GALAXY 64
SYNERGY CORE

USER MANUAL

Contents

64 CHANNELS OF ANALOG AUDIO.

DANTE, HDX & THUNDERBOLT CONNECTIVITY.

ONE DEVICE.

Galaxy 64 Synergy Core is a high-end recording system that connects your entire studio within a 2U rack space while providing high-fidelity audio and onboard plugin processing for your most demanding projects. With Dante, HDX and Thunderbolt connectivity, the world's first 64-channel AD/DA converter offers unbeatable flexibility when moving sound around your high-profile production facility, live stage, broadcast, or other enterprise applications. The interface is designed to be the hub of your entire recording environment that eliminates the need for any external modules & expansion cards, thus centralizing your entire setup.

BEFORE YOU BEGIN

Congratulations on your purchase! We would like to turn your attention to the following:

Important!

Despite the unit's extensive touchscreen functionality, the PC/Mac Control Panel application is the ultimate "mediator" between the Galaxy 64 Synergy Core and your DAW of choice. To take complete advantage of the unit's capabilities, you are meant to handle tasks like gain adjustments, signal routing, effects processing, mixing, and metering from its intuitive, single-window environment. The resulting audio is routed into your DAW for recording in formats of your choice, such as multi-track, stem, and two-channel stereo.

Thus, we encourage you to familiarize yourself with the 'Control Panel Application' chapter before you begin working with the Galaxy 64 Synergy Core. Likewise, a 'Getting started with Dante®' chapter provides the information needed for a quick and smooth start with audio networking.

Note that a USB Type-C cable is included in the box. Thunderbolt™ and DigiLink Mini cables are not included. Feel free to use the included USB Type-C cable for initial computer connection, registering and setting up your Galaxy 64 Synergy Core. The USB connection is only used for remote control - the device has no USB audio functionality.

System Requirements

Mac:

- Apple Mac 2012 or newer with Thunderbolt™ port

- Minimum: Mac OS X 10.12 Sierra. Recommended: Mac OS X 11.02 Big Sur

- Available storage space (Minimum 4 GB)

- Memory (RAM): 4 GB minimum (8 GB or more recommended)

Windows:

- PC computer with certified Thunderbolt™ connectivity

- Windows 10 (64-bit) with latest Microsoft Updates

- Available storage space (Minimum 4 GB)

- Memory (RAM): 4 GB minimum (8 GB or more recommended)

- CPU: Intel Core i3™ or AMD FX (Higher recommended)

Additional Information:

- Stable Internet connection is required to download and update your Antelope Audio Software

PRODUCT ACTIVATON

This Galaxy 64 Synergy Core product activation is a mandatory process required to be completed on the first run of the interface. It is needed to validate your product warranty and to gain access to our special software packages and exclusive product offers.

To activate your product, please make sure to follow the instructions listed in this document. Bear in mind that internet connection is required for successful product activation.

1. Connect the Galaxy 64 Synergy Core to a Windows or macOS computer.

2. Open your internet browser and navigate to https://antelopeaudio.com/login/

3. Login to the Antelope Audio user area with your e-mail and password. If you don't have an account, visit https://antelopeaudio.com/sign-up/ to create one.

4. Click on the 'Activate New Device' button.
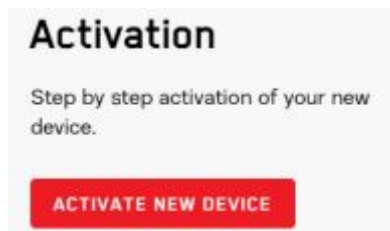
5. Click on ' Galaxy 64 Synergy Core' from the device list.
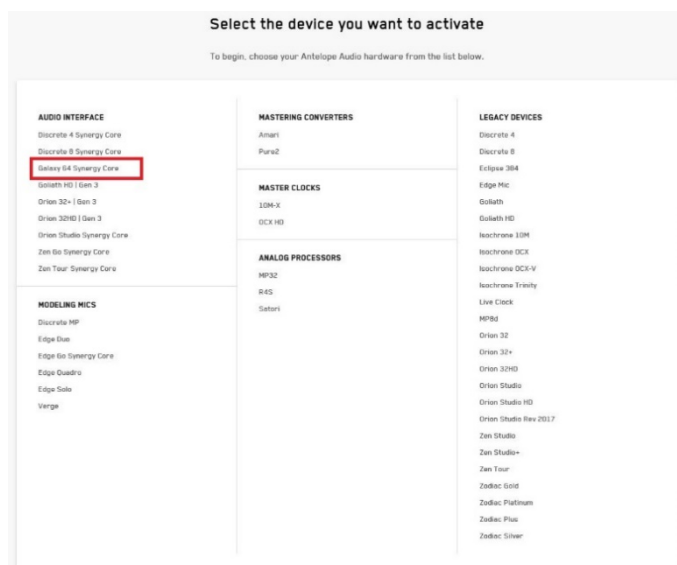
6. Download and install the Antelope Launcher application for Windows or macOS.
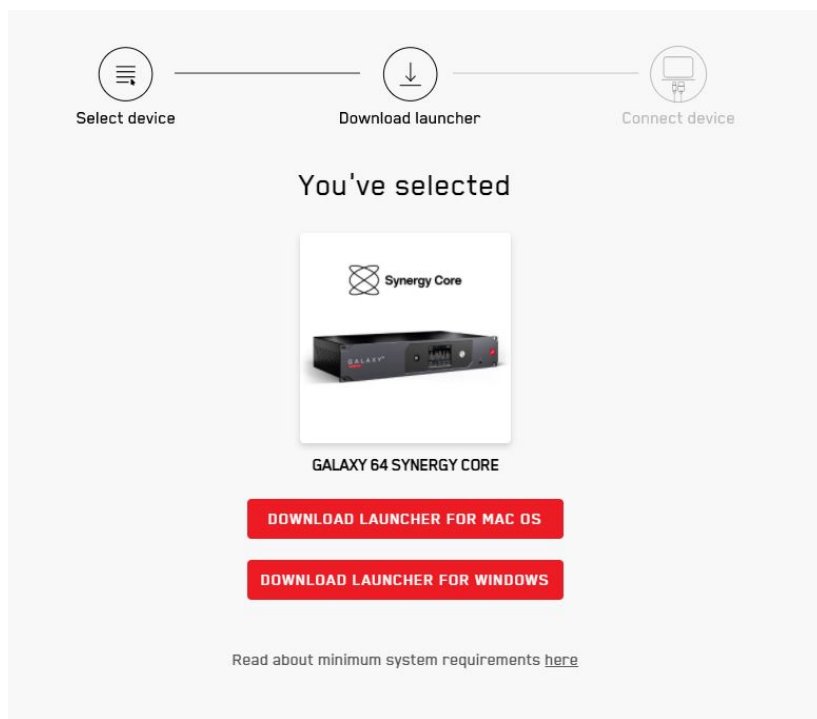
7. Open the Antelope Launcher application and click on the 'Login' button. Enter the e-mail and password you used to login into the Antelope Audio user area and click 'Login'.

8. Click on 'Activate device'.

Note: If the Galaxy 64 Synergy Core does not appear in the 'Devices' tab, click on 'Not seeing your device?' and follow the on-screen instructions.
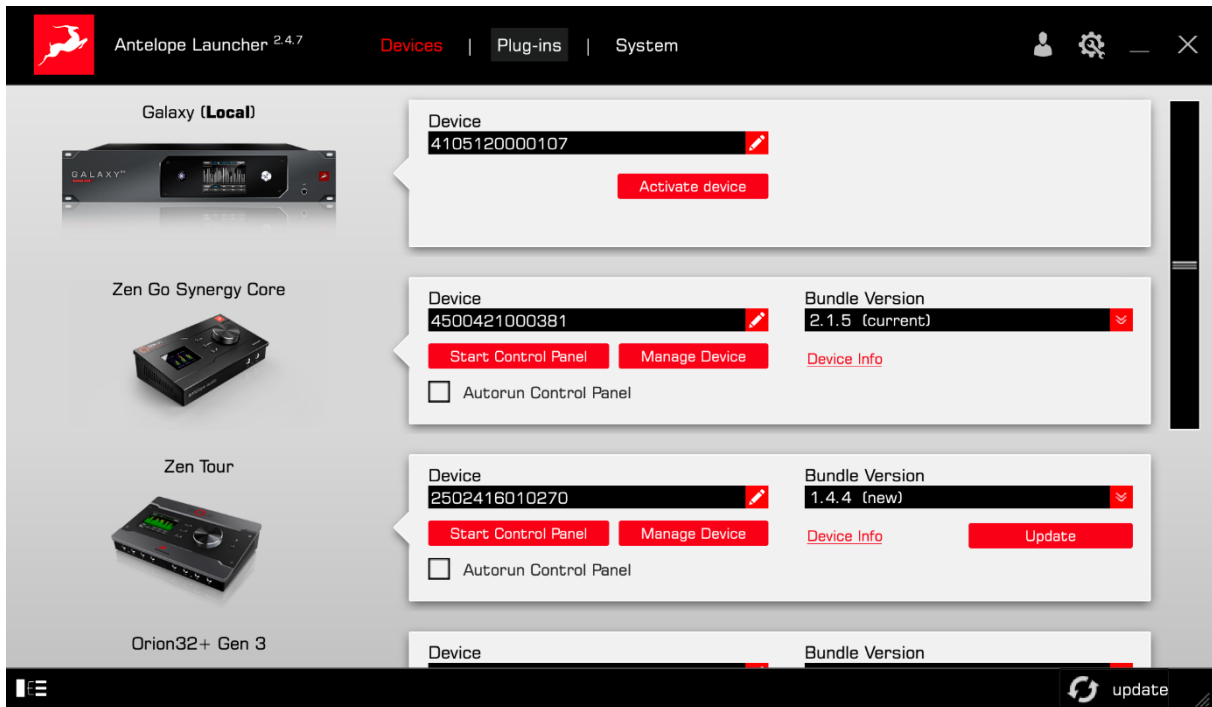
9. In the Antelope Management Wizard window, choose 'Activate device or assign features' and click 'Continue'.

10. In the subsequent window, place a checkmark next to 'Register device' and click 'Continue'.

11. Upon successful activation, the final window will read 'Congratulations! You have successfully activated your device.' Click 'Done' and the activation is finished.

Please proceed with the 'Setting up' chapter below to configure the Galaxy 64 Synergy Core for use with your Windows or macOS computer.

Note: The Galaxy 64 Synergy Core will be listed in the 'My Hardware' page of the Antelope Audio user area with its serial number and activation date.

SETTING UP

After online activation is complete, please update the Galaxy 64 Synergy Core to the latest software and firmware versions available. To do this, simply open Antelope Launcher and click the 'Update' button below the 'Bundle Version' drop-down menu.

Bundle Version
2.0.38 (new)
Device Info   Update

After the update is complete, you can proceed with the instructions for your operating system.

Need any help? Visit the Antelope Audio Customer Support page, choose your device and find the required information

Configuring for Windows 10

Windows 10 needs a few tweaks to get everything up and running:

1. Enter the **'Sounds'** options window from the Control Panel or right-click the speaker icon in the system tray and choose 'Open Sound settings'.

2. Make sure the Galaxy 64 Synergy Core is chosen under 'Output' and 'Input'. Next, click 'Device Properties' under 'Output'. Then, click 'Additional Device Properties'.

3. Enter the **'Supported Formats'** tab and place checkmarks next to all the available sample rates:
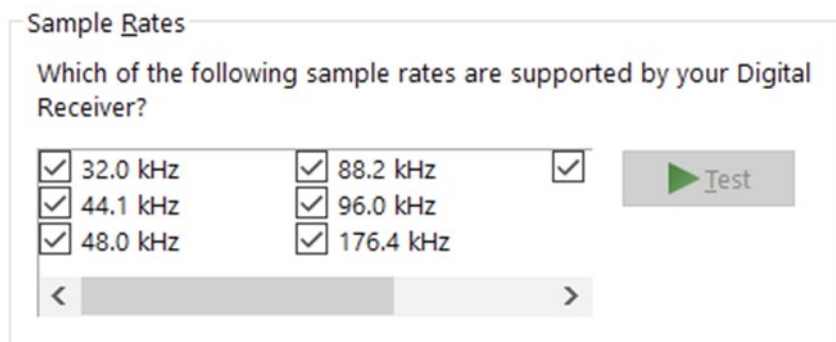
4. Enter the **'Enhancements'** tab and disable all enhancements.

