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Test amoenus ASM 6-3 SP headphone amplifier

Published on 20 August 2023 - Daniel Schmid



amoenus audio ASM: headphone amplifier and preamplifier.

It is impossible to imagine our everyday life without headphones. We often wear them for music and communication on the go. Smartphones and Bluetooth make this easy. But we also like to reach for headphones in a stationary, home environment. Whether it's because you want to immerse yourself in "your" world of music or simply don't want to disturb your roommates in their activities. It is not uncommon to invest more in high-quality headphones than in loudspeakers. The market for high-priced headphones has experienced enormous growth in the last decade.

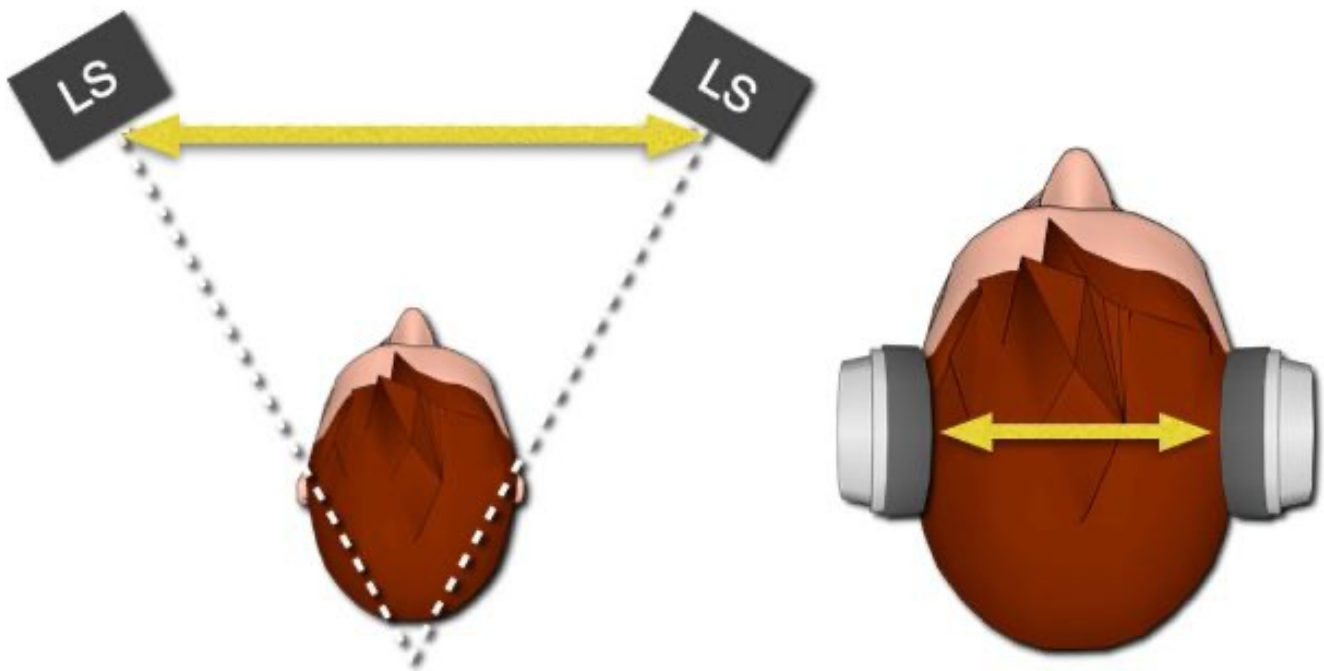
With some exceptions, recordings in the studio are mixed with and for loudspeakers. Playback over headphones differs significantly from

speakers. With headphones, you locate music or conversations "in your head," while with speakers, as you would expect from a performance, the sound stage is set up in front of the person listening. This doesn't have to bother everyone, but it can lead to the infamous „headphone fatigue“. This is because our brain actively tries to compensate for the unnatural location of the sound sources.

In-head localization

In-head localization is a phenomenon that occurs when listening to stereo recordings through headphones. Instead of feeling that the sound is coming from the environment, it seems as if the sound is being generated directly inside your own head. This is the opposite of what we normally experience in the real world, where we can localize the location of sound sources based on differences in the loudness and arrival time of the sound in our two ears.

In-head localization occurs because when using headphones, each auditory canal hears only what is in the respective channel of the audio. There is no natural crossing of sound waves as would normally occur in the environment.



