dBFS). Always adjust the input gain and crosspoint gain in the matrix mixer before the output gain.

Analog output level: Select Line, Aux, or Mic level output signal to match the sensitivity of the receiving device.

Parametric Equalizer

Maximize audio quality by adjusting the frequency response with the parametric equalizer.

Common equalizer applications:

- Improve speech intelligibility
- Reduce noise from HVAC systems or video projectors
- Reduce room irregularities
- Adjust frequency response for reinforcement systems

Setting Filter Parameters

Adjust filter settings by manipulating the icons in the frequency response graph, or by entering numeric values. Disable a filter using the check-box next to the filter.

Filter Type
Only the first and last band have selectable filter types.
Parametric: Attenuates or boosts the signal within a customizable frequency range
Low Cut: Rolls off the audio signal below the selected frequency
Low Shelf: Attenuates or boosts the audio signal below the selected frequency
High Cut: Rolls off the audio signal above the selected frequency
High Shelf: Attenuates or boosts the audio signal above the selected frequency

Frequency
Select the center frequency of the filter to cut/boost

Gain
Adjusts the level for a specific filter (+/- 30 dB)

Q
Adjusts the range of frequencies affected by the filter. As this value increases, the bandwidth becomes thinner.

Width
Adjusts the range of frequencies affected by the filter. The value is represented in octaves.
Note: the Q and width parameters affect the equalization curve in the same way. The only difference is the way the values are represented.
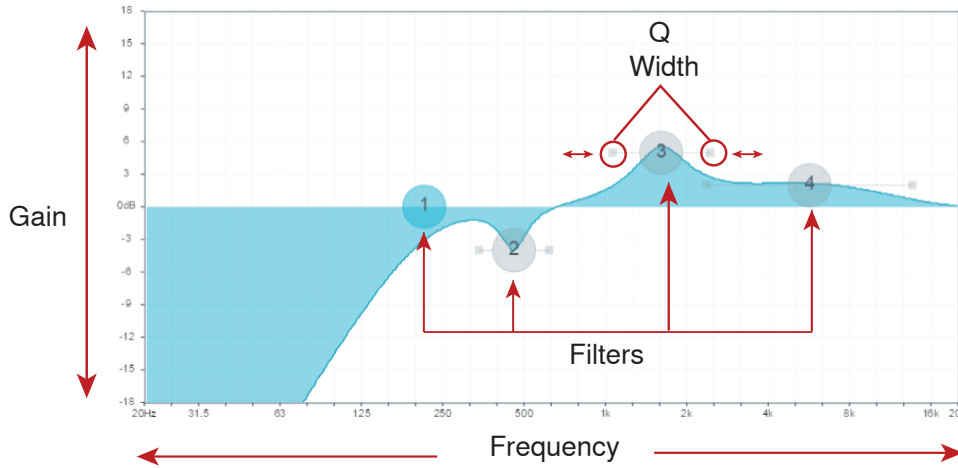
1	Filters	Frequency (Hz)	Gain (dB)	Q	Width (oct)
Channel 1					
☑ Filter 1 ⤾ Low Cut ▼		− 217 +	N/A	N/A	N/A
☑ Filter 2 ⌃ Parametric		− 466 +	− -4 +	4.32 ▼	1 ▼
☑ Filter 3 ⌃ Parametric		− 1634 +	− 5 +	2.14 ▼	1 ▼
☑ Filter 4 ⌃ Parametric ▼		− 5786 +	− 2 +	0.67 ▼	1 ▼

Copy, Paste, Import, and Export Equalizer Channel Settings

These features make it simple to use effective equalizer settings from a previous installation, or simply accelerate configuration time.

Copy and Paste

Use to quickly apply the same PEQ setting across multiple channels.
1. Select the channel from the pull-down menu in the PEQ screen.
2. Select Copy
3. In the pull-down menu, select the channel to apply the PEQ setting and select Paste.

Import and Export

Use to save and load PEQ settings from a file on a computer. This is useful for creating a library of reusable configuration files on computers used for system installation.

Export
Choose a channel to save the PEQ setting, and select Export to file.

