



insist that you purchase a licence.

Several distinct areas of technology exist under the NXT umbrella. AFR (Audio Full-Range) combines NXT exciters with 'piston' technology in order to improve low frequency performance; DMA (Distributed Mode Activator) which utilises a smaller yet more efficient actuator for applications where size, weight and power drain are crucial issues; and then there are the two DML (Distributed Mode Loudspeaker) technologies – Surfacesound which relies on the excitation of opaque panels, and SoundVu which is able to excite a panel that is capable of displaying an electronic image.

The longest established application for NXT is multimedia. Jean-Paul Eekhout, marketing director for TDK Recording Media Europe says, "TDK was the first company to use NXT technology to develop superior multimedia speakers, something which has really helped TDK differentiate its multimedia speaker offering over the past few years."

Since 1997, companies such as TDK have been utilising NXT to make stylish speakers with small footprint and good sound for use with PCs. As improvements in quality and design have been achieved, there have been more inroads into the home cinema market and with the revolutions in both DVD and surround sound, the so-called 'spouse factor' has played a huge part in NXT products appearing in the home.

There are more than a few applications of NXT in the field of portable sound. On the face of it, the TDK OutLoud is a CD case holding 12 or 24 discs, but it also incorporates an active NXT Speaker system, which can amplify any stereo signal. The Mission M-Cube is a revolutionary DML-based home cinema system and Tecsonic is a small lightweight speaker system that fits into a briefcase. The latter was specifically designed as a good quality, portable presentation tool for executives and lecturers. Thanks to NXT, there are now even inflatable speaker systems on the market!

As LCD and plasma screens get wider and flatter, the built-in speaker system on a TV has become an encumbrance. In order to enhance the ergonomics of its 32, 37 and 42-inch PF9986 LCD TVs, Philips has incorporated invisible NXT surfacesound speakers. Tina >>

>>Withington, media relations manager at Philips says, "NXT speakers with surface-sound technology have a flat membrane to create a better propagation of sound in the room. The unique design of these speakers also diffuses the sound field, improving the directionality and quality of the sound." NEC has adapted similar technology for its 17-inch and 23-inch multifunction monitors (MFM).

The advantages for the installation market are immediately obvious. Tannoy utilises NXT technology in one of its ceiling loudspeaker models, the iP5 Mirage. Tim Lount of Tannoy tells *PSNE*, "The fundamental way in which sound waves from a distributed mode panel are propagated into the environment provides certain benefits." Tim sees the main advantages as "extremely wide dispersion enabling a single iP5 to cover large areas; the sound from a panel reacts constructively with the room boundaries which helps when dealing with difficult acoustic environments and good resistance to feedback".

In the early days, it wasn't easy to convince corporate customers that a piece of foam board was going to be the answer to their audio dreams. CIE-Audio have been involved in the marketing of this 'revolutionary' technology since day one. Marketing manager, Chris Edwards comments: "breaking through the brick wall of 'not wanting to be the first to install it' and 'not wanting to be the first to have it in my building' were a real struggle." Edwards also admits that it isn't easy to advertise a product that is designed to be invisible; "What could you show someone in the advertising?" Seven years on however, CIE Group in partnership with Amina Technologies and Armstrong



I-ceilings now have products specified into the Houses of Parliament, the Natural History museum and a considerable number of high-street and blue-chip contracts.

If generating good quality audio reproduction in a large space presents problems, what about small spaces? David Pearson is CEO at NXT: "The traditional European car audio system use to have two speakers, the average European car now has 6 – mine has ten! Noise floor is high, the environment difficult, and getting the sound right for driver can often make it poor for passengers. NXT uniformity can help." British high-performance car manufacturers, TVR has now begun to incorporate NXT technology into its designs.

Ironically, alongside all its new-found applications, the flat-panel speaker has also returned to its roots in aviation. Lufthansa is now using NXT technology in the manufacture of private aircraft. Good quality sound for in-flight music may be desirable but good quality sound for emergency announcements could save lives.

So the flat-panel speaker hasn't exactly overrun the world of pro-audio, although NXT Pro Panels from Amina were used on tour with Bjork earlier this year for surround sound. Tim Lount feels that NXT "will never replace conventional loudspeaker technology particularly where there is a demand for high SPL with a true to life dynamic range", but NXT has certainly found some comfortable niches. Armstrong, for example, predicts that the installation of I-ceilings is set to double in 2005, and with this being a relatively young technology, who knows what the future holds? >>

ADRIAN BAMFORD