On the left, playback via loudspeaker. Localization in front of the listener. On the right, in-the-head localization with headphones (diagram amoenus audio).

However, there are technologies that have been developed to overcome this problem and create a more realistic soundstage - even when using headphones. One example is binaural recording using microphones in an artificial head. They are currently gaining popularity, especially in virtual and augmented reality areas.

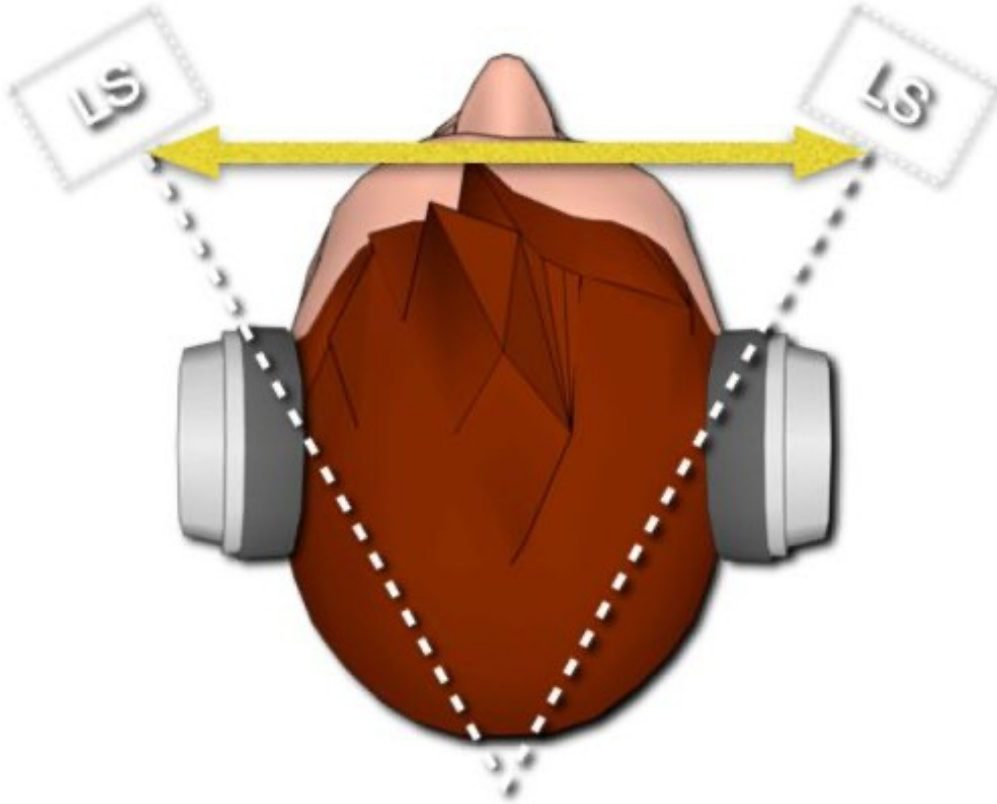
Cheskyrecords is one of the few labels that creates such recordings for the music industry. In recent years, software has been launched that adapts stereo recordings for headphones to create a real-world sound experience. Referred to as "3D audio," Apple Music, Sony and Dolby all offer such technologies, requiring recordings to be appropriately processed, encoded and, at most, repurchased.

Headphone amplifiers with crossfeed are well known in the studio. They make the sound more spatial by mixing the signals of both channels. However, the result is not always optimal in terms of sound.

From tinkerer to innovator

Erich Meier, audio lover and technician from Bern, wanted more and started thinking about the playback of stereo music on headphones early on. So in 2005 he began experimenting with the programmable DSP of the audio interface from the company Metric Halo.

The idea was to use electronic delays to affect stereo sound for headphones as if it were coming from a distant sound source. To do this, he now uses (after 18 years of refinement) a cascade of nine delays and equalizers that recreate delays and attenuation of the shoulders, auricles and ear canal as if they were acting on a more distant sound source.



Sound localization as with a near-field monitor with "amoenus externus" algorithm (diagram amoenus audio).

His algorithm, called "amoenus externus", aims to recreate the acoustics of a near-field speaker system via headphones. Erich Meier makes a point of using neither reverb algorithms nor surround codecs in his algorithm. He does not generate any room information, but merely delays the sound of certain frequencies in the same way as would happen when listening to a distant sound source. The original stereo signal does not need to be processed. In this respect, his system differs fundamentally from current 3D sound technologies.