5. Enter the **'Advanced'** tab and choose any of the available "2 channel, 24-bit" modes from the drop-down menu. Click 'OK' to close the window.
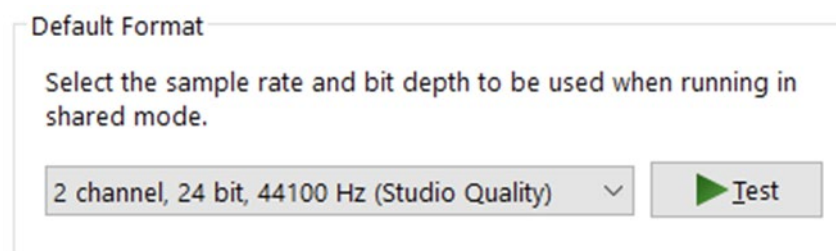
6. Back in Sound settings, click 'Device Properties' under 'Input'. Then, click 'Additional Device Properties'. Enter the 'Enhancements' tab and disable all enhancements. Click 'OK' to close the window.

Tips

- If you are experiencing interruptions or failure when using your DAW and trying to playback audio from your OS at the same time, make sure that the device sample rate matches the one of your DAW session.

- You can disable the device and enable it again from the 'Playback' tab to refresh the driver. This will be similar to disconnecting and re-connecting your device, which makes Windows reset the playback configuration of the applications you are using.

- In some cases, disabling the 'Exclusive mode' functionality from the 'Advanced' tab in 'Playback' Properties might help when running multiple playback applications at the same time.

- Disabling the 32kHz sample rate is not mandatory, but it might help in general.

Further Reading

- Antelope Audio Knowledge Base - Windows 10 Optimization

Configuring for macOS Mojave 10.14 (or later)

The new security settings introduced in macOS Mojave 10.14 and later releases may result in no input signal reaching your DAW, despite having everything set up correctly. These steps apply when you are using the Galaxy 64 Synergy Core in a DAW for the first time:

1. Launch your DAW and choose Galaxy 64 Synergy Core as the input device.

2. Click 'OK' and your DAW should function normally.

However, if the events above did not occur for some reason, or you are using multiple DAWs, you must do a manual tweak for each in 'Security & Privacy' settings:

1. Click the 'Apple' symbol and choose 'System Preferences'. Head to the 'Security & Privacy' settings menu.

2. Click the 'Privacy' tab. In the column on the left, choose 'Microphone'. Make sure there's a checkmark next to any DAW you want to use.

THUNDERBOLT™ 3 FUNCTIONALITY

The Galaxy 64 Synergy Core's dual Thunderbolt™ 3 ports enable the following functionality:

Daisy Chaining

Thunderbolt™ 3 can "daisy chain" devices". Daisy chaining means that one device can plug into the end of a chain of devices, one after the other. A basic example would be connecting the Galaxy 64 Synergy Core to an external hard drive with two Thunderbolt™ 3 ports. One port is occupied by the unit while the other connects to a computer or another Thunderbolt™ 3 device in the chain.

The following rules are in place:

1. The Thunderbolt™ 3 specification places a limit of up to 6 devices per chain. However, the 6-device limit does not apply to the following Apple computers:

- 2018 MacBook Pro or later
- 2018 Mac mini
- 2017 iMac Pro

These machines have dual Thunderbolt™ 3 busses and support up to 12 devices per chain.

2. Each device must be powered on for subsequent devices to operate.

3. If a USB or DisplayPort device is plugged directly into the USB-C connector downstream from any device, the Thunderbolt™ daisy chain is terminated at that point.

4. As Thunderbolt™ bandwidth is shared between daisy chained devices, the available bandwidth for each device inevitably decreases. Therefore, Antelope Audio cannot guarantee optimal performance in each and every daisy chain configuration possible.

Device Charging

Galaxy 64 Synergy Core is able to power any Type-C device from its Thunderbolt™ 3 ports. For example, you can power a laptop (e.g. 2016 MacBook Pro or later).

Backwards Compatibility

Thunderbolt™ 3 is backwards-compatible with legacy Thunderbolt™ 2 and Thunderbolt™ 1 connections through the use of a third-party TB 3 to Legacy TB adapter and corresponding cables. Given all the technical variables involved, we cannot provide singular instructions for legacy compatibility in this manual. Please get in touch with Customer Support if you need help setting up.

Remote Control

It is possible to connect the Galaxy 64 Synergy Core to two computers. However, you will have to assign a primary/recording computer and use the other for the sole purpose of remote control for the Control Panel application.

Note that simultaneous use of two computers on Thunderbolt™ 3 connections for digital audio is not possible and should be avoided. However, the source for primary and secondary computer can be configured.

Use the left Thunderbolt™ port labeled 'USB REMOTE' with a Type-C USB cable to connect the 'Remote Control' computer.

It is also possible to use your computer strictly for the purposes of remote control. Simply connect a USB Type-C cable between the left Thunderbolt™ port and the computer. Start the Galaxy 64 Synergy Core Control Panel and use it to operate the device.

ANTELOPE LAUNCHER

The Antelope Launcher is a streamlined hub for managing and troubleshooting your Antelope Audio products. The application is organized into the following tabs:

'Devices' Tab
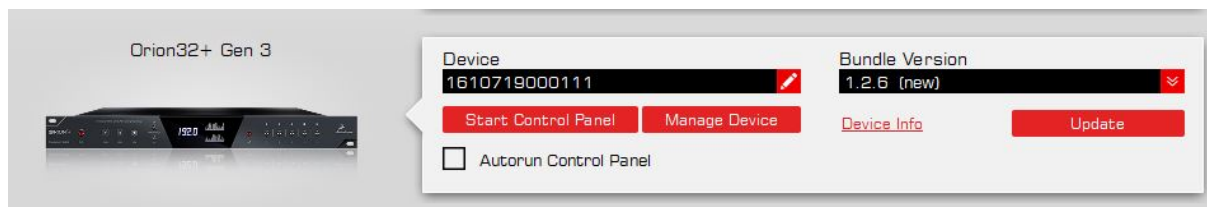
All Antelope Audio devices currently connected to your computer are listed in this section. In this example, we have connected the Orion 32+ | Gen 3. However, the application functionality is identical for each Antelope device.

The following functionality is available in the 'Devices' tab:

Device Name

Click the black box to enter a name for your device. The device serial number is used by default. Erasing the name and clicking outside the box reverts to the serial number.

Bundle Version

By default, this drop-down menu shows the most recent software bundle available for your device. Clicking it shows the currently installed software bundle version and lets you roll-back to an older build.

To update or change the installed software version, choose your desired Bundle Version, click the check mark next to the drop-down menu, and click the 'Update' button.

Manage

Click to launch the Antelope Registration Wizard. Use it to register or de-register devices and features (such as AFX2DAW, FPGA FX, HDX Activation and so on).

Device Info

Click to display the following information (useful for troubleshooting):

- Serial number
- Hardware version
- Firmware version

- Control Panel version
- USB/Thunderbolt ™ driver version
- Software Bundle version

Click the information window to close it.

Start Control Panel

Click to start the device's Control Panel application. You can also click the device's picture. Place a check mark next to 'Autorun' to have the Control Panel for a specific device launch automatically when you start Antelope Launcher.

Can't see your device?

If a device is missing from the list, the most common reason is driver conflict. The Antelope Launcher makes it easy to re-install drivers and troubleshoot. Click "Can't see your device?" to launch the 'Add Drivers' wizard.

Choose your device and connection type from the drop-down menus, disconnect the device from your computer, and click 'Next' to perform a driver re-install.

Note: If the issue persists, please contact Antelope Audio Customer Support.

'Plug-ins' Tab
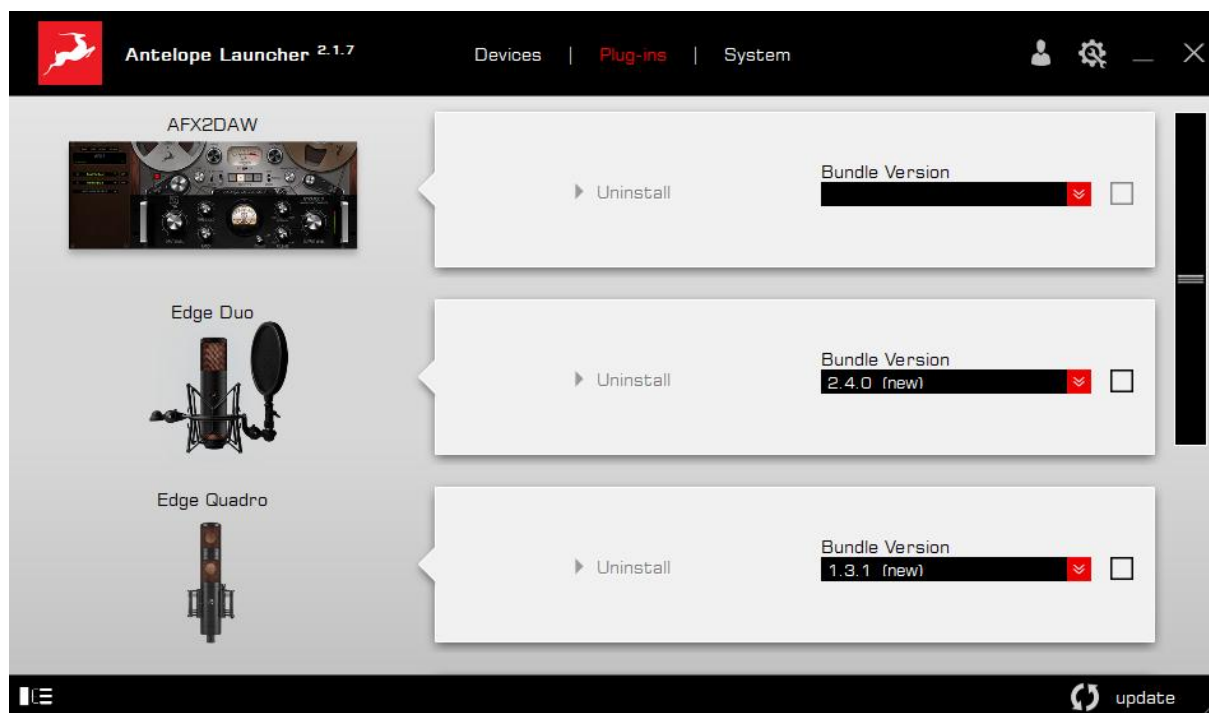
This section lets you install, update, and uninstall Antelope Audio software such as native mic emulations and AFX2DAW.

By default, the Bundle Version drop-down menus show the most recent software bundle available for each product. Clicking the menu shows the currently installed software bundle version and lets you roll-back to an older build.

To update or change the installed software version, choose your desired Bundle Version, click the check mark next to the drop-down menu, then click the 'Update' button.

