Antelope
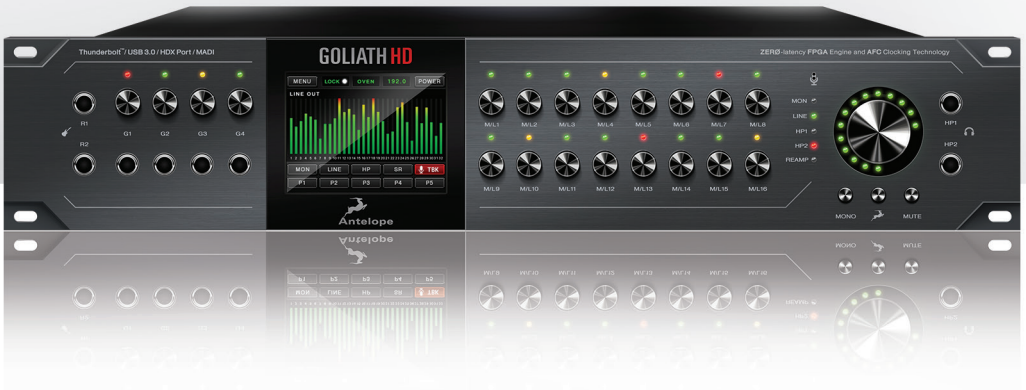# Owner's Manual

GOLIATH HD

Professional
HDX | Thunderbolt™ | USB | MADI
Audio Interface

Owner's Manual

Contents

1. 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.

2. Introduction

Thank you for purchasing Goliath HD from Antelope Audio.

Goliath HD is a 64-Channel interface that can be used with Pro Tools HD or Native DAWs via second generation Thunderbolt™, USB 3.0 or via 2 MADI connections, which are compatible with MADI to Dante Bridge products. Coming with extensive I/O options, featuring 16 Accusonic mic preamps with individual volume controls, 32 analog ins with 124dB of Dynamic Range, 32 analog outs with 129dB of Dynamic Range, plus mastering grade monitor outputs, featuring new technology that boosts dynamic range to a spectacular 132dB. Goliath HD comes with 8 instrument inputs, 2 transformer re-amp outs, integrated Talkback mic, 2 headphone outs and a pair of analog inserts. And if this wasn't enough, the descendant of the mighty Goliath HD offers also AES, MADI, ADAT and S/PDIF connectivity.

FPGA offers a whole new level of real time performance and sonic excellence. The platform is taking advantage of real hardware circuitry and component modeling, allowing engineers to track a vocalist with a zero latency headphone mix, including reverb; record a guitar part with proper feel & tone, using onboard amp and cabinet FX. Capturing a full drum kit is also brought to another level with up to 16 mics using the industry's best new Microphone and Mic Preamp technology, all in realtime.

Needless to say Goliath HD is armed with the full Antelope Audio arsenal of hardware-based FPGA FX. These include the most authentic and realistic zero latency Vintage EQs, Compressors and guitar amp & cabinet models on the market. Use them for real time tracking or mixing and easily save presets with your favorite setups. Those can be easily recalled or shared with other studio facilities, which are also part of the global Antelope Audio family.

By offering both HD and USB 3.0 modes, engineers can now accommodate producers and their laptop projects and integrate them into their existing HD setups by easily switching between HD and our low latency Thunderbolt™ and new USB 3.0 modes.   With Antelope's proprietary HDX Delay Compensation, any analog or digital input can arrive in Pro Tools HD sample accurately in the timeline. No other interface on the market offer this level of perfect integration for digital sources to Pro Tools HD software.

The Antelope Audio Real-time FX, zero latency independent software mixers and routing matrix with two alternative views are the perfect compliment to Pro Tools HD studios, which have come to expect maximum power at their disposal. Goliath HD, however, is compatible with any DAW on the market

making the device the heart and soul of the highest tier audio facilities around the world. Our newly introduced full Session Presets are the perfect match for the complex and large-scale setups and projects Goliath HD was designed to handle.

Another reason why Goliath HD sounds like no other interface on the market is because of the world-renowned Antelope Audio Acoustically Focused Clocking (AFC) jitter management technologies it features. With over 20+ years of history in digital clocking behind our backs, we backed the Goliath HD up with all OCX HD and Trinity sounding audio clocking. This unbeatable sonic detail and precision, combined with analog authenticity will bring your sound to the realms of hi-end audio. Now you can also spread this perfection across your whole studio as BNC connectors are available for use as Loop Sync, standard Word Clock I/O and the Antelope Audio 10M atomic input.

Goliath HD features a redesigned front panel. With enhanced monitor and level indicators, the responsive Touchscreen offers multichannel metering, easy access to preferences, presets, and clocking modes for HD or Native interfacing. And if this wasn't enough, the Goliath HD dedicated Android & iOS compatible mobile app will allow you to turn your smartphone or tablet into a powerful audio interface remote control. Goliath HD guarantees quiet operation even in the most demanding control rooms. Don't be surprised if soon expensive machine rooms become a thing of the past.