From innovation to product

Like many inventors, Erich Meier had the desire over time to turn his development based on a programmed DSP into a product. The result was the ASM 6-3 SP. ASM stands for "Authentic Stereo Monitor", the numbers indicate the six inputs and three outputs. As a small one-man company, only a premium product in small quantities was an option. Following the principle "reduced to the essentials", he designed a compact and easy-to-use device.

The result is a headphone amplifier with integrated DAC and an active, analog volume control. Thus, the ASM 6-3 SP is not only suitable for headphones, but can also be operated as a preamplifier directly to a power amplifier or an active speaker. The abbreviation "SP" in the product name stands for Speaker and Phones, respectively, and underscores this dual function.



The ASM 6-3 SP is not only a headphone amplifier, but also a preamplifier with integrated DAC and an active analog volume control.

While the "amoenus externus" is intended to reduce in-the-head localization with headphones, Erich Meier designed "amoenus verus", another algorithm for stereo playback via loudspeakers. A virtual center channel is intended to increase the presence in the middle between the stereo channels and thus create a more authentic live experience. Systematically, center reproduction is a weak point in stereo. Therefore, as early as the 1960s, shortly after the introduction of stereo, an additional center speaker was introduced for a 3-channel system, which, however, could not establish itself. We are curious about the listening test.

Solid workmanship - made in Bern

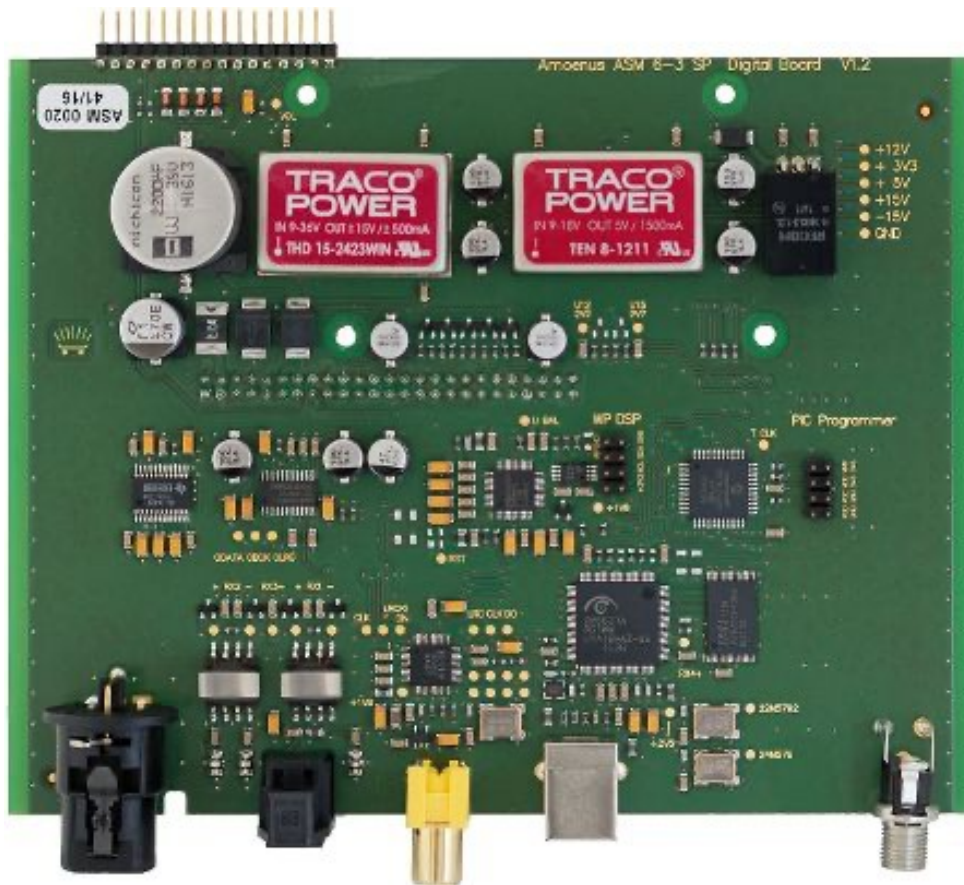
The design of the amoenus audio ASM 6-3 SP is simple and functional. Its sturdy metal housing, solid switches and heavy-handed, large volume control emphasize its quality. Every component seems to be selected with durability in mind. In its black anodized simplicity, the amoenus ASM is reminiscent of a classic studio unit. I appreciate this minimalist design, even if it may seem a bit emotionless to some.

