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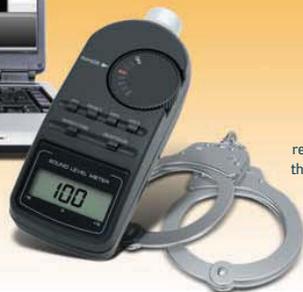
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5 Series DP548 Dynamic Audio Management



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From club installs to festival events, you want to be in control, getting the best drive and the clearest audio - without worrying about infringing sound regulations. The DP548 features multiple bands of Dynamic EQ on every input, giving you automatic control that only adjusts target frequency bands when they become a problem. And because the audio is left completely unaffected until the threshold is reached, you'll have a happy FOH, happy noise police and happy neighbours. But that's not all - add output compressors, matrix mixing and the full suite of DP448 DSP into the mix and everyone's happy.

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High ART

Founded in 1999, ADAM Audio has quickly established itself in the world of studio monitoring, but its latest budget friendly range is taking it to a new audience

TO BECOME A RESPECTED

international loudspeaker monitor manufacturer requires a combination of innovation, investment and market presence over many years, if not decades. However, having established itself in 1999, ADAM (Advanced Dynamic Audio Monitors) Audio quickly asserted its brand on quality rather than cost to capture a healthy market share.

The adoption of Advanced Ribbon Technology (ART) into the company's designs has been fundamental to the Berlin-based manufacturer's success story. The labour intensive, hand-folded ribbon mid- and high-frequency drive units lie at the heart of all ADAM monitors, reproducing enormous clarity and transient reproduction. So when the company announced that it was designing a new budget-friendly monitor for entry level customers which would nevertheless still incorporate ART, it was assured of everyone's attention in the monitor loudspeaker market.

Conventional loudspeaker drive units act in the same way as a car's

piston, moving air in a 1:1 ratio. This is undesirable as the specific weight of air is much lower than that of the driving mechanics. Like the bellows of an accordion, the ART principle consists of a membrane with a folded diaphragm whose single folds move according to the applied current in squeezing the air in and out. Overall, this achieves a 4:1 velocity transformation between the diaphragm and driven air, so that the air moves in and out four times faster than what the folds are moving. Dr Oskar Heil first published his theory of Air Motion Transformer in 1972, and Dr Heil's peer Klaus Heinz, then a hi-fi employee, quickly developed a deep fascination in the subject matter.

But as the founder of ADAM Audio, Mr Heinz wasn't merely trying to incorporate another man's ideas into his own speaker cabinets. 'We wanted to create a construction with no weak points,' explains the now ADAM Audio managing director. 'Once the tweeter had been created and it displayed the properties that



ADAM Audio managing director Klaus Heinz



Inside the ADAM office

were sought, I was then faced with the option of selling the patent or establishing a manufacturing plant. I chose the latter as I knew it would be much more fun.'

In addition to the improved air coupling, Mr Heinz maintains that the ART tweeter's pleated membrane avoids the break up and subsequent dynamic limiting at higher frequencies of stiffer voice coil designs, such as those found in dome and cone tweeters. A further benefit of the design is that the driving stripes are in direct contact with the outer air providing a cooling

effect, which also increases the thermal power handling capacity of the unit.

Both the ART tweeters and mid-ranges are painstakingly assembled by a nucleus of 18 skilled ladies – six times the number of a decade ago, demonstrating the growth the company has experienced in that time. On average, it takes one hour to produce just one unit.

The tweeter is intricately constructed with neodymium magnets and a yoke (ring), which produces perfect magnetic shielding. A very flat impedance results with the omission of the traditional voice coil and the phase response is also very flat with +/- 1.5-degrees. When considering the dynamic range of a transducer, the diaphragm area is also of importance as the ART diaphragm is folded into a three dimensional surface area which in turn almost triples its effective area. The mid-range unit is built in the same manner as the tweeter, using a diaphragm that weighs only a fraction of comparable voice coil units, operating within a frequency response of between 400Hz to 12kHz, producing very high, uncompressed SPL without compromising dispersion.

