MERGING ANUBIS

USER MANUAL



V25.02.2021

MERGING
AUDIO FOR THE NETWORKING AGE

Contents

Thank you for purchasing MERGING+ANUBIS 6
Important Safety and Installation Instructions 7
Product Regulatory Compliance 9
MERGING+ANUBIS Warranty Information 11
INTRODUCTION 12
Package Content 12
OVERVIEW 13
MERGING+ANUBIS VARIANTS AND KEY FEATURES 13
ABOUT RAVENNA 16
MISSION CONTROL - MODULAR BY SOFTWARE 16
MERGING+ANUBIS panels description 17
TOP PANEL 17
BACK PANEL 19
FRONT PANEL 21
ANUBIS ANALOGUE I/O BLOCK DIAGRAM 22
HOW TO CONNECT MERGING+ANUBIS 23
Connecting the Ethernet cable to the Network for RAVENNA use 23
How to connect a balanced line output to an unbalanced input 24
DRIVERS INSTALLATION PROCEDURE 26
Windows PC - RAVENNA ASIO Driver or Merging Audio Device (MAD) 26
Mac OS – VAD Premium 27
Linux OS – ALSA Driver 28
POWER SUPPLY 29
Using the DC power supply source 29
Using the Power-over-Ethernet (PoE) source 29
Switching ON MERGING+ANUBIS 30
TOUCHSCREEN AND NAVIGATION 31
ANUBIS HOME PAGE 32
STATUS BAR 33

LOGS MESSAGES 34
LOG MESSAGE APPENDIX 35
PREAMPS CONTROL 36
DUAL GAIN 32bit CIRCUITRY 41
SPLIT CHANNEL 42
ANUBIS VIRTUAL KEYBOARD 43
SETTINGS 45
SETTINGS CATEGORIES DESCRIPTION 46
PRESETS Settings 51
MONITORING Settings 52
ANUBIS EQ GUIDELINES 59
BASS MANAGEMENT 66
Bass Management Signal flow 67
INFO Settings 80
DEBUG Settings 80
EXIT Settings 81
ANUBIS MONITOR MISSION CONTROL 82
Missions IO Channels Specifications 84
Sources vs. Monitors Fundamentals 85
Different Monitor types 86
MONITOR PAGE 88
Downmix Table 92
METERS PAGE 96
ANUBIS PREMIUM DXD-DSD GUIDELINES 98
DSD Features & Restrictions: 98
DSD MONITORING: 99
DSD PreAmps 102
ANUBIS SPS 104
ANUBIS USE CASES (MULTIPLE CASES ARE ONLINE) 110
BASIC MONITORING SETUP 110
RECORDING SETUP 114

MORE ANUBIS USE CASES HERE 120
MONITORING WEB USER INTERFACE 121
How to Open the Remote Web User Interface 122
Web Access Source and Monitor Renaming 125
Web Access PreAmps Remote Control 126
Web Access Settings 129
Tablets Remote Access - Using the Anubis IP Address 130
ANUBIS FIRMWARE UDPATE PROCEDURE 131
ANUBIS TECHNICAL SPECIFICATIONS 134
APPENDICES 137
TROUBLESHOOTING 140
FOR MORE INFORMATION 145

Thank you for purchasing MERGING+ANUBIS

This manual is intended to take you through the setup and installation of the MERGING+ANUBIS. We encourage you to familiarize yourself with the features, applications, and connection procedures before setting up your MERGING+ANUBIS.

To ensure the safe operation of your Anubis please read the instructions, important safety information and warnings carefully before installation and use.

Important Safety and Installation Instructions

INSTRUCTIONS PERTAINING TO RISK OF FIRE, ELECTRIC SHOCK, OR INJURY TO PERSONS

WARNING – when using electrical products, basic precautions should be followed, including the following:

1. Before using this product, read all of the safety and installation instructions and the explanation of graphic symbols.

2. This product must be grounded otherwise it could malfunction or breakdown. Grounding provides a path of least resistance for electric current to reduce the risk of electric shock. If using the AC adapter of this product, make sure to use the power supply cable having an equipment-grounding conductor and a grounding plug. The mains cable should be plugged into an appropriate outlet, which is properly installed and grounded in accordance with all local codes and ordinances.

DANGER – Improper connection of the equipment grounding can result in a risk of electric shock. Do not modify the plug provided with the product – if it will not fit the outlet, have a proper outlet installed by a qualified electrician. Do not use an adapter that defeats the function of the equipment-grounding conductor. If you are in doubt as to whether the product is properly grounded, check with a qualified serviceman or electrician.

3. Do not use this product near water or in a damp environment, for example, near a bathtub, washbowl, kitchen sink, in a wet basement, or near a swimming pool, or the like.

4. This product, either alone or in combination with an amplifier and speakers or headphones, may be capable of producing sound levels that could cause permanent hearing loss. Do not operate at a high volume level or at a level that is uncomfortable. If you experience any hearing loss or ringing in the ears, you should consult an audiologist.

5. The product should be located so that its location or position does not interfere with its proper ventilation.

6. The product should be located away from heat sources such as radiators or other products that produce heat.

7. The product should be connected to a power supply only of the type described in the operating instructions or as marked on the product.

8. The product's power-supply cable should be unplugged from the outlet when it is to be left unused for a long period of time. When unplugging the power supply cable, grasp it by the plug. Do not pull on the cable itself.

9. Care should be taken so that objects do not fall on to the product and liquids are not spilled onto any part of the enclosure.

10. The product should be serviced by qualified service personnel when: a. The power supply cable or plug has been damaged. b. Objects have fallen onto the product, or liquid has spilled and may have leaked into the product. c. The product has been exposed to rain. d. The product does not appear to be operating normally or exhibits a marked change in performance. e. The product has been dropped, or the enclosure damaged.

11. Do not attempt to service the product beyond that described in the user maintenance instructions. All other servicing should be referred to qualified service personnel.

12. WARNING - Do not place any objects on the power supply cable, or place the product in a position where anyone could trip over, walk on, or roll anything over the cable. Do not allow the product to rest on or be installed over cables of any type. Improper installations of this type create the possibility of a fire hazard and/or personal injury.



The lightning flash with arrowhead symbol, within an equilateral triangle, is intended to alert the user to the presence of uninsulated "dangerous voltage" within the product's enclosure that may be of sufficient magnitude to constitute a risk of electric shock to persons.



The exclamation point within an equilateral triangle is intended to alert the user to the presence of important operating and maintenance (servicing) instructions in the literature accompanying the product.

IMPORTANT NOTICE:

Please read the following information very carefully before attempting any installation. Failure to comply with the precise instructions may result in damage to your Merging hardware. Please read this entire section of the manual carefully before installation.

STATIC ELECTRICITY DANGER NOTICE:

Please note that the MERGING+ANUBIS contains delicate electronic components that can be damaged or even destroyed when exposed to static electricity. Take all necessary precautions not to discharge static electricity into the equipment when touching any of the MERGING+ANUBIS connectors.

Merging Technologies makes no warranties express or implied regarding the MERGING+ANUBIS embedded software, its quality, performance, merchantability or fitness for a particular purpose. The software is supplied “as is” and you, the purchaser, are assuming the entire risk of the results of using this Merging Technologies software.

In no circumstances will Merging Technologies, its owners, directors, officers, employees or agents be liable to you for any consequential, incidental or indirect loss or damages including loss of time, loss of business, loss of profits, loss of data or similar resulting from the use of or inability to use the Merging Technologies hardware and or software or for any defect in the hardware software or documentation.

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Product Regulatory Compliance

Product Safety and EMC Compliance

Merging Technologies ANUBIS is designed, tested and verified to comply with the following Safety & EMC regulations
FCC – Radiated and Conducted Emissions (USA).
CFR 47 Part 15 – Radiated and Conducted Emissions (Canada).
CISPR 22:2008 (class B) – Radiated and Conducted Emissions (International).
CISPR 32:2012 (class B) – Radiated and Conducted Emissions (International).
CISPR 24:2010 – Immunity (International).
EN 55022:2010 (class B) – Radiated and Conducted Emissions (European Union).
EN 55032:2012 (class B) – Radiated and Conducted Emissions (European Union).
EN 55024:2010 – Immunity (European Union).
EN61000-3-2 & -3 – (Power Harmonics and Fluctuation and Flicker).

Electromagnetic Compatibility Notices

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference and (2), this device must accept any interference received, including interference that may cause undesired operation.

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

Reorient or relocate the receiving antenna.

Increase the separation between the equipment and the receiver.

Connect the equipment to an outlet on a circuit other than the one to which the receiver is connected.

Consult the dealer or an experienced radio/TV technician for help.

Any changes or modifications not expressly approved by the grantee of this device could void the user's authority to operate the equipment. The customer is responsible for ensuring compliance of the modified product.

Only peripherals (computer input/output devices, Ethernet switches, terminals, printers, etc.) that comply with FCC Class B limits may be attached to this computer product. Operation with noncompliant peripherals is likely to result in interference to radio and TV reception.

All cables used to connect to peripherals must be shielded and grounded. Operation with cables, connected to peripherals that are not shielded and grounded, may result in interference to radio and TV reception.

Environmental Limits

System Office Environment Parameter Limits
Operating Temperature +5 degrees C to +45 degrees C with the maximum rate of change not to exceed 10 degrees C per hour.
Non-Operating Temperature -40 degrees C to +70 degrees C
Non-Operating Humidity 95%, non-condensing @ 30 degrees C
Operating Shock No errors with a half sine wave shock of 2G (with 11-millisecond duration).
Package Shock Operational after a free fall, 60 cm depending on the weight.
ESD 8kV per Merging Technologies Environmental Test Specification

CE

Declaration of Conformity

According to

EMC Directive 2004/108/EC

Product	**Anubis**
Manufacturer	**Merging Technologies SA** **Le Verney 4** **CH-1070 Puidoux** **Switzerland**
Electrical Rating	**90-260 VAC, 50/60 Hz, 0.15 A (at 230V)**
Standards	**EN 55103-1:2009, EN 55103-2:2009, EN 61000-3-2 :2006+A1+A2, EN 61000-3-3 :2008**

Detailed specifications of the tested and certified product are shown in the following Test Report:

Test report Ref No: 16'835 Issued Date: May 2019 by Schurter EMC SA

The CE label is affixed on the bottom of the Anubis unit as per below:



Date May 1st 2019

Claude Cellier

President

Merging Technologies S.A.

MERGING+ANUBIS Warranty Information

This product is warranted to be free of defects in materials and workmanship for a period of two year from the date of purchase. Merging Technologies, Inc. extends this Limited Warranty to the original purchaser.

In the event of a defect or failure to confirm to this Limited warranty, Merging Technologies, Inc. will repair or replace the product without charge within sixty (60) days. In order to make a claim under this limited warranty, the purchaser must notify Merging Technologies, Inc. or their representative in writing, of the product failure. In this limited warranty the customer must upon Merging Technologies, Inc. request, return the product to the place of purchase, or other local designation, for the necessary repairs to be performed. If the consumer is not satisfied with the repair, Merging Technologies, Inc. will have the option to either attempt a further repair, or refund the purchase price.

This warranty does not cover: (1) Products which have been subject to misuse, abuse, accident, physical damage, neglect, exposure to fire, water or excessive changes in the climate or temperature, or operation outside maximum rating. (2) Products on which warranty stickers or product serial numbers have been removed, altered or rendered illegible. (3) The cost of installations, removal or reinstallation. (4) Damages caused to any other products. (5) Do not attempt to service the equipment. There are no user serviceable parts inside*. Please refer all servicing to an authorized Merging Technologies sales partner. Any attempt to service the equipment will expose you to a risk of electric shock, and will void the manufacturer's warranty.

** Replacing or adding hardware components is permitted under the supervision of a Merging Technologies sales partner. Any other modification will void the MERGING+ANUBIS warranty.*

Contacting Merging Technologies

International Office:
Merging Technologies S.A.
Le Verney 4
CH-1070 Puidoux
Switzerland

Phone: +41 21 946 0444
Email: support@merging.com

For all documentation inquiries or suggestions for improvement:
www.merging.com

Product features and specifications are subject to change without notice.

Merging Technologies SA shall not be liable for technical or editorial errors contained herein, nor for incidental or consequential damages resulting from the furnishing, performance or use of this manual.

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INTRODUCTION

Thank you for choosing Merging Technologies. The MERGING+ANUBIS has a wide range of advanced features. Before attempting to use your new MERGING+ANUBIS product, we strongly recommend that you read this manual, as it will enable you to obtain the best experience and performance from it.

Environmentally Friendly by Design

The MERGING+ANUBIS products have been carefully designed in order to keep power consumption to a strict minimum. Merging Technologies believes in a sustainable future and takes appropriate measures at all phases of a product's design and manufacture to avoid wasting energy. This said, we will never compromise on sound quality and electronic components are carefully selected based on their audio performance first and foremost. The side benefit is that if equipment runs cool it is usually also a guarantee of longevity and long-term reliability.

Package Content

If the shipping carton shows any signs of damage, please inform your Merging Technologies dealer or purchased store, as the product may also have sustained damage. Please retain all the packing, and particularly the soft-shell case, as this must be used should you need to ship the unit in the future. The use of any other packing may result in the unit sustaining damage in transit, which will not be covered by the warranty.

In addition to the Safety information and quick start guide, the carton should contain the items shown below. If any of these is missing please contact your Merging Technologies dealer.

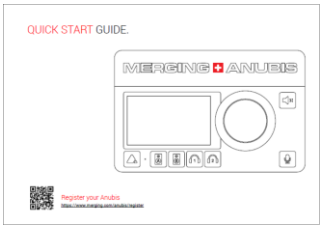
Figure 1. Items inside the box.



Soft-shell case



MERGING+ANUBIS



Quick Start Guide



Ethernet RJ45 cable



Power Supply (12V)



Power Cable*

Note: Additional items could be added to your Anubis package depending of your purchased order.
**Power cable varies with purchased country (US, EU, CH).*

OVERVIEW

MERGING+ANUBIS is a ground-breaking new audio interface incorporating the Swiss expertise of Merging Technologies in analogue and digital, networked audio and DSP technology. More significantly, it offers unique features to any engineer or musician looking for a compact AD/DA unit with the quality you would expect from Merging, and a fully featured monitor controller that integrates with any DAW.

MERGING+ANUBIS was designed in Switzerland, where it is assembled and tested to the same exacting standards as our complete line of professional products and is intended to deliver the same high level of performance and reliability.

MERGING+ANUBIS VARIANTS AND KEY FEATURES

VARIANTS

MERGING+ANUBIS PRO: Supports sample rates from 44.1kHz to 192kHz PCM at a 32-bit resolution
MERGING+ANUBIS PREMIUM: Supports sample rates from 44.1kHz to 352.8kHz (DXD) and 384kHz PCM at a 32-bit resolution plus high resolution DSD64, DSD128 and DSD256 formats.

Those variants are as well available for MERGING+ANUBIS SPS model.

KEY FEATURES

- Modular by software. Evolving long life product with multiple missions (upcoming)
- Merging class of its own sound quality
- Ethernet with RAVENNA interface allows asynchronous data transfer with computer audio systems and allows cable runs up to 100m with Cat5e/Cat6 cable
- Standalone or central part of a highly scalable and expandable network. Multiple MERGING+ANUBIS or RAVENNA/AES67 compliant interfaces can be connected to the network and Anubis can remotely and locally: Control, Mix, Monitor multichannel content and route those I/O's.
- Full 32 bit signal path from analog Input to Output, via Mixer
- TFT LCD capacitive multi-touch screen
- Web based remote control accessible via smartphone, tablet or computer.
- Rotary Control knob allowing easy adjustment of volume level. The rotary knob provides as well access to comprehensive and intuitive menu within the Anubis software
- FPGA-based DSP mixer with effects with ultra-low latency for the performer foldback/Cues
- Up to 4 x 128 x 8 Mix engines
- Redundant power supply with PoE and DC Power Supply

- SMPTE 2110-30 support: Audio transport is built on AES67 uncompressed 48kHz PCM audio. Up to 8 channels can be bundled in one stream,16- and 24-bit depth are supported.
- SMPTE 2110-10 support: PTP v2 (IEEE 1588)
- ST2022-7 Support with new Anubis SPS (Seamless Protection Switching) and as of firmware 1.1.X and above.
- NMOS Support as of firmware 1.1.X and above. Refer to the link below for more details. https://confluence.merging.com/pages/viewpage.action?pageId=68747294

Microphone Preamplifiers

- Unprecedented audio transparency with a Dynamic Range (A Weighted) of 139 dB Typical
- 48V phantom power, Low cut filter, Pad and Boost, Phase inversion, Stereo Linking, Lock and Cut features
- Dual Gain 32 bit AD circuitry
  - Huge Dynamic Range with ample headroom
  - Totally clickless Gain steps
- Split Channel feature
  - Possibility to independently control FOH & Monitoring Microphone Gains without any conflict
  - Possibility to cut input signals to FOH while monitoring it from other outputs (e.g. Headphones) for signal check by example.
  - Possibility to record duplicate of the input channel at a different input gain level (for backup or peak-safety recording)

Instrument/Line inputs

- Two Instrument/Line inputs on front panel. Can be used for Hi-Z instruments or Line inputs
- Dynamic Range (A Weighted) of 136 dB Typical
- Independent gain levels for Instrument or Line inputs
- Dual Gain and Split channels feature as above

Monitoring

- Two Individual stereo main balanced XLR outputs with mono, dim, mute, level control and mixing possibilities. Can be used for Main monitor set
- Two Individual stereo main balanced TRS outputs with mono, dim, mute, level control and mixing possibilities. Can be used for auxiliary monitors of additional Cue Mix
- Two independent headphones sockets with independent level control
- Two exceptional high-power headphone amps with dedicated DACs
- Mute switch for any outputs

- Adjustable Max, Ref, Dim levels
- Crossfeed for headphones. Recreate the stereo image heard from speakers by mixing some signal from the left channel into the right channel, and vice versa
- Instant access dedicated soft buttons
- Monitor Mission Specs
  - The remote allows control of volume level and source selection of any Merging RAVENNA Device on the network
  - In the Box and Expandable I/O through Hapi, Horus or any RAVENNA/AES67 devices
  - Up to 8 Monitors capable of up to 22.2 (maximum 32 channels)
  - Up to 128 Sources capable of up to 22.2 (maximum 128 channels -2 dedicated to Talkback)
  - Up to 256 channels Analogue, MADI, AES3, SPDIF, Pro Tools HD I/Os via RAVENNA/AES67
  - In-the-box I/O pairing management with Merging devices
  - Any other RAVENNA/AES67 devices pairing using ANEMAN
  - Down-mix selector (from mono to 22.2)
  - Sources trim (exclusive and sum) selector
  - Bass management

And more:

- Power-over-Ethernet supplied: IEEE 802.3at compliant
- GPIO general-purpose input/output for studio (e.g. Record light control) or live (e.g. Foot switch)
- MIDI input and output for conventional digital sources
- Connects from/to the computer using standard ASIO on Windows, Core Audio on Mac or ALSA on Linux
- Mic stand mount
- Kensington security slot
- Built-in talkback microphone for communication and recording, possibility for 2 independent Talkbacks
- 18 Save/Recall Internal Presets and unlimited external Presets Save/Recall.
- Mic/Pre DAW remote control
- Standalone operations. Anubis can serve as a multi-channel analog converter or headphone amp when disconnected from the computer.

ABOUT RAVENNA

RAVENNA is a solution for real-time distribution of audio and other media content in IP-based network environments. Utilizing standardized network protocols and technologies, RAVENNA can operate in existing network infrastructures and is fully AES67 compliant. The RAVENNA protocol manages the data transfer between the MERGING+ANUBIS and a computer or other hardware when the Ethernet interface is used. This open and published IP network technology had been created to meet the demands of national broadcasters and focused on the essential requirements of extremely accurate clocking, high resistance to packet loss and very low latency i.e. getting the data to where it needs to be, intact and at the right time.

COMPATIBILITY

The RAVENNA protocol comes with standard drivers for all mainstream computer operating systems. ASIO for Windows, Core Audio with DoP support for MacOS and ALSA for Linux. The MERGING+ANUBIS RAVENNA drivers allows use of any application of your choice to record, edit, playback and monitor your music. Use MERGING+ANUBIS with your preferred DAW, Player or for rehearsal and live performance.

Using RAVENNA IP audio, the MERGING+ANUBIS can connect to a standard network, using off the shelf Gigabit switches and other IT technology to become a node on a LAN. From that point, any other RAVENNA node can receive information from and deliver information to any combination of RAVENNA devices on the network

MISSION CONTROL - MODULAR BY SOFTWARE

A single product with multiple workflows. A Monitor controller that also controls your network. A Music recording hub that allows you to network a whole band or orchestra. A low latency mixer and processor with extraordinary audio quality. Anubis is already planned to implement two missions with more to follow. Each will put you in control of the tasks you want to accomplish. Today a control room or an on-location monitor controller, tomorrow a music studio or live event interface, the day after, it could be something else that allows you to succeed in your mission. Booting up between missions completely changes the user interface and the function of Anubis. Plug-ins will be released to aid whatever workflow is required. Your investment is protected, your missions are secured!

MERGING+ANUBIS allows the user to choose the Mission Controller that fits the task. Today Anubis offers Anubis+Monitor, tomorrow Anubis+Music and more to follow!

Follow the Anubis+Monitor Mission Appendix for all details on your first mission

The Anubis+Music Mission oriented towards a music, recording, bands and studio projects is currently under works and not yet available.

MERGING+ANUBIS panels description

TOP PANEL



1. TFT LCD: High resolution capacitive multi-touch display
2. Home button: Access to Anubis display Main menu cycling and Home page / Settings access
1. Built-in talkback microphone: Mono omnidirectional condenser capsule, located beneath the hole

   Warning: Avoid touching the built-in microphone, or apply pressure while engaged.
   Do not insert any object or liquid into the hole, or use a vacuum over the mic hole as it could permanently damage the microphone

3. Speaker set A selector: Select the Speaker "A" to activate this monitor set, it will be activated once button is lit. The monitor set can be configured from the Anubis Settings>Monitors and can control the Anubis local outputs of your choice or the outputs of an external interface (RAVENNA/AES67 compliant)

4. Speaker set B selector: Select the Speaker "B" to activate this monitor set, it will be activated once button is lit. The monitor set can be configured from the Anubis Settings>Monitors and can control the Anubis local outputs of your choice or the outputs of an external interface (RAVENNA/AES67 compliant)

5. Headphones # 1 selector: Control over the Headphones 1 output Volume. When engaged and lit, use the main Rotary for local Headphone 1 volume control. The volume control can as well be adjusted remotely (from web access). The button selector can also control different monitor sets, that can be configured from the Anubis Settings.

6. Headphones # 2 selector: Control over the second set of headphones (independent).
Similar to Headphones #1.

7. Talkback control: Pressing the talkback button will activate the talkback microphone (previously configured in settings). Its signal can be distributed to the Monitor set of your choice, whether this one is local or external (RAVENNA/AES67).
The distribution choice can be made from the Anubis Monitors Settings.
Note: The Anubis Talkback logic is not restricted to the built-in mic and is able to use any other microphone (including Phantom power condenser mics) as well. With even the possibility to setup by software two Talkback mics sending out to different cues or monitors.

8. Rotary control: Multi-function encoder that can be used for Volume control over the selected monitoring output set or the Gain/Trim control over inputs or outputs. The Rotary control can also be used for selecting and controlling various Anubis settings (software).

9. Mute control: The mute can be applied to any Monitor set. It can also be applied to external monitoring sets (RAVENNA/AES67 compliant) and mute the content of the outcoming streams.

10. Anubis chassis: Premium machined and anodized aluminium

BOTTOM PANEL



Mic stand thread: 3/8" 16BSW European thread incorporated

Note: Americas 5/8" 27UN adaptor not included

SIDE PANEL



Fan: low noise that operates under thermal control. Can be set from Software Settings>General.

⚠ *Warning: Do not insert objects into fan opening*

BACK PANEL



Anubis SPS version



1. **Power switch**: Sets the power of the device to On (pressed) or Off (released).
2. **Kensington Security Slot:** Lock mechanisms for protection measure. Metal anchor not provided
3. **Power Supply:** DC Power Supply connector with lock, to prevent accidental disconnection. The DC power input accepts a voltage from 9V to 15V, with a maximum power consumption of 18W.

*Warning: Do not exceed the maximum DC input voltage or the unit may be damaged.*

4. RAVENNA/AES67 interface: RJ45 female receptacle with a locking EtherCon connector. A network interface adaptor might be required to connect to a USB-A, B, C or Thunderbolt port. The Anubis can be powered via PoE over this port.
   * The Anubis SPS version features two (2) RJ45 connectors, for ST2022-7 support (network redundancy). The top port can be used to power the Anubis via PoE.
   The SPS Model can be set to network switch mode, allowing the daisy-chaining of one additional network device without the need for an external network switch.

5. Dual functions interface: Switch between GPIO or MIDI (from General Settings)
   - GPIO: General-purpose input/output
     The GPO could for example be used to switch a LED Recording lamp on/off
     The GPI. Can be used with a footswitch on/off to select an input or for hands-free punch-in/out
   - MIDI: Musical Instrument Digital Interface protocol that connect a wide variety of electronic musical instruments, computers, and related audio devices.

6. Line Outputs 3-4 balanced: Assignable balanced stereo TRS ¼" jack outputs, that can be used for auxiliary speaker set, sub-woofer or for additional cue mix.
   Note: Can be used in balanced (TRS) or unbalanced (TS) mode

7. Main Line Outputs 1-2: Two Neutrik sockets on XLR balanced, that can be connected to a set of active studio monitors or power amp.

8. Inputs 1-2: Two Neutrik combo sockets Mic/Line inputs on XLR and 6.3 mm - 1/4" TRS connector
   Note: Can be used in balanced or unbalanced mode

FRONT PANEL



1. Headphones #1: Independent headphones socket with Stereo jack ¼" connector

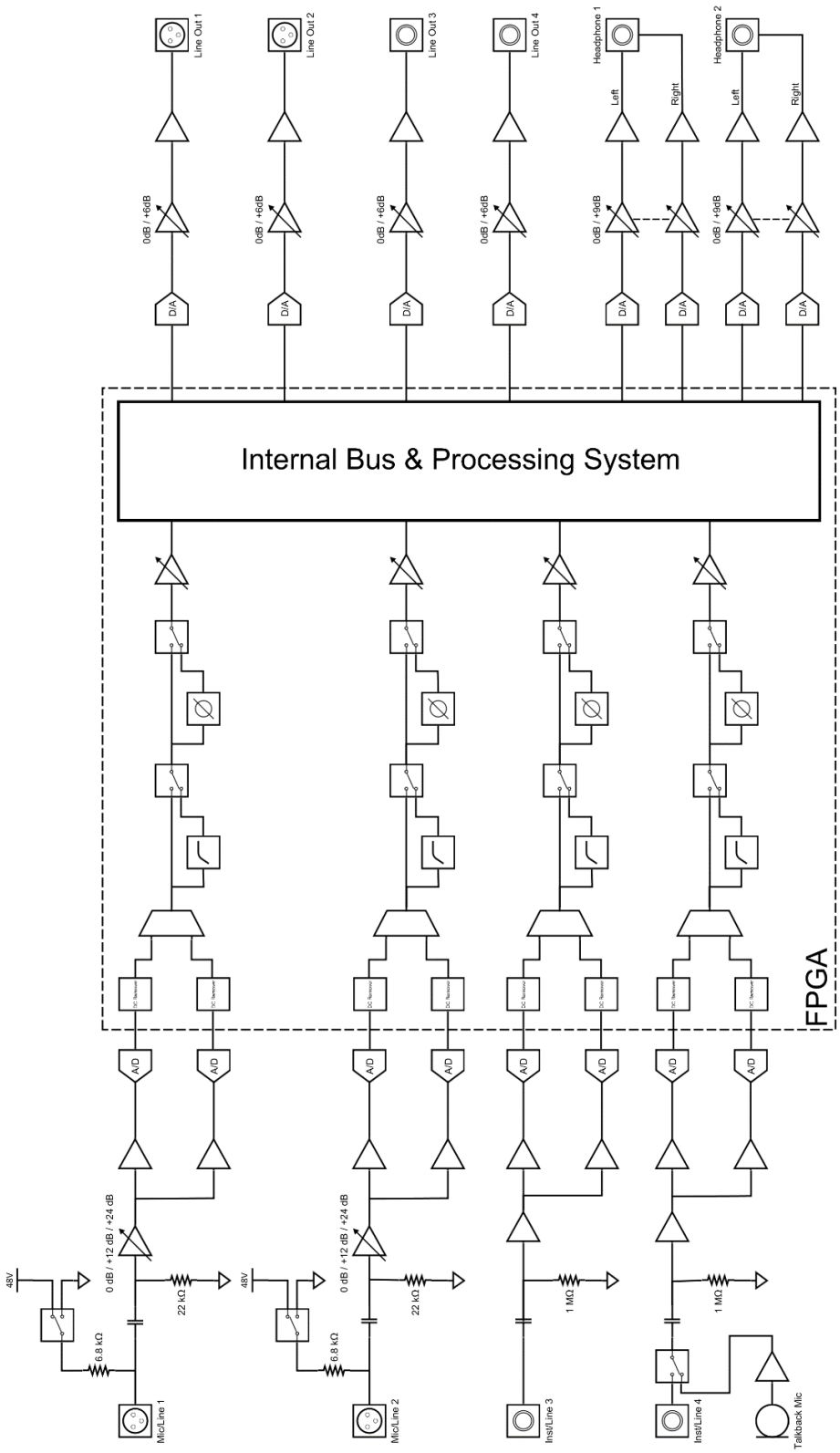
Warning: Depending of the impedance of your headphone set, it is important to make sure that the Headphones output level is set accordingly. For further details refer to the Anubis Settings>IO>Outputs Headphones description

2. Headphones #2: Independent headphones socket with Stereo jack ¼" connector

3 & 4. Instrument/Line: ¼" connector Jack can be connected to phone type (unbalanced or balanced) plugs for Hi-Z or Line inputs. For connection to a drum machine, synthesizer, electric guitar (active or passive pickups), electric bass (active or passive pickups), direct box, pedal board or in order to connect an external analog processing chain.

Note: Connecting a jack into the input 4 will be overriding the built-in talkback microphone as both share the same input. It is recommended that you mute or cut the input 4 when disconnecting the Jack to avoid potential feedback.

ANUBIS ANALOGUE I/O BLOCK DIAGRAM



HOW TO CONNECT MERGING+ANUBIS

Connecting the Ethernet cable to the Network for RAVENNA use

The Network connection uses an RJ45 female receptacle with an EtherCon locking connector. A standard Cat5e, Cat6 or higher cable can be used. Anubis is supplied with a 3 meters Ethernet Cat6 cable, if a longer cable is required, it can be ordered from your Merging Technologies dealer. If using an EtherCon align this one to the Network connector so that the small slot in the EtherCon connector body is facing upwards, then push the connector home until the lock clicks. To remove the cable, grasp the EtherCon cable connector body and push the tab above the Network input connector to release the lock, then withdraw the connector. Do not pull on the cable. If the lock release tab is not pushed sufficiently, the cable cannot be removed.



Figure 1 Cat5e or Cat6 Ethernet cable

Note: A network interface adaptor might be required to connect the Anubis RJ-45 cable to a USB Type A, B or C port or to a Thunderbolt port of your notebook/computer.

For RAVENNA/AES67 Networks

If you have more than one Anubis or if you have another RAVENNA/AES67 device such as a Horus or Hapi, or a second system running RAVENNA/AES67 over the same network it is highly recommended to use a Merging certified RAVENNA/AES67 switch, and follow our configuration guidelines.



Merging's recommended Switches: RAVENNA/AES67 Certified Switches

Note : Switches for RAVENNA / AES67 must be in managed mode and properly configured.

How to connect a balanced line output to an unbalanced input

Contrary to Horus and Hapi DA8/P Line outputs, the MERGING+ANUBIS outputs are electronically floating (similar to transformer-based) and will therefore operate nominally with either Hi or Lo shorted to ground as would be the case when connecting to an unbalanced input.

To connect the MERGING+ANUBIS to an unbalanced input using the balanced outputs, it is recommended to do so as shown in Figure below.



Figure 2 Correct balanced output to unbalanced input connection method

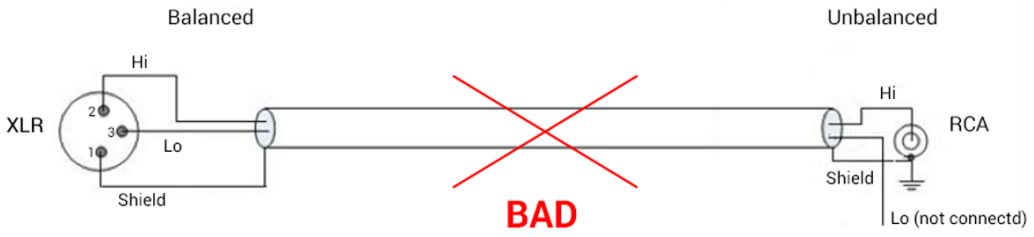


Figure 3 Incorrect balanced output to unbalanced input connection method

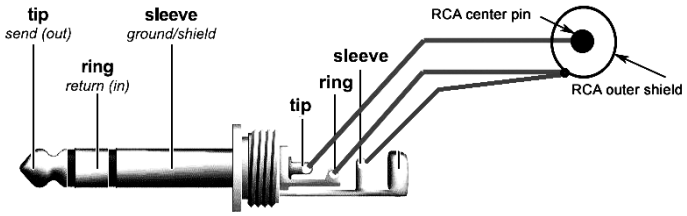


Figure 4 Correct balanced TRS output to unbalanced RCA connection method

Note: When driving an unbalanced input, make sure you set the line output level to the +18 dBu setting as the +24 dBu setting is only achievable when driving balanced inputs. This could otherwise cause distortion

*Warning: Before you Power Up Anubis, it is recommended to lower the Volume of your Monitor Speakers (if those are connected) and to remove the headphones set from your ears.*

DRIVERS INSTALLATION PROCEDURE

We recommend that you first read how to POWER Up your MERGING+ANUBIS and only then proceed with the information below.

Important. Make sure your Anubis has the most recent firmware installed. Verify the Firmware version by going to the Settings>Info Page.
Downloads and Procedures: https://www.merging.com/anubis/download

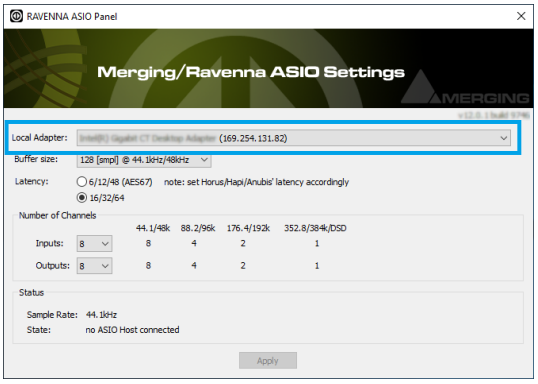
Windows PC - RAVENNA ASIO Driver or Merging Audio Device (MAD)

Prerequisites:

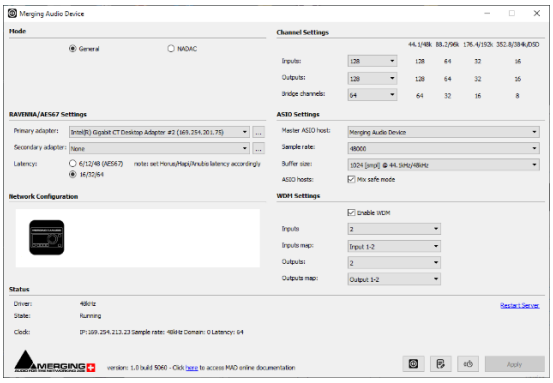
- *Gigabit Ethernet network*
  (A Gigabit Ethernet adapter is required in order to connect to a USB A, B or C or Thunderbolt port).
- *Windows 7 SP1 Pro - 64 bit or Windows 10 Pro - 64 bit*
- *DAW ASIO compatible*

Installation:

1. Connect the Ethernet cable from the Anubis RJ-45 RAVENNA/AES67 port to the Ethernet network port (1Gb) of your computer.
2. Download and install the Merging RAVENNA ASIO Driver v13 or the Merging Audio Device (MAD) 1.0 and ANEMAN v1.2.3 from https://www.merging.com/anubis/download
   Pyramix MassCore users should only install ANEMAN.
3. After the computer reboot at the end of the installation, open the Merging RAVENNA ASIO or MAD Panel and make sure that under "Local Adapter" the Ethernet Interface to which the Anubis is connected to is selected.



RAVENNA ASIO PANEL



MERGING AUDIO DEVICE (MAD)

4. For further details on the other parameters, follow the RAVENNA ASIO guide or MAD online pages https://confluence.merging.com/pages/viewpage.action?pageId=70221956 for more details. You may configure those later.
5. Make sure that your DAW is started and configured to use the Merging RAVENNA ASIO Driver or MAD.
   MassCore users should launch their VS3 Control Panel and have RAVENNA activated.
6. Launch ANEMAN to connect the inputs and outputs of your choice between the Anubis and the RAVENNA ASIO driver (or MassCore).
   Follow the ANEMAN guide for more details.