The numerous and flexible connection options are pleasing. On the back there are four digital inputs - from AES/EBU to SPDIF and USB - as well as two analog inputs: one balanced with XLR jacks and one unbalanced with RCA connectors. Analog sources are digitized by means of an AD converter so that the algorithm can also be applied to analog sources.



On the back are four digital and two analog inputs. The balanced XLR output is variable, the line-out has a fixed level.

For the DAC, they use the Cirrus Logic CS4398, which is no longer brand new but is highly regarded by audiophiles. The opinion that "older" DAC chips sound better than the latest models is widespread and, in my experience, not entirely unfounded. What falls by the wayside is the processing of DSD streams.



The digital board of the amoenus ASM 6-3 SP.

The electronic circuitry was designed by a partner with over 20 years of experience in the development of professional audio equipment. All outputs are disconnected from the circuit with relays in case of problems such as power failure, before undefined voltage conditions can cause damage. This is taken care of by a large 2.2 millifarad backup capacitor that provides the current for controlled shutdown of the outputs.

A non-linear curve of the output impedance with respect to the volume control is intended to automatically adjust the control path for low- or high-impedance headphones.



The circuit board with the analog circuitry including the volume control and a line output stage in Class A.

Thanks to the balance control, differences in the sensitivity of the ears can be compensated by fine adjustment of the levels of the left and right channels in the range of ± 10 dB. No cables are used in the amoenus ASM 6-3 SP; all circuit boards are directly connected. The twenty units produced so far have been personally assembled, programmed and tested in Switzerland by Erich Meier.

The price of 4950 francs seems a bit high at first glance. But when you consider the small number of units as well as the thousands of hours of listening tests and pioneering work, the matter is put into perspective a bit.

Practical testing

In the listening test, I largely used the Sendy Audio Aiwa planar headphones. I chose my favorite playlist as music source, ranging from rock albums of the 80s in 16 bit to the latest Highres audio productions. To elicit uncompressed dynamics from it, the Sendy Audio Aiwa needs a powerful power supply. The amoenus audio ASM provided a sufficient level for the magnetostat, with the volume control set to 2 o'clock to achieve a normal volume.

In the first two thirds, the volume increases only discreetly, followed by a relatively concise increase due to the non-linear course of the slider. The above mentioned

Automatic variable output impedance for low impedance transducers is basically a good idea. However, the current tuning does not seem optimal. I would have liked a more constant control curve of the volume.



Switching on the "amoenus externus" algorithm changes the spatial balance. You get the illusion of a certain distance to the sound body. Eric Clapton, "24 Nights: Orchestral."

For a better understanding of the characteristics of the DAC and Class A amplifier, I first listened with the algorithm turned off. The amoenus audio ASM 6-3 SP surprised with a powerful and lively sound. The Sendy Audio Aiwa exhibits a certain restraint in the presence range. The ASM gave it an unexpected and impressive liveliness. The articulation of the sound structures is impressive. The amoenus audio ASM impresses with its outstanding attack and enables a dynamic that I have rarely experienced in combination with the Aiwa and other headphone amplifiers.

I was particularly taken with the wonderful sound character. The Class A power amplifier acts harmoniously and with a pleasantly fresh, but also silky smooth timbre.

Overall, I was impressed by the sonic development of the ASM. Compared to my UAD Apollo 8, the ASM was noticeably more lively and clear.

Switching on the "amoenus aexternus" algorithm to overcome the in-the-head localization does not seem spectacular at first. Whoever expects a dramatic change like with

who expects some 3D audio technologies might be disappointed. However, that is also a good thing. There is no virtual room here in which the instruments float. The impact is moderate, but clearly changes the spatial balance.

The in-the-head localization does not dissolve completely, but you get the illusion of a certain distance to the sound body. Put simply, you are no longer sitting in the middle of the orchestra pit, but you are still in the front row. The treble is reduced, just as it is in reality with increasing distance from the sound source, and the dynamics also seem more restrained.

As a first reaction, some may almost miss the directness, as some test listeners stated in the first feedback. After all, one has gotten used to the typical "headphone sound". I found the reduction in treble and dynamics conducive to the natural sound experience. With longer listening time - I was lucky enough to test the ASM extensively over the summer weeks - one notices what a natural and relaxed music listening the ASM allows with activated compensation.

