The upstream network technique in audio compoments for music streaming is becoming increasingling important. Ansuz Acoustics' highenders tackle the topic very consistently: their "entry-level switch" called the PowerSwitch X-TC costs 2,000 euros. But it sounds fantastic. (Photo: F. Borowski)

Test: Ansuz Acoustics LAN PowerSwitch X-TC: superior network streaming

Frank Borowski January 11, 2020

Audio streaming begins ahead of the actual streamer. If you want optimal sound, you should provide the best possible conditions in the home network. A network switch optimized for audio can work wonders, as the Ansuz Acoustics PowerSwitch X-TC has impressively demonstrated in the LowBeats test.

If you visit the relevant HiFi trade fairs here in the country occasionally or regularly, you may already have stumbled across the Ansuz Acoustics brand. Otherwise, the name is still rather unknown in this country. Intrepid sound seekers, however, should make a mental note of the brand, because the accessories from Denmark are extremely impressive.

Ansuz is a sub-brand of the Dane Michael Børresen, who has already left a lasting impression on me with his speakers under his own name. You can find more details in the test of the compact speakers Børresen 01. After that, the small floorstanding loudspeakers Børresen 02 found their way into my place as top reference. You can find out more about Børresen and its other brands Ansuz and Aavik Acoustics in the Børresen company report.

With the Ansuz Acoustics label, the Danes mainly cover the realm of audio accessories. It comprises cables, audio racks, device feet, power distributors and now also network switches, such as the PowerSwitch X-TC entry-level system discussed here for 2,000 euros. Yes, exactly: beginners. Børresen is fully committed to uncompromising research into audiophile border areas. Therefore, the price lists of its three brands are not for the faint-hearted or bargain hunters.

Simple, elegant and solid. The Ansuz Acoustics PowerSwitch X-TC (Photo: F. Borowski)

Eight LAN ports and ten power connections for actively shielded Ansuz cables. The power supply is installed on the inside (Photo: F. Borowski)

There are currently four network switches in the Ansuz range, starting with the X-TC model up to the D-TC Supreme for a measly 12,000 euros. However, if you make comparisons with common switches designed for home networks that can be bought for less than 20 euros, you are on the wrong track. Even if the function is actually exactly the same - namely to distribute data from the Internet router to various devices in the local network using the Ethernet protocol.

In addition to the PowerSwitch X-TC, Børresen sales manager Frits Dalmose also provided me with a few cables from the Ansuz entry-level series "X" for this test: two Ethernet cables of different lengths, a power cable and a three-meter-long USB cable. Here is the background for it: With all of its components, Børresen pursues a holistic approach in which all individual parts of the audio chain follow the same principles for electrical and mechanical grounding. And this includes such seemingly unimportant things as the audio rack and the device feet. There are only a few HiFi manufacturers who are determined to do this so consistently.

And as usual at Børresen / Ansuz, the cables supplied are also of outstanding quality:

The Schuko plug of the Ansuz X power cord (Photo: F. Borowski)

For the powerful LAN cables, Ansuz uses particularly solid plugs (Photo: F. Borowski)

Why a dedicated switch for audio? The development of digital playback systems for end users that began with digital tape machines and the CD in the early eighties, was and is characterized by numerous misunderstandings. At first, it was argued that digital would be the final solution for perfect and completely lossless signal transmission. However, it soon became clear that there is nothing of that sort of perfection. The sound simply couldn't live up to its promise.

The further developments that followed in the next decades, in particular the CD player and D/A-converter, brought gradually to light insights regarding weak points in digital audio transmission and processing, such as the dreaded jitter. In the meantime, there are CD players of the highest sound quality that have increasingly eroded the argument that analog sounding remains unrivalled. Now the age of the silver disc is coming to an end. New modes of transmission, namely streaming via the Internet or music data stored

locally in the home network, shape the present and the future. Physical data media for digital music are increasingly going out of fashion.

Unfortunately, the integration of high-quality audio devices in the network structures, created primarily for the computer world, brought new difficulties to light that do not play a role in isolated, non-networked systems such as CD players. Many experienced high-enders believe that the CD is superior to the streaming sound. Even high-bit files and the most sophisticated and expensive streaming players and DACs would not change this. And these voices are not entirely off the mark. As it turns out, the network - regardless of whether wired or wireless - is a gateway for sound-damaging signal components.