Mac OS – VAD Premium

Prerequisites:

- *Gigabit Ethernet network*
  (A Gigabit Ethernet adapter is required in order to connect to a USB A, B or C or Thunderbolt port).
- *macOS Sierra - High Sierra – Mojave – Catalina 10.15.2*
  Warning: upcoming Catalina 10.15.3 and 10.15.4 Not yet certified.
- *DAW CoreAudio compatible*

Installation :

1. Connect the Ethernet cable from the Anubis RJ-45 RAVENNA/AES67 port to the Ethernet network port (1Gb) of your computer.
2. Download and install Merging's RAVENNA/AES67 VAD Premium (Virtual Audio Device version 2.0.39648 and higher) for Mac and ANEMAN for Mac (version 1.1.7 Beta2 and higher) from https://www.merging.com/anubis/download
   Note : Since High Sierra, the drivers have to be approved. During the installation, you will have a "System extension blocked" message, go in the Security preferences to unlock the driver.
   Follow this page for more details.
3. After the computer reboot at the end of the installation, launch the Merging RAVENNA/AES67 Panel from the System Preferences menu.
   Follow the Virtual Audio Device guide for more details.
4. Launch ANEMAN in order to connect the inputs and outputs between the Anubis and the VAD.
5. Open your preferred DAW and ensure the VAD is selected.

⚠ Warning: Recent Mac's are using 10Gb Ethernet Adaptors that are not certified for VAD usage. Please consider the use of an Apple or Belkin USB-C to ETH Gigabit adapter if you have such a Hardware Interface.

Linux OS – ALSA Driver

Prerequisites:

- *Gigabit Ethernet network*
  (A Gigabit Ethernet adapter is required in order to connect to a USB A, B or C or Thunderbolt port).
- Linux kernel 2.4 (or above) 3.18 (or above for DSD support)
- ALSA compatible application

Installation:

1. Connect the Ethernet cable from the Anubis RJ-45 RAVENNA/AES67 port to the Ethernet network port (1Gb) of your computer.
2. Download and Install the Merging LINUX RAVENNA/AES67 Driver.
3. ANEMAN not being supported under Linux, RAVENNA/AES67 connections have to be made from the Advanced Settings RAVENNA pages.

   For additional information contact alsa@merging.com

POWER SUPPLY

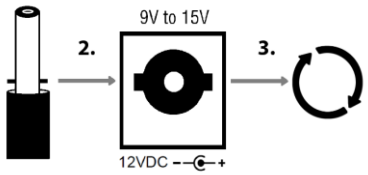
Anubis can be powered from a DC Power Supply (12V) and/or from PoE (Power over Ethernet).

Using the DC power supply source

1. First connect the included Power Supply Mains adapter to an AC outlet.
Note: The DC power source can also be coming from a 12V battery.

2. Connect the Power Supply to the rear panel of your Anubis.

* The Locking Power Supply requires that you align the two tabs on the power cable's connector to the notches on the Anubis input male connector.
Then rotate the barrel clockwise until latched, this will secure the connection and prevent accidental disconnection or a bad electrical contact.



** The Locking Power Supply option is no longer manufactured as of the Anubis serials:*
A600640 (Pro) and above
A650300 (Premium) and above.
The Anubis Locking Power Supply accessory remains optional at ordering.
Contact your Merging local sales representant for more details.

The DC power input accepts voltages from 9V to 15V, with a maximum power consumption of 18W. Do not exceed the maximum DC input voltage or the unit may be damaged. Merging highly recommends using the 12V power supply provided with Anubis.

Check that the power cable has the correct plug for the power outlet to which it will be connected. If the wrong Mains cable has been supplied, do not attempt to modify it but contact your Merging Technologies dealer for a replacement.

Using the Power-over-Ethernet (PoE) source

Anubis can alternatively be powered from PoE (Power over Ethernet) or in parallel to the DC Power, if redundancy is required.

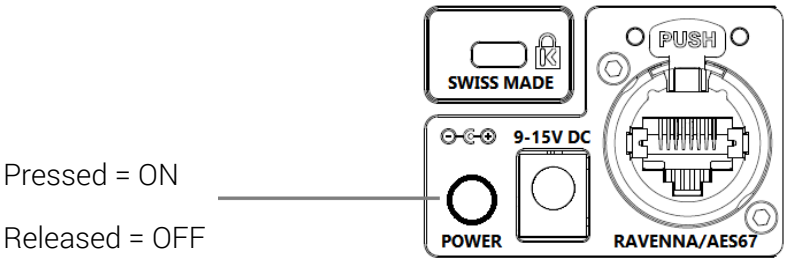
PoE requirements:

- A suitable PoE+ equipped switch and/or external midspan PoE+ injector
- IEEE 802.3at class 0 Power-over-Ethernet standard
- 37.0 V (Min) – 48.0 V (Typical) - 57.0 V (Max) @ 1–2 A

Note: Recommended PoE Switches are available RAVENNA/AES67 Certified Network Switches

Switching ON MERGING+ANUBIS

1. Press the switch on the unit's rear panel next to the DC input, as shown on the Back-Panel figure.



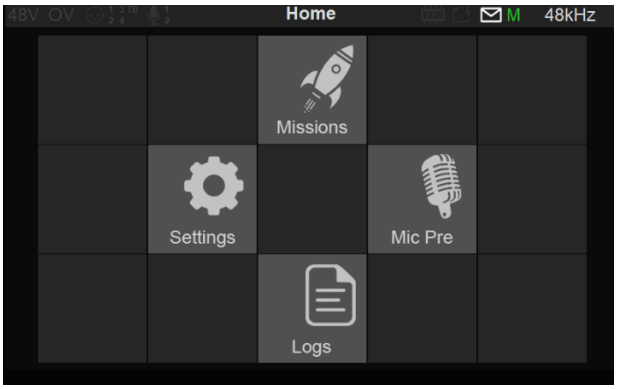
2. The Anubis Soft buttons will light up orange when the unit initiates the boot-up sequence, the TFT display will follow soon after. During this time the unit will perform a series of self-test and initialization routines.

3. Once the Anubis TFT display shows the Home page, the unit is ready for use.
Note: To turn OFF Anubis, press the POWER button to the Released state.

4. Select your Anubis Mission. To navigate between pages, press the Anubis Home pyramid button. Hold the pyramid button for 1 second to return to the Home page.



The Anubis Home page provides access to the Settings and Preamps pages and the Logs (messages) . The Home page is not in the 3 Main pages cycle. It can anytime be accessed by long pressing the Anubis Home button.



More details on the Anubis main pages and settings in the Monitoring Mission chapter.

TOUCHSCREEN AND NAVIGATION

Use the following motions and gestures on your touchscreen to navigate the device.



Swipe from Right to Left on the TFT screen to view the following menus and pages.



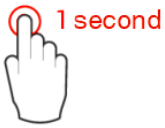
Swipe from Left to Right on the TFT screen allows you to return to the previous pages



Swipe Up or Down to scroll through menus or various options



Single tap on the Anubis TFT to select or enable a function/option



Hold pressed for a period of 1 second to access or modify some parameters. This is required to access the Home page or to open a dialog box.

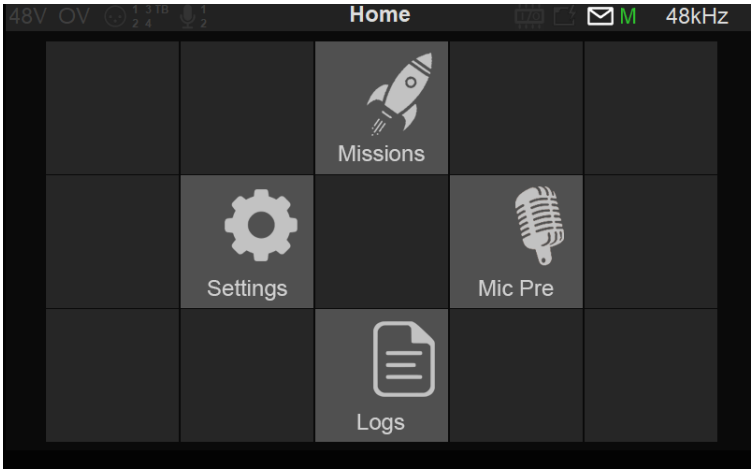
Anubis Rotary Knob



The Anubis Rotary Knob can be used for the Volume control, and to control the Preamps Gain, plus settings such as Trim, Delay, Brightness, numeric value entries and for navigation in various Anubis menus.

Generic: Turn the Rotary knob clockwise to increase values and turn the Rotary knob counter-clockwise to decrease values.

ANUBIS HOME PAGE

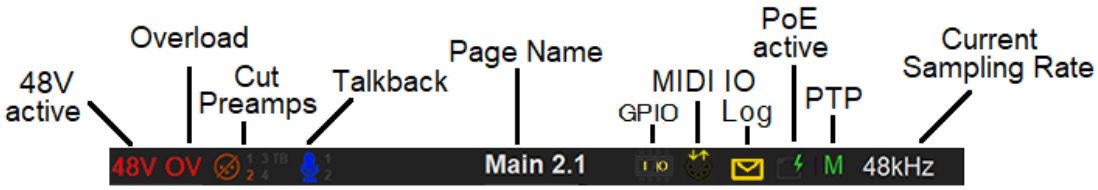


As of the Anubis Firmware 1.1.x we include the Mission Hosting icon. Enter the Missions page to load the Mission you plan to use. For the moment only the Monitoring Mission is available.



STATUS BAR

Displays information and **notifications about the Anubis status**



48V: Will light up red if 48 Phantom power is active on an input channel

CLP: Clipping peak detected, clear the clipping by either tapping the meters section (PreAmps & Meters page) or use the Peak clear option available in the Meters page (PK) or in the Monitor Control section (refer to the Monitor Mission chapter)

OV: Overload detected in the Anubis built-In Mixer. Typically summing multiple sources could cause an Overload and clear the overload by either tapping the Monitor page Peak or from the general Meters page (PK)

Input Cut: When lit it will indicate that one or more Preamp channel is cut (muted) 1-2-3-4-TB

Talkback: Built-in and/or routed input to the Talk 1 or 2. Active talkback will light up if engaged

Page title: Information related to the selected page

GPIO: GPIO indicator for input and output, will lit if GPIO is received or transmitted

MIDI IO: MIDI indicator for input and output, will lit if MIDI is received or transmitted

Log: Lights up when a message or error has been received. Check message in Home page Log

Power Over Ethernet: (PoE) when active, the icon will be highlighted green

Synchronization status: **M** Master PTP or **S** Slave PTP clock, recommended for operations. Yellow color **S** indicate lock in progress, wait for the lock to be green before operating Anubis. Red color **S** indicates improper synchronization (operation not recommended check your setup.)

PTP Clock*: The Precision Time Protocol (PTP) is used to synchronize clocks throughout a computer network. Also known as IEEE 1588, it is a protocol designed to synchronize real-time clocks in the nodes of a distributed system that communicates using a network. RAVENNA is based on and uses V2 of this IEEE standardized protocol. PTP Clocks allow for time resolution to the nanosecond.*

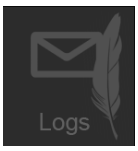
Master*: Indicates that the current Anubis is the PTP Master*
Slave*: The Anubis is slave to another PTP Master*

If multiple Anubis are connected over the same network, one Anubis will be elected the PTP Master. A specific Anubis can require to be the PTP Master by enabling the PTP Master option in the Anubis>Settings>General.
Note: There is no guarantee it will be the Master as another device can have higher PTP priority/class.

Sampling Rate indication: e.g. 48kHz

LOGS MESSAGES

Important events, warnings and errors that occur during Anubis operations are keep the Logs page, which can be accessed from the Anubis Home page. The reported messages in the logs page are intended at first to assist the user in case of operation issues.
Refer to the Anubis Log Message Appendix at the end of the Manual for complete listing.

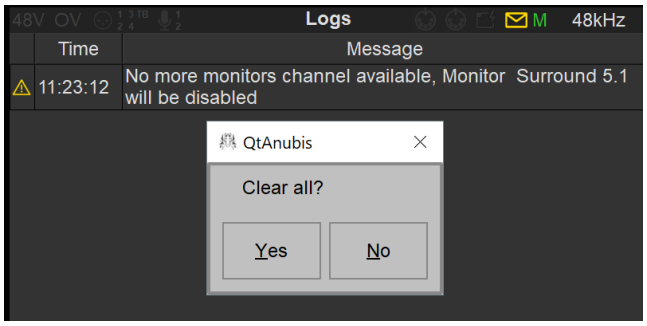


When a message is available the Anubis taskbar envelop will light up.



View the Logs messages by opening the Logs page from the Anubis Home page.

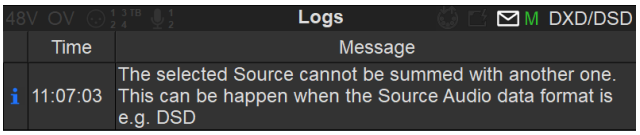
Users can clear the logs errors by selecting the messages line and confirming their removal.



Example: The error reported above indicates that the total Monitoring channels has been exceeded.
Solution: Disable some of your Monitors in order to have sufficient channels for a given Monitor Set

LOG MESSAGE APPENDIX

Listing of the Anubis log errors

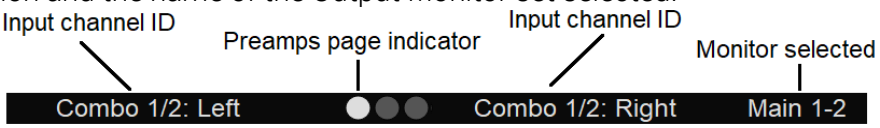


Log Messages

Message ID	Severity	Log
-2000	Warning	Filter slope for speaker set <MONITOR NAME> cannot be applied due to some resource's limitation. Effective slope will be <X> dB/octave (can also apply to EQ bands)
-2001	Warning	No more talk channel available, Talk <TALK NAME> will be disabled
-2002	Warning	No more monitors channels available, Monitor <MONITOR NAME> will be disabled
-2020	Info	The selected Source cannot be summed with another one. This can happen when a DSD Source is already selected.
-2060	Warning	Route from <SOURCE NAME> to <MONITOR NAME> cannot be achieved (e.g. Mixed DSD/DXD formats cannot be monitored concurrently by Anubis)
-2100	Warning	An unexpected behavior has occurred. Proper operation of the software cannot be guaranteed. Please contact the Merging support by providing the Debug Report.
-2800	Warning	Bass management filter slope X dB/oct can't be recalled, to prevent an inaccurate result a 12dB/oct slope is applied instead.
-2005	Warning	Channel X of monitor X cannot be fully compensated. Add EQ on this channel to solve delay alignment

PREAMPS CONTROL

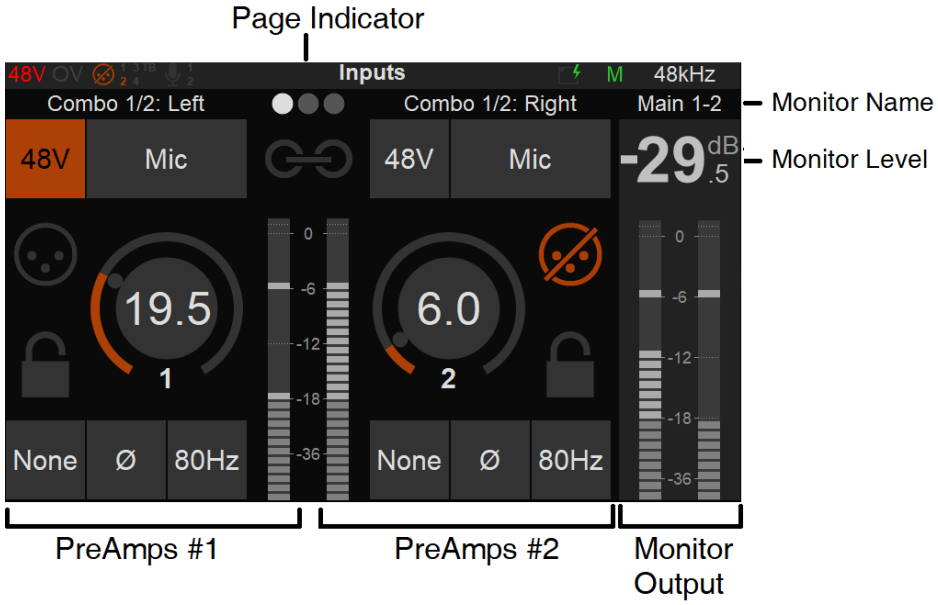
Selecting the Preamps icon will open the Anubis Inputs pages.
The Preamps Information bar on top of the controls displays: The Input Channel identification, the page position and the name of the Output Monitor set selected.



Note: More than three Preamps pages will be available if the Split Channels are enabled under Settings>Inputs>Split.

The PreAmps name can be edited with the Anubis Virtual Keyboard as of firmware 1.1.X by taping on the Input Channel ID name.

Combo 1/2: Control over the physical XLR/TRS Combo (6.3 mm / 1/4" connection) Mic/Line inputs located on the back panel of the ANUBIS



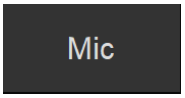
INPUTS OPTIONS:

48V

48V: When enabled it will turn on the 48V phantom power for the channel 1 or 2 of the Anubis meaning that the Phantom power becomes active, typically needed for condenser microphones.
Note: Only active on channels set to Mic (Anubis XLR/Combo Inputs 1-2).

⚠ *Warning:*
The 48V power MUST be turned off prior to changing the connection in certain patch bays. Many such patch bays do short the Hot, Cold or both signals to Ground during insertion or removal of the Jacks with the risk of deteriorating

permanently the protective resistors in the input of the Preamp circuitry. If an AD module input circuitry is damaged, following such a short, it will end up permanently having inaccurate gain levels, distortion or even no signal at all on some channels. Such damage is not covered by our warranty.



Mic/Line: Switches the Input between the Mic-Pre amplifier and the Line level circuitry. The option will show the current input signal path it is set for (Mic or Line).



The Line input sensitivity, switch from Mic to Line level and impedance
Line Fader of 0 dB, means 0 dBFS for +24 dBu Analog signal level present at the Line input
Line Fader of + 6 dB, means 0 dBFS for +18 dBu Analog signal level present at the Line input
Line Fader of + 20 dB, means 0 dBFS for +4 dBu Analog signal level present at the Line input
Line Fader of + 66 dB, means 0 dBFS for -42 dBu Analog signal level present at the Line input

Note #1: the MIC, Line and Instruments inputs are stored as independent parameters, meaning that switching from Mic to Line to instruments and vice versa will load their stored gain (sensitivity) value

Note #2: The ANUBIS Premium has been designed in order to be able to benefit from the +3.1 dB SA-CD headroom offered by DSD, as per the scarlet book standard. Therefore, a minimum of +6 dB gain is required on the mic preamp or line input. This gain is applied in the digital section post AD just prior to the sigma delta 1-bit modulator. It is automatically applied as soon as the ADs are switched to DSD (64, 128, 256FS) and is visible in the preamp page. The gain can be adjusted between +0dB and +66dB in DSD mode. In Line mode, with a gain of +6dB, an input of +21dBu will generate a signal of +3dB SA-CD, in Mic mode, with the same gain, an input of +9dBu would generate a signal of +3dB SA-CD.



Gain: Tap the channel you wish to adjust. When the Gain is highlighted the Anubis Rotary Control lets you adjust the value in 0.5 dB steps.
The Gain range goes from 0 dB to +66.0 dB. Turn the Rotary knob clockwise to increase the Gain value and turn counter-clockwise to decrease the Gain value.



Link: Tap to link a pair of input Preamps and control their settings simultaneously. Changes will then be applied to both channels while keeping any Gain value offset (if present).



None: Max Mic input level +12dBu for 0dbFS (when Gain set to 0)



Pad: Attenuates (lowers) the mic input signal level by 12 dB > Max Mic input level +24dBu



Boost: Increases (boosts) the mic input signal level by 12 dB > Max input level 0dBu *Note: Useful for Ribbon Microphones that have low output.*



Polarity: Polarity invert option. When lit, it inverts the polarity of the selected input signal.



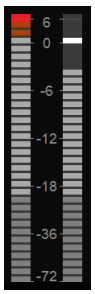
80 Hz: Low cut filter 80 Hz. Second order, 12 dB/octave.



Cut: This option allows the operator to Cut a channel input. By example to Cough Cut a microphone input. It can also be used to avoid potential noise when connecting or disconnecting an XLR or Jack input.



Lock: Enabling the lock option will prevent the input parameters being changed. This could be useful for safety or in order to maintain a calibration for an external analog processing chain.



Meters: The Meters default display scaling range goes from -90 dBFS to 0 dBFS.

Note: Refer to the General Settings in order to configure and adjust the Level meter color range (Peak, Alignment and Decay time). Refer to the DSD section for Meters.

Peaks: The top Red led of the Preamp metering will indicate that a Peak has occurred. In order to clear the Peak display, simply tap on the meters VU to clear the Peak.



Output: The Output meters located on the far right of the UI display the Output level and metering of the selected Monitor whether it is a local Monitor (Main, Line, Headphones 1, Headphones 2) or an over the network Monitor set.
The name of the selected Output is displayed at the top of the meters.
Note: Despite the display being two channels, the peak of all channels, split in left and right channels is indicated.

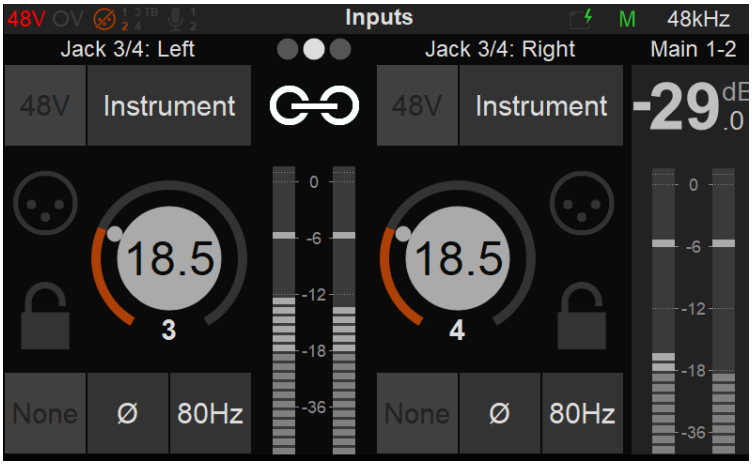
Inputs 3-4 Instruments/Line:



Swipe from Right to Left on the TFT screen to access the Anubis Inputs 3-4

The location indicator will show second Preamps page. 

The Instruments (Hi-Z)/Line inputs 3-4 are the ones located on the front panel of the ANUBIS on 1/4" connectors (6.3 mm). This second Preamps page will give you control over those Preamps.



The Preamps controls for those inputs 3-4 are similar to inputs 1-2 but will apply to Hi-Z, Instruments or Line inputs types only. Thus, the 48V Phantom power and Pad/Boost options are not available for the Anubis inputs 3-4.

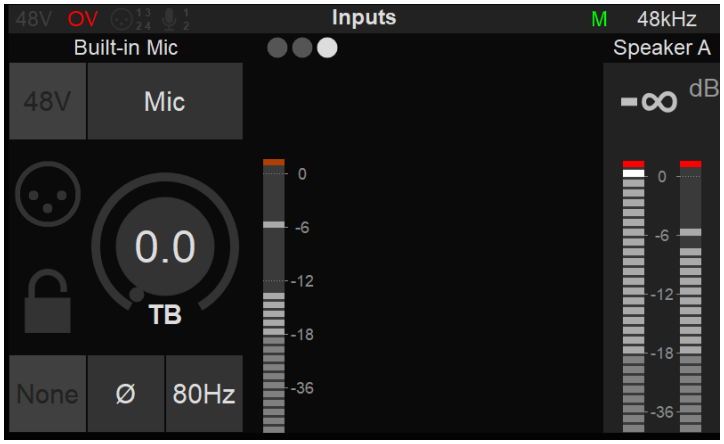
Note: Input 4 is shared with the Built-in Talkback. Connecting an Instrument or Line input jack into this input will deactivate the built-in Talkback (Channel 5).

It is recommended when you pull out a Jack out of the input 4 to either Mute your Monitors or Cut the Input 4 preamp signal prior to pulling out the Jack to avoid an accidental short feedback situation between the built-in talkback Mic and the Monitor set.

Input 5 Built-in Talkback:



Swipe from Right to Left on the TFT screen again to view the Anubis Input 5 that is dedicated to the built-in Talkback microphone.



The Preamps controls for the Input 5 will control the built-in Talkback microphone.

Notes: The Input 5 Built-in Talkback is shared with Input 4. Connecting an Instrument or Line input jack into this input will deactivate the built-in Talkback (Channel 5).



Swipe on the TFT screen from left to right in order to return to the previous Inputs Preamps pages.

Note: More than three Preamps pages will be available if Split Channel is enabled under Settings>Inputs>Split.

Remote control of the Anubis Mic Preamps using ProTools DAW.

Mac: User should refer to the VAD User Guide for details on the procedure to follow
Virtual Audio Device guide

PC: Users must refer to the RAVENNA ASIO Guide or Merging Audio Device (MAD, for details on the procedure to follow
RAVENNA ASIO guide or Merging Audio Device (MAD) guide

Remote MIDI preamps limitations (Boost, Link, Cut):
Boost: Remote MIDI Preamps control does not support the Anubis Boost Preamps option. It will be interpreted as a Pad. For the moment it is recommended to set this parameter locally on the Anubis Preamps.
Link and Cut: Remote MIDI-Preamps control do not support the Anubis Link Preamps option. users can use Stereo Inputs. The Cut option will also need to be used locally on Anubis.

DUAL GAIN 32bit CIRCUITRY

While based on the extensive experience of Merging's Horus and Hapi Preamp and AD converter design, the Anubis engineered Dual Gain 32bit A/D circuitry takes Analog/Digital Conversion design one step further. While using 2 A/D converter channels per input as, in the Horus & Hapi design, those two A/D converters are not driven in parallel by a single Preamp stage but the Anubis provides for two gain-ranged separate Analog front-ends, each driving its own A/D converter channel. The signals out of each AD converter is then combined seamlessly in an optimal way to both expand the headroom and lower the noise floor, providing huge dynamic range with ample headroom. One main advantage of this topology is the considerable additional freedom and safety implied by not having to spend much time and effort to adjust the input Gain to maximize the program level range between input circuitry noise and clipping level of the A/D converter. An important side benefit of that topology is also the total absence of any clicks when adjusting the Preamp Gain steps, as those can be entirely processed in the digital domain.

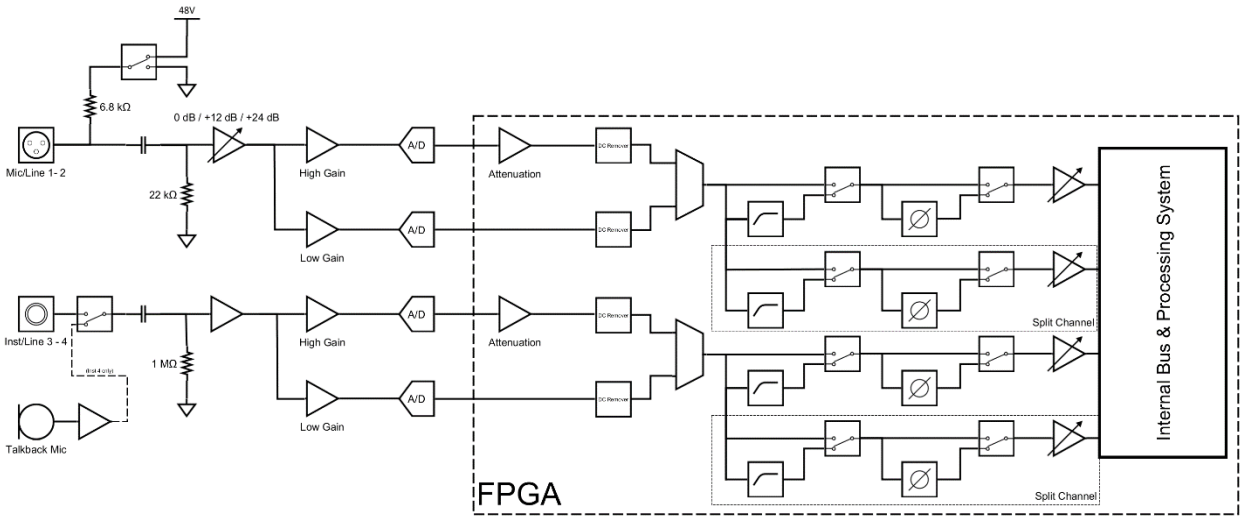


Figure 4 Dual Gain Block Diagram

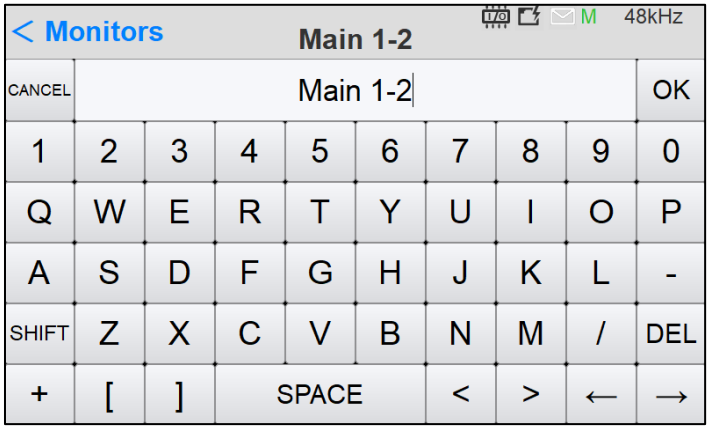
SPLIT CHANNEL

As seen on the right side of the above block diagram, the Anubis AD front-end topology gives also additional flexibility by offering a split channel functionality, where every input channel has a separate split gain control for sending them to different paths.

Use Case examples:

- Typically, an AD could be used for the recording device and have its split channel used for the FOH.
- Independently control the FOH & Monitoring Microphone Gains without any conflict
- The Split channel gives the operator the possibility to cut an input signal to the FOH while monitoring the same channel split that would be routed to another Monitoring set (e.g. Headphones). For signal check, changing a defective cable or searching for a proper sound or instrument FX, all this while muting the FOH feed.
- Possibility to record a duplicate of the input channel at a different input gain level (for backup or peak-safe recording)

ANUBIS VIRTUAL KEYBOARD

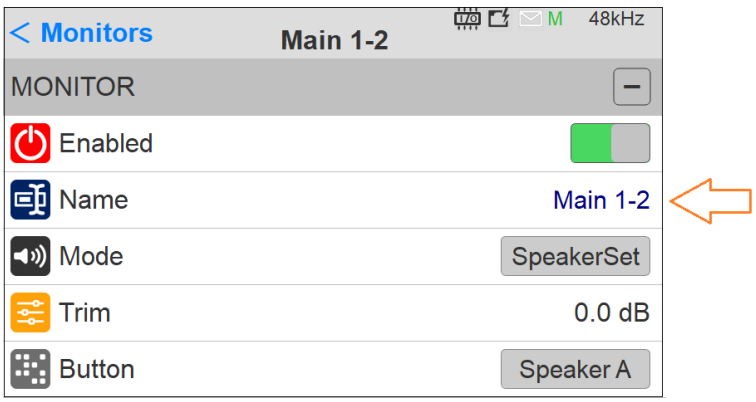


As of Firmware 1.1.8 and above the Anubis includes a Virtual keyboard. You can use the onscreen keyboard to add and edit text.
The Anubis keyboard is only available for the moment with a Qwerty US layout.

The Anubis Virtual Keyboard is available to edit.

- Source Names
- Monitor Names
- Presets Names
- PreAmps Input Names
- More to come….

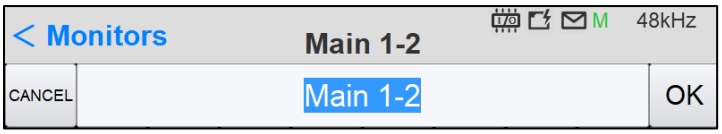
The Virtual keyboard is available to edit Anubis entries identified in blue. Open the onscreen keyboard by tapping a blue editable text or field



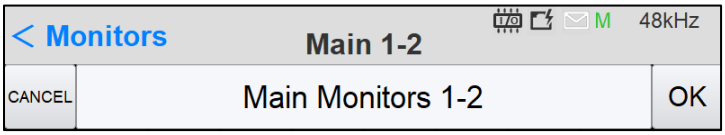
Virtual Keyboard - Key Functions.

Select a word: Double-tap the word with one finger.

Select a sentence: Tap and drag your finger up to desired selection range



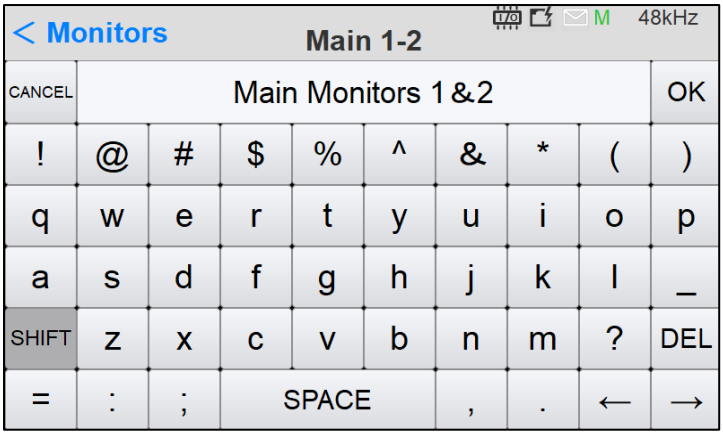
Use the Virtual Keyboard key to enter the new desired name or entry.



OK: Tap the OK key to confirm the new edited text entry, this will automatically close the Virtual Keyboard and

Cancel: Tap key to cancel the Edited text and close the Virtual keyboard.

SHIFT: Enable to access the lower-case keys and special characters



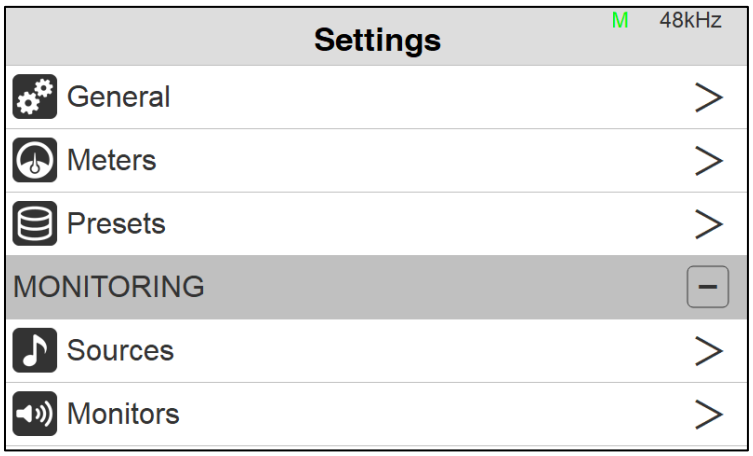
SETTINGS



The Anubis Settings are accessible from the Anubis home page, by giving a long press on the Anubis Home button.

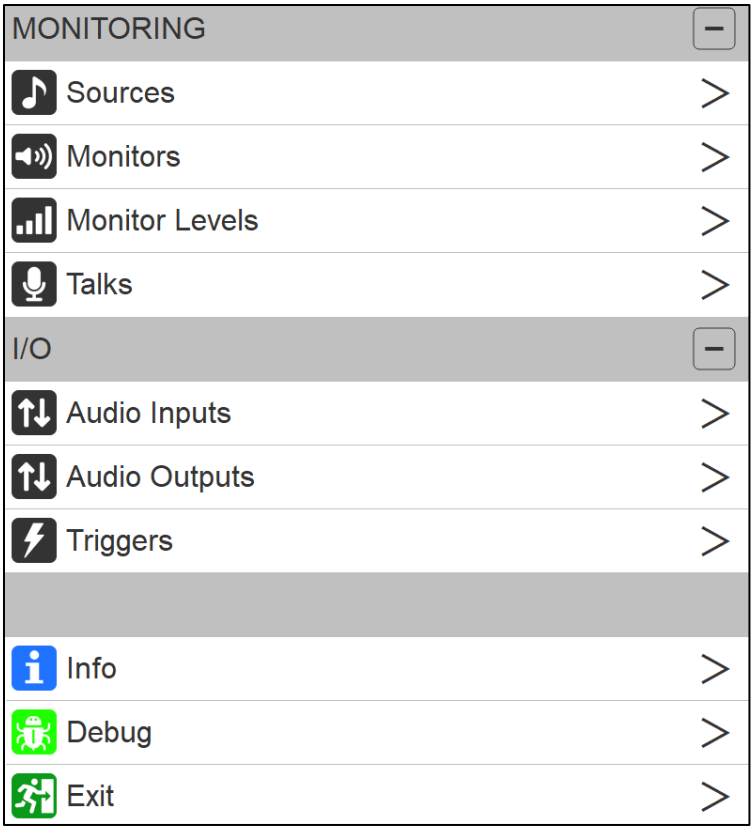


This will open the Settings page





scroll up or down to view and navigate through the settings entrie



SETTINGS CATEGORIES DESCRIPTION

GENERAL SETTINGS

Sample Rate

Sampling Rate

Selector to the different sampling rates, available from a drop down menu.

Anubis Pro: 44.1kHz, 48kHz, 88.2kHz, 96kHz, 176.4kHz, 192kHz

Anubis Premium: 44.1kHz, 48kHz, 88.2kHz, 96kHz, 176.4kHz, 192kHz, 352.8kHz (DXD), 384kHz, DSD64, DSD128, DSD256
DSD Requires the Anubis firmware v1.0.16 and higher.

Auto

Auto Sampling Rate mode, when enabled, will make Anubis automatically follow the sampling rate given by a RAVENNA/AES67 source provided by either; ASIO, Merging Audio Device (MAD) Virtual Audio Device (VAD), MassCore or another interface with PTP clock. Enabled by Default.

