Sound at Home - Patatorz & Friends - French Review :

Metrum Acoustics AMBRE : A network player that connects in more ways than one.

Following our first introductory article on the Metrum Acoustics Ambre, today we look deeper into this device.

Metrum Acoustics is a manufacturer recognized for its R2R-based DACs. They have however a larger range of products including a Power Amplifier called FORTE and a DAC Headphone Amp, the AMETHYST.

Metrum Acoustics offers a modular hardware approach to their products, leaving open the field to evolution. As an example, we can mention the availability of modules providing the MQA functionality for their DACs and also i2s input modules (on RJ45) instead of USB. As such Metrum Acoustics offers to support customers re connectivity of the i2S - which is far from standardized. For information, you will find on this link, a document that consolidates the different variants and wiring for i2S.

https://docs.google.com/spreadsheets/d/1h5PMUBkldkpt1rCnAR4ZHYGZNeCe-vwIFyKWYMZWsX0/edit#gid=853411704

AMBRE is available in black or silver façade and completes the range by offering online music files. This product consists of a substantial power supply that seems to be the same as used in the DAC/Amethyst Headphone Amplifier.

A main board managing input/output (AES/SPDIF/TOSLINK/i2S) and also the interface with the heart of the network drive – which is :-

Raspberry Pi 3 B +. This Raspberry is connected to the main board. The power supply for the Pi as well as the management of the inputs/outputs on the main board are provided only through this connection (no power to the Pi by a micro-USB connector of 5V for example).

There is an ethernet link between the Pi and the main board. This link is all about “Optical decoupling” between the Pi and the main board. The link being provided by a simple Ethernet cable. The Ethernet link is galvanically isolated and does not directly use the Pi Ethernet input.

The main board houses the TOSLINK, AES and i2S connectors. The SPDIF connector on RCA is remote, I guess for lack of space on the PCB vs product size. This has at least the advantage of being able to replace the RCA with a BNC for those interested.

The fascia carries 3 LED indicators : one for the LAN connection, a second showing the playback of an Audio file and the third blue colour - which I will return to later - representing the product startup status.

There is no particular decoupling at the level of the feet which proves to be a fairly standard product in “rubber”.

The “smart” heart of this product is therefore a 3rd generation Raspberry Pi in its latest version (B +). This approach already implemented by many manufacturers (we can mention Allo who just released the signature version of its best-seller - the DigiOne) brings modularity and scalability both in hardware and software. Metrum Acoustics was therefore initially dedicated to making its network drive compatible and Roon certified. They started from a low-consumption distribution base (loaded in RAM) and implemented Roon : RoPieee. You will find below a brief description of this distribution.

For the tech savvy : it’s Archlinux based, runs a custom 4.9.x kernel with the latest DSD patches, runs completely in RAM, uses the F2FS file system for preserving the flash card as much as possible, supports native DSD for a reasonable set of DAC’s and updates itself automatically. For that I’ve (for now at least) implemented a crude mechanism where the RPi reboots once every 24 hours and after that checks for updates. So basically, it follows Archlinux rolling release model and on top of that Ropieee’s software and the custom kernel.

At present, Metrum Acoustics has certified its device at Roon on the basis of this distribution. In this sense, when RoPiee has finished loading, the blue front LED stops blinking, which is not the case if you want to use other distributions. One point Metrum Acoustics is still working on as ‘they are looking to open up more of their product to the community’.

You can access the settings of the distribution and the device by pointing to the IP address of Amber in a browser. Access to SSH for the most "sharp" is always possible using the Username/Password common (root/root).

This distribution can reboot at regular intervals in order to validate the presence of updates in "stable" or "beta" version, to be configured via the "advanced" tab.

The heart of Ambre being a Raspberry Pi with a part "sound card" identified as "Hifiberry Digi + Pro", it is quite possible to install other distributions. Note that Metrum Acoustics is quite open to users continuing their experience in this direction, by allowing the opening of the Ambre to be able to make changes to SD cards. So I started implementing Dietpi and PCP by customizing my need for Dietpi (GMediaRender, Squeezelite, Shairport, BubbleUPnP Server). This customization makes it possible, among other things, to access Qobuz's streaming via OpenHome or LMS). I used the configuration tools of dietpi to cut the wifi I do not use (not tested through the boiboite steel), turn off the Bluetooth and reduce the consumption of USB ports (no need).