Import
Choose a channel to load the PEQ setting, and select Import from file.

Equalizer Applications

Conferencing room acoustics vary based on room size, shape, and construction materials. Use the guidelines in following table.

EQ Application	Suggested Settings
Treble boost for improved speech intelligibility	Add a high shelf filter to boost frequencies greater than 1 kHz by 3-6 dB
HVAC noise reduction	Add a low cut filter to attenuate frequencies below 200 Hz
Reduce flutter echoes and sibilance	Identify the specific frequency range that "excites" the room: Set a narrow Q value Increase the gain to between +10 and +15 dB, and then experiment with frequencies between 1 kHz and 6 kHz to pinpoint the range of flutter echoes or sibilance Reduce the gain at the identified frequency (start between -3 and -6 dB) to minimize the unwanted room sound
Reduce hollow, resonant room sound	Identify the specific frequency range that "excites" the room: Set a narrow Q value Increase the gain to between +10 and +15 dB, and then experiment with frequencies between 300 Hz and 900 Hz to pinpoint the resonant frequency Reduce the gain at the identified frequency (start between -3 and -6 dB) to minimize the unwanted room sound

Custom Presets

Use presets to quickly save and recall settings. Up to 10 presets can be stored on each device to match various seating arrangements. A preset saves all device settings except for the Device Name, IP Settings, and Passwords. Importing and exporting presets into new installations saves time and improves workflow. When a preset is selected, the name displays above the preset menu. If changes are made, an asterisk appears next to the name.

Note: Use the default settings preset to revert to the factory configuration (excludes Device Name, IP Settings, and Passwords).

Open the presets menu to reveal preset options:

save as preset:
Saves settings to the device

load preset:
Opens a configuration from the device

import from file:
Downloads a preset file from a computer onto the device. Files may be selected through the browser or dragged into the import window.

export to file:
Saves a preset file from the device onto a computer

Using A Password

All settings are configurable by default. To protect settings with a password, open the Settings menu and select the General tab. In this screen, passwords can be created or changed.

Once a password has been set, a Read-Only option appears on the log-in screen. In Read-Only mode, device parameters can be viewed, but not edited. Device identification remains active.

Networking and Dante

Dante™ Transmit Flows

Dante Flows
This device supports up to **two transmit flows** and **two receive flows**. A single flow consists of up to **four channels**, through either a unicast or multicast transmission.

- A **unicast flow** is a point-to-point connection between two devices, supporting up to four channels per flow.
- A **multicast flow** is a one-to-many transmission, which supports sending up to four channels to multiple receiving devices across the network.

Shure Device Applications

This device can connect with up to two Dante devices.

The Shure MXA310, ANI22, ANIUSB-MATRIX and ANI4IN support multicast transmission. This means that flows can transmit to multiple devices -- as many as the network can support. If using unicast flows, each of these devices can connect with up to two Dante receiver devices.

The Shure ANI4OUT connects with up to two Dante transmitter devices.

Pushing Device Names to the Dante Network

To send a device name to appear in Dante Controller, go to Settings>General and enter a Device Name. Select Push to Dante to send the name to appear on the network.

Note: names appear in Dante Controller with "-d" attached.

ANIUSB Command Strings

The device is connected via Ethernet to a control system, such as AMX, Crestron or Extron.

Connection: Ethernet (TCP/IP; select "Client" in the AMX/Crestron program)
Port: 2202

Conventions

The device has 4 types of strings:

GET
Finds the status of a parameter. After the AMX/Crestron sends a GET command, the ANIUSB responds with a REPORT string

SET
Changes the status of a parameter. After the AMX/Crestron sends a SET command, the ANIUSB will respond with a REPORT string to indicate the new value of the parameter.

REP
When the ANIUSB receives a GET or SET command, it will reply with a REPORT command to indicate the status of the parameter. REPORT is also sent by the ANIUSB when a parameter is changed on the ANIUSB or through the GUI.

SAMPLE
Used for metering audio levels.

