

# High End 2018

## Higher-End Audio Electronics in Munich



Yes, the High End in Munich, Germany, is my favorite show for everything high end audio. There, we indeed find everything. As all the manufacturers are there and all the trends are on display, we always find ourselves facing the question: Where to start? That is great fun, as well as a challenge. The following is a report of our main findings for the year.

By  
**Ward Maas**  
 (The Netherlands)

For the 2018 High End Show, the weather outside was warm and summer-like, and the mood inside the show was also more relaxed. In previous years, I used the tactic of walking around the Munich Order Center (MOC) on the first day to try to get a feel for the layout and discuss with colleagues what was really interesting. The next two days I would spend following up on all the leads. I would use the last day to check if I missed something important.

However, this year was different. It seemed everyone had something really special to showcase. Or better, everyone had multiple new products and was introducing multiple fascinating technologies. So, the 2018 show turned into a four-day marathon that concluded with an extreme thunderstorm, which washed away the sweat of a once again very exciting High End.

Although there was officially a slight decline in visitor numbers compared to the previous year, it was not noticeable on the first (dealer and press)



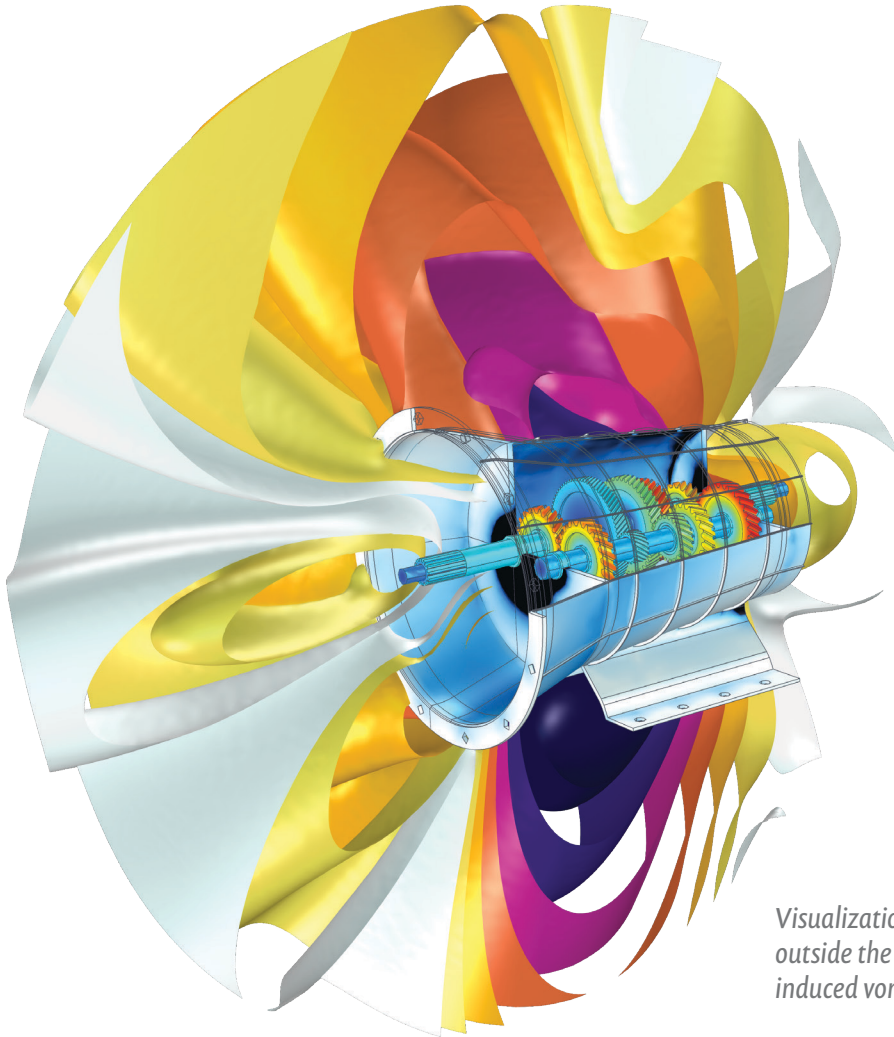
day. After that first day, you could maneuver better and we could actually discuss products in-depth. It seems that German consumer visitors had to choose between spending those summer-like days with family and visiting the High End. This certainly prompted many potential visitors from the region to stay away from visiting the show.