'System' Tab
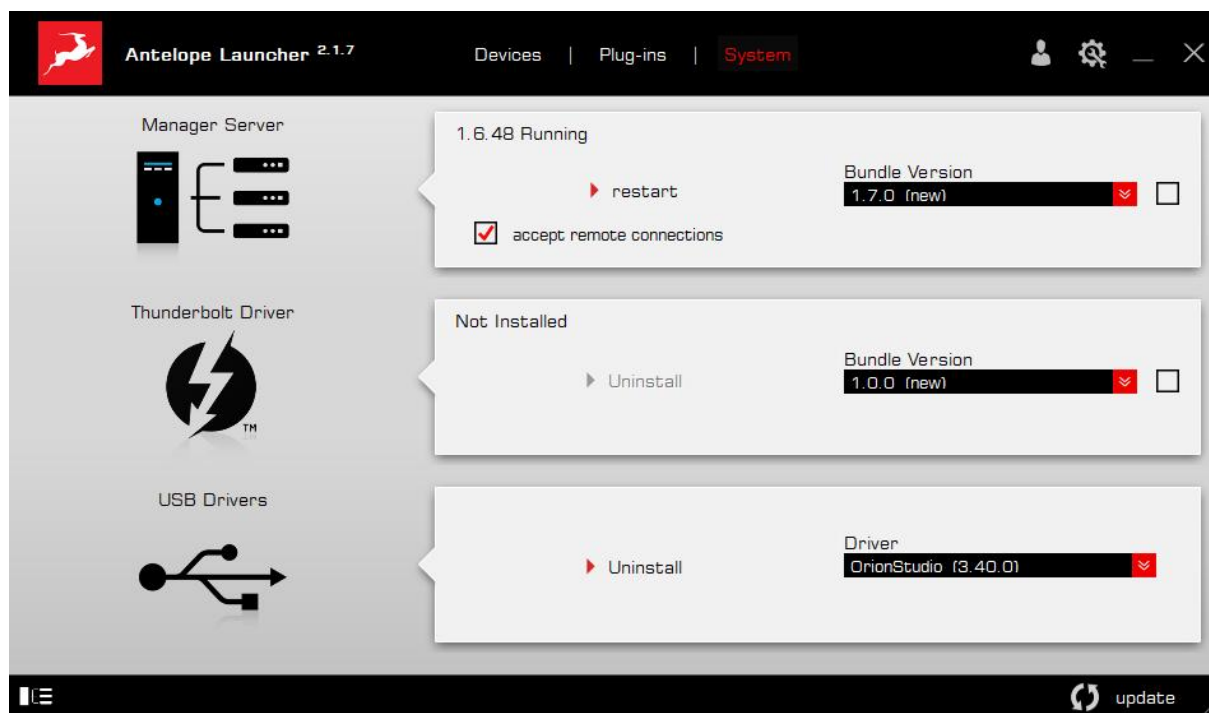
Here, you can do the following:

- Update or roll-back the Manager Server, USB and Thunderbolt™ Driver versions. Choose your desired Bundle Version from the drop-down menu, click the check mark, then click the 'Update' button.

- Restart the Manager Server and enable/disable remote connections from other computers on your network.

- Install the Antelope Audio Thunderbolt™ driver. Choose a Bundle Version from the drop-down menu, click the check mark, then click the 'Update' button.

- Uninstall the Antelope Audio Thunderbolt™ and/or USB driver(s) present on your system.

Login button
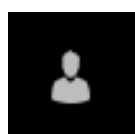
Click and enter your Antelope Audio username and password, then click 'Login'. If you don't have an Antelope Audio account, click 'Register' and follow the on-screen instructions.

Settings button

Click to open the Settings window.
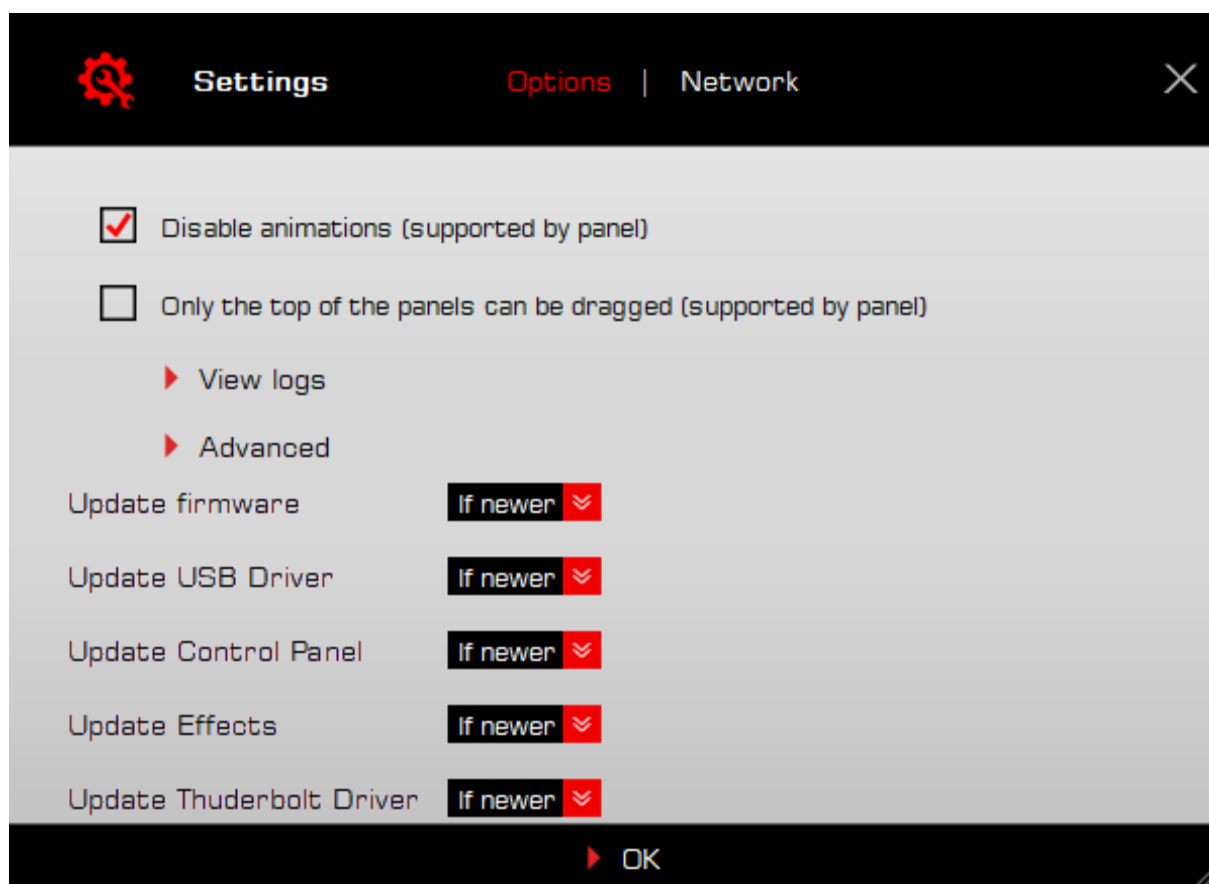
Here, you can do the following:

- Click 'View Logs' to view, save, and send activity logs to Antelope Audio Customer Support.

- Click 'Advanced' to enable or disable automatic updates for each of the following:

  - Device firmware
  - USB Driver

- Control Panel

- Effects

- Thunderbolt™ driver

Make your selection(s) in the drop-down menu(s) and click 'OK'.

- Click 'Network' to view network status and logs.

FRONT PANEL EXPLAINED

The Galaxy 64 Synergy Core front panel is dedicated to the following items (left to right):

1. **Atomic Clock Indicator**. Lights up when the unit is synchronized to an Antelope Audio 10M/10MX atomic master clock.

2. **Touchscreen**. Provides convenient access to the Main Menu, metering options and preset recall. The touchscreen is explained in-depth in the "Touchscreen Functionality" chapter.

3. **On/Standby Button**. Lights up when the unit is powered on. Press once to power up. Press again to enter Standby.

4. **Headphone Output**. Stereo TRS jack for headphone monitoring.

REAR PANEL EXPLAINED

Power Connector

For use with the provided power supply only.

HDX Ports

Four primary HDX ports carrying 32 audio channels each (128 in total). DigiLink Mini cables are not included with the Galaxy 64 Synergy Core.

HDX Specs:

Interface Connection:	4 x HDX Ports, I/O
I/O Channel Count	128 Channels (32 Per Port)
Primary/Secondary ports	4 Primary
Supported sample rates	44.1 kHz—192 kHz, 24-bit PCM
Delay Compensation	Supported
Manual Delay Compensation	Supported (up to 128 samples)
Session I/O Support	Yes (16x16)

External Clock Inputs

1x Word Clock input and 1x Atomic Clock input on BNC connectors for synchronizing to external clock sources.

Word Clock Inputs:

Word Clock Input	1 x Input @ 75 Ohms 3Vpp on BNC
10M Atomic Reference Input	1 x Input @ 75 Ohms 1Vpp on BNC
Supported sample rates	44.1 kHz—192 kHz, 24-bit PCM

Loop Sync I/O

Loop Sync input and output on BNC connectors for synchronizing Pro Tools systems.

Loop Sync I/O Specs:

Loop-Sync Input	1 x Input @ 75 Ohms 3Vpp on BNC
Loop-Sync Output	1 x Output @ 75 Ohms 3Vpp on BNC

Word Clock Outputs

6x Word Clock outputs on BNC connectors for synchronizing external equipment to the Galaxy 64 Synergy Core.

Word Clock Output Specs:

Word Clock Output	6 x Output @ 75 Ohms 3Vpp on BNC

Dante® Connections

Primary and Secondary Dante® connections on RJ 45 (Ethernet) ports. Please note that the number of input and output audio channels is sample rate-dependent. The Secondary Dante® port is mirrored to the primary one and acts as a redundant port. it does not provide an independent channel count.

Dante Specs:

Interface Connection:	2 x RJ-45 Ports, I/O
Connectivity	1x Primary Port 1x Secondary Port (For redundancy only)
I/O Channel Count	64 Channels @44.1/48.0 kHz 32 Channels @88.2/96.0 kHz 16 Channels @176.0/192.0 kHz
Supported sample rates	44.1 kHz—192 kHz, 24-bit PCM

S/PDIF & AES Connections

S/PDIF I/O (left) on RCA connectors. AES I/O (right) on XLR connectors.

S/PDIF Specs:

Interface Connection:	2 x RCA Connectors
SPDIF SRC	Supported
I/O Channel Count	2 channels
Supported sample rates	44.1 kHz—192 kHz, 24-bit PCM

AES/EBU Specs:

Interface Connection:	2 x XLR Connectors
AES Mode	AES/EBU
I/O Channel Count	2 channels
Supported sample rates	44.1 kHz—192 kHz, 24-bit PCM

MADI Connections

MADI I/O carrying digital audio over fiber optic cables with SC-Plugs on both ends.

Standard MADI audio limits apply per connector:
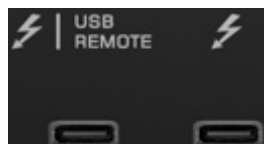
MADI Specs:

Interface Connection:	2 x Optical SC Connectors
MADI Mode	Dual Wire, Optical
SMUX	Supported
MADI Protocol	AES10-2003
I/O Channel Count	64 Channels @44.1/48.0 kHz 32 Channels @88.2/96.0 kHz

	16 Channels @176.0/192.0 kHz
Supported sample rates	44.1 kHz—192 kHz, 24-bit PCM

Thunderbolt™ 3 Computer Connections

2x Thunderbolt™ 3 Type-C ports for PC/Mac connection and daisy-chaining units. The left port also enables USB connection to a secondary computer for remote control purposes.

Thunderbolt™ Specs:

Interface Connection:	2 x Thunderbolt™ 3 (Type-C) Ports, I/O
I/O Channel Count	64 Channels (per port)
Daisy-chain	Supported
Remote Control	Supported (over USB Type-C)
Supported sample rates	44.1 kHz—192 kHz, 24-bit PCM

Monitor Speaker Outputs

L/R studio speaker outputs on 1/4-inch TRS connectors. Note that these mastering-grade monitor outputs boast the greatest dynamic range in the system.

Monitor Output Specs:

Output Connection:	2 x 1/4" 6.35 mm Jack (3 pin)
Chanel Count	2 Mono Channels
Output level	-inf to 24dBu // 1 dB step
Dynamic Range	130 dB
Supported sample rates	44.1 kHz—192 kHz, 24-bit PCM
THD+N (A)	-115 dB
Impedance Load	11.2 kOhms

Line Outputs

64 line audio outputs on 8x DC-coupled DB25 connectors (TASCAM pin-compatible).