Everything works perfectly except the blue LED on the front keeps blinking. While waiting for Metrum Acoustics to take this into account, the masking tape method is certainly the best (if it annoys).

Metrum Acoustics uses two clocks from Tentlabs (VCXO ?) In 44.1 and 48kHz of course, handling the multiples of these frequencies (see photo below).

As far as the tests are concerned, we have confined ourselves to trying the AES and SPDIF outputs as we do not have a compatible i2S DAC at hand. Regardless, these two outputs should be the most commonly used by customers of this product. In terms of distribution, the returns below are based on RoPiee, thus the base distribution for Metrum Acoustics. I will add my feelings about the other distributions (if there are any) in the days to come.

I picked some usual recording play lists :

Birdy - Live in London: Skinny Love

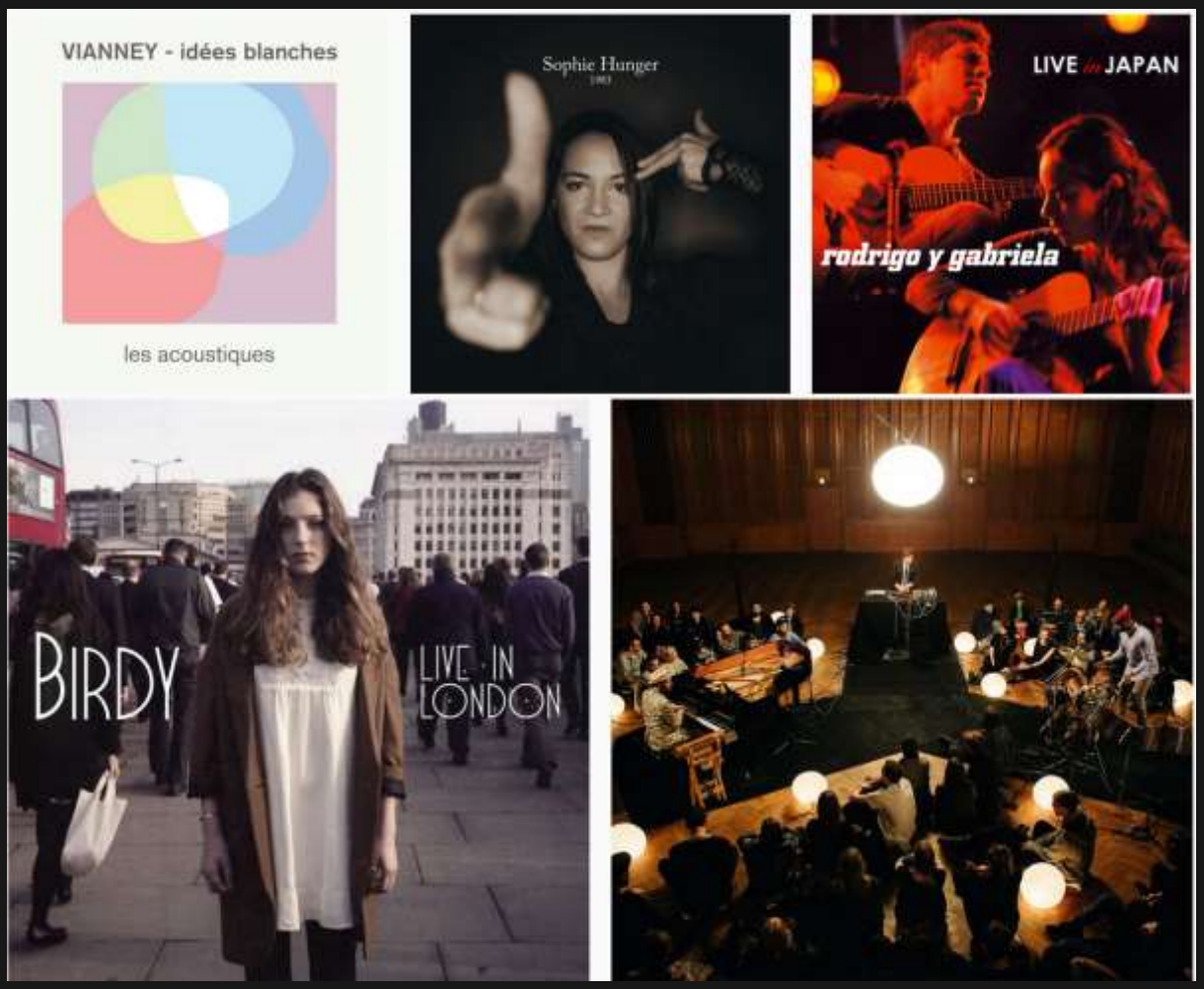
Rodrigo y Gabriela - Live in Japan : Stairway to Heaven & Tamacun
Vianney - The Acoustics: Man Down