Example 1: User using an external player (such as a DAW) can enable the Auto mode so that Anubis automatically changes its sampling rate according to the project settings.

Example 2: This Auto setting is also useful in a network configuration following the RAVENNA ASIO/Merging Audio Device (MAD)/Virtual Audio Device (VAD) settings, where Anubis will adapt its sampling rate automatically.

Note: Both examples above are valid provided at least one RAVENNA ASIO, Merging Audio Device (MAD) *or Virtual Audio Device (formerly Core Audio Driver) stream is connected to an Anubis Source.*

Frame Mode

Latency

Modes available in samples: AES67 (6), AES67 (12), Ultra (16), Extra (32), AES67 (48)* & Low (64). The selected mode will determine the device latency over a RAVENNA network. When multiple RAVENNA devices (e.g. Anubis) are connected over a network, they should be configured in order

to adjust themselves to the lowest latency that can be globally achieved.
** Ex-factory default mode*

Clock

About the PTP Clock: The Precision Time Protocol (PTP) is a protocol used to synchronize clocks throughout a computer network. Also known as IEEE 1588 or IEC 61588, it is a protocol designed to synchronize real-time clocks in the nodes of a distributed system. RAVENNA is based on and uses V2 of this IEEE standardized protocol. PTP Clocks allow for time resolution to the Nanosecond.

 PTP Master

If multiple AoIP devices are used in a network environment, Anubis will try to be elected as the PTP Master priority when enabling this setting, using the Best Master Clock Algorithm (BMCA):

Note: Non-Merging devices might not consider Anubis as the PTP Master

 PTP Status

Information on the Anubis PTP status. Save or Master indicator and Unlock, Locking and Lock status.

 ASIO Clock

Auto: The ASIO clock will be generated by the Anubis which will be PTP Master
On: The ASIO clock will always be generated by this Anubis whomever the Master
Off: The ASIO clock is never generated

Note: Set to Off only if you are sure that no Anubis will be PTP Master, or if you are configured for a Unicast (point to point) workflow.

Interface Controls

 Brightness Display

Adjust brightness of the TFT display using the Anubis rotary encoder to increase or decrease it.

Buttons Intensity

Adjust brightness of the Anubis physical buttons by using the Anubis Rotary Knob to increase or decrease the intensity.

Fan

Fan

Cooling Mode: Settings are available for either Low, Mid or High Cooling. This affects the threshold at which the fan will start to operate, with reference to the temperature measured internally. While there is no universal preferred setting, we recommend that unless noise levels are a concern, you leave the setting on Mid for adequate cool operation and protection.

- Low: Fan starts above 50°C
- Mid: Fan starts above 45°C
- High: Fan starts above 40°C

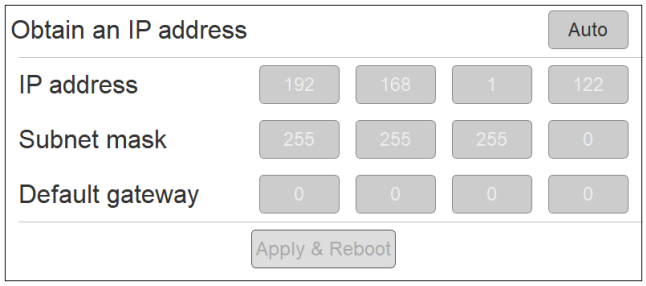
When above these thresholds, Fan always starts at the lowest speed (minimum noise), and gradually increases proportionally to the measured temperature.

Note: The Anubis will shutdown automatically as a precaution when reaching a temperature of 66°C.

Stop on Talk

Enabling the Stop on Talk option will stop the Fan when engaging the Anubis Talkback button. Once released, the fan will start back if it has to (depending of the measured temperature).

Network Settings



Obtain an IP Address

Manual: Tap the address field you wish to edit and select the value using Anubis Rotary Knob
Auto: The IP address will be automatically attributed using ZeroConf/Auto-IP mechanism

(address range 169.254.x.x if no DHCP server is present)
Note: By default the Anubis IP setting is set to "Auto" configuration mode

For details on the Anubis SPS model refer to the SPS Manual section here.

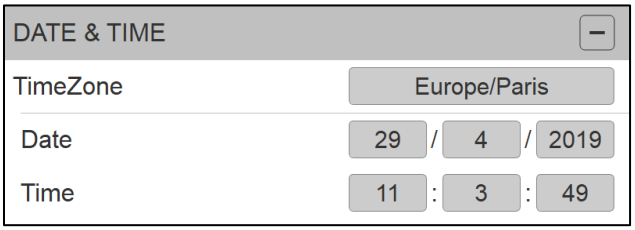
IP address
Set the IP Address for the Anubis unit by using box selection and changing the value using the Anubis rotary knob. Available only with IP Settings = Manual
Default: 169.254.x.x

Subnet mask
Set the Subnet Mask (subdivision of an IP network) for the Anubis unit by using box selection and changing the value using the Anubis rotary knob. Available only with IP Settings = Manual
Default: 255.255.0.0

Default gateway
Computer network node using the Internet Protocol Suite that serves as the forwarding host to other networks when no other route specification matches the destination IP address of a packet
Default: 0.0.0.0

Apply & Reboot
Once changes have been made to this section, you must press this button to save the settings and power cycle the Anubis unit, shutdown and reboot.

Date & Time
Anubis includes a real-time clock that is battery powered even in the absence of external power.



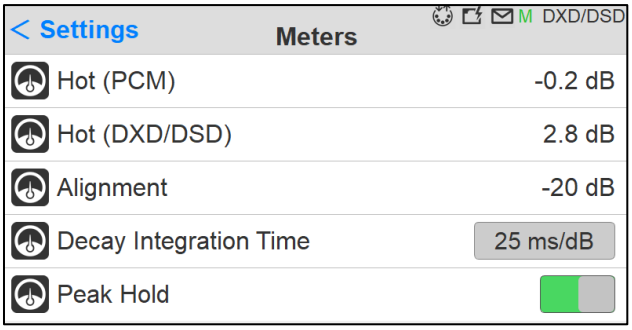
TimeZone
Select your local timezone from the dropdown menu

Date
Set the date by tapping each field (Day: Month: Year) one by one and using the Anubis Rotary Knob to adjust it.

Time

Set the date 24-Hours format by tapping each field (Hours: Minutes: Seconds) one by one and using the Anubis Rotary Knob to adjust.
Note: The Date and Time changes will be saved once you exit the Anubis Settings or if you Save the current configuration from Settings>Exit>Save

METERS Settings



Hot (PCM)
Sets the metering level Hot range (white). If set to 0dB this will mean clipping.
Range -2dBFS to 0dBFS
Default: -0.2dBFS
Note: When reaching a level of 0dBFS (digital clipping) the meter top led will display a Red peak.

Hot (DXD/DSD)
Sets the metering level Hot range (white). If set to 0dB this will mean clipping.
Range: -2dB to +6dB SACD
Default setting: +2.8dB SACD
Reminder: DSD users benefit from a +6dB headroom in DSD with distortion starting slightly and progressively from 3.1dB upwards and clipping once reaching +6dB SACD.

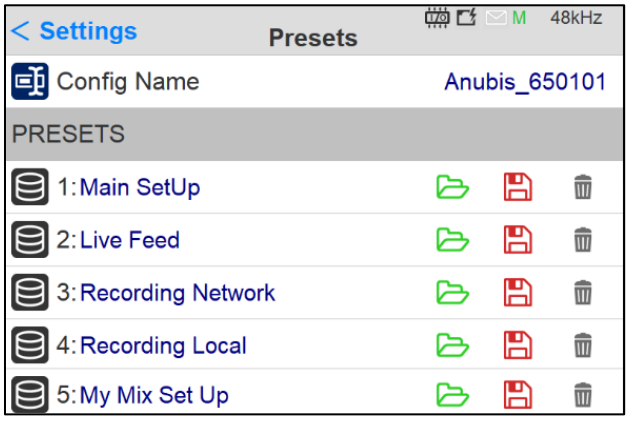
Alignment (reference level)
Sets the metering level Alignment range (light-gray).
Range -24dBFS to 0dBFS
Default: -18dBFS

Decay Integration Time
Sets the rate at which the level meter display decays after the level falls below the most recent Peak.
Choices: OFF - 25 ms/dB - 50 ms/dB - 75 ms/dB - 100 ms/dB
Default: 25ms/dB

Peak Hold
Enabling Peak Hold allows the meter to continue displaying the highest signal level permanently,

until it is exceeded by an even higher peak. This is very useful, as it gives clear indications of where and how hot peaks are, but still allows monitoring of the current signal level.

PRESETS Settings



Preset Configuration Name. Identify your current configuration.

Full configuration save and recall for instant switching between various projects or configurations. Anubis ex-factory comes empty of presets, gray folders.

Load: 18* presets banks of different Anubis configurations can be loaded (one at a time)

Save: 18* presets banks are available to store different Anubis configurations

** 18 presets are available as of Anubis Firmware 1.1.11*

Empty a preset by selecting the trash and confirming is deletion

A prompt message box will ask you to confirm the save or load of a preset.
During the Preset loading the Anubis Mute button will blink muting all monitors for a short period

Rename your Preset by using the Anubis Virtual Keyboard (as of Firmware 1.1.18 and higher). Simply tap on the Preset name entry to open the Anubis Virtual Keyboard. Refer to the Virtual Keyboard here for more details.

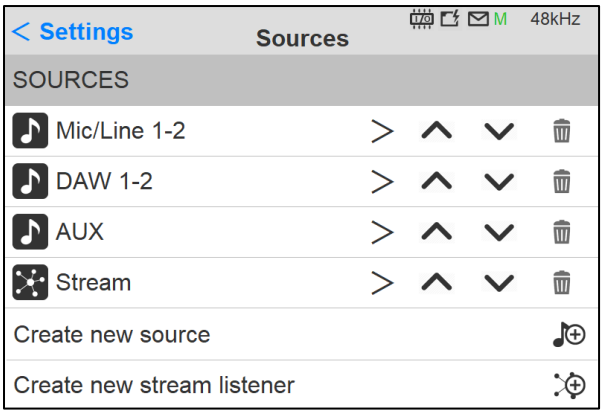
Note: An unlimited number of Presets can be save and loaded from the Web Access (external Disk)

⚠ *Warning: A Reboot to Factory will reboot the Anubis to the default factory settings, the current configuration will be lost, but all the saved Presets will be kept and can be reloaded.*

MONITORING Settings

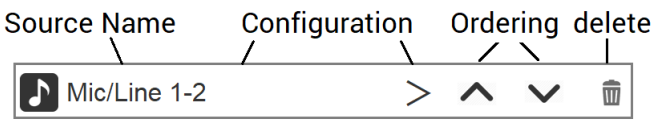
The Monitoring settings are the central part of the Monitoring Mission, this is where you can configure the incoming Sources and outgoing Monitor sets and configure their routing.

SOURCES



The first step is to configure your Sources (e.g. DAW or External RAVENNA Device) prior to deciding how you will monitor those. By default, Anubis comes with pre-created sources that consist of the current Anubis physical inputs: Mic/Line (Back Panel Inputs 1-2) and INST/LINE (Front Panel inputs 3-4), with an additional DAW Source ready to listen to your DAW Playout, upon a first connection within ANEMAN. The internal Sources are already patched to the Anubis mix engine, so that you can immediately use them for monitoring purpose. You are free to remove any of those pre-configured and/or to create your own additional Sources at any time. Anubis ex-factory comes with some pre-configured Sources (such as DAW 1-2). Users are free add and create their own sources or edit the present ones. 128 channels @ 1FS (44.1/48kHz) are available to connect those Sources.

Sources entry page details.



Note: Use the arrow up or down to move a source to a new ordering position. This feature is available as of Firmware 1.1.x and higher.

Two different types of Sources can be created

Create New Source

Standard Sources: for example, for a DAW playback, External Multichannel device, Physical Inputs

Create New Stream Listener

To Monitor the streams available over a RAVENNA/AES67 network, streams have to be compliant with RAVENNA or AES67, once available Anubis will see those and allow the users to select them for monitoring purpose.

> Enter a Source configuration by tapping the Source line or the source name

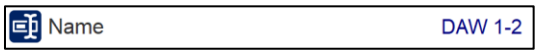
Select to delete a Source upon confirmation in message dialog

Enable or disable a source

Disabling a source will hide it from the Main Anubis menu pages. Doing so will not delete the Source but simply hide it with a gray icon it can be re-enabled at any time.

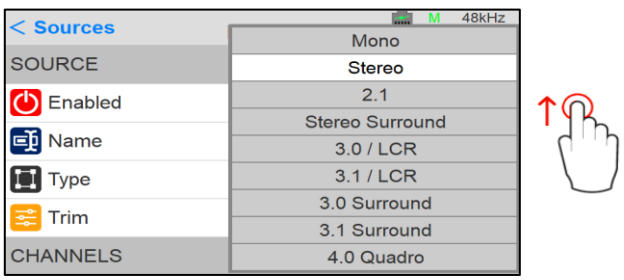
Name

Name the Source by taping the Blue text entry to open the Virtual Keyboard (available as of Firmware 1.1.8 and above)



Type

Select the source channel type. Predefined sources are available from mono to 22.2 Channel mappings. Scroll to see all available entries.

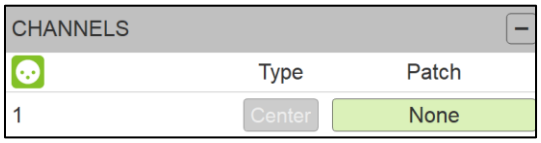


Note: As of the Anubis firmware 1.0.13 and higher, users are no longer restricted to the predefined name listing and can rename their Sources and Monitors with the Anubis Virtual Keyboard or from the Web Access page. Refer to the Virtual Keyboard here or Web Access chapter for more details here.

Trim

Trim the level of an entire Source, apply a trim by turning the Anubis Rotary Knob.
Range: -36dB to 12dB
Note: Trim is after the initial analog gain stage, so if the channel input is clipping, Trim cannot fix it.

Channels



Number: Channel numbering of the Source
Type: The channel type is predefined in accordance with the selected Source Type
Patch: Configure the Source routing by patching each of the source channels. The Patch numbering in the Patching dialog starts with the Anubis Hardware Input sources followed by the external sources Streams, such as paired device streams from another Anubis, Horus or Hapi, ASIO, MAD, VAD or MassCore streams. Scroll to view the entire listing.

Single Patches a single channel at a time.

Auto↓ Patches automatically the channels following the selected one (downwards). Quick way of patching multichannel Sources or Monitors.

Note: can be applied to None, to un-patch all channels.

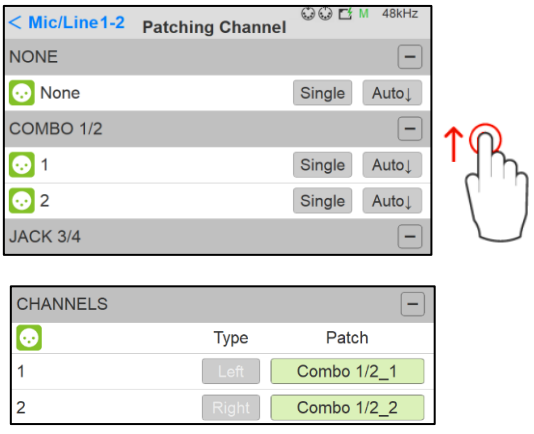
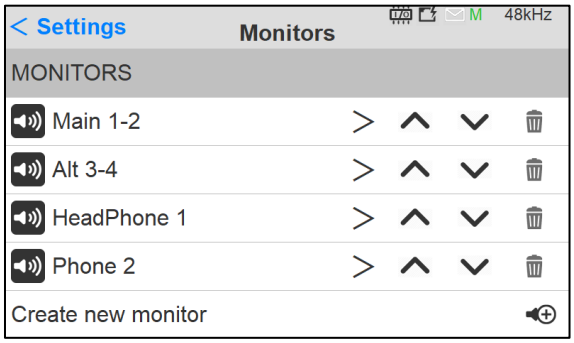


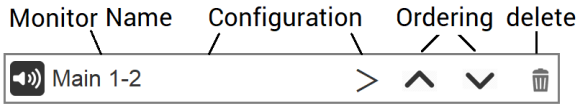
Figure 5 Example: Patched Source

MONITORS



Configure your Monitoring sets, whether you plan to use the Anubis hardware output sets for your Studio Monitor Speaker, Headphones, Cue Mix or to Remotely control the outputs of an external compatible device RAVENNA/AES67 (e.g. Horus or Hapi).

Monitor entry page details



Note: Use the arrow up or down to move a Monitor to a new ordering position. This feature is available as of Firmware 1.1.x and higher.

Create new Monitor

Create a new Monitor set that can be customized for your needs.
For example configure the Anubis Main (1-2) outputs to control the volume of your DAW Source through the Anubis Monitoring Engine.

> Enter a Monitor configuration by tapping the Monitor line or Monitor Name

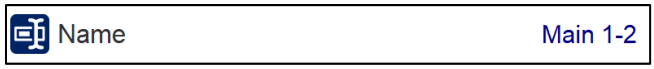
Select to delete a Monitor set upon confirmation in message dialog

Enable or disable a Monitor

Disabling a Monitor will hide this one from the Main Anubis menu pages. Doing so will not delete the Monitor but simply hide it with a gray icon it can be enabled back at any time.

 Name

Name the Monitor by taping the Blue text entry to open the Virtual Keyboard (available as of Firmware 1.1.8 and above).



Note: As of the Anubis firmware 1.1.8 and higher, users are no longer restricted to the predefined name listing and can rename their Sources and Monitors with the Anubis Virtual Keyboard or from the Web Access page. Refer to the Virtual Keyboard here or Web Access chapter for more details here.

 Mode

Define your Monitor by selecting one of the 3 available Monitor Modes.
1. Speaker Set: Recommended to be used for Speaker Sets (e.g. Stereo Monitors)
2. Headphones: Recommended to be used for Headphones Sets monitoring
3. Cue: Recommended to be used when a specific summation of Sources is need on a designated Monitor set or when recording to produce a low-latency Cue mix for the performer foldback.

Important:
Monitor sets have different properties, refer to the Monitors Types and Features table here
Speaker Sets and Headphones will monitor the same Sources selection. In order to have an independent monitored Source selection it is mandatory to use a Cue. For more details refer to the table detailing the different Monitor mode possibilities and constraints, available in the Sources vs. Monitor section.

Note#1: Connecting only one input to a Stereo Source will hard pan this source monitoring to either the left or right channel depending of the input used and Monitor set. It is recommended to change the source type to Mono if using only one input in order to have this source monitored to center channels.
Note#2: Monitors must be selected on Anubis in order to be visible for connections within ANEMAN

 Mon to Cue inactive (only available for Cue mode)

By default inactive, so all Cues are over-routed the by the Speaker Set/Headphones current source selection when MON>CUE is selected on the Monitor Controls.
When enabled it will prevent the operator to override the Cue Mix and so will not send the Speaker Set/Headphones Sources to Cue listener.

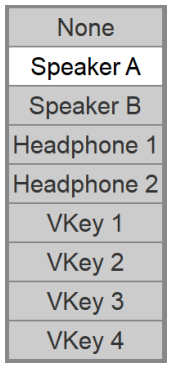
Note: When enabling Mon to Cue only the Sources selection will override the Cue Monitor. The Speaker Set controls: Mute, Solo, Solox, Polarity, Downmix, Ref and Dim will not be injected in the Cue.

Trim

Trim the level of a Monitor set, apply by turning the Anubis Rotary Knob.
Range: -12dB to 12dB (as of Firmware 1.1.x)
An individual Channel Trim is available for each channel (refer to the Channel description below)
Note: The Trim can also be set directly from the Meters page. DSD/DXD trims range max level depends of the applied trims.
For example, if you trim a monitor to +3 dB, the max volume will be set to -3dB for that monitor. On the same monitor if the trim on the L channel is +2 dB, the max volume will set to -5 dB.

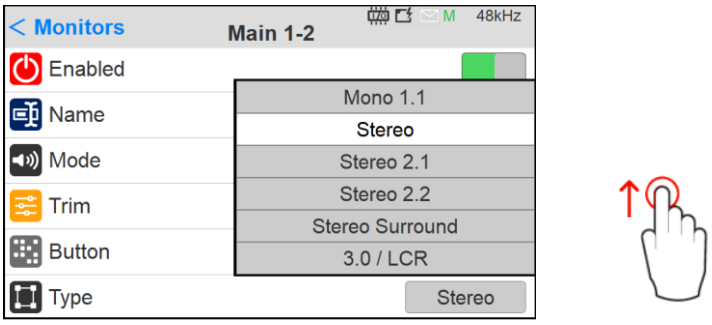
Button

Assign your Monitor set to the button of your choice by selecting one entry from the drop-down dialog. You can choose between one of the Anubis hardware monitoring buttons available; Speaker A, Speaker B, Headphones 1, Headphone 2. Or by choosing one of the 4 Virtual Keys available, a Virtual Key will then be added on the Anubis TFT. Only one Button /Monitor can be chosen. If an already assigned Button is chosen, it will automatically set to None the Monitor selected



Type

Select the Monitor set type. Predefined Monitors are available from mono to 22.2 Channels mappings. Scroll to see all available entries.



Channel

Number: channel number enumeration of the Source

Type: The channel type is predefined in accordance with the selected Monitor Type

Patch: Configure the Monitor routing. Users can patch an Anubis Hardware Output Monitor, an external source (e.g. Paired device) or RAVENNA/AES67 Stream. The Patch list starts with the Anubis Hardware inputs followed by the RAVENNA/AES67 Stream, the latter cannot be created from the Anubis. Use ANEMAN to do so. Scroll to view the entire listing.

Single Patches a single channel at a time.

Auto↓ Patches automatically the channels following the selected one (downwards). Quick way of patching multichannel Sources or Monitors.

Trim: A channel trim exclusive to each Monitor Set is available for speakers. Range: -12dB to 0dB.

Delay: Set a delay to the speaker of your choice. Apply by turning the Anubis Rotary Knob. Range: 0ms to 150ms by steps of 1ms

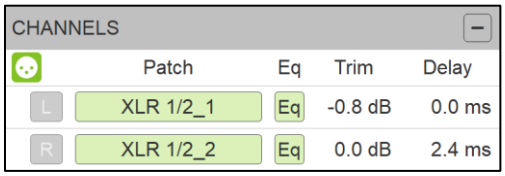
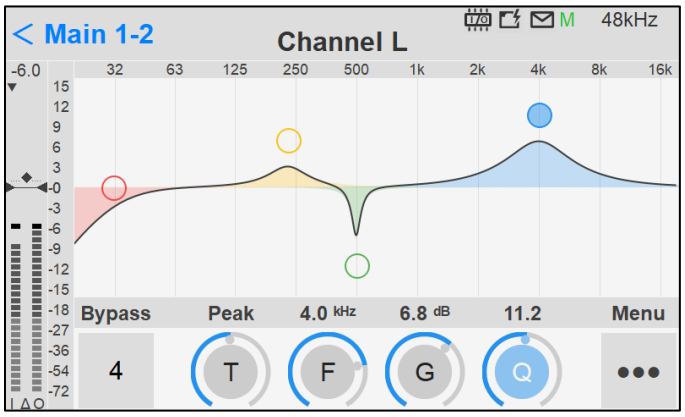


Figure 6 Example: Configured Patch Monitor

Note: Audio will cut on all delayed channels when enabling/disabling a delay on a channel.

ANUBIS EQ GUIDELINES



⚠ Important: The Monitor EQ are supported as of Anubis Firmware 1.1.8 and higher.

New Anubis EQ for Monitors

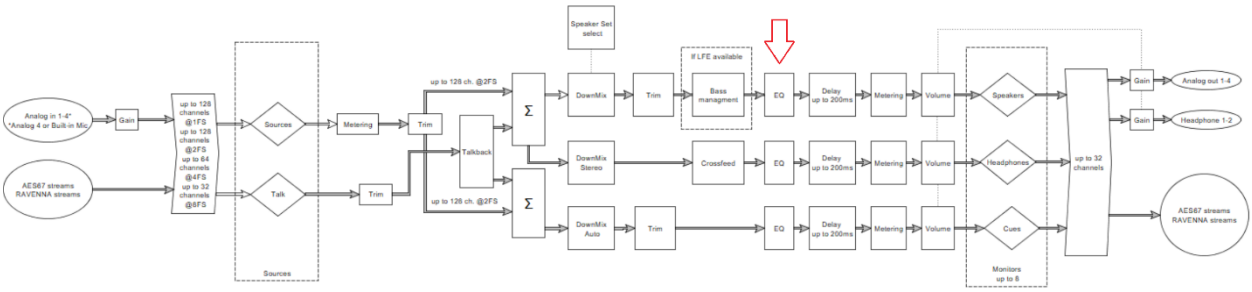
The Anubis EQ is built on the existing and universally acclaimed quality of the Pyramix EQ-X and offers Extreme definition filtering at sampling frequencies up to DXD.

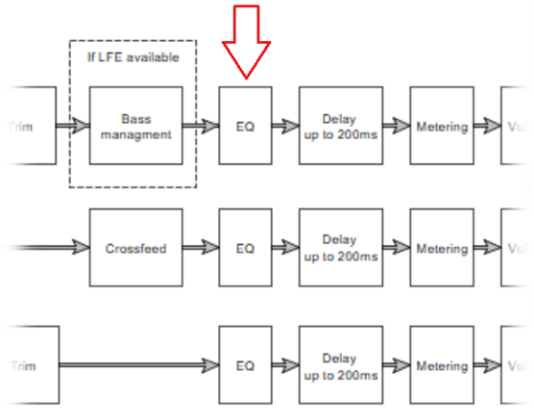
This new EQ support for Monitors is a twelve band fully parametric EQ with independent control of filter type, gain boost and cut, frequency, and Q factor (bandwidth) for each band. With notch, low cut, Hi Cut, peak and shelving filter types available. The state space filter design of this extreme definition equalizer has been specifically optimized to deal with the highest audio resolutions while still permitting very low noise & distortion, typically offering a THD+N of better than -110dB, throughout the entire audible (and even non-audible) range. Of course, this new digital filter's topography, while designed with high sample rate in mind, also offers the extra benefits and low noise to 1FS equalization.

EQ can be applied to any monitors type (speakers set, headphones and cues). In case of speaker set, multiple speakers set having the same routing with different equalization can be set. In that situation the EQ resources are not cumulated but shared. This allow a complex equalization for each speaker set (maximum total of 56 bands are available).

EQ SIGNAL FLOW

PCM 44.1 kHz to 384 kHz





ANUBIS EQ FEATURES

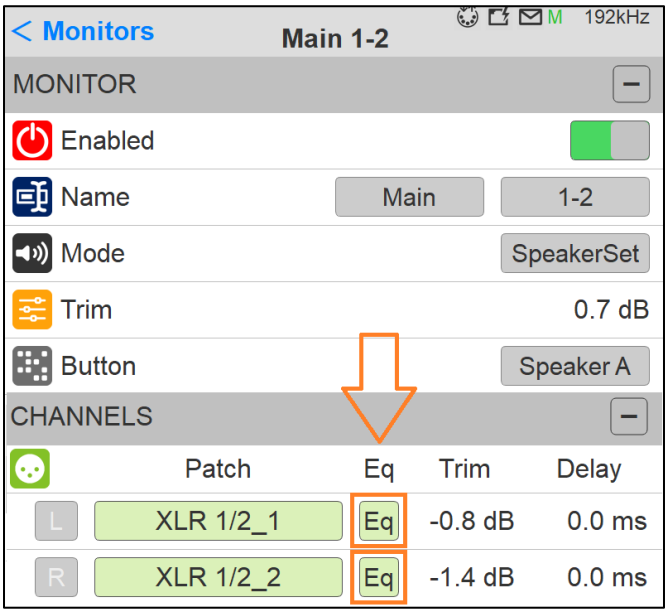
- EQ available in the Monitors for all Anubis users
- EQ Supported from 44.1khz up to 352.8kHz (DXD) and 384kHz
- Up to 12 bands per channel with a total limit of 56 bands, this applies per Monitor since only one monitor can be active at a time. Be aware that be Bass management when active will take 3 bands.
  By Example a 12.1 Speakers sets could host 4 EQ Bands per channels with Bass Management active (3 bands)

ANUBIS EQ RESTRICTIONS

- No DSD support. The EQ is unavailable when the Anubis is in DSD.
  This restriction does not apply to DXD.
- No touch screen manipulation of the frequency movement or Q (not supported yet)
- No present available (yet)

ANUBIS EQ GENERAL SETTINGS ACCESS

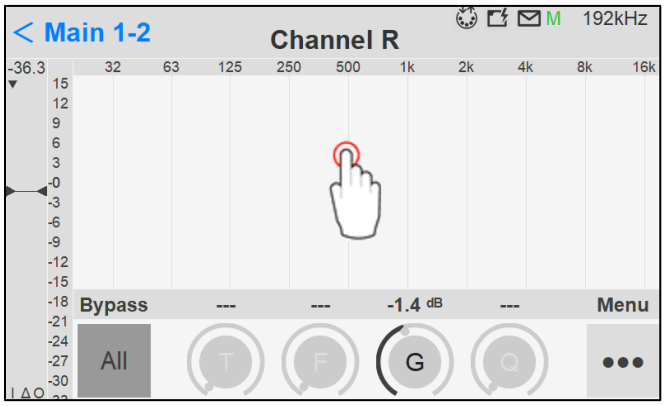
The EQ is available from the Settings under Monitors>Channels



Eq Press the EQ button in order to access the EQ UI.

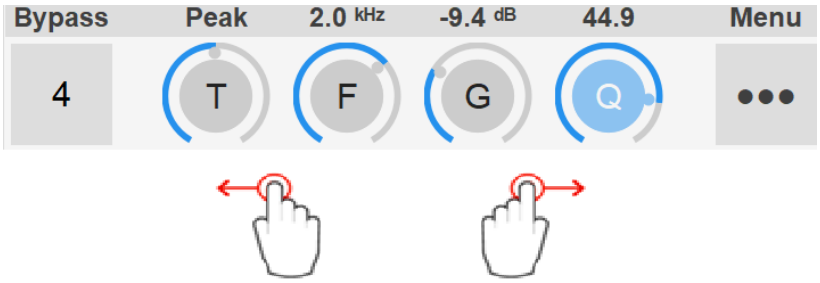
Bands Activation

Tap the EQ UI in order to activate the first 1-4 EQ bands.



Note: Graphic Display does not allow dragging EQ bands but only their selection, use button controls in order to apply the frequency parameters.

ANUBIS EQ PARAMETERS CONTROLS



Operation: Selected parameter to operate changes and use the Anubis Rotary to apply those.

EQ Band selection: Tap the frequency band on the UI itself that you want to configure once a frequency band is selected you can swipe to left or right on the Parameters control to access the adjacent band.

Bypass

All ALL: When no bands are selected, taping All with disable all EQ Bands and the EQ input will be directly routed to the output.

2 Band Channel number: When a frequency band is selected, taping this one under Bypass will Bypass that specific frequency only. (e.g. band 2)

Bypass Default Value: Disabled



Filter Type

Five Filter types are available on all EQ bands.

Types:

- Low Cut (Lo Cut - high pass filter): 6 dB per octave
- Low shelving (Lo Shelf)
- Peak (Parametric)
- High shelving (Hi Shelf)
- High Cut (Hi Cut): 6 dB per octave low pass filter

Note: for 12dB per octave precision two bands are required.
Default Value: Peak



Band Frequency (up to 12)

Adjusts the center frequency for the band.
Unit: Hz and kHz
Value Range: 20Hz / 20kHz
Default Value for first five bands: 31Hz / 125Hz / 500Hz / 2kHz / 8kHz
Step: 24 steps per octave



Gain

This knob sets the gain in dB of the selected bands between -24 dB and +24 dB.
This setting is only used for Peak and Shelving filter types.
Default Value: 0 dB

Step: 0.1 dB

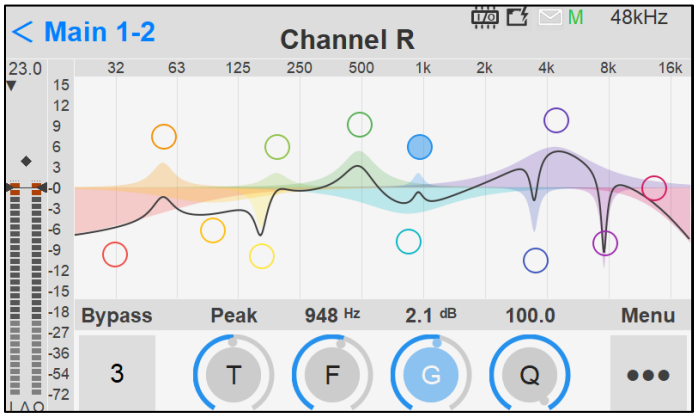


Band Q-Factor (7)

Adjusts the frequency range affected by Gain and Frequency on the band when the Parametric filter type is used. Q is only available for Peak Filter Type.

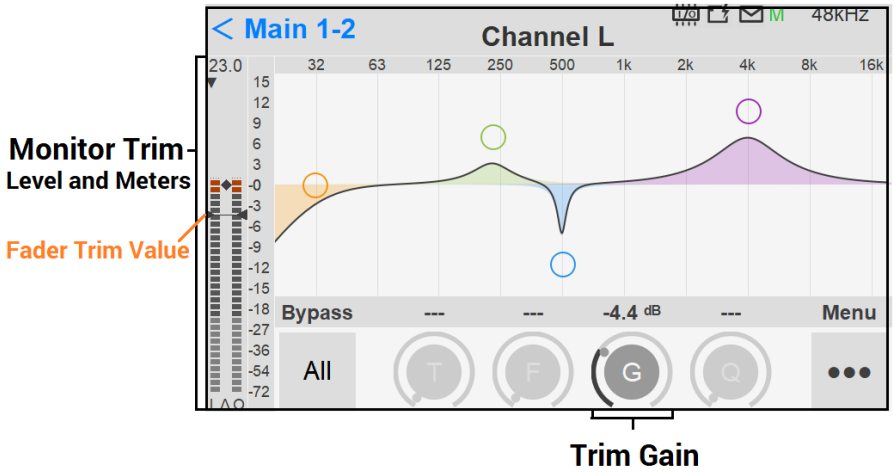
With a lower Q-Factor, a wider range of frequencies are affected, with a higher Q-Factor, a narrower range of frequencies are affected.

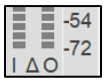
Value Range: 1 to 100
Default Value: 10
Step: 24 steps logarithmically distributed.



Monitor Trim Level Fader and Meters

At the far left of the Anubis EQ a Fader is available to control the Monitor Trim level of the selected channel. This once can be operated by using the Gain encoder when no EQ back is selected and that this one is Gray.





Metering indicators legend at bottom of the faders

I Input peak meter pre-EQ

Δ Input and Output peak level difference with indicator ◆

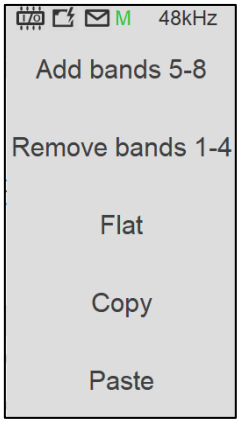
O Output peak meter post-EQ



Peak Column selector: Available at the top of the Monitor Level meter. Tap to toggle between the I or O peak meters you want to display.

Note: Peak Reset can be achieved by tapping in anywhere in the Meter area.

EQ Settings menu access



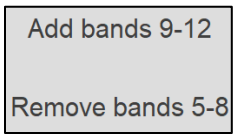
Add bands 5-8: Selecting this entry will add

Delete current Bands 1-4: Select and confirm to delete the current bands 1-4.

Flat: Reset the bands set the bands to peak mode and gain set to 0dB

Copy: Copy the current EQ bands parameter, copy can be used to eventually duplicated the EQ parameters for a second EQ Monitor Channel where the Paste dans be used in order to start form the same EQ setting.

Paste: Paste to applied the currently copied EQ. By example paste to another Monitor Channel



Once you have added Bands 5-8 you can from the EQ Settings dialog add bands 9-12 or remove the 5-8 Bands.

Note: the EQ "BM" indicator stands for Bass Management EQ, that is a fixed low cut filter type with frequency range from 20 to 200 Hz.

BASS MANAGEMENT

Bass Management is available for Speaker Set Monitor sets with at least one LFE channel type. Based on the ZMAN Anubis board that offers built-in high-quality filters directly processed into the FPGA. Those will apply a crossover frequency from all channels (except LFE and LF2) and route low frequency information to the LFE channel(s).

The Monitor Mission uses these filters to achieve complete bass management for speaker setups having one or two LFE channels and thus support standards such as 5.1 or 7.1 and go beyond with support for 10.2 or even 22.2 formats. This ensures long term compatibility for upcoming immersive standards which use a high channels count.

Bass Management Settings


Monitor

Enable or disable the Bass Management for a Speaker Set which includes at least one LFE channel type.


Crossover Frequency

Adjustable crossover frequency, from 20 Hz to 200 Hz


Filter slope

Cut off slope: 12 dB/octave (as of Firmware 1.1.x)

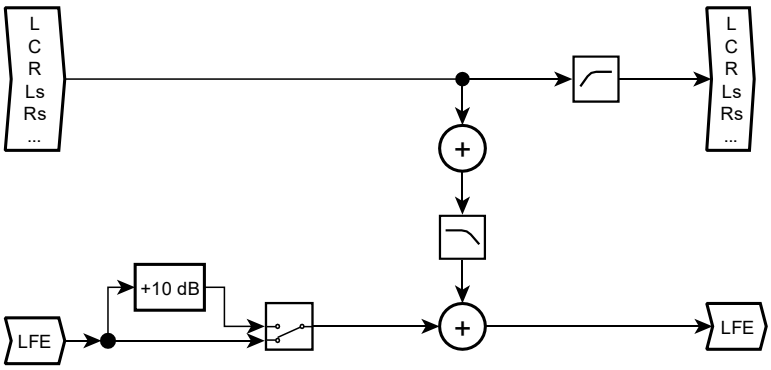

LFE Boost

Optional +10 dB LFE boost
When using a Monitor Set configured with 2 LFE channels, those will be processed Stereo-wise.