Line Output Specs:

Output Connection:	8 x D-sub 25-pin (Tascam Standard)
I/O Channel Count	64 Channels
Output level	-inf to 24dBu // 1 dB step

Dynamic Range	128 dB
Supported sample rates	44.1 kHz—192 kHz, 24-bit PCM
THD+N (A)	-115 dB
Impedance Load	11.2 kOhms

TASCAM's DB-25 Pinout Standard:

Line Inputs

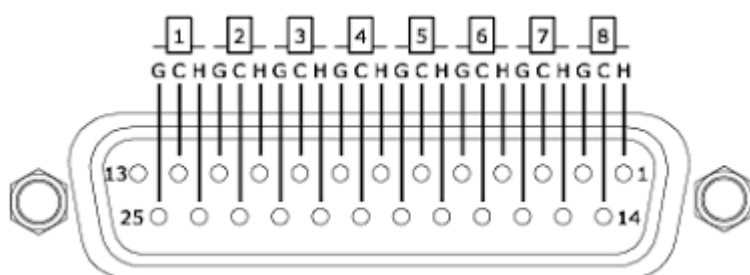64 line audio inputs on 8x DC-coupled DB25 connectors (TASCAM pin-compatible).

Line Input Specs:

Input Connection:	8 x D-sub 25-pin (Tascam Standard)
I/O Channel Count	64 Mono Channels
Input level trim	14 dBu to 24 dBu in steps of 1 dB

Dynamic Range	121 dB
Supported sample rates	44.1 kHz—192 kHz, 24-bit PCM
THD+N (A)	-112 dB
Impedance Load	11.2 kOhms

TASCAM's DB-25 Pinout Standard:

TOUCHSCREEN FUNCTIONALITY

The touchscreen works with single finger taps. Other traditional gestures, such as pinch-to-zoom, multi-touch and so on are not used.

By default, the screen shows up to 32 peak meters for each channel of the chosen audio source. Tap anywhere to change the audio source for the meters. The choices are explained in **'Routing Matrix - Terminology'**.

The following functionality is available:

'MENU' Button

Tap to open the Galaxy 64 Synergy Core Main Menu with the following options:

- Presets Saving - tap to save the current settings to Preset slots 1 - 5.
- Factory reset - restore settings to device defaults. Note that all presets will be lost
- 10M Calibration - enter the 10M Calibration procedure to correct clock deviations.
- Device Info - display serial number, hardware and software revision information.
- Touch Scr Calibration - enter the touchscreen calibration procedure.
- Loop Sync Mode - toggle Loop Sync for Pro Tools On and Off.

- Brightness - drag the slider to adjust screen brightness.
- Scr Save Style - choose the screensaver type.
- Scr Save Time - choose how long it takes before the screensaver appears. We recommend the shortest setting you are comfortable with.

'LOCK' Indicator

Indicates when the device is 'locked' to your computer.

Clock Source

Next to the LOCK indicator, a drop-down menu to choose clock source is available with the following options:

- Internal - internal clock.
- WC - external clock generator connected to the Word Clock input.
- S/PDIF - S/PDIF clock from compliant connected device.
- AES - AES clock from compliant connected device.
- MADI (1x, 2x, 4x) - MADI clock from compliant connected device.
- HDX - HDX clock from Pro Tools system.
- DANTE - Dante® clock from compliant network device.

Sample Rate Indicator

Shows the current device sample rate. Tap to change the sample rate. Make sure the device sample rate matches your DAW project sample rate and Dante® Controller application setting.

'POWER' Button

Tap to toggle On/Standby modes.

'MON' Button

Tap to adjust monitor output volume, choose signal trim value and mute/un-mute the outputs.

'HP' Button

Tap to adjust headphone output volume and mute/un-mute the output.

'LINE' Button

Tap to adjust line output volume and mute/un-mute the line outputs.
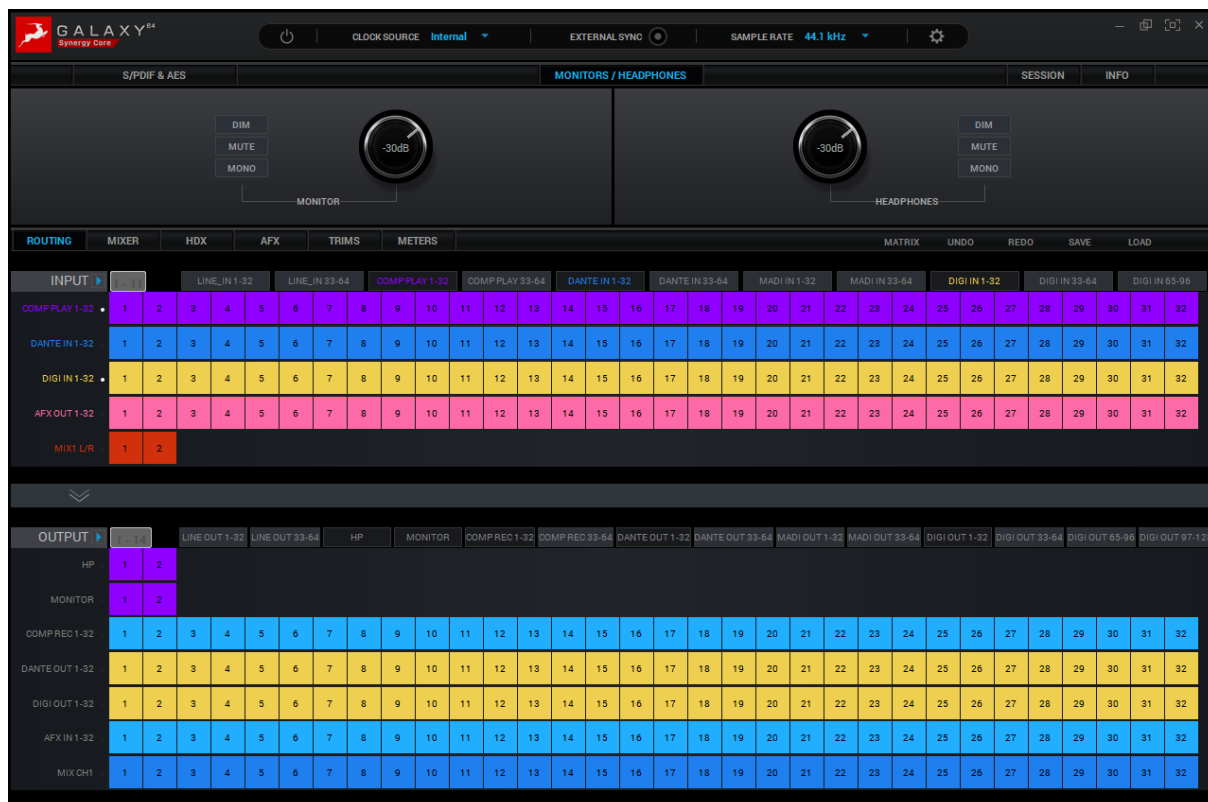
'IF' Button

Tap to choose the communications interface. The options are USB, Thunderbolt™ and Dante®.

'P1' - 'P5' Buttons

Tap to recall presets 1 - 5.

CONTROL PANEL APPLICATION

Introduction

Welcome to the Galaxy 64 Synergy Core Control Panel application! More than just an alternative to the touchscreen controls, it provides intuitive and comprehensive access to each aspect of the unit's functionality. This includes settings, signal routing, audio mixing, Synergy Core effects, metering, and presets.

We encourage you to get comfortable with the software and make the most of your investment. For example, you may find that getting an initial mix happening in the 'Mixer' tab and routing it to your DAW for detailed post-production is quite convenient. Moreover, you will never be stuck figuring out audio inputs and outputs with everything clearly labeled and color-coded in the Routing Matrix.

Feel free to get going immediately with the 'Quick Start' section as your guide or skip it for now and read the entire chapter before you touch any virtual knobs and faders.

Quick Start

Let's begin with some quick examples of essential tasks being accomplished in the Control Panel.

Note: These examples do not convey the "correct" or "only" way of accomplishing the following tasks. They merely illustrate some fundamental logic and offer solutions to the initial stumbling blocks most often encountered by novice users.

Monitor incoming audio via headphones

Say you want to monitor incoming audio from Line inputs 1 and 2 via headphones connected to the Headphone output. Open the Control Panel and enter the 'Routing tab'. Click and drag the colored number blocks labeled '1' and '2' from the 'Line In 1 - 32' row onto the pair of blocks in the 'HP' row. You will find the former inside the 'INPUT' section and the latter in the 'OUTPUT' section.

Adjust headphone gain from the Control Panel's 'Monitors & Headphones' tab or the touchscreen.

Apply Synergy Core FX to incoming audio

Say you want to run audio from Line input 1 through a custom FX chain while monitoring the result through your studio monitors connected to the Monitor outputs.

Open the Control Panel and enter the 'Routing' tab. Open the Control Panel and enter the 'Routing tab'. Click and drag the colored number block labeled '1' from the 'Line In 1 - 32' row onto the colored block labeled '1' from the 'AFX IN 1 - 32' row.

Next, drag the colored block numbered 1 from the 'AFX OUT' row onto the pair of blocks in the 'MONITOR' row.

Now, click the 'AFX' tab. Add your choice FX by clicking the 'ADD NEW EFFECT' drop-down menu. Listen to your FX-processed audio and play around with the effects' parameters.

Route audio to your DAW for recording

Any audio input channel from the Routing Matrix's 'INPUT' section can reach your DAW by dragging its colored number block(s) onto any of the 64 blocks in the rows 'COMP REC 1 - 32' and 'COMP REC 33 - 64' from the 'OUTPUT' section. The 'COMP REC' rows are represented as Audio Inputs 1 – 64 inside the DAW.

Using the flexible Routing Matrix, you can record 'dry' and FX-processed audio on different tracks simultaneously, output entire individual mixes in multi-track or 2-channel stereo formats, and monitor chosen audio with the lowest possible latency.

Mouse & Keyboard Shortcuts

The following features are accessible via mouse & keyboard shortcuts in the Control Panel:

- Return to default value (all knobs and faders):

    double-click the knob or fader.

- Change text labels and manually enter gain values:

    double-click the text label / gain value.

- Adjust parameter values in smaller increments (all knobs and faders):

    Hold Ctrl (Windows) / Command (macOS) and drag.

- Detach, move and resize Control Panel tabs:

    Right-click (Windows) / Command-click (macOS) and drag the tab.

- Click any peak meter to clear it.

Click and drag the corners of the Control Panel application window to freely resize the interface. Note that black bands will be automatically added to the window to preserve the screen ratio. This is by design and it's not a 'bug'.

Main View

The main view is always visible in the Control Panel's top section. It features the following areas:

Function Strip
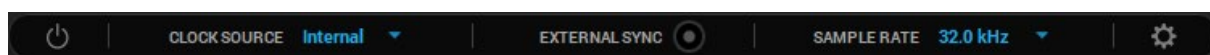
From left to right, the Function Strip features the following items:

On/Standby button

Click to power on the Galaxy 64 Synergy Core or enter standby.

Clock Source

Drop-down menu to choose a clock source. The following choices are available:

- Internal
- W.C.
- S/PDIF
- AES

- MADI (2x, 4x)
- HDX
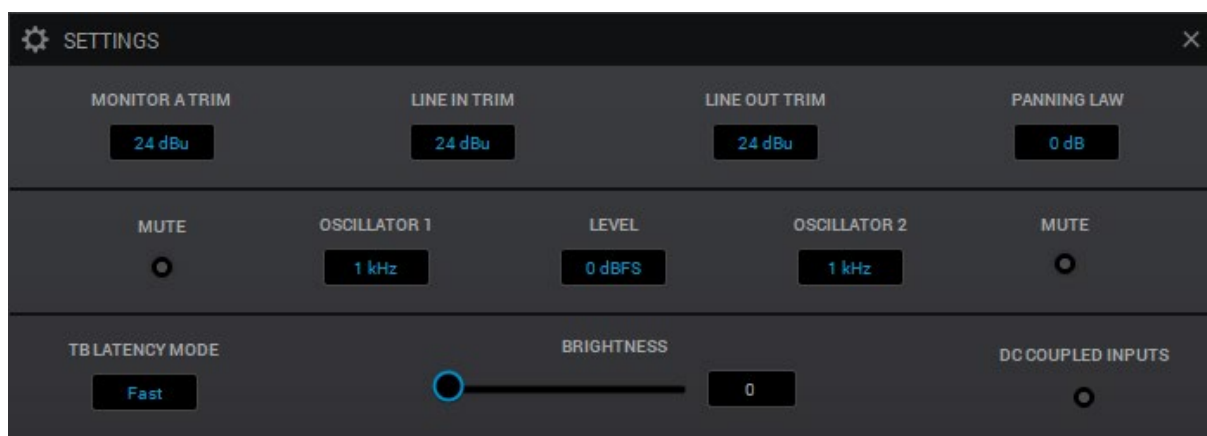
External Sync Indicator

Lights up when the Galaxy 64 Synergy Core is locked to an external clock source.