For further information, you can also visit our support area online for the FAQ, Help Desk and to register your product at: www.antelopeaudio.com.

Enjoy working with the new Goliath HD!

All the best,
The Antelope Team

3. Features

- Hardware-based vintage effects: EQs, Compressors, Reverb, Guitar Amps & Cabinets
- Proprietary Field Programmable Gate Array (FPGA) with massive modeling capabilities
- 2 × HDX ports
- 1 × USB 3.0
- 1 × Thunderbolt Gen2
- 16 × Universal Inputs (Mic In/Line In) on XLR (Inputs 1-4 HiZ compatible, 1 & 2 connected to AD Inserts)
- 4 × Instrument In on 1/4 stereo jack (dedicated for instrument / HiZ only)
- 16 × Line In on 2 × DB25
- 32 × Line Out on 4 × DB25
- 2 × Reamp Out on 1/4 stereo jack
- 2 × HP Out on 1/4 stereo jack
- 2 × AD Inserts on double TRS (only for rear Mic/Line Inputs 1 & 2)
- 1 × S/PDIF In on RCA (2 CHs)
- 1 × S/PDIF Out on RCA (2 CHs)
- 4 × AES/EBU In on DB25 (8 CHs)
- 4 × AES/EBU Out on DB25 (8 CHs)
- 2 × ADAT In on Fiber optic
- 2 × ADAT Out on Fiber optic
- 1 × Atomic In on BNC
- 1 × WC In on BNC (also used for HDX Loop Sync)
- 2 × WC Out on double BNC (also used for HDX Loop Sync)
- 2 × Optical MADI In and Out on Fiber optic (64 channels on each MADI)
- 1 × Monitor Line Out on 1/4 TRS stereo jacks (L/R CHs) for pair of stereo monitors
- 1 × TALKBACK Mic
- 1 × 3.5" high resolution TFT display (262 000 colors) with capacitive touch screen panel
- 1 × Big knob for all Monitor or Line Outs and HP volume control

4. Installation Guide

Connect to the AC power source via rear panel connector.

Connect the AC power source on the rear panel.

1. Connect the USB 3.0 or Thunderbolt™ cable to the corresponding port on your computer.

2. Download the Goliath HD launcher and driver from http://www.antelopeaudio.com/products/goliath-hd/.

3. Start the application, the launcher will automatically download the Software Control Panel.

4. Open your Control Panel by double clicking and follow the device activation procedure.

5. Connect your inputs and outputs of choice to Goliath HD.

6. Open your preferred DAW and ensure the device is selected as an input and output.

Note: *Make sure your Goliath HD has the most recent firmware installed. Check this by selecting the Info panel and clicking on the Firmware Update button.*

See picture:
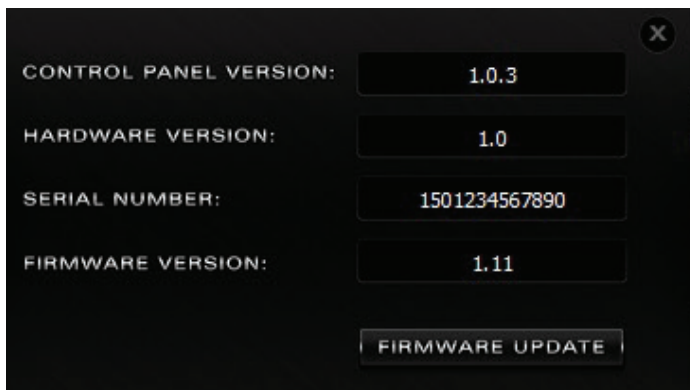
Activation Guide

It is essential to activate your Goliath HD before using it. Once connected to your AC and via USB 3.0 or Thunderbolt™ to your computer follow the steps below:

Navigate to www.antelopeaudio.com/support/downloads and then to Goliath HD.

1.   Download the Goliath HD Launcher.

2.   Start the application (If you are on a PC install the launcher). The launcher will automatically download the Software Control Panel.

3.   You will be greeted by an Activation Screen. If you already have an Antelope Audio account click on "Use existing Antelope ID". Enter your information and click Continue.

4.   If you don't have an Antelope Audio account please enter a user ID, e-mail and password, then click Done.

5.   Check your email for the activation link mail and click on it. If the email does not appear in your Inbox, please check your Spam folder.

