

Meridian/KEF

high-end A/V sound system

Alvin Gold

On the face of it this looks like a fabulous, no-holds-barred home cinema audio system. The issue of how fabulous, or whether any holds have indeed been barred, will be addressed in due course, but to describe it as a home cinema system scarcely does it justice. This is also a system which makes sense in music only terms. Perhaps this is just as well. With all due respects to the giants of the film business major films are too often let down by poor, gimmicky or otherwise bottom-line engineering and production values, and plot lines are too shallow by half. Of course there are also many fine films that really do make sense of the remarkable capabilities of modern high-end home cinema hardware, but if

such a system also does justice to music then it makes the investment much more worthwhile.

This, as we shall see, is where this particular system scores, making it very special indeed. Most home cinema systems simply don't do well outside their prime context, a trend that reached its apotheosis with the development of Home THX, which deliberately subverts many of the qualities of traditional high fidelity to force the home cinema message across. Specifically it was designed to maintain vocal intelligibility in the presence of special effects and music. This is no criticism of THX, which in many ways sets standards that the hi-fi industry should have taken on board years before Lucasfilm forced the issue: it is

simply a prominent example of the way the two related technologies have developed along different lines. This Meridian/KEF system represents a convergence of these two streams, and the remarkable thing is that there is almost no performance-related price to pay. There are compromises, of course, but most users will find them more than acceptable, and none impacts noticeably on the integrity of the system when playing music. Just the opposite: this system has musically valuable properties that traditional two-loudspeaker stereo systems don't even hint at.

To borrow a Saturday afternoon phrase, this system is a match of two halves. On the one hand there is a loudspeaker package culled from the top of the KEF loudspeaker range, whose main component is a large and highly capable stereo loudspeaker which was conceived specifically with music reproduction in mind – the Reference Four. The centre loudspeaker is the Model 200C and at the back of the room are a pair of Reference Twos, which are cut-down counterparts to the Reference Four. Completing the system is an AV1 active (i.e. self-powered) subwoofer, a THX-certified design, although that has little practical consequence here other than acting as a guarantee that it meets certain standards with respect to low frequency extension and attainable sound pressure level, abilities you would have inferred anyway from the price tag.

The electronics comes from the Meridian stable and comprises the 565 processor, the 508 20-bit CD player in lieu of a CD transport, and three power amplifiers: two of the stereo 557 and one 555 monoblock, each of which is well matched to its corresponding KEF partner. There is also a small accessory black box, the 519 RF demodulator, which acts as an interface between a LaserDisc player and the rest of the system when AC-3 (Dolby Digital) encoded LaserDiscs are the source. It operates transparently,



MSR system remote control

sensing the presence of an AC-3 RF signal and reformatting it as a digital data stream the 565 processor can understand, otherwise leaving the signal unmolested.

Undoubtedly the key item in the system is the 565 processor-cum-preamplifier, which is now in 7:1 guise, indicating that it has eight output channels including a narrow-bandwidth dedicated bass or LFE (Low Frequency Effects) channel. This is the latest version of Meridian's now long-running DSP-based digital processor/pre-amplifier. The 565 is a complex product, both conceptually and to install and fine tune. Partly for this reason, this system is best set up by the supplying dealer. Thankfully it is less intimidating to operate than to install, due to what is, on the whole, a well designed table-top system remote control called the MSR, the final component in the system.



565 7-1 processor/preamplifier

Meridian 565 7-1 processor/preamplifier

The 565 is a deceptively simple looking processor with rudimentary preamplifier capabilities. Alternative digital (optical and electrical) and two-channel analogue inputs, selected on a pre-programmed priority basis, are provided, plus a high-quality stepped attenuator volume control with 1dB resolution over a 99dB range.