Avishai Cohen (Double Bass) - Live Blue Rating : Remembering

Aron Ottignon - Live @ Funkhaus Berlin : Waterfalls

Sophie Hunger – 1983 : The wind will bring us

Hadouk Trio - Live @ FIP : Loukoumotive



What strikes as soon as the product is powered up, is its ability to manage the pace of songs and also the difference in recordings. However, I was raised very early on with "Bridges" & Streamers excelling in this field (BelCanto RefStream, dCS Network Bridge) and clearly the Ambre has this legacy. It is important to be able to compare this product with a Pi-based equivalent. On the rhythm front it's still good (considering the price difference), Ambre brings much more to the party than a DigiOne Player (with stock supply Allo or linear power supply 5V).

Switching on the DigiOne Player via SPDIF is a real challenge : the reading of "Tamacun" Rodrigo y Gabriella or their cover of "Stairway to Heaven" appears to be located between the Speakers with the game of two guitars much more difficult to follow. No problems with timbres or dynamics (Aron Ottignon at the Funkhaus or "Man Down" by Vianney) - just the separation of instruments that is so obvious with Ambre.

This aspect is all the more striking on the live Birdy and the title "Skinny Love" : the sound allows you to transcribe in a realistic way - the sound stage and the interaction with the public. The DigiOne, but we could also mention the Auralic Aries G2, cannot reproduce these different aspects. Not that reproduction is unacceptable with these two products but we necessarily expect better. The rendition of the cymbal display in the background of the "Wind will carry us" (recovery of Sophia Hunger), is much less immersive and jubilant on these last two devices (Allo DigiOne and Auralic Ariès G2) - despite some artifices of the G2 - including all the filter levels.

Whatever the songs, this separation appears obvious and can raise the overall performance of Ambre to a level close to the dCS Network Bridge. Is Amber better than the latter ? The answer is not particularly on dense music in terms of instruments and complexity in terms of sound stage. The dCS gets a small head start, which increases when you add a clock like dCS Rossini.

Regarding the different inputs, I must say that I perceived a slight difference between the AES and SPDIF including the rising of voicing that tends to be slightly aggressive in configuration with AES (Coincident cable and Synergistic Research CTS). This aggression was reduced by switching to SPDIF (Coincident and Mad Scientist). Is it linked to the outputs of Ambre or the inputs of my DAC ... only additional tests will say (in progress). It was necessary to mention but this point is in no way unacceptable to me regarding the choice of this product.

Keep in mind that prices between Ambre and a Network Bridge vary from one to three times the cost and achieving this level of performance at this price level can be considered a great feat. While it is not a "Swiss army knife" such as the Auralic Aries G2, I add to this story that Metrum Acoustics are always open and willing to evolve this product from a software and hardware point of view. Metrum listens to its customers and in particular their desire to remain flexible with the features. For those who wish to go further (forgetting the warranty), this product is a nice base for optimization (see below).

In conclusion, I would not have today a dCS Network Bridge at home, I think that the choice would be difficult between the dCS and Ambre. In my configuration, this product meets 90% of my criteria (it lacks a USB output) and from a sound reproduction point of view it must be able here again to meet most of my expectations. In this sense it is likely to stay at home in a second system oriented around listening to Headphones during my insomnia attacks.

Regarding the future, I will spend more time listening to different distributions on this device (PCP, Dietpi ...), shaping these distributions according to my needs (streaming Radio, Qobuz, UPnP, LMS, Roon , etc) and my limited skills with Linux.

Reference System : (nice to see our own Mad Scientist cables in use)

Amplifier : Ypsilon PHAETHON with 5187 NOS tubes

Speakers : Leedh E2 Glass

DAC : Metronome C8

Associated Sources :

dCS Network Bridge
dcS Rossini clock

AES Cables : Coincident and Synergistic Research CTS
SPDIF Cables : Coincident and Mad Scientist