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MERIDIAN D600 DIGITAL ACTIVE LOUDSPEAKER

John Atkinson

"Two-and-a-half-way," reflex-loaded, floor-standing loudspeaker with full infra-red remote control, three integral 70W amplifiers, line-level crossover, tone controls, and 4x-oversampling digital filter with 16-bit D/A converter. Inputs: two analog (balanced/unbalanced) via phono sockets; two digital (S/PDIF standard) via coaxial cable/phono sockets, one digital input via an EIAJ optical connector. Analog sensitivity: 0dBm (775mV). Analog input impedance: 10k ohms. Communications, a) with Meridian 207 CD player and 204 FM tuner, and b) with other loudspeaker of the pair, via DIN sockets. Drive-units: 1" (25mm) aluminum-dome tweeter, two 6.3" (160mm) polypropylene-cone woofers with diecast frames. Crossover frequency: 2.5kHz. Frequency range (no limits given): 36Hz–20kHz. Maximum SPL: 110dB. Dimensions: 35.5" (900mm) H by 8.3" (210mm) W by 11.9" (295mm) D. Enclosure volume: 26 liters. Weight: 71 lbs (32kg) each. Finishes available: Black Ash, American Walnut, Rosewood veneers. Price: \$5490/pair including Model 609 remote control and digital/communication cables to connect to 207 CD player or 201 preamplifier and 204 FM tuner. Approximate number of dealers: 40. Manufacturer: Meridian Audio Ltd., Eccleston Road, Tovil, Maidstone, Kent ME15 6QP, England.¹ US Distributor: Meridian America Inc., 14120-K Sullyfield Circle, Chantilly, VA 22021. Tel: (703) 818-3028.

In audiophile circles, it is the "Stuart"—electronics designer Bob Stuart of the Boothroyd-Stuart collaboration—who has received most recognition. The contribution of industrial designer and stylist Allen Boothroyd has gone relatively unremarked. Yet as I unpacked Meridian's D600 "Digital Active" loudspeaker, I was struck by Boothroyd's ability to make the humdrum—a rectangular box loudspeaker—seem more than just that. The man has one hell of an eye for proportion. From the first Orpheus loudspeaker of 1975, through the Celestion SL6 and '600 (where AB did the industrial and package design), to this latest Meridian loudspeaker design, his brainchildren look "right," to the extent of making competing designs appear at minimum over-square and clumsy, if not downright ugly.

"Digital Active?" The "active" is self-explanatory, given Bob Stuart's long history of designing loudspeakers which accept a line-level input to feed internal and integral amplification. But "digital?" This is rather a misnomer as it suggests that the actual principle of operation of the D600 is digital; *ie*, it directly converts binary input words into equivalent sound pressures. But no, the D600 may accept a standard multiplexed-stereo serial datastream, sampled anywhere from 30–50kHz, but it converts this

to analog via an internal digital-filter/DAC before driving the crossover/equalizer/amplifier electronics which in turn are connected to conventional moving-coil drive-units.

I first heard a pair of D600s at the 1989 Winter CES last January, and to say I was impressed would be an understatement. Even in the unfamiliar circumstances of a room at Las Vegas's Golden Nugget hotel,² the sound had a breathtaking clarity to it, apparently achieved without any undue treble emphasis. The L'Oiseau-Lyre recording of Handel's *Messiah* quite frankly took my breath away, and I let Bob Stuart know right away that I wanted a pair for review.

Technical details

Starting at the conventional end, the D600 uses three drive-units, all sourced from SEAS. The tweeter appears to be a descendant of a ferrofluid-cooled aluminum-dome unit the Norwegian manufacturer developed for the English Monitor Audio company, which first appeared in their R652/MD model. (Thiel also uses a version of this tweeter in their CS1.2 model.) Although the D600 uses two 6" woofers, the bottom one is rolled off above 200Hz to reduce the radiating area in the midrange and above. (Widely spaced drivers will produce severe beaming once the wavelength of sound drops below the distance separating their acoustic centers.) The D600's low-frequency alignment



Meridian D600 digital-input active loudspeaker

is fundamentally reflex, a 7.25"-deep, 2.5"-diameter port venting at the bottom of the speaker's rear panel. I believe that additional

¹ If this address strikes KEF owners as vaguely familiar, they're right. Although Boothroyd-Stuart continues to manufacture Meridian products at their factory almost next door to Quad's in the ancient market town of Huntingdon near Cambridge—check out The Old Bridge Hotel for a great traditional English lunch if ever you're touring this area—since Meridian became part of the AGI group, the company that owns KEF, its marketing wing was moved to Kent.

