

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

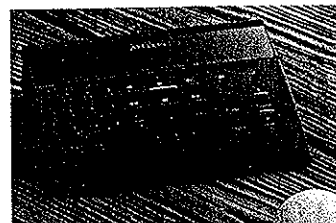
such a system also does justice to music then it makes the investment much more worthwhile.

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 AVI 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.

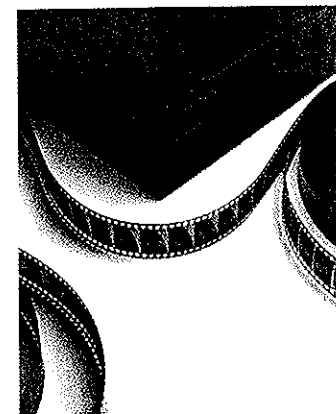
The electronics comes from the Meridian stable and comprises the 565 processor, the 508 20-bit CD player in lieu of a CD transport, and three power amplifiers: two of the stereo 557 and one 555 monoblock, each of which is well matched to its corresponding KEF partner. There is also a small accessory 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 UHF 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

Audio

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 onboard 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

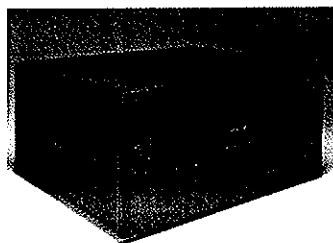
support, and further configuration options, making it remarkably complete. Its key sound processing algorithms are summarized in the table. To support these additional features a further increase in computing power was required, the current Z3 DSP processing card now boasting two Motorola 56303 processors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

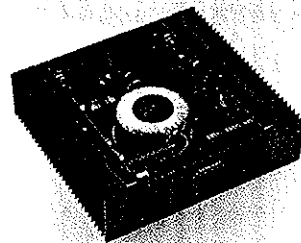


557 stereo power amplifier

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) >850 watts into 8 ohms

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

Weight 27kg

UK retail price £1,400

Meridian 555 monoblock 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 13kg

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