### Better Loudspeakers

High-quality loudspeakers were certainly a hallmark for the show this year, and in this article, we will only focus on the new products.

PMC Audio (<https://pmc-speakers.com>) introduced the “fact fenestria” (fact being a completely new consumer series from the British company, renowned in the professional studio monitor world). It is a large loudspeaker completely designed from scratch. The fenestria design took five years of development. Special are the Laminair ports placed on the end of twin Advanced Transmission

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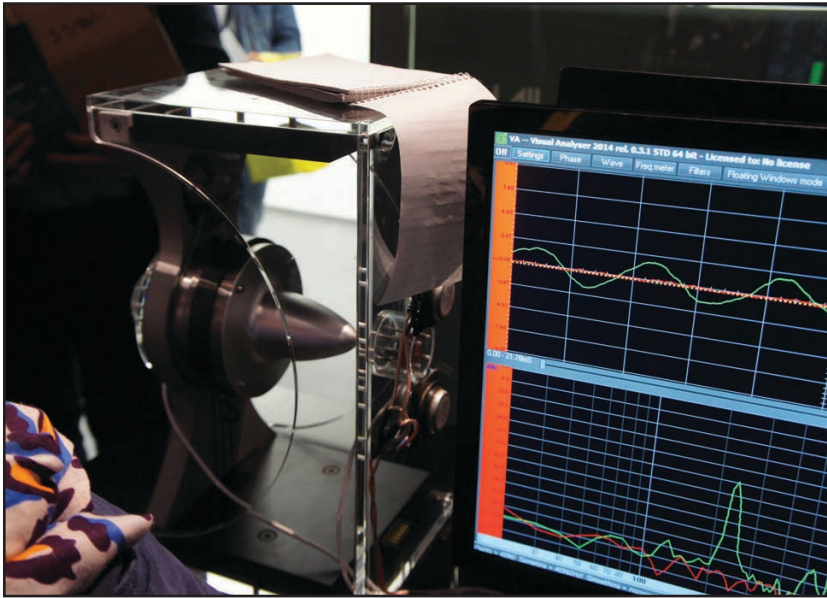


*Visualization of the noise pressure level outside the gearbox and vibration-induced von Mises stress in its housing.*

The most effective approach for reducing the noise radiation from a gearbox is to perform a vibroacoustic analysis to learn how the design can be improved. Noise, vibration, and harshness (NVH) testing is an important part of the design process, and it can be simulated with multiphysics software.

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To highlight the vibration-free qualities of the fact fenestria three-way speakers (seen here in detailed illustrations), PMC had a laser vibrometer in the demo of this completely new high-end speaker series.



Now even more powerful, the Kii THREE gained a powerful bass extension upgrade.

Lines (ATL) as the brand calls its proprietary bass-loading technology. These Laminair ports are, just as with F1 cars, intended to make turbulence free airflow possible. The four bass drivers would normally cause interference with the mid- and high-frequency loudspeakers. Therefore, the complete mid/high section, named “the nest,” has been acoustically isolated from the remaining structure. The four bass drivers can produce so much acoustic energy that PMC designed a pendulum system, similar to those used for earthquake protection on skyscrapers, to completely eliminate unwanted vibrations. During the demos, the “fact fenestria” showed a powerful and controlled impulse behavior.