All messages sent and received are ASCII. Note that the level indicators and gain indicators are also in ASCII

Most parameters will send a REPORT command when they change. Thus, it is not necessary to constantly query parameters. The ANIUSB will send a REPORT command when any of these parameters change.

The character "x" in all of the following strings represents the channel of the ANIUSB and can be ASCII numbers 0 through 4 as in the following table

00	All channels
01-04	Dante Inputs
05	Analog Input
06	USB Input
07-08	Dante Outputs
09	Analog Output
10	USB Output

Command Strings (Common)

Get All	
Command String: < GET xx ALL >	Where xx is ASCII channel number: 00 through 10. Use this command on first power on to update the status of all parameters.
ANIUSB Response: < REP ... >	The ANIUSB responds with individual Report strings for all parameters.
Get Model Number	
Command String: < GET MODEL >	
ANIUSB Response: < REP MODEL {yyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyy} >	Where yyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyy is 32 characters of the model number. The ANIUSB always responds with a 32 character model number.
Get Serial Number	

Command String: `< GET SERIAL_NUM >`	
ANIUSB Response: `< REP SERIAL_NUM {yyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyy} >`	Where yyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyy is 32 characters of the serial number. The ANIUSB always responds with a 32 character serial number.
Get Channel Name	
Command String: `< GET xx CHAN_NAME >`	Where xx is ASCII channel number: 00 through 10.
ANIUSB Response: `< REP xx CHAN_NAME {yyyyyyyyyyyyyyyyyyyyyyyyyyyyyyy} >`	Where yyyyyyyyyyyyyyyyyyyyyyyyyyyyyyy is 31 characters of the channel name. The ANIUSB always responds with a 31 character name.
Get Device ID	
Command String: `< GET DEVICE_ID >`	The Device ID command does not contain the x channel character, as it is for the entire ANIUSB.
ANIUSB Response: `< REP DEVICE_ID {yyyyyyyyyyyyyyyyyyyyyyyyyyyyyyy} >`	Where yyyyyyyyyyyyyyyyyyyyyyyyyyyyyyy is 31 characters of the device ID. The ANIUSB always responds with a 31 character device ID.
Get Firmware Version	
Command String: `< GET FW_VER >`	
ANIUSB Response: `< REP FW_VER {yyyyyyyyyyyyyyyyyy} >`	Where yyyyyyyyyyyyyyyyyy is 18 characters. The ANIUSB always responds with 18 characters.
Get Preset	
Command String: `< GET PRESET >`	
ANIUSB Response: `< REP PRESET nn >`	Where nn is the preset number 01-10. 0 = no preset active.
Set Preset	
Command String: `< SET PRESET nn >`	Where nn is the preset number 1-10. (Leading zero is optional when using the SET command).

ANIUSB Response:
`< REP PRESET nn >`
`< REP ERR >`
	Where nn is the preset number 01-10.
	When user attempts to load an empty preset.

Get Preset Name	

Command String:
`< GET PRESET1 >`
`< GET PRESET2 >`
`< GET PRESET3 >`
etc
	Send one of these commands to the ANIUSB

ANIUSB Response:
`< REP PRESET1 {yyyyyyyyyyyyyyyyyyyyyyyyy} >`
`< REP PRESET2 {yyyyyyyyyyyyyyyyyyyyyyyyy} >`
`< REP PRESET3 {yyyyyyyyyyyyyyyyyyyyyyyyy} >`
etc
	Whereyyyyyyyyyyyyyyyyyyyyyyyyy is 25 characters of the device ID. The ANIUSB always responds with a 25 character device ID

Get Audio Gain	
Command String: `< GET xx AUDIO_GAIN_HI_RES >`	Where xx is ASCII channel number: 00 through 10.
ANIUSB Response: `< REP xx AUDIO_GAIN_HI_RES yyyy >`	Where yyyy takes on the ASCII values of 0000 to 1400. yyyy is in steps of one-tenth of a dB.