Sample Rate

Drop-down menu to choose the device sample rate. Make sure your device sample rate matches your DAW and operating system sample rates.

Settings button

Click to open the Settings Window. The following options are available:

MONITOR TRIM

Choose a signal trim value (in dBu) for the monitor output.

LINE IN TRIM

Choose a signal trim value (in dBu) for the line inputs.

LINE OUT TRIM

Choose a signal trim value (in dBu) for the line outputs.

PANNING LAW

Specify panning law compensation between 0dB (none) to -4.5dB.

OSCILLATOR 1 - MUTE

Mute the output of test oscillator 1.

OSCILLATOR 1

Choose the frequency of test oscillator 1.

OSCILLATOR 2

Choose the frequency of test oscillator 2.

OSCILLATOR 2 - MUTE

Mute the output of test oscillator 2.

TB LATENCY MODE

Choose the Thunderbolt™ latency mode. Experiment with the different modes if you experience audio interruptions and glitching.

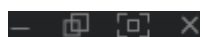### BRIGHTNESS SLIDER

Click and drag to adjust the Galaxy 64 Synergy Core touchscreen brightness.

DC COUPLED INPUTS

Click to enable DC-coupling for the Galaxy 64 Synergy Core line inputs.

Window Controls

From left to right: Minimize, Maximize, Return to default size, Close window
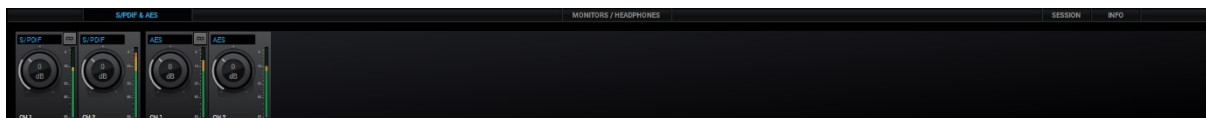
Tab Selector

Switch the Main View between S/PDIF & AES | MONITORS/HEADPHONES | SESSION | INFO views.

'S/PDIF & AES' Tab

This view contains controls for two S/PDIF and two AES/EBU audio channels. The controls are identical and feature the following functionality:

- **Link button** – Links adjacent S/PDIF or AES/EBU channels. Adjustments made to one channel will be reflected by its neighboring channel.
- **Gain knob** – click and drag to adjust signal gain.
- **Gain meter** – provides volume metering.

'MONITORS/HEADPHONES' Tab
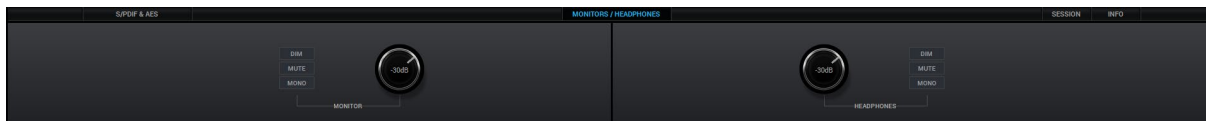
This tab provides identical controls for the Galaxy 64 Synergy Core's Monitor and Headphone outputs:

- **'DIM'** – 'Ducks' audio level when toggled.
- **'MUTE'** – Mutes audio output when toggled.
- **'MONO'** – Sums output to mono when toggled.
- **Volume knob** – Click and drag to adjust output volume.

'SESSION' Tab

This tab lets you save and load Sessions. Sessions are complete snapshots of Control Panel settings. This way, you can easily recall specific gain and routing adjustments, device settings, and so on. Sessions are stored on your hard drive as *.as files. You can easily share them with other Galaxy 64 Synergy Core users.
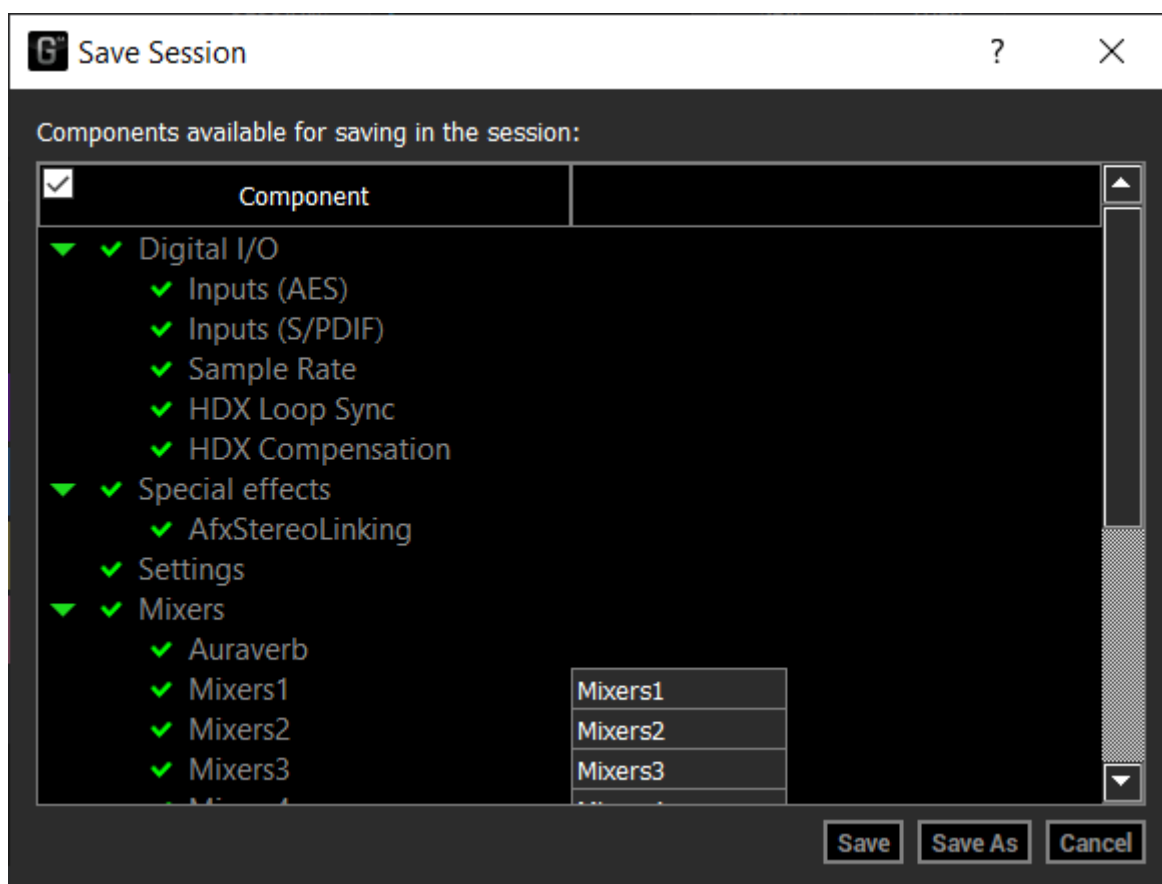
The Save Session and Load Session windows let you choose the exact Control Panel components you want to save in or load from the Session file. Simply click and place checkmarks next to the components you want to save or load.

'INFO' Tab
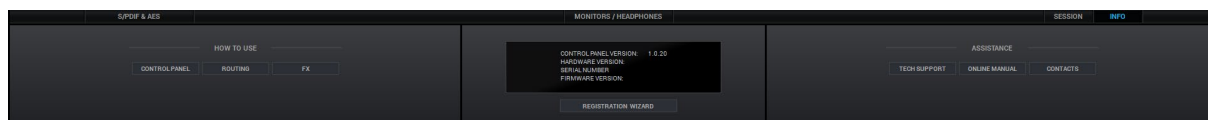
The info tab contains:

- Shortcuts to YouTube videos covering the Control Panel, routing, and Synergy Core FX functionality.
- Firmware, hardware and software information.
- The 'Registration Wizard' button opens the Antelope Registration Wizard, used for registering devices and assigning purchased FX or add-ons to them.
- Shortcuts to Antelope Audio Tech Support, the Galaxy 64 Synergy Core user manual, and contact information.

'ROUTING' Tab

This tab contains the Routing Matrix for analog and digital audio routing. The Routing Matrix is row-based. Each row has its own unique color and represents a specific audio input or output with its maximum number of channels.

The Routing Matrix is split in two main sections: **Input** (Source) and **Output** (Destination). Route audio between them by dragging and dropping the colored number blocks. The following functionality is also available:

- Click on a number block to highlight the destinations it's currently routed to.
- Double-click a number block to change its text label.
- Click the colored names of rows (which appear in the horizontal Input and Output bars) to show and hide any inputs and outputs of your choice.
- Use Ctrl/Command + Click and Shift + Click operating system shortcuts to select multiple blocks.
- An alternative grid-based view is available ('MATRIX'). Please read the guide.
- Undo/Redo buttons are available.
- Save/Load buttons let you save and load routing setups (as opposed to entire Sessions).
- Right-click (Windows) or Command + Click (Mac) on the 'Routing' tab button and drag to have the Routing Matrix in its own floating window.

Routing Matrix - Terminology

Here are the individual rows inside the Routing Matrix explained:

'INPUT' SECTION

LINE IN 1-32, 33-64

These rows represent the 64 line inputs.

COMP PLAY 1-32, 33-64

These rows represent DAW 'Outputs 1 - 64'. <u>This is where you receive audio from your DAW.</u>

Create a new track in your DAW and assign the output with matching number - e.g. DAW 'Output 1' = 'COMP PLAY' 1.

These rows also represent all computer audio, such as media playback, YouTube, etc. By default, the system stereo mix is routed to outputs 1 and 2.

DANTE IN 1-32, 33-64

These rows represent 64 channels of incoming Dante® network audio.

MADI IN 1-32, 33-64

These rows represent 64 channels of incoming MADI digital audio.

DIGI IN 1-32, 33-64, 65-96, 97-128

These rows represent up to 128 channels of incoming HDX digital audio.

AFX OUT 1-32

This row represents 32 audio channels with Synergy Core FX applied.

MIX1 L/R

This row represents main outputs 1 and 2 of virtual Mixer 1. The 4 virtual mixers are found in the 'MIXER' tab.

'OUTPUT' SECTION

LINE OUT 1-32, 33-64

These rows represent the 64 line outputs.

HP

This row represents 2-channel headphone output audio.

MONITOR

This row represents 2-channel monitor output audio.

COMP REC 1-32, 33-64

This row represents DAW Inputs 1 – 64. This is where you send audio to your DAW for recording. To record from a 'COMP REC' output, route audio to it from the 'Routing' tab. Create a new track in your DAW and assign the input with the matching number - e.g. 'COMP REC' 1 = DAW 'Input 1'.

DANTE OUT 1-32, 33-64

These rows represent 64 channels of outgoing Dante® network audio.

MADI OUT 1-32, 33-64

These rows represent 64 channels of outgoing MADI digital audio.

DIGI OUT 1-32, 33-64, 65-96, 97-128

These rows represent 128 channels of outgoing HDX digital audio.