Kii Audio ([www.kiiaudio.com](http://www.kiiaudio.com)) had a display at the High End and another display at the Hifi Deluxe showcase, in the nearby Marriott Hotel. The Kii THREE already has a solid reputation as an extreme transparent system with a precise bass reproduction. The introduction of the BXT modules with eight bass loudspeakers per side made clear that there is still something to gain. The demos once again showed the absolute ease with which these loudspeakers can reproduce high-quality music.

California-founded and China-based ESD Acoustics ([www.esdacoustics.com](http://www.esdacoustics.com)) was remarkably active, especially for a company exhibiting at the High End for the first time. Not only did ESD Acoustics introduce the massive Dragon five-way active system with Carbon Fiber Horns, it also did not shy away from the use of Field Coil Loudspeakers (no permanent magnets but electromagnetic ones with a power supply). Furthermore, during a lecture, they introduced a new loudspeaker cone material, new amplifiers, and a new DAC. The amplifier and DAC cabinets looked like perfectly lacquered Chinese boxes. All of that was on display in a rather cramped demo room, making photography useless. All in all, their incredible enthusiasm was only dampened by a lack of European experience. It would not surprise me if this is an indication that more original Chinese contributions to high-end audio can be expected.

And talking about creating an impression, saying the presence of Ascendo Immersive Audio ([www.aia-cinema.com](http://www.aia-cinema.com)) was remarkable is an understatement. How often do you encounter a 50” driver at a show? Albeit only a display, the giant woofer was a crowd-grabber (and selfie inducer...) and an effective way to convince visitors to enter and spend time in their large demo room. The German company decided not to set up a fully working installation, as it did last year (creating complaints from

neighboring demo rooms), and instead opted to show some of their cinema-oriented loudspeakers in refrained “hi-fi mode.” Still, looking around their demo room, one could see that bass and infra bass is still their thing. Their amplifier products, which are not that impressive aesthetically, are fully Audio Video Bridging/Time Sensitive Networking (AVB/TSN) networkable and all the systems are DSP controlled. As immersive is, at this moment, the buzzword in the pro audio world, it is not difficult to understand why Ascendo wants to be recognized as a reference in immersive theatre systems. Wow!

Lyravox (<https://lyravox.com>) is, of course, known for its all-in-one ultra-luxurious soundbars. In Munich, however, the emphasis was on the “normal” Karl, Karlotta, Karlina, and Karlos loudspeakers, with a highly innovative technological approach. Ceramic drivers combined with Pascal bulletproof amplifiers capable of playing a world of digital audio formats. In short, examples of 21<sup>st</sup> century loudspeaker design. Interesting and impressive. The Karlina and Karlos are the faces of the new “affordable” products.

### Amplifiers and Electronics

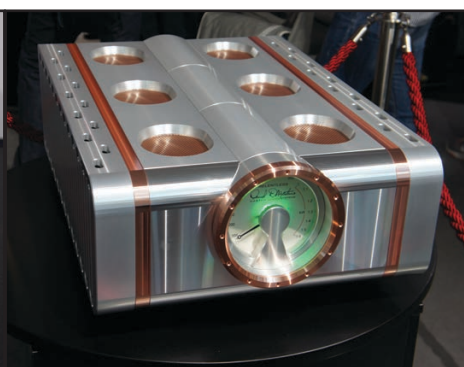
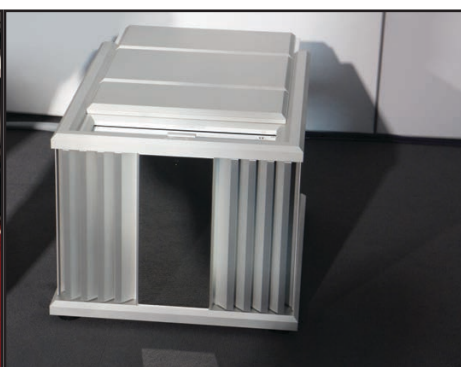
No High End is complete without the monster amplifiers. Block Audio ([www.blockaudio.com](http://www.blockaudio.com)) showed a very nicely styled dark red amplifier named Mono Block... An amplifier with no less than 200 W in Class A. It is not for energy saving audio enthusiasts as the idle power is 500 W. If that heats you up, there is an eco-mode of 50 W. Further specifications are very nice as well. Specifications for the new Burmester 159 ([www.burmester.de](http://www.burmester.de)) are so far unknown. However, it is the predecessor of the famous 909 MK5, the first real new Burmester amplifier in a long, long time. A weight is mentioned of 175 kg... for a mono amplifier! Although the new D’Agostino Relentless (<http://dandagostino.com>) is topping that with a weight of 220 kg. However, it brings you a staggering 6000 W at 2 Ω.



