



***Where raw power
comes in handy...***

Horn speakers stand for dynamics and presence, whereas dipole speakers promise agility and spatiality. Spatial went ahead and combined the two: the X1 is a true horn dipole speaker that exudes an impressive ease of tone despite its massive appearance.

Nothing short of the ultimate active loudspeaker – that is how Robert Andorf, owner of MachOne Classics, introduced the newest addition to his portfolio. The German distributor and licensed manufacturer of the US-based Spatial Audio's dipole special converter definitely weren't talking about tiny little speakers with an integrated amplifier and a DSP switch. This became blatantly clear when even two of our strongest guys had trouble getting the X1, coming in at a whopping 95 kilograms each, out of the delivery van. Because even though hi-fi enthusiasts view the chassis as a less important factor when it comes to open baffle systems, the X1 is equipped with a massive 10 centimeter thick chassis as well as steel support legs. These components were included to provide construction with absolute stability and low resonance.

The overall concept is quite daring: An open baffle precision 18 inch woofer is combined with a gigantic mid- and high-frequency driver that takes over the entire audible range and – hear, hear – is fitted with a driver that's open at the back. Robert Andorf was also breaking stereotypes when he first set up the system, calmly connecting a digital crossover based on a mini DSP with an armada of single-ended triodes by Audion. The result that only required a couple of watts can only be described as a dynamic firework display. Indeed – this is not your stereotypical active speaker.

First plug, then play

Simply claiming “it plays out of the box” is not an accurate statement in this case. While the X1 is based on an actively separated concept, users can have their choice of amplifier and have to connect separate output stages for the low- and the high-frequency path.

This is where you'll need know-how and patience. The degree of efficiency and the mean sound pressure of the horn, which springs into action from a self-resonance of around 400Hz, are so extreme that every deficiency with regards to the signal-to-noise ratio, every negligence concerning ground loops and every other noise is amplified beyond measure. In our lab, the mid- and high-frequency path already reached a nominal volume of 100dB at just 1.3V and 0.13A!

How does that work? Well, you'll need an extreme horn and an extreme driver, which in this case is a model with an oval, slightly outward opening shape and a 40 centimeter wide woofer. Still, it is light as a feather, and our tests confirmed that it plays resonance-free up to 18kHz. From 1,200Hz and up, it reaches an impressive directivity without constricting the sweet spot.



This mid-range tweeter, which was developed by Spatial in collaboration with Radian Audio, is driven by an inverted tweeter with a diameter of 10 centimeters. It plays internally on a pressure chamber which is connected to the horn through slots.

To the rear, the inverted horn made from a hard aluminum bor alloy is open. Since it doesn't have a pressure chamber or a second horn, it can't emit as many volumes as it can to the front; still, it ensures an indirect sound especially in the higher frequencies where concentrated horns in real listening rooms usually just play focused instead of airy.

Brute force for a refined outcome

The woofer brings almost as much brute force to the table: It has a diameter of no less than 46 centimeters and is equipped with a gigantic aluminum phase plug as well as a 18 kilogram magnet structure. Its membrane is made of a special hardened and coated paper and hung up with an extremely hard bead that was folded several times, like a PA driver.

But the X1 is less about brute force than it is about harmony when it comes to its dispersion and impulse behavior with the horn that is used in the upper part. The dipole characteristic is due to the open construction and makes for a corresponding bundling of the sound. It also reduces resonances and reflexions in the room, which results in a direct sound with an exact pulse and thus matches the the mid- and high-frequency range perfectly.



In contrast to common compression drivers, the four inch inverted tweeter is open towards the rear. This doesn't actually amount to a true dipole characteristic, but it does bring about more airiness and high frequency energy.

Since with deeper frequencies the cone works in a kind of acoustic bypass, it has to process certain strokes, which is pretty easy for this 18 inch model.

Usually, open systems like this showcase a rather low mean sound pressure and require a significant bass enhancer for lower frequencies (which means you'll need an even more powerful amplifier).



The brachial 18 inch woofer is equipped with two voice coils that are connected in parallel. The lower as well as the mid- and high-frequency path are always actively separated and fired up over different amps.

The X1 doesn't show this – even without the upstream switch, it mobilizes around 85dB from just 2V. This means that it can be absolutely appropriate to use two different output stages, of which at least one should have an adjustable volume.