How come? It's still just zeros and ones, which, if they arrive in the streamer without any losses, cannot be any different than the data from a CD, right? No. It's not that easy.

Here is an attempt to explain. Probably the biggest weakness in streaming (at least according to current knowledge) is the heavy load on the network interfaces with all sorts of data garbage, which has nothing to do with the audio data, but is incessantly beating on the entrance gate of the streamer - and in a rather pretty chaotic manner. Like a rush of wild warriors beating against castle walls. The poor castle staff now has the task of separating friend and foe at the gate. As a rule, they can do this reliably, but it takes strength and causes unrest.

High processor load, as we now know, is the enemy of a clean D/A conversion. That is why there are functions in audio programs such as Audirvana for PC and Mac that can be used to paralyze certain processes in the operating system so that they do not interfere with audio signal processing. And that's also one of the reasons why streamers specializing in audio usually sound better than playing directly from computers with their countless background processes.

What happens to the data in the streamer is as follows: The interface has the task of separating the pure audio data from other information. This includes occasional control commands, metadata, but also, and unfortunately, constantly any network requests. The problem is further exacerbated by signal noise induced, for example, by line losses, EM interference, cheap signal suppliers, etc. The noisier the signal, the greater the burden of identifying, separating and passing on the individual signal components at the right time.

Normally, streamers first load a part or an entire piece of music into a buffer before the data is forwarded from there to, for example, the DSP and later to the DAC for analog conversion. This suggests that the chaotic rush of data at the network entrance should actually have no influence on the sound, because the music is properly sorted and put in order for retrieval. However, the ordered extract from the buffer is disturbed by the processor load caused by the flood of data at the entrance. You can see this very nicely on the LEDs of most Ethernet ports. They continue to flicker rapidly even when the audio data has long been in the buffer and no control commands are present.

This causes unrest, which in turn manifests itself in clock fluctuations and electromagnetic interferences. Particularly, the D/A conversion - by far the most difficult part of the process - can be significantly influenced by this.

The goal is to get the data stream as clean and low-noise as possible before it gets into the streamer so that its processor load can be kept as low as possible. Specifically developed LAN switches, such as the Ansuz X-

TC, are used for precisely this purpose. There are now other offers in this sector. For example, I have a 400 Euro device called Silent Angel Bonn N8, which I could compare with the Ansuz. I am currently also waiting for the new S100 network switch from Melco (2,000 euros), which takes a somewhat different approach than the two previously mentioned. Thus, the topic will keep us busy in the future.

By the way: If you now think that you can simply use WLAN instead of LAN, because this should be much more suitable, thanks to its wireless nature (for instance, because there is no galvanic connection to the router for WLAN), then you are wrong. Some experts are still arguing, but WLAN definitely has other problems, such as fluctuating or simply too low signal strengths, noisy transceivers and more. In my experience, a cable connection is usually the better sound choice. But ultimately, it depends on the sophistication of the individual components.

Ansuz Acoustics PowerSwitch solves the problem

Even if Michael Børresen himself has no streamers in his range of audio equipment, he obviously knows about their weak points. The PowerSwitch X-TC is Ansuz's cheapest answer to network problems. The striking feature of the device, with the large Ansuz "Bullseye" logo that initially attracts attention, is its enormous size. By contrast, conventional switches like the one from Silent Angel, mentioned above, appear tiny, as you can see in the following three photos.

Digital streaming setup with the mighty Ansuz Acoustics PowerSwitch in the foreground (Photo: F. Borowski)

The casing of the PowerSwitch is actually made of wood (-composite) and is outstandingly manufactured (Photo: F. Borowski)

The small box, here on the top of the PowerSwitch, is the Silent Angel switch mentioned in the text called "Bonn 8" (Photo: F. Borowski)