While many were attracted by the giant woofer on the back, Ascendo had its Live 15 loudspeaker front and center in the room, a complete hi-fi statement from a home theater specialist.



The Lyravox room and the company’s new extended range of luxury loudspeakers are on display.



The Block Audio Mono Block, the Burmester 159, and the real monster—the Dan D’Agostino Audio Systems Relentless Monoblock.

The Mola-Mola Tambaqui DAC



Looking at the more down-to-earth technologies, Hypex ([www.hypex.nl](http://www.hypex.nl)) showed the complete Fusion plate Amp series for the very first time to a larger audience. There are no less than eight different models ranging from the FA 251 of 250 W in 4 Ω unit to the FA503 with two 500 W units and one 100 W unit. They are, of course, equipped with all the features one would expect from a plate amp.

Also, on display at the Hypex stand were the Mola Mola products ([www.mola-mola.nl](http://www.mola-mola.nl)). Very interesting was the introduction of the Mola Mola Tambaqui DAC. Basically, it is the same DAC that was used as an option available for the MAKUA preamplifier. It features a PWM DAC output stage with 32-stage discrete analog FIR, asynchronous upsampling to 3.125 MHz/32 bit, seventh-order noise shaper clearing 80 kHz band, and all types of inputs, including AES/EBU, USB, Ethernet (Roon, DLNA), Bluetooth (A2DP, aptX), and I<sup>2</sup>S over HDMI. Outputs are balanced and supported formats include PCM up to 384 kHz/32 bits, DoP up to double speed and Native DSD up to quad speed.

Astell & Kern ([www.astellnkern.com](http://www.astellnkern.com)) is an example of a typical Asian manufacturer, with a very large product range in Portable Audio, Home Audio, and accessories—all very high quality—and

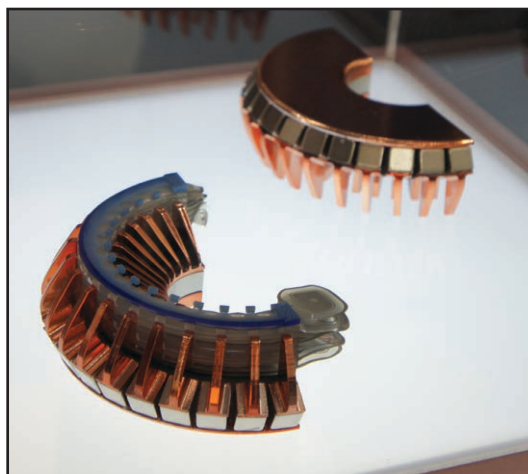
expanding every year. So much so, it's hard to keep track. In Munich, their large product collection was on display and could be heard as well. New and of notice was the A&futura SE100, equipped with SABRE ES9038Pro DAC, which can handle 32 bit/384 kHz PCM audio and Quad DSD. With an Octa-core CPU, 5" touch screen, 128 GB internal storage, support for fast charging and a battery life of 10 hours, this is a true high-end portable system. Also new, was the "standard" class A&norma SR15, which uses a Cirrus Logic CS43198 and a Quad-core CPU. The A&norma SR15 can handle 24 bit/192 kHz PCM audio and single-rated DSD.

