

## innovations: the manufacturer's view

# Increasing Precision in a Time of Change

## ADAM AUDIO S SERIES PRECISION REFERENCE MONITORING RANGE

BY DAVID ANGRESS

Since its start in Berlin in 1999, ADAM Audio has been an internationally respected manufacturer of reliable, accurate reference loudspeakers for audio professionals, with its innovative products reflecting Germany's heritage of advanced industrial design as well as the company's reputation as a precision toolmaker for the modern era. The very best producers and engineers have always trusted ADAM, and the company's speakers are found in leading recording and production facilities all over the world. Over these 18 years, ADAM has learned a great deal from our customers about the way that they work.

Right now, we happen to be in a time of significant change in our clients' workflow, as they produce content for new formats. It's more important than ever that we future-proof our products so that they accurately represent what is going on in their studios. This is a significant reason why we chose our particular DSP approach to our new S Series. And as we investigated new technologies in manufacturing and test equipment, we realized that we could take our reputation for precision and make it even better. For example, we are using test equipment such as laser-based analyzers, which help our engineering team dramatically reduce distortion in our new drivers.

After years of extensive research and development using these latest technologies and methodologies, ADAM Audio has taken the next step forward with the new flagship family of professional reference monitors, the S Series. The result of classic ADAM craftsmanship combined with the latest engineering innovations, modern materials and advanced DSP, the new third-generation S Series range of monitors offers stunning clarity, low distortion, new woofer and mid-range driver designs and the debut of the S-ART tweeter, a newer, even more precise version of ADAM's renowned X-ART hand-built tweeter.

The S Series is comprised of five models of increasing size, the S2V, S3H, S3V and the largest-of-the-range S5V and S5H, all of which are the culmination of many years of advanced in-house engineering innova-



ADAM Audio S Series Family

tion by our team as well as the use of the latest computer-aided design techniques, without employing off-the-shelf loudspeaker technology. The S Series incorporates a number of technical innovations in the realms of electroacoustics and mechanical engineering, literally taking the concept of the reference monitor right back to the drawing board to create more advanced products.

All of these advances in design allow the new S Series speakers to reproduce the audible frequency range with even greater accuracy than before, with uniform dispersion and minimal distortion, even at high monitoring levels. The S Series, with its pure, natural sound, allows our customers to make judgments about sound and music that will stand the test of time.

We developed and produced the new flagship range in Berlin to maintain control over the development process. We ensured that the design and build quality were of the highest standards, and every aspect of the new monitors was subjected to extensive analysis, redesign and testing. And each component undergoes many rounds of testing, with each finished loudspeaker subjected to a comprehensive final inspection.

ADAM's innovations created specifically for the S Series include: completely new, highly efficient, long-throw ELE Extended Linear Excursion woofers; one-piece DCH dome/cone hybrid mid-range driver for ex-

cellent dispersion, low distortion and high power handling; newly designed waveguides for the tweeter (and the mid-range driver on the largest models); and a high-power DSP engine, based on the very latest generation of SHARC chips, which provides crossover optimization, voicing options and digital connectivity, as well as providing expansion potential. The S Series also marks the debut of ADAM Audio's S-ART tweeter, the latest iteration of the renowned accelerated ribbon design for which the company is famous.

The result of all this technical effort is a set of loudspeakers with an accurate frequency response and wide, consistent dispersion, offering enhanced detail in the bass and mid-frequencies, and high overall performance. The range operates over wider frequency ranges compared to previous ADAM designs, so there's more bass extension and critical mid-range information, with a raised overall maximum output level but reduced distortion. The S Series also offers forward-looking digital connectivity alongside its analog connections.

The redesign of the bass drivers for the S Series has included the creation, entirely from scratch, of a new low-mass but highly rigid honeycomb driver cone, a highly efficient, self-cooling linear magnet assembly, a low-loss speaker surround, linear suspension and damping systems, a vented symmetrical voice coil and a new driver chassis/basket. All these

innovations allow the driver to handle more extreme excursions in a linear fashion without experiencing cone breakup, while the ventilation-orientated design minimizes power compression. Even the bass reflex ports have been completely redesigned. Taken together, all of these changes make for a more accurate LF driver that can produce higher SPLs with reduced distortion, and permit listeners to work with raw, uncompressed audio at higher levels for longer without suffering fatigue.

The new 100 mm (4-inch) mid-range driver on the S Series is a dome/cone hybrid design offering the advantages of both dome and cone designs: excellent dispersion characteristics, low distortion, high power handling and a flat response. Many of the innovations designed for the new woofer also influenced the design of the mid-range driver, including its new linear magnet assembly, speaker surround, suspension and damping systems, and chassis.

Finally, the aesthetics of the range reflect ADAM's heritage as a manufacturer of precision tools in a country renowned for the quality of its industrial engineering—and all aspects of the design are the result of practical considerations. The thick, heavy cabinet construction minimizes unwanted vibrations and coloration, and its rounded edges reduce unwanted diffractions. Mounting points are also built in to the S2 and S3 models to allow them to be suspended.

The S Series loudspeakers were designed without compromise to be true professional reference monitors, capable of flawlessly reproducing the sound signals at their inputs without adding or obscuring any detail. Their excellent dynamic response, absolute transparency and extreme flexibility in operation, coupled with a sound that remains open and un-fatiguing even over long periods of operation, make these monitors essential equipment for serious audio professionals.

David Angress led the emergence of the new ADAM Audio and its product portfolio. He is the principal of Angress Consulting, focusing on audio industry executive management.

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