

Adam A77X

Three-way Active Monitors Review
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The award-winning AX family of speakers have a new member, in the shape of Adam's most affordable three-way monitor yet.

Coincidence is a wonderful thing — sometimes. The other week, one of my own monitors decided to eat its internal amplifier just as we started laying down the guide tracks for my band's next CD project, thus leaving me monitoring in mono for the first time in a very long time. A couple of days later, a pair of Adam Audio A77X active monitors turned up for review and were immediately pressed into service.



Adam monitors come with an excellent reputation — not only from SOS readers, who have voted the A7X the Best Studio Monitor in the SOS Awards for the last two years, but also from an increasingly long and prestigious list of producers, studios and artists. Despite that, I hadn't had an opportunity to work with any of their monitors so I found myself in an interesting situation: a known environment, known instruments, known microphones, known mixer and known musicians, but totally unknown monitors. So I set out to discover a bit about the company's products...

Tweeter Trends

Adam are relative newcomers to the monitor world. They were founded in 1999 as a consequence of the further development, by physicist Klaus Heinz, of Oskar Heil's Air Motion Transformer. This led to a new breed of high-frequency driver, the ART (Accelerating Ribbon Technology) tweeter,

and, some 10 years later, the company launched the X-ART (eXtended Accelerating Ribbon Technology) tweeter, a feature of the aforementioned Adam A7X.

The X-ART tweeter features a pleated, extremely lightweight membrane, the folds of which expand and contract as an audio signal is applied to them, resulting in air being drawn into, and expelled from, the inter-fold spaces. The design results in an extremely efficient engine, in which the air leaving the folds moves four times faster than the membrane driving it. This, Adam claim, gives the X-ART an unprecedented clarity and transient response. Also, since no voice coil or cone is involved, the X-ART tweeter appears to avoid the distortion and dynamic limitations of conventional dome tweeters at higher frequencies, exhibiting a useful frequency response up to 50kHz. Although it occupies much the same front-panel space as a one-inch dome tweeter, the pleated membrane of the X-ART has a surface area of four square inches and this, combined with the unit's virtually flat impedance and phase response curves, is said to endow it with high efficiency, excellent directivity, wide dynamic range and good power handling.

Delivering the performance of this seemingly stupendous tweeter required an amplifier with an extended high-frequency capability. Adam Audio had to develop an ultra-low-distortion, 50W Class-AB amplifier with an internal bandwidth of 1MHz (externally limited to a mere 300kHz) to exploit the 50kHz capability of the X-ART tweeter.

The cone construction of Adam's Hexacomb seven-inch bass/mid drivers also seems worthy of mention. In these, a honeycomb core of Nomex is overlaid on both sides with Kevlar, resulting in extremely stiff cones that resist breakup resonances. These are mated to a pair of high-efficiency, 100W, Class-D PWM amplifiers. So much for the research...

Out Of The Box

The Adam A77Xs arrive on your doorstep with their photographs emblazoned on their boxes, so you realise at once that they're named for the two seven-inch drivers dominating the front panel of their substantial, chamfer-cornered cabinets. The X-ART tweeter is contained within a centrally positioned 2 x 3-inch housing that leaves 1 x 1.5 inches of tweeter surface visible to the outside world. Sitting above the tweeter at the cabinet's edge is a small panel that hosts the volume control and the on/off switch.

The back panel carries the IEC mains socket, the unbalanced phono and balanced XLR input connectors, and a trio of controls that allow you to tailor the response of the A77X to your personal preference in your acoustic environment. The top two knobs in this group control the high and low shelving filters, which each have a range of ± 6 dB above 5kHz and below 300Hz, respectively. The third control boosts or cuts the tweeter level across its frequency band by up to 4dB. While these are useful controls to some, my personal inclination is to leave them well alone and, should I feel the urge to start tweaking, to work out what the real problem is with what I'm hearing and deal with that first.

What isn't immediately obvious from a casual glance is that the two cabinets in a pair of Adam A77X's are mirror images of each other. The manual cunningly doesn't mention anything relating to that until page 8, possibly to check that you've read it through before installation. Even more cunningly, the manual simply tells you that they are "build [sic] as A and B speakers", and that "you will find respective marks on the rear." A quick web search threw up the information that speaker A goes on the left, which seems logical enough.

The A77X isn't simply an A7X on its side with an additional driver; it's essentially a three-way A7X on its side. In an A7X, the single crossover frequency is 2.5kHz, but in the A77X the frequencies are 400Hz and 3kHz, making it a genuine three-way loudspeaker. I am a huge fan of good active three-way loudspeakers (I still go all dewy-eyed over the long-gone Genelec 1024's). Why? Simply because, to my ears, a well-designed three-way system just sounds better than any two-way equivalent. There are real physical and electronic reasons backing up my ears, the main one being

that in a three-way system the crossover frequencies are moved out of the mid-range area where human hearing is at its most sensitive, thus allowing the use of a single driver across this frequency band. This removes any phase shifts (and other crossover anomalies) from the mid-



range, giving a more accurate reproduction of this critical area.