The separation of the frequencies and the equalization can be done with different devices. The most simple option would be a preprogrammed mini DSP by Spatial, but there are also other more expensive and purely analogue versions by Vinnie Rossi.

After work, it's time for some fun

Happiness must be earned, and the test of these dipoles proved to be no exception. Literally – moving these speakers through the listening room was hard work, and it took us quite a while to figure out the correct positioning (large physical distance, very large listening distance, wall clearance of 90cm). Then we had to work out the power cabling and the question of which amplifier to use. In the end, *stereoplay* decided on a Unison hybrid for the lower frequencies and a Brinkmann for the higher frequencies.

Once you've gotten this far though, you enter a brave new world of dynamics and timing. Enjoy the extremely fast and precise switches from loud to quiet, from perfect impulses in all frequency ranges. Even at lower volumes, Hubert von Goisern's "Mercedes Benz" was smashing bass and drum beats like the room didn't even exist; weightlessly and ethereal, the singer and the accordion stood in the giant room.

Jeff Beck's "Brush to the Blues", which tends to be a little slower in the deeper basses on conventional speakers, sounded similarly impressive. No such slowness when it came to the X1. It mastered the colorful impulses as well as the transient guitar parts, gave the listening room a smoky club atmosphere and really let the listener feel every tone and every beat, body and soul. It played classical orchestra ("Symphonie fantastique" by Berlioz, conducted by Nézet-Séguin) very diversified, slightly compressed in the depth department and with a touch of vintage charm, while at the same time scoring points for the unbelievable speed and rhythmic shades. Voices like Sara K. in "I Can't Stand the Rain" breathed a little less than usual through the horn, but still exuded a clear and direct energy.

Not everybody can or wants to put up a speaker of this size, and not everybody wants to spend this much time choosing the right positioning and amplifiers. However, if you enjoy the timing and direct character of a horn speaker, you have to listen to the X1 – the light, yet powerful bass and the homogeneous timing across all genres is unlike anything you've heard before.

Malte Ruhnke



In a simple version, a mini DSP provides switching and equalization capabilities. The amps have to be connected downstream.

Spatial Audio X-1 Uniwave

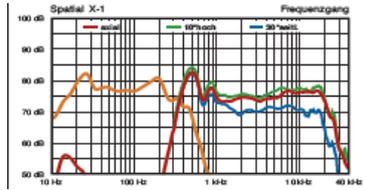
€18,000 (according to manufacturer details)

Distribution: MachOne Classics Telephone: +49 (0)841 / 33 67 0 www.machone.de
www.spatialaudio.us

Dimensions: W: 55 x H: 132 x T: 35 cm
Weight: 95 kg

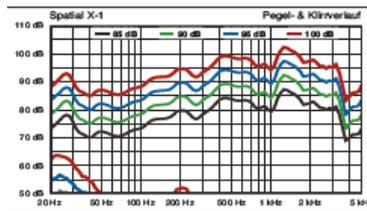
Measurements

Frequency & impedance response:



Very deep, center resonance, very focused, horn lowered by 27dB

Volume curve & distortion factor 85-100dB SPL



Bass level without equalization very clean, high reserve capacities in the lower bass regions

Lower limiting freq. -3/-6dB 23/20Hz
Maximum volume (bass) 110dB

Application & compatibility

Compatibility diagram for



Mid-range tweeter not a problem even for the weakest triodes, record-breaking mean sound pressure

Room acoustics & placement

Listening distance 1m ***** 5 m
Wall clearance 0 m ***** 1.5 m
Reverberation time 0.2 s ***** 0.8 s

Approximately five degrees past the listener, requires large physical distance (>4m), wall clearance differs from case to case

Realistic sound performance: 11

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Accurateness of performance: 12

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Maximum Dynamic performance: 14

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Bass reproduction quality: 15

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Accurateness of sound projection: 14

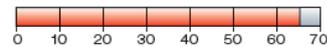
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Requires patience and willingness to experiment during the setup, fascinates with world-class dynamics, timing and precision. Speed and rhythm in the bass region are unbeatable.

Measurements: 6 **Application: 4** **Quality: 8**

stereoplay's final verdict

Sound: absolutely outstanding 66



Overall rating: 84 points

Price-performance ratio: high-end