

DSP Loudspeakers with the G Series

The Audio Press on Meridian DSP Loudspeakers

Meridian Audio's DSP8000 speakers are a testament to both engineering and aesthetics...

Popular Mechanics

The effortless sweep of the DSP8000s presentation was aided by the extended and well-defined low frequencies.

Not only was the sound... astonishingly lifelike, but the image... just hung between and behind the Meridians.

I was also taken with the... clarity and transparency, especially in the midrange. They provided a clear picture window on the music, with no sense of haze. The presentation was open, crystal clear, and remarkably transparent.

Stereophile

The sound had a palpable transparency that gave me the feeling I was hearing back through the playback and recording chain to the original musical event.

Fidelity

This system delivers a performance that's state-of-the-art, especially when it comes to bass extension and control....The Meridian rules supreme when it comes to scale, authority and sheer low-end weight.

Clarity and balance will knock you off your feet.

What Hi-Fi

Much more than just a speaker, the DSP5000 is designated a 'music system'....This modestly sized speaker is capable of a surprisingly high acoustic volume or sound level.... Meridian's ace in the hole here is a dynamic, music-controlled correction for the overall bass alignment which allows clean, remarkably extended bass under normal conditions....The DSP5000 has to be heard. For its size it offers a remarkable combination of bass power and extension, of maximum volume level, of user control and adjustability, and of stereo image performance.

Hi-Fi News & Record Review

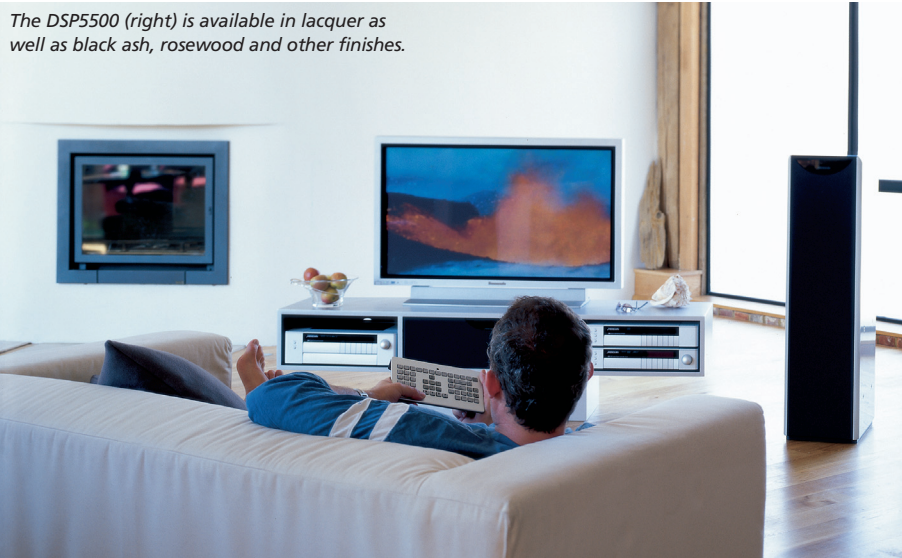
Speakers don't get much smarter than this!

Sound & Image

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Further technical details, images, product reviews and company history are available from Meridian Audio or from our web site, www.meridian-audio.com

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The DSP5500 (right) is available in lacquer as well as black ash, rosewood and other finishes.

design with a silver voice coil, while the mid-range unit uses a custom 160mm polypropylene driver.

The speakers are driven by four independent high-power, low-feedback power amplifiers, powered by a substantial toroidal transformer feeding audiophile-grade capacitors.

Like the DSP8000, each DSP7000 loudspeaker is built into a precision manufactured cabinet, which uses innovative design techniques to give exceptionally low coloration and exquisite mid-range transparency.

The ported enclosure is fabricated in a similar way to the DSP8000. The front incorporates a window for the matrix display and an infrared remote control sensor. The cabinet stands on three adjustable machined feet with provision for floor spikes or skids.



The DSP8000 – our flagship loudspeaker system.

Hear something to your advantage

Combining the multiple, audible benefits of Meridian's unique DSP loudspeakers with the extraordinary sound quality and reproduction of the G Series brings you the best of all possible worlds. The G Series sources, such as the G07, G08, G91 and G98 include digital outputs that will drive Meridian DSP Loudspeakers directly in stereo and, in some cases, surround, while the G68 surround processor with Meridian Room Correction is an ideal complement to a G Series digital source and Meridian DSP Loudspeakers for the ultimate digital surround experience.

