



Grimm Audio MU1

Tuesday, May 12, 2020
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Grimm Audio is a Dutch company with studio connections that entered the hi-fi market with the LS1, a DSP active loudspeaker system with bass and mid/treble sections separated by a stand. The MU1 is Grimm's first entry into the streaming market and it's equally if not more distinctive than the LS1. In essence it's a digital platform with built in Roon core that gives it the broad streaming capabilities provided by that company's enviable tech, it is also a digital hub that can stream from internal, USB or NAS storage and accept signals from all manner of digital sources including CD transports and TVs. But it's not a DAC because the MU1 only produces a digital output, and this solely via AES/EBU (on XLR, Grimm can supply a conversion cable for RCA coax inputs) unless you are an LS1 owner for which there is a dedicated RJ45 output. Otherwise it is designed to connect to any DAC and transform its performance.

What really makes the MU1 different isn't so much that it's a hub with a Roon core although that's pretty cool, what really counts is what it does with the digital signals it receives and how it connects with the DAC. The reason that Grimm use AES/EBU over XLR is that this connection allows the clock signal to be sent alongside the data (to the DAC), and the electronics inside the MU1 are designed to provide an extremely low jitter signal based on the clock rate of the source, be that Roon or anything else. It slaves to the incoming clock rate, reduces the jitter and sends the same clock signal to the DAC.

That's not all, company co-founder Eelco Grimm explains that all DACs since the first 14-bit Philips CD player back in 1982, upsample internally. The DAC of that first Philips ran at 176.4kHz, but soon much higher internal rates became fashionable. Upsampling is then usually done in cascaded stages, of which the first step is the most demanding. So in order to make the connected DAC's life easier the MU1 does this upsampling onboard, this can be switched off but Grimm is of the opinion that the benefits it brings to any DAC mean that it effectively upgrades that component in the process. Controversially the MU1 also converts incoming DSD and DXD files to these PCM sample rates as well, primarily because AES/EBU cannot cope with anything higher than DSD64 and then only via DoP (DSD over PCM). Grimm argues that the high precision processing power provided by the FPGA inside the MU1 means you hardly lose sound quality from these formats despite the need to convert them, but with AES/EBU you do get advantage of the low jitter clock. USB is the only connection system that transmits higher sample rate DSD or DXD but you can't send a clock signal by the same means. It's notable that

companies like dCS use two AES/EBU connections to send higher sample rate DSD, but that limits them to DACs that have the requisite inputs which in effect means dCS DACs only.

Roon is a fabulous control system and one which allows volume control with a product like the MU1 (in its FPGA) but it's not inexpensive and Grimm plan to create their own control software in the future. They also have a notion to build a DAC into the MU1 which will make it even more interesting, but as things stand this is the most exciting streamer I have heard for a long time.



You can't miss the big gold mushroom on top of the the MU1, this is actually a controller that can be used to select inputs and change volume and it looks great in the curved dimple that is the top of the box. Unfortunately it isn't that easy to use when the machine is rack mounted as it requires downward presses of short or long duration to access functions, which makes selecting inputs a little tricky to begin with. But the most confounding thing for newcomers is finding an on/off switch, this turns out to be a small white button near the power inlet, making it the most obscure example of its breed I've encountered for some time. In fairness the MU1 uses almost the same amount of power in standby as it does when turned off so it's not really necessary to cut the power very often. What this machine needs is a remote handset for these functions or that they be included in the forthcoming control app, apparently this is at the





top of Grimm's list for future improvements. That is about all I can criticise about the MU1, when it comes to sound quality I very happy indeed.

Sound quality

The MU1 has the option of storing music onboard using an SSD drive of up to 4TB, it needs to be factory fitted but Grimm does this at very near to cost, so it's a very appealing option. I used both the onboard drive as well as an Innuos Zenith SE alongside cloud streamed music from Qobuz for most of the listening, an iFi Pro iDSD DAC did the converting. Initially I used the only AES/EBU cable I could find which is an ancient, unbranded and frankly rather sad looking thing but it didn't stop the Grimm/iFi combination from producing some spectacular sounds. Later I switched to a Tellurium Q Waveform II which clearly helped. Essentially the MU1 produces a richness and depth of sound that is very rare and if you switch off the upsampling you get spot on timing and coherence as well. Grimm put a lot of emphasis on the benefits of the upsampling so I was surprised to prefer it off but this may be because I run the iFi in its 'Bit Perfect' non-oversampling mode. The difference that the upsampling makes varies with material but turning it off seems to be generally beneficial, bringing focus and coherence up to a level that I have never encountered with this DAC before. It would be fascinating to try the MU1 with a more capable DAC or something as thrilling as the Kii Three digital active speakers, but equally it's remarkable what it achieves with this relatively modest but clearly very capable converter.

This is one of those rare products that gets better as the density of the music increases, Frank Zappa's *Roxy by Proxy* live album has some of his less than teenage easy listening numbers on it, tracks that even enthusiasts struggle with but the MU1 opens them up and lets you hear everything that's going on, right down to the quietest details. And it does so with a degree of musical coherence that is out of the park. When you have a lot of musicians contributing different elements in a complex composition it doesn't work unless everything is happening at precisely the right time, without any blurring of attack and decay or distortion being added. This is what you get with the Grimm and it's addictive; I'm not sure how I'm going to adapt to real world digital sources when it's gone.

Another example of this is the Grateful Dead's 'Cumberland Blues' (*Europe '72*) which can often be raucous on digital sources because it's dense and seems crudely recorded. Here it has an analogue warmth and a presence that is reminiscent of good vinyl replay, and it boogies with a vengeance that is particularly inspiring. On the simpler and more 'phile recording that is Fiona Boyes' 'Professin' the Blues the image is cavernous and dark with an extremely strong sense of presence. On Olivia Trummer's 'Sharing My Heart' the voice is also very strong in the room and there's oodles of detail to enjoy, layers of the stuff that reveals the decay on the piano notes and precise yet totally grainless leading edges. Another piano, Keith Jarrett's on *Testament* is particularly alive and vivid, this live ECM recording is stunning but I never knew how much atmosphere was on it till now. It engages the senses like a great vinyl pressing and that doesn't often happen with digital in my listening room.

I also tried a digital input by connecting the coax output of a Rega Saturn-R CD player to the DAC direct and then putting it through the Grimm. This was a real eye opener because the soundstage opened up to reveal what was going on to such an extent it was hard to believe that this was the same CD player. With another disc, Terry Callier's *Timepiece*, it really brought out the vocal and revealed texture in the heavy bass, making the direct to DAC version sound



flat by comparison. I didn't try it with the TV but imagine it would be very useful there as well. I could have carried on listening to the Grimm MU1 for a lot longer than I had the opportunity, it has qualities that very few digital sources do and only one real shortcoming; the price. What the post lockdown world will need is great sound quality at more affordable prices, so how about an MU1 lite in a standard case without Roon for half the price? However, I have not heard a better streamer than this so the price while high is warranted by the sound quality produced. Build quality is also very high even if the box is relatively light, there are no transformers onboard to add mass so it must have a switched mode PSU (clearly such things do work when done properly). In summary the Grimm MU1 is a major contribution to road safety, no music lover who hears it will be able to leave the sweet spot unless it's for a genuinely essential journey.