From its inception the 565 was built around a Motorola DSP processor programmed with

Meridian 565 sound processing algorithms for video & audio

Academy for early black and white film soundtracks. Mono, with appropriate equalization

Ambionics decodes the stereo-compatible UHJ surround sound encoding used on some CDs, notably from Nimbus, and occasional radio broadcasts

Direct as above but without subwoofers

Dolby Digital AC-3 digital 5:1 channel surround using the preferred encoding system for US Area DVD, and which is used on many NTSC LaserDiscs available via personal import in the UK. AC-3 is likely also to be used on some European DVD releases, although MPEG-2 Audio will be the statutory standard. LaserDisc source material requires the 519 RF demodulator

Dolby Digital AC-3 THX (THX 5-1) THX enhanced version of the above. Requires THX-certified loudspeakers for full compliance

Dolby Pro-Logic analogue four-loudspeaker surround sound mode (plus subwoofer)

DSP Hall, Chapel, Chamber, Pop, Football and Stadium effects for enhancing two-channel stereo sources

DTS Dolby Digital competitor available on CD and LaserDisc as a standard digital data stream, so does not require the 519 converter. Two non-THX algorithms are available, with different LFE (bass) channel levels for music and cinema titles

DTS THX THX enhanced version of above. Requires THX-certified loudspeakers for full compliance and is associated with the cinema LFE channel setting

Mono for monaural and multi-language recordings etc.

MuLogic enhanced stereo process with user adjustable steering, designed to give a more exciting effect with many multi-mic recordings

Music Meridian-devised algorithm for replaying two-channel material in three-loudspeaker (left, centre, right) systems, especially recommended for large-scale orchestral and choral music

Stereo bypass (direct) mode, but including any connected subwoofers

Super Stereo a variation of Ambionics which simulates the effect from non-encoded sources

THX (THX 4-0) enhanced Dolby Pro-Logic with re-equalization, timbral matching and decorrelation of the surround channels. Requires THX-certified loudspeakers for full effectiveness

Trifield comparable to Music (above), this is another two channel, three loudspeaker replay algorithm. Particularly suited to smaller-scale material, e.g. solo, chamber, vocal

TV Logic an alternative to Dolby Pro-Logic for non-surround encoded sources, has user adjustable steering

Most of these settings are customizable with various options including bass, treble, phase, listening position, centre channel level/delay and spaciousness. Lip sync can be adjusted by up to one video frame (30mS). Up to 16 user-nameable presets can be programmed



519 RF demodulator

Meridian's own software and codes acquired from Dolby, THX and so on. Meridian's coding has always been remarkably complete in the functions supported within the various sound modes, including alternative languages, dynamic range control (compression) and alternative loudspeaker and subwoofer layouts where available. Many are options not universally supported by Meridian's competitors, most of whom rely on hard-coded, third-party decoder chips.

The original 565 supported a range of audio modes such as Trifield and Ambisonics, plus Dolby Pro-Logic and THX, and was capable of feeding either outboard power amplifiers from its analogue outputs or active digital loudspeakers via digital outputs. The second version included AC-3 Dolby Digital decoding, added optional support for a pair of side loudspeakers in addition to the rear effects channels, and provided further subwoofer layout options (stereo L/R, mono front/rear and a single LFE channel). THX compliance was also extended to AC-3, all of which extra functionality forced a change to a new, more powerful, Motorola DSP.

The current incarnation, supplied for test, also includes a DTS decoder, with or without THX

support, and further configuration options, making it remarkably complete. Its key sound processing algorithms are summarized in the table. To support these additional features a further increase in computing power was required, the current Z3 DSP processing card now boasting two Motorola 56303 processors plus additional memory.

Front panel and remote control features create the impression of a preamplifier with a massive array of inputs but the more prosaic reality is that they all address the same input (in its various analogue and digital guises) with programmable defaults for choice of processing algorithm, start-up volume settings and other set-up parameters. The processor is capable of recognizing AC-3 and DTS signals automatically, which will override any programmed settings, although by default the 565 will remember variations – DTS cinema or DTS music, for example – and choose between them according to the input selected.