² One of the town's classier hotels, that is if *any* Las Vegas hotel can be said to be "classy."

filtering is used here, as in other Meridian active speakers, to give an overall 6th-order high-pass characteristic, though two controls on the supplied 609 handset do allow some control of the bass alignment. "Bass" provides shelving up or down of the response below 200Hz of ± 2 dB, while "Q" offers a choice between flat response and a roll-off of -3 dB at 50Hz, this possibly allowing a near-rear-wall placement. (I suspect that the latter is actually the speaker's intrinsic response, the "flat" position applying a degree of electronic boost to equalize the woofers' output to be flat.)

The cabinet itself I understand is internally braced and constructed from $\frac{3}{4}$ " plywood panels loaded with a lead-loaded bituminous compound. It certainly feels extremely dead when rapped with a knuckle—what audiophile can resist *that* simple test? The $\frac{3}{4}$ " MDF baffle is recessed to allow the drivers to be flush-fitted, while the grille is constructed from black cloth stretched over what appears to be a polystyrene space frame. A green LED display at the speaker's top indicates volume setting and selected source (Slave), the Master also offering a choice between those and track/time information (Meridian 207 CD player) or station/frequency (204 FM tuner). A red LED glows to indicate the Master speaker.

The rear of the cabinet is recessed by some 60mm ($2\frac{3}{8}$ "), which both adds some stiffening and leaves space for the D600 electronics. (The cabinet recess is lined with aluminum foil to provide a degree of electromagnetic screening.) Two black-painted aluminum panels enclose this tray—the bottom one is only 8" tall and carries the mains input, on/off switch, and transformer; the second runs the full height of the cabinet and carries five separate printed circuit boards. The topmost carries the digital electronics and control microprocessor, including a Philips B-grade 4x-oversampling digital filter—"B" stands for "Best"—and is screened by a tin can, this mechanically damped by a Sorbothane pad on the rear panel when the screws are tightened up. This is fed an input signal by a 7-pin DIN socket, duplicated by a phono socket. A second digital input is also provided via another phono socket. The DIN socket "hears" from the other Meridian components in the system what they're up to and supplies them with the control information sent by the 609 handset. A second DIN socket sends a duplicate of the input digital data to the other speaker of the pair, this, of course, extracting only the channel information relevant to its own operation.

Two sets of analog inputs are also provided, both balanced and unbalanced, via phono sockets. I found it easy to misunderstand these: selecting "Radio," "LP," or "Tape 1" all routed the analog input from the A1 jacks to the output circuitry. Finally, I sussed what was going on, helped by a glance at the 207 CD player control panel. Yes, it was all the same analog signal, but the different source settings affected the 207's input switching: selecting "Radio" with the remote switched whatever was plugged into the 207's "Radio" inputs to the 207's outputs, hence to the D600 output. The only exceptions are "Tape 2," which assumes that a second digital source is plugged into the

D600's second serial digital input socket, and "Video," which assumes a digital source plugged into the EIAJ-standard optical input of the D600.

The analog inputs go to CD4053BCN CMOS switching chips. These common ICs also appear to be used to activate the various switched EQ options and the approximately 1dB/step 64-level volume control, all controllable from the handset. The oversampled, digitally low-pass filtered digital data are converted to single-channel analog by a selected Philips TDA-1541A SI "Crown" dual-DAC chip, this offering in my experience a genuine 15.5-bit resolution, and followed by what appears to be a discrete-transistor current-voltage stage. Both low-noise bipolar NE5534 and LM351/LF353 JFET-input op-amp ICs are then used to implement the crossover filters and equalization functions.

A separate 70W power amplifier is used for each drive-unit, each one being constructed from discrete transistors and using a single complementary pair of Motorola MJ15003 & 4 TO-3 devices. These are bolted to the rear panel with vibration-proof washers and use the sheet metal as a heatsink. They run fairly cool, however—they are said to operate in Meridian's "unique class-AA non-switching" mode.