There's too much to say about the extensive range of Meridian DSP Loudspeakers than we have room for here, and there are several other models available, such as the DSP5000, DSP5500 (pictured above) and DSP6000 Series. The DSP5000 and DSP5500 also include horizontal centre-channel variants. For full details, see the DSP Loudspeaker and G Series data sheets, visit www.meridian-audio.com or contact your Meridian authorized dealer.

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DSP Loudspeakers with the G Series



The DSP7000 (left) and DSP5500HC horizontal centre-channel unit (under the screen) form perfect complements to a G Series system and are ideal for the living room.

Meridian Audio has taken an almost unique course in the design of its audio systems, and particularly in its loudspeaker design, where the signal remains in the digital domain until the very last moment, and the loudspeakers include digital crossovers and signal processing.

Meridian's DSP Loudspeakers form an ideal combination with the latest G Series components to create superlative systems for clear, dynamic and, above all, musical reproduction of any source material.

As much effort goes into cabinet design as into the electronics within, and the keynote here is extremely high integrity. Cabinets are heavy and rigid, to minimize colouration. Typically, they incorporate multiple layers of wood and metal, bonded together for maximum damping. Many luxury finishes are available.

The DSP6000 and DSP8000, for example, include side-firing woofers that are horizontally opposed, so that the net movement is zero. Advanced materials ensure that the cabinet is so dead that movement stops at once when excitation ceases, with no ringing.

Our loudspeakers are essentially "human-sized" – psychoacoustic research indicates that humans are most highly developed to appreciate this size of sound-producing system, and they will thus sound the most natural.

This information sheet provides an overview of Meridian DSP loudspeaker technology. For a more detailed discussion, please download the White Paper on DSP Loudspeakers from our web site, www.meridian-audio.com.

The ideal loudspeakers to accompany Meridian's G Series components: elegant, stylish and with a uniquely musical sound

Active loudspeakers with built-in amplification deliver superb driver control and extended bass response – without enormous, ugly cables

Powerful DSP processing permits truly linear crossovers, for clear, dynamic sound and pinpoint imaging in stereo and surround

Meridian's DSP Loudspeaker systems set entirely new standards for clarity, dynamics, imaging and realism. They are breathtaking in their ability to place musicians in precise locations in your room, with even subtle body movements clearly audible. These systems also have the power to bring alive the most challenging motion picture sound track or rock band.

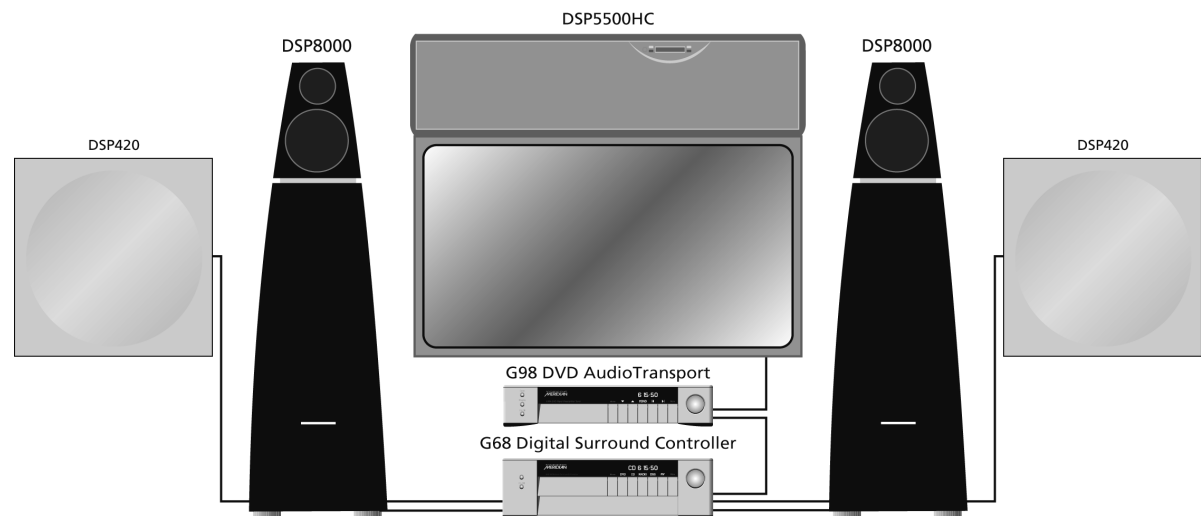
Our DSP Loudspeakers include FIFO memory buffering at each input for the lowest possible jitter; a linear-phase crossover for precision drive unit integration; adjustable tweeter delay for perfect driver alignment and a 48-bit resolution volume control. In addition, minimal equalisation delivers a frequency response free from drive unit or electronic colouration. Transparent tone controls are provided, along with absolute phase control and a phase-corrected balance control, while a position control allows maximum speaker location flexibility.