Programmable bass management and channel compression options are an important part of the 565 7-1, to avoid the kind of nasty surprises that can occur with some video material, or simply to avoid loudspeaker damage. The compression function employs active monitoring of each channel's

output and relates what it finds to the 565's pre-programmed knowledge of the loudspeakers' limitations. Video processing is limited to a well implemented composite circuit; there is no S-Video option. An on-screen display is available and everything can be adjusted with just a handful of front panel controls. These are easy to use if you have the kind of brain that can absorb computer logic but may otherwise appear indecipherable, especially when trying to access some of the more obscure functions nested deep within the menu structure. Keep the instruction books (there are two, for installation and for operation) handy – this is advice born of experience.

No 565 owner is disenfranchised by the progressive improvements in specification. A day-one 565 can be upgraded to the full current specification for around £600. MPEG-2 Audio processing (for European DVD) is the next planned addition, which is to be made available as a maintenance upgrade.

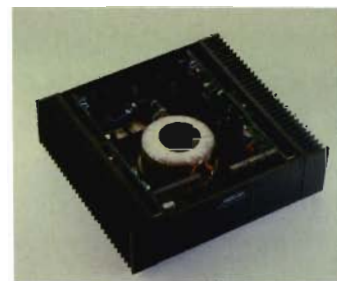


557 stereo power amplifier

Meridian 557 and 555 power amplifiers

Meridian has long had a name for power amplifiers, dating back to the 105 and 103, but for many years the reputation was eclipsed by the marque's concentration on active loudspeakers. This was finally redressed by the introduction of the 606, featuring a comparatively small but very 'fast' power supply, which has now been superseded by the 'meat and two veg' 557 and 555. These have comparatively massive power supplies which use proprietary error correcting circuits and input/output comparators to keep the audio output on the straight and narrow.

The 557 is a 200 watt dual mono power amplifier with a 1.6kVA toroidal transformer and four pairs of bipolar output transistors and reservoir capacitors per channel, which allow for faster recovery times on the voltage rails. Peak output current capability is 30 amps. The 557 can also be bridged, in which mode it yields 680 watts into 8 ohms and 1,000 watts into 4 ohms. Balanced inputs are available (although the



555 monoblock power amplifier

565, which has only a stripped-down preamplifier stage, has no matching balanced output) together with paralleled outputs to simplify bi-wiring. The bridging switch is all too easily operated by accident but Meridian is fitting a new design in current production which is said to lessen the possibility. Two 557s were supplied, to power the front and rear loudspeaker pairs respectively.

Essentially the 555 is more of the same or, rather, less. Using much the same circuit topology in a smaller cabinet, this is a monoblock with an 800VA toroidal transformer and three pairs of output devices per channel. It is capable of 160 watts into 8 ohms or 260 watts into 4 ohms, and 25 amp peak output current.

One feature many will miss is a remote power option to switch the amplifiers on and off with the rest of the system. However, they run cool when not in use, which supports Meridian's contention that quiescent current consumption is negligible.

Meridian 508-20 CD player

Meridian's history of CD player manufacture began not long after Philips' and Sony's, with the MCD, the re-badged version of the original Philips CD104. Later came the 208, which signalled the move from 16-bit to single-bit conversion and employed the celebrated CDM4 mechanism on a slide-out tray. From this base the design evolved into the 500 series, still using single-bit, with a revised transport mechanism and a carbon fibre clamp on top of the disc. As in the 200, the whole transport mechanism moves when the disc button is pressed (rather than just the usual shuttle tray) which is felt



508-20 Compact Disc player

Specifications

Meridian 565 7-1 AV digital processor/preamplifier

Inputs digital electrical and optical; analogue line-level

Outputs digital electrical and optical; outputs 1-8 variable (left, centre, right, rear left, rear right, subwoofer left, subwoofer right, subwoofer 1 and 2)