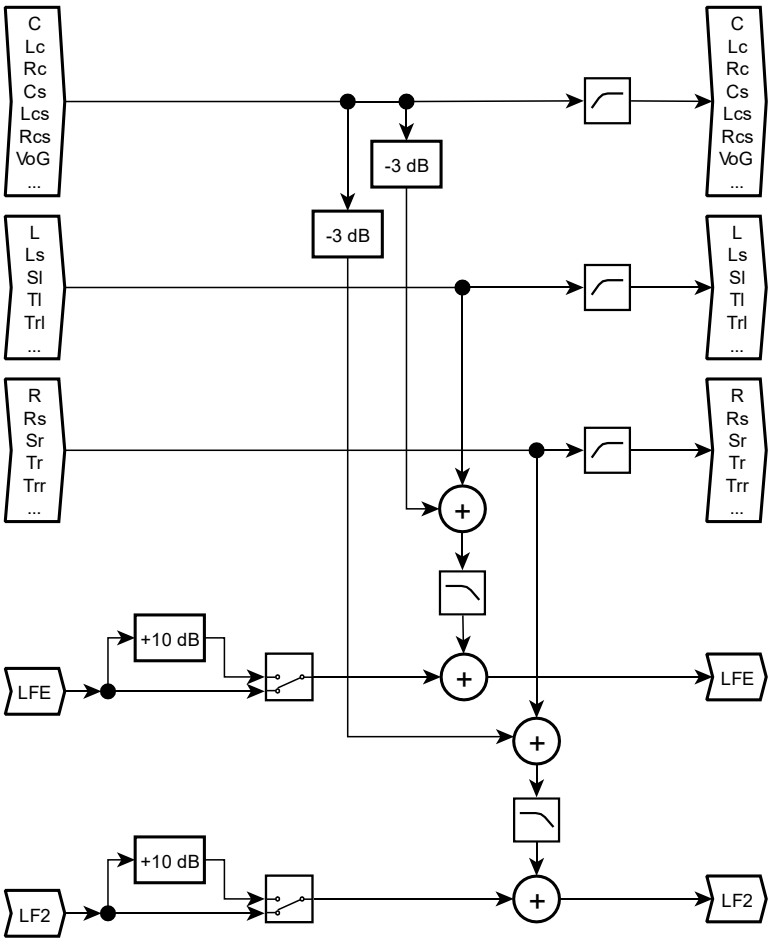
Note: The LFE channel Boost will only be effective if the monitored Source itself includes an LFE channel, as per Signal Flow diagram below.

Bass Management Signal flow

Single channel bass managment



Dual channel bass managment



Crossfeed

Crossfeed only applies to Headphones. It is the process of blending the left and right channels of a stereo audio recording. It is generally used to reduce the extreme channel separation when monitoring with headphones vs. speakers (e.g., where instruments are panned entirely on one side or the other). Apply Crossfeed to make audio played through headphones sound more natural, as when listening to a pair of external speakers. Select and turn the Anubis Rotary Knob to apply. Range: 0 (no crossfeed applied) to 100% (equivalent to mono).

Talkback

It is first recommended that you configure your Talkbacks from the Settings>Talks page.
Once having configured the Talkback #1 and/or #2, those settings will determine if and which Talker will be inserted into the selected Monitor Set, Headphones or Cue when engaged.

Sources Dim: When talkback is engaged all the listening sources feeding the monitor are dimmed to the value selected. *Example: To Dim the DAW playback source when talking to a musician.*

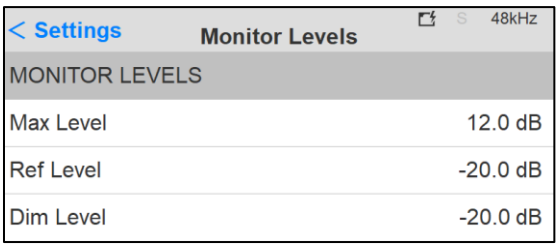
Talker Dim: Apply a Dim attenuation to the talkback Mic when engaged.
Example: To avoid feedback in a Studio control room when engaging the talkback while monitoring speakers and the talkback simultaneously or to allow to make a pleasant balance between Music listening and talking (without needing to change the monitor volume each time somebody is talking).

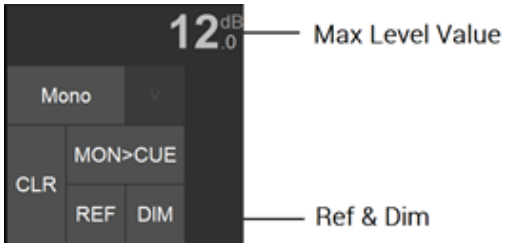
Talk A: Select a Talk source available, in order to inject this source when selected in this Cue or Monitor set *Note: Talks must first be configured in the Settings>Talks.*

Talk B: If you need a second talkback, select a Talk source available, in order to inject this one when engaged in this Cue or Monitor set *Note: Talks must first be configured in the Settings>Talks.*

Monitor Levels

The Monitor Levels settings are in relation to the Monitor Control section of the Main pages and can be recalled from this section.





Max Level:
Set the Maximum volume level boundary, use the Anubis Rotary Knob to set the value.
Range: -36dB to +12dB

Ref Level:
Determine the Reference listening level you wish to establish when recalled. Set the level by using the Rotary Knob.
Range: -36dB to +12dB

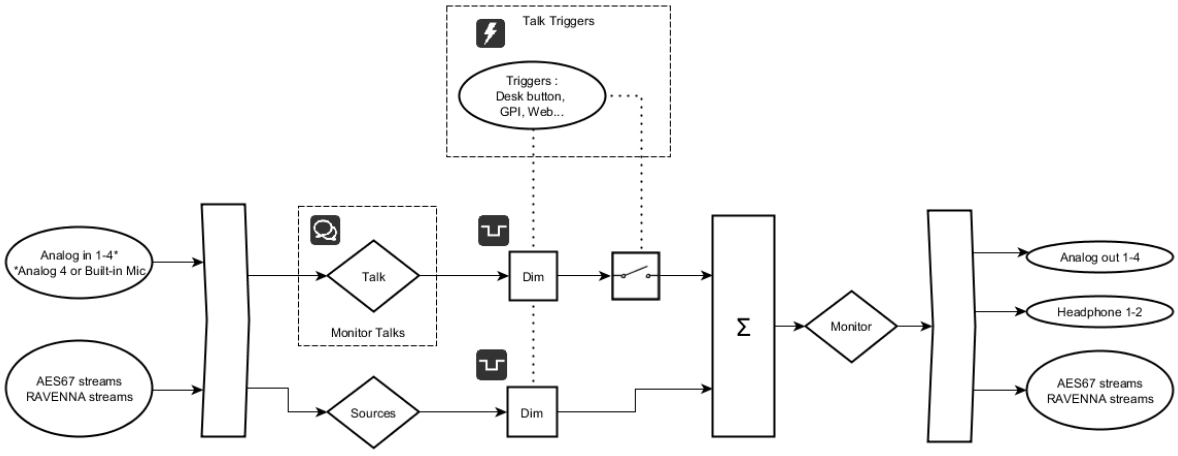
Dim Level:
Set the desired Dim level value by using the Rotary Knob. The Dim attenuation is applied to the current volume value of a Speaker Set *(Dim does not apply to Headphones or Cues Monitors).* Apply the Dim from the Main Pages Monitoring controls.
Range: -60dB to 0dB

Note: Ref and Dim only apply to Speaker Set Type of Monitor Modes

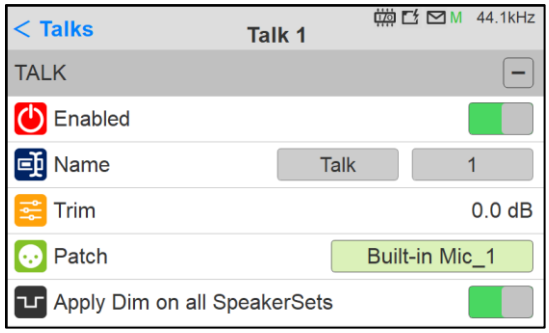
TALKS Settings

The Anubis Talkback logic is not restricted to the built-in mic but is able to use any other microphone (including Phantom power condenser mics) as well. With the possibility to setup by software two Talkback or Listen mics sending out to different Speaker Set/Headphones monitors.

Talkback Circuitry



The TALKS settings have similarities to the Sources settings.



Enable: Enable or disable the Talk sources

Name: Select the Talk name from the pre-defined naming listing
Trim: Apply a trim value to the Talk source

Patch: Patch the Talk source, you can choose the local Built-in Mic, any Anubis input where you would connect a Microphone or an AoIP Stream that could be a Microphone connected to another RAVENNA/AES67 compliant device.

Apply Dim to all SpeakerSet: When enabled if the talkback is engaged it will Dim the SpeakerSet levels to the configured Dim level configured under Settings>Monitoring>Monitors>*MONITOR-NAME*>Talkback Sources Dim value. This setting can be configured for each Speaker Set, in order to have different Dim levels applied when engaging the Talkback.

Triggers

The operator can define how the Talkback is triggered, that can be from either Anubis Talk Button or from GPI (footswitch), a trigger can engage multiple Talkbacks at a time. Refer to the GPIO Settings for more details.

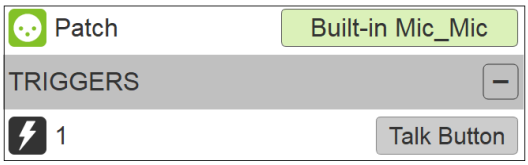


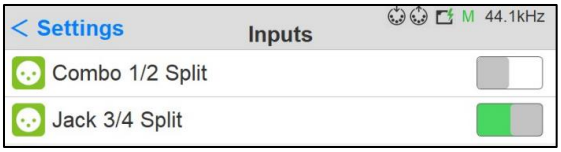


Figure 7 Example: Patching the Anubis Built-in microphone and using the Anubis Talk button as the Trigger

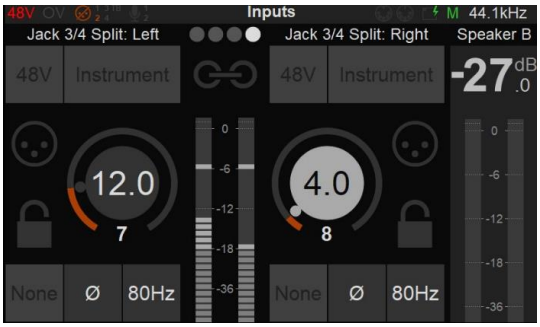
INPUTS Settings

Split channel settings. The Anubis AD front-end topology offers the split channel functionality, where every input channel has a separate split gain control for sending them to different paths.

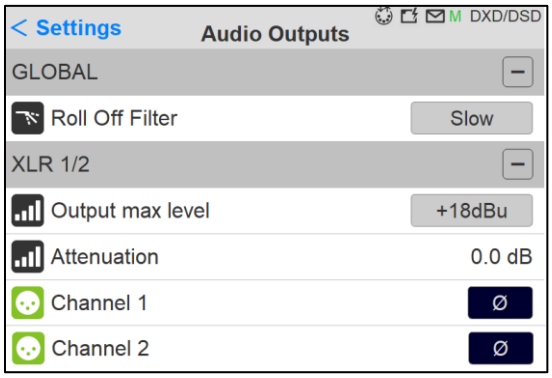
Enable the Split channel option for the Anubis Preamps channels pair of your choice. The Anubis XLR Combo 1/2 inputs or the Jack 3/4 inputs.



When enabled, within the Anubis Preamps pages a second pair of Preamps will appear for each Split Channel pair. Allowing you Split control over: Gain, Polarity and Low Cut parameters.



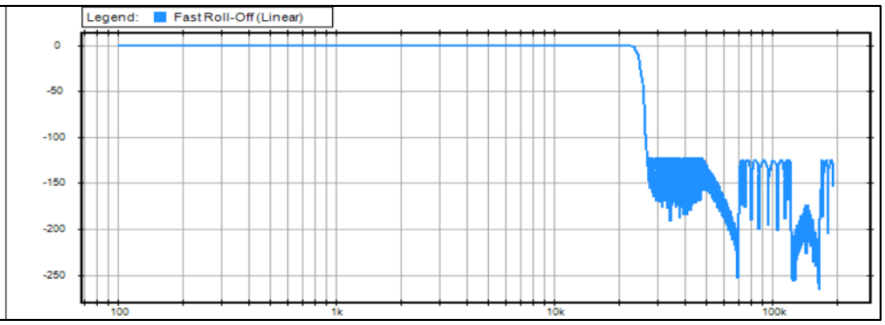
OUTPUTS Settings



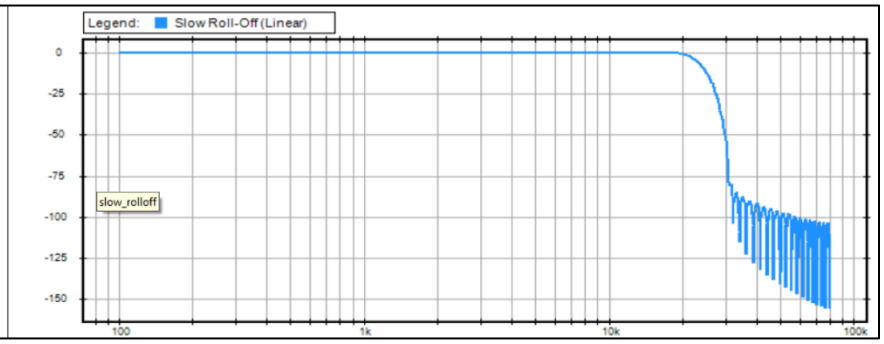
Global Outputs Setting

Roll Off Filter:

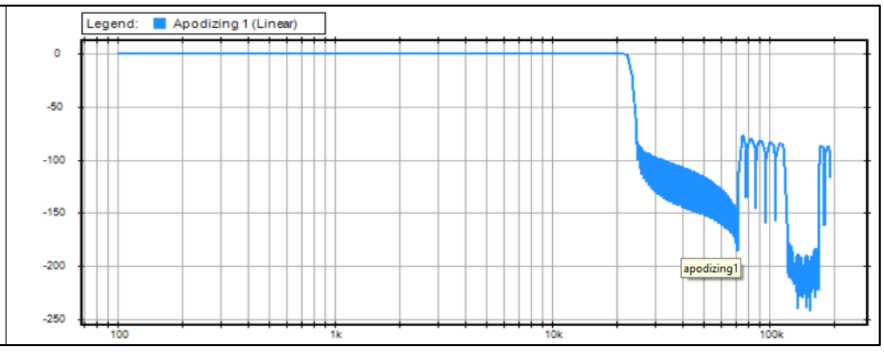
Sharp: Offers a flat frequency response with an attenuation of 3 dB at 0.484 x FS (23.2 kHz @48k), which has the tradeoff of 35 samples latency.

Fast Roll-Off, Linear Phase Filter (dB)	

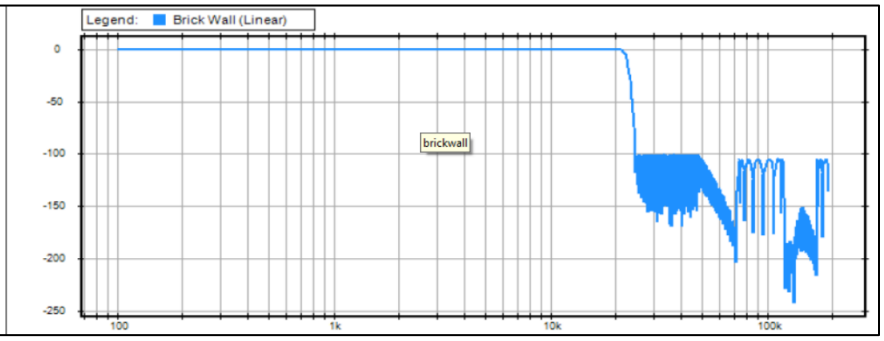
Slow (default): Offers the lowest latency of 9 samples, with the tradeoff of a gentle frequency response attenuation reaching -3dB at 0.45 x FS (21.6 kHz @48k)

Slow Roll-Off, Linear Phase Filter (dB)	

Apodizing: Fast Roll-Off filter, Linear phase filter. Latency of 35 samples

Apodizing, Fast Roll-Off, Linear Phase Filter (dB)	

Brickwall: Ensures rejection of more than -100dB at Nyquist (0.50 x FS, 24 kHz @48k). Latency of 35 samples

Brickwall Filter (dB)	

XLR 1/2: Line output level of the physical XLR outputs 1 and 2 located at the back to the Anubis
Max Output Level: +18dBu or +24dBu
Attenuation*: +0dBu or -36dBu
Channel 1: Polarity setting
Channel 2: Polarity setting

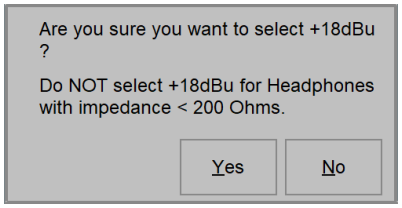
⚠ *Warning: Please refer to the section on How to connect a balanced line output to an unbalanced input regarding Max Output Level limitation.*

JACK 3/4: Physical TRS jack outputs 3 and 4 located at the back to the Anubis
Same parameters as above (XLR 1-2)

HEADPHONE 1: Headphone set 1 located at the front Anubis left side
Max Output Level: +9dBu or +18dBu
Attenuation*: +0dBu or -36dBu
Channel 1: Polarity setting
Channel 2: Polarity setting

HEADPHONE 2: Headphone set 2 located at the front right side of the Anubis
Same parameters as above (Headphones 1).
The Anubis digital to analog converters are designed to drive high or low impedance headphones at high levels with significant audio output Power undistorted.
User should be attentive to the impedance of the headphones being used and set the Anubis Max Output level accordingly.

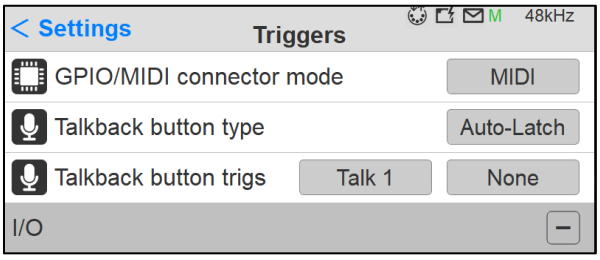
⚠ *Warning: It is not recommended for headphones with an impedance below 200 Ohms to select an Output Level of +18dBu. As a preventive measure, a warning message will be displayed each time a user changes the Output Level of the Headphones from +9dBu to +18dB*



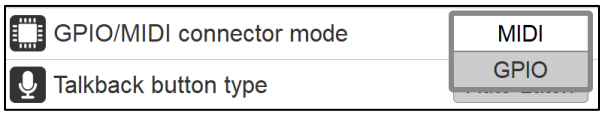
⚠ *Warning: The Anubis Headphones output level can make your headphones very loud if it is turned up too high, and that could cause permanent hearing damage. Please be careful with your ears when using the +18dBu setting.*

**As of Firmware 1.0.16 and higher. The Settings>Audio Outputs page no longer have per channel output Trims. This was replaced by an Attenuation feature for the output pairs.*
Trim / channel have to be done in the Monitor from now on.

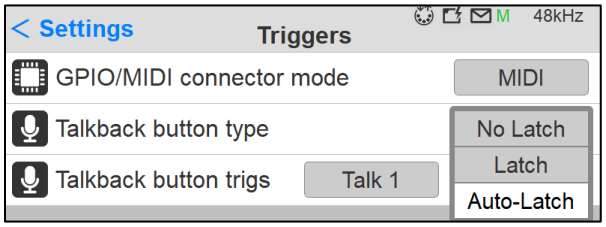
TRIGGERS Settings



MIDI or GPIO Selector: Switch between GPIO or MIDI (default)Users can select either MIDI or GPIO and cannot combine one with the other.



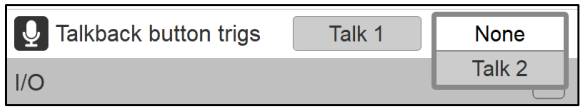
Talkback button type: Configure the behavior of the Anubis Talkback button



No Latch: Keep pressed to Talk and release to end the discussion
Latch: Press to Talk and press again to end the discussion
Auto-Latch (default): Auto-Latch (default): Act as No Latch if keep pressed after 333 ms otherwise act as a Latch.

Note: When engage the Anubis Talkback button will be blinking

Talkback button trig: Define which of the Talks will the Anubis physical Talkback button trig, either the Talk 1, the Talk 2 or both.



MIDI Mode

Connect a Keyboard MIDI Out -> Anubis MIDI IN and via RAVENNA/RTP or configure your MIDI so that your Keyboard triggers DAW VST instruments. The DAW source stream is then monitored from ANUBIS. A DAW/MIDI program can as well return a MIDI out signal, that could play a MIDI partition via the MIDI Out that would be connected to the MIDI Input of an external Synthesizer.

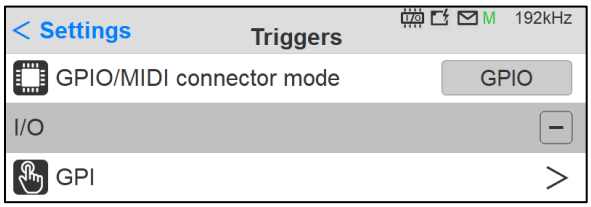
Requirements:
It is mandatory to use a MIDI Jack ¼ with the proper pin out. Such cable is available on the Merging pricelist, refer to the closest Merging Sales partners near you for ordering.

MIDI Setup procedure:
The MIDI ports will be available in your computer once the Anubis drivers are installed and once you've followed the PC or Mac procedure here.
https://confluence.merging.com/pages/viewpage.action?pageId=61309057

GPIO Functions

The general-purpose input/output is an uncommitted digital signal pin on an integrated circuit or electronic circuit board whose behavior—including whether it acts as input or output—is controllable by the user.
Typically used by example with a footswitch (GPI) that would trigger a second Talkback whom status would be reflected (GPO).

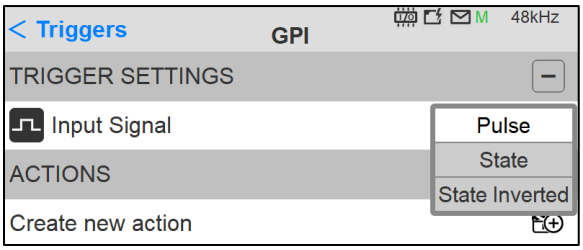
Enabled the GPIO mode in order to use those I/O (located at the back of the Anubis), by doing so two new entries, GPI and GPO will appear in the Triggers Settings.



GPI: General-purpose Input and the GPO: General-purpose Output

GPI Settings

Enter the GPI page in order to configure the GPI triggering function type and triggering modes.

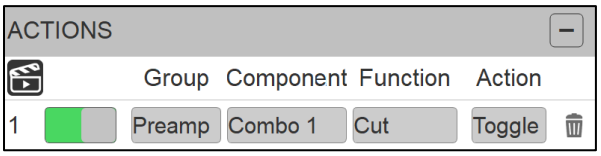


Pulse: Action is executed when the (foot)switch moves from close to open state.
State: Action is executed when the (foot)switch moves to open state. Actions in Toggle mode will reflect the state as follow: open = on, close = off

State Inverted: Action is executed when the (foot)switch moves to close state. Actions in Toggle mode will reflect the state as follow: open = off, close = on

Create a new GPI action:

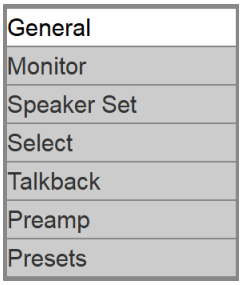
Determine what will be the action triggered



Created actions are by default enabled, but users can disable an Action at any time

Select to delete an action

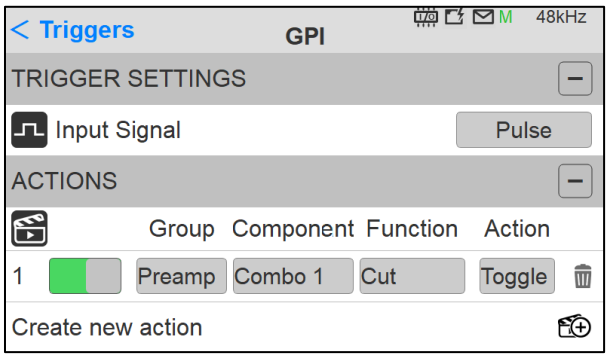
Group: A fixed list of Group options are available



Component: Will vary with the Group option selected.

Function: Will vary with the Component option selected.

Action: Toggle: Action will toggle between ON and OFF
On: Action will be turned ON (only)
Off: Action will be turned OFF (only)
Trig: Applies the action at every triggering



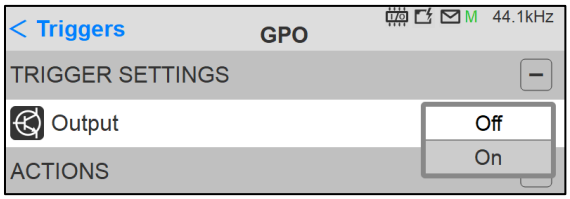
Note: In the example here above a footswitch will trigger the PreAmps Cut option On/Off in order to use this one as a cough pedal.

GPI: State/Pulse table

Group	Component	Function	Action	Description
General	n/a	Sum	On/Off/Toggle	
	n/a	Mon>Cue	On/Off/Toggle	
	n/a	Peak reset	Do	
Monitor	<Monitor name>	Mute	On/Off/Toggle	Do not work if Monitor is a Speaket Set. Use Speaker set instead
	<Monitor name>	Downmix	On/Off/Toggle	
SpeakerSet	n/a	Mute	On/Off/Toggle	
	n/a	Dim	On/Off/Toggle	
	n/a	Ref	Do	
Select	<Monitor name>	<Source name>	On/Off/Toggle	Limitation: Multiple subsequent select on a given Monitor do not work yet
Talkback	<Talk name>	Talk	On/Off/Toggle	
Preamp	<Input name>	Cut	On/Off/Toggle	
	In [1/2/3/4]	Highpass	On/Off/Toggle	
Presets	Recall	Preset [1,2,3,4,5]	Do	
Transport	n/a	Stop/Rec	Toggle	n/a
	n/a	Play/Stop	Toggle	n/a
	n/a	Punch In/Out	Toggle	n/a

GPO Settings

Enter the GPO page to configure the GPO triggering function type, where you can select between 2 triggering modes.

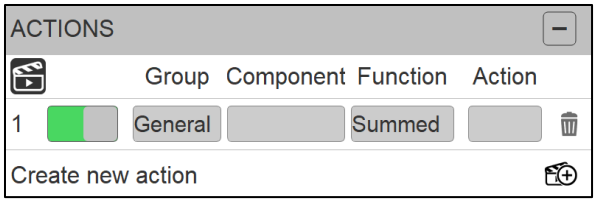


On: When the Action (or the action condition) is true, the transistor is in On state. Transistor do conduct

Off: When the Action (or the action condition) is true, the transistor is in Off state. Transistor do not conduct

Create a new GPO action:

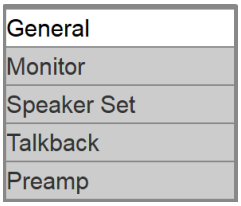
Determine what will be the action triggered



Created actions are by default enabled, but users can disable an Action at any time

Select to delete an action

Group: A fixed list of Group options are available



Component: Will vary with the Group option selected.

Function: Will vary with the Component option selected.

Action: No action parameter

GPO: On/Off table

Group	Component	Function	Action	Description
General	n/a	Summed	n/a	
	n/a	Mon>Cue	n/a	
	n/a	Clipping	n/a	
Monitor	<Monitor Name>	Muted	n/a	
	<Monitor Name>	Downmix	n/a	
	<Monitor Name>	Sel. Speakerset		Under development
SpeakerSet	n/a	Dimed	n/a	
	n/a	Is Ref	n/a	
Talkback	<Talk name>	Talking	n/a	
Preamp	In [1/2/3/4]	Clipping	n/a	Under development
Transport	n/a	Recording		n/a
	n/a	Playing		n/a
	n/a	Stopped		n/a

Warning: Inserting a cable Jack ¼ in the ANUBIS GPI or GPO connectors could trigger a GPIO event. It is recommended to disable the GPIO actions prior to connecting a Jack ¼ in the connectors.

Pedal switch types that can be used for GPIO

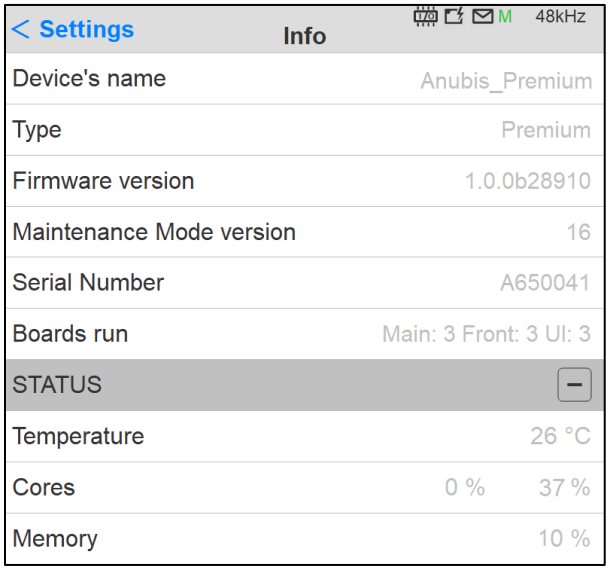
Momentary switch: Remains in its “on” state only as long as it is being compressed. Once the user removes the compression of the switch the device is no longer on. An everyday example of a momentary switch is an electric drill. Once the compression of the switch is removed the drill will stop rotating. With such a pedal Talkback could be engaged only when the pedal is pressed.

Latching switch: Needs to be pressed once for ON and again for OFF, for example a light switch. Once the lights are on, the switch can be left until they need to be turned off.
It applies also to the Talkback, press to engage Talkback ON and press again set Talkback OFF.

INFO Settings

Info

Find all information about the Anubis Name, Type, Firmware version, Maintenance mode and Serial Number along with additional information on the Anubis status: Temperature, CPU and Memory usage.

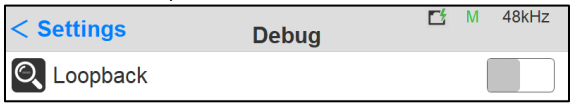


Note: Anubis users should regularly check if a new firmware is available. It is important to update to the latest firmware in order to benefit from the latest improvements and fixes.
Follow the firmware update procedure for all details.

DEBUG Settings

Debug

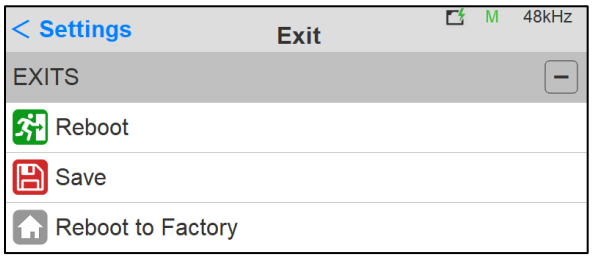
Loopback: Internal module with Generator (Supporting 1FS) and transparency check tool (Supported up to 384kHz). *Under Development.*



Enabling the Loopback will provide access to the Loopback module within the Anubis I/O's.

Note: The Loopback is for the moment only available as a debugging tool for the Merging Team.

EXIT Settings



Reboot

Reboot the Anubis

Note: To turn OFF Anubis, press on the POWER button to switch it to the released state.

Save

Save the current Anubis configuration

Note: The Anubis entire configuration is saved every 2 minutes, and as well every time you exit the Anubis Settings. If changes are applied when in the Anubis Settings and you plan to power off the Anubis while in the Settings, it is recommended to first perform a Save configuration.

Reboot to Factory

Reboot your Anubis to factory settings will recall to the default factory settings.

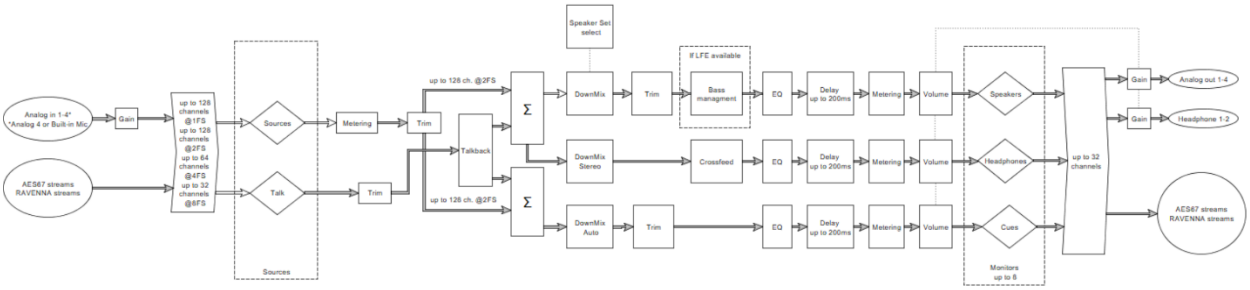
Warning: All Sources, Monitors and Settings will be lost.
Since the saved Presets will not be erased we recommend that you first back up your Anubis Configuration by saving it to a Preset.

ANUBIS MONITOR MISSION CONTROL

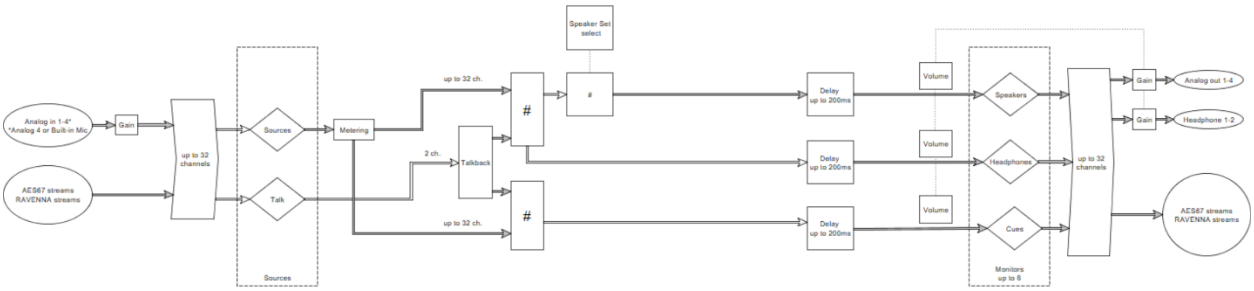
The Monitor Mission is designed for professional applications where superior monitoring capabilities are truly mission critical. No matter how large your studio is, monitoring matters. State of the art features that are the standard of today have been carefully integrated, while unique and future proof capabilities were specifically added to the feature set to meet the challenges of tomorrow. The Anubis Monitor Mission allows you to be in complete control of your monitoring; reference monitors, near-field monitors, headphones, sources, surround mix, downmix, etc.

The Monitor Mission is the central node of essentially any Music, Recording and Broadcast Studio. It's extreme sound quality fulfills the essential requirement of all Mastering Studios. The large number of supported surround formats will please all Film and TV Post Studios and its AoIP standards support makes it the perfect choice for Broadcast Studios, OB Vans or Editing Rooms. The Anubis compactness and robustness makes it the ideal choice for Location Recording and Live Events monitoring.

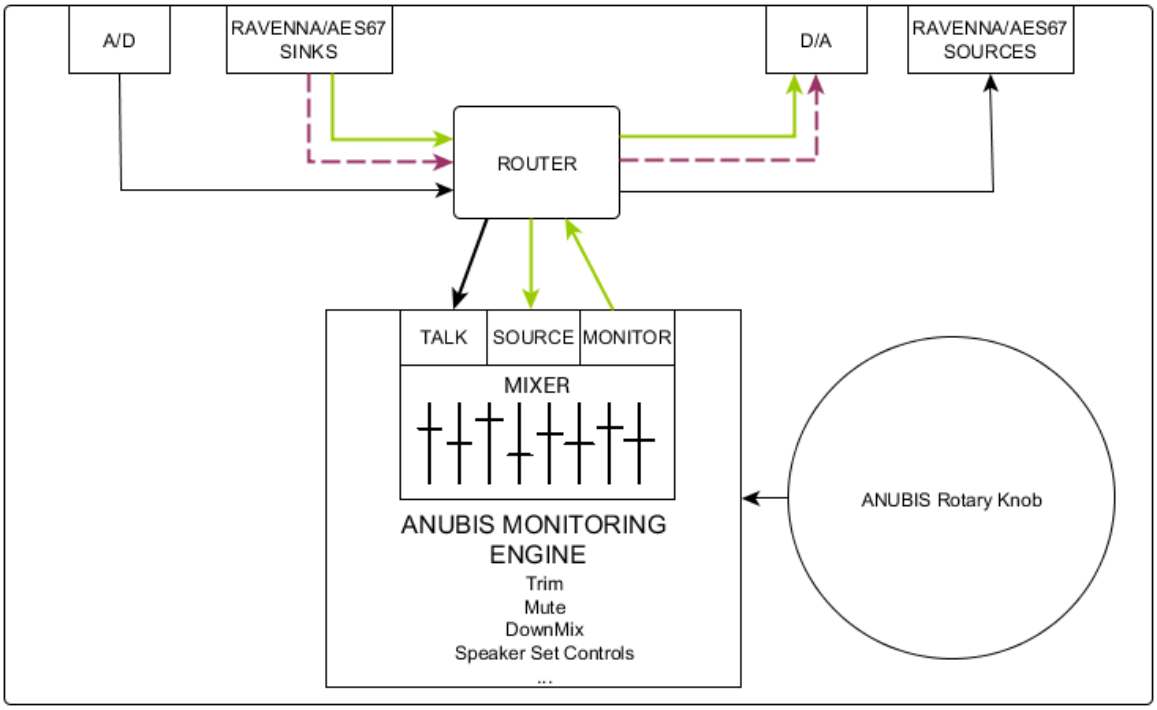
SIGNAL FLOW PCM (44.1kHz to 384kHz)



SIGNAL FLOW DSD (DSD64, DSD128, DSD256)



Monitor Mission Engine



Bypassing the Anubis Monitoring Engine will prevent control over Volume (Rotary), Trim, Mute and more. Such connection could be desired for direct IO use and for connecting for example, an A/D directly to a D/A for Effect Inserts usage. For Monitoring Control purposes this is it not recommended.