Fundamental to any piece of hi-fi kit's audio performance is its power supply. The base of the rear panel carries two 10,000 μ F electrolytic capacitors and the boards are literally festooned with three-terminal voltage regulator chips, both premium LM317/337 types and less-well-specified 78/79 types being in plentiful supply. Overall, construction is to a high standard.

If I were being picky—and isn't that I'm paid for?—I am faintly irritated that you still have to run an additional set of long interconnects to the D600s to handle the analog input signals. I wait, therefore, for Bob and Alan to introduce their next-generation CD player/preamplifier which will undoubtedly have integral A/D converters to convert all the analog signals to serial digital datastreams to be fed to the D600s down the single datalink in place of the CD data output. (Larry Archibald thinks that this is a dreadful idea, reducing the fine-quality output of, say, a Linn record player to the homogenized level of any other digital source!)

For those who prefer a more conventional active loudspeaker, Meridian's M60 (\$3690/pair) appears to be identical to the D600, apart from lacking the remote-control sensor, pre-amp switching facilities, and digital inputs and outputs.

Setup

Any number of D600s can be set up in a particular system, for Dolby-Surround purposes, for example, the 609 control already having buttons to set appropriate levels. Which of a pair of D600s is configured as a "Master"—*ie*, it controls that room's system—and which a "Slave" is set at the factory. If you need to change this choice, however, it's just a matter of telling the speakers which is which with the 609 remote.

The 609 remote has a "standby" button which puts the D600s (and a 207 and 204 if connected) to sleep. Pressing any function but-

ton, or loading a CD into the player's drawer, wakes up the speakers, but I found that an upper-midrange hardness apparent on turn-on took about 30 minutes to be sufficiently ameliorated that I could enjoy the sound.

Source components consisted of the Linn Troika/Ekos/LP12 analog record player sitting on a Sound Organisation table, a Revox A77 open-reel recorder, and a Meridian 207 CD player, the latter driving the "Master" D600 from its digital and "Comm." outputs via the supplied Meridian cable, with the "Slave" D600 daisy-chained to the first, again with Meridian's own cable. (Though the D600 has an optical input, I didn't have long enough optical connectors to use these inputs with another CD transport; the 207 CD player, reviewed by Thomas J. Norton in Vol.11 No.11, only has a coaxial digital output.) For most of the auditioning, the analog sources fed a Mark Levinson No.25/26 preamplifier combination which then drove the D600s via 15' lengths of Madrigal HPC balanced interconnect. This is fitted with XLR plugs, so short XLR/twin-phono adaptors fabricated from twisted solid-core cable had to be used to drive the D600s' "A1+" and "A1—" analog inputs, which use gold-plated phono jacks. To be honest, apart from the 6dB increase in gain, I couldn't hear any benefit from driving the speakers with a balanced signal compared with an unbalanced one. However, as the balanced cables were the only sufficiently long ones I had to hand during most of the review period, why not?

I experimented only slightly in siting the D600s. Basically, as with other designs intended for out-in-the-room placement, there are only a limited number of positions in my 20' by 16' listening room where speakers will achieve the optimum balance between precise soundstaging and a neutral transition between the upper bass and lower midrange. The D600s ended up 42" away from the (longer) rear wall (which is faced with books and records) and 6' away from the sidewalls, toed-in toward the listening seat, which is some 8' distant. The sidewalls have bookcases at the midpoint between the speakers and the listening seat, which I believe disperse any strong early reflections (apart from that from the floor), and the overall room is reasonably live (though I have attempted to kill a strong 63Hz resonance with ASC Tube Traps). Compared with, say, Larry Archibald's or J. Gordon Holt's rooms, the direct sound from a pair of speakers predominates in my room. Though the '600s are supplied with plastic feet, these can be pulled off to reveal height-adjustable spike feet. Once I had determined the optimum positions, I did all serious auditioning with the speakers coupled through the carpet to the concrete-beneath-saltile-tile floor.

At the beginning of my listening I was disturbed to hear a serious rattle emanating from both cabinets, particularly on piano recordings. The culprits turned out to be the blanking plugs for the optical inputs, which sang their hearts out at one or two midband frequencies.

I removed them.