Processing options see separate table on page 120

Dimensions (W x H x D) 321 x 88 x 332mm

Weight 5kg

UK retail price £2,850

Meridian 557 stereo power amplifier

Inputs phono unbalanced and XLR balanced

Power output >200 watts into 8 ohms, >300 watts into 4 ohms, bridged mode (mono) >650 watts into 8 ohms

Dimensions (W x H x D) 176 x 400 x 320mm

Weight 27kg

UK retail price £1,400

Meridian 555 monaural power amplifier

Inputs phono unbalanced and XLR balanced

Power output >160 watts into 8 ohms, >270 watts into 4 ohms

Dimensions (W x H x D) 88 x 400 x 320mm

Weight 11kg

UK retail price £795

Meridian 508-20 CD player

Conversion dual differential 20-bit delta sigma

Digital outputs S/PDIF coaxial, Toslink optical

Dimensions (W x H x D) 88 x 321 x 332mm

Weight 6.4kg

UK retail price £1,685 (500 transport £1,245)

Meridian 519 RF demodulator

This unit is required only for systems with AC-3 LaserDisc capabilities

UK retail price £450

Meridian MSR system remote control

UK retail price supplied with 500 transport, otherwise £70

Manufacturer Meridian Audio Limited, Stonehill, Stukeley Meadows, Huntingdon PE18 6ED Telephone 01480 434334 Fax 01480 432948

to offer a more stable disc platform. The current 500 transport also features an AES/EBU output and improved servos.

The 508-20 included here has a 20-bit balanced digital-to-analogue converter stage based on a Crystal chip. This has been usurped by a 24-bit chip in the latest version, with other circuit changes to extract full advantage from the new processor, but for this review the 508 was used simply as a transport via its digital S/PDIF output.



Reference Model Four

KEF Reference Model Four and Two loudspeakers

Of the four loudspeaker types deployed in this system, two – the Model Two and Model Four – are from KEF's Reference Series. This range also includes the Model One and Model Three, reviewed by IH in January 1995 (Model One) and November 1996 (Model Three) – issues to which readers with sufficiently long bookshelves may wish to refer for an in-depth description of the technology involved. The précis is that the Reference Series is both technically innovative and superbly constructed, representing the zenith of KEF's abilities at the time they were designed. The two stand-out technologies that identify these loudspeakers are Uni-Q and Coupled Cavity bass loading.

Uni-Q, which is also now used in lower KEF models, is a coincident loudspeaker technology in which a compact rare earth tweeter magnet structure is enclosed inside the bass-midrange unit voice-coil, the tweeter dome being where you would normally expect to find a dust cap. As well as being coaxial with the larger cone its acoustic centre is also coplanar, so that the two units are effectively equidistant from the intended listening position. The result, when

coupled with Linkwitz-Riley crossover filters, is excellent integration through the crossover region and a notable lack of the off-axis response perturbations caused by the finite spacing of separate drivers.

The characteristic feature of coupled cavity bass loading, which was developed by but is no longer unique to KEF, is the use of one or more bass drivers mounted within the enclosure, whose output is vented to the outside world via a port. This topology allows very tight control over the diaphragm, as in a sealed box enclosure, but with the sensitivity of a ported system. There are other advantages too, such as the inherent bandpass nature of the acoustic output, which simplifies the crossover to the midrange unit. Where two coupled cavities are used (which is the case with both Reference models tested here) it is also possible to couple the two bass drivers together with a steel rod. This acts to cancel their magnet reaction forces, reducing the vibration injected into the cabinet. Additional small ports, known as 'interports', vent the two small rear chambers, enhancing efficiency.