Signal path going through the Monitoring Mix Engine, for Monitoring control over the entire Anubis Monitoring feature set, with the use of Sources and Monitors.

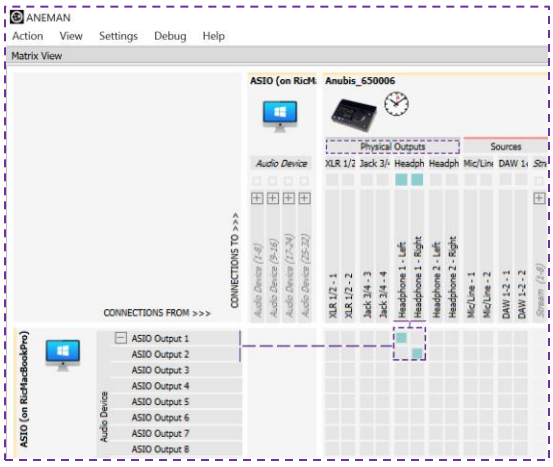


Figure 8 Bypassing Monitoring Engine



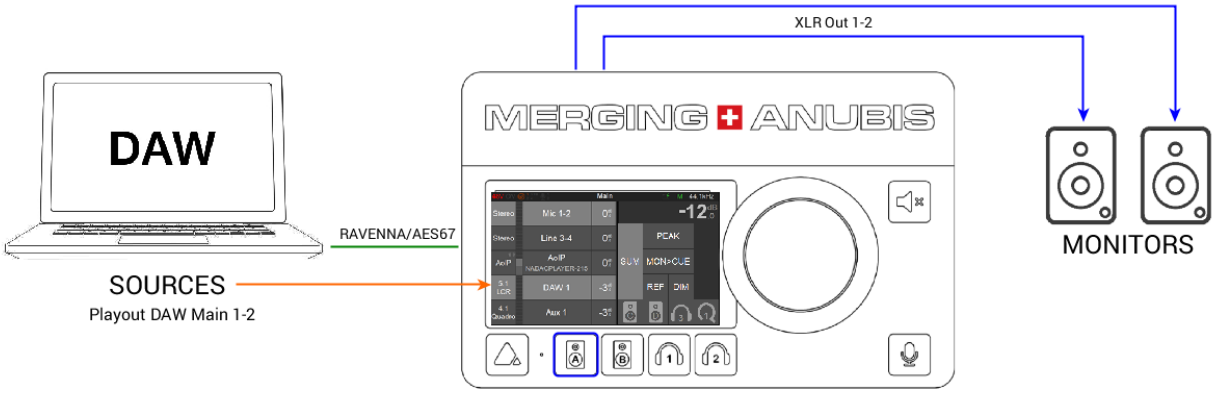
Figure 9 Properly Routed for Monitoring Mission

Missions IO Channels Specifications

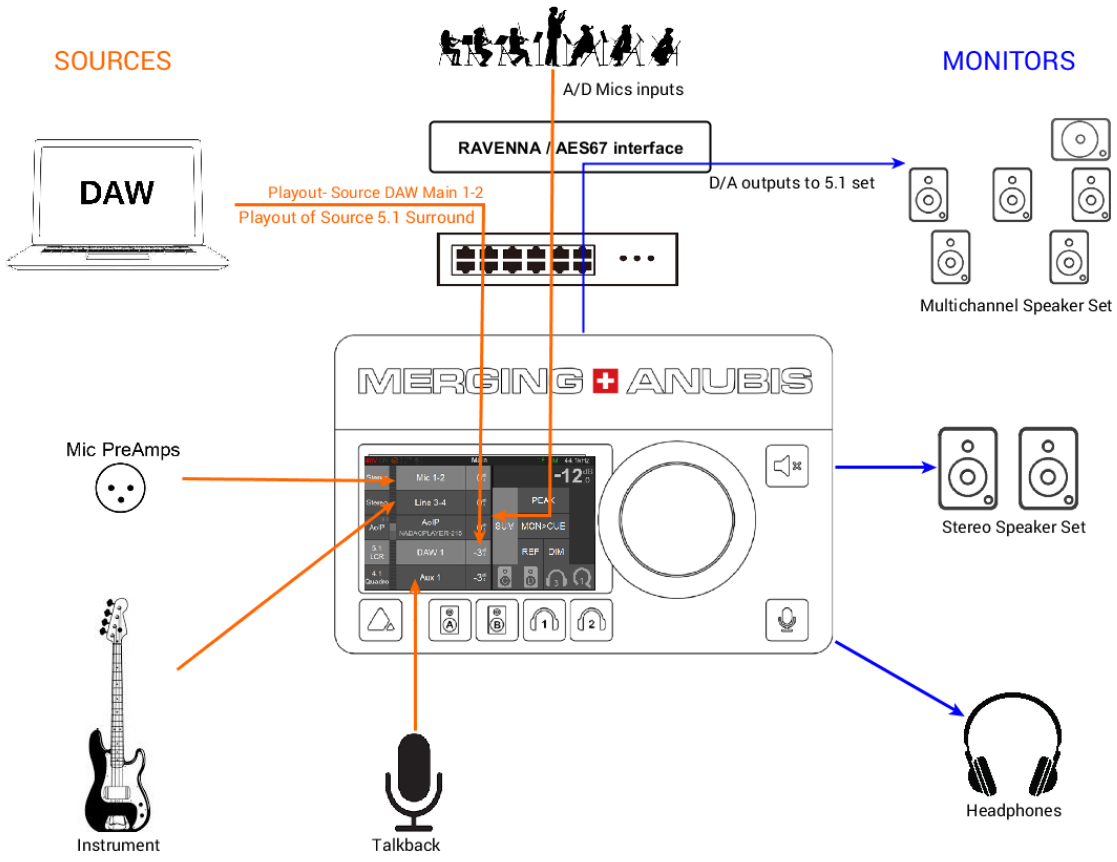
Max channels for	44.1/48 kHz	88.2/96 kHz	176.4/192 kHz	352.8/384 kHz	DXD	DSD64	DSD128	DSD256
Anubis incoming streams	256	256	128	48	48	64	64	64
Anubis outgoing streams	256	256	128	64	64	64	64	64
Anubis+Monitor Sources	128	128	64	32	32	32	32	32
Anubis+Monitor Monitors	32	32	32	32	32	32	32	32
Anubis+Music Input Mixer	48	48	48	24	24	0	0	0
Anubis+Music Output Mixer	24	24	24	24	24	0	0	0

Sources vs. Monitors Fundamentals

It is fundamental with the Anubis Monitoring Mission to understand the importance of using Sources (Mixer inputs) and Monitors (Mixer outputs), as this is the base of the Anubis Monitoring Engine. Not doing so will bypass the Monitoring engine and prevent proper Monitor Control (Volume control, Mute, Trim...).



Different types of Sources and Monitors going through the Monitor Engine



Different Monitor types

The Anubis Monitor Mission provides the operator with control over three types of Monitors. Anubis can host up to 8 Monitors, capable of up to 22.2 (maximum 32 channels).

1. Speaker Set
Recommended to be used for Speaker Sets (e.g. Reference Monitors).

2. Headphones
Recommended to be used for Headphones Sets monitoring.

3. Cue
Recommended to be used when a specific mix of Sources is needed for a chosen Monitor set or when recording to produce a low-latency Cue mix for the performer foldback.

Note: Each of the three types of Anubis Monitors have their unique set of features and possibilities. Refer to the table below for more details.

Monitors Types and Features table

	ANUBIS MONITOR TYPES		
Features	**Speaker set**	**Headphone**	**Cue**
Channel Controls - Solo/Mute/Polarity	X		
Adaptative Downmix	X	X	X
Manual Downmix	X	X	X
Surround / Immersive	X		X
Crossfeed		X	
Bass management	X		
Mute (independent)	X	X	X
Volume (independent)	X	X	X
Ref	X		
Dim	X		
Max level	X		
Independent Source selection			X
Share Source selection	X	X	
Apply source sel. to Cues (Mon>Cue)			X
Colored indicator		X	X
Shared Outputs	X		
Multi-instance (running concurrently)		X	X

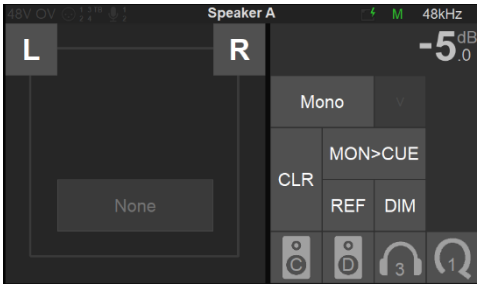
Maximum channels for Sources and Monitors

ANUBIS SOURCES AND MONITORS MAX CHANNELS		
	Sources	Monitors
1 Fs (44.1-48 kHz)	128	32
2 Fs (88.2-96 kHz)	128	32
4 Fs (176.4-192 kHz)	64	32
8 Fs (352.8-384 kHz)	32	32

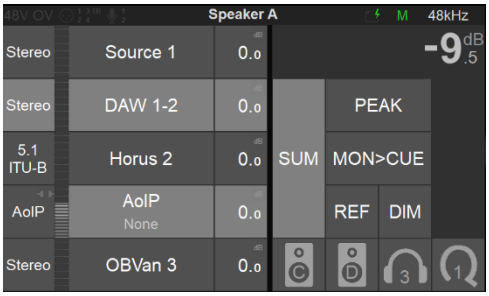
MAIN PAGES - MONITOR MISSION

The Monitor mission has 3 main pages, press the Anubis home button to cycle between those.

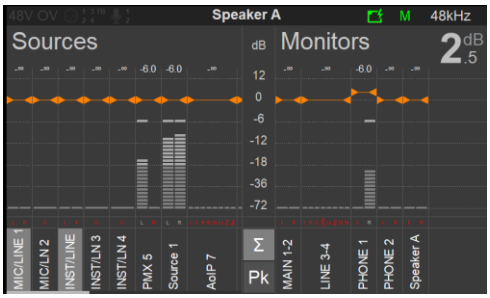
Monitor Page



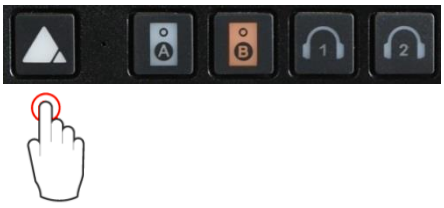
Source page



Meters page

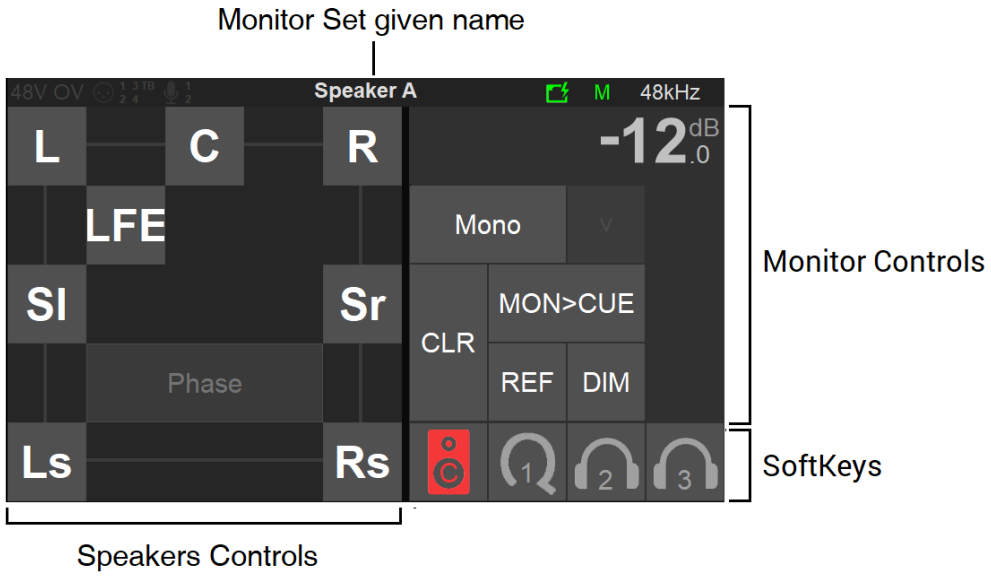


Single tap on the Anubis Home button to cycle between the three MONITOR Pages. At all times return to the Anubis Home page (Settings/Preamps) by a long press on the Anubis Home button.



MONITOR PAGE

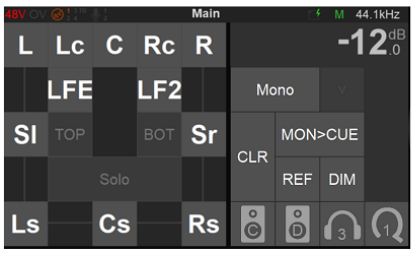
The monitor page is the mother of the Monitoring pages, allowing you to select the fundamental functions of your monitoring setup. A Monitor set will only appear once created in the Anubis Settings, properly configured and assigned to a specific button (hardware key or softkey). Refer to the Settings Sources and Monitors section for all details. Your speaker set will come into display once you select the key that it is assigned to. By default, Anubis comes with some predefined Monitor sets that can be used right away, those can be reconfigured or deleted as one wishes.



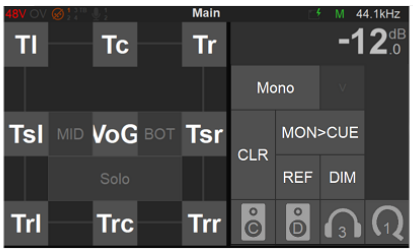
Speakers Set Controls *(left section)*

Get full control over your monitoring setup by having control over your Speakers. Each Speaker of a Monitoring Set is represented by a button given the name of the speaker channel type. Typically, L (left) and R (right) for a Stereo Monitor Set.

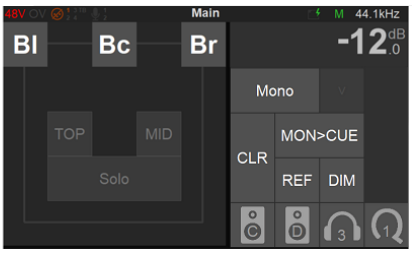
Multichannel Immersive sets with 3D elevation will be represented in layers. Access to each of the level layers by using the; Mid, Top and Bottom layer view options.



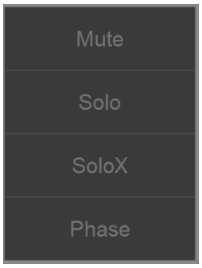
Mid Layer



Top Layer



Bottom Layer



Tap the Speaker control box to open the dialog, for Speaker controls such as: Mute, Solo, SoloX and Phase option controls. Those functions can be applied to the Speaker(s) of your choice.

Mute: Mute function available for each speaker in your set. Tap a speaker to cut its signal.

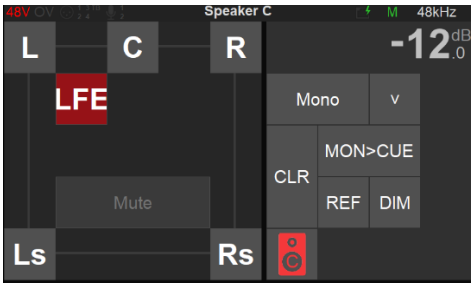


Figure 10 Example: Muting LFE

Solo: Solos the Speaker by muting all other speakers. Available for each speaker in your set up.

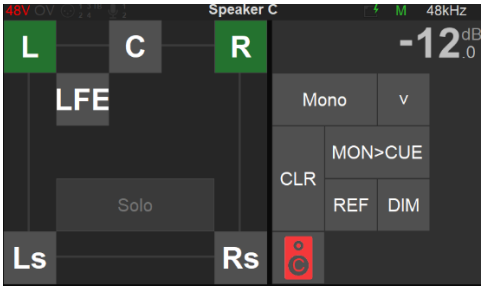


Figure 11 Example: Solo L and R channels

SoloX: Exclusive Solo function available for each speaker in your set up. Tap the speaker you wish to Solo exclusively, this will un-solo speakers that were previously soloed.

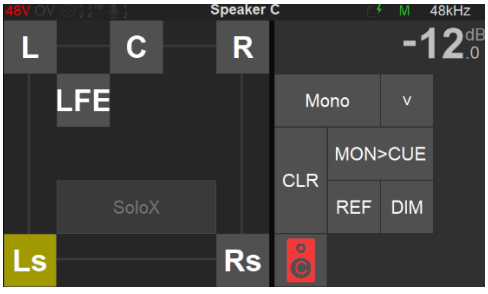


Figure 12 Example: Exclusive Solo of Left Surround

Polarity: Invert the polarity of a chosen speaker in your set up. Tap a speaker to invert its polarity, this can be useful to check or fix phase cancellation problems.

The polarity is a latching function that can be applied in addition to Mute/Solo or SoloX options.

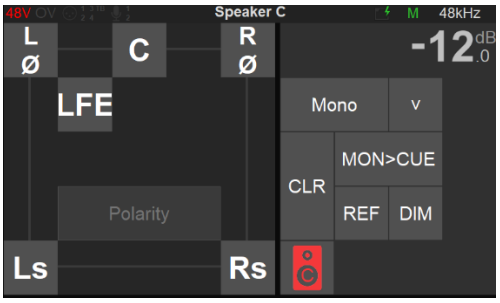


Figure 13 Example: Polarity applied to L and R speaker channels

Clear: Use the Clear function to re-initialize the Speaker controls, this will remove all applied controls to the speakers.



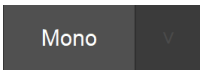
Monitor Controls *(right section)*



Volume Level

The top right section of the Monitor Controls section indicates the level of the currently selected Monitor set.

Note: All Speaker sets share the same global level (unless Trim applied) while Headphones and Cues have each their own independent level. To have different levels on your Speaker Set Monitors it is recommended to apply a Trim on any of the Monitor Set.



Downmix

The Downmix possibilities are available within the dropdown menu and allow the operator to Downmix to a subset of the Speaker Set. The available possibilities depend on the Speaker set configuration. Please refer to the Downmix Table on the next page for the available downmix listing.

Note: Each Speaker Set have their own Downmix selection (as of Firmware 1.0.10 and above)



Mon > Cue

Allows the operator to override the Cue Mix by sending the Speaker Set directly to the Cue listener. Only Speaker Set Monitor types can override cues. To prevent a Cue monitor set from being overridden, enable the inactive option under Settings>Monitors of the selected Cue.



Ref

Select to recall your reference level, the default Reference level is set to -20 dB and can be configured from the Anubis Settings>Monitor Levels.



Dim

Turns the Main Monitor output dimmer on, the default Dim level is set to -20 dB and can be configured from the Anubis Settings>Monitor Levels.



Clear

Using the Clear function will reinitialize all parameters that were applied to the selected Speaker Control Section and removes all applied controls to speakers.



SoftKeys

A total of 4 Softkeys are available and can be used to control extra Monitor Sets, Cues or Headphones. The SoftKeys mapping must first be configured from the Anubis Settings>Monitors under the Monitor Set settings. Tap a Softkey to activate its Monitoring just as you would with a Hardware button, giving you flexibility of local or network Web Access remote control.

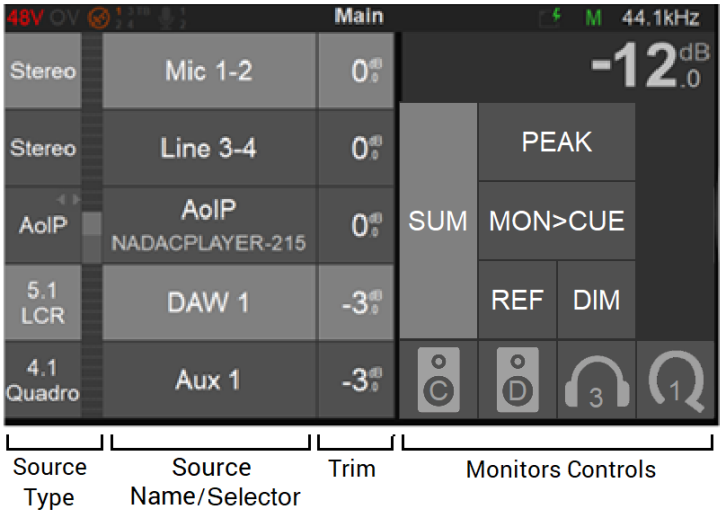
Downmix Table

Monitor Channels - Types vs. Downmix formats available.

| | Mono | 1.1 | Stereo | 2.1 | 2.2 | Stereo Srnd | 3.0 LCR | 3.1 LCR | 3.0 Srnd | 3.1 Srnd | 4.0 Quadro | 4.1 Quadro | 4.0 Srnd | 4.1 Srnd | 5.0 LCR | 5.1 LCR | 5.2 LRC | 5.0 ITU-B | 5.1 ITU-B | 6.0 LCR | 6.1 LCR | 6.0 LRC | 6.1 LRC | 7.0 LCR | 7.1 LCR | 7.0 ITU-I | 7.1 ITU-I | 7.0 SDDS | 7.1 SDDS | 7.0 ITU-C | 7.1 ITU-C | 8.0 LCR | 8.1 LCR | 9.0 LCR | 9.1 LCR | 9.0 ITU-D | 9.1 ITU-E | 11 | 11.1 | Dolby 5.0 | Dolby 5.1 | Dolby 7.0 | Dolby 7.1 | Dolby 9.1 | Dolby 5.1.2 | Dolby 5.1.4 | Dolby 7.1.2 | Dolby 7.1.4 | Dolby 7.1.6 | Dolby 9.1.2 | Dolby 9.1.4 | Dolby 9.1.6 | 10.2 TMH | 12.2 TMH | Auro 8.0 | Auro 9.1 | Auro 10.1 | Auro 7.4 | Auro 11.1 | Auro 13.1 | 10.2 ITU-F | 7.2.4 | 22.2 ITU-H | Cube | Cube Mid | Cube C/F | Cube C/F/E | 30.2 |
|---|---|---

SOURCE PAGE

The Source page allows the operator to select the different Sources he wishes to monitor. You can exclusively select a Source or sum multiple Sources and as well apply level Trim. The Sources page also gives you Monitor Controls, with similarities to the Monitor page.



Source Type

This first section on the left indicates the Source Type name as well as the Metering of the Source, once this one has been configured and patched form the Settings>Sources.
Note: The meters peak level displays the max of all corresponding channels.

Source Monitor codec status icons.

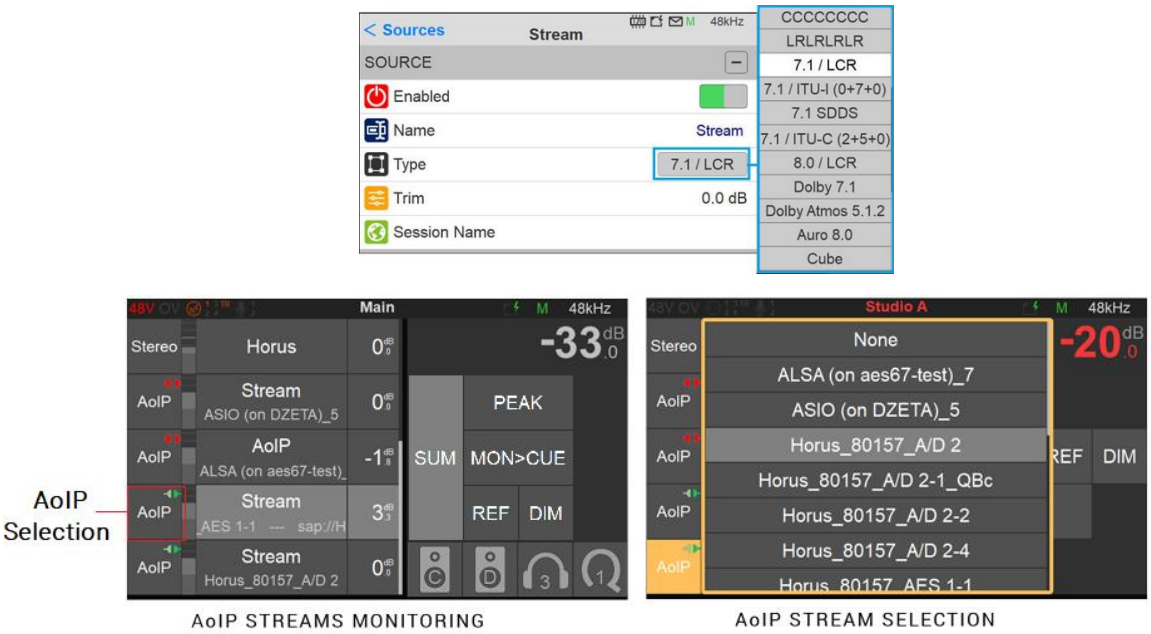
? Codec is unknown
∅ Source has no stream or is not patched
DSD A DSD Patched or Streamed signal is detected
≠ Channel codec mismatch (E.g. L channel receives DSD64 and R channel is receives DSD256)

There are two types of Sources.

1. Standard Sources: Full control over Channel type and Speaker set, with a dedicated Source entry. The source must be created and routed from the settings or from ANEMAN.

2. AoIP/Stream listeners: Used to monitor streams available over a RAVENNA/AES67 network. Those must be created from the Settings>Sources and will then appear in the main Sources page. Available Streams are listed in the AoIP dialog once tapping in the AoIP selection area. From the dialog choose the AoIP/Stream source you wish to Monitor.

Note: AoIP Streams up to 8 channels with 7.1 ITU-I default channel type and All Center CCCCCCCC and LRLRLRLRLR types are supported. With a total of 11 Channel types, as per image below.



AoIP STREAMS MONITORING

AoIP STREAM SELECTION

AoIP streams icons status

AoIP disconnected

AoIP partially connected

AoIP connection error

AoIP RTP Error

AoIP receiving

Source Name/Selector

Name of the Source and selector. Tap the source you wish to monitor, this one will be highlighted when active, to select multiple Sources make sure you enable the SUM option, otherwise the selection is exclusive.

Note: Predefined Names are available under the Sources configuration Settings

Trim

Source Trims are applied to all monitors and can be adjusted by holding the finger on the Source name while turning the Anubis Rotary knob. Turn the Rotary clockwise to increase a Trim value and turn the Rotary counter-clockwise to decrease a Trim value.

Note: The Trim value is displayed in orange during adjustments.

Monitors Controls



Sum:
Enable the Sum option to select multiples Sources and sum them together into your Monitor set. When disabled the Source section is exclusive.



Peak

Tapping the Peak Reset (PK) will reset the Meters Peaks



Mon > Cue

Allows the operator to override the Cue Mix by sending the Monitor Set directly to the Cue listener. Only Speaker Set Monitor types can override cues. To prevent a Cue monitor set from being overridden, enable the inactive option under Settings>Monitors of the selected Cue.



Ref

Select to recall your reference level, the default Reference level is set to -20 dB and can be configured from the Anubis Settings>Monitor Level

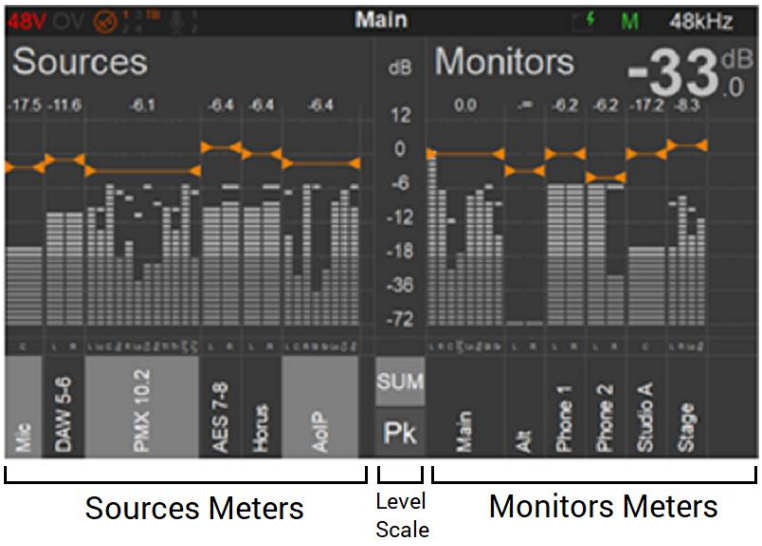


Dim

Turns the selected Speaker Set output dimmer ON, the default Dim level is set to -20 dB and can be configured from the Anubis Settings>Monitor Level

METERS PAGE

The Meters page provides an overview of the Sources and Monitors metering, along with some controls over the Sources and Monitors.

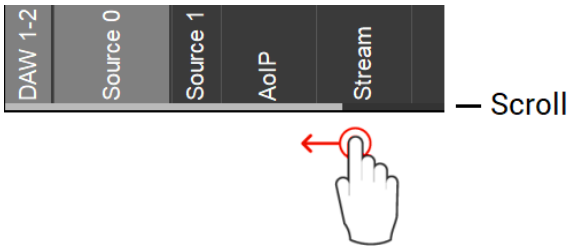


Sources Meters

Metering overview of all the Sources, each source with full details of peak-meters and type per channel.

The Meters display grayscale can be customized from the Settings>Meters page.

Note: If the Sources content extends the current display zone, a horizontal scroll bar will be available, allowing the view of additional Sources and Meters to the right.
The same applies to the Monitors Meters section.



Level/Scale

At the bottom of the dB level scale find the SUM and PK functions.

SUM Sum

Enable the Sum option to select and sum multiple Sources. When disabled the source section will be exclusive.

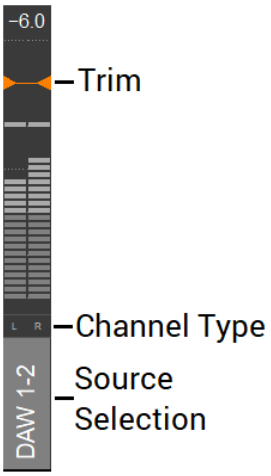
Pk PK

Tapping the Peak Reset (PK) will reset the Meters Peaks. By default, the Peak hold is enabled. Permanent Peak hold can be disabled under the Anubis>Settings>Meters page.

Trim

Trim the level of a Source or Monitor by first selecting it, while holding the meter region pressed, adjust the trim by turning the Anubis Rotary knob. Turn the Rotary clockwise to increase the Trim value and turn the Rotary counter-clockwise to decrease the Trim value. Range -12dB to 0dB

Note: The trim level value will be displayed in yellow when adjusted.



Channel Type

Each of the Source displays the listing of their channel type abbreviation.

Note: Unpatched channels will be displayed in Red

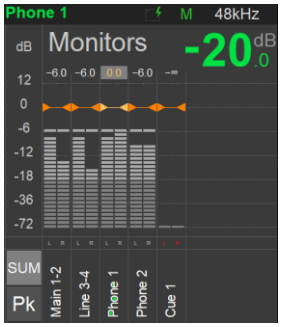


Source Selection

The Source selection section allows the operator to select which one he wants to monitor. When the Sum function is enabled multiple Sources can be summed together.

Monitors Meters

The Monitors Metering are located to the right side of the Meters page. Monitors can only be selected for Trims.



ANUBIS PREMIUM DXD-DSD GUIDELINES

About DXD and DSD.

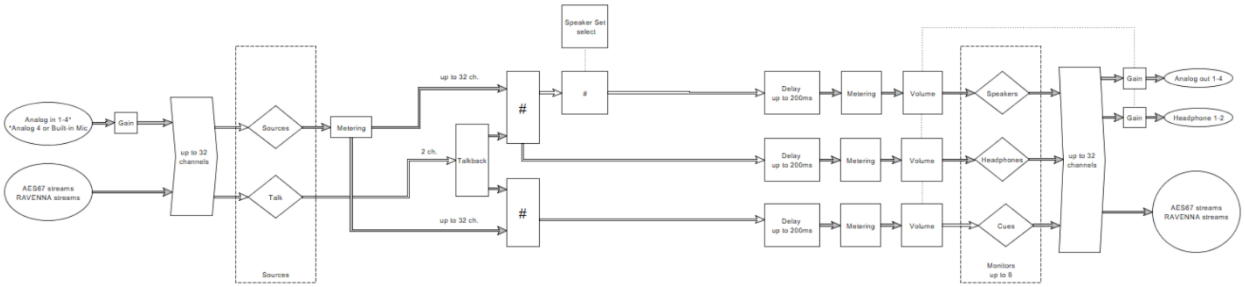
Anubis Premium offers the users sampling rates from 1FS up to 4FS along with support for 352.8kHz (DXD), 384kHz, DSD64, DSD128 and DSD256.

⚠ Important: DSD is supported as of Firmware 1.0.16 and higher.

Bit-Perfect DSD & DXD.

In DSD the file is retained in the original DSD format and directly converted to analogue without any unnecessary digital processing or decimation.
MERGING+ANUBIS brings its auditors the fidelity of an extremely pure natural sound.

SIGNAL FLOW DSD (DSD64, DSD128, DSD256)



DSD Features & Restrictions:

DSD Features:

- DSD Input and Output Support
- Volume control on all Outputs including the two Anubis Heaphones sets
- Delay support on Monitors
- Trim Support on Monitors
- Attenuation Support on all Outputs
- Polarity support on all Outputs
- Reference and Dim level support
- Input metering with SACD headroom scale (+6dB SA-CD)
- Speaker set, Headphones and Cue types monitors supported
- Speaker Set control page (Mute, Solo, SoloX, Polarity)

DSD Restrictions:

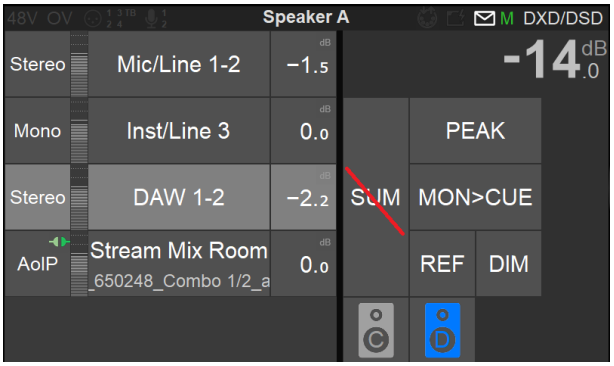
What is unavailable when the Anubis is in DSD. Those restriction do not apply to DXD.

- Multi-Source selection (SUM) *
- Bass management
- Downmix
- Crossfeed
- No Sources Trim support (Trim monitors is however available)
- No Metering on DSD RAVENNA sources
- No Output Metering in DSD
- Max Volume level is 0dB **
- Talkback (currently not supported) ***
- Warning switching between DXD and DSD Sources produces gab in DAC (Mute). Mixed DSD and DXD source are not recommended in Recording setup

** Today's firmware releases do not have DSD mixing support.*
Selection of sources is exclusive (no summing)
*** Volume control in DXD and DSD is done on the DAC itself and will have a maximum level of 0dB.*
**** Talkback disabled for the Monitors.*
Merging plan to address those in a future release.

DSD MONITORING:

Since summing not supported in DSD modes, the Source selection will be exclusive.



No SUM consequences

Sum mode is no more global but becomes a property of monitors (Headphone, Cues and Speaker Set do not share the same property). Selecting a DSD Source, will set the Sum mode off.

If you try to engage the Sum mode when a DSD source is selected, the log will report the following info: The selected Source cannot be summed with another one. This can happen when the Source Audio data format is e.g. DSD.

Cannot simultaneously Monitor DSD and DXD sources

Monitoring is exclusive to the highest sampling rate in use.
Applicative example: If a user Monitors a DSD source from a Cue, this one will not be able to simultaneously Monitor another Source PCM (DXD) from another Monitor set.

The consequence will be an automatic Source Deselection with warning log indication. Therefore, in order to monitor this one, the operator will have to unselect the DSD Source and select the DXD source. Mixed DSD and DXD source are not recommended in Recording setup.

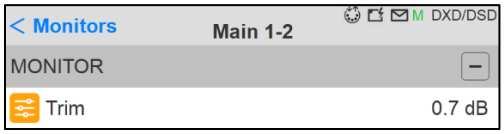
Note: This will not be an issue if the Monitoring is streamed to another Device.

Refer to the Anubis Log Appendix for all complete message listing.

DXD/DSD Volume control (DAC)

When running on those two formats the Anubis volume control will be done directly by the DAC (Digital Analog Converter) itself. The Anubis built-in Mixer cannot host and mix DSD 1Bit content today like it is done for all other PCM formats, so when in 192kHz and lower sampling rates we are controlling the Volume via Anubis DSP engine (internal mixer).