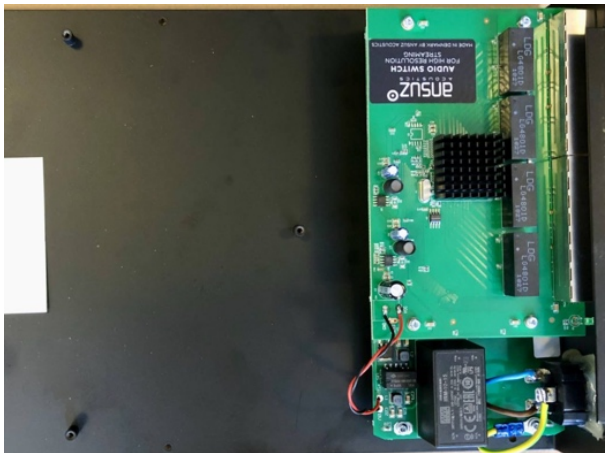
The casing is sensational and unique for a network component in terms of both quality and appearance. It consists of a kind of wood composite with high internal damping. It is milled from a full block. A casing made of aluminum or other metals was out of the question because they can interact with the high-frequency signals (hysteresis effect) and have an unwelcome resonance behavior. Ansuz also relies on this material for its mains power distributors. One advantage of the large casing is that it is not pulled from the audio rack even by heavy and stiff cables (in absolute contrast to the Silent Angel Bonn N8, in comparison).

The Ansuz has eight RJ45 Gigabit LAN ports on the back, as well as a power socket for electricity. This shows a peculiarity: unlike other switches, the Dane has an internal power supply. This is a specially developed, particularly stable resonance mode power supply that hails from the forge of Børresen's electronics brand Aavik Acoustics. In contrast to the usual switching power supplies, it works with sine waves, but is significantly more efficient than comparable linear power supplies with toroidal transformers.

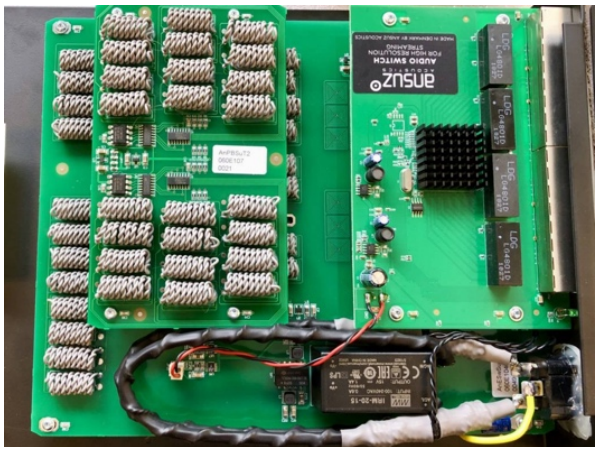
This point should not be underestimated. Power supplies are subject to strict regulations. Their approval and compliance cost a lot of money. Even the slightest adaptation to other electronics requires a new approval procedure. This is exactly why most - even Melco with the S100 - prefer to buy an already approved, mass-produced power supply that is cheaply available on the market. Network switches are surprisingly sensitive to the quality of the power supply. In the light of this, Børresen's approach is very independent and consistent.

Another special feature lies in the form of ten small sockets below the LAN ports. These small sockets supply a 5 V voltage for Ansuz's actively shielded cables from the outrageously expensive top series. So far, I have not been able to try this additional option since the existing X-series cables are not actively shielded, but I will try to catch up on it at some later point.

You will get a shock when you look inside the casing. That is about three quarters empty. Only in the rear area, there are two superimposed, double-sided boards with the components and the power supply unit. Rationalization is the sole reason for this. The same casing, only slightly prettied up, is also used in the more expensive models. In the case of the PowerSwitch D-TC Supreme, Børresen's own Tesla coils and other components fill out the casing well.