The Reference Four is a tall four-way, six-driver system which features a Uni-Q midrange/treble driver at the top, two midrange drivers below, all of 160mm diameter, and two 250mm internally mounted bass drivers. The latter communicate with the outside world through a front panel vent which has the same diameter as the midrange cones to preserve directivity. The crossover points are set at 2.8kHz, 500Hz and 160Hz. The Reference Two – a three-way, four-driver system in a scaled-down enclosure – employs the same Uni-Q midrange/treble unit and two



Reference Model Two



Model 200C centre channel loudspeaker

similarly sized, internally mounted bass drivers with similar venting arrangements. The crossover frequencies here are 3kHz and 150Hz.

The crossover networks in both models make extensive use of impedance compensation networks, the effect of which is to make the load seen by the amplifier almost constant with frequency. The Model Two also includes a "boundary compensation device" which takes the form of a switch (integrated with the 'hot' terminal on the bass section) which drops the LF output by around 2dB, countering a tendency to heaviness in the bottom octaves when the loudspeaker is used near room boundaries.

Both systems have a 4 ohm nominal impedance, with sensitivity figures of 89dB (Reference Two) and 92dB (Reference Four). Other features are common to all the Reference models and include heavy, low resonance enclosures which are extensively braced by the coupled cavity partitions and internally damped. All forward-facing units in both systems inhabit their own sealed acoustic cavities. Both particle board and MDF are used in the main enclosures, their different resonant behaviour providing some mutual damping. The mineral loaded base, which in the case of the Reference Two can be mass loaded, is fitted with gold-plated feet which can be adjusted for level or supplemented with carpet-piercing spikes, in which case the feet act as locking devices.

Both loudspeakers are magnetically shielded and have cloth covered, open lattice grille frames. The finish in both cases is real wood in a choice of black ash, a very exciting rosetta burr – a pressure-formed veneer with a strong, highly irregular grain

structure – or rosewood. Edges are radiused and detailing is of a high order.

KEF Model 200C centre channel loudspeaker

The Model 200C centre loudspeaker, although available in 'video grey' finish only, is otherwise consistent in design with the Reference models. It is an unusually long, low-profile centre loudspeaker, designed for use below or preferably above the television screen, and is a derivative of the seminal Model 100 which uses a single 160mm Uni-Q driver. Here two 160mm bass-midrange drivers have been added, flanking the Uni-Q unit.

In addition to the enhancement of low frequency performance (-3dB is around 55Hz) and power handling elicited by the additional drivers, there has been some subtle re-voicing to allow for the acoustic contribution of the TV screen, which acts as an extended baffle. The result is a more accurate sound with a touch more presence, which makes the 200C a good match for the Reference Fours. Its enclosure has a trapezoidal cross-section to help disperse standing waves, and the end caps are curved, largely for aesthetic reasons.

KEF AV1 active subwoofer

KEF's AV1 was one of the first THX-certified active subwoofers, and no corners were cut in its design. The amplification (sub-contracted to Quad) and associated electronics can be removed and rack mounted, if desired, and allow input at either line or loudspeaker level (with matching filtered and unfiltered outputs). Crossover and blend controls ensure appropriate integration with the satellites. There is also a



AV1 active subwoofer

THX input, which invokes the THX specified low-pass crossover parameters.

The enclosure is extremely heavy (nearly 50kg) and topped with a blackened glass plate bearing the THX logo. Internally there are two 250mm pulp cone drivers in a bandpass coupled cavity configuration, the drivers mounted and driven in antiphase as a distortion cancelling measure. The output vents from below, and the controls and socketry are concealed by the plinth, which means that the AV1 can double as an occasional table or flower support without looking out of place in most homes. Of all big subwoofers known to the author, the AV1 is comfortably the most house trained.

Performance

This system is about as good as it gets given the cost of its components, and in many respects performs well beyond expectations. The only item that seems inordinately expensive when set against what competition exists is the 519 RF demodulator. Meridian's other components, by contrast, are well priced or even under-priced. The cost of the 565 stacks up favourably against any remotely comparable processor, especially given the facility to upgrade it economically as new surround sound algorithms become available, and the power amplifiers are particularly impressive value for money, offering little short of high-end standards at prices which approach the mainstream. In many respects much the same bottom line judgements can be applied to the loudspeakers. More central to any assessment of this system, though, is that it does not behave as a collection of worthy individuals but as a coherent, unified whole – that is, as a system worthy of the name.