6.   Go back to the launcher and enter the required information. Click Done.

7.   You're good to go!

Note: *If you haven't activated your Goliath HD, a red window will appear on the touch screen saying: PLEASE ACTIVATE. Please follow the steps above to successfully activate it.*

5. Front Panel Explained
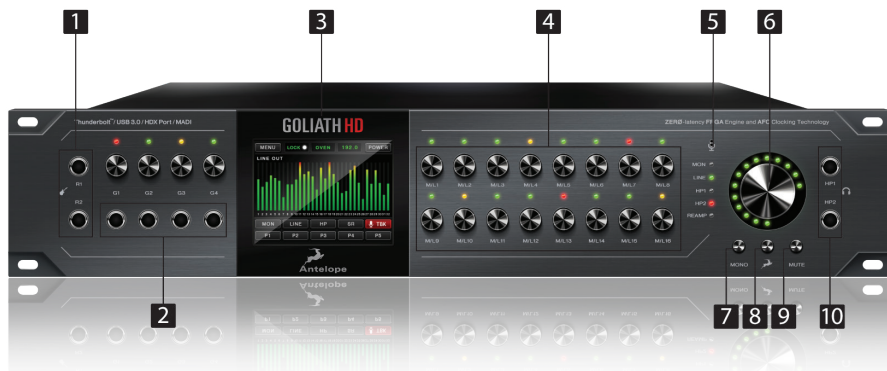
1. **2 Re-amp outputs**
   These outputs are direct outputs that should be used with guitar amplifiers for re-amping.

2. **4 Instrument Inputs**
   Hi-Z Inputs with dedicated rotary control knobs. Hi-Z Inputs are suitable for connecting instruments such as bass or guitar to the Goliath HD.

3. **High resolution "capacitive touch" TFT display**
   Multi function touch screen that displays various information and gives control over certain functions of the device.

4. **Channel Gain Control knobs / Input Selectors**
   To adjust the input signal of the channel, turn the knob left/right. Value can be adjusted in 1 dB steps. The peak indicator lights in response to the level of the input signal. Press and hold the rotary knob to mute the corresponding channel.
   To switch between the input modes (Mic, Line, Hi-Z on inputs 1-4) press the rotary knob. Please ensure that your selection matches the type of input signal.

5. **Talkback mic**
   Press the talkback button, located onto main display to activate the talkback microphone. This can be distributed to the selected headphones and/or monitors using the software control panel.

6. **Main Rotary Knob with LED Ring**
   Press the knob to cycle through and/or change the volume levels of Monitor, Line, HP and Reamp outs. The LED Ring shows the Volume Control or Mute status of the selected output.

7. **Mono Button**
   Changes from Stereo to Mono the current output that is selected by the Main Rotary Control

8. **Antelope Button**
   Accesses various menus in combination with other buttons.

   Antelope button & Mono button: Enters touch screen calibration mode.

   Press and hold the Mono button + Mute button before powering on the device: Factory Reset Combo.
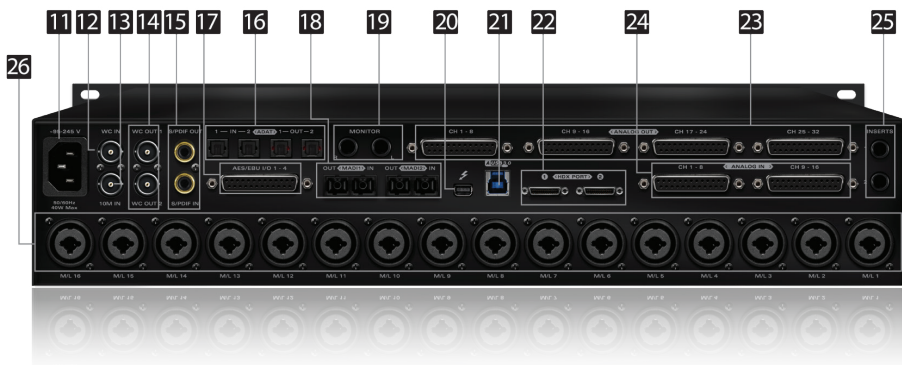
9. **Mute Button**
   Mutes the current output that is selected by the Main Rotary Control

10. **2 Headphone outputs**
    Two independently assignable headphone outputs, selectable and controllable via the main volume control knob. The lights next to the outputs are illuminated to indicate which headphone output is currently controlled.

6. Rear Panel Explained

11. Mains Power Connector
The IEC connector supports a range from ~95-245 V. This enables the device to automatically accommodate mains voltage in every country.

12. Word Clock Input
(also used for HDX Loop Sync)
BNC connector used to accept Word Clock reference.

13. 10M Input
This BNC Input Connector allows the Goliath HD to receive timing reference from an Atomic Clock such as the Antelope 10M and 10MX, to increase the Oscillator accuracy. If the device is in Oven mode, plugging in the atomic clock causes the "Oven" light to turn to "Atomic" on the touchscreen and the atomic device becomes the primary timing reference, thus providing better sample accuracy, more detailed sound and greater stability.

14. Word Clock Outputs
(also used for HDX Loop Sync)
Two Word Clock Outputs on BNC connectors.

15. S/PDIF I/O
75 Ω S/PDIF inputs and outputs on RCA for use with compatible equipment.

16. ADAT Inputs and Outputs
2 Inputs & 2 Outputs (up to 8 channels per line).

17. AES/EBU I/O
D-SUB 25 connector has 4 ins and 4 outs (following TASCAM standard).

18. MADI Inputs and Outputs
2 x MADI I/O Connectors providing 64 tracks input and 64 tracks output per connector.

19. Monitor Outputs
A stereo pair (2 x ¼ TRS) of balanced outputs to connect a pair of monitors.

20. Thunderbolt™ Port
Enables you to connect your Goliath HD to a Thunderbolt™ port on a Mac computer using a Thunderbolt™ cable (not included).