Set Audio Gain	
Command String: < SET xx AUDIO_GAIN_HI_RES yyyy >	Where yyyy takes on the ASCII values of 0000 to 1400. yyyy is in steps of one-tenth of a dB.
ANIUSB Response: < REP xx AUDIO_GAIN_HI_RES yyyy >	Where yyyy takes on the ASCII values of 0000 to 1400.
Increase Audio Gain by n dB	
Command String: < SET xx AUDIO_GAIN_HI_RES INC nn >	Where nn is the amount in one-tenth of a dB to increase the gain. nn can be single digit (n), double digit (nn), triple digit (nnn).
ANIUSB Response: < REP xx AUDIO_GAIN_HI_RES yyyy >	Where yyyy takes on the ASCII values of 0000 to 1400.
Decrease Audio Gain by n dB	
Command String: < SET xx AUDIO_GAIN_HI_RES DEC nn >	Where nn is the amount in one-tenth of a dB to decrease the gain. nn can be single digit (n), double digit (nn), triple digit (nnn).
ANIUSB Response: < REP xx AUDIO_GAIN_HI_RES yyyy >	Where yyyy takes on the ASCII values of 0000 to 1400.
Get Analog Input Gain Switch	
Command String: < GET xx AUDIO_IN_LVL_SWITCH >	Where xx is ASCII channel number: 00 or 05.
ANIUSB Response: < REP xx AUDIO_IN_LVL_SWITCH LINE_LVL > < REP xx AUDIO_IN_LVL_SWITCH AUX_LVL >	The ANIUSB will respond with one of these strings.
Set Analog Input Gain Switch	
Command String: < SET xx AUDIO_IN_LVL_SWITCH LINE_LVL > < SET xx AUDIO_IN_LVL_SWITCH AUX_LVL >	Where xx is ASCII channel number: 00 or 05. Send one of these commands to the ANIUSB
ANIUSB Response: < REP xx AUDIO_IN_LVL_SWITCH LINE_LVL > < REP xx AUDIO_IN_LVL_SWITCH AUX_LVL >	The ANIUSB will respond with one of these strings.
Get Channel Audio Mute	
Command String: < GET xx AUDIO_MUTE >	Where xx is ASCII channel number: 00 through 10.
ANIUSB Response: < REP xx AUDIO_MUTE ON > < REP xx AUDIO_MUTE OFF >	The ANIUSB will respond with one of these strings.
Mute Channel Audio	
Command String: < SET xx AUDIO_MUTE ON >	Where xx is ASCII channel number: 00 through 10.
ANIUSB Response: < REP xx AUDIO_MUTE ON >	The ANIUSB will respond with one of these strings.
Unmute Channel Audio	
Command String: < SET xx AUDIO_MUTE OFF >	Where xx is ASCII channel number: 00 through 10.
ANIUSB Response: < REP xx AUDIO_MUTE OFF >	The ANIUSB will respond with one of these strings.
Toggle Channel Audio Mute	

Command String:	
< SET xx AUDIO_MUTE TOGGLE >	
ANIUSB Response:	The ANIUSB will respond with one of these strings.
< REP xx AUDIO_MUTE ON >	
< REP xx AUDIO_MUTE OFF >	
Get Device Audio Mute	
Command String:	
< GET DEVICE_AUDIO_MUTE >	
ANIUSB Response:	The ANIUSB will respond with one of these strings.
< REP DEVICE_AUDIO_MUTE ON >	
< REP DEVICE_AUDIO_MUTE OFF >	
Set Device Audio Mute	
Command String:	
< SET DEVICE_AUDIO_MUTE ON >	Send one of these commands to the ANIUSB.
< SET DEVICE_AUDIO_MUTE OFF >	
< SET DEVICE_AUDIO_MUTE TOGGLE >	
ANIUSB Response:	The ANIUSB will respond with one of these strings.
< REP DEVICE_AUDIO_MUTE ON >	
< REP DEVICE_AUDIO_MUTE OFF >	
Get Analog Output Gain Switch	
Command String:	Where xx is ASCII channel number: 00 or 09.
< GET xx AUDIO_OUT_LVL_SWITCH >	
ANIUSB Response:	The ANIUSB will respond with one of these strings.
< REP xx AUDIO_OUT_LVL_SWITCH LINE_LVL >	
< REP xx AUDIO_OUT_LVL_SWITCH AUX_LVL >	
< REP xx AUDIO_OUT_LVL_SWITCH MIC_LVL >	
Set Analog Output Gain Switch	
Command String:	Where xx is ASCII channel number: 00 or 09. Send one of these commands to the ANIUSB.
< SET xx AUDIO_OUT_LVL_SWITCH LINE_LVL >	
< SET xx AUDIO_OUT_LVL_SWITCH AUX_LVL >	
< SET xx AUDIO_OUT_LVL_SWITCH MIC_LVL >	
ANIUSB Response:	The ANIUSB will respond with one of these strings.
< REP xx AUDIO_OUT_LVL_SWITCH LINE_LVL >	
< REP xx AUDIO_OUT_LVL_SWITCH AUX_LVL >	
< REP xx AUDIO_OUT_LVL_SWITCH MIC_LVL >	
Flash Lights on ANIUSB	
Command String:	Send one of these commands to the ANIUSB. The flash automatically turns off after 30 seconds.
< SET FLASH ON >	
< SET FLASH OFF >	
ANIUSB Response:	The ANIUSB will respond with one of these strings.
< REP FLASH ON >	
< REP FLASH OFF >	
Turn Metering On	