KEF's Reference Fours were a particular focus of attention. I ran them with a number of amplifiers, including models from Classé, Musical Fidelity and Roksan, but

the Meridians proved well up with the best of them. They had no obvious aural fingerprint: the Meridians simply sounded smooth, detailed and authoritative, with complete consistency across changes in volume and never a hint of breathlessness or granularity.

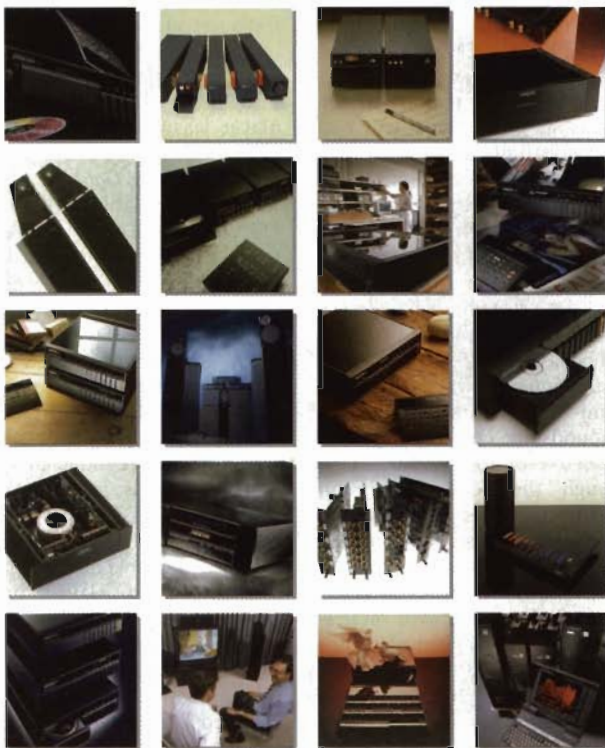
The KEF loudspeaker system has much of the same transparency and consistency. The Reference Four is a smooth, elegant performer, with a subtle yet complex midband and an expressiveness which marks it out from many competitors. What is right with the Reference Four is very often what is wrong with the competition. It is peculiarly lacking in boxiness or obvious coloration (a subject to which I will return) and it extracts midrange detail from source material with a rare facility which nevertheless stops short of over-emphasis. Here the high resolving power is inherent, not a by-product of tonal imbalance.

There are some properties of this loudspeaker that are less impressive, however, of which the most obvious – and the most puzzling – is a lack of deep, earth-moving bass. This is a large loudspeaker, but it sounds like many smaller ones. There is even some support for this observation in the quoted frequency response, although such figures can rarely be relied upon and in any case are usually bettered in practice thanks to the proximity of room boundaries. The Reference Four appears to hit a brick wall near 30Hz (according to KEF's figures), leaving little sense of air or space in the lowest octave and the impression of a loudspeaker that is not all it might be dynamically.

This undercooked quality in the lowest octave is not all bad news, however. The bass balance is light and tuneful, if a touch 'slow', and totally lacking the excess or overhang of many large loudspeakers. The lack of extension is in any case addressed in this system by the AV1 subwoofer, which does its job in some style. Even with this assistance the Reference Four doesn't truly rock and roll, but it is capable of a convincing sense of menace when the occasion demands, such as the opening movement of the Abbado/Vienna Philharmonic recording of Mahler's Ninth Symphony (DG ① 423 564-2, 88/08), which it conveyed with an almost understated quality which somehow made the musical argument twice as effective.

The Reference Four had some other praiseworthy properties. It is unusually easy to position and to

It was 20 years ago today...



In November '77, the design team of Bob Stuart and Allen Boothroyd launched their first Meridian product, an active loudspeaker of course!