The sound

Before proceeding with the auditioning, I must

first get a confession off my chest. Although I tried hard to like earlier Meridian active loudspeakers, having a considerable degree of respect for the design talents of Bob Stuart and being covetous of a speaker visually styled by Allen Boothroyd, I was never ultimately satisfied. The M2, for example, always worried me with a peculiar midrange balance that I only ever found really acceptable on chamber music, and the larger models, such as the M10, had what I could only describe as an "odd" bass character. From the outset, however, I will say that I enjoyed my time with the D600 immensely.

Unlike other speakers I have auditioned recently—the Thiel CS1.2 and Spica TC-50, which use first-order crossover filters and beam severely in the vertical plane—the D600 seems relatively uncritical regarding listening axis. My chair places my eyes and ears level with the LED displays; that seemed an appropriate listening axis, therefore. The cabinet certainly seemed dead enough despite its almost 36" sidewalls; placing my ears close failed to reveal any midrange "singing." It was a different story with the metal rear panel, however, this adding a (low-level) hooty quality to the sound emitted behind the speaker. Probing with a sinewave revealed this panel to go off strongly at 330Hz, though as this is the rear of the speaker, its effect on the sound is probably minimal.

With all the tone controls flat, the D600 has rather a "sweet" character, upper registers sounding slightly depressed and lending violin slightly too warm a tone. Tilting up the highs with the tilt control gave the sound a more generous portion of treble, but also accentuated a slight HF "scratch," noticeable most on recorded tape hiss, which became very slightly more "fizzy" or "white." I found that cutting the treble sucked the sense of "air" from the recorded sound. The "flat" position of the treble control actually seemed to be the best choice in musical terms, in my quite-live room at least, not the least because the speaker's superb presentation of recorded detail to a large extent compensated for any feelings of insufficient treble. The Harmonia Mundi *Water Music*, for example, was revealed as having an impressive dome of ambience gently excited by the period instruments. And the quiet key clatter on the continuo bassoon added to the sense of realism. This degree of detail reproduction almost took on a fetishist nature. I kept reaching for such consummately perfect production jobs as Jennifer Warnes and Leonard Cohen singing the latter's "Joan of Arc" on the famous *Famous Blue Raincoat* album (Cypress 661 III-2) just to hear the tambourine breathed on in the second verse—"and who are you?" she sternly spoke. . . "why, I'm fire," he replied—and the gentle slap echo producing filigree reverberations of producer Roscoe Beck's guitars.

The soundstage on the *Water Music* recording was revealed as having a rather ill-defined center, something to do with Peter McGrath's miking I guess. To check whether this was not being accentuated by the speakers' imaging ability, I put on Kavi Alexander's Blumlein-technique recording of violinist Arturo Del-

moni (Water Lily Acoustics WLA-WS-07-CD). At first I thought that the sound was splashing to the right a little as the violin played above the treble stave.

Then it splashed to the left.

I could only assume that rather than a speaker aberration, the D600s were allowing me to hear the violinist's slight body motions as he played. Putting on dual-mono pink noise revealed the D600s to produce, if not quite a positional singularity at the center of the line joining the speakers, at least an extremely narrow image, stable with frequency. The '600s should and do throw a laterally precise soundstage.

Despite the superb retrieval of ambient detail, however—you could "hear the walls" on my own piano recordings to an extent I hadn't realized existed before—the soundstage lacked depth compared, for example, with that produced by the Spica TC-50. This could be due to a tonal aberration in either speaker, but it also might be tied in with the fact that the Spica is time-coherent (on its optimum but critical listening axis), whereas the D600 is a typical UK design in that the tweeter leads the midrange in time but the sound is more smooth in the crossover region and the listening axis is considerably less critical.

At the opposite end of the spectrum, the D600's bass in the flat position was generous for what is fundamentally a small loudspeaker. Visitors to my listening room expressed astonishment that such extended low frequencies could emanate from such visually small enclosures. While the D600s didn't shake Santa Fe with the bass pedals of the excellent new Dorian organ recording from Paris's Saint Eustache church (DOR-90134) in the manner the Waveforms reviewed by Larry Archibald had, with their 15" JBL woofers, there was still bass to burn, within the dynamic-range limitations of four 6" drive-units. That this impressive low-frequency performance is the result of artifice rather than intrinsic air-moving ability was revealed by the fact that the bass noticeably thickened up at climaxes while the rest of the speaker still seemed dynamically unrestricted. Take the recent Bernstein Mahler 5 (DG 423 608-2), for example. When the music is quiet, as in the deservedly famous *Adagio*, the double-basses have full power and weight. But in the tremendous opening orchestral chords after the solo trumpet fanfare (which cruises 25–30dB lower in level), there was a distinct threshold around volume-control setting 45, equivalent to a 100dB spl (unweighted) in-room, where the bass and lower midrange became significantly congested.