Command String: < SET METER_RATE sssss >	Turns metering on/off and sets rate. Where sssss is a value from 00000 to 99999 representing milliseconds. 00000= off 00100 = minimum value 99999= maximum value Note: values 00001 to 00099 are not valid and result in <REP ERR> response.
ANIUSB Response: < REP METER_RATE sssss > < SAMPLE aaa bbb ccc ddd eee fff ggg hhh iii jjj >	sssss = rate in milliseconds. Value 00000 means metering is off. Where the list that follows is the sample for each channel. Audio Levels take on values 000-060, which represent actual audio levels of -60 to 0 dBFS. aaa = channel 1 data bbb = channel 2 data ccc = channel 3 data ddd = channel 4 data eee = channel 5 data fff = channel 6 data ggg = channel 7 data hhh = channel 8 data iii = channel 9 data jjj = channel 10 data
Stop Metering	
Command String: < SET METER_RATE 0 >	A value of 00000 is also acceptable.
ANIUSB Response: < REP METER_RATE 00000 >	
Get LED Brightness	
Command String: < GET LED_BRIGHTNESS >	
ANIUSB Response: < REP LED_BRIGHTNESS n >	Where n can take on the following values: 0 = LED disabled 1 = LED dim 2 = LED default
Set LED Brightness	
Command String: < SET LED_BRIGHTNESS n >	Where n can take on the following values: 0 = LED disabled 1 = LED dim 2 = LED default
ANIUSB Response: < REP LED_BRIGHTNESS n >	
Get Audio Clip Indicator	
Command String: < GET xx AUDIO_OUT_CLIP_INDICATOR >	Where xx is ASCII channel number: 00 through 10.
ANIUSB Response: < REP xx AUDIO_OUT_CLIP_INDICATOR ON > < REP xx AUDIO_OUT_CLIP_INDICATOR OFF >	The ANIUSB will respond with one of these strings.
Get Audio IP Address	
Command String: < GET IP_ADDR_NET_AUDIO_PRIMARY >	

ANIUSB Response: `< REP IP_ADDR_NET_AUDIO_PRIMARY {yyyyyyyyyyyyyyy} >`	Where yyyyyyyyyyyyyyy is a 15 digit IP address.
Get Audio Subnet Address	
Command String: `< GET IP_SUBNET_NET_AUDIO_PRIMARY >`	
ANIUSB Response: `< REP IP_SUBNET_NET_AUDIO_PRIMARY {yyyyyyyyyyyyyyy} >`	Where yyyyyyyyyyyyyyy is a 15 digit subnet address.
Get Audio Gateway Address	
Command String: `< GET IP_GATEWAY_NET_AUDIO_PRIMARY >`	
ANIUSB Response: `< REP IP_GATEWAY_NET_AUDIO_PRIMARY {yyyyyyyyyyyyyyy} >`	Where yyyyyyyyyyyyyyy is a 15 digit gateway address.
Get Limiter Status	
Command String: `< GET xx LIMITER_ENGAGED >`	Where xx is ASCII output channel number: 07 through 10. Indicates if the limiter is currently reducing the signal level.