X-ART (eXtended Accelerating Ribbon Technology) was launched in 2009 as the natural successor to ART, and this technology has since been applied to all the ADAM speaker systems. Compared to their predecessors, X-ART tweeters and mid-range speakers provide an extended frequency range with higher efficiency. In order to realise the full bandwidth of the X-ART tweeter of up to 50kHz, ADAM has



Hand producing tweeters

developed its own A/B amplifier with a bandwidth of up to 300kHz. Having improved the connection between the drivers and the wooden cabinet, the ADAM R&D team discovered that the time behaviour of the speakers was improved. Referred to as Impulse Coupling (IC), the drivers were mounted on to stiff 25mm thick aluminium acoustically dead plates in the S6A Mk2 and the S7A Mk2 models, providing a mechanically stable bridge to the cabinet.

All of which brings the story up to date, when ADAM decided the time was right to apply its expertise to a broad section of the market as yet untouched by its technology. Launched in early 2013, the F series so far consists of two active near-field monitors and a dedicated subwoofer. It takes the ADAM brand to a whole new audience.

'From an analysis of published sales, we discovered that the high end of the market in which ADAM monitors such as the AX and SX are being sold represents just five per cent of the monitor market as a whole,' explains Mr Heinz. 'The reason for launching the F Series was therefore to address the 95 per cent of the monitor market we had not addressed before. The range was designed to produce precise and natural sound reproduction incorporating our brand values but at a new, lower price point.'

Targeting a broader audience of end-users meant some compromises would have to be made. However, the ADAM engineers insisted that the X-ART tweeter could not be sacrificed when paired with the 5- and 7-inch woofers that make the F5 and F7 models. 'The amplifiers in these models operate with half the power compared to the AX models with the same woofer size and so produce a lower maximum SPL,' continues Mr Heinz.

ADAM's blueprint for creating a low cost monitor now allows the company to penetrate a wider audience yet without compromising its brand values. Manufacturing lower cost products in China today is a given, but it's difficult to think of any other manufacturers who are shipping hand assembled components from the West to the East. 'Compared to other brands in similar price points, the X-ART tweeter produces distinguishably better transient reproduction,' Mr Heinz declares.

As entry level models, the actual physical dimensions and the power supply have decreased in comparison to ADAM's AX and SX series. The sleek cabinets don't appear to have been developed for budget conscious customers, as confirmed by the chamfered edges and the slightly-flared front-facing port. Both monitors produce a vibrant, deep bass with a maximum SPL of 106dB and 109dB



ADAM Audio A7X monitors on the production line



The F5 monitor

per pair respectively. Whilst the F5 operates within a 52Hz to 50kHz frequency range, the F7 – which incorporates 40W (tweeter) and 60W (mid-woofer) RMS A/B class amplifiers – extends down to 44Hz. A room equaliser for high (> 5kHz) and low (< 300Hz) frequencies, a volume control on the rear panel, a high pass filter and XLR/TRS/RCA inputs are hardly characteristic features of entry level monitors. There is an option to plug the cables into both the combi and RCA jacks simultaneously, providing access to more than one source at a time whilst minimising cable plugging.

To further extend the F-Series' appeal, particularly for those adopting modern urban and hip hop music genres, the ADAM engineers devised the SubF to accompany both the F5 and F7 models. Incorporating an 8-inch woofer with a 1.5-inch voice coil driven by a single 110W (RMS) PWM amplifier, the SubF is capable of extending music reproduction down to 30Hz. In addition to a volume control and a phase reverse switch, there is also an option to adjust the frequency response. 'When we first sat down and proposed the F-Series development in 2011, we didn't target a new market sector such as DJs,' Mr Klaus confesses. 'We simply want anyone whoever feels intrigued

by accurate sound to look at and audition these products. With the lower price point, a new audience outside of the traditional recording community will become intrigued, so this is a new situation for us.'

The F-Series was designed to complement the AX and SX models as an entry level series. However, the F5's crisp sound and fidelity surpass expectations so that it can be used to mix multitrack recordings to CDs or high-resolution recordings in many situations. Technically precise, they provide a pleasant listening experience in a variety of



Testing monitors in the lab

settings when used as playback systems, or in project studios and multimedia workstations. Recognised by the distinguished ribbon tweeter on the front panel, Accelerated Ribbon Technology has made ADAM Audio a brand to be reckoned with in a relatively short period of time. With the introduction of the F-Series, admirers can now own a pair without having to break their budgets and will find either model ideal for mixing in small studio environments.

Mr Heinz explains that he expects the monitors to be ADAM Audio's biggest selling series within two years. 'We are aiming for sales of around 50,000 this year using our established sales channels and distribution network,' he confirms. 'Everything is set up, so we don't need to change anything.'

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