There was also a dynamic-range problem in the upper midrange. A slight nasality at low levels remained benign again until the spl reached much above 100dB, when the sound rapidly hardened. Boy soprano at high levels, for example, became suddenly quite unpleasant. I am talking about high replay levels here, but I thought it worth exploring because Meridian does quote a maximum spl of 110dB for the D600. And even Martin Colloms felt that a pair of D600s could reach 108dBA, which is very loud, while remaining clean-sounding.³

One note on the D600's bass is in order. In

common with other high-order-LF-alignment speakers, the body of its midbass tone seems to lag a little behind the initial edge of the sound of double-bass and bass drum when compared with a good sealed-box design. This can be alleviated by switching the "Q" to the "Cut" position, though I then felt the balance to lack weight. Shelving up the "Bass" control to "+1" gave, then, a better midbass quality in combination with the "Cut" setting, but still at the expense of ultimate low-bass weight at normal listening levels. The exact bass balance will be very room-dependent, however, and it is a tribute to the speaker that they offer such flexibility in LF tuning to best match the room.

To sum up, therefore, the D600 in its "flat" position offers a neutral tonal balance with just a touch of nasality occasionally apparent, with musical but rather depressed extreme highs offset by a slight degree of, if not quite "fizz," a narrow-band emphasis somewhere in the top octave, an occasional degree of hardness in the upper mids, and an impressive degree of low-bass extension, provided the speaker is not asked to deliver spls higher than 100dB or so. Stereo imaging is superbly precise laterally, but despite its quite stunning retrieval of recorded detail and ambience, the illusion of reproduced image depth doesn't quite match the level of attainment reached elsewhere by this design. Overall, this is a sound worthy of recommendation in Class B of *Stereophile's* "Recommended Components" listing.

Digital comparisons

To assess the intrinsic performance of the D600's integral DACs, I carried out a series of comparisons with other familiar D/A decoders. The first, and most obvious, was to compare the sound of the D600s when fed a digital datastream by the 207 CD player with that produced by the 207 when using its integral DACs to provide the D600s with an analog signal (via 1m lengths of Monster M-1000). Levels were matched at 1kHz (as they were for all direct comparisons), and A/B switching⁴ could be implemented by toggling the remote control between "CD" and "Radio." (The only practical drawback to this is that when the speakers are set to their analog inputs, the remote cannot be used to control the CD functions.)

I must say that differences were small. Hardly surprising, considering that the same digital filter/DAC combination is used in both products and that the analog design is from the pen of the same engineer. However, the D600 handling a digital input gave a more delicate sound overall, with less treble grain, than the 207's analog outputs. I felt the 207 slightly emphasized vocal sibilants; it also had a warmer balance overall, which muddled up the sounds of

³ See *Hi-Fi News & Record Review*, June 1989, pp.47–49.

⁴ As the switchover takes about 2–3s, this is not quite instantaneous. More disturbingly, when selecting an analog source after CD, the music can still be heard playing at reduced level during switchover. Worried that this was crosstalk into the analog input from the DAC output, or vice versa, I decoded the data representing a 0dB 1kHz tone with the D600 DACs while listening to the analog input at full system gain, then played the 0dB 1kHz tone in the analog input while listening to a silent CD track via the speaker's CD input. In both cases the result was nothing—a false alarm!

tenor instruments such as the cello. The soundstage appeared to be more spacious via the D600 DACs.

The second comparison was to set up the British Fidelity Digilog and feed it the digital output from the 207 via coaxial cable. The Digilog was connected to the Analog AI+ inputs of the D600s with 1m lengths of Monster Cable M1000, so my description of the sound quality will also include a contribution from the interconnect as well as the effect of the RF coaxial cable carrying the digital signal. A/B comparisons were now a little more cumbersome, due to the fact that the digital cable had to be changed each time, as well as changing the source with the D600 handset.