The "acoustic pressure" on the ears is significantly reduced and genuine listening pleasure sets in. This is like a transition from superficial, analytical listening to pleasure listening. The music appears, somewhat casually said, no longer "pressed" directly into the ear, but perceived from a certain distance. The goal of the amoenus ASM, to offer the sound experience of a loudspeaker also through headphones, is largely achieved. The compensation is sensitive and the signal is not contaminated with artifacts.

Recordings made from a live performance benefit most from this technology. For example, Nadezhda Pavlova's soprano in "La Traviata, Act III" conducted by Teodor Currentzis. With the algorithm activated, her voice sounds not only crystal clear and haunting, but also graceful. The same goes for Eric Clapton in his 2023 re-release "The Definitive 24 Nights (Live)." The Fender Stratocaster no longer sounds so immediately superficial in the head with the algorithm switched on, so you can sit back and relax and enjoy the music.

As already as a headphone amplifier, the amoenus ASM also pleased as a preamplifier. Quickly connected via XLR cable symmetrically with the Manger S1 active speakers, it convinces with sonic grace and liveliness. Particularly noticeable were the exceptional transparency and dynamics. Even complex recordings such as the piece "Dance of the Sugar Plum Fairy" from Tchaikovsky's "The Nutcracker Suite," played by the New York Philharmonic under Leonard Bernstein, appear vivid and alive.



The "amoenus verus" algorithm for speakers makes voices seem bigger. Medolsy Gardot, "My One And Only Thrill".

The activation of the "amoenus verus" algorithm for speakers left mixed feelings. As advertised, it improves the reproduction of the center in the stereo field in a pleasant way. Recordings of smaller jazz and classical ensembles especially benefit from this. The algorithm moves listeners closer to the musical action in the center, much like a magnifying glass. Solo voices are brought more into focus, and rocking live recordings gain intensity. Finally, there is a tendency to place the main musical message in the center of the stereo field.

However, this does not work free of charge. The downer is a certain coloration, not unlike the tape effect of tape machines. The slight staining does not necessarily have to be negative. Conscientious cool studio recordings are given a new life this way. It's like moving from the studio to a smoky nightclub. There's a certain charm to it, like Melody Gardot's "Who Will Comfort Me." However, it can be rather detrimental on more elaborate sound bodies that require a high degree of transparency and clarity. I would see the "amoenus verus" algorithm as a variant that offers a certain live charm to sterile recordings. Erich Meier points out that the "amoenus verus" works best with speakers with dome tweeters. This is not the case with the flat full-range driver of the Manger S1.

Conclusion



amoenus audio ASM with unique algorithm to reduce in-the-head localization.

If you often and gladly listen to music with high-quality headphones, are looking for a high-quality headphone amplifier and are willing to spend a handsome amount of money for it, you should definitely listen to the amoenus audio ASM. Its innovative algorithm for reducing the - tiring - in-the-head localization makes it unique.

With its dual function as a headphone amplifier and preamplifier with DAC, as well as the wide range of connection options, including analog inputs, it also proves to be extremely versatile.

PROFILE

| | |
|----------------------------|--|
| Model: | ASM 6-3 SP |
| Profile: | Headphone amplifier and preamplifier with DAC and multiple connection options. Unique algorithm for reducing in-the-head localization. |
| Pros: | In-head localization reduction algorithm Great sound from the Class A output stage. Analog inputs Multiple function headphone/DAC/preamplifier |
| Contra: | No jack for balanced cables Control range Volume Headphone Price |
| Price: | 4,950.00 CHF |
| Manufacturer: | amoenus audio |
| Year: | 2023 |
| Mass: | 165 x 92 x 190 mm |
| Color: | Black |
| Airplay: | No |
| Bluetooth: | No |
| Chromcast: | No |
| Network connection: | No |
| Balanced output: | Yes |
| Balanced input: | Yes |
| Analog Input: | XLR, RCA |
| Analog Output: | XLR (variable), RCA (fixed) |
| Digital Input: | AES, SPDIF, TOSLINK, USB |
| Channel: | 2 |

Online link:

<https://www.avguide.ch/testbericht/test-amoenus-asm-6-3-sp-kopfhoeerverstaerker-zurechtgerueckt>

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