

Meridian D6000

**Meridian Audio Ltd, 13 Clifton Road, Huntingdon,
Cambs PE18 7EJ. Tel: (0480) 434 334**

Hi-fi isn't always exciting. Most advances are made by standing on the shoulders of others, and using the extra altitude to gaze a little further into the distance. Most products are refinements of what already exists, not that there's anything inherently wrong with that. The Meridian 6000, however, is original. *Seriously* original. Original to the point where even some of its most familiar components work in surprising, unfamiliar ways.

However, nothing in the D6000 could be described as unprecedented. Most people are familiar with digital audio as a tool for storing musical data, as in CD. But the idea of using digits to completely reshape the architecture of a hi-fi system, or to reinvent such common everyday features as the balance control, is rather less common. The D6000's significance is that it introduces a number of such ideas to the market for the very first time, albeit at what for most people will look like science fiction pricing (£7,650 per pair).

The 6000 is a fully active loudspeaker, with built-in electronic crossovers and power amplification. It also performs key functions expected of a preamplifier, and in addition it acts as the seat of the system's 'intelligence'. It is addressed directly by a system remote control which transfers commands back to the source components where called for, though the system can also work with 'dumb' source components, record players or non-Meridian CD players for example, which cannot understand commands from the remote control. When used with 'intelligent' components—a Meridian CD player or tuner, say—the messages fly in both directions, and information such as track numbers and FM station preset IDs are relayed to the display on the front of the two speakers. The display also gives a wide variety of rather tersely presented status information; input, volume level, absolute phase and so on.

All this is unusual enough, but what makes the 6000 unique are two factors.

The first is that no analogue inputs are provided whatsoever. The system is driven through one or more of its two optical and two electrical (coaxial) links from either a digital source, or an analogue source that has first been converted into the digital domain.

The second factor is that everything upstream of the power amplifiers, and this includes the electronic crossover and all preamplifier related functions, operate mainly in the digital domain.

Preamplifier functions include a very sophisticated, part digital, part analogue, stepped volume control with a 1dB action and an almost complete absence of step switching noises.

Acoustic design

The acoustic design of the 6000 is nothing less than fascinating. Most of the output—everything above about 200Hz in fact—is handled by the small, trapezoidal, self-contained, downwards spiked enclosure that sits on the main pillar, making a structure over 130cm tall. This enclosure, connected electrically with the pillar by an umbilical cable, consists of a 170mm synthetic cone bass/midrange unit and a SEAS a metal dome tweeter.

The main pillar contains the digital electronics, power amplification and bass section of the system. To handle the bass there are four similar 210mm units, two on each side, each pair operating in phase with the other so that there is no net rocking moment on the enclosure which is spike coupled directly to the floor.

Separating the two parts of the enclosure has a number of benefits. The mid/top enclosure can be designed for good dispersion and for strength, and is almost completely insulated from the high levels of low frequency ambient 'noise' in the bass enclosure.

No attempt has been made to produce

a flat acoustic output from the driver complement in the usual way, ie by adjusting the characteristics of the drive units so that they match. Instead, this task is handled by active digital equalisation.

This would have been almost inconceivable, and certainly musically ruinous, had it been attempted in the analogue domain, but the construction of complex multi-pole filters is one area where DSP excels. The bass, for example, is extended downwards to provide an in-room response curve flat to around 20Hz.

Active equalisation is not restricted to the bass. Similar curve flattening is performed in the mid/treble area, which presumably has allowed other aspects of the design to be optimised without needing to worry about response shaping. The crossover points are also handled digitally, and with slopes that would cause severe headaches were they carried out in the analogue domain: -36dB/octave at the 200Hz crossover point for example.

Even this isn't the extent of the D6000's DSP capabilities. Digital equalisation is also employed to provide a 'tilt' facility, and a loudness contour which operates in near textbook fashion because SPLs for a given volume control setting are 'known,' the only important variable being room size. In addition, and this is unprecedented in any loudspeaker to the author's knowledge, the listening axis can be varied by controlling the crossover phase responses to account for different listening angles, while in-band responses are varied to counteract the usual polar response changes that occur off axis. Related to this, the balance control employs digital delay of the signal to the nearby speaker to keep the image correctly centred off axis as well as on. As a result it is possible to sit or even stand at the foot of the loudspeakers, or for that matter anywhere else in a room, and still achieve a level of performance from the speaker comparable to what would be expected from a

'normal' listening distance.