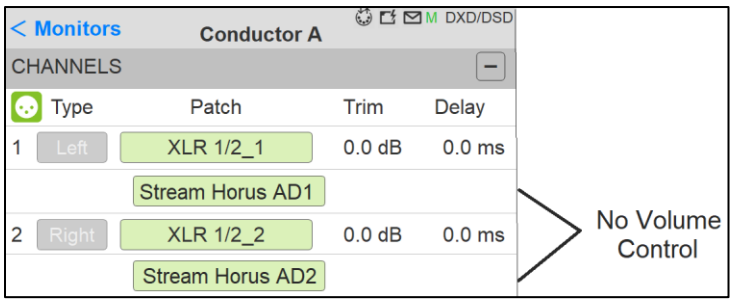
Monitors Trims in DXD/DSD



While users will see 0.1dB Steps in the Monitor Trim, the effective steps will actually be of 0.5dB /steps. This is due to the Anubis DAC specifications.

Patch: Multiple target in DXD/DSD

When a Monitor channel is patched to multiple outputs/targets and if the DAC volume control is applied on one of the targets (XLR 1-2) other targets (Stream 1-2) will not have volume control.



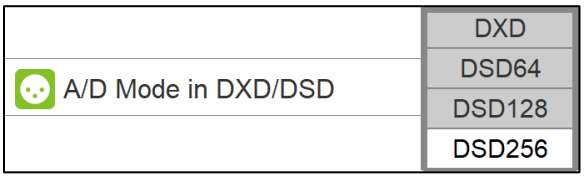
Sampling Rate

In order for ANUBIS Premium users to work in either DXD or DSD the operator must set the sampling rate to DXD/DSD.



A/D Mode in DXD/DSD:

This format setup only applies to the AD (PreAmps) which can be set to either DXD - DSD64 - DSD128 - DSD256



The Anubis can be configured in DXD/DSD, in this mode the Anubis can receive any audio data format stream and can generate DXD or DSD64, DSD128 or DSD256 stream depending on the A/D or Stream audio data format chosen.

It is recommended to set the A/D mode to the same sampling rate as selected for your project. However DAW's such as Pyramix can record in a DXD project with the A/D mode set to DSD formats, this feature is only available for MassCore users (not supported in Native/ASIO) and can be quite resource demanding for high channel counts.

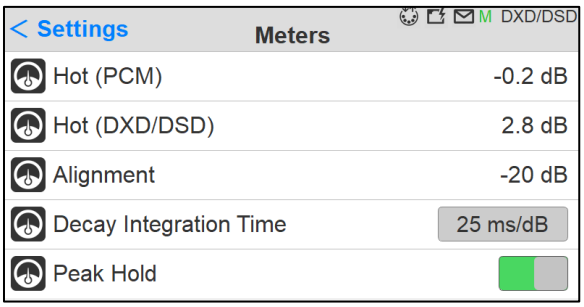
DSD PreAmps

The Anubis Premium has been designed in order to be able to benefit from the +3.1 dB SACD headroom offered by DSD, as per the scarlet book standard. This is made possible thanks to the gain applied in the digital section post AD just prior to the sigma delta 1-bit modulator. The gain can be adjusted between +0dB and +66dB in DSD mode. In Line mode, with a gain of +6dB, an input of +21dBu will generate a signal of +3dB SACD, in Mic mode, with the same gain, an input of +9dBu would generate a signal of +3dB SACD.
To benefit also from this +6dB headroom in DSD on the DA outputs, we recommend our users to set the Output Attenuation to -6dB on each DA module configuration page.

Reference : 0dBFS (PCM) = 0dB SACD (DSD)

DXD/DSD METERS

HOT DXD/DSD METERS SETTINGS

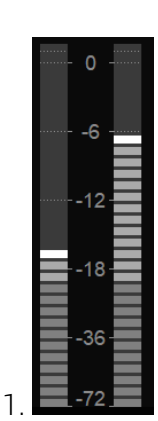


Applies to Anubis Premium only, so effective from 352.8kHz and upwards.
Hot (PCM) Level Range: -2dB to +0dB
Hot (DXD/DSD) Level Range: -2dB to +6dB SACD
Default setting: +2.8dB SACD
Reminder: DSD users benefit from a +6dB headroom in DSD with distortion starting slightly and progressively from 3.1dB upwards and clipping once reaching +6dB SACD.

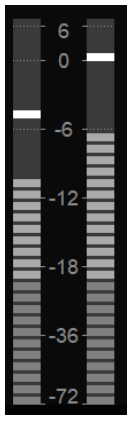
DXD/DSD PEAK METERS

Anubis Meters displayed scale will be different when the Anubis Sampling Rate is set in 1FS to 4FS versus DXD or DSD this is in order to indicate the additional headroom offered by DSD.

PreAmps Page View

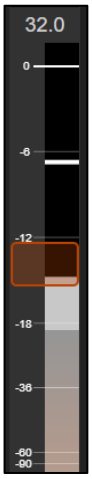


1.

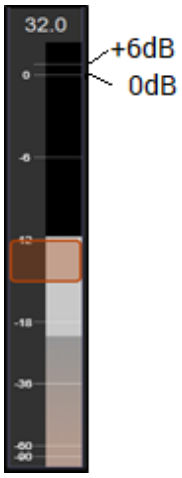


2.

Web Access view



1.



2.

1. PreAmps Input Metering scale from 44.1khz to 192kHz

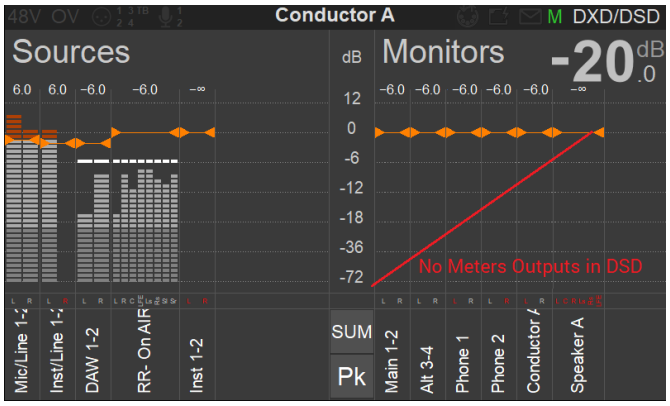
2. PreAmps Input Metering scale changes when in DXD and DSD mode, in order to represent the headroom offered by DSD, as the Scarlet Book allows up to 3.1dB SACD as Max. level.

Note: Input Gain level indication in dB

Anubis Meters Page:

While the Main Meters page offers the same scales.

Warning: it is important to be aware that no Outputs Meters will be available when listening to a DSD source.



Note: There will also not be Metering on DSD RAVENNA Sources, but there will be metering for the physical inputs (PreAmps)

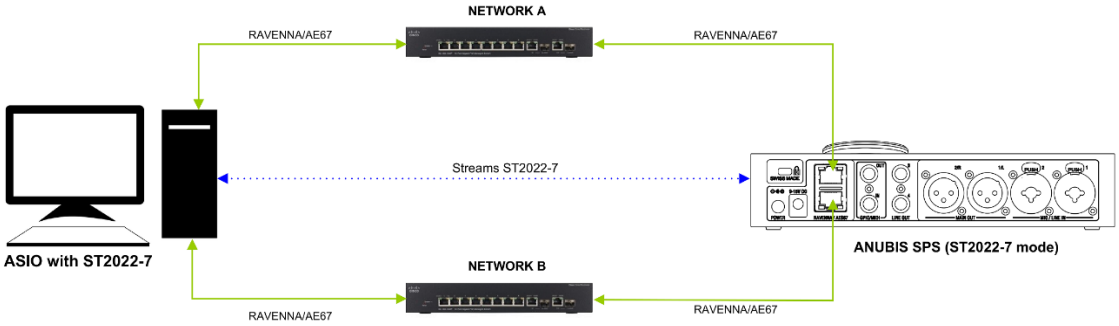
ANUBIS SPS



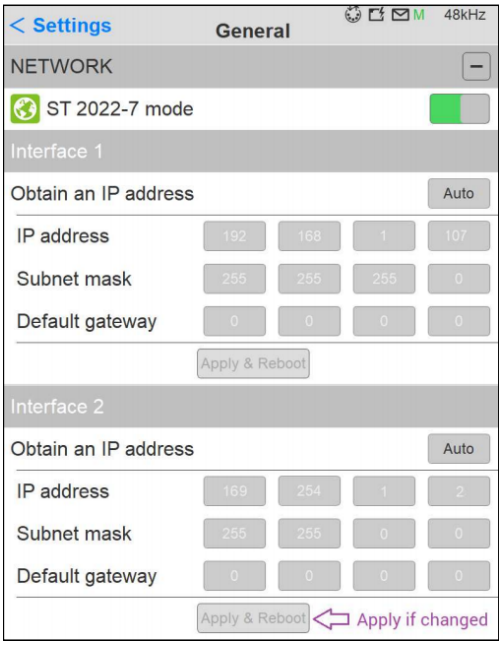
The Anubis SPS (Seamless Protection Switching) version features two (2) RJ45 connectors, for ST2022-7 support (network redundancy) or to use in Switch mode. The top port can be used to power the Anubis via PoE.

ANUBIS SPS ST2022-7 MODE

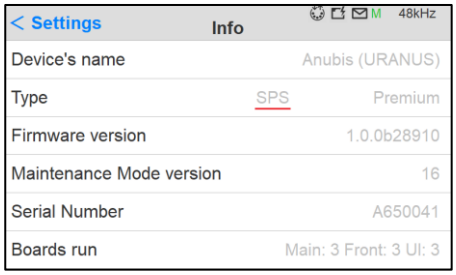
Seamless Protection Switching for ST2022-7 compliance.



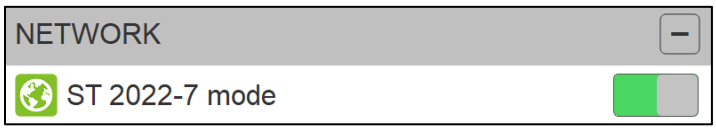
An option available to operate the Anubis in either ST2022-7 or Switch mode



Settings>Info page SPS identification



To enable the Enable the ST2022-7 mode, go to Settings>General in the network section tap the ST2022-7 mode.



A reboot of Anubis will be required afterwards.

When returning to the Settings>General two network interfaces will be available for your ST2-2207 configuration

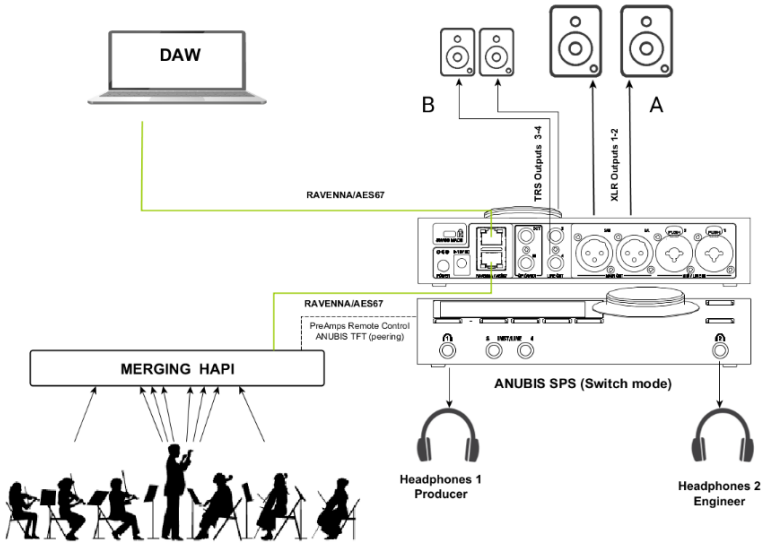
ST2022-7 Remote control:
First Ethernet Port Web Server is available on port 80 (i.e. 192.168.1.107:**80**)
Second First Ethernet Web Server is available on port 81 (i.e. 169.254.1.2:**81**)

Refer to the link below for more details on ST2022-7 configuration setup.
https://confluence.merging.com/pages/viewpage.action?pageId=71139378

Note: The ST2022-7 mode can also be used if you want to access Anubis from two different networks. In example operate Anubis on your RAVENNA Network and at the same time remote control Anubis from another network, such as your home network with WIFI and access point.

ANUBIS SPS SWITCH MODE (factory default)

The SPS Model can be set to network switch mode, allowing the daisy-chaining of one additional network device without the need for an external network switch. In scenarios where a DAW simply needs to be connected to a Horus and an Anubis, i.e. when doing a mobile recording.



At manufacturing the Anubis SPS and delivered in Switch Mode, meaning that ST 2022-7 option is disabled.



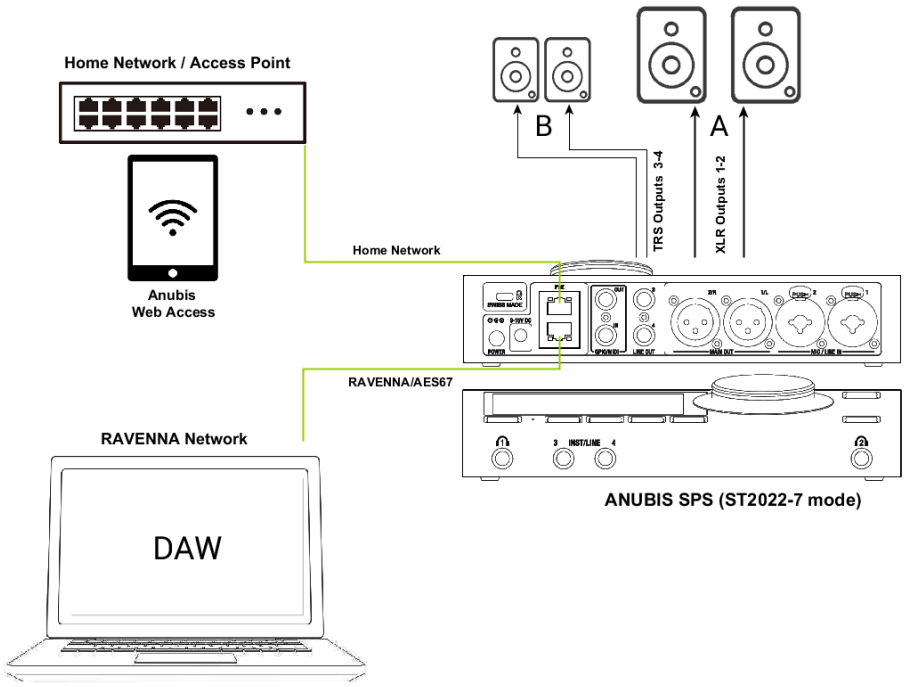
Under the network settings only one Network interface will be visible. You can connect to your second Anubis Ethernet port another RAVENNA/AES67 interface such as Horus, Hapi or another Anubis.

Those will then be visible in ANEMAN and immediately can be used along Anubis.

Anubis SPS - Switch SetUp Use Case

https://confluence.merging.com/pages/viewpage.action?pageId=75989119

Anubis SPS Web Access control from your phone



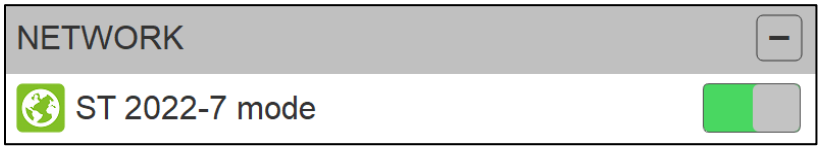
SetUp:

Connect your Anubis SPS to your Home network and control it from your Phone or Tablet, while at the same time have Anubis running with your DAW or system application in RAVENNA.

Procedure:

1. For this specific workflow since we are here on two different networks (RAVENNA & Home) the Anubis must be set to ST2022-7 mode.

Go to the Anubis General settings and enable ST2022-7.



A reboot is required.

2- Connect your home network to the top port of the Anubis SPS (port #1)

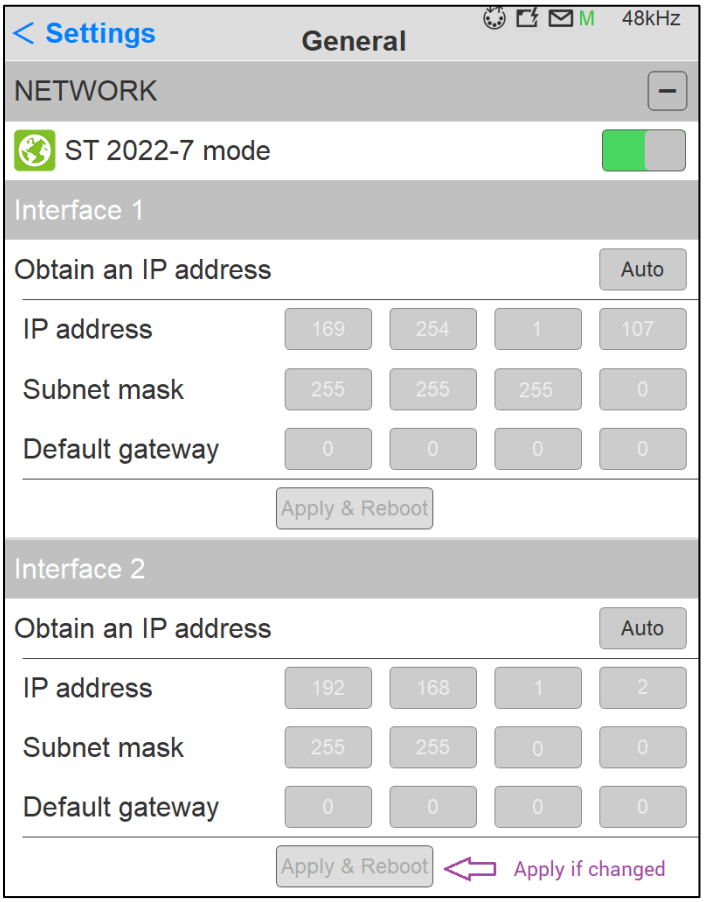
3- Connect your RAVENNA Network to the bottom port of the Anubis SPS (port #2)

4- Go to the Anubis General Settings and scroll to the Network configurations.

5- The Network 1 should be your home network, so Anubis IP address and subnet mask must be in the proper range of your home network (example 169.254.1.107 subnet mark 255.255.255.0), Go to manual mode if you need to edit those.

6- The Network 2 is your RAVENNA network and should be in the IP address and subnet mask range of your RAVENNA network. (example 192.168.1.2 subnet mark 255.255.0.0)
Go to manual mode if you need to edit those.

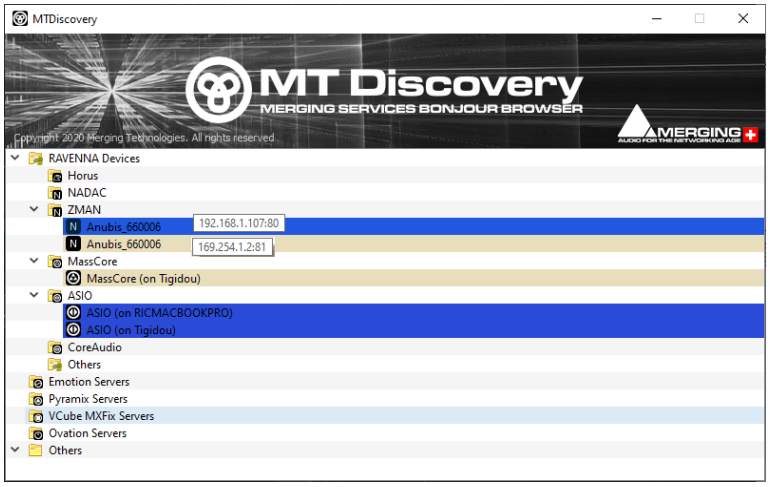
Example



7- Press Apply & Reboot after changing the network configuration.

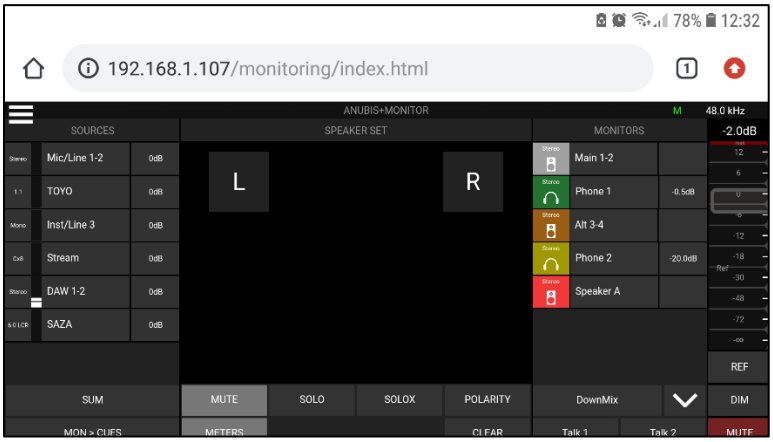
If your PC or Mac is also connected to the home network, open the MT Discovery utility installed along Merging's applications. You will then see the Anubis discovered twice once on your Home Network and Once from your RAVENNA network.

Remote control:
First Ethernet Port Web Server is available on port 80 (i.e. 169.254.1.107:**80**)
Second First Ethernet Web Server is available on port 81 (i.e. 192.168.1.2:**81**)



You can operate the Anubis in RAVENNA mode (169.254.1.2) and make your RAVENNA stream connections with to the MassCore or RAVENNA ASIO.

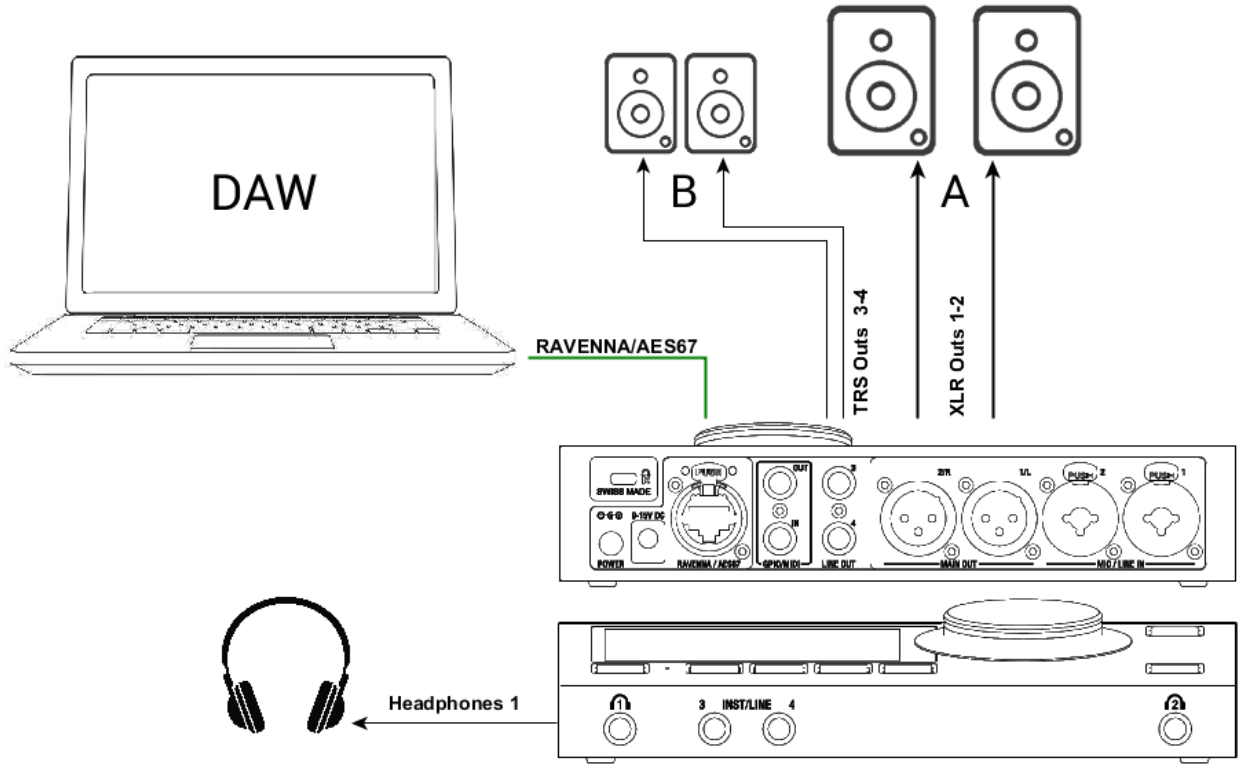
To open the Web Access on your Phone or Tablet by typing the Network 1 Anubis IP address followed by :80.
example 192.168.1.107:80



ANUBIS USE CASES (MULTIPLE CASES ARE ONLINE)

https://confluence.merging.com/pages/viewpage.action?pageId=60031175

BASIC MONITORING SETUP



SetUp:

Using a Main Speaker Set and headphones in order to Monitor the DAW Main playout Source.

Prerequisites:

First follow the User Manual section on the Drivers Installation Procedure (Drivers Installation Procedure) and ensure that you have correctly connected and powered up your Anubis.
Connect your Active Monitors (or Power Amp) to the Anubis physical Outputs XLR 1 and 2 and/or TRS outputs 3-4 if you have alternate Monitors in your setup.

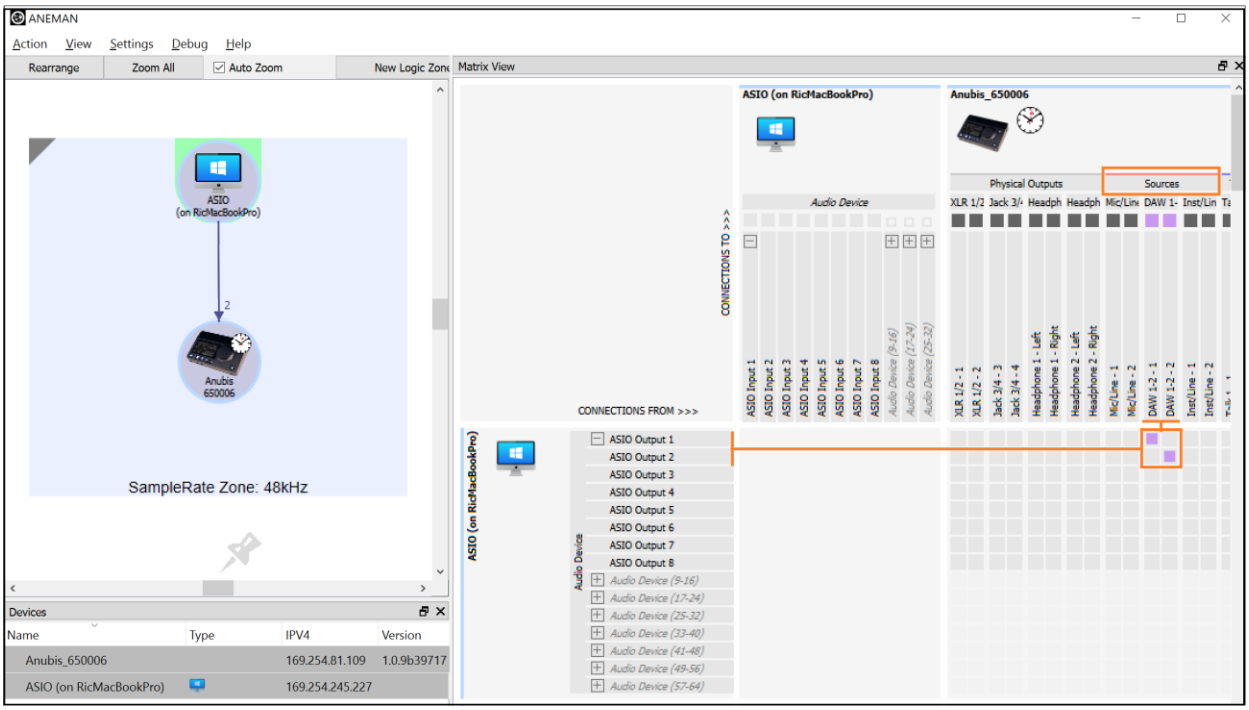
Procedure:

1. In order to connect your DAW playback to Anubis you must first have a Source available to host your DAW Playout Stream 1-2 (if stereo)
Note: Ex-factory Anubis comes with a DAW 1-2 Source. If this one is not available in the Sources page, create it, refer to the Settings>Sources manual section.

2. Launch your DAW making sure it is loading Merging's Driver (or MassCore for Pyramix users)

3. open ANEMAN and connect the RAVENNA ASIO Driver or Merging Audio Device (MAD) Output 1-2 (or VAD Outs 1-2) to the DAW Source 1-2. Users can choose and apply either a Multicast or a Unicast connection.
Unicast: from one source to one destination i.e. One-to-One
Multicast: from one source to multiple destinations stating an interest in receiving the traffic i.e. One-to-Many

ANEMAN DAW 1-2 Source connection
(Open the Matrix view and select both Anubis and the Driver to establish a connection)

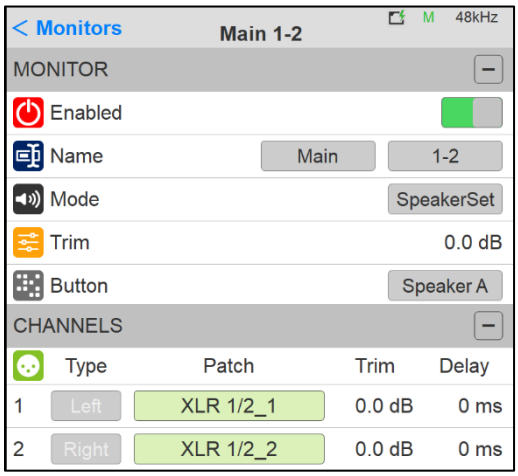


Note: If the connection is not successful, make sure that both your Anubis and Driver are at the Same Sampling Rate and Latency Frame mode or on the same multiple set (e.g. AES67-48 samples) or Driver Panel Low Latency 128 and on the Anubis Low latency 64.
Mac OS users will only see the connections properly established once the DAW playback is engaged.

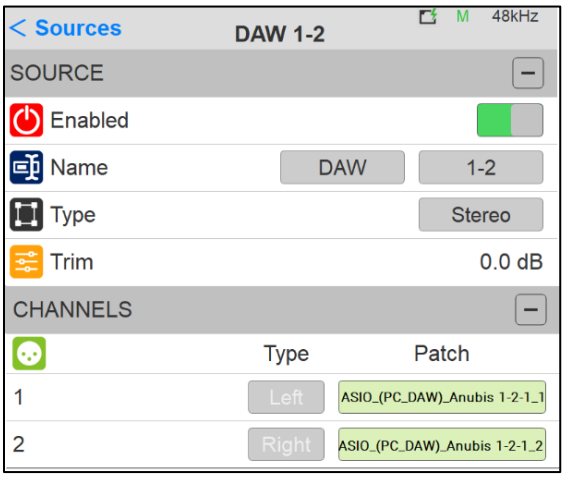
4. Patch your Monitor Set. Ex- Factory Speaker Sets: A, B, and Headphones 1, 2 should already be patched to their respective physical outputs. This can be verified and changed if desired under the Settings>Monitors Patch section.

Default Patching under the respective Sources and Monitors settings

Settings>Sources DAW 1-2 Patch



Settings>Monitor Main 1-2 Speaker A Patch



Note: Settings>Monitor Line 3-4 Speaker B should be patched to Patch to Jack 3/4_3 and Jack 3/4_4

	ANUBIS DEFAULT MONITORS OUTPUT PATCH						
Monitor (type) **/ Outputs**	**Channels**	**XLR/Combo 1**	**XLR/Combo 2**	**TRS/Jack 3**	**TRS/Jack 4**	**Headphones 1**	**Headphones 2**
MAIN 1-2 Speaker Set A (Stereo)	Left Channel	X					
	Right Channel		X				
LINE 3-4 Speaker Set B (Stereo)	Left Channel			X			
	Right Channel				X		
Headphones 1 (Stereo)	L-R					X	
Headphones 2 (Stereo)	L-R						X

Figure 14 Monitors Default factory output patching

Note: The operator is free to change the default patch in order to suit his Monitoring setup

5. Return to the Main Anubis Source page in order select which source and from which Monitor set you will monitor. First select the Monitor Set (e.g. Anubis A or B button), then select the DAW 1-2 Source to monitor it.

Monitor Speaker Set A



Monitor Speaker Set B



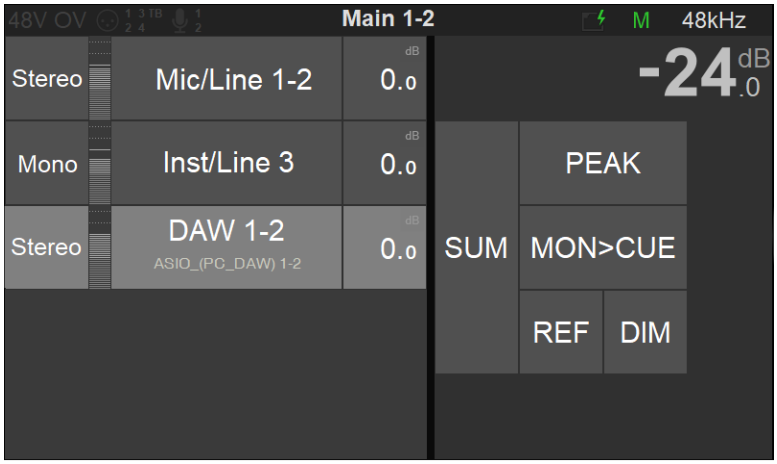


Figure 15 Select DAW 1-2 Source

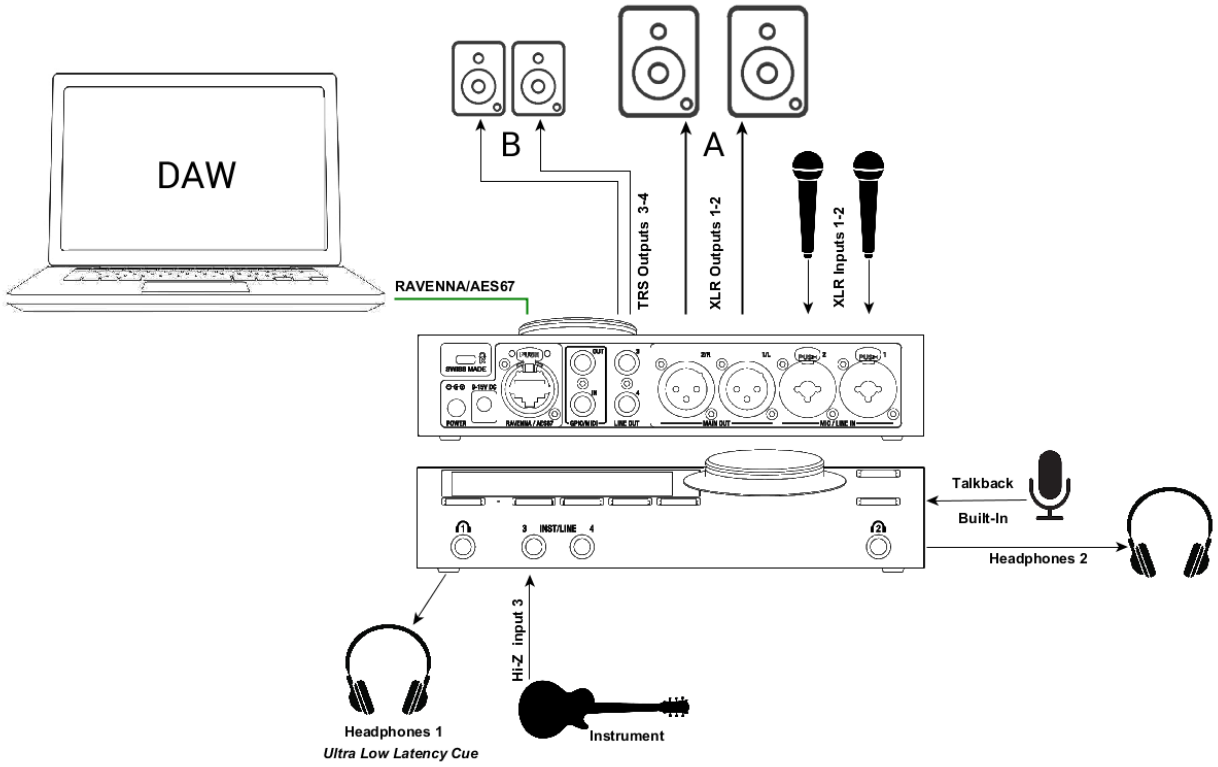
6. In order to monitor multiple sources simultaneously enable the SUM option and sum your Sources selections.
To control the Headphones volume, simply select the Headphone 1 button and use the Anubis Rotary knob to adjust its Volume.

Note: The Speakers Set mode and Headphones mode listen to the same Sources selection. In order to listen to different Sources, a Monitoring Cue must be configured (refer to the Settings>Monitors Cue mode section)

Note: To connect mirrored outputs (an input/source to Multiple outputs) can be achieved from the RAVENNA Advances paged.

You are ready to start your Anubis Monitoring Mission and have full control over your DAW monitoring.

RECORDING SETUP



Setup:
Adding Microphones and Instruments for recording while monitoring your DAW Main outputs along with an ultra-low monitoring Cue routed to the Headphones 1.

Prerequisites:
Make sure you have first followed the User Manual section on the Drivers Installation and have correctly connected and powered up your Anubis.

Connect your microphones to the XLR combo inputs 1-2 located at the back of the Anubis, your Guitar or Bass can be directly connected to the Hi-Z instrument input at the front Input 3. Stereo inputs 3-4 can be used, but in this case under Settings>Sources>Inst/Line the source mode has to be changed to Stereo mode, and patched to Jack 3 and Jack 4.