21. USB 3.0
Goliath HD uses USB 3.0 connector compatible with Windows & Mac OS X.

22. HDX Ports
Enables you to connect your Orion32 HD to an HD system (cable not included).

23. Analog Line Outputs (on top)
Four D-SUB 25 connectors enable you to attach breakout cables, each with 8 lines.

24. Analog Line Inputs (on bottom)
Two D-SUB 25 connectors enable you to attach breakout cables, each with 8 lines.

25. AD Insert Points
Two ¼" TRS insert points (L & R) for connecting analog gear such as dynamics processors or EQ's, just before the A/D conversion.

26. Mic and Line Inputs
16 Class-A mic/line preamps, with phantom power over combo XLR. First four also Hi-Z compatible.

7. Touch Screen Explained

The Goliath features a touch screen on its front panel. From it you can access all options of the device. The touch screen features the following options:

Menu
Here you can adjust different Goliath HD parameters:

Comm Interface
Selects which is the current type of connection between the computer and the Goliath, USB or Thunderbolt™.

Screen Saver Style and Time
Changes the amount of time it will take for the screen saver to appear as well as the type of the screen saver for the touchscreen.

SR Conversion
Enables and disables the Sample Rate Converter for the S/PDIF Inputs.

Presets Saving
Enables you to save the current settings on a preset.

Main Display
Tap it you select the meters to be currently displayed.

Lock
Indicates whether the Goliath HD is locked to an incoming signal or not.

MON
Enter the Monitor menu to adjust the Monitor volume level from the main Volume Knob.

LINE

Enter the Line Out menu to adjust the output volume level.

HP

Cycle through the two Headphone outputs and set their volume levels.

PREAMP Volume

Cycle through the preamp inputs and set their volume levels.

CS

Shows the current Clock Source for the Goliath, set by default to Oven. The selected source is displayed on the top of the touchscreen. Tap to choose from the available clock sources. Your selection will be shown in the section above.
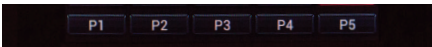

SR

Here you select the Sample Rate for the Goliath. Tap the SR button to see the available Sample Rates. The current one will be displayed on the top of the touchscreen.
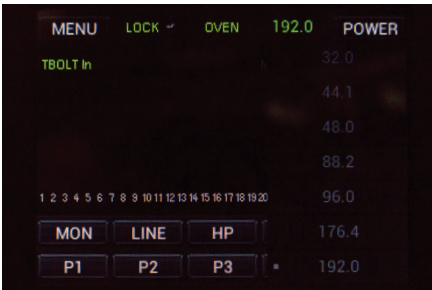
Presets 1–5

The Global Presets save all device settings to one of the five available Preset slots.
By pressing buttons P1 to P5 you switch between all customizable presets.

TBK

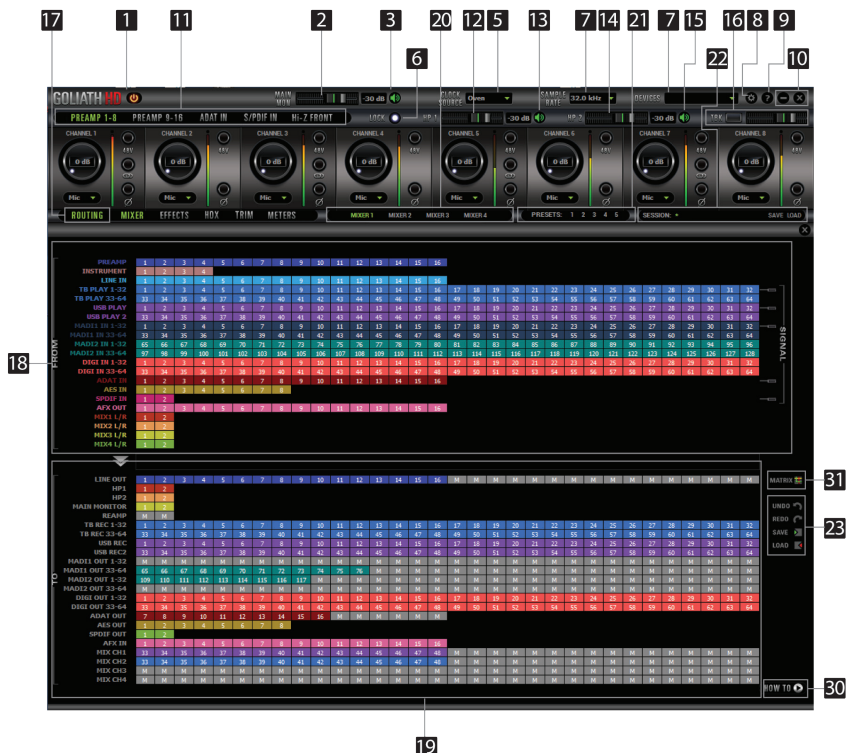Set the Talk Back volume level and output (HP1, HP2, Main Monitor Outs).