ANIUSB Response:
`< REP xx LIMITER_ENGAGED ON >`
`< REP xx LIMITER_ENGAGED OFF >`
	The ANIUSB will respond with one of these strings.

Get Encryption Status	
Command String: `< GET xx ENCRYPTION_CH >`	

ANIUSB Response:
`< REP xx ENCRYPTION_CH ON >`
`< REP xx ENCRYPTION_CH OFF >`
	The ANIUSB will respond with one of these strings.

Reboot ANIUSB	
Command String: `< SET REBOOT >`	
ANIUSB Response: `< REP REBOOT >`	
Get Error Events	
Command String: `< GET LAST_ERROR_EVENT >`	Gets the last error that is loged on the ANIUSB.
ANIUSB Response: `< REP LAST_ERROR_EVENT {yyyyyyyyyyyyyyy} >`	Where yyyyyyyyyyyyyyy is up to 128 characters.
Get PEQ Filter Enable	
Command String: `< GET xx PEQ yy >`	Where xx is the PEQ block 07 or 10. Where yy is the PEQ filter 01-04 within the block. 00 can be used for all blocks or all filters.

ANIUSB Response:
`< REP xx PEQ yy ON >`
`< REP xx PEQ yy OFF >`	

Set PEQ Filter Enable	

Command String:
`< SET xx PEQ yy ON >`
`< SET xx PEQ yy OFF >`
	Send one of these commands to the ANIUSB.

ANIUSB Response: < REP xx PEQ yy ON > < REP xx PEQ yy OFF >	Where xx is the PEQ block 07 or 10. Where yy is the PEQ filter 01-04 within the block. 00 can be used for all blocks or all filters.
Get Input Meter Display Mode	
Command String: < GET INPUT_METER_MODE >	
ANIUSB Response: < REP INPUT_METER_MODE PRE_FADER > < REP INPUT_METER_MODE POST_FADER >	The ANIUSB will respond with one of these strings.
Set Input Meter Display Mode	
Command String: < SET INPUT_METER_MODE PRE_FADER > < SET INPUT_METER_MODE POST_FADER >	Send one of these commands to the ANIUSB.
ANIUSB Response: < REP INPUT_METER_MODE PRE_FADER > < REP INPUT_METER_MODE POST_FADER >	The ANIUSB will respond with one of these strings.
Get Output Meter Display Mode	
Command String: < GET OUTPUT_METER_MODE >	
ANIUSB Response: < REP OUTPUT_METER_MODE PRE_FADER > < REP OUTPUT_METER_MODE POST_FADER >	The ANIUSB will respond with one of these strings.
Set Output Meter Display Mode	
Command String: < SET OUTPUT_METER_MODE PRE_FADER > < SET OUTPUT_METER_MODE POST_FADER >	Send one of these commands to the ANIUSB.
ANIUSB Response: < REP OUTPUT_METER_MODE PRE_FADER > < REP OUTPUT_METER_MODE POST_FADER >	The ANIUSB will respond with one of these strings.
Get USB Connection Status	
Command String: < GET USB_CONNECT >	
ANIUSB Response: < REP USB_CONNECT ON > < REP USB_CONNECT OFF > < REP USB_CONNECT ERROR >	The ANIUSB will respond with one of these strings.
Get Matrix Mixer Routing	
Command String: < GET xx MATRIX_MXR_ROUTE yy >	Where xx is input channel numbers 00-06. Where yy is output channel numbers 00 or 07-10.
ANIUSB Response: < REP xx MATRIX_MXR_ROUTE yy ON > < REP xx MATRIX_MXR_ROUTE yy OFF >	The ANIUSB will respond with one of these strings.
Set Matrix Mixer Routing	
Command String: < SET xx MATRIX_MXR_ROUTE yy ON > < SET xx MATRIX_MXR_ROUTE yy OFF >	Where xx is input channel numbers 00-06. Where yy is output channel numbers 00 or 07-10. Send one of these commands to the ANIUSB.