Note: Using Input 4 will override the built-in Talkback microphone as both share the same circuitry.

Procedure:

1. Your DAW playback and Monitoring should already be setup and wired, as detailed in the previous monitoring use case.

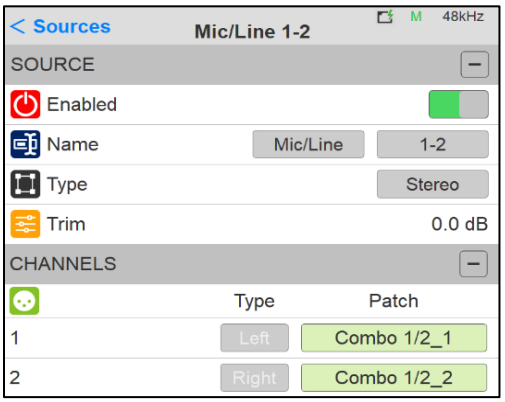
2. In order to monitor your Microphones and Instrument input, the operator can use the already available default sources.
The Anubis default factory settings come with a MIC/Line 1-2 Source and Inst/Line 3 Source. If those sources are not available or if you wish to use different sources, please refer to the Settings>Sources manual section.

Anubis factory default Sources patching

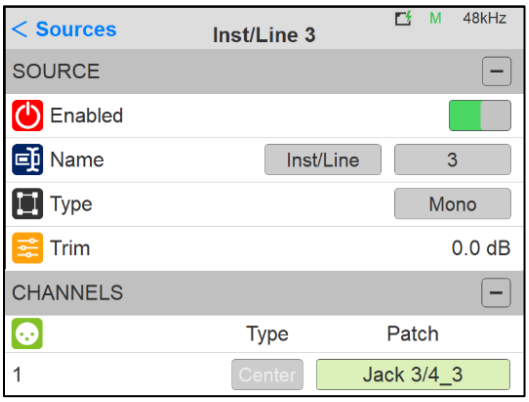
	ANUBIS DEFAULT SOURCES INPUT PATCH							
Sources (Default Type)	**Channels**	**XLR/Combo-1**	**XLR/Combo-2**	**Line/Inst-3**	**Line/Inst-4**	**DAW MAIN 1-2**	**DAW AUX 1-2**	**STREAM**
Mic/Line 1- 2 (Stereo)	Left Channel	X						
	Right Channel		X					
Inst/Line 3 (Mono)	Mono			X				
					Used by Talkback			
DAW MAIN 1-2	Left Channel					To be connected		
	Right Channel					To be connected		
AoIP Source Listener	Up 8 Channels							To be selected

Default patching under the respective Sources and Monitors settings

Settings>Sources Mic/Line 1-2 Patch



Settings>Sources Inst/Line 3 Patch

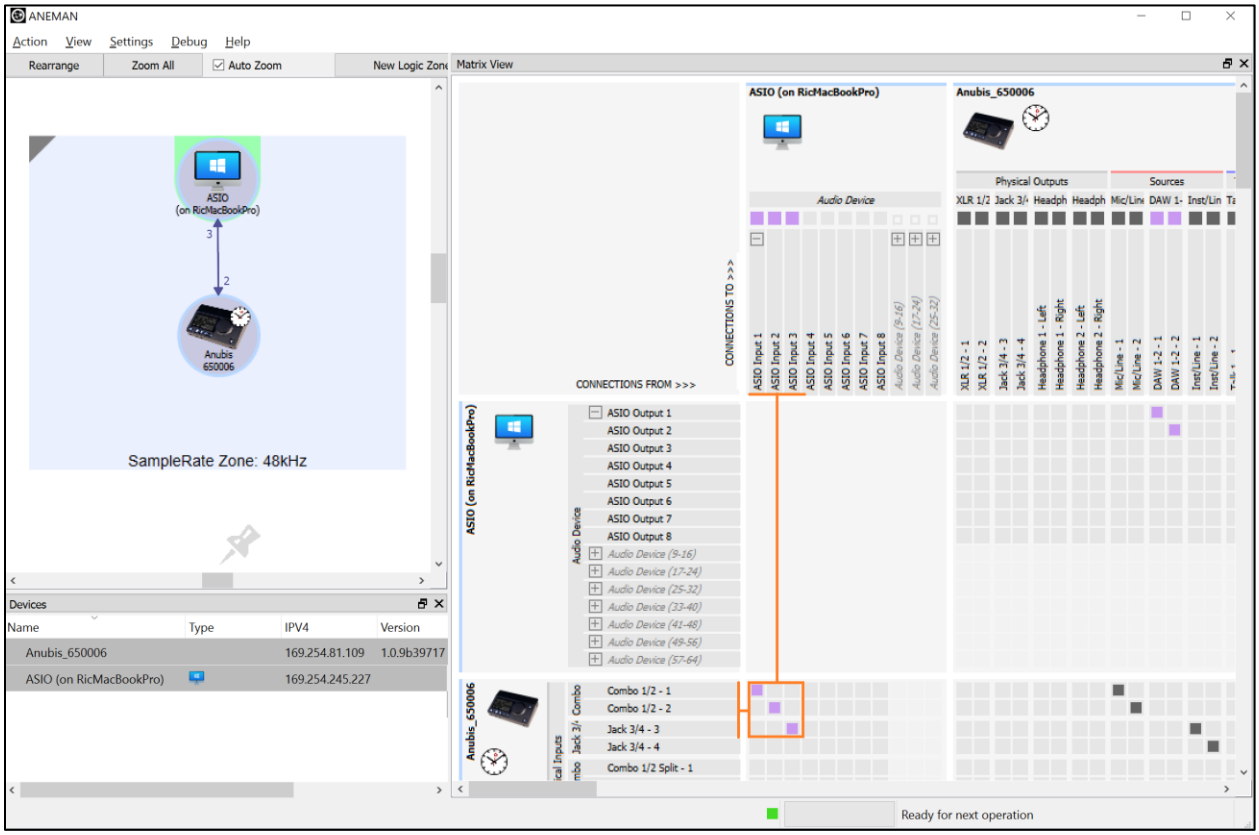


Note: Connecting only one input to a Stereo Source will hard pan this source monitoring to either the left or right channel depending of the input used. It is recommended to change the source type to Mono if you are using only one input in order to have this source monitored to the center.

3. Launch your DAW making sure it is loading Merging's Driver (or MassCore For Pyramix users) and then open ANEMAN (refer to the separate ANEMAN User Manual for operation details).

4. Within ANEMAN select in the world view both the Anubis and RAVENNA ASIO Driver, Merging Audio Device (MAD) or VAD.
Connect the Driver Output 1-2 (or VAD Outs 1-2) to the DAW Source 1-2 that was at first available or created from the Anubis Settings.
Users can choose and apply either a Multicast or a Unicast connection.

ANEMAN adding Mics/Line 1-2, Inst/Line 3 connections while having DAW Source 1-2 already connected.



4. Return to the main Anubis Source page in order to select a source to monitor. Enable the SUM option and select multiple sources to monitor those.

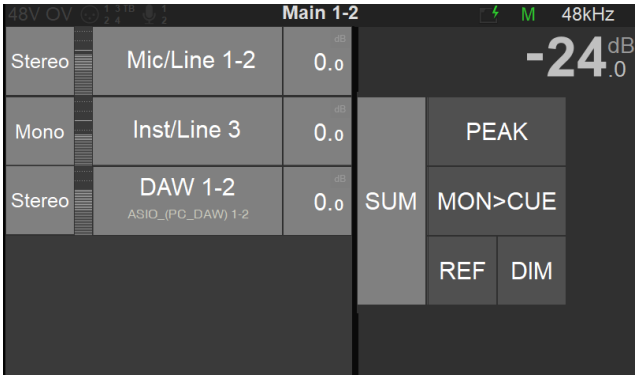
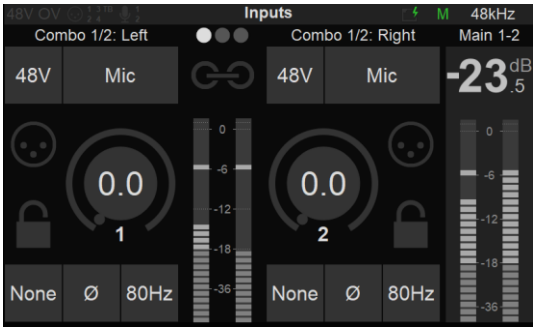


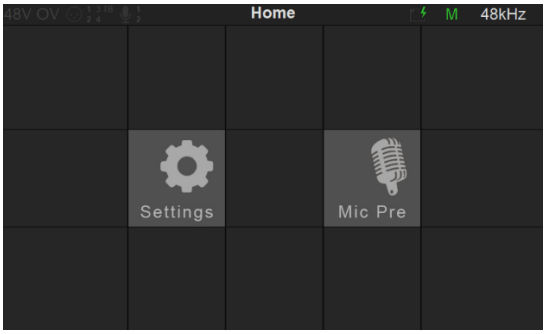
Figure 16 Source Page

5. Access the Preamps control page. Now that you can Monitor your inputs open the Preamps page by pressing the Anubis Home button for a second. This will open the Home page where you can select the Mic Pre page.

Home Page



Mic Pre page

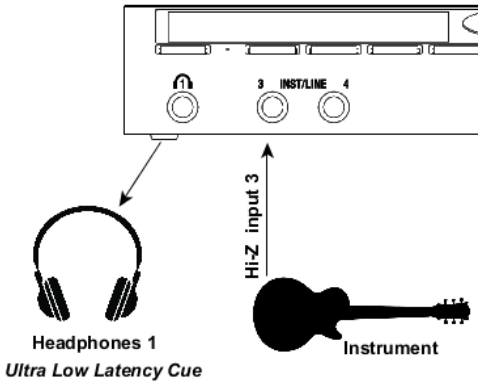


Refer to the Preamps chapter for all details on the Preamps controls.

Creating an Ultra-Low Latency Cue

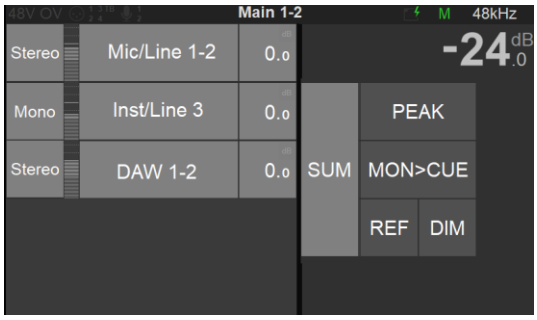
In this example we will setup a Cue for the performer foldback on the Headphones 1 Monitor set.

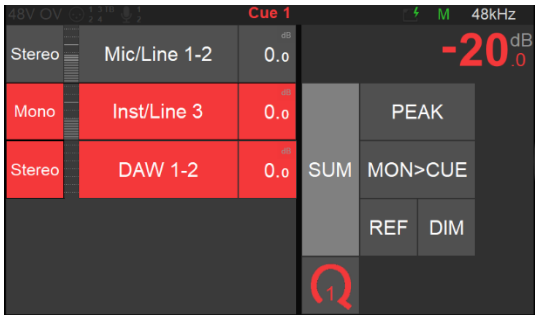
Note: Cues can monitor a different set of Sources than a Speaker Set or Headphone set, it can be used so that a chosen Monitor set listens to a different Source or sum of Sources, that is then exclusive to the Cue.



Speakers Type monitors selection

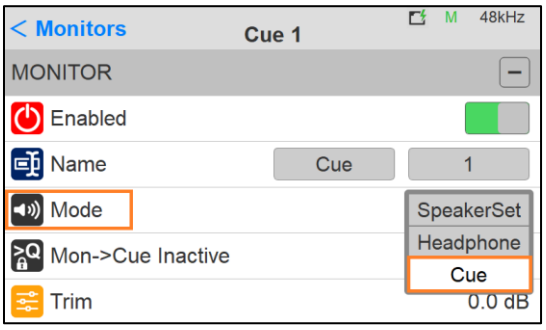
Cue Type monitors selection & level are different





7. How to create a Cue Monitor. First enter the Settings>Monitor page and create a new Monitor Set. Tap this new entry to enter the monitor setting.

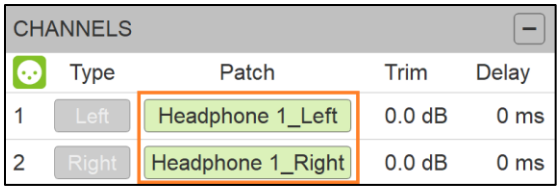
Note: Users can edit existing Monitor sets and change their mode to Cue.



8. Under Monitor Mode, select Cue
9. Assign this Cue to the button of your choice. Here we will assign the Cue to the VirtualKey 1.

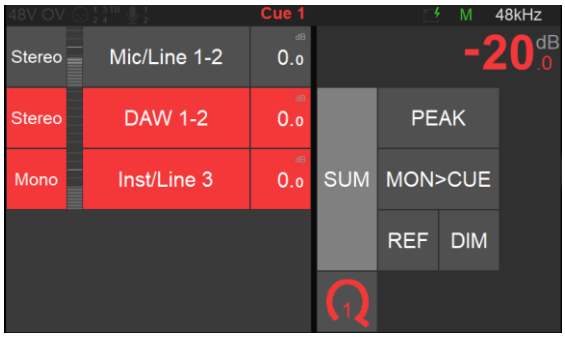


10. Make sure that the cue is properly patched in the lower Channel section of the Monitor set.
Here we are patching the Cue to the Headphones 1 (left and Right Channels)



⚠*Warning: Patching already patched channels will be disconnect if those are used within another Monitor set, as a designated output can only be Patched once within all Monitor Sets. This rule does not apply to Sources and Inputs.*

11. Return to the Source Page where you will now find a Q1 (Cue) Monitor available on the VirtualKey 1.



12. By selecting the Q monitor set the operator can then select a Source or sum multiple sources, those will be monitored exclusively on this Cue (Q) Monitor set.
Cues are recommended when needing to monitor a different selection of sources for a designated Monitor set (e.g. If you want headphones to monitor something different than the Speaker set, use a Cue). Cues can also be used when recording to produce a low-latency Cue mix for the performer foldback. Once the Musician has completed his recording take this one can press the Mon>Cue option in order to have his Cue overwritten by the Speaker set Sources.

Note: To configure the Built-in Talkback for the performer's headphones, refer to the Talkback use case.

You are ready to start recording with Anubis and have a Musician using an Ultra-Low Latency Cue (Q) Monitor set.

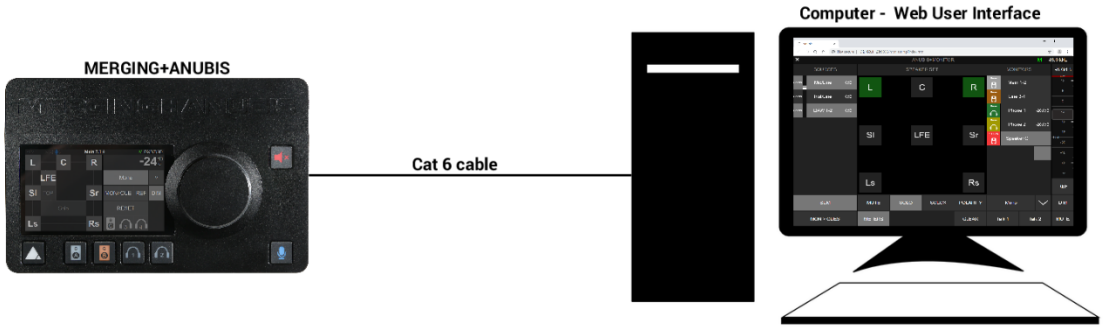
MORE ANUBIS USE CASES HERE

https://confluence.merging.com/pages/viewpage.action?pageId=60031175

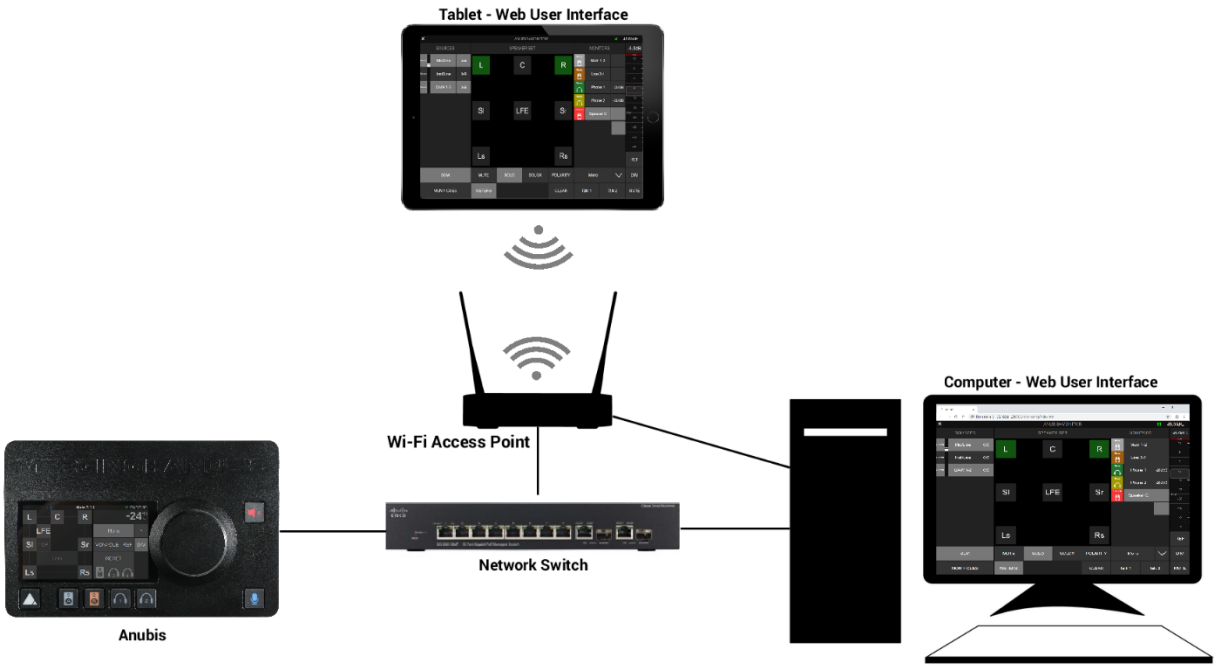
MONITORING WEB USER INTERFACE

Remote control your Anubis Monitoring through any tablet or web browser by opening the Web User page. The Anubis Monitoring Web User Interface combines all three pages of the Monitoring Mission into a single web page.

Peer to Peer Remote Access:



Network/Tablet Remote Access:



How to Open the Remote Web User Interface

PC Users:

Once Anubis is properly connected to your PC launch ANEMAN and double mouse click on the Anubis icon. This will open the Monitoring Web Access page into your default web browser. Users can also open the Web User interface page from MT Discovery by simply clicking on the Anubis entry.



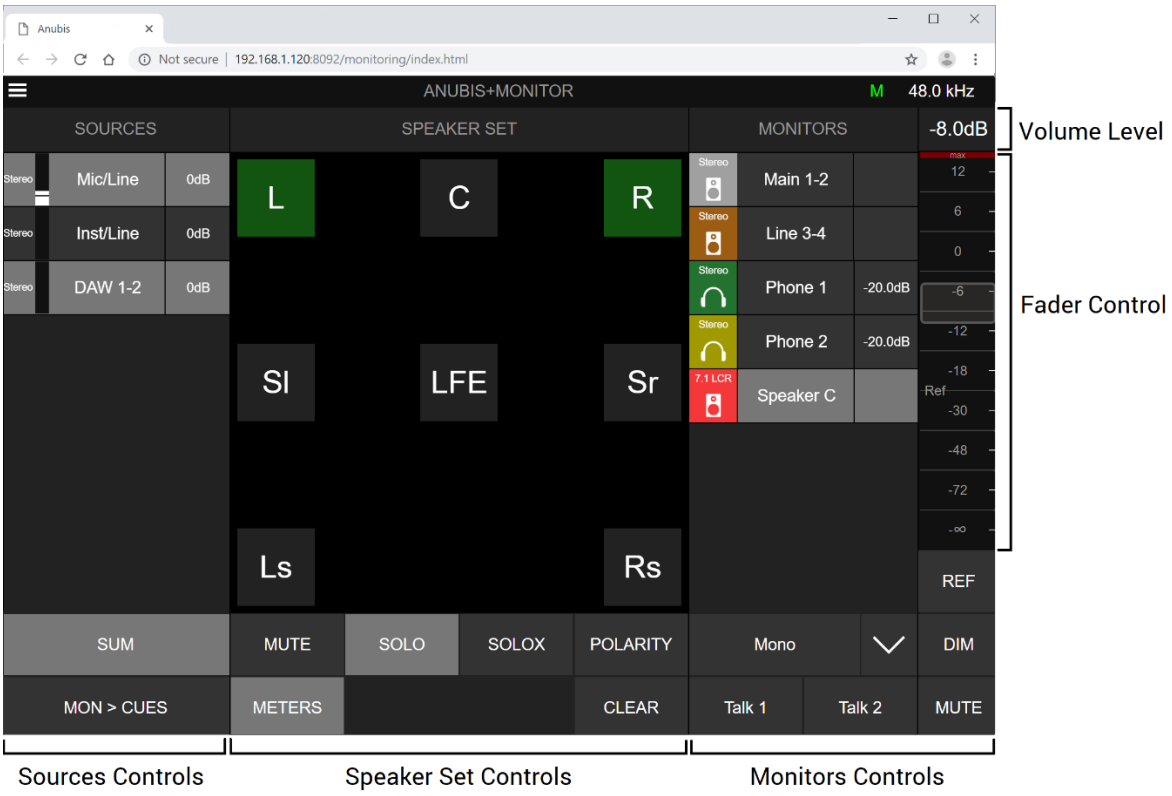
Mac Users:

Once Anubis is properly connected to your Mac, open the VAD Panel and click on the Anubis Icon. This will open the Anubis Monitoring Web Access page in your default browser. Users can also open the Web User interface page from ANEMAN or MT Discovery by clicking on the Anubis.

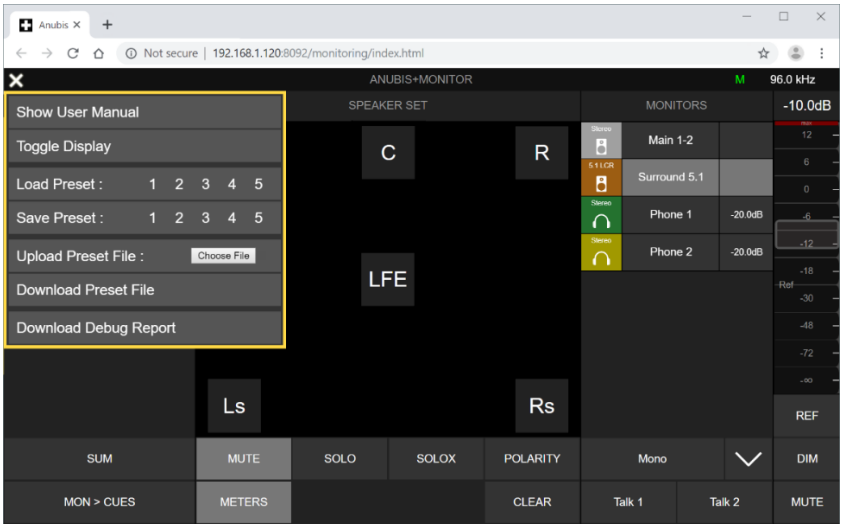


Anubis_650017

Web User Interface Page


Anubis
Not secure | 192.168.1.120:8092/monitoring/index.html
ANUBIS+MONITOR
M
48.0 kHz
SOURCES
SPEAKER SET
MONITORS
-8.0dB
Volume Level
Stereo
Mic/Line
0dB
Inst/Line
DAW 1-2
L
C
R
Sl
LFE
Sr
Ls
Rs
Main 1-2
Line 3-4
Phone 1
-20.0dB
Phone 2
7.1 LCR
Speaker C
max
12
6
0
-6
-12
-18
Ref
-30
-48
-72
-∞
Fader Control
REF
SUM
MUTE
SOLO
SOLOX
POLARITY
Mono
DIM
MON > CUES
METERS
CLEAR
Talk 1
Talk 2
MUTE
Sources Controls
Speaker Set Controls
Monitors Controls

Click on at the top left corner to display the Menu options



Show User Manual:
Selecting this entry will open the Anubis User Manual that is embedded into the Anubis. Make sure you have a PDF program or extension installed in order to view the manual.

Toggle Display:
Web Access view can display either all of the monitoring pages and functions or only the Speaker Set control page. Toggle to display your preferred view.

Load Preset:
Select to load one of the 18* Anubis presets available. Confirmation will be required.

Save Preset:
Select to save one of the 18* Anubis presets available. Confirmation will be required.
** As of Anubis Firmware 1.1.11 and above*

Upload Preset File:
Select "Chose File" to load externally saved presets (.bin). The users will need to browse and select the Anubis preset they wish to load.

Download Preset:
Select to download and save an Anubis preset to an external drive. The users will need to browse and select the folder in which they would like to save their Anubis preset .bin file.

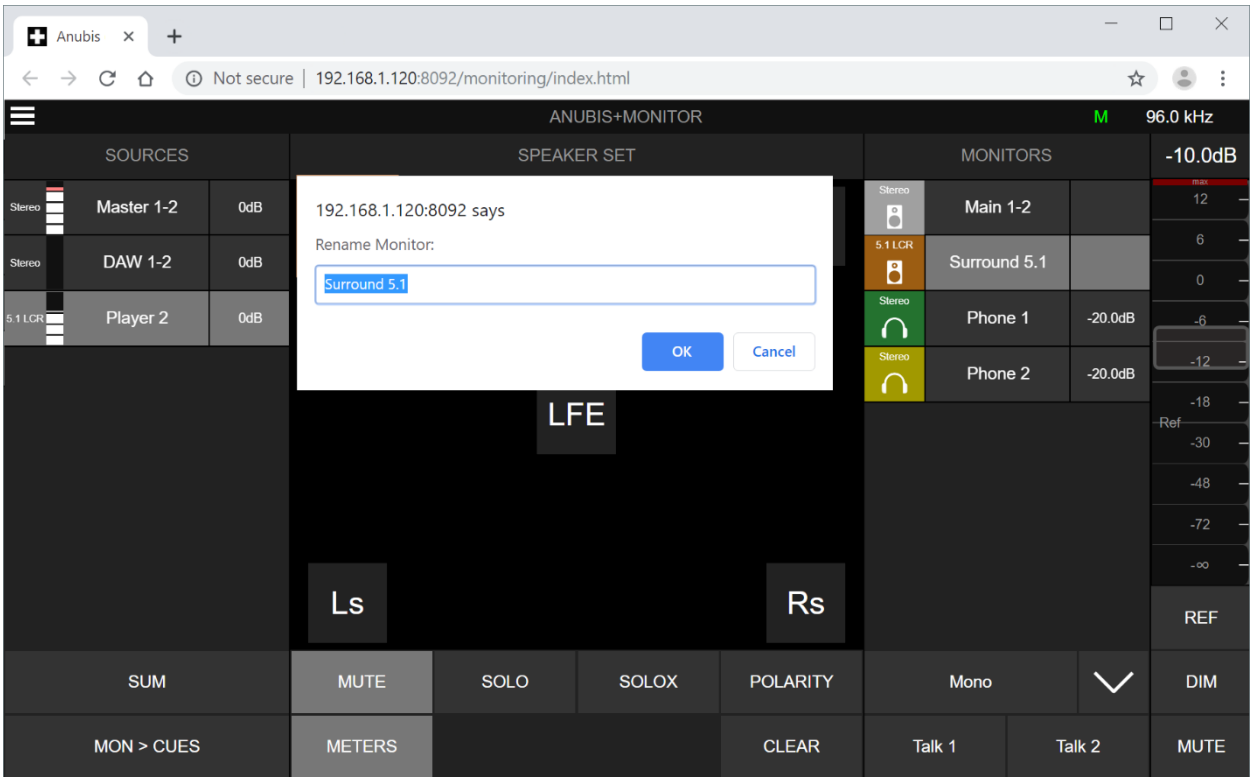
Rename Presets:
Presets can be renamed only form the Anubis Virtual Keyboard. *Refer to the Virtual Keyboard here*

Download Debug Report:
Select to download and save the Anubis Debug Report. This report should be sent to the Merging team when required, for debugging purpose and the investigation of encountered problems.

Web Access Source and Monitor Renaming

Users that which to rename their Sources and Monitoring sets can do so from the Anubis Web Access page *(as of Anubis firmware 1.0.13 and higher)*.

Procedure:
1. Open the Anubis Web Access Page from ANEMAN or MT Discovery
2. Make sure that the Web Access displays the Sources and Monitors set, otherwise use the Toggle view option from the Web Access Menu
3. Double Mouse click on the Source or Monitor Set you wish to rename.
This will open a dialog window where you can rename and confirm the new given name.

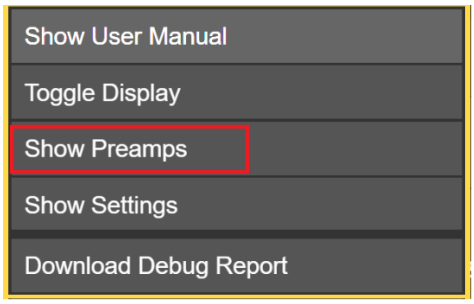


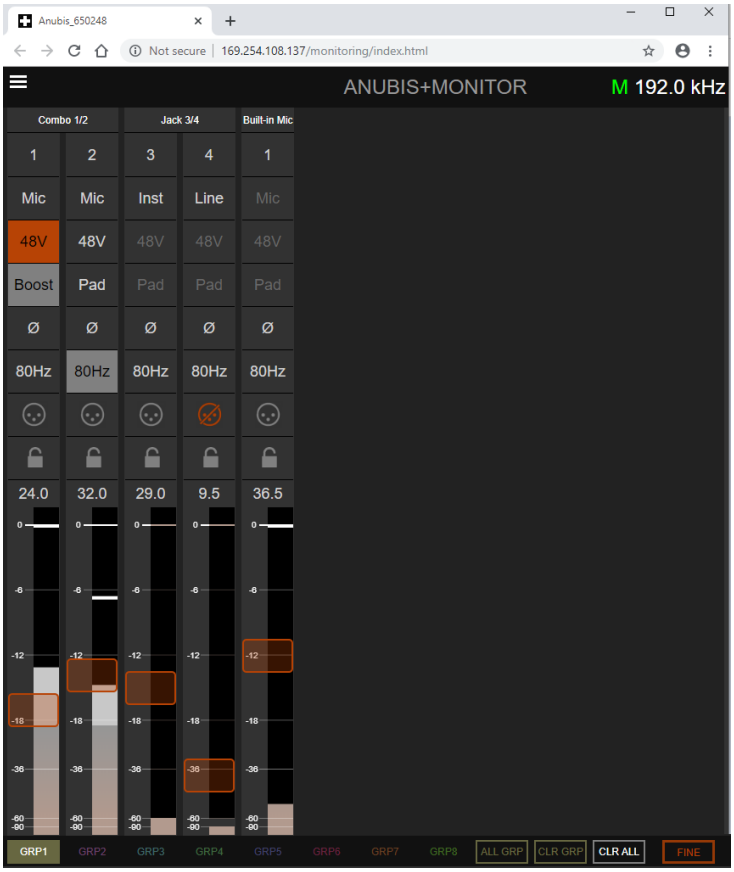
Note: The renaming is not available from the Anubis itself where the users must use the predefined Sources and Monitors name listing.

Web Access PreAmps Remote Control

Available as of Anubis Firmware 1.0.16 and higher.

 From the Menu options select Show Preamps





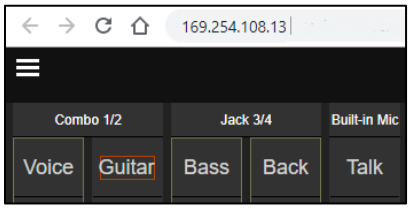
Anubis PreAmp Remote Control

- Full remote control of the Anubis PreAmps from your browser (Chrome recommended)
- Support for up to 8 groups



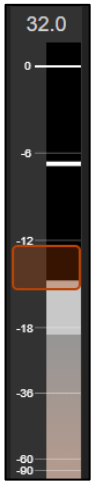
Select one of the group, and then select the inputs numbering/name section to add them to a group.

- Naming of channels.
  Mouse+Click in the Channels numbering section in order to rename an input channel.



Note: Naming's are saved in Anubis presets

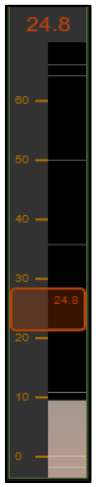
- VU meters
  Input Gain level indication in dB

1. 

1FS to 4FS

2. 

DXD and DSD

3. 

PreAmps Gain scale

1. PreAmps Input Metering scale from 44.1khz to 192kHz

2. PreAmps Input Metering scale changes when in DXD and DSD mode, in order to represent the headroom offered by DSD, as 0 dBFS = +6dB SA-CD

3. When changing the Gain the Metering scale will change to represent the gain scale level in dB. This scale is only visible while the Gain is being adjusted.
Range: 0dB to +66dB

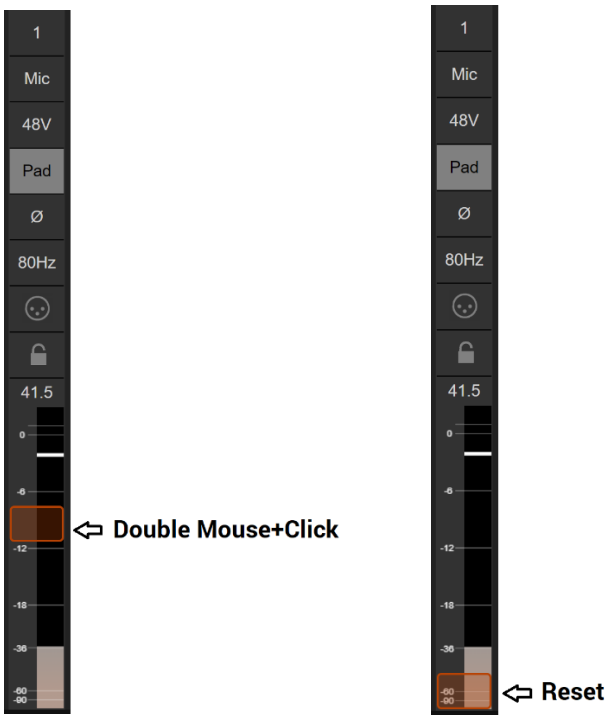
- Peak reset



Click on the peak hold in order to reset a peak.

- Reset Faders unity.

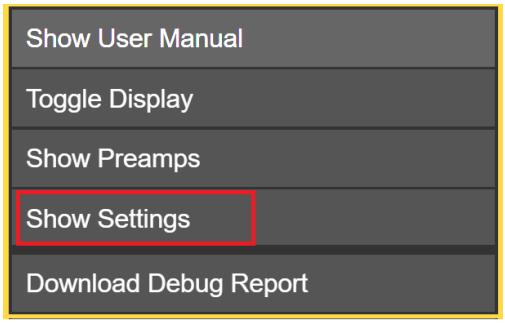
Reset all the faders (gain) by double clicking on the fader itself.

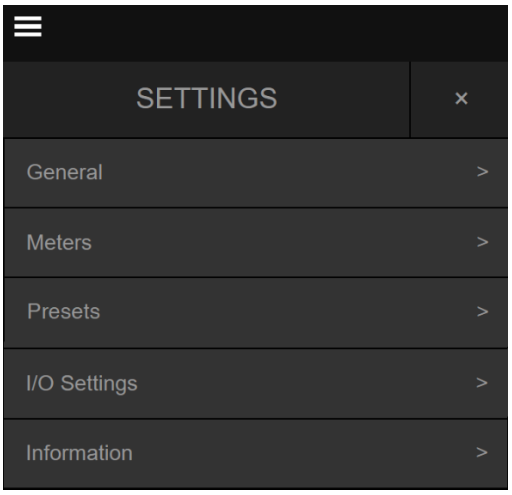


Web Access Settings

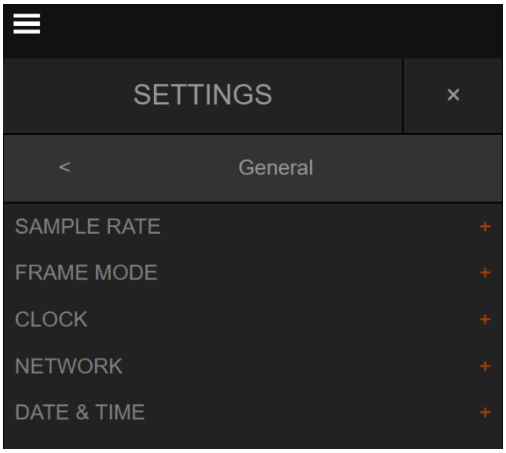
The Web Access now provide remote controls of the Anubis main Settings. Not all of the settings are available in remote control.
Note: Supported as of firmware 1.1.X and above

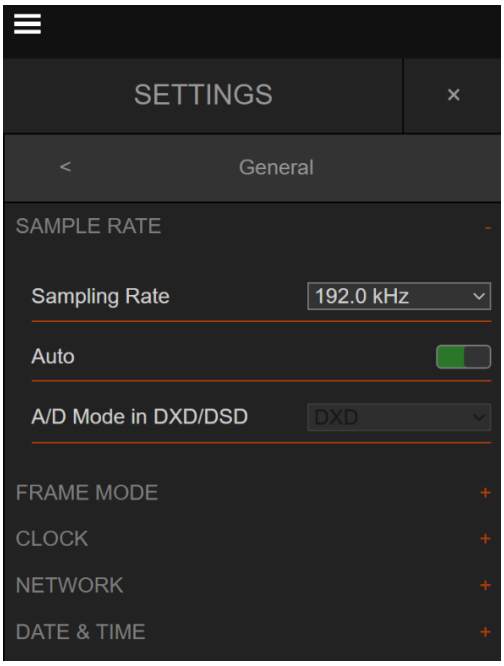
Select Show Settings from the menu option in order to open the Settings remote layout.