Since then, Meridian Audio has continued to pioneer advanced audio design in products such as the first high end CD player, the first CD transport, the first DSP domestic loudspeaker, the first digital home theatre and now, high end DVD.

Amongst many awards for product excellence we are the only audio team to be awarded 3 Design Council Awards.

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drive. As long as it doesn't stray too close to corners it seems largely unaffected by the proximity of walls, in part because its bass delivery is so dry and self-contained. Although the Meridian amplifiers suited it particularly well, the large KEF kept its cool with every amplifier used during the extended test period. If, for the reasons given, the sound was not always quite as wide-ranging as achieved by certain other loudspeakers with which the KEFs cohabited (Ruark Excalibur and Tannoy Definition D900s, to name two) the corollary also held: the system was always easy on the ear and a model of good behaviour.

Stereo integrity was as promised by Uni-Q, with a very stable sense of soundstage presence almost irrespective of the listening axis, although the depth dimension didn't open out as well as it can. Tonally the KEFs are on strong ground, apart from a suggestion of a rather papery roughness which is sometimes apparent with orchestral strings – the anguished strings sound of the first movement of Mahler's Tenth Symphony which opens the aforementioned Abbado disc is as good an example as any.

The story of the Reference Fours was repeated with the other loudspeakers in the system. The Reference Twos have an obvious family resemblance but with a still tighter if very slightly less even bass, although in surround operation they were indistinguishable in their own right. Much the same applied to the model 200C (whose low bass was reproduced by the subwoofer) which, when the system was correctly set up, also sounded an integrated part of the frontal triumvirate. Only very careful listening suggested a marginal lack of finesse when judged by Reference Four standards.

In this system the use of a good active subwoofer – and the AV1 is just that – turns out to be a prerequisite, with results that are typical of the breed. With the AV1 energized the system became easier to listen to, with bolder, more distinctive tonal colours, clear improvements in bass depth on appropriate source material (including virtually all films) and an enhanced sense of image space. All this was achieved at settings that ensured the AV1 was never identifiable as a source of sound in its own right.

This test posed problems regarding the lack of recorded material in some formats, compounded by an intermittent failure of the test LaserDisc player when used with DTS software. The player worked for half of most

films – which frankly was long enough – and ran continuously in the AC-3 tests and with Pro Logic material, although not too much time was spent on the latter with digital surround, in various flavours, on tap.

LaserDisc wasn't the only source available, however. A Panasonic DVD-A100 DVD player was also to hand, with a small selection of AC-3 encoded films, including *Goldeneye* (which was also available in LaserDisc DTS format). Towards the end of the test, a music-only recording in DVD form of Beethoven's *Egmont Overture* and Third (*Eroica*) Symphony and Chopin's Second Piano Concerto, recorded live at Alter Oper, Frankfurt, also became available. Featuring Vladimir Krainjew, piano, and the Frankfurt RSO conducted by Carl St Clair, this disc is now available on Denon (DEG-02001) with other titles to follow. DTS music was also available on CD compatible discs and played on the Meridian 508, but this was limited mainly to some old and rather tired rock material, partly on samplers and often remixed from what sounded like four-track originals, placing one track in each corner of the room. The effect was both peculiar and disconcerting. The better side of DTS was represented by a solitary disc of the inevitable The Eagles' *Hell Freezes Over* in a mostly naturalistic mix (DTS Entertainment DTS CD1006), which was very effective indeed.

The best of the AC-3 material – in this context the Denon Beethoven/Chopin recording – was better than I had expected, and in some ways remarkably good. I have witnessed a Mahler recording in the same hall and immediately recognized its distinctive warm, rather dark tonality – a character which I have never before heard convincingly captured, even in the Denon Inbal Mahler cycle. There was something missing from the sound, though, and this was underlined by switching to DTS. Whether changing from the AC-3 to the DTS version of *Goldeneye*, or simply playing The Eagles against a conventional stereo copy, DTS impressed for its obvious complexity of sound, which made AC-3 seem somehow caricatured, and also for the way all the loudspeakers knitted together for the first time to generate a genuinely coherent soundstage presence quite distinct from the sources. These are all provisional comments, of course, generalizations based on what must be conceded is inadequate evidence, but the superiority of DTS was indisputable.