The power side of the D6000 is taken care of by two 150watt amps for the bass and two 75 watters for the midband and treble, giving a total wattage which is simply too frightening to contemplate. The design of the amplifiers follows established Meridian practice, featuring DC coupling and servo control to eliminate DC offsets. There is some sharing of power supply components, and of course the amps are connected directly to their respective loads, eliminating the usual problematical loudspeaker wiring.

record deck I tried was able to stand up as well as the *Rock* to the unblinking bass analysis provided by the Meridian. Combined with its other good qualities, records are far from being the poor relation in this system, despite having to be converted to digital form.

However, the 6000 does have some faults, and, as the rest of the system runs somewhere between amazing and miraculously good on a routine basis, this makes any residual shortcomings, however small, all the more objectionable. But the things that make the D6000 good are hard

pitch relationships, and the complete lack of overhang. It has a truly vice like quality: it starts and stops quickly, and is both uncoloured and open.

This bass, which in my opinion sets new standards for domestic reproduction, is not a blunt instrument, but a subtle one wielded with utter precision. Radio speech, which often sounds chesty via hi-fi systems, was perfectly controlled with no hint of this problem.

The rest of the system turned out to be utterly consistent with what I've said about the bass. Again there is that wide open, airy quality, the utter control, the enormous dynamic range and the absence of most forms of coloration. Stereo soundstaging benefited immeasurably from the consistency and clarity of the design, and the result was the ability to support a massive soundstage with a great sense of physical presence, even when listened to from a considerable distance.

The down side

The shortcomings I alluded to earlier are confined to the upper midband (more correctly perhaps upper harmonics that affect the perception of the midband) and the treble itself, and take the form of a degree of intrusiveness or obviousness that at times inhibited the system from sounding completely transparent.

Rather breathy sounding vocals, an occasionally astringent string tone and a closeness with some material almost as though the performer is leaning over you while performing were the main shortcomings. Generally the effect was to sharpen up transients and increase the forcefulness of the sound, leaving some Sixties EMIs sounding like Deccas from the same period, and some of the latter sounding like late Eighties DGs; slightly confused and stringy in tone.

There is some suggestion from conversations I have had with Meridian since the D6000s were sent back, that the pair I had may not have been typical in their treble behaviour. Meridian is not claiming that they're faulty though, and this is one area that clearly needs working on as the product develops. If and when a new filter algorithm or a revised tweeter is eventually called for, existing owners will of course be able to have their D6000s upgraded.

None of this detracts from the main gist of my argument which is that the D6000 sets standards in certain important areas, and that the shortcomings, such as they are, are minor. The DSP development work carried out by Meridian is soundly based and coupled to fine audio engineering in other areas to produce a remarkable system that for once benefits from innovation, and which therefore acts as a pointer to the future.

Alvin Gold

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The front of the main pillar is black and covered in a glass sheet, which can take on the appearance of its surroundings, helping it integrate into at least some traditional surrounds almost as well as it works in a more modern setting. The mid/treble enclosure has a black gloss finish to match. Subtle feature lines link the two components. The effect is striking and, in my opinion, startlingly effective, but I've heard a diversity of views on this.

Using the D6000

Installing the D6000s is a procedure best handled by a trained dealer, and involves programming a whole series of defaults, extending from which speaker acts as 'master,' the number and nature of source components connected (eg Meridian or non-Meridian) through to the volume setting when the system is turned on.

During my spell with the 6000, I had access to a Meridian tuner, the 204, and an A/D convertor, the 607, which was connected to the output of a conventional Meridian preamp and fed in turn by a record deck, the *Rock Reference*. This sounded absolutely marvellous. No other

to do without, and in some cases just cannot be matched.

The most important of these is the system's amazingly wide dynamic compass. I routinely test big amplifiers and expensive, capable loudspeakers with power ratings measured in the hundreds of watts, but I can think of no system I have used in the last decade that can match the ability of the D6000 to play wide ranging music at realistic sound pressure levels.

Although most loudspeakers can be coaxed into playing loud, they almost always change in sound radically as they do so. The bass usually becomes drier and more limited, and dynamics shrink as the music becomes louder. These paradoxical constraints don't apply here: as the D6000 goes louder, the sound retains its original generosity and openness, and astonishingly the headroom available above even the loudest sounds seems to be practically limitless.

The bass output truly goes down to the point where it is almost possible to feel each wavecrest separately, but more astonishing still is the utter lack of 'ringing' of the kind that eliminates or changes