Anubis FAQ.

Which kind of PoE (Power over Ethernet) is compatible with Anubis ?

The Anubis PoE module is compatible with the 802.3at PoE standard.
802.3af is not compatible with Anubis.
https://en.wikipedia.org/wiki/Power_over_Ethernet

Does Anubis include redundant Power Supply?

Anubis can alternatively be powered from PoE (Power over Ethernet) or in parallel to the DC Power (9-15V), 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
- 0 V (Min) – 48.0 V (Typical) - 57.0 V (Max) @ 1–2 A

If you use both power sources simultaneously and lose one of the source, redundancy is assured without any interference.

What exactly is the AD 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. More details are available in the Anubis User Manual.

What is the AD Split Channel feature?

The Dual Gain 32bit circuitry not only includes two inputs separate Gain but as well on each channel two separate Gain for independent dual outputs. This being the AD Split Channel feature. Each one of the Anubis 4 inputs channels can be split and have its independent Gain and Cut feature. Meaning that the Gain of a single Microphone can be split into two Gains for the same unique input channel.

Split Channel 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.

Do the Anubis DA have DC coupled outputs?

Both Anubis Pro and Premium have DC coupled outputs circuitry, as did Merging's Horus and Hapi.

Is the latency roundtrip (ADC to DAC) of an Anubis lower than an Hapi or Horus

Not only is it a few samples lower but the Anubis as well includes an internal FPGA-based DSP Mixer with ultra-low latency for the performer foldback, making sure that your musicians monitor themselves without any perturbing latency (e.g. in Live concerts or during Recording sessions).Refer to the Anubis User Manual, specification chapter for more details.

Can I use the Anubis ultra-low latency Mixer for my Horus or Hapi IO's?

Yes, the Anubis is a great asset for owners of Horus and Hapi as you can already can route and mix IO Streams coming from Horus or Hapi (or any RAVENNA AES67 compliant device) and create ultra-low latency Mixes for monitoring purposes or for musicians foldback. At the moment the connections have to be made using ANEMAN. Sources and Cues can be used in the Monitoring Mission to create Ultra Low Latency Monitoring Cues. A musician friendly Low Latency Mixer is planned for the Music Mission.
Refer to the Anubis User Manual setup examples for more details.

What would the expected minimal Anubis AD to DA latency? And what about the ASIO driver?

Anubis has a roundtrip latency AD- DA that can be as low as 16 samples to which you must add 3 samples (FPGA side). So we are talking here of around 19 samples, depending of the configured settings.
Refer to the Anubis User Manual specification.
Our RAVENNA/AES67 ASIO driver and latest firmware's support a latency frame mode as low as 6 samples.

For Surround and Multichannel, can one use the Anubis Headphones outputs for additional speakers?

Strictly speaking Anubis was designed and is marketed to offer 4 channels of Line Outputs.This said, it is not prohibited to use additionally the 4 channels offered by the two Headphone Outputs, these are however Unbalanced, so additional unbalanced -> balanced circuitry may be required depending of the target's input design.
Either use each of the two Anubis Headphones with balanced circuitry for 5.1 Surround Monitoring, or use each of the Headphones in unbalanced mode to achieve up to 7.1 Surround Monitoring, you could also use one of the Headphones to have 5.1 (with 2 unbalanced outputs).
The Anubis Monitoring Mission gives you all the flexibility to route and adjust those if they were to be added to a Monitoring set, it can all be done with ease.

Note: You can use Anubis along with another Merging interface on your RAVENNA/AES67 network, such as Horus, Hapi or a second Anubis and use their additional Outputs for multichannel and have Anubis control all of those channels. Using AES67 compliant Speaker sets can also be a solution for surround monitoring (such as the Genelec 8430).

With Horus/Hapi we cannot duplicate the same output to different module, is Anubis the same?

With Anubis you can monitor the same outputs stream through different monitoring sets (Headphones, Speakers…) because of the Anubis internal Mixer and its routing flexibilities you can easily Monitor the Output thought your 1-2 Speakers and at the same time monitor it from the headphones output of your choice including the ones form your devices that are AES67 compliant over your network.

What is minimum supported impedance headphones?

