

Meridian's £2475 digital speaker bargain

It's a lot of money but, as Andy Kerr explains, you do get speakers, amplification, digital processing – and a great sound

It's rare that one encounters something truly original in hi-fi, but Meridian offers just such a concept: self-powered, pre-amplifier-equipped, digital loudspeakers. Beginning with the mighty DSP6000 back in the early 1990s, Meridian has promoted the concept of loudspeakers not only as mere reproducers of audio signals, but as hi-fi components in their own right, able to directly shape sounds with little input from other elements in the hi-fi chain. Thus a Meridian digital active loudspeaker contains amplification for all the drivers, a preamp section (normally responsive to remote commands from a handset such as the company's MSR), powerful DSP processing to handle aspects such as crossover and position, and – most important – digital-to-analogue converters.

This is intriguing. All that is required for high-quality music reproduction is some form of digital source, such as a CD transport: all the other elements of the music chain are handled by the speakers themselves. Signals are simply fed in using coaxial digital cable, then the speakers take over. Truly, a unique concept in hi-fi, and one which has, as time passes, lent itself readily to the demands of the modern multichannel age.

Meridian's all-digital surround system, the Digital Theatre, first emerged in 1994 with the launch of the outstanding 565 surround processor (which could feed as many as seven digital active loudspeakers). Now, the company is at the forefront of multichannel sound, so much so that MLP (Meridian Lossless Packing) has been adopted by the DVD-Audio forum as the mandatory standard for both stereo and multichannel audio for DVD-Audio discs.

Over the years, Meridian has expanded its range of digital active loudspeakers to include smaller floorstanding designs (the DSP5000 and DSP5500) and dedicated centre channel designs intended for multichannel use, but this year has seen two remarkable new débuts. The first, the DSP8000, is a hugely sophisticated and powerful flagship for the range, a massive design aimed at the highest end of the market. The other, the DSP33, is quite the inverse: a compact, almost bookshelf-sized design that, by the standards of previous Meridians, is almost 'budget'.

However, although small, the DSP33 is still every inch a Meridian design. Clever use of DSP processing, powerful amplification and an acoustically inert cabinet all contribute greatly to its performance, so much so that it can rival many floorstanding designs for overall bass weight and midrange drive. You can, if you wish, supplement the bass response still further by using one of Meridian's partnering subwoofer designs, such as the D1500, but for the purposes of this test I found it unnecessary: the DSP33s are more than sufficient by themselves.

Each DSP33 incorporates two power



Superb standard of finish and (left) some unusual connections for the rear panel of a loudspeaker

toroidal transformer supplies power (you must, of course, connect the speaker directly to the mains, using a standard three-pin plug). This, together with the high-quality cabinet, contributes to a hefty all-up weight: each DSP33 weighs 9.5kg. The curvature over the top and bottom of the cabinet does not make stand-placement easy, but small rubber 'feet' are provided to help make the speaker more stable.

Alternatively, an Omnimount bracket can mount each speaker directly to the wall. This is not a position normally advocated for the best results with a conventional enclosure, but for a DSP33 (which has no rear port) it is less problematic. Since the speakers have been designed with multichannel applications in mind, you can also be flexible over speaker orientation: it is just as easy to lay a DSP33 on its side, in the manner of a centre speaker, and

performance suffers not a jot as a result.

The preamplifier section can accept two electrical digital connections, which as I mentioned can come either directly from the digital output of a CD or DVD transport, or from a surround processor such as my own Meridian Reference 861. No remote sensor is fitted, in a departure from previous Meridian practice, but the speaker will respond to volume commands from any other Meridian component: alternatively, an external sensor unit, the 512, is available.

A computer-type RS232 terminal allows easy connection to a PC (now that would be some multimedia speaker!) or, if you wish, a rapid process of setting-up and customising sound preferences, using specialist software. Clearly, this is no ordinary loudspeaker design.