ANIUSB Response: < REP xx MATRIX_MXR_ROUTE yy ON > < REP xx MATRIX_MXR_ROUTE yy OFF >	The ANIUSB will respond with one of these strings.
Get Matrix Mixer Gain	
Command String: < GET xx MATRIX_MXR_GAIN yy >	Where xx is input channel numbers 00-06. Where yy is output channel numbers 00 or 07-10.
ANIUSB Response: < REP xx MATRIX_MXR_GAIN yyzzzz >	Where zzzz takes on the ASCII values of 0000 to 1400. zzzz is in steps of one-tenth of a dB.
Set Matrix Mixer Gain	
Command String: < SET xx MATRIX_MXR_GAIN yyzzzz >	Where xx is input channel numbers 00-06. Where yy is output channel numbers 00 or 07-10. Where zzzz takes on the ASCII values of 0000 to 1400. zzzz is in steps of one-tenth of a dB.
ANIUSB Response: < REP xx MATRIX_MXR_GAIN yyzzzz >	
Increment Matrix Mixer Gain	
Command String: < SET xx MATRIX_MXR_GAIN yy INC nn >	Where xx is input channel numbers 00-06. Where yy is output channel numbers 00 or 07-10. Where nn is in steps of one-tenth of a dB.
ANIUSB Response: < REP xx MATRIX_MXR_GAIN yyzzzz >	Where zzzz takes on the ASCII values of 0000 to 1400. zzzz is in steps of one-tenth of a dB.
Decrement Matrix Mixer Gain	
Command String: < SET xx MATRIX_MXR_GAIN yy DEC nn >	Where xx is input channel numbers 00-06. Where yy is output channel numbers 00 or 07-10. Where nn is in steps of one-tenth of a dB.
ANIUSB Response: < REP xx MATRIX_MXR_GAIN yyzzzz >	Where zzzz takes on the ASCII values of 0000 to 1400. zzzz is in steps of one-tenth of a dB.

Troubleshooting

Troubleshooting

Troubleshooting

Problem	Solution
Software lags in Google Chrome browser	Problem is browser-related. Turn off hardware acceleration option in Chrome.
Sound quality is muffled	Use equalizer to adjust frequency response. See the equalizer applications for the appropriate use.
Hardware does not show up in device discovery	Ensure the devices are powered Ensure PC and equipment are on the same network and set to the same subnet Turn off other network interfaces not used to connect to the device (including WiFi) Check that DHCP server is functioning (if applicable) Reset the device

Problem	Solution
No audio	Verify the ANIUSB-MATRIX is selected as the audio device in the audio devices or properties panel on the computer Audio channels must be routed to an output through the matrix mixer Connections between devices must be established in Dante Controller™ software Check cables Verify that input/output channels are not muted Check that fader levels are not set too low Make sure there is not an encryption error -- a passphrase mismatch or encryption only enabled on one device disrupts audio.

Problem	Solution
Cannot route Dante audio channels	Install latest version of Dante Controller™ from Audinate®, available at www.audinate.com.
Hardware does not power on	The network switch must supply Power over Ethernet. Otherwise, a PoE injector must be used Check network cables and connections

Event Log

Event Log
The event log provides a detailed account of activity from the moment the device is powered on. The log collects up to 1,000 activity entries and time-stamps them relative to the last power cycle. The entries are stored in the internal memory, and are not cleared when the device is power-cycled. The Export feature creates a CSV (comma separated values) document to save and sort the log data.

Refer to the log file for details when troubleshooting or consulting with Shure Systems Support.

To view the event log:

1. Open the Help menu
2. Select View Event Log

Severity Level

Information
An action or event has been successfully completed

Warning
An action cannot be complete, but overall functionality is stable

Error
A problem has occurred that could inhibit functionality.

Log Details

Description
Provides details on events and errors, including IP address and subnet mask.

Time Stamp
Power cycles:days:hours:minutes:seconds since most recent boot-up.

Event ID
Indicates event type for internal reference.