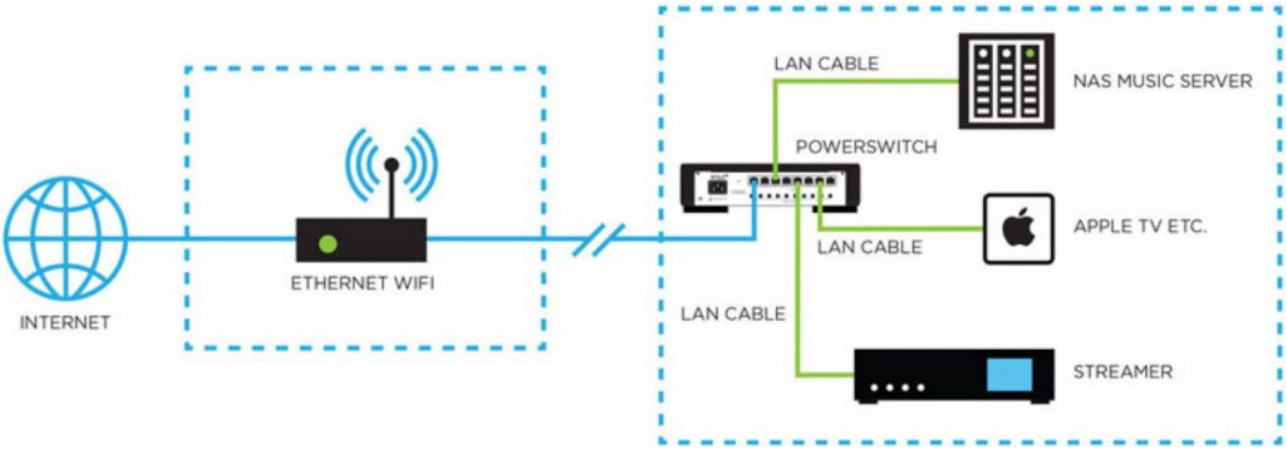


Plenty of space: a look inside the entry-level Ansuz Acoustics PowerSwitch X-TC. The same casing is also used for the larger model variants ...



... which have significantly more components, as can be seen here in the flagship model D-TC Supreme (Photo: Ansuz)

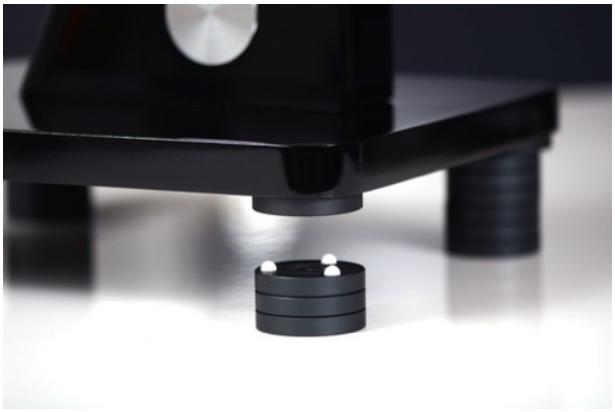
The practical part is quickly ticked off, because an Ethernet switch does not require buttons and operation. Simply connect a power cable (there is no on/off switch), plug in the network cable from the router, connect end devices to other LAN cables, and it runs. Optionally, the voltage supply of active cables could be connected to the Ansuz. The traffic LEDs on the LAN sockets provide information about data traffic. Unfortunately, they cannot be switched off (this is possible with the Melco S100), but Ansuz thankfully renounces on annoying status lights on the front.



Setup: All components responsible for audio should be connected to the switch and placed near the system (screenshot from the Ansuz website)

It should also be noted that the Ansuz Acoustics PowerSwitch is delivered without a power cable and only with basic device feet (Darkz). These have a round cavity and are designed to be complemented with Darkz Resonance Control device feet. With three matching balls per foot (available in ceramic or titanium), the Darkz, which are optionally available in various versions, are simply placed underneath. Without Darkz, the base feet are not particularly suitable for sensitive surfaces. When purchasing, it is advisable to include a set of Darkz and both high-quality power and network cables.

The feet under the PowerSwitch look like in this example. (Photo: Ansuz)



Supplemented by three balls and Darkz Resonance Control device feet round off the Ansuz PowerSwitch box ...
(Photo: Ansuz)

Ansuz X series cables

The Ansuz X-Series cables provided for the test consistently support Børresen's strategy of the best possible "mechanical grounding". Acoording to the holistically oriented Danes, not only good electrical grounding, but also the resonance energy in every single part of the chain needs to be considered. At Børresen / Ansuz / Aavik, the focus is not on energy destruction through soft damping, but on resonance harmonization that is optimized at specific points (but not with spikes). The device feet and cable supports of the Darkz series, which are available in various versions, form the basis for this - in the full sense of the word.