8. Software Control Panel

8.1. Main View options and Routing Tab

The universal panel view is constantly located on the upper half of the control panel for quick access to the most important features.

Main view:

1. **Power/Standby button**
2. **Main Monitor volume slider**
3. **Main Monitor Mute button**
4. **Clock Source select**

This dropdown menu allows you to select how the Goliath HD is to be synchronized. Select 'Oven' for internal sync, WC (Word Clock) to sync the Goliath HD to an external device through the Word Clock input or ADAT, MADI, S/PDIF, AES for syncing with incoming digital signals, or through HDX / Thunderbolt™ / USB.

5. **Sample Rate select**
Once you select the Clock Source and Sample Rate, this will automatically determine the number of channels available to you in the Inputs & Outputs Router.

16

6. Lock light

When your Goliath HD is slaved to another clock source the panel will lock, displaying a "Pad Lock" symbol to the clock source and you also won't be able to change the presets. Presets do not store clock source info or sample rate. This allows you to adjust presets while the device is receiving clock lock.

7. Devices

This dropdown menu allows you to switch between Antelope Audio devices connected to your computer or on the same network.

8. Settings
9. Info
10. Minimize & Close
11. PREAMP 1-8 / PREAMP 9-16 / ADAT IN / S/PDIF IN / INST FRONT Section
12. Headphone (HP 1) volume slider
13. Headphone (HP 1) 'Mute' button
14. Headphone (HP 2) volume slider
15. Headphone (HP 2) 'Mute' button
16. Talkback active button / Indicator light & Talkback volume fader
17. Routing Show/Hide
18. From' Section (from Routing tab)
19. 'To' Section (from Routing tab)
20. Mixers 1–4 Section
21. Presets 1–5 Section

Five different presets are available to save your favorite setups for easy access.

To save a new preset:

- Hold down Ctrl (PC) or Command (MAC) & mouse-click on the preset button (in the software control panel) or;
- Press Ctrl (PC) or Command (MAC) & press the according number on your keyboard.

You can reset the presets to the factory setting or check device info.

22. Session Save / Load

All control panel options can now be saved and recalled with one mouse click. You can restore Gain levels for every input and output, clock modes, ASIO driver settings plus the AFX and AuraVerb settings with every parameter included. The full session saving function will also let you save and load Mixer and Routing adjustments. Even personalized window positions can be recalled.

23. Undo/Redo Routing; Save/Load (from Routing tab)

24. Mic, Line and HiZ (1, 2, 3, 4 only) modes selectable via dropdown menu (please ensure your selection from the dropdown menu matches the type of signal being inputted)

25. **Channel Gain** (value adjustable in 1 dB steps), Ctrl+Left-Click (Win) / Cmd+Left-Click (Mac)
mutes the channel
26. **Peak Meter**
27. **48V Phantom Power Switch** (independently assignable)
28. **Phase Reverse button**
29. **Stereo Link**
30. **"How To..." Video Tutorials**
31. **Alternative Routing Matrix View**

8.2. Mixer Tab
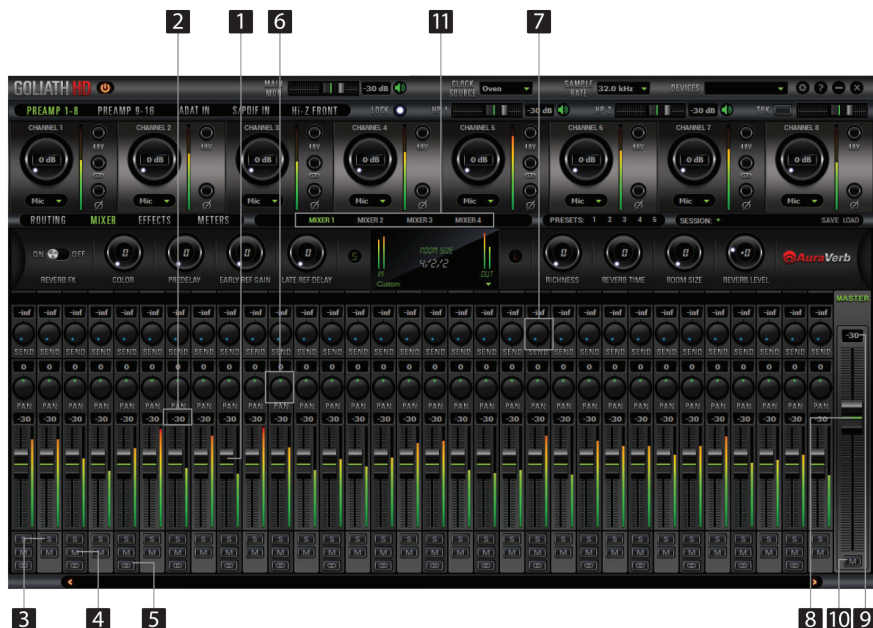
1. Fader (double-click to reset to zero)
2. Fader Level indication
3. Solo
4. Mute
5. Stereo Link
6. Pan (double-click to reset to zero)
7. Send (double-click to reset to zero)
8. Master Mix Fader (double-click to reset to zero)
9. Master Mix Level indication
10. Master Mix Mute
11. Mixer 1–4 Show/HideGoliath HD offers four software low latency mixers which provide near

