



DSP7200

Digital Signal Processing Active Loudspeaker System



The concept of the Digital Active DSP Loudspeaker, first brought to market by Meridian over two decades ago, provides the most accurate and effective way to high quality sound reproduction. Originally introduced in 2007, the latest edition of Meridian's DSP7200 takes this technology to a new high, with a series of technological innovations that deliver superior performance in many areas.

The DSP7200 features the latest internal electronics and software, and specialised power amplifiers. It also includes a novel Enhanced Bass Alignment system, which ensures that low frequencies are time-aligned across the entire bass range, and confers the bottom-end extension benefits of porting, but retains the exact timing and coherence previously only associated with 'closed-box' designs. The result is deep, tight bass and clarity coupled with clean, clear, audibly superior low frequency transients.

In common with all Meridian's DSP Loudspeakers, the DSP7200's design rests on the use of digital signal processing for crossover filtering and all other signal processing. DSP7200 features a sophisticated multi-amplifier active loudspeaker topology in which each individual driver is powered by a dedicated amplifier channel. Ultra-accurate DSP makes possible filter designs that can actually clean up older digital recordings, and delivers crossover characteristics and precision that would be inconceivable for any passive, analogue system, for a level of driver integration that is otherwise unobtainable.

Additionally, individually powering each driver after the crossover system pays dramatic dividends in enhanced dynamic potential, reduced distortion, and idealized time-domain behaviour.

The DSP7200 benefits from original research at Meridian into digital filtering, featuring a special upsampling filter with

Product Information

3½-way Digital Signal Processing (DSP) active loudspeaker system

Self-contained audio system with four custom drivers, amplifiers, digital converters, improved digital crossovers and advanced sound-shaping DSP technology

New improved-performance dual-magnet, semi-horn-loaded composite dome tweeter with silver voice coil.

Advanced DSP filtering "cleans up" older digital recordings, and new Enhanced Bass Alignment improves LF transient response

Horizontal centre channel unit includes unique Centre Elevation adjustment technology – raises the centre image for perfect movie enjoyment

SpeakerLink digital audio and control I/O interface via RJ45

Curved cabinet features advanced damping technology and "Meridium" metal/wood laminate for superb rigidity

Additional listener controls include volume, bass, treble tilt, listening axis, time-compensated balance, absolute phase, Enhanced Boundary Correction and other new features

Black and white piano lacquer finishes; other colours to order via the Meridian Select programme

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A horizontal ported design is available, the DSP7200HC, designed for use in home theatre applications. The unique Centre Elevation feature allows the centre-channel image to be aligned with the screen in theatre installations.

especially impressive characteristics and no pre-echo. This 'apodising' filter is so effective that it can correct problems further up the chain – even including fixing faults in the original recording. As a result, conventional 44.1/48 kHz sampled CDs and DVDs sound astonishingly like high resolution recordings.

The DSP7200 accepts a digital feed directly from a Meridian controller, CD, DVD player or system controller, handling highest resolution bitstreams, eliminating analogue speaker cabling and its associated losses, coloration, and clutter – while SpeakerLink allows it to be driven by a single, low-profile cable.

A DSP loudspeaker brings unique opportunities for optimization of driver/amplifier/enclosure systems, while giving listeners unprecedented control over music and cinema sound playback. Whether in a two-channel system or as part of a multichannel home-theatre array, the DSP7200 provides precision command of frequency balance, listening axis and time-compensated balance and master volume – all implemented utterly transparently.

The DSP7200HC horizontal centre-channel loudspeaker features breakthrough DSP technology, such as Centre Elevation adjustment, which employs results of the latest psychoacoustical research to vary the height of the audio image. Thanks to this unique, proprietary development, the loudspeaker may be placed beneath the screen in a home theatre installation, while the sonic image can be elevated to the centre of the screen image or to align with the main front loudspeakers as desired.

The DSP7200's four internal 150-watt amplifiers are the same balanced-input, high-current designs employed in the flagship DSP8000, with heatsinking on the extruded back panel. Two amplifiers drive a pair of refined 8-inch, long-throw bass units with a new basket design, separately housed in their own optimised enclosure in the base of the speaker system.

Meanwhile the 6-inch midrange unit is the same driver used in the flagship DSP8000, employing a cone made from a uniquely light and stiff combination of polymers to give unparalleled transparency. The treble unit, new to the DSP7200, is a dual-magnet, semi-horn-loaded composite dome type with a silver voice coil. Both are driven by their own amplifiers and operate from a second, completely separate enclosure atop the bass/electronics module.

DSP7200 includes Meridian's SpeakerLink input/output interfacing architecture, featuring balanced drive and RJ45 connectors for simplicity and elegance of installation via simple, unobtrusive cabling.