Now there was considerably more difference to be heard, the Digilog having a distinctly different tonal signature. Again it had a warmer balance, but the main distinguishing characteristic of the D600 referred to the Digilog was a lighter, more delicate treble. The Digilog appeared to have less good midrange definition and less extended highs, though, as might be expected, the treble response measured identical to the D600's. Conversely, on some recordings, the D600 sounded rather brittle in the treble. Though the D600 excelled at presenting the ambient information on recordings—the individual echoes on the Tony Faulkner-engineered Hyperion recording of music by Sir Hubert Parry for choir and organ (CDA66273) could be clearly differentiated—the Digilog presented the music with an overall more distant perspective, almost as if it had less upper-midrange energy. This helped such midrange-aggressive recordings as *Showdown* from blues axemen Albert Collins, Robert Cray, and Johnny Copeland (Alligator ALCD4743). Copeland's guitar in particular is head-splittingly bright via the D600s—it sounds like a piece of garbage—and the slight softening/distancing offered by the Digilog could only be an improvement here.

The Digilog also had a fatter midbass that rendered such modern classics as Thomas Dolby's *Aliens Ate My Buick* (EMI-Manhattan CDP 7-48075-2) more viscerally satisfying than via the D600s alone. But the D600 DAC, while being less forgiving of clumsily engineered recordings, is more subtle and spacious.

Finally, to put things into context, I substituted for the Digilog the \$4000 Sony DAS-R1 decoder that had acted for a while as my reference digital sound source earlier this year. Again it drove the D600s via 1m lengths of Monster M-1000.

No contest, I'm afraid. The big Sony both equaled the D600's sense of space—the choir sounded less homogeneous and more like a collection of individual voices on the Hyperion Parry recording—and rendered such sonic trash as the Alligator blues recording musically

acceptable. Copeland's guitar still sounded plebian, but at least its sound could now be easily distinguished from the more aristocratic Fender Stratocaster played by Mr. Cray. The Sony also bested the Digilog in the weight and definition of its bass registers. This is the processor of choice for listening to Mr. Dolby's *Aliens*... waxing, er, polycarbonating.

But, hey, I could quite happily live with any of the sounds of these processors, the '600 most definitely being a classy loudspeaker, and incredibly convenient to use.

Measurement

Looking first at the D600's response on the tweeter axis to a 25 μ s rectangular pulse (fig.1, plotted over a 5ms window and slightly offset from the DC line to show its full shape), this can be seen to be overlaid with a high degree of ultrasonic ringing, due to the metal-dome tweeter's primary "oil-can" resonance being excited by the wide-bandwidth test signal. Of very high Q or "quality factor," this resonance is still ringing more than 2ms after the stimulus has been and gone, but whether it will produce audible effects downband on music signal is open to question. Certainly with CD replay, the band-limited nature of the analog signal will prevent this resonance's excitation unless the player itself produces a significant level of spurious at exactly the same frequency. The non-time-coherent nature of the speaker's crossover and construction can be seen in the lazy manner in which the lower-frequency content of the impulse decays. (Look at the impulse response of the Thiel CSI.2, which utilizes a similar tweeter, elsewhere in this issue to see how a more time-aligned design reproduces the same rectangular pulse.)

Performing a Fast Fourier Transform calculation on the impulse response data gives the effective anechoic frequency response of the speaker on the same axis. To get an idea of the speaker's forward response characteristic and to eliminate the spurious effects of specific cancellations and reinforcements which will be peculiar to any one microphone position, I calculate five such FFT responses from impulse responses taken over a $\pm 15^\circ$ horizontal window and take the average as being typical of the balance of the direct sound to reach the listener's ear on this particular axis. This response for the D600, taken with all the tone controls set to "flat" and plotted with 200Hz resolution from 400Hz to 30kHz, can be seen in fig.2. The response is reasonably smooth, and an overall slight downward trend is overlaid with a degree of boost in the presence region and at 10kHz, with slight suckouts between 4kHz and 6kHz and at 24kHz. (Both suckouts are less evident with the mic exactly on the tweeter axis.) The B&K measuring microphone starts to roll off above 20kHz; nevertheless, a peak 10dB above the midband level can be seen at the tweeter resonance, around 26kHz.