zero latency mix and monitoring that can be distributed to any output from the control panel.

For example, you can drag all of the 32 USB PLAY channels to MIXER 1 channels and then drag and drop MIX 1 L/R to LINE OUT 1&2 providing a stereo bus mix to LINE OUT channels 1 and 2.

The low latency mixers provide all basic functions of a real mixer such as: Solo, Mute, Pan, Stereo Link, Volume Level fader control and a Master Fader, so you can easily make a stereo mix plus an Auxiliary send in order to use the Goliath HD FPGA effects.

AuraVerb is a powerful and flexible algorithmic reverb effect powered by the Goliath HD Custom FPGA chip. It provides near zero-latency effect monitoring without taxing your CPU. AuraVerb can also be used as a hardware effect from your DAW. That way you can take advantage of its rich and unique sound while mixing or mastering.

By default the effect is switched on.

- **Quick Start**

AuraVerb appears as a pre-fader send effect on the Goliath HD mixer 1. To send a signal to the reverb, turn up the send control on a mixer channel and use the reverb output level to adjust the return to the mixer's master channel. To hear the reverb, route the mixer output to your monitors by clicking and dragging MIX 1 [1] [2] to MONITOR [1] [2] on the routing matrix. Fine tune the reverb mix by balancing between the dry signal on the mixer channel's fader and the reverb Output Level knob.

AuraVerb Parameters

- **Color**

AuraVerb's Color control allows you to adjust the overall tone of the reverb. On "0" the space created is darker, like a lushly carpeted area. On "100" the reverb sounds the brightest, which can add some sizzle to a lead vocal, for example.

- **PreDelay**

PreDelay is a common function on most reverb effects and allows you to create a bit of space between the source and the onset of reverb by controlling the amount of delay time that precedes

the initial reverberated sound. This parameter is used to place the reverberated signal later in time with respect to the unprocessed signal. Natural settings for this are based on the size of the environment and range from 0 to 32 milliseconds. Fine adjustment of this parameter with respect to the tempo of the song or dramatic timing of the piece can help set the feel of the reverb within the mix.

- Early Reflection Gain

This is the linear gain value for all early reflections. These reflections are perceptually grouped with the direct sound when set at lower levels and can nicely thicken a track when increased.

- Late Reflection Delay

Among other things, AuraVerb calculates reflected energy from the side walls and ceiling of the virtual space. Late Reflection Delay controls the delay of these these late bursts of reflections, either to create dedicated echoes or to support the spatial impression of the simulated acoustic space.

AuraVerb allows you to fine tune several other parameters for even deeper control of the acoustic environment you are designing.

- Richness
- Reverb Time
- Room Size
- Reverb Level

AuraVerb offers 24 presets suitable for a variety of genres and instruments.

The S & L icons stand for saving and loading your own AuraVerb presets.

For more info about AuraVerb, visit our website:
http://www.antelopeaudio.com/en/support/downloads

8.3 Effects Tab

Click on the Effects Tab to reveal the 16 Goliath HD AFX Channel strips. You can choose between EQs, Compressors, Vintage Guitar Amps and Cabinets. Goliath HD comes with the entire yet ever-growing Antelope Audio library of real-time FPGA Vintage FX modeling legendary studio gear. Those can all be used for real time tracking or mixing. Presets with your favorite setups can be easily saved, recalled and shared with other studio facilities, which are also part of the global Antelope Audio family.

8.4. Meters Tab

The Meters tab allows you to measure the volume levels of all audio signals coming from and to the Goliath HD. A dropdown menu allows you to easily switch between the routing matrix sections, whose signal levels you want to visualize.
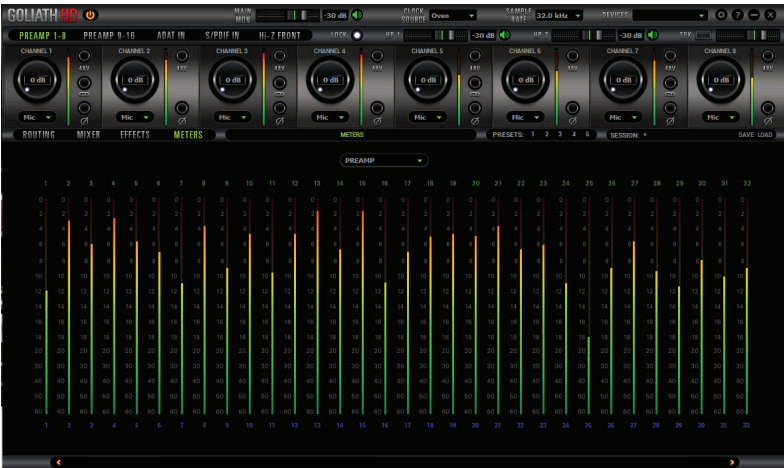
8.5. HDX Settings Tab

The HDX Tab allows you to select between the HDX Delay Compensation modes and control all HDX audio channels.