The drive units are powered by multiple independent high-power, low-feedback amplifiers mounted on a high-efficiency external heatsink. The combination of optimised magnetic design, careful star earthing, and very fast output devices gives the amplifiers extremely low noise, high detail, and extremely responsive, full bass.

Meridian DSP loudspeakers accept digital input signals including 96kHz/24bit, and Meridian High Resolution (MHR) streams from Meridian surround controllers, processors and DVD players such as those comprising the G Series.

On-board DSP processing means that the DAC can be placed just before the power amps. A separate DAC is used for each band of the

DSP Loudspeakers with the G Series



The G98DH DVD Transport is an ideal source for a Meridian system, and coupled with the G68 surround controller, forms the heart of a stunning Meridian Digital Theatre system. The units are shown here connected to a pair of Meridian's flagship DSP8000 speakers for front left and right, coupled with a pair of DSP420 in-walls for the surrounds and a DSP5500HC for the centre front channel. Any kind of video display device can be supported, whether composite, S-Video, Component (progressive or interlaced) or even the latest interfaces such as HDMI or DVI. Different video inputs are converted to all formats, so there is only need for one display connection (drawing not to scale).



DSP8000 – the inside story. The rigid enclosure, laminated from selected plywood and metal, has six coats of hand-finished piano lacquer. The six horizontally-opposed bass drive units neutralise cabinet resonance. The rear-mounted sealed DSP crossover and multiple power amplifiers are mounted on a precision machined heat sink.

loudspeaker system, delivering a dynamic range in excess of 120 dB, giving better inter-modulation performance, and offering a level of background noise below 10 dB SPL.

Digital signal processing allows "impossible" crossovers, with linear phase, steep slopes and time delay compensation. Highly accurate phasing between the drivers means that the "beam" of the system can be steered for the best experience at the listening position: there is even an axis control that allows the mid-range frequencies to be precisely tailored to suit your height.

Meridian's active bass extension deepens the response of the system without excessive woofer excursion. At moderate volumes, a psychoacoustically-correct filter extends the bass response much further than can be achieved with an analogue speaker of equal size, while at high volumes dynamic DSP bass protection is used to prevent overload.

Meridian DSP8000

Our Stereophile Class A rated flagship, the DSP8000, (see cutaway drawing, left) is designed to reproduce sounds at up to full natural level while providing all the resolution required by sources of up to 24bit and 192kHz. Such demanding dynamic resolution called for a new approach to cabinet construction and selection of advanced drive unit materials.

Each DSP8000 loudspeaker uses six high-efficiency long-throw custom bass drive units. These are mounted symmetrically in pairs on the sides of the bass cabinet, cancelling vibration in order to minimise interference with the mid-range and treble units.

The mid-range unit incorporates a cone made from a uniquely light and stiff combination of polymers to give unparalleled transparency. The whole electronic assembly is supplied from two substantial toroidal transformers feeding high-quality audiophile-grade capacitors.

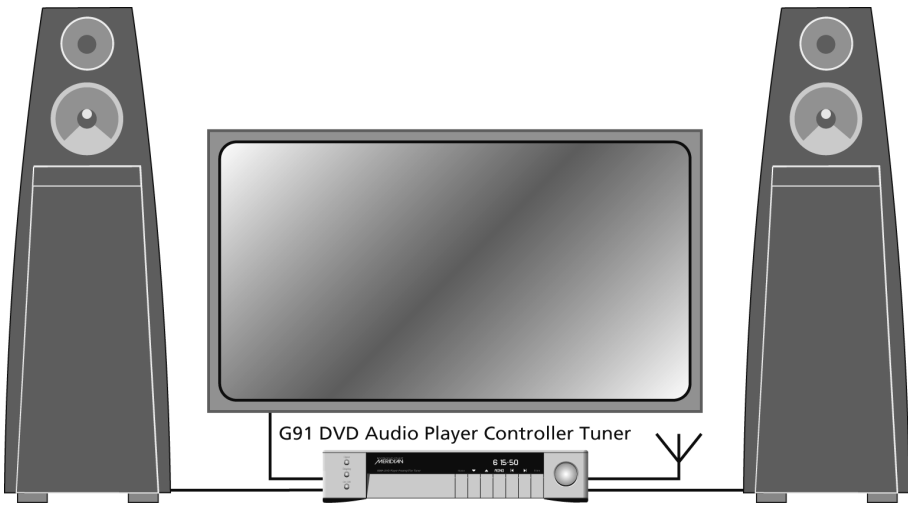
The DSP8000 is built into a precision manufactured cabinet, employing many innovative design techniques for exceptionally low coloration and exquisite mid-range transparency.