In all this digital excitement it is easy to overlook the analogue surround sound processes aimed at the stereo music listener. In particular, those who own Nimbus recordings will never know how much they gain in stature when played through a good Ambisonics decoder (most previous decoders have been horribly complex analogue designs) until they hear them reproduced via the 565. The rather over-reverberant quality associated with many Nimbus discs is revealed as an artefact associated with undecoded stereo replay. I was also particularly impressed by the 565's Trifield matrix – developed by the late Michael Gerzon – which adds a sense of stability, depth and space to many stereo recordings, without any obvious loss that I could identify. Meridian claims that it works best with small-scale recordings, but I see no reason for such limitations on its use.

In sum

This is a much harder system to sum up than usual, not least because it contains so many elements and sets out to perform so many disparate roles. The bottom line, though, is that it works brilliantly as a *whole*. Virtually any KEF Reference series loudspeakers could be used as main and surround units without spoiling the synergy, but other changes intended to provide improvements in particular areas are quite likely to result in a system that is not as well balanced, or as easy on the ear. As far as sound processing algorithms go, this one has the lot and is ready to track any important changes in the future, with MPEG-2 Audio already promised. Some of the processes will not be to everyone's taste, but others may change your thinking about how you listen, in particular by showing that there really is life beyond Blumlein. **G**

Specifications

KEF Reference Model Four

Type floor-standing, four-way

Drive units 25mm tweeter within 160mm polypropylene cone midrange unit; two 160mm polypropylene cone lower midrange units; two 250mm pulp cone bass units

Crossover frequencies 160Hz, 500Hz, 2-8kHz

Frequency response 35Hz–20kHz ±3dB

Sensitivity 92dB for 2-83V at 1m

Nominal impedance 4 ohms

Recommended amplifier rating 50–400 watts

Dimensions (H x W x D) 1,266 x 300 x 390mm

Weight 49kg each

UK retail price £3,099 (black), £3,299 (rosetta burr), £3,899 (rosewood)

KEF Reference Model Two

Type floor-standing, three-way

Drive units 25mm tweeter within 160mm polypropylene cone midrange unit; two 160mm pulp cone bass units

Crossover frequencies 150Hz, 3kHz

Frequency response 45Hz–20kHz ±3dB

Sensitivity 90dB for 2-83V at 1m

Nominal impedance 4 ohms

Recommended amplifier rating 50–200 watts

Dimensions (H x W x D) 1,012 x 230 x 300mm

Weight 29.6kg each

UK retail price £1,499 (black), £1,799 (rosetta burr), £1,999 (rosewood)

KEF Model 200C AV centre loudspeaker

Drive units 25mm tweeter within 160mm polypropylene cone midrange unit; two 160mm pulp cone bass units

Crossover frequencies 400Hz, 2-7kHz

Frequency response 55Hz–20kHz ±3dB

Sensitivity 90dB for 2-83V at 1m

Nominal impedance 4 ohms

Recommended amplifier rating 30-200 watts

Dimensions (H x W x D) 174 x 760 x 169mm

Weight 11kg

UK retail price £699 ("video grey" only)

KEF AV1 active subwoofer

Drive units two 250mm pulp cone, coupled-cavity loading

Frequency range 22Hz–150Hz

Dimensions (H x W x D) 428 x 560 x 500mm

Weight 49.75kg

UK retail price £2,499 (black), £2,599 (rosewood)

Manufacturer KEF Audio (UK) Limited, Eccleston Road, Tovil, Maidstone, Kent ME15 6QP Telephone 01622 672261 Fax 01622 750635