1. HDX Compensation Mode Dropdown Menu
2. HDX 1 Device Dropdown Menu & Reset Button
3. HDX 1 Channels
4. HDX 2 Device Dropdown Menu & Reset Button
5. HDX 2 Channels
6. Loop Sync In
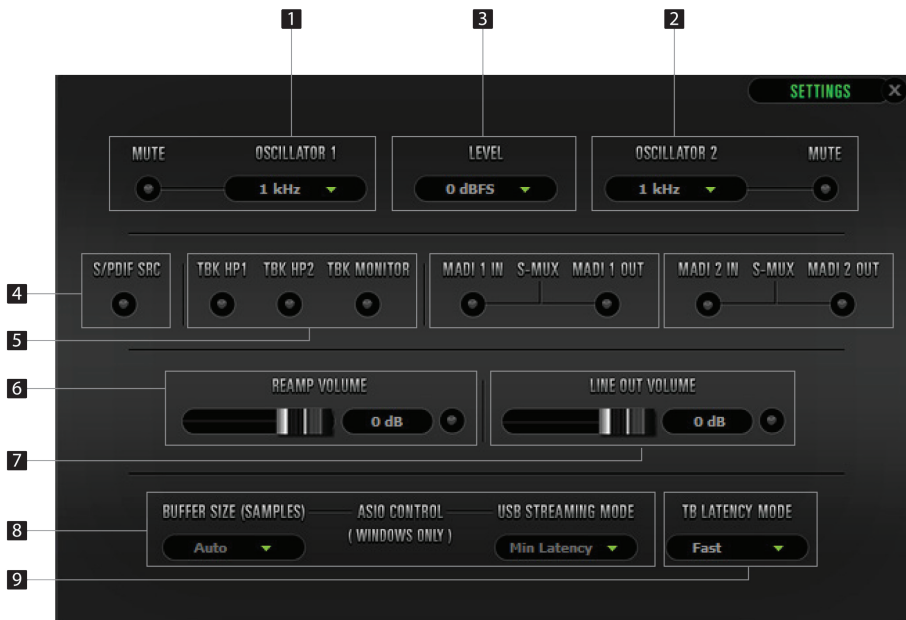7. Loop Sync Enable / Master Indicators
8. Loop Sync Out

8.6. Trim Tab

The Trim Tab allows you to adjust Monitor Trim levels and apply individual or multiple Line In / Line Out trims.

8.7. Settings Tab

Click on the gear icon to open the "Settings" window.

1. Oscillator 1 and Mute
2. Oscillator 2 and Mute
3. Oscillator Output Levels
4. S/PDIF SRC Indicator
5. TBK HP1 / HP2 / MONITOR Indicators
6. Reamp Volume
7. Line Out Volume
8. Windows only: ASIO Control – Buffer Size & USB Streaming Mode
9. Thunderbolt™ Latency Mode

9. In The Box

- Goliath HD – Thunderbolt™ and USB AD/DA Interface
- Owner's Manual
- Warranty Card
- 1 AEC Power cable
- 1 USB cable
- 1 Cleaning cloth

10. Troubleshooting

Start up and Sound

- Are you running the latest control panel and firmware?

If not, please update your control panel and firmware.

- Are you correctly routing the audio signal via the routing panel?

For HDX, Thunderbolt™ or USB playback, route the HDX, Thunderbolt™ or USB-play channels to the Line Out channels by dragging and dropping from the top section to the bottom.

- Have you set the correct sample rates matching your DAW with your computer's sound and the Goliath?

On Mac, first check that the sample rate is correct in the audio midi set up, then proceed to check in the DAW before finally checking the Goliath HD sample rate.

For Windows, first check in play back devices, right click on the Goliath HD then click properties before then moving to the advanced tab. Then repeat the above by checking the DAW's sample as well as the Goliath.

Connectivity

If you believe there is no sound being received to an input or delivered from an output:

- Check your source. Is there a signal being transmitted form the source?

- Is your source in the correct sample rate for the Goliath HD to receive?

- Check what clocking mode you are in. Are you receiving the clock signal from the source?

- Check that the relevant lock light on the control panel of the Goliath HD is lit up.

- Try a different cable and another source if available.

- Check the routing on the control panel. Have you routed the signal path correctly?