Tip: Use the filter to narrow down results. Select a category heading to sort the log.

Important Product Information

The equipment is intended to be used in professional audio applications.

Note: This device is not intended to be connected directly to a public internet network.

EMC conformance to Environment E2: Commercial and Light Industrial. Testing is based on the use of supplied and recommended cable types. The use of other than shielded (screened) cable types may degrade EMC performance.

Changes or modifications not expressly approved by Shure Incorporated could void your authority to operate this equipment.

Industry Canada ICES-003 Compliance Label: CAN ICES-3 (B)/NMB-3(B)

Authorized under the verification provision of FCC Part 15B.

Please follow your regional recycling scheme for batteries, packaging, and electronic waste.

Information to the user

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential 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 the receiver.
- Connect the equipment to 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.

The CE Declaration of Conformity can be obtained from: www.shure.com/europe/compliance

Authorized European representative:
Shure Europe GmbH
Headquarters Europe, Middle East & Africa
Department: EMEA Approval
Jakob-Dieffenbacher-Str. 12
75031 Eppingen, Germany
Phone: +49-7262-92 49 0
Fax: +49-7262-92 49 11 4
Email: info@shure.de

This product meets the Essential Requirements of all relevant European directives and is eligible for CE marking.

The CE Declaration of Conformity can be obtained from Shure Incorporated or any of its European representatives. For contact information please visit www.shure.com

Specifications

Analog Connections

Input	(1) 3-pin block connector (Active Balanced)
Output	(1) 3-pin block connector (Impedance Balanced)

USB Connections
(1) USB 2.0, Type B

Single port carries 1 input and 1 output channel (Summed mono)

Network Connections (Dante Digital Audio)
(1) RJ45

4 input channels, 2 output channels

Polarity

Non-inverting, any input to any output

Power Requirements

Power over Ethernet (PoE), Class 0. (PoE Plus compatible).

Power Consumption

6.5W, maximum

Weight

668 g (1.5 lbs)

Dimensions

H x W x D

4 x 14 x 12.8 cm (1.6 x 5.5 x 5.0 in.)

control application

HTML5 Browser-based

Operating Temperature Range

–6.7°C (20°F) to 40°C (104°F)

Storage Temperature Range

–29°C (-20°F) to 74°C (165°F)

Thermal Power Dissipation

Maximum	6.8W (23.0BTU/hr)
typical	6.0W (20.8BTU/hr)

Audio

Frequency Response

+1, -1.5 dB

20 to 20,000 Hz

Dante Digital Audio

Sampling Rate	48 kHz
Bit Depth	24

USB Audio

Sampling Rate	44.1, 48 kHz
Bit Depth	16, 24

Latency

	Analog to Analog	0.98 ms
Does not include Dante latency	Analog to Dante	0.39 ms
	Dante to Analog	0.72 ms
	Dante to Dante	0.14 ms

Dynamic Range

20 Hz to 20 kHz, A-weighted, typical

Analog-to-Dante	113 dB
Dante-to-Analog	117 dB

Equivalent Input Noise

20 Hz to 20 kHz, A-weighted, input terminated with 150Ω

Line	-86 dBV
Aux	-98 dBV

Total Harmonic Distortion

@ 1 kHz, 0 dBV Input, 0 dB analog gain

<0.05%

Common Mode Rejection Ratio

150Ω balanced source @ 1 kHz

>70 dB

Impedance

10.6 kΩ

Input Clipping Level

Line	+27 dBV
Aux	+15 dBV

Output Clipping Level

Line	+20 dBV
Aux	+0 dBV
Mic	-26 dBV

Built-in Digital Signal Processing

Per Channel	Equalizer (4-band Parametric, Analog and USB output channels only), Mute, Limiter, Gain (140 dB range)
System	Matrix mixer

Networking

Cable Requirements

Cat 5e or higher (shielded cable recommended)

Accessories

Furnished Accessories

KIT, HARDWARE, ANIUSB-MATRIX	90A33522
Mounting Bracket (1/3 rack unit)	53A27742

Optional Accessories and Replacement Parts

19" rack tray	CRT1