The treble and mid-range drivers are mounted in a separate sealed head assembly. The treble unit is a semi-horn-loaded composite dome design with a silver voice coil.

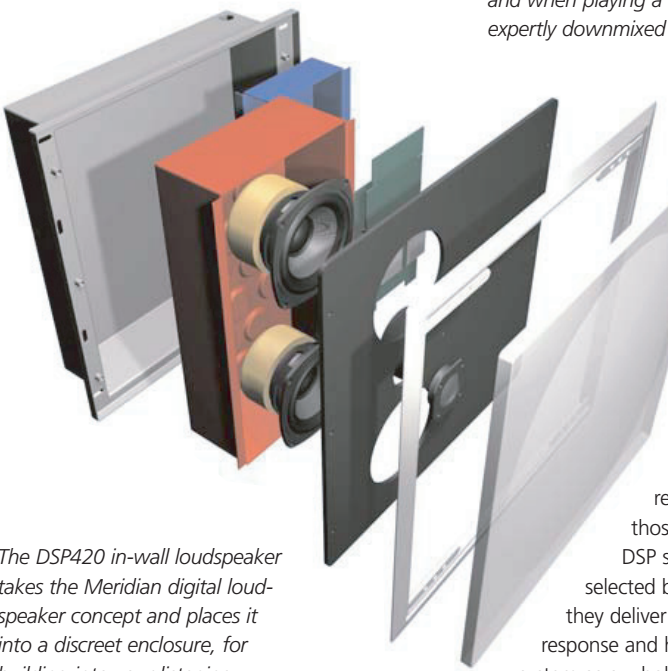
The head assembly is a sealed enclosure fabricated from curved pressure-laminated panels, each using multiple layers of selected woods and metal to provide high stiffness and damping. Its narrow, tapered shape offers optimum dispersion across a wide listening area. It is supported atop the bass enclosure by three machined feet.

Like the head unit, the bass cabinet is constructed from laminated wood/metal panels with extensive bracing. The front panel is finished with 6mm glass and incorporates a window for the matrix display and infrared remote control sensor. The cabinet stands on triangulated adjustable machined feet with provision for floor spikes or skids.

DSP Loudspeakers with the G Series



The illustration above shows the G91 at the heart of a compact Meridian-based stereo DVD system. The Meridian DSP loudspeakers take their feed from the G91's digital preamp outputs, with the speaker volume controlled either by the G91's front-panel knob or via the remote. With the G91DH, any kind of video display device can be supported, whether composite, S-Video, Component (progressive or interlaced) or even the latest interfaces such as HDMI or DVI. Different video inputs are converted to all formats, so there is only need for one display connection. With three stereo analogue inputs and four digital ins (two optical and two coax), the unit will support a wide selection of inputs, and when playing a multichannel source (disc or an external bitstream), the multichannel data is expertly downmixed to stereo (drawing not to scale).



The DSP420 in-wall loudspeaker takes the Meridian digital loudspeaker concept and places it into a discreet enclosure, for building into your listening room or home theatre.

DSP420 In-Wall DSP Loudspeaker

The DSP420 (see cutaway drawing, left) is a truly active in-wall speaker with separate internal amplification for high and low frequency bands. The precision low feedback designs, rated at 65 and 85 Watts respectively, are based on those used in other Meridian DSP speakers. Using carefully selected bipolar output devices, they deliver exceptionally fast bass response and high resolution, while the system as a whole offers extremely low levels of noise and distortion.

The power supply includes a substantial toroidal transformer and audiophile-grade capacitors. These amplifiers are coupled directly to the drive units for the most efficient delivery of power and the best possible control of driver excursion.

Enclosed in a fully shielded housing, Meridian's unique DSP processing is performed on a specially-designed six-layer PCB using a powerful 100 MIPS Motorola DSP engine. Thanks to this sophisticated "audio computer", the DSP420 provides high-technology features identical to those found in the rest of the Meridian DSP Loudspeaker family.

The bass drive units are two parallel 5in woofers with cast alloy chassis, carbon fibre cones and very large shielded magnets that provide excellent drive and control.

The high frequency dome tweeter has a Neodymium magnet and a protective grille, while an acoustically transparent grille protects the front baffle and drive units from harm when installed. Its powder finish means the grille can be easily painted, helping the DSP420 to blend in with its surroundings.

Meridian DSP7000

The Meridian DSP7000 (pictured on the front page) is a smaller derivative of the DSP8000. Each DSP7000 uses two multiple high-efficiency long-throw custom bass drive units.

The treble and mid-range drivers are mounted in a separate acoustic enclosure. The treble unit is a semi-horn-loaded composite dome