'MIXER' Tab
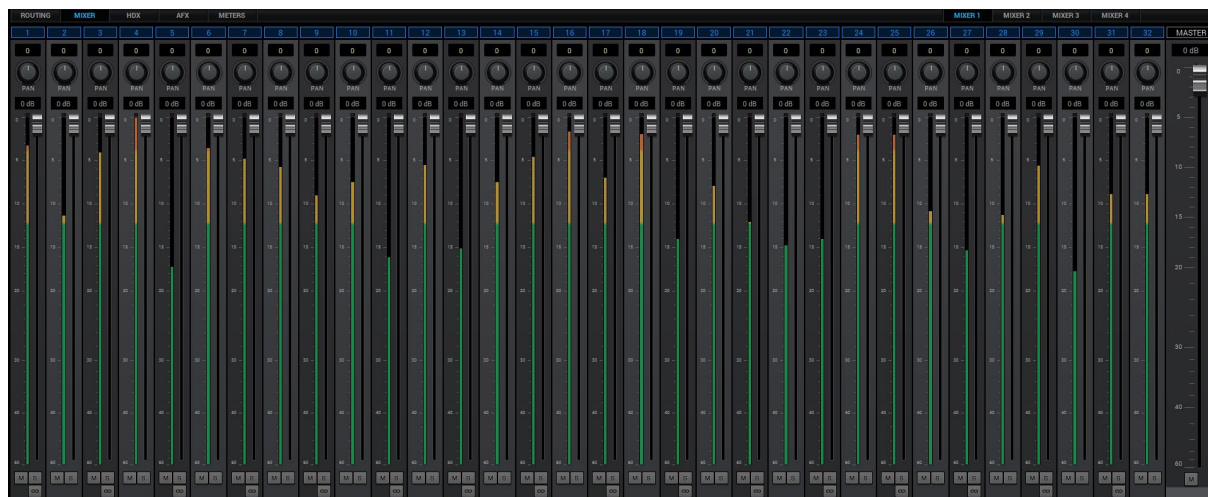
The Mixer tab is home to four 32-channel virtual mixers. Each channel is equipped with Pan, Volume, Solo, and Link controls (on odd-numbered channels), as well as metering. The Master channel has Volume and Mute controls.

[1 - 23]
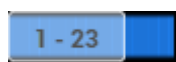
Note the colored slider immediately below the Master fader. Click and drag left and right to scroll horizontally between mixer channels 1 - 32.

Limitations

- There is no grouping/bus/sub-mixing functionality, but the four full-fledged mixers give plenty of space to set up sub-mixes alongside your main mix.

- Due to technical reasons, we cannot offer volume automation inside the mixers at this time. Synergy Core FX automation is possible in your DAW with AFX2DAW.

- MIDI control is not supported at this moment.

'HDX' Tab
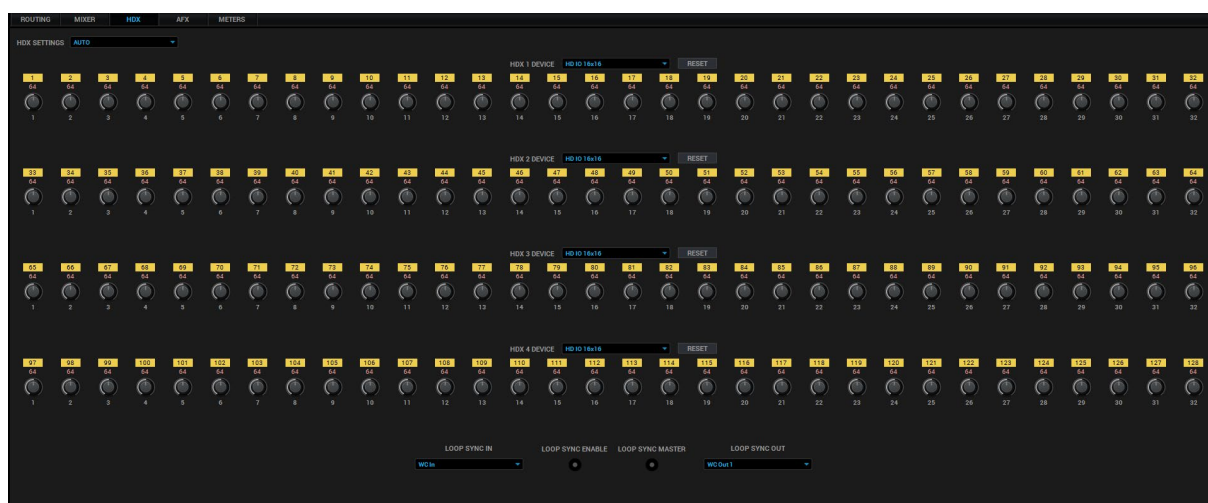
The 'HDX' tab contains the following Pro Tools-relevant functionality:

HDX Settings

Drop-down menu to choose between automatic, manual or none HDX delay compensation.

HDX 1-4 Device

The 128 HDX audio channels handled by the Galaxy 64 Synergy Core are spread across four virtual HDX devices. Each virtual device handles 32 audio channels. These drop-down menus let you choose how these virtual HDX devices are represented in Pro Tools.

Yellow number indicators

Specify the audio channel number.

Delay compensation knobs

When 'HDX Settings' is set to 'Manual', these knobs let you adjust HDX delay compensation (from 0 to 128 samples) for individual audio channels.

Loop sync in

Drop-down menu to choose the external clock input providing loop sync for Pro Tools. The options are Word Clock In or Atomic Clock In.

Loop sync enable

Click to toggle loop sync on or off.

Loop sync master

Click to assign the Galaxy 64 Synergy Core as the primary loop sync source.

Loop sync out

Drop-down menu for choosing which word clock output the loop sync signal is routed to.

'AFX' Tab

The 'AFX' tab is contained in a floating window. It lets you apply up to 8 Synergy Core effects per mono audio channel, independent of sample rate.

FX Basics

- Route audio to the 'AFX IN' row inputs in the 'Routing' tab.

- Click the audio input (or linked pair) you want to work on:

- 'Link' buttons are available for each pair of inputs. Linking two inputs means the exact same FX processing is applied to both. Names of inputs and linked inputs are shown immediately above the Presets drop-down menu on the left.

- The 'DEL ALL' button clears all FX racks for all audio channels. This function is protected with a tooltip: macOS (CMD + Left Click) & Windows (Ctrl + Left Click)
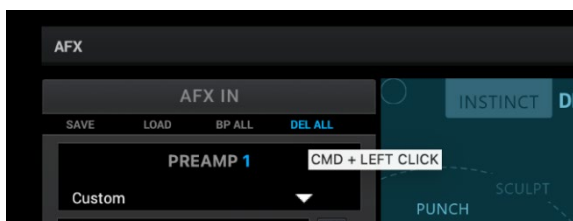
- Click the 'ADD NEW EFFECT' drop-down menu to choose and add effects. Their instances will appear in the FX Rack to the right. The list on the left lets you drag to re-order.

- Use the 'SAVE' and 'LOAD' buttons to store FX chains.

- Use the 'BP ALL' and 'DEL ALL' buttons to bypass or delete all FX on the current channel.

- Individual 'BP' (bypass) buttons are available next to each effect in the list to the left.

- Hold Ctrl (Windows) or Command (Mac) and drag to adjust FX parameters in smaller increments.

Notes:

- Manuals for the equalizers and compressors are available here.

- The Antelope Audio AFX2DAW plug-in makes it possible to use Synergy Core FX inside your DAW. Please visit the AFX2DAW product page for more information.

'TRIMS' Tab
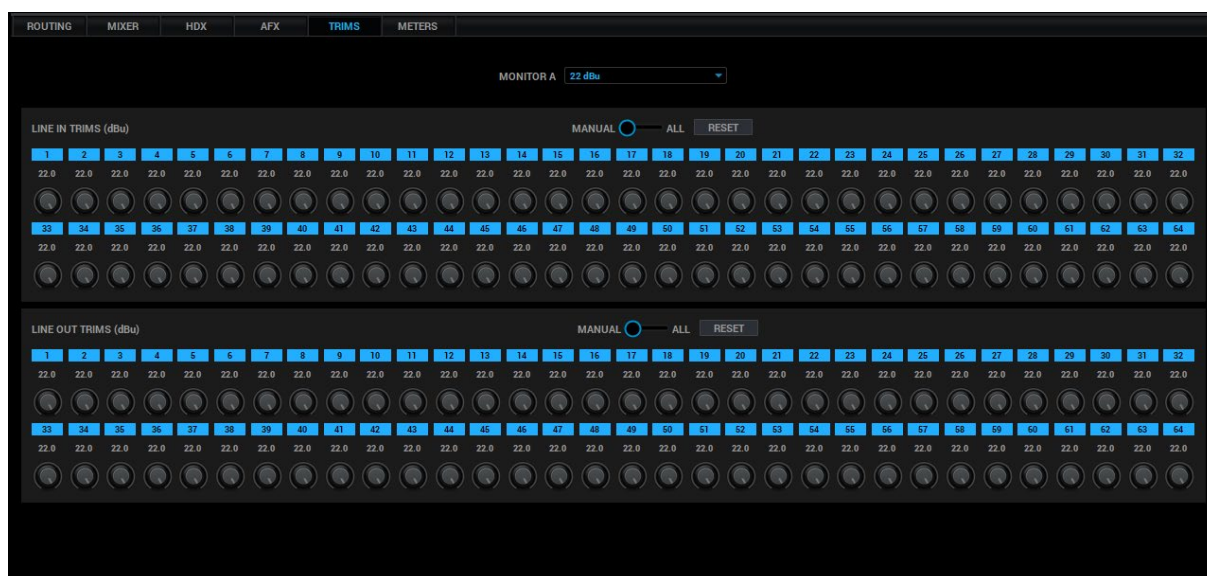
This tab lets you adjust signal trim for the monitor outputs, the line inputs and the line outputs. By default, signal trim is set to 22dbu. Use the Manual/All switches to adjust signal trim for individual audio channels or globally. Click the 'Reset' buttons to return all trim values to default.

'METERS' Tab
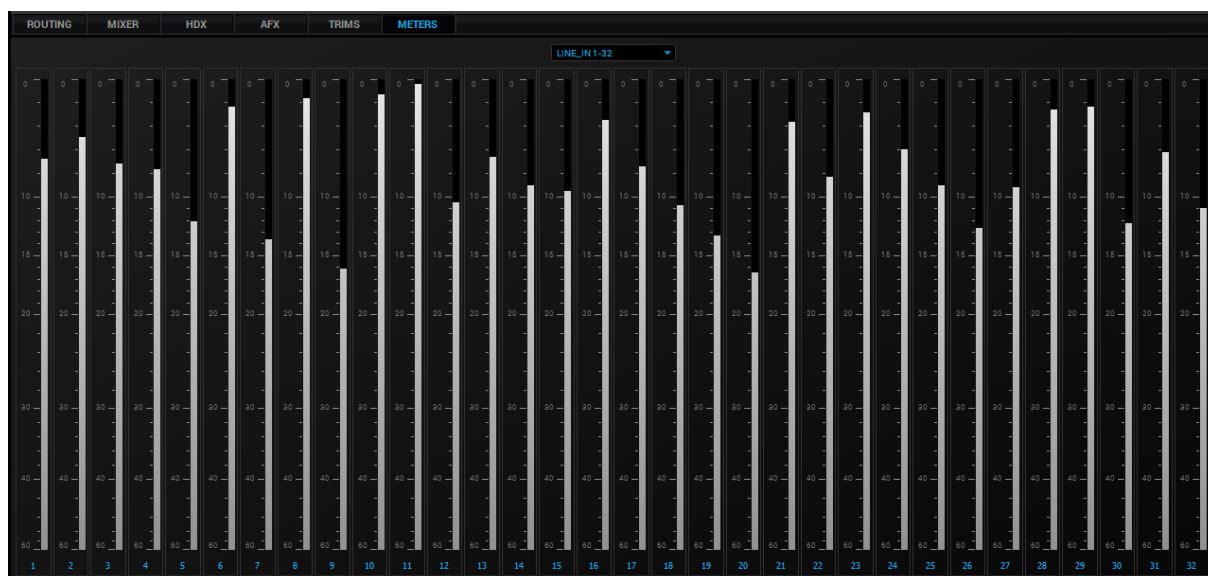
This tab lets you monitor signal levels for all audio inputs and outputs of the Galaxy 64 Synergy Core. Click the drop-down menu to select an input or output.

GETTING STARTED WITH DANTE®

The audio networking choice of nearly all professional audio manufacturers, Dante™ audio networking uses standard IP networks to transmit high-quality, uncompressed audio with minimal latency.