Fig.2 also shows the nearfield response of the lower of the two woofers and of the rear-firing reflex port. The woofer peaks slightly at 50Hz, then rolls out rapidly, being 6dB down at 45Hz with the port handling the bulk of the output between 30Hz and 50Hz. The port itself

appears to be -6dB at 28Hz. Matching the absolute levels of these different curves for display purposes can only be approximate. I suspect that I have plotted the port output a little too high in level in fig.2, as the spatially averaged in-room response⁶ (fig.3) shows a rather earlier

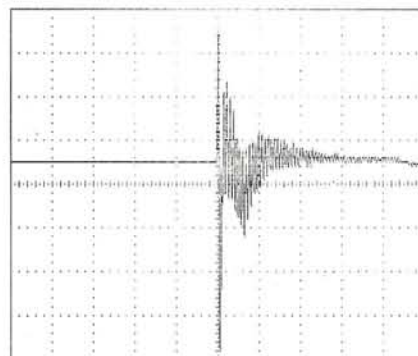


Fig.1 Meridian D600, impulse response (5ms window)

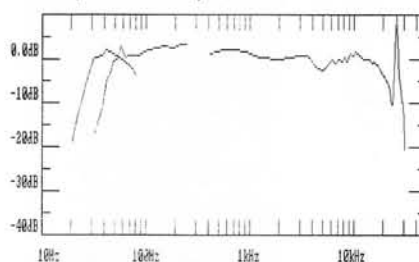


Fig.2 Meridian D600, FFT anechoic response, averaged across 30° lateral window, plus nearfield LF response

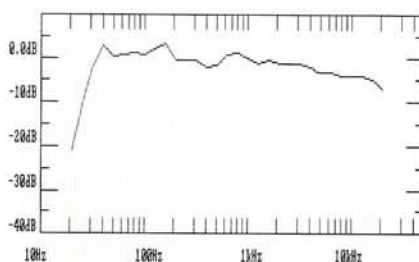


Fig.3 Meridian D600, 1/3-octave, spatially averaged, in-room response

rolloff in the bass, a slight peaking up at 40Hz being followed by a steep rolloff. The curve produced by this measurement, which has proved to correlate quite well with a speaker's subjective balance, shows an overall downward tilt to the D600's in-room sound, relieved by some emphasis in the midrange, centered on the 800Hz 1/3-octave band (which might correlate with the "hardness" noted), and in the upper bass at 160Hz. (The depression above that region will be partly due to cancellation between the speaker's direct sound and the first reflection of that sound from the floor between the speaker and the measuring microphone.) Looking at the individual curves taken to derive fig.3 suggests good pair-matching, as well as

⁵ Lewis and Lynne-Jane Lipnick took me to task at the recent *Stereophile* reviewers' conference over my advocacy of this recording. "It's horrible!" I think was their succinct summing up of its musical and sonic merits. I remain unashamed. For me it defines where rock music stands at the end of the '80s in the intelligence of its lyrics, the skill of the musicians, the complexity of its mix, the spaciousness of its soundstage, the awesome and monstrous power of its bass, and the rip-your-head-open quality of its highs. My thanks are due to Krell's Dangerous Dan D'Agostino for turning me on to it at the 1988 Summer CES.

⁶ See October, p.166-167, for a full description of how this test is performed and why I think it useful.

reasonably wide dispersion in both horizontal and vertical planes. The D600 is certainly not a "hot-seat" loudspeaker.

Measuring the performance of the digital replay section of the D600 with any degree of confidence presented problems. However, as it uses a conventional premium Philips 16-bit chip set, I expect that its overall departure from linearity will be typical of the genre. (See Robert Harley's measurements on the Arcam Black Box 2 and British Fidelity Digilog in the October issue.) Certainly I was not bothered by any noise problems.⁷

Conclusion

Technically sophisticated, Meridian's D600 was one the most aesthetically desirable loudspeakers to have spent time in my listening room. It proved capable of delivering high-quality, musically balanced sound with a wide, deep soundstage and an astonishing degree of clarity. It also offers a generous low-frequency performance, considering that the actual driver radiating area is limited, and it will give quite high sound levels, before increasing bass distortion and upper-midrange hardness conspire to have you reach for the volume control.