- If you have routed signals to the routing mixer, check their corresponding fader is up.

- Check the relevant peak meters of the control panel by selecting them in the drop down menu to see if the relevant signal is being received or is being outputted.

DAW

● What buffer size is your DAW set to?

● If it is significantly low i.e. lower than 128 samples in your buffer size, try increasing it. Try increasing the buffer size from the Goliath control panel (Windows Only)

● Have you checked the input and output routing is correct in your DAW?

● Is the Goliath device selected in the relevant sound card section of the DAW's preferences?

If the Goliath doesn't show up in you DAW, first try unplugging and plugging back the Thunderbolt™ cable (or the USB cable), then restarting your Computer and finally re-install the firmware, drivers and control panel for the Goliath.

11. Technical Specifications

Analog Inserts	2 × Inserts on 1/4" TRS (dedicated for inputs 1, 2)
Analog Inputs	2 × DB25 (16 channels) 16 × Mic / Line on XLR combos (incl. 4 × Hi-Z) 4 × Hi-Z inputs on 1/4" TRS on front
Analog Outputs	4 × DB25 (32 channels total) 1 × Stereo pair of Monitor outs on 1/4" TRS 2 × Stereo Headphone outs on 1/4" TRS 2 × ReAmp outs on 1/4" TRS
Digital Inputs	2 × ADAT (up to 16 channels) 1 × S/PDIF 1 × AES/EBU (8 channels) 2 × MADI
Digital Outputs	2 × ADAT (up to 16 channels) 1 × S/PDIF 1 × AES/EBU 2 × MADI
HDX	2 × mini HDX connectors for direct Pro Tools connection, 32 Channels I/O each (total of 64 channels)
Thunderbolt™	1 × Thunderbolt™ Gen2
USB	USB 3.0 Super-Speed, Type B connector
Word Clock Input	1 × Input @ 75 Ohms 3Vpp on BNC
Word Clock Output	2 × Outputs @ 75 Ohms 3Vpp on BNC
Atomic Clock Input	1 × 10MHz Input @ 75 Ohms 1Vpp on BNC
D/A Monitor Converter	Dynamic Range: 132dB THD + N: -108dB
D/A Converter	Dynamic Range: 129 dB THD + N: -120 dB
A/D Converter	Dynamic Range: 124 dB THD + N: -112 dB
Mic Preamp	Gain: 0,10 – 65 dB THD + N: -112 dB
Clocking system	4th Generation Acoustically Focused Clocking, 64-bit DDS Oven Controlled Crystal Oscillator
Sample Rates	32, 44.1, 48, 88.2, 96, 176.4, 192 (kHz)
Electrical Specs	AC Universal input: ~95-245 V Power Consumption: 40 Watts Max
Physical Specs	Dimensions: 483 mm/19" (W) / 81 mm/3.2" (H) / 279 mm/11" (D) Weight: 6.8 kg/ 15 lbs approx.

12. Antelope Audio Support Resources

Antelope Audio offers a range of services and support resources for your Antelope hardware, firmware and software control panels.

FAQ
Several categories of frequently asked questions are available on the website:
http://www.antelopeaudio.com/en/support

Telephone Support
Phone line is for general inquiries and technical support: +1 734 418 8661
Hours of Operation: 7:00 a.m. - 3:00 p.m. (EST)

Help Desk
A ticketing system ensures a 24-hour response time:
www.antelopeaudio.com/en/support/help-desk

Live Chat
Connect with a customer support agent directly via the website:
http://www.antelopeaudio.com/en/support

Click on Antelope Tab on the right-hand side of the webpage
Hours of Operation: 7:00 a.m. - 3:00 p.m. (EST)

Support Documents and Software
A web resource with all device manuals, datasheets and software:
http://www.antelopeaudio.com/en/support/downloads

Control Panel Newsfeed
The software control panel for Goliath HD incorporates a newsfeed at the bottom, which displays all new updates and relevant information:

You Tube Page
Tutorial videos, interviews, user cases and promos for forthcoming products:
http://goo.gl/yfOmZf

Web Blog
Regular blog posts will update you on the latest user cases with the Goliath:
http://www.antelopeaudio.com

Correct Disposal of This Product
(Waste Electrical & Electronic Equipment)

(Applicable in the European Union and other European countries with separate collection systems)

This marking shown on the product or its literature, indicates that it should not be disposed with other household wastes at the end of its working life. To prevent possible harm to the environment or human health from uncontrolled waste disposal, please separate this from other types of wastes and recycle it responsibly to promote the sustainable reuse of material resources.

Household users should contact either the retailer where they purchased this product, or their local government office, for details of where and how they can take this item for environmentally safe recycling.

Business users should contact their supplier and check the terms and conditions of the purchase contact. This product should not be mixed with other commercial wastes for disposal.

Antelope

Owner's Manual

GOLIATH HD

Professional
HDX | Thunderbolt™ | USB | MADI
Audio Interface