Once digital data has arrived at the speaker, it is dealt with by a 100-MIPS device from Motorola's 56000 family of DSP engines, the 56364, which gives 48-bit (or better) resolution throughout every step of the speaker's processing. This allows for fully optimised, digital-domain linear-phase crossovers for optimal driver integration, phase-benign tweeter delay for perfect time alignment, and digital-domain system equalisation for near-perfect overall frequency response. This is coupled to the company's unique Active Bass Extension (ABC) technology, which is designed to give greater bass response than would otherwise be possible given the constraints of the drive unit size. At moderate volumes, the ABC processing applies a subtle extension filter to give greater bass response; turn the DSP33s up, and the filter steadily switches over to DSP bass protection, which (equally gently) applies a subtle brake on the drive units to control their excursion and prevent bottoming. This allows the DSP33s to cleanly deliver notes as low as 60Hz at louder volumes, and reach still lower at more moderate

outputs. Finally, the DSP33s use 24-bit Delta-Sigma DACs, fully compatible with 96kHz sample rates, to convert all this digital data into a suitable analogue signal before amplification.

It is worth taking the time to explain all this complexity, simply because so few speakers can rival it, but the practice of living with, and listening to, the Meridians is much simpler. Although you can, if you wish, use a PC to set them up, the DSP33s can be made to function with only a press of a switch on the back panel (which informs the design whether it is sited as a left, right or centre-channel speaker). That, along with a simple digital connection, is it: the DSP33s are otherwise remarkably benign about placement, working as well close to the wall as they do in free space.

And how well they work! The DSP33s defy logic: they can achieve levels of drama, scale and presence that very few speakers their size, whatever the price, can rival. Huge dynamic sweeps are effortless; the drama of Orff's *Carmina Burana* (EMI, 12/86) is remarkable. The massed choral presence is a potent force in the room, even at moderate volumes; push the Meridians harder, and you can perhaps detect a slight fall-off in overall weight, as the ABC circuitry takes hold, but the

sense of energy remains infectious. As an experiment, I tried toeing the speakers in heavily, but the results proved that there is no particular need to do so: the DSP33s image powerfully even when placed in a more-or-less straight-on position, and, as we've seen, don't suffer should you choose to position them horizontally rather than vertically.

Looking for some form of dynamic limit, I pushed on with the outstanding Mercury Living Presence recording of Tchaikovsky's *1812* (Mercury, 12/95). Here, the collected might of the Minneapolis Symphony Orchestra is supplemented by 'live-microphone' recordings of a 1775 bronze cannon housed in the US Military Academy in West Point: you simply cannot get a more dramatic, dynamic sound. The DSP33s coped with ease. True, at the very highest volumes (my neighbours were out!) they cannot match the extension of larger floorstanding speakers, but for midrange drive and attack, they are every bit the equal of my reference DSP5000 designs. The sheer 'crump' of each cannon blast is thoroughly addictive, clearly showing these speakers can handle orchestral works of any extreme.

I emphasise the importance of power and extension simply because such areas are normally

Meridian DSP33

Type Active digital loudspeakers

Price £2475 (black), £3025 (piano black)

Drive units 1 x 25mm aluminium dome, neodymium magnet tweeter, 2 x 125mm carbonfibre drivers, cast alloy chassis

Amplification Bipolar design, 65W for tweeter, 85W for midrange/bass drivers

Processing Motorola 56364 running at 100MHz

DAC type 24-bit Delta-Sigma

Digital inputs 2 electrical

Dimensions (W x H x D) 150 x 395 x 210mm

Made by Meridian Audio Ltd, Stonehill, Stukeley Meadows, Huntingdon, Cambridgeshire PE29 6EX

Tel 01480 52144

Fax 01480 459934

web www.meridian.co.uk

beyond the remit of compact speakers. The Meridians show an equally deft touch with delicate works, even if you might imagine that with this much digital manipulation they could sound rather mechanical. In fact, they have a surprisingly warm balance: Mitsuko Uchida's sublime Schubert Piano Sonata No 9 in B (Philips, 2/00), is natural and intimate, offering clear space around notes; at the same time you can hear the action of finger on key, as if Uchida were in the room with you. Musicality of this order makes listening session a treat.

As you may well have gathered, I'm most impressed with these speakers. You might balk at the price, which is steep by most measures, but consider for a moment what you get for your investment: speakers, amplification, preamplification and digital-to-analogue conversion, in a single unit. Assemble a separates-based system using high-quality components of similar performance, and it's doubtful that you could achieve the same results for less. The Meridian DSP33s are thus – odd as it may seem for a £2500 product – a bargain. **C**