And what a volume control! I am getting to love remote system control—even though a confirmed couch potato such as myself still has to get up from his comfy chair to turn over the LP or post another CD into the 207's gaping maw.

However. . . *Stereophile's* value judgments must be based on ultimate sound quality, *not* on such trivialities as aesthetic appeal and ease of use. How then does the D600 stand regarding value for money? The easiest way to judge is to carry out a thought experiment—couch potatoes love thought experiments almost as

much as they do remote controls—and put together a system from Class B or C separates that does everything a pair of D600s do with a similar overall sound quality. Remote control is mandatory,⁸ so we have to choose between the Hafler Iris (\$800) and the Linn LK1 (\$1160 with remote). (Yes, I would love to choose the fabulous remote-control Counterpoint SA-11 all-tube line section, but its \$5495 price has already burst my budget!) Linn's LK280 power amplifier (\$1495) works best with the LK1, while the Hafler could be paired with the Adcom GFA-555 (\$700) or Counterpoint SA-12 (\$1195, but soon to be discontinued), the latter being my preference. As the D600s accept a digital input, our separates system also needs a good DAC unit to accept the serial digital datastream from a CD transport. I would say the British Fidelity Digilog (\$995) or Arcam Black Box 2 (\$899) would be acceptable, considering they use the same Philips digital filter/16-bit DAC chip set as the Meridian speakers. And \$35 would need to be put aside for a phono-XLR adaptor lead so the DAC unit could drive the Linn preamplifier. The Linn amplification comes complete with interconnects to join pre- and power amplifier, but the Hafler/Adcom or Hafler/Counterpoint pairings will need good-quality interconnects, \$300 worth of Monster M-1000, for example. Finally, we need to choose a pair of loudspeakers broadly similar in attainment to the D600. My choice would be a pair of Vandersteen 2Ci's, which will add \$1195 to the budget, not counting \$260 for the matching Sound Anchor stands. The Vandersteens go as low in the bass as the Meridians and are unfailingly musical, in this reviewer's opinion. Good speaker cables, of course, will be needed. Fifteen-foot runs of Kimber Kable 8TC will probably be suitable, which, at \$7.80/ft., adds up to another

\$234, or \$468 if the speakers are to be bi-wired. Alternatively, you could go for AudioQuest Clear Hyperlitz, at \$50/ft., but at \$3000 for a bi-wired set, that would probably be overkill in this system. Four pairs of Monster X-Terminators add another \$100 to the cost of the Kimber Kable. I've allowed \$100 for Linn stranded/spaced-pair speaker cable, which comes with good soldered banana plugs.⁹

This gives system totals of \$5315 (British Fidelity/Hafler/Counterpoint/Vandersteen/Sound Anchors/Monster/Kimber) or \$5150 (Arcam/Linn/Vandersteen/Sound Anchors). Of course, you could replace the DAC unit with a complete CD player, such as the \$600 Adcom GCD-575, which will lower the overall system cost by obviating the need for a separate digital source, but even taking this into consideration, a pair of Meridian D600s appears to be reasonably good value at \$5490, particularly as the owner is relieved of all system-matching and compatibility problems, doesn't have to worry about which expensive loudspeaker cables to buy, *and* gets a set of sensible tone controls to boot.

The D600 is actually a cost-effective and painless way for a CD enthusiast to obtain what is fundamentally a sound appropriate for a Class B ranking in *Stereophile's* "Recommended Components." Add a Meridian 207-Pro CD player/preamplifier at \$1990 (\$2240 with phono board) and a Meridian 204 FM tuner/timer (\$1090), both of which can be controlled by the D600's remote unit, and remember that this system can be the basis of a complete multi-room installation using Meridian's modular units, and you will understand why I think the D600 will turn out to be one of the best-selling loudspeaker systems in the early '90s—even if it *isn't* "digital!" **S**

⁷ Just as I write this conclusion, Murphy strikes. The "Master" speaker has started to emit a low-pitched burp every two minutes or so when turned on but not playing music.

⁸ "*Sic semper potatum rectius*," appropriately states the front of the T-shirt I wear while reviewing.

⁹ Please don't write to ask what dealer would recommend or sell either of these systems. I did say this was a *thought* experiment!