LINDEMANN ([www.lindemann-audio.de/25-jahre-lindemann](http://www.lindemann-audio.de/25-jahre-lindemann)) did not let its 25<sup>th</sup> anniversary go by unnoticed. With the slogan "The best of 25 years," LINDEMANN drew attention to its Limetree series of products. These small products fit the trend of putting limited essential wished-for functionality in a smaller cabinet instead of providing the bulkier "do it all" products. In the Limetree series, there is a Phono preamp, a headphone amplifier, a USB-DAC, a network player, and a network bridge available. Everything at affordable prices.

An example of a company that has been attending the High End show for years is The Bespoke Audio Co. ([www.thebespokeaudiocompany.com](http://www.thebespokeaudiocompany.com)). Really a very understated booth, it is easy to pass it unnoticed. What you might notice, however, is the transformer winding machine. It is not just there as a prop, but it is actually used. They use it to produce the heart of a rather exceptional preamp. A preamp with a transformer volume control. The lady operating the machine explains what she does, why she does it, and why that creates an absolutely top class product. Yes, you can have an in-depth coil winding discussion with her during the show. Brilliant!

And speaking of electronics, as the saying goes, "when there is a knot in the garden hose, little water will emerge out of it." The German company EFUSE ([www.efuse.de](http://www.efuse.de)) realized that the same applies for a super mains cable where the apparatus electric fuse (a very thin melting wire) forms the knot. Trying to solve that problem, EFUSE offers a resettable electronic fuse, which nicely cuts the power above a certain current, while assuring that below that current it doesn't behave as a "knot" for electric current.

Also, despite the fact that CE regulations can be tough for small companies, Dutch company Sbooster ([www.sbooster.com](http://www.sbooster.com)) showed that it does not shy away from such inconveniences by constantly improving its production and its products. A very interesting option is the replacement of the switch-mode power supply of Lumin products by



Arya Audio Labs took the original Christensen Audio transducer concept and decided to make it commercially available as the AirBlade. The shape of things to come.



Something worth looking at: the Reed 5T “tangentially tracking pivoted tonearm.”

an Sbooster connection kit. An upgrade that can be done in 15 minutes.

### Promising Newcomers

Under the Newcomers’ banner, which is a specific showcase promoted by the High End Society, start-up companies can present themselves under friendly conditions. This year, there was one company that clearly stood out from the rest. Arya Audio Labs ([www.arya-audio.com](http://www.arya-audio.com)) from the UK, resumed the work originally patented by Christensen Audio, and presented the Airblade transducer. A tweeter constructed with two half rings of magnets on top of each other enclosing a diaphragm stack of foil. By nature of the construction, the dispersion can more or less be determined. Arya did build prototypes with 90°, 180°, and even 360° dispersion. We will definitely hear more from them!

Not exactly a start-up, MSB Technology ([www.msbtechnology.com](http://www.msbtechnology.com)), also made a strong statement in Munich—the Reference DAC, the Reference Transport, and the M204 Monoblock Amplifiers, to mention the best of the best. The future-proof modular hardware approach, the perfect finish. It is also clear that if you have to ask the price... you are probably not in the company’s potential customers group.

### Turntables and Tubes

Walking around a show like this you will be bombarded with all kinds of visual stimuli.

It happens all the time as you quickly pass the umpteenth product of which you have seen variants all day long. In this case, I passed the REED booth ([www.reed.it](http://www.reed.it)) and thought I saw a tone arm making a rather unusual movement. Indeed, I was right. The REED 5T is, as they say, a “tangentially tracking pivoted tone arm.” With a 1-second groove test disc (where the arm moves in 1 second from outside to inside and back again) this looks weird. However, it is well-thought-out and looks promising. Good that I paused there!