The minimum impedance Merging tested for headphones is 16. Merging has in the plans to certified lower impedance headphones.
If you are a user already running Anubis with low impedance headphones, you are welcome to provide your feedback to anubis@merging.com

What would be maximum current output for a 12 Headphones?

You should be able to pump out up to a Max current of 2 x 140 mA on a 12 Headphones, retaining the ultra-low distortion. We recommend in such case that you configure the Anubis Headphones Gain Output setting to Low (Max +9dBu).

Can I have more than one Talkback with Anubis?

Anubis today can be used with two Talkbacks. It has one built-in Talkback microphone but its Talkback logic is not restricted to the built-in mic, it is able to use any other microphone (including Phantom power condenser mics) as well and even use a Talkback that would come from an external device network stream. With the possibility to setup by software the Talkback mics sending out to different Cue/Monitors. It is also possible to use the Anubis hardware button for the talkback of your choice and to use a footswitch (GPI) for a second talkback Mic control.

Can I monitor and Mix in standalone with Anubis?

One of the wonderful things about Anubis is that with its built-in Touchscreen (TFT) you can control all the routing of the interface and monitor what you wish to in standalone. Whatever you physically connect the interface inputs can be controlled and mixed from the Anubis itself, no DAW, no Tablet needed. In addition, you can save and recall your favorite presets at any time locally.

Can Anubis only talk Dante AES67 and can it talk Dante only.

Anubis supports RAVENNA/AES67 devices, meaning that Dante devices with AES67 support will work over a network that would include Anubis (or a Horus or Hapi). But Dante only devices will not be supported. Refer to our online guide here below for more details.
Configure Merging and AES67 Devices

Are Dante/AES67 devices connected to the Anubis limiting sessions to 48kHz?

AES67 is not limited to 48kHz Merging is certifying it even in DXD 352.8kHz. But you will actually not be able to operate at other than 48kHz samples when including Dante/AES67 streams, simply because Audinate has limited its AES67 support to the bare minimum, ie. 48 kHz ONLY.
Refer to document from Yamaha with additional details.
https://download.yamaha.com/files/tcm:39-868466/

Note: Merging's RAVENNA/AES67 ASIO driver (PC) and VAD Premium (Mac) requires that at least one Merging device is preset on the network (e.g. Anubis), then you can add Dante/AES67 devices that work at higher sampling rate than 48kHz and work along with those in AES67 as long as our device is the Master PTP clock. You will need to make some connections from the Advanced RAVENNA Settings Pages as ANEMAN does not support the connections to Dante/AES67 devices.

My Anubis becomes very warm should I worry?

Anubis was purposely designed to extract and to dissipate with high efficiency to its entire unibody chassis the heat produced by its powerful central dual-core processor, as well as its FPGA-based signal processing and high quality Analog front-ends without requiring forced air-convection by means of a noisy fan in normal operation.

It is thus normal to expect that its chassis temperature rises to around 35-40 degrees (typical body temperature) after continuous operation of several tens of minutes. Under particular warm conditions (hot summer days, operation under direct Sun light), the design includes the additional cooling of a small fan that allows, under user choice, to start operating gradually above a selected temperature threshold (user selectable between Low, Mid and High Cooling) providing full protection against over-heating situations.

Can the Anubis Fan be turned off?

It is expected that the Anubis Fan will only very rarely be put in motion (if ever) and if it is, the airflow will be minimal compared to what it is with regular computers.

Is it possible to use the RAVENNA ASIO Driver (PC) to monitor the general output of Windows (e.g. Spotify, YouTube etc) simultaneously with the Anubis?

Merging does not have a API (WDM-WASAPI) driver, but there are ways to achieve this today with 3rd party bridges such as VB-Cable for dedicated use More details here.
For multi-application and simultaneous usage this can be acheive using VoiceMeeter-Banana, but with small buffer sizes some latency can still be expected. Merging is not completly satisfied with this later solution and is working on a more reliable solution.