To get started with Dante®:

1. Download and install the Dante Controller Windows/Mac application from Audinate.

2. Connect the Galaxy 64 Synergy Core to your computer or network hub with a standard Cat5 or Cat6 ethernet cable.

3. Launch Dante Controller. The Galaxy 64 Synergy Core will appear as 'AA-SERIALNUMBER'.
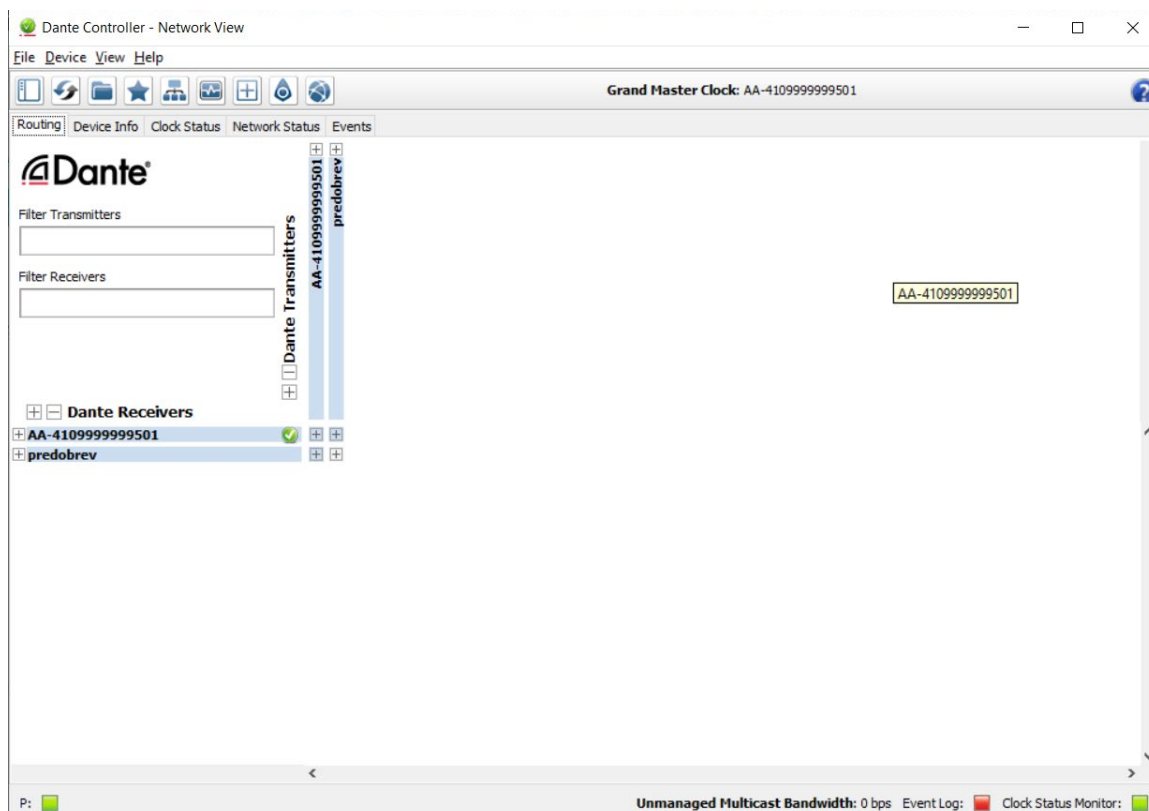
4. Click 'Device' and choose 'Device View'. Choose the Galaxy 64 Synergy Core from the drop-down menu and head to the 'Device Config' tab:
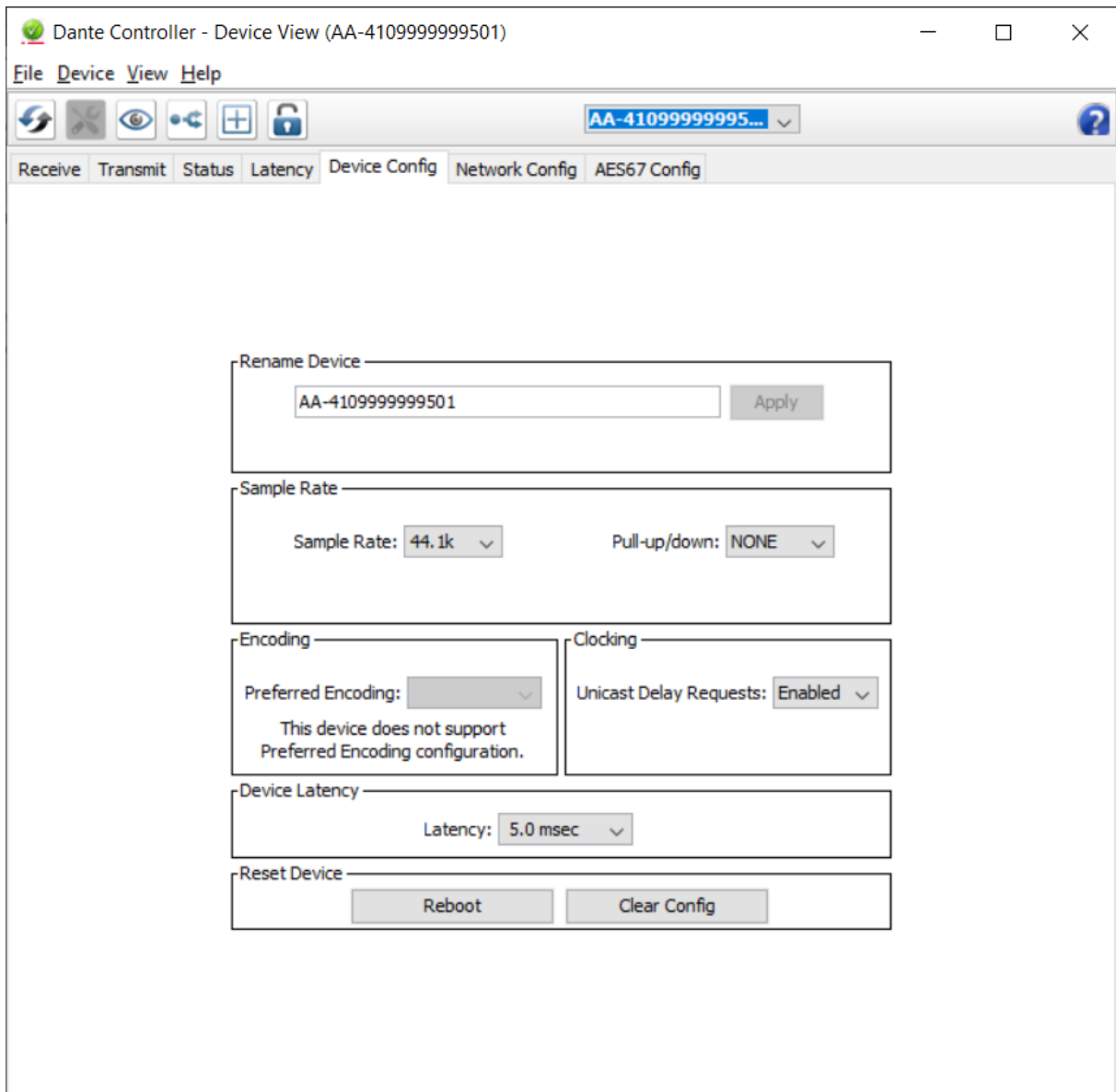
5. <u>Make sure the sample rate matches that of the device and your DAW project.</u> Feel free to close the window.

6. Back in the Dante® Controller application, use the provided routing matrix in combination with the Galaxy 64 Synergy Core Control Panel application to route audio inside your network:

CUSTOMER SUPPORT INFORMATION

Antelope Audio Customer Support can be reached by the following means:

Online

Visit support.antelopeaudio.com

Phone

We are there for you around the clock, 21 hours/day, Monday to Friday.

North America +1-916-238-1643 01:00 a.m. – 10:00 p.m. (EST)

International +44 19 2593 3423 06:00 a.m. – 03:00 a.m. (GMT)

Pour le Support francophone: +44 20 3389 8108 09:00 a.m. - 17:30 p.m. (GMT+1)

Live Chat

Live Chat is available during the following hours Monday to Friday

International 06:00 a.m. – 06:00 p.m. (GMT)

Note: If you're trying to reach us outside working hours, we advise you to file a ticket in our customer support system or leave a voice message.

Additional Resources

- The Antelope Audio YouTube channel is home to various tutorial videos and endorser content which you may find helpful and inspiring. Good examples are the Getting Started and Advanced Tips & Tricks playlists.

- The Antelope Audio Users Facebook group lets you interact with fellow users and some of our employees. Note, however, that it is not meant to be a support group. Please contact our customer support team for such inquiries.

- The Knowledge Base in our Customer Support section is an often-overlooked source of troubleshooting information, answers to commonly asked questions and Antelope know-how.

MY ANTELOPE AUDIO PRODUCT ISN'T WORKING.

WHAT SHOULD I DO?

If you cannot find a solution on your own, please get in touch with us so we check if you are having a hardware-related issue. If this is the case, we will guide you through the repair process. If the product should be returned, an RMA number will be issued so we can begin the procedure.

What's an RMA number?

Issuing a RMA (Return Merchandise Authorization) number is required for any factory service or repair procedure. Please, don't attempt to send us your device without receiving a RMA number first, as the device will be returned and not serviced.

How do I get an RMA number?

The Antelope Audio Customer Support team is in charge of issuing RMA numbers. Visit support.antelopeaudio.com and get in touch.

After your RMA has been issued, you will receive an email with instructions on how to proceed.

RMA shipping information

Alongside the product you are returning please, include a letter containing your full name, shipping address, RMA number issued by our technical support team and a note with a short information about the technical issue.

Please use the original box if possible, because a worn out one will surely not protect your product sufficiently on its way to the Antelope Audio HQ. Additional cushioning materials in multiple layers between the unit and the box walls to prevent from shock, vibration and various tears and scratches.

Please remove any labels or old shipment markings it may have and ensure you add your shipping address inside the box in case the original shipment label becomes illegible during transportation.

The shipping costs are covered by the owner of the product. Antelope Audio will not cover any local customs charges.

We recommend using a courier service of your choice (e.g. DHL, UPS, FedEx). The package should be insured for its real value, marked as fragile and a tracking number should be provided. We do not recommend using standard mail delivery services.

Please, don't forget to add the RMA number, issued by the Antelope Audio technical support, on all shipping paperwork.

Antelope Audio cannot be held responsible for undelivered packages – lost or damaged on the way to the Antelope Audio HQ. For damage claims, please contact your shipping service provider of choice.

Antelope Audio cannot cover any repair costs for product damages due to poor packaging.

LIMITED WARRANTY POLICY

This is a non-transferable voluntary Limited Product Warranty provided to end-customers who have purchased Antelope Audio-branded hardware product (hereinafter referred to as "Product") from an authorized Antelope Audio re-seller.

For customers covered by consumer protection laws or regulations in their country of purchase or, if different, their country of residence, the benefits conferred by Antelope Audio's Limited Warranty are in addition to, and not instead of, rights and remedies convened by such consumer protection laws and regulations and it does not exclude, limit or suspend buyer's rights arising from consumer law. Consumers have the right to choose whether to claim service under the Antelope Audio Limited Warranty or under their consumer law rights.

All claims made under the Antelope Audio Limited Warranty will be governed by the terms set out in this warranty document.

Warranty Coverage

Antelope Audio warrants that the Product will be free from defects in material and workmanship for the period of 1 (one) year commencing on the date of purchase of Product by end-customer from authorized Antelope Audio's re-seller.

Except where explicitly prohibited by applicable local law, this warranty is limited to the original purchaser and is non-transferable. This warranty provides you with specific legal rights, and you may have additional rights that vary under local laws.

In general, this warranty means your Antelope Audio hardware product will operate in accordance with published technical specifications, as specified by its data-sheet, and in the operating environment for which it was intended for the length of the warranty period.

This version of the warranty applies to products purchased on or after January1,2018. For prior versions of the Antelope Audio limited warranty, please contact customer service.

Limited Factory Refurbished (B-stock) Warranty

Antelope Audio warrants products sold as "B-stock, Factory Refurbished or Open Box" to be free from defects in materials (unless otherwise stated in product description) and workmanship. Only products purchased from an authorized dealer or directly from Antelope Audio are covered by this Warranty.

The Limited Factory Refurbished (B-stock) Warranty is valid for the period of 6 (six) months, commencing on the date of purchase of Product, if local regulations do not require otherwise.

All warranty terms contained hereunder apply also to the B-stock Warranty, unless otherwise specified.