Another turntable worth mentioning is the Technics SL-1200G ([www.technics.com](http://www.technics.com)). Last in a line of the famous 1200 series. Looking under the hood, you can see the amount of time and technology that went into it to make it a top product. A direct drive motor, motor control, plateau, a tone arm, housing, and isolation. I have to admit that you have to stand close to it because it doesn’t look that spectacular. Good to see this icon back. It is a special turntable.

The story goes that Pro-Ject CEO Heinz Lichtenegger once stopped at a gas station and went into the accompanying shop to discover—to his horror—a plastic turntable with a built-in loudspeaker. That was the moment he decided to go into the turntable business to provide decent products at decent prices. His mission was to provide quality musical experiences. Not only for the High End market (which he serves very well) but also for people taking their first



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### About the Author

Ward Maas is the owner of Pilgham Audio. He studied electronics, marketing, and amplifier design. During his career in consumer electronics, Ward worked in areas ranging from CD standardization to radio and television to personal GPS navigation. Ward has worked on an extreme low-noise magnetic cartridge preamplifier and several special amplifier products. As the CTO of “Witchworld,” a theme park near Amsterdam, he also works with animatronics. He lives in Almere, Netherlands, with his wife and son.



It was a pleasure to meet a reenergized Western Electric at the show and see the return of the 300B vacuum tube. Pictured are the *audioXpress* expert team—Norman Weber, Ward Maas, and Gerhard Haas (Haas and Weber have worked on many tube projects, including the original Sennheiser Orpheus project), together with Charles Whitener, president of Western Electric.

steps into the world of LP analog music.

Nowadays, Pro-Ject (<http://project-audio.com>) is the world largest turntable manufacturer. During the High End 2018 show, Pro-Ject showed the “Jukebox S2” products. A step in a new direction for audiophile turntables, which come completely factory adjusted with built-in amplifier and Bluetooth connectivity. Plug and play.... Now, we won’t find these products sold in a gas station, but for those who want to step in the vinyl world, this is a decent product that won’t disappoint.

For tube aficionados, the Western Electric brand ([www.westernelectric.com](http://www.westernelectric.com)) is legendary. The 300B is definitively a highly praised cult tube. It was

good news to hear that Charles Whitener is keeping the company alive. Particularly good to hear about the company’s expansion plans, with a new and re-imagined electron tube works facility in Rossville, GA, where a new production run of the 300B will be done. According to Whitener, some of the production equipment from an old Philips picture tube factory will be reused. Very interesting also is the fact that there are plans in an advanced stage to start the production of a tube, which was under development when the original Western Electric company closed. This tube seems to be a 300B on steroids capable of driving amplifiers with much more power. More exciting news is expected this year.

Meanwhile in Europe, Thomas Mayer, known from *Vinylsavor* (<http://vinylsavor.blogspot.com/2017/08/deutsche-elektronenrohren-manufaktur.html>), is working hard to develop the product program for the Deutsche Elektronenröhren Manufaktur GmbH, which took over the ELROG tube factory in August 2016. This company had its roots in the well-known Telefunken tube activities. We hope to discuss a little more about the activities of this factory in the near future.

Finally, I need to mention Kostas Metaxas, a designer with a reputation for unusual audio designs. Unusual, even strange, but of high quality. *audioXpress* readers will be familiar with the design of one of his first preamps. What Metaxas & Sins presented in Munich was unusual, to say the least. A design that is fascinating, attractive or perhaps a little scary. The photos speak for themselves. Nowadays, Metaxas & Sins headquarters are in Amsterdam. Visit [www.metaxas.com](http://www.metaxas.com) for more stunning images and information regarding these unique audio products. You can learn more about the “conventional” products on the legacy pages ([www.metaxas.com/pages/masnewfiles](http://www.metaxas.com/pages/masnewfiles)).