In the construction of Ansuz cables, this goal is continued by avoiding soft components. This applies to the solid core conductor materials as well as to the insulations and connectors. The cables are therefore all quite stiff. In the case of LS and power cables so much that you literally have to bend them into the right shape. This may sound very impractical at first (and it can actually be). However, it has the advantage that

the cables, when placed on cable supports and assembled to the correct length, do nowhere touch the ground, only the components and the cable holders do so for "mechanical grounding".

Either way, the Ansuz cables have strongly convinced me in the test. Their manufacturing is of highest quality. All Ansuz cables are assembled by hand and sometimes also manually intertwined. The X-Cables are made of twisted, shielded and silver-plated solid-core copper conductors with mechanically stable Teflon insulation.

Ansuz Acoustics PowerSwitch listening test: The strength comes from calmness

The excellent Auralic Aries G1 as a streamer, the Exogal Kombi Comet and Ion PowerDAC and the floorstanding loudspeakers Børresen 02 served as a monitoring audio chain. Initially, the Aries was connected directly to my internet router (FritzBox 7590) using a standard LAN cable.
The effect was audible immediately after the PowerSwitch was inserted. And to a not insignificant degree. The effect has been traceable with any kind of music and with practically any resolution, whether compressed web radio or hi-res from hard disk or via Qobuz: Much more calmness, clarity and sensitivity in all areas. Bass contours always came out of the incorruptibly precise Børresen loudspeakers more cleanly, the middle more tangible and the heights much finer. Therefore, it makes no sense if I now cite individual examples of music. EVERYTHING really benefits in playback. Similar to how a projector's image quality benefits from a better, highly reflective screen compared to a plain white wall. While the source material and the reproduction technology remain unchanged, an optimal projection surface ensures more brilliant colors, better contrasts and finest details. In this analogy, the better the screen, the quieter the noise level, thanks to the PowerSwitch.

The control test with a direct LAN connection from the router to the streamer now confirms that this is not an imagination. The Switch Bonn N8 from Silent Angel used for comparison tended to have the same effect, but not quite as pronounced as with the Ansuz. Considering the price difference, I would also recommend the cheaper device. Still clearly better than the direct router connection.

A further upgrading with the Ethernet cable from Ansuz shows that signal impurities can also have a traceable effect in other ways. Although I was still using the simple LAN string from the router to the switch at this point and only covered the last meter from the switch to the streamer with the Ansuz, this step was also audibly traceable. The upgrading effect even went one level higher with the Ansuz X power cable instead of a run-of-the-mill power cable on the switch. Amazing!

Conclusion: less is not always more

It seems paradoxical: One more component in the chain and at least two additional cables - and yet it sounds clearly better with the Ansuz PowerSwitch. The Ethernet connection, which is heavily loaded with data traffic, is clearly the Achilles' heel of music streaming. Ultimately, however, this comes as no surprise, because noise (caused by all the unnecessary external data on the line) is the archenemy of good sound - even in the digital world.

With the PowerSwitch X-TC, Ansuz Acoustics offers an excellent solution to provide more tranquility in the data chaos of the home network. Grinding in the switch pays off in many areas, which together can make all the difference between weal and woe. You have to try it out. The Silent AngelBonn N8 (€ 400) used for comparison also had an effect, but it was clearly distanced from the Ansuz PowerSwitch. It remains to be seen what other solutions, like the Melco S100, have to offer in this realm. But let's put it this way: never again streaming without a good switch!

More from Børresen / Ansuz Acoustics:

Sound enhancement in all areas

Beautiful casing, holds even heavy cables

Suitable for actively shielded Ansuz cables

Traffic LEDs cannot be switched off

Distribution:
Ansuz Acoustics
Rebslagervej 4
DK-9000 Aalborg

www.ansuz-acoustics.com

Price (manufacturer recommendation)
Ansuz Acoustics PowerSwitch X-TC: 2,000 euros
Ansuz Acoustics Digital X LAN cable: 540 euros (1 m)
Ansuz Acoustics Mainz X power cable: 600 euros (1 m)
Ansuz Acoustics Digitalz X USB cable: 400 euros (2 m)