In the A77X, the mid-range driver is on the 'inner' edge, with the bass driver sitting on the other side of the tweeter. Incidentally, I found that the physical dimensions of the A77X are such that the tweeter sat well below my earline on my speaker stands, which were bought to match the tweeter position of my vertically oriented monitors. A quick bit of improvisation concrète (two slabs per side), and all was well.

Connecting the speakers was simplicity itself — one XLR and one IEC mains lead — and I powered them up with everything set flat. New monitors, like cars, need a bit of running in, and the AX77s are no exception to that rule. This time I put one of my current favourites — the Grammy nominated Deadmau5 4x4=12 — on repeat, and left it running for a good 24 hours before settling down to some serious listening.

Listening To Adam

I've been listening to a lot of electronica recently and, in addition to Deadmau5, Hugues de Courson's Lux Obscura has featured heavily on my CD player. However, I started out, as I always seem to do, with Voix, a compilation of unaccompanied vocal tracks from the seminal 1970s French folk-rock band Malicorne, of which Hugues de Courson was a founding member.

My first impression was of a deep, solid soundfield locked between the two speakers, and with its height confined within them. What I found was that, in my setup, the angle between me and the A77X pairing was much more critical than any other loudspeakers that I've used. I had set them at the angle I use for my monitors and that turned out to be too narrow. Opening out the angle (which necessitated some furniture adjustment) widened the soundfield without sacrificing the sense of solidity and positional security that I'd first noticed.

What really impressed me was the amount of additional detail that the A77X was able to reveal. I know the vocal performances on Voix really well, and have listened to them more times than I care to remember, but this time around I was hearing very low-level details of compression artifacts and plosives through the A77Xs that I'd never heard before. I also discovered that even after a couple

of hours of very concentrated and detailed listening, my ears didn't feel stressed or tired, which is a sure sign of a clean, effortless and undistorted system.

Then it was time for the electronic house of Deadmau5, and the Adam A77X turned into a very different beast indeed. The album 4x4=12 has some of the edgiest low-bass sounds that you'll ever hear, and these are overlaid with detailed and sometimes surprisingly delicate mid- to high-frequency sounds. The bandwidth of the A77X starts at 38Hz and it doesn't mess around when it is down there, producing a fast, accurate, rock-solid and very deep bass that never feels as though it's dragging the beat or overpowering the other elements in the mix. If you ever own a pair of A77Xs, you're never going to even think about needing a subwoofer in your setup.

The mid-range and high-frequency reproduction of 4x4=12 was similarly exemplary, the mids benefiting from not having to deal with the mayhem at the bottom end. It quickly became obvious that the X-ART tweeter is something very special, since the highs not only came across with accuracy, speed and solidity, but also managed to retain a sense of space and definition no matter how busy the music.

If you haven't heard Lux Obscura, you might expect that only an electronica CD would have the lowest, loudest bass on the planet — but you'd be wrong. Combining low, powerful electronic bass with traditional folk and medieval instruments, Lux Obscura offers a serious challenge to any monitor seeking to reproduce it. Some of its tracks have extremely low bass drones and pulses that are felt as much as heard, often with room-shaking bass lines superimposed upon them. Over the top of these sit highly-detailed, microphone-recorded acoustic instruments whose mid-range and high-frequency contributions are crucial to the compositions on the CD. The trick that has to be accomplished is to reproduce the whole in such a way that every detail is discernible — and the A77X seems to pull this off with ease.

The A77X is an extremely impressive nearfield active monitor system that I would expect to work just as well in the midfield. It seems to me to reproduce the smallest sonic fragment with the same sense of detail, refinement and power that it brings to the lowest, loudest bass note, and that makes it an extremely accurate monitoring system.

Conclusion

Part of the overall ability of the A77X must be down to the X-ART tweeter, with that flat response up to 50kHz. In the real world of today's primary playback systems, you might wonder why we need this level of performance in a monitor, and you might well be right to do so. However, start running at 24-bit/96kHz with a halfway-decent D-A converter and you could find yourself perceiving (if not quite hearing) high frequencies extending up to around 45kHz. How much this level of performance matters is, in some quarters, the subject of conjecture, belief and faith. But to me it mostly points to good engineering, and the X-ART tweeter and its power amplifier certainly seem to be extremely well engineered.

The quality of the A77X's mid-range and low-frequency reproduction also has to be acknowledged. The two seven-inch drivers deliver a highly-detailed mid-range and a bass whose depth, accuracy and speed was probably the thing that initially impressed me the most.

The only problem that I can find with the A77Xs is the horizontal orientation, which can make them awkward to fit into a tight space. However, in talking to Adam, I discovered that you can turn the tweeter through 90 degrees and position the A77X with the low-frequency driver at the bottom, which not only gets around the positioning problem but also puts the tweeter right on my ear-line.

So there we have the Adam A77X: an extremely able active monitor that's capable of accurately reproducing frequencies from 38Hz to 50kHz in a seemingly effortless manner, even when being run at some pretty serious levels. This all comes with a price tag that actually represents very good value for money, given the level of performance that the Adam A77X delivers. If you're in the

market for active monitors in the region of their price point, you really do need to put the A77X very high up on your audition list.