Click on the setting entry line or + you want to open a specific setting.



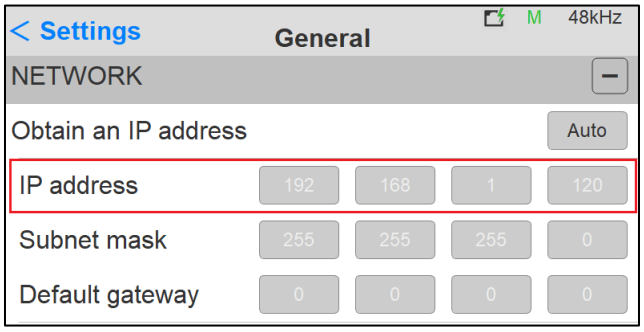


Note: All changed settings parameters will be reflected on the Anubis itself.

Tablets Remote Access - Using the Anubis IP Address

Connect your Anubis to your network while making sure that this one has a direct connection to a Wi-Fi Access Point.

Find the Anubis IP address under Settings > General into the Network IP address entry

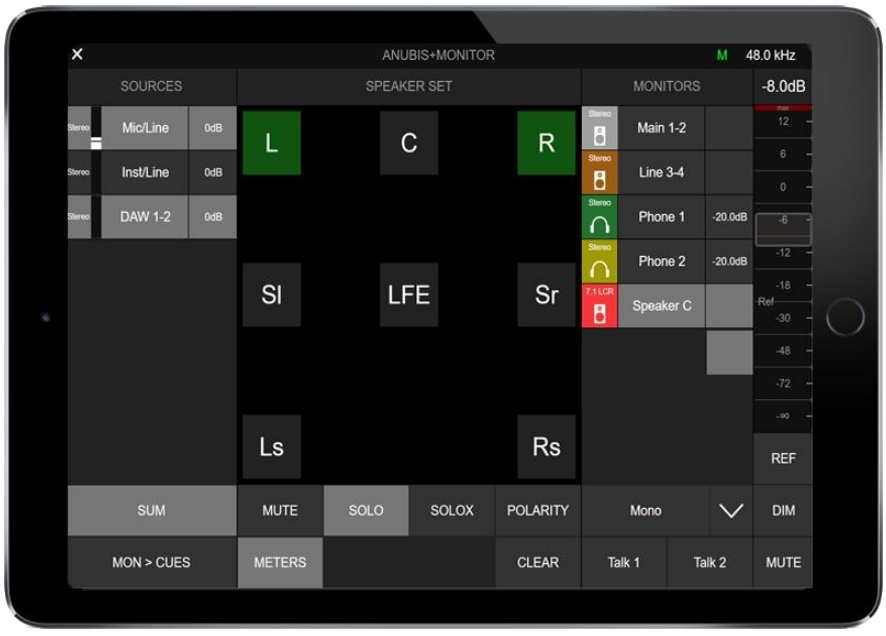


Type your Anubis IP address in the web browser and press enter to open the Remote Web User Interface



This method works with Chrome, FireFox, Opera and Safari, but does not work with Microsoft Edge.

Note: Merging certifies and recommends the use of Google Chrome.



ANUBIS FIRMWARE UDPATE PROCEDURE

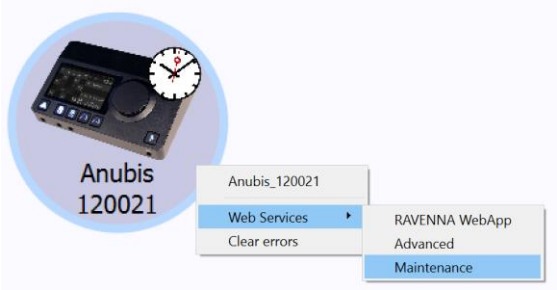
PREREQUISITES

- ANEMAN v1.1.8 and above. Download from https://www.merging.com/anubis/download
- An internet connection to download the latest Firmware
- Connecting the ethernet interface of the Anubis to a Mac or PC system for the update procedure
- Google Chrome is the recommended browser

⚠ *Warning. Safari is known to cause update slowdown or update button might not appear. Use Chrome*

PROCEDURE

1. Install ANEMAN
2. Download the latest Anubis Firmware from https://www.merging.com/anubis/download
3. Connect your Anubis network port to the system where you have downloaded the latest firmware
4. Launching ANEMAN will discover your Anubis within seconds.
5. Once ANEMAN discovers Anubis, perform a Mouse + Right Click and select Web Services> Maintenance

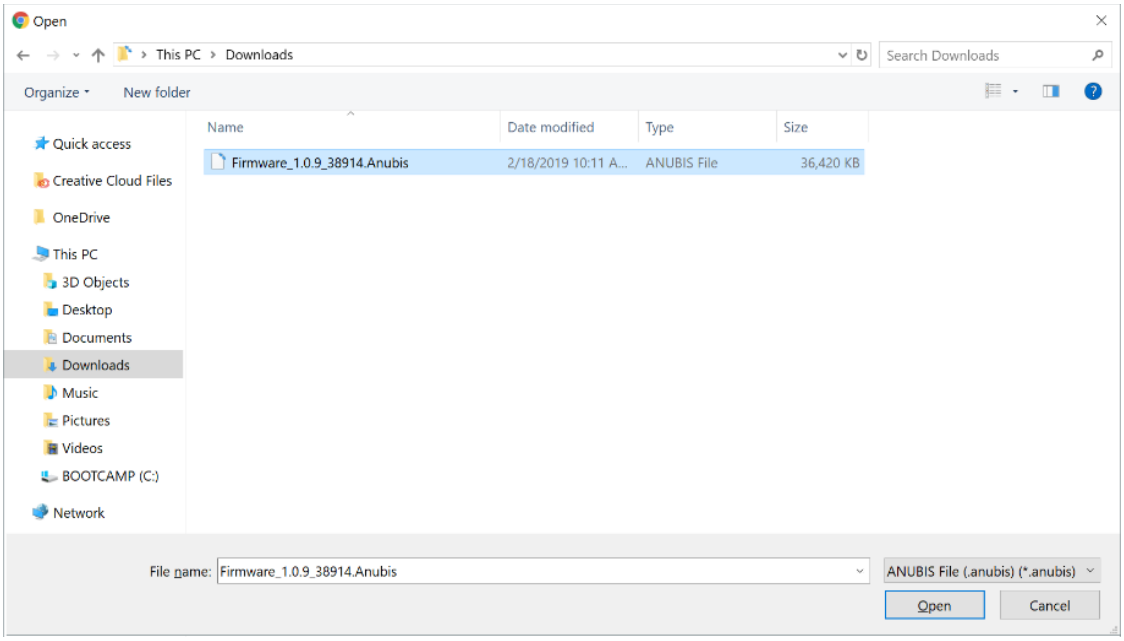


6. This will open a browser page from which you will be able to select the firmware file



7. Use the “Select File” button to select your firmware

8. This will open the explorer form where you can load the Firmware



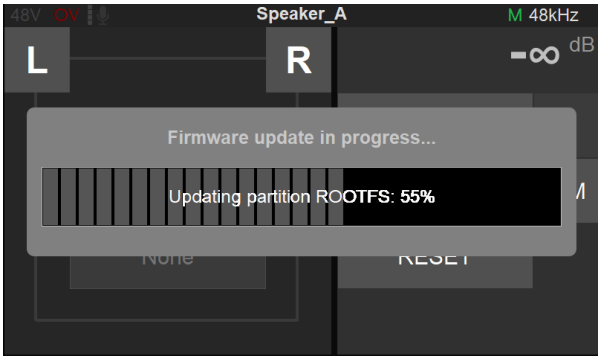
9. Once the firmware is selected press the Update button





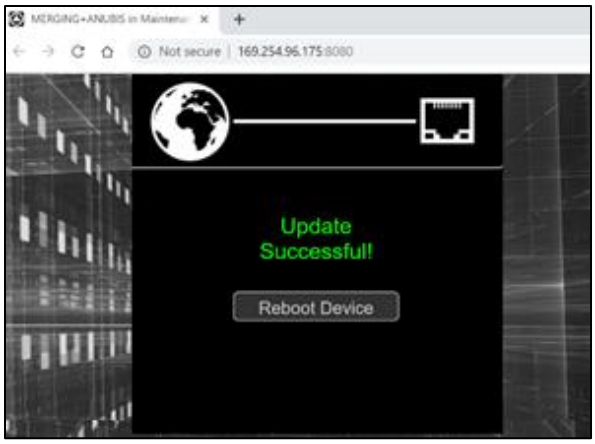
Note: During the Firmware update the Anubis Mute button will blink muting all monitors

10. Wait for the upload and update to complete. Notice that your Anubis TFT will also display the progression of the update.



⚠ *Warning. Never abort the Firmware when it is updating, this could damage the Anubis configuration.*

11. Once the Firmware update is completed please reboot your Anubis. You can do this from either the browser or the ANUBIS TFT, by selecting “Reboot Device”



12. You should now be on the latest Firmware. You can verify the Firmware version of your Anubis by opening the Info page (Long press Home button) and navigate to Settings>Info

In case you cannot access the Anubis Maintenance mode.
Make sure that Anubis is well connected to your system, it is mandatory that the Ethernet port or Switch is a Gigabit one.

Under the Anubis>Settings>Info page take note of the written IP Address (ideally be set to Auto IP on both your Anubis and Network Interface card).

Type the Anubis address in your Chrome browser followed by :8080 Example: 169.254.182.31:8080
You could also just open the Anubis web access page and add the :8080 at the end of the IP address, follow by pressing enter.
You should now have access to the Anubis Maintenance page and be able to update your Anubis firmware.

⚠ *Warning: Users needing to rollback from a 1.1.x firmware to a previous 1.0.x Firmware must first rollback to the Anubis Firmware 1.0.20b43451 and from there rollback to older 1.0.x Firmware’s if needed.*
Anubis SPS does not support 1.0 firmware’s, make sure you do not rollback to old versions.

ANUBIS TECHNICAL SPECIFICATIONS

GENERAL	
Case Material	Premium machined and anodized aluminium
Dimensions	200 x 128 x 40mm
Weight	950 gr
Top Panel Display	Capacitive Touch, TFT LCD 800 x 480 pixels resolution 16:9 Aspect ratio
Rotary Encoder	Anodized aluminum + Black rubber O-ring
7 x Hardware + Soft buttons	RGB LEDs
Bottom Panel Mic stand thread	3/8" 16BSW European thread incorporated *Note: Americas 5/8" 27UN adaptor not included*

POWER	
Power Supply Voltage (DC)	9V to 15V DC
Power Supply Connector Type	Barrel jack, int. 2.5mm/out. 5.5mm, with locking function
Power Consumption (Max)	< 15W
PoE (Power Over Ethernet)	IEEE 802.3at PoE+ class 0 Power-over-Ethernet standard

MICROPHONE INPUTS 1-2 (Combo)	
Connector Type	Combo Locking Neutrik XLR / TRS
Dynamic Range Mic / Mic Boost	137 dB / 128 dB (A-weighted, typ.)
Max Input level Mic Pad / Mic / Mic Boost	+24 dBu / +12 dBu / +0 dBu
Frequency response +0/-0.2dB @ fs = 48 kHz	9 Hz – 22k Hz
Frequency response +0/-3dB @ fs = 96 kHz	9 Hz – 46 kHz
Frequency response +0/-3dB @ fs = 192 kHz	11 Hz – 94 kHz
THD+N Preamp + A/D 1kHz @ 0 dBFS	< -110 dB (0.0003%)
Interchannel Crosstalk @ 1kHz	< -130 dB
Equivalent Input Noise Mic / Mic Boost (150Ω Source)	< -125 dBu / -128 dBu (A-weighted, typ.)
Common Mode Rejection Rate (20 Hz – 20 kHz)	> 80 dB
Input Impedance (Differential)	~ 10kΩ
Gain Range (Software controlled)	0 dB to +66 dB
Gain Step Coarse / Fine	0.5 dB / 0.1 dB
Phantom Power (Software Switchable Per Channel)	+48V
Phase Reverse (Software Switchable Per Channel)	Yes
Low Cut filter (Software Switchable Per Channel)	-12 dB/octave, 80 Hz
5° low-end in-channel Ø deviation pt: Inst/Line	9 Hz
Interchannel phase 10 Hz - 100 kHz	< ±2°

LINE INPUTS 1-2 (Combo)	
Connector Type	Combo Locking Neutrik XLR / TRS Gold Plated
Dynamic Range, ref +24 dBu	139 dB (A-weighted, typ.)
Max Line Input Level	+24 dBu
Input Impedance (Differential)	~ 10kΩ
THD+N Preamp + A/D 1kHz @ 0 dBFS	< - 104 dB (0.0006%)
Interchannel Crosstalk @ 1kHz	< -140 dB
Sensitivity Range for 0 dBFS (Software controlled)	+24 dBu to -42 dBu
5° low-end in-channel Ø deviation pt: Inst/Line	9 Hz
Interchannel phase 10 Hz - 100 kHz	< ±2°

INSTRUMENTS / Hi-Z & LINE INPUTS 3-4	
Connector Type	¼" TRS Female
Dynamic Range, ref +18 dBu	136 dB (A-weighted, typ.)
Max Input Level	+18 dBu
Input Impedance (Single ended / Differential)	~ 1MΩ / ~ 2MΩ
Gain Range (Software controlled)	0 dB to +66 dB
THD+N Preamp + A/D 1kHz @ 0 dBFS	< - 111 dB (0.0003%)
Interchannel Crosstalk @ 1kHz	< -150 dB
Sensitivity Range for 0 dBFS (software controlled)	+18 dBu to -48 dBu
Common Mode Rejection Rate (20 Hz – 20 kHz)	> 70 dB
5° low-end in-channel Ø deviation pt: Inst/Line	2 Hz
Interchannel phase 10 Hz - 100 kHz	< ±1°

MAIN OUTPUTS 1-2	
Connector Type	Neutrik XLR Male
Dynamic Range	123 dB (A-weighted, typ.)
Max output Level (Differential / Single ended)	+24 dBu (12.2 Vrms) / +18 dBu (6.1 Vrms)
Frequency response +0/-0.2dB @ fs = 48 kHz	6 Hz – 22 kHz
Frequency response +0/-3dB @ fs = 96 kHz	2 Hz – 46 kHz
Frequency response +0/-3dB @ fs = 192 kHz	2 Hz – 92 kHz
Output Impedance	< 70Ω
THD+N 1 kHz @ 0 dBFS	< - 110 dB (0.0003%)
Output Level Matching	±0.01 dB
Attenuation Range (Software controlled)	- ∞ dB to 0 dB
Gain Step / Precision	0.5 dB / ±0.05 dB

LINE OUTPUTS 3-4	
Connector Type	¼" TRS Female
Dynamic Range	123 dBFS (A-weighted, typ.)
Max output Level Differential / Single ended	+24 dBu (12.2 Vrms) / +18 dBu (6.1 Vrms)

Output Impedance	< 70Ω
THD+N 1 kHz @ 0 dBFS	< - 110 dB (0.0003%)
Output Level Matching	±0.01 dB
Attenuation Range (Software controlled)	- ∞ dB to 0 dB
Gain Step / Precision	0.5 dB / ±0.05 dB

HEADPHONES	
Headphone Jacks	2 Independent ¼" TRS Female Stereo 6.3 mm
Dynamic Range (A-weighted, typ.) High / Low	< -122 dB / - 117 dB
Max output Level High / Low	17.1 dBu / 7.8 dBu
Frequency response +0/-0.2dB @ fs = 48 kHz	6 Hz – 22 kHz
Frequency response +0/-3dB @ fs = 96 kHz	2 Hz – 46 kHz
Frequency response +0/-3dB @ fs = 192 kHz	2 Hz – 92 kHz
Output Impedance	< 0.035Ω
THD+N 1 kHz @ 0 dBFS High / Low	< -108 dB (0.00039%) / -110 dB (0.0003%)
Gain Range (Software controlled)	- ∞ dB to 0 dB
Gain Step / Precision	0.5 dB / ±0.05 dB

A/D – D/A CONVERSION	
Supported Sample Rates PRO	44.1 kHz, 48 kHz, 88.2 kHz, 96 kHz, 176.4 kHz and 192 kHz
Supported Sample Rates PREMIUM	44.1 kHz up to 352.8 kHz (DXD), 384 kHz, DSD64, DSD128 & DSD256
Bit Depth Per Sample	32
A/D Latency Sharp Short @ 44.1kHz to 96kHz	5 samples
A/D Latency Sharp Short @ 174.6kHz to 192kHz	6 samples
A/D Latency Sharp Short @ 352.8kHz to 384kHz	7 samples
D/A Latency Sharp / Slow @ 44.1kHz to 384kHz	35 / 9 samples (Apodizing & Brickwall 35 smpl)

COMPLEMENTARY I/O	
RAVENNA (Gigabit Ethernet)	Locking EtherCON compatible with standard RJ45 connectors
Built-in Talkback microphone	Mono omnidirectional condenser capsule
GPI/MIDI Input	¼" TRS Female
GPO/MIDI Output	¼" TRS Female

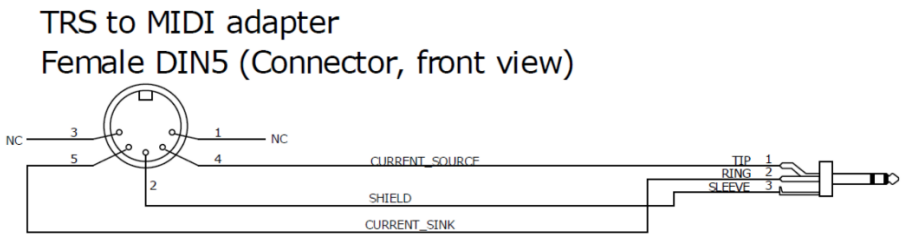
SOFTWARE SPECIFICATIONS	
Windows Driver/OS	RAVENNA ASIO v12.0 and higher (ASIO 2.2) for Win7 - 64bit / Win10 - 64bit Merging Audio Device (MAD) 1.0 Multi-ASIO and WDM support / Win10 -64bit
Mac Driver/OS	VAD - Core Audio for MacOS 10.8.5 or higher (Intel)
Linux Driver/OS	ALSA Linux RAVENNA/AES67 driver
ANEMAN	Version 1.1.7 and above

APPENDICES

MIDI CONNECTOR

Female 6.3 mm - 1/4" TRS connector

PIN OUT

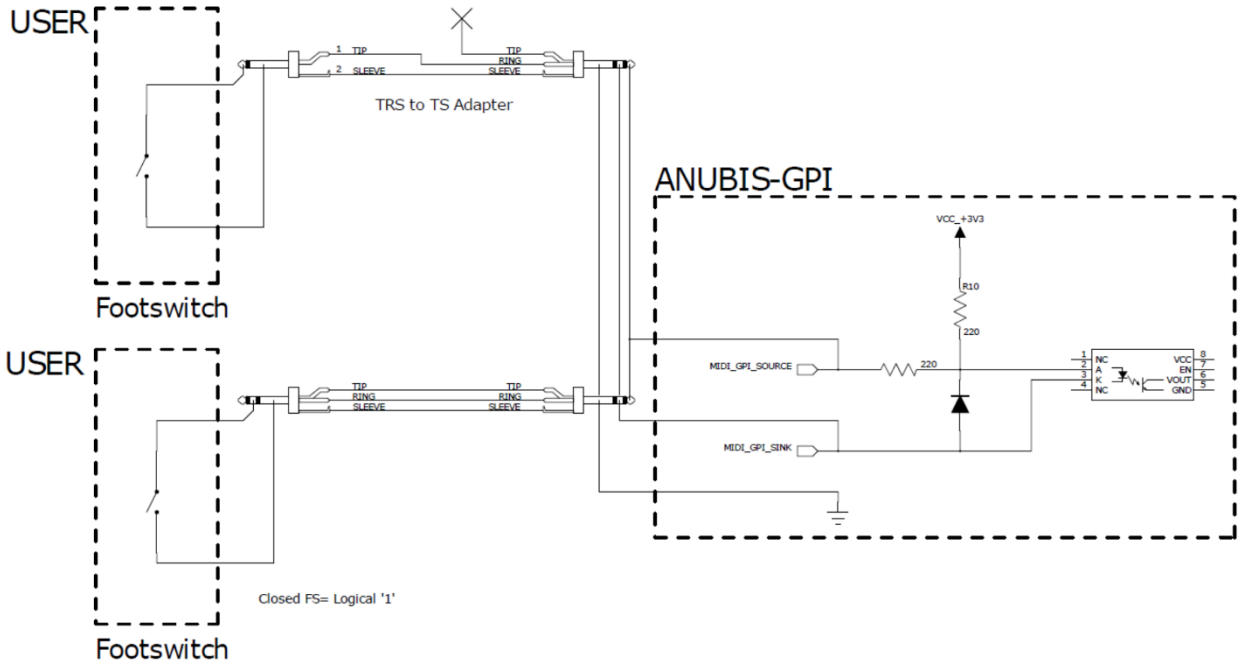


GPIO CONNECTOR

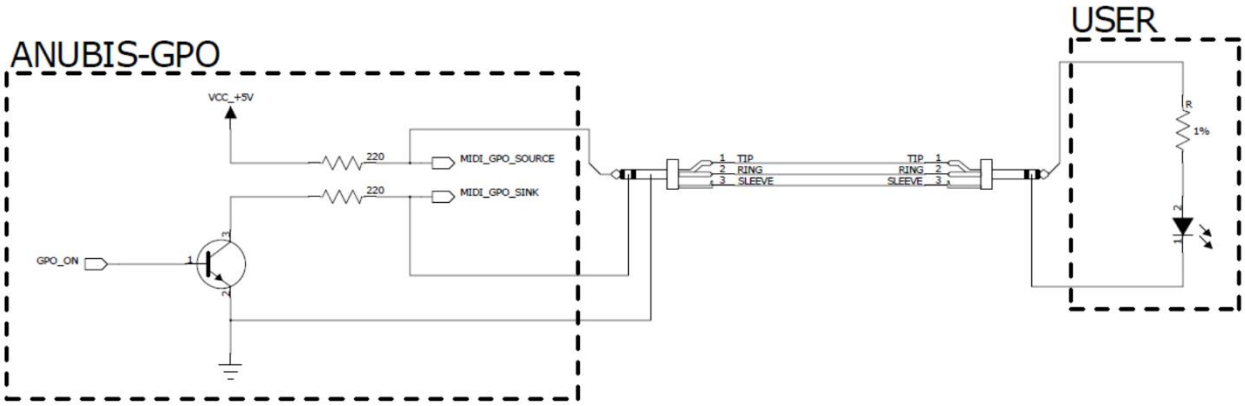
Female 6.3 mm - 1/4" TRS connector

GPI Application Example - Footswitch triggering

Run 3 TRS to TS Switch



GPO Application Example 1 – Record On Led



$$I_{Led} = \frac{5\ [V] - V_{F_Led}}{440\ [\Omega] + R_{Led}[\Omega]}\ [A]$$

$$R_{Led} = \frac{5\ [V] - V_{F_Led}}{I_{Led}} - 440\ [\Omega]$$

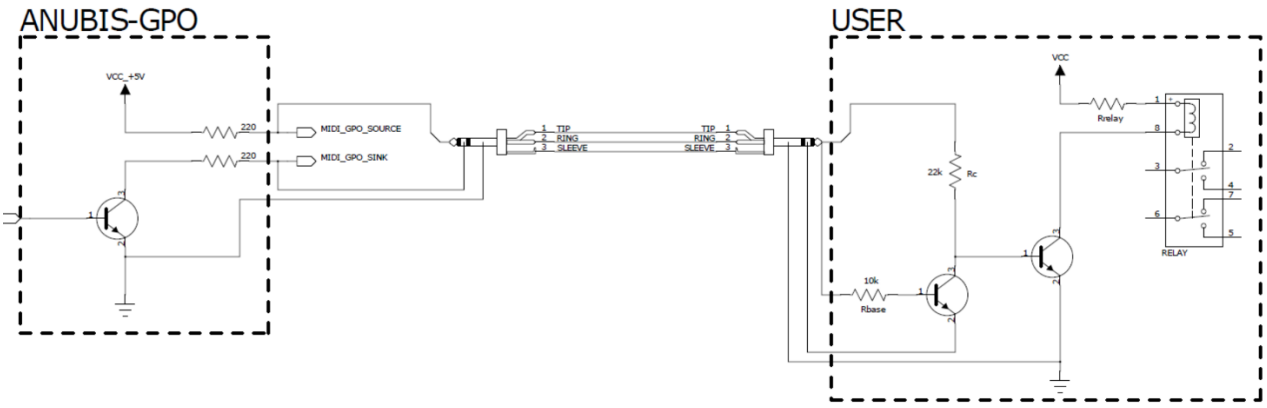
$$V_{F_Led} : Forward\ LED\ Voltage\ [V]$$

$$R_{Led} : LED\ Current\ limiting\ Resistor\ [\Omega]$$

Typical forward voltage example:

Red	2V
Yellow	2.3V
Green	2.2V
Blue	3.5V

GPO Application Example 2 – Relay triggering



TROUBLESHOOTING

PROBLEM	POSSIBLE CAUSE	SOLUTION
Anubis not starting	DC Power Supply not connected or not plugged correctly	Make sure the DC power supply connector is correctly plugged. If you are using the Merging power supply unit, align the two tabs on the power cable's connector to the notches on the Anubis input male connector, then rotate the barrel clockwise until latched.
	DC Power Supply not sufficient	Anubis requires a DC power input voltage from 9V to 15V
	PoE power not sufficient	Anubis requires PoE+ (802.3at). Make sure your PoE source is configured to supply PoE+
No Monitoring Volume Control over the connected streams	Monitor not selected	Make sure you have selected the Monitor set you are listening to, and that this one is patched correctly. Follow the User Manual Monitor section or follow the Basic Monitoring Use Case setup..
	Source not connected to the Monitor engine	Users tend to bypass the Anubis Monitoring Engine. It is important to review the "*Sources vs. Monitors Fundamentals"* chapter in the User Manual. By design at first a source should be created or used in order that Outputs such as a DAW 1-2 Playout are coming into the Anubis Monitoring Engine and then going to a Monitor set.
Cannot Apply the Dim or Reference parameters to a Headphones Set.	Wrong Monitor type	This is expected as each of the Anubis 3 types of Monitor set have their own features. Refer to the Monitors Tables. In order to use Dim, the Reference level and other features on a Headphone set this one must be changed to a Cue.
ASIO, MAD or VAD sound Interruption or glitches.	Wrong driver configuration	Adjust the Audio Driver I/O Buffer. The size of the buffers determines how much delay you hear when monitoring live inputs through your audio software: larger buffers produce more delay; smaller buffers produce less. Change the Buffer adjustment are made in the ASIO and VAD panels
	Wrong driver configuration	Reduce the I/O count of your ASIO or VAD panels, and select only what is needed.
	Wrong Network configuration	If operating with multiple devices make sure that you are using a properly configured and recommended RAVENNA/AES67 Switch. See this page for RAVENNA/AES67 validated switches.
Can't make connections on Anubis with Ravenna EasyConnect	Compatibility - Legacy	Ravenna Easy Connect is not compatible with Anubis, you have to use ANEMAN.

<table>
<tr><td rowspan="2">"ASIO Clock Error : latency of the master Horus/Hapi and ASIO driver must be set accordingly" in Merging Ravenna ASIO Panel</td><td>Driver compatibility</td><td>The Merging RAVENNA ASIO driver version for Anubis must be V12 (or above). Or Merging Audio device (MAD) v1.0 or Above.</td></tr>
<tr><td>Driver or Device Latency Configuration</td><td>The latency between the ASIO driver and the Anubis device must be from the same multiple set; AES67 (48 - 12 - 6) or 64 (64 - 32 -16).
See Anubis Settings > General > Frame Mode : Latency setting.
If you have multiple devices on your network, this setting can only be configured on the Master PTP device.</td></tr>
<tr><td>Using Reaper, the audio disconnects</td><td>Reaper Configuration</td><td>In Reaper, the default behavior is to turn off the audio device when the application is inactive (when you are outside the application)
Go in Reaper Options > Preferences > Audio and untick the "Close audio device when stopped and application is inactive".</td></tr>
<tr><td rowspan="2">Anubis does not follow the sampling rate changes of the DAW or System</td><td>Auto Sampling Rate</td><td>Under the Anubis>Settings>General enabled the Auto Sampling Rate option. The Auto sampling rate should follow provided at least one RAVENNA ASIO, MAD or Virtual Audio Device stream is connected to an Output of the Anubis.</td></tr>
<tr><td>ANEMAN Sampling Rate Zone</td><td>Launch ANEMAN and in the world view create a New Sampling rate Zone, select your RAVENNA ASIO, MAD or VAD driver and drag this one on the Crown within the Zone, then drag the Anubis in the Zone as well.</td></tr>
<tr><td>Monitor your PC sounds (YouTube, Spotify,...) using Anubis with similar use as a built-in soundcard, with a WDM bridge. Along with Mutli-ASIO support</td><td>Merging Audio Device (MAD)</td><td>Refer to the Merging Audio device (MAD)

Online Documentation here</td></tr>
<tr><td>Some of the Anubis Sources or Monitors cannot be activated under their respective Settings</td><td>Exceeding the maximum channel count available</td><td>The total channels used for Sources or Monitors available is most probably exceeded. Disable some of the other Sources or Monitors in use, or delete unused ones, then reactivate your Source or Monitor. Refer to the table here for information on the maximum channel count that can be used for either the Sources or Monitors.

<table>
<tr><th colspan="3">ANUBIS SOURCES AND MONITORS MAX CHANNELS</th></tr>
<tr><th></th><th>Sources</th><th>Monitors</th></tr>
<tr><td>1 Fs (44.1-48 kHz)</td><td>128</td><td>32</td></tr>
<tr><td>2 Fs (88.2-96 kHz)</td><td>128</td><td>32</td></tr>
<tr><td>4 Fs (176.4-192 kHz)</td><td>64</td><td>32</td></tr>
<tr><td>8 Fs (352.8-384 kHz)</td><td>32</td><td>32</td></tr>
</table>
</td></tr>
<tr><td>Using Pyramix the Anubis Preamps remote control are not supported on all versions of Pyramix.</td><td>Version dependent.</td><td>The Anubis remote preamps control support within the Pyramix Mixer is supported as of Pyramix MassCore v11.1.6 Hotfix and on all Pyramix Native version running ASIO v12 (64 bit).
Note some parameters such as Boost, Link and Cut are not supported.</td></tr>
</table>

Firmware takes a long time to update, and the update button is not always showing	Browser issue with Safari	It is not recommended to use Safari for the Firmware update as it is known to cause slowdown at update and potentially the Update button might not be seen. Merging recommends that you perform your Firmware update using Google Chrome. If you still encounter issue try using a Chrome Incognito Tab for the update.
Cannot perform some functions on my Monitors set *(such as DownMix, Ref/Dim, Speaker selection…).*	Anubis Monitor Types	Anubis has 3 types of Monitor sets 1) Speaker Set 2) Headphones 3) Cues Each one of the Monitor types have their own characteristics and features. Make sure select the right one. Consult the Monitoring Mission section and table for all details. Here.
Cannot have different Source trims for each Monitor set	Anubis Monitoring Mission has global sources trims.	With the Anubis Monitoring mission each Source has a trim that is global and applied to all Monitor set. A workaround is to create a second source routed to the desired Monitor set and trim this one to a given level. Individual sources trim per Monitor set is planned for the upcoming Music Mission.
"no ASIO Host connected" in Merging Ravenna ASIO Panel or MAD	DAW configuration	Make sure your DAW is running and set to use the Merging Ravenna ASIO driver or Merging Audio Device (MAD) On some Media Players software, the playback must be started for the application to run its ASIO hosting.
Remote Preamps: Some parameters such as Boost, Link and Cut cannot be controlled from ProTools	Not supported in Avid's remote Preamps protocol	Boost: Remote MIDI Preamps control does not support the Anubis Boost Preamps option. It will be interpreted as a Pad. For the moment it is recommended to set this parameter locally on the Anubis Preamps.
		Link and Cut: Remote MIDI-Preamps control do not support the Anubis Link nor Cut Preamps options. Users can use Stereo Inputs to control 2 Anubis inputs simultaneously, or use the Link locally on the Anubis. The Cut option will need to be used locally as this parameter is not supported by the Avid MIDI Preamps protocol.
Cannot see all Monitor sets in ANEMAN	Limitation	Only the selected Monitor set is displayed in ANEMAN.
Cannot trim the Sources level differently in each Monitor set	Monitor Mission Design	Source Trims are global and not individual to each Monitor set. Workaround: If you wish to have independent Source trims levels for different Monitors is it recommended to duplicate the Sources and use Cue monitors, so that each Cues have a different selection of Sources.

		The upcoming Anubis Music Mission will not have this limitation.
If I use Pyramix as a DAW do I still need to use the Pyramix Monitoring Panel?	Under development	The Pyramix Monitor Panel does not yet have the Anubis support and integration, it still recommended in some cases to keep using the Pyramix Monitor section, especially if you plan on using the Media Manager trimmer for playback monitoring. In such case make sure that you connect properly your Source to the Pyramix Monitoring Panel and use only the Panel for this monitoring purpose.
How to make a Direct connection from the Driver or MassCore to the Anubis Outputs, like Horus/Hapi thus bypassing the Anubis Monitoring panel.	Routing	This is feasible by simply using ANEMAN and connecting the ASIO outputs to the Physical Anubis Outputs. Refer to the Manual page 63 where you have the explanation of the Anubis Monitoring Engine. You should be doing as indicated on the figure 8 *Bypassing Monitoring Engine*.
DXD/DSD Monitoring a Source is at times is muted	Exclusive with DSD predominant	If you have DXD and DSD sources you could come up in a situation where you cannot Monitor the DXD source. This could happen by example if a DSD source is being monitored by a Cue and that you wish to select a DXD source from another Monitor set. IN this case the DXD Source will be muted because a DSD source is already being monitored. Solution: Deselect the DSD Source being monitored in order to select and Monitor the DXD source. Remember that we have no Mixer nor Summing in DSD. Please refer to the Anubis DXD/DSD chapter for more details.
Hum noise in your Monitors or Headphones.	Setup / configuration	If you experience constant static noise or hum apparent in your monitors connected to your interface this is most probably caused by a ground loop. A ground loop occurs when there are multiple paths to ground between two or more pieces of equipment. These paths create a loop which causes electrical interference in the form of an unwanted current through a conductor. This is often due to poor wiring in power sockets or extension cables. Whilst a ground loop is not hazardous, it can manifest itself as a constant low frequency buzz or hum through your audio equipment, or even glitches in audio that are often associated with mouse movement or hard disk activity. To diagnose your system with ground loop hum, it would be preferable if you could test your interface with different cables in a different location - if the issue is caused by poor wiring in the power socket then you should find when testing in a different location that this noise does not occur. Also, if you are using a laptop, you may find that the hum stops when the laptop's power cable is disconnected. Most commonly, ground loops can be solved by using balanced cables. You will be able to hear it through your monitors if you are using unbalanced cables. All 1/4" jack line outputs Anubis are balanced outputs, which means you can use balanced (TRS) jack cables to connect your monitors to your interface. In most cases, this

		should prevent ground loop hum. If you have several units in your setup then one of these units could be causing a second ground path which would cause ground loop hum. To narrow down which unit is causing the problem, have your system up and running and physically disconnect each unit one by one to see when the noise stops. For Anubis users experiencing such problem Merging recommends the use of the Power over Ethernet (PoE). To avoid ground loop issues connect the Anubis RJ45 RAVENNA network port to suitable PoE+ source (network switch) and disconnect Anubis the DC power connector. In most cases this will solve the problem. If you cannot use PoE and if a ground loop noise remains apparent in your headphones and/or monitors when using balanced cables, while you are unable to find the source of the second path to ground in your set up. You can get a ground loop isolator noise suppressor box that prevents audible ground loop issues. *Note that a buzzing noise, can also be caused to magnetic field interference. If your Anubis is very near; Laptops/Computers (with fan), power amps, speakers, guitar pickups or any device that includes a magnet. In this case we suggest that you keep your Anubis at a distance of at least 60 cm to those devices and/or have the Anubis fan set to Low mode.*
On Mac auditioning mono files through VAD routes the audio out to channel 3	macOS issue. Merging has no control over this.	When playing a mono track the audio is routed to VAD output 3 instead of outputs 1 & 2 Workaround: Reducing the number of output channels in VAD to "2" will force mono audio to be properly routed to those outputs.

FOR MORE INFORMATION

MERGING+ANUBIS Downloads
https://www.merging.com/anubis/download

MERGING+ANUBIS Knowledge Database, FAQs and Tutorials
https://confluence.merging.com/display/publicdoc/MERGING+ANUBIS

MERGING+ANUBIS USE CASES
https://confluence.merging.com/pages/viewpage.action?pageId=60031175

MERGING SUPPORT
support@merging.com

MERGING+ANUBIS WEBSITE
https://www.merging.com/products/anubis

MERGING YouTube CHANNEL
https://www.youtube.com/channel/UCR5q_dlb9dYnXTrVDWMshgw