Remedies

Antelope Audio's entire liability and your exclusive remedy for any Antelope Audio Product that is not operating in accordance with its published technical specifications is at Antelope Audio's discretion:

1) to repair the Product at Antelope Audio's expense using new or equivalent-to new refurbished parts in good working condition; or

2) to replace the Product at Antelope Audio's expense with a product with equivalent functionality formed from new and/or equivalent-to new refurbished parts in good working condition, or

3) to refund the price paid. Should Antelope Audio decide to refund the price paid, it may deduct from the paid Product's price any damages caused to the Product; where, within fourteen (14) days of the expiration of the warranty period,(i) Antelope Audio has received written notice of any nonconformity;(ii) after Antelope Audio's written authorization, customer has returned the nonconforming product to the designated place; and (iii)Antelope Audio has determined that the Product is nonconforming and that such non conformity is not the result of any of the exclusions designated below.

These warranty obligations are conditioned upon the hardware being returned to the original place of purchase, or another place as directed by Antelope Audio, with the original sales receipt attached. You will be required to pay shipping and handling charges for returning the product. You may be required to pay any other applicable tariffs, duties, taxes, or other fees with regard to returning the products.

Any repaired or replacement Product will be warranted for the remainder of the original warranty period.

Obsolete or Discontinued Products

An obsolete or discontinued product will be repaired or replaced with the same product if available. If Antelope Audio is unable to replace your obsolete or discontinued product with the same product, Antelope Audio will replace the obsolete or discontinued product, in its sole discretion, with a product having similar function and capacity.

Exclusions

This warranty does not cover problems or damage resulting from, but not limited to, any of the following: (i)Wear and tear associated with normal use; (ii)Any modification, abuse, accident, disassembly, misapplication, misuse, negligence, acts of God, accident; (iii)Unauthorized repair or attempted repair by anyone other than Antelope Audio or someone authorized by Antelope Audio to do warranty work; any unauthorized repairs will void this warranty(iv)Any improper operation, maintenance or installation, including any use not in accordance with any supplied product instructions; (v)Connection to any improper voltage supply; (vi)Use of consumables or spare parts not supplied by Antelope Audio, except where such restriction is prohibited by applicable local law; (vii)Any other cause which does not relate to a Product defect in materials or workmanship.

The warranty does not apply to any Products which have been subject to misuse, neglect, accident or modification or which have been soldered or altered such that they are not capable of being tested under normal test conditions.

This warranty does not cover (i) any counterfeit products, i.e. Products that Antelope Audio, at its sole discretion, determines were not manufactured by Antelope Audio or any

of its authorized manufacturing partners; (ii) Products purchased from a person or entity which is not an authorized dealer or re-seller of Antelope Audio; (iii)Product sold "as is" or "with all faults", to the extend permitted by local law.

This warranty is not valid in case any manufacturer label(s), serial numbers, date stamp(s) or warranty sticker(s) has been altered or removed from the Product.

Limitation of Liability

ANTELOPE AUDIO SHALL NOT BE LIABLE FOR ANY SPECIAL, INCIDENTAL, INDIRECT, OR CONSEQUENTIAL DAMAGES WHATSOEVER, INCLUDING BUT NOT LIMITED TO LOSS OF PROFITS, REVENUE, OR DATA (WHETHER DIRECT OR INDIRECT) OR COMMERCIAL LOSS FOR BREACH OF ANY EXPRESS OR IMPLIED WARRANTY ON YOUR PRODUCT EVEN IF Antelope Audio HAS BEEN ADVISED PREVIOUSLY OF THE POSSIBILITY OF SUCH DAMAGES. Some local laws do not allow the exclusion or limitation of special, indirect, incidental or consequential damages, so this limitation or exclusion may not apply in your jurisdiction.
ANTELOPE AUDIO WILL NOT ASSUME OR AUTHORIZE ANY OTHER PERSON TO ASSUME FOR IT ANY OTHER LIABILITY IN CONNECTION WITH ITS PRODUCTS.

Data Recovery

In the event of data loss using Antelope Audio storage devices, Antelope Audio is not responsible for backing up or recovering any data that you may have lost.

No Other Warranties

No Antelope Audio employee, dealer, re-seller, or other agent is authorized to make any modification, extension, or addition to this warranty.

How to Make a Warranty Claim

Valid warranty claims should be processed through your point of purchase. Please also verify the return policy directly with the retailer where you purchased your product. Any warranty claims that cannot reprocessed through your original point of purchase should be

addressed directly to Antelope Audio. Our customer service contact information can be found on the web or in the documentation included with your Product.

Returning Your Product

In the event that you need to return your Antelope Audio products for repair or replacement, Antelope Audio will provide you with a Return Merchandise Authorization Number (RMA#) as well as return instructions. Do not return your product without prior approval from Antelope Audio. Any product returned without a valid unique RMA# will be refused and returned to the sender at the sender's expense. To avoid problems at the time of receipt, clearly write your RMA# on the outside of the package and include a copy of your RMA confirmation-mail within the package.

In certain situations, for in-warranty units, we may (entirely at our opinion) offer you a temporary replacement unit, provided that we have such on stock in your state. To request a temporary replacement unit, a valid credit card must be provided to secure the new replacement unit for shipping prior to Antelope Audio receiving the defective one.

Request a Return Material Authorization Number (RMA#)

Please follow these steps to obtain an RMA number:

(I) For end user customers, submit a claim online at: support.antelopeaudio.com. For business to business (B2B) / Direct customers of Antelope Audio please email us at techsupport@antelopeaudio.com

(ii) A valid proof of purchase is required for RMA processing (i.e. receipt, invoice, etc). Antelope Audio will provide you with the RMA number within 2 working days as of the claim submission date.

RMA Return Addresses

We have multiple RMA receiving locations worldwide. Your RMA confirmation will specify the specific return address you must use when sending your RMA package. Any packages

received at an unauthorized location may be refused and returned to the sender at the sender's expense.

Products Lost or Damaged During Transit

The original packaging material should be used to pack the product for return; if the original packaging is not available, you should use such materials that provide the same or greater protection to the product. All packages that arrive with any external damage or appear inadequately packed will be refused and returned to the sender at the sender's expense. We are not responsible for damage incurred during shipping to our RMA receiving locations or for lost or stolen products.

Company information

Antelope Audio is the trade name, under which the company Elektrosfera ltd., registered under the legislation of the Republic of Bulgaria with UIN: 131052590, is doing business and is worldwide known. Elsewhere in this document where the trade name **Antelope Audio** is used shall refer to Elektrosfera ltd., with address of management: Tsarigradsko Shose Blvd., 7th km, Building of BIC IZOT, floor 6, Mladost region, Sofia, Bulgaria.

If any term hereunder is held to be illegal or unenforceable, it shall be severed from this warranty and the legality or enforceability of the remaining terms shall not be affected.

SAFETY NOTES

To reduce the risk of electrical shocks, fire, and related hazards:

- Do not remove screws, cover, or cabinet. There are no user serviceable parts inside. Refer servicing to qualified service personnel.

- Do not expose this device to rain, moisture or spillover of liquid of any kind.

- Should any form of liquid or a foreign object enter the device, do not use it. Switch off the device and then unplug it from the power source. Do not operate the device again until the foreign object is removed or the liquid has completely dried and its residues fully cleaned up. If in doubt, please consult the manufacturer.

- Do not handle the power cables with wet hands!

- Make sure the device is switched off when plugging/unplugging it to/from the power source.

- Avoid placing things on the cabinet or using the device in a narrow and poorly ventilated place which could affect its operation or the operation of other closely located components.

- If anything goes wrong, turn off the device first and then unplug the power. Do not attempt to repair the device yourself. Consult authorized service personnel or your dealer instead.

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

- Do not use harsh chemicals to clean your unit. Clean only with specialized cleaners for electronics equipment.

- Connect all your devices before powering your unit.

- This unit is connected via its power cord to the mains safety earth.

- Never operate the unit without this earth connection.

- DC power supply cable should be routed so that it is not likely to be walked on or squeezed by items placed upon or against it.

- To completely turn off the device, unplug the power cable first from the outlet and then from the rear panel of the unit.

- Both occasional and continued exposure to high sound pressure levels can cause permanent ear damage via headphones and monitors.

- Your unit should always be un-racked when traveling or in a flight case.

- The device is designed to operate in a temperate environment, with a correct Operating Temperature of 0-50° C, 32-122° F.

TECHNICAL SPECIFICATIONS

AD Line Input:

Input Connection:	8 x D-sub 25-pin (Tascam Standard)
I/O Channel Count	64 Mono Channels
Input level trim	14 dBu to 22 dBu in steps of 1 dB
Dynamic Range	121 dB
Supported sample rates	44.1 kHz—192 kHz, 24-bit PCM
THD+N (A)	-112 dB
Impedance Load	11.2 kOhms

DA Line Output:

Output Connection:	8 x D-sub 25-pin (Tascam Standard)
I/O Channel Count	64 Channels
Output level	-inf to 22dBu // 1 dB step
Dynamic Range	128 dB
Supported sample rates	44.1 kHz—192 kHz, 24-bit PCM
THD+N (A)	-115 dB

Impedance Load	11.2 kOhms

DA Monitor output:

Output Connection:	2 x 1/4" 6.35 mm Jack (3 pin)
Chanel Count	2 Mono Channels
Output level	-inf to 22dBu // 1 dB step
Dynamic Range	130 dB
Supported sample rates	44.1 kHz—192 kHz, 24-bit PCM
THD+N (A)	-115 dB
Impedance Load	11.2 kOhms

Digital Interface – Thunderbolt™:

Interface Connection:	2 x Thunderbolt™ 3 (Type-C) Ports, I/O
I/O Channel Count	64 Channels (per port)
Daisy-chain	Supported
Remote Control	Supported (over USB Type-C)
Supported sample rates	44.1 kHz—192 kHz, 24-bit PCM
Control Panel Support	Yes

Digital Interface - Dante:

Interface Connection:	2 x RJ-45 Ports, I/O
I/O Channel Count	64 Channels @44.1/48.0 kHz 32 Channels @88.2/96.0 kHz 16 Channels @176.0/192.0 kHz
Connectivity	1x Primary Port 1x Secondary Port (For redundancy only)
Supported sample rates	44.1 kHz—192 kHz, 24-bit PCM

Digital Interface - HDX:

Interface Connection:	4 x HDX Ports, I/O
I/O Channel Count	128 Channels (32 Per Port)
Primary/Secondary ports	4 Primary
Supported sample rates	44.1 kHz—192 kHz, 24-bit PCM
Delay Compensation	Supported
Manual Delay Compensation	Supported (up to 128 samples)
Session I/O Support	Yes (16x16)

Digital Interface - MADI:

Interface Connection:	2 x Optical SC Connectors
MADI Mode	Dual Wire, Optical
SMUX	Supported
MADI Protocol	AES10-2003
I/O Channel Count	64 Channels @44.1/48.0 kHz
Supported sample rates	44.1 kHz—192 kHz, 24-bit PCM

Digital Interface - S/PDIF:

Interface Connection:	2 x RCA Connectors
SPDIF SRC	Supported
I/O Channel Count	2 channels
Supported sample rates	44.1 kHz—192 kHz, 24-bit PCM

Digital Interface - AES/EBU:

Interface Connection:	2 x XLR Connectors
AES Mode	AES/EBU
I/O Channel Count	2 channels
Supported sample rates	44.1 kHz—192 kHz, 24-bit PCM

Clocking System:

Clocking Technology	4th Generation Acoustically Focused Clocking 64-Bit Jitter Management DDS
Word Clock Input	1 x Input @ 75 Ohms 3Vpp on BNC
Word Clock Output	6 x Output @ 75 Ohms 3Vpp on BNC
Loop-Sync Input	1 x Input @ 75 Ohms 3Vpp on BNC
Loop-Sync Output	1 x Output @ 75 Ohms 3Vpp on BNC
10M Atomic Reference Input	1 x Input @ 75 Ohms 1Vpp on BNC
Clock Stability Clock Aging Clock Calibration	<+/-0.02 ppm. < 1 ppm per year <+/-0.001 ppm
Supported sample rates	44.1 kHz—192 kHz, 24-bit PCM