## CANJAM-Europe

Very close to the MOC building, where the Munich High End show is held, this year there was something else to visit—CANJAM-Europe. Housed in the former “Kohlenbunker,” which is on an old factory building where they used to build train coaches, CANJAM-Europe is a small headphone show where a number of (very) high-quality headphones and matching headphone amps could be tried, in a very pleasant environment. Most were established names, while others were completely new to us. Modenaudio ([www.modenaudio.it](http://www.modenaudio.it)) from Modena, Italy, presented a rather understated headphone/line amp, which was basically able to drive all electrodynamic headphones. Due to some clever switching possibilities, it can be used with a larger



A different take on the reel-to-reel revival by Kostas Metaxas

system or standalone. Available in gray or white with a choice of five sorts of wood. Okay, if you're from Modena, then matching red or yellow like the cars, which are made there is also an option.

### The Future of Digital

At these shows there is still a lot of "old technology" wanting to prove it is the only way to High-End Nirvana and often also promotes that image of a "service technician included" product, which says something as well. In contrast, are



A partial view of the nice environment at the CANJAM Europe exhibits



The Lympa headphone amplifier from Modenaudio is a versatile unit and comes in multiple colors and natural wood finishes

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and  
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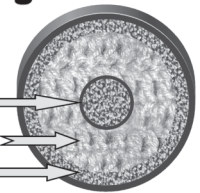
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Merging Technologies MERGING+NADAC network with an attached DAC and MERGING+PLAYER with an integrated Roon player makes for an extremely elegant high-end system, in this case matched in black finish with the new (and still unnamed) PSI Audio speakers. Swiss perfection.



The reference NAIM ND555 network and streaming player combines state-of-the-art DSP with a rich, analog soul.



These tiny things are the Pre Box S2 Digital DAC, using ESS Sabre converters and supporting up to 32-bit/768 kHz PCM and DSD512, as well as hardware MQA unfolding (\$349); and the Stream Box S2 Ultra (\$799) a Roon-ready Wi-Fi or Ethernet music streamer.

the companies that demonstrate all-new digital technology with pride and know-how. Merging Technologies (<http://nadac.merging.com>) proved once more why it can claim absolute top quality. Merging's products, such as the MERGING+PLAYER and the MERGING+NADAC, are there to prove that analog is not the modern concept it used to be... Connected simply with a Ravenna network and feeding active speakers from PSI Audio, the statement was totally clear.

Grimm Audio ([www.grimmaudio.com](http://www.grimmaudio.com)) was there as well, promoting the Dutch company's flagship LS1be loudspeaker system in a carefully designed and decorated environment. Showing future directions, its new MU1 "streamer" could not be overlooked.

This MU1 is supposed to get a very central role, hence an extended functionality, combined with an unmatched ease of use. It is a complete digital audio platform with room to grow, the ultimate digital source, with support for Tidal, Qobuz, and Primephonic music services, as well as Spotify Connect. Combining top-quality conversion, the MU1 can also be used as a source for third-party DACs. All digital input formats are supported, including AES, as well as internal SSD, external USB and NAS storage options. And there's even an FM and DAB receiver inside, and room for a surround playback option. The MU1 will be available beginning November 2018. Also planned are the MU2 and the MU3, where that central stage role will be expanded once more. By the way, have a look at the Grimm Audio banners at shows. They look awesome!

Pro-Ject (<http://project-audio.com>) also had a number of non-turntable products on display as well. The large range of products branded "Box Design" are becoming more popular in this digital age. Particularly the Box Design S2 series, created with the intention to make a product as small as possible, but still having a breathtaking sound performance.

Last year's EISA award-winning PreBox S2 Digital now has the ideal companion, the Stream Box S2 a 24-bit/192 kHz streamer and Internet radio. John Westlake, Pro-Ject's digital product designer, did his very best. This little (the size of three CD jewel cases stacked) box is packed with features, options, and possibilities and together with PreBox S2 Digital, they form a formidable digital side of an audio system in itself and not only in price/performance. For the very tech-minded, have a look at specs, the back of the product, and the Internet discussion groups and you will find out that there is a lot more than meets the eye. A cult product is born!