Is it possible to use the VAD (Mac) in order to monitor the general output of the Mac (e.g. iTunes, Spotify, YouTube etc) simultaneously, all monitored with Anubis?
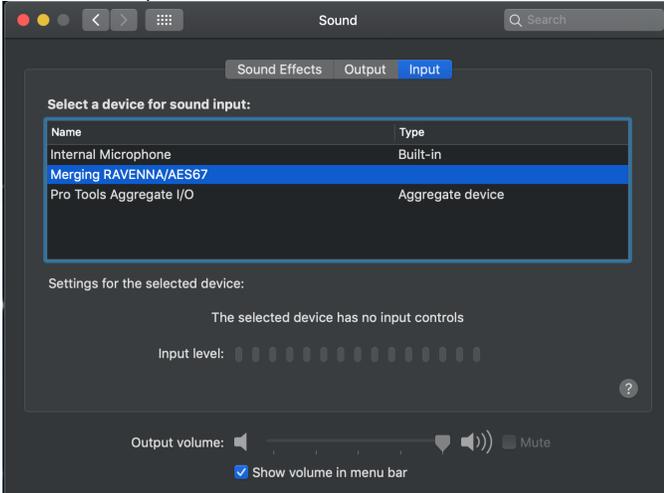
This is feasible by configuring the Mac Sound panel.

Configuring the Mac Sound panel.
1. Go to the Mac "System Preferences"
2. Open the "Sound" panel
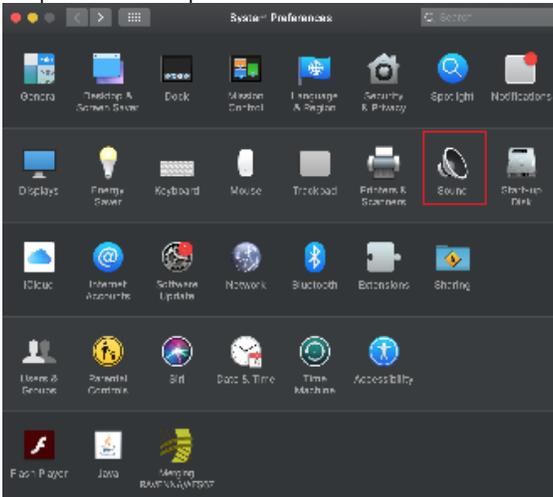
3. under the Output Tab, select the "MERGING RAVENNA/AES67" for sound outputs

4. If you simultaneously want to monitor the Mac Sound and the DAW, we recommend that you use two different sources, one for the DAW and one for the Player or Online sound (Music), in the example below we created a Music Stereo Source in Anubis (refer to source creation chapter)

5. Connect both sources in ANEMAN
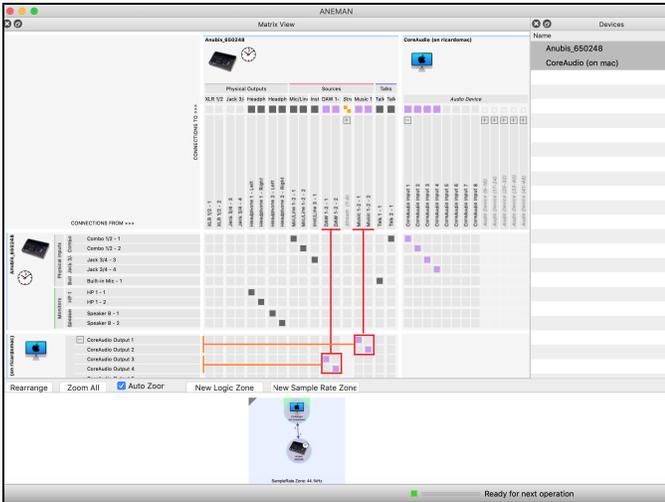
Is it possible to use the VAD (Mac) and monitor the built-in output of the Mac if Anubis is on stage or dedicated to a DAW.

This is feasible by using the Aggregate Device on Mac, as it lets you use the audio inputs and outputs from different devices at the same time than audio applications what would run on VAD.

Configuring an aggregate device

1. From the Finder, choose Go > Utilities. Open Audio MIDI Setup.
2. Then open the Mac "Audio Devices" panel
3. Open the + and select "Create Aggregate Device"

4. Select the Merging RAVENNA/AES67 VAD
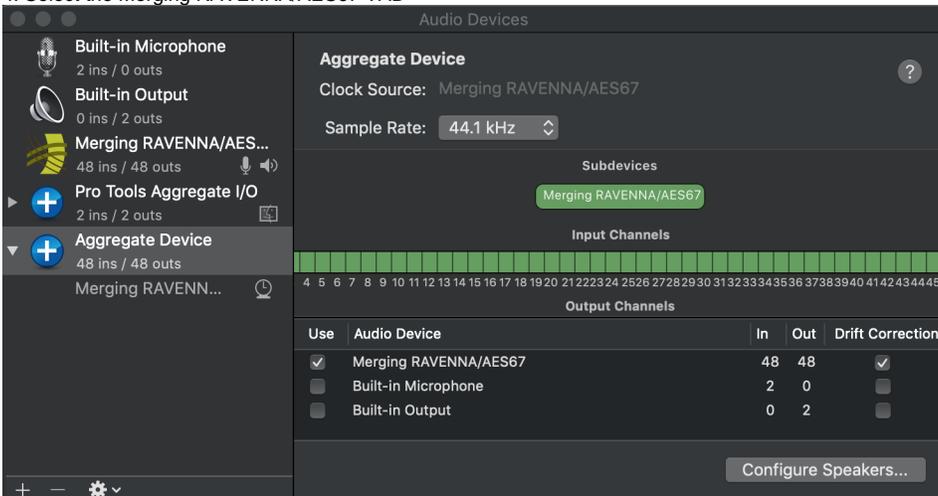
5. Make sure that this one is checked, along with the Drift Correction
6. To have this one configured so that your player (iTunes, Spotify) outputs to it. Control-click the Aggregate Device in the left column
7. Select "Use this device for sound output" or "Use this device for sound input."
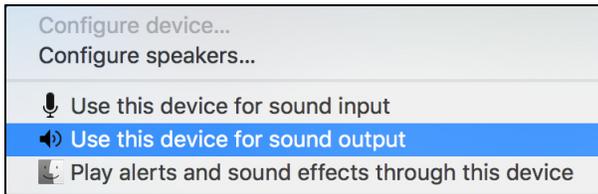
To use an Aggregate Device with Apple music creation software
Choose the Aggregate Device from the Output Device pop-up menu. Some applications will automatically set the Input Device to the match the selected output device, which you can change if you want to use a different input device. On other applications, you must manually select the input device.

Note: The Mac Aggregate device is limited to 96kHz.

If iTunes is playing music and I am playing guitar over it, can I access the different volume's (iTunes & Guitar) from the Anubis knob?

Anubis has a built in Mixer, it is possible to monitor the iTunes playback stream with Anubis and have your Guitar inputs as well and sum/mix those and trim those adequately today to have different levels. You can monitor that mix from the outputs of your choice (Headphones, Main XLR and even from Horus/Hapi outputs if over the same network) and each output can as well have a different Mix (use Cues and different Sources Section). Once again this can be done today with the Monitor Mission, but it will be more intuitive and complete with the Music Mission with a typical Mixer (Inputs, Faders, Pan...) workflow.

The Anubis Volume Knob can control the Volume of the selected output, meaning that a Monitor set can be assigned to one of the 4 Physical button or one of our 4 available Virtual Keys. So, you can now turn down the level/trim of the Tidal / iTunes Playback (AoIP Source) using the Anubis Knob and as well change the volume of your Guitar (input Source) using the same Knob or TFT, and mix those and monitor.

The Anubis ultra-low latency Mixer, how does it work for musician?

With the Monitor Mission this can be achieved by Sources that will be monitored within Anubis, you can also trim the sources accordingly. Those can then be Sum into a Monitor Cue set of your choice. Today, no Panning or effects can be applied. The Music Mission will bring you a more intuitive and complete workflow with a typical Mixer (Faders, Pan, Fundamental Effects...). A more suitable mixer for musician monitoring is planned in the Music Mission.

Are the Monitoring and Music Missions for two different Anubis?

The Monitor Mission (today's mission), the Anubis Music Mission (under development) refer to applications that can run on your Anubis interface, no matter if you have an Anubis Pro (up to 192kHz) or Premium (up to DXD, DSD64, DSD128 and DSD256). Those applications could for example be seen like your phone apps, so you could eventually imagine starting the Monitoring Mission and later on switching to the Music Mission, just with a tap of your finger on the Anubis built-in Touchscreen (TFT).
Today all Anubis include the Monitoring Mission by default, and the other missions are under work.

What is exactly the Music Mission and when will it be available?

The Music Mission will bring you a more intuitive and complete workflow for Music production with; recording, mixing and mastering features. It will include a typical Mixer/ Console view with ultra-low latency for the performer foldback with; Faders, Pan and fundamental Effects.
Merging plans on having Beta version at the start of the new year.

Is Anubis supported by RAVENNA Easy Connect?

No, Anubis has not been implemented in Easy Connect, users must rely on ANEMAN in order connect, monitor, and manage their Anubis AoIP I/O's.

What is the difference between Unicast and Multicast connections ? Which one should I choose ?

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
Multicast audio connections allows several nodes to "listen" to a single source, but the network configuration must be multicast capable (managed switches) and properly configured (otherwise there will be audio issues, or no audio at all).
Unicast network configuration is much simpler, and does not require advanced configuration.
But Unicast audio requires to create 1 source per destination, while Multicast allows to have 1 single source to be sent to several destinations, which changes the network bandwidth used.
If you have to connect 2 devices together (e.g. 1 Anubis and 1 CoreAudio Mac), you can use Unicast, whether the physical connection is direct or through a standard gigabit network switch (unmanaged).

If you have more than 2 devices to connect, but are not sharing any modules between the devices, you can also use Unicast. A typical setup would be a Hapi sending its AD Mic inputs into your DAW, and your DAW sending its ouputs into Anbuis for Monitoring purpose.

If you have more than 2 devices to connect, but need to share modules between the devices, you have no choice but to use Multicast. For example, if you want to send a Hapi AD Mic inputs into your DAW and also in a backup recorder, or if you want to monitor a Hapi AD Mic inputs in Anubis and record those in your DAW.

In a networked system with a combination of Horus or Hapi and Anubis, what is the best candidate to be selected as the PTP Grand Master?

Unless the Horus or Hapi are slaved to an external incoming digital source such as MADI, AES-EBU, Wordclock or Video House-Sync, where for obvious reasons they will in turn have to become master of the local Audio Network, the Anubis will by default be selected by the Grand Master selection mechanism as it advertises himself as an even more long-term stable reference comparatively to the Horus or Hapi.

The Anubis is effectively designed with an ultra-low phase noise oscillator whose characteristics are almost those of a high-grade OCXO with -164 dBc/Hz at 1 kHz and -170 dBc/Hz at 100 kHz.

See below typical graph.
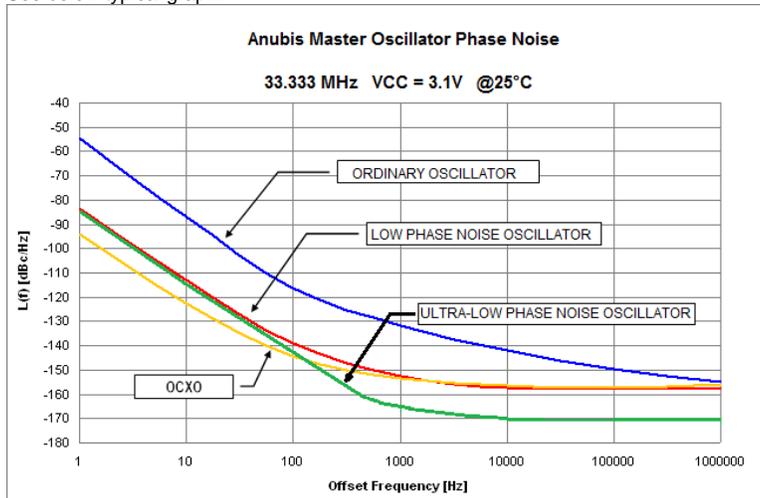
Is Anubis supporting IGMPv3

Anubis is supporting IGMPv3 including SSM. The Horus and Hapi are also supporting IGMPv3 + SSM as of Firmware v3.9.4>. The SSM option must first be enabled in the Advanced RAVENNA pages.

Note: Make sure that your network switch is also configured for IGMPv3

Does Anubis support Ambisonics speaker array for immersive audio?

Anubis is planned to be able to decode Ambisonic sources (from 1st to 7th order) to a given set of standard speaker sets.

Hum noise in your Monitors or Headphones.

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.

Anubis Applicative Troubleshooting

Follow the Anubis Troubleshooting section for more information on: configuration, drivers and Anubis operations.
https://confluence.merging.com/display/PUBLICDOC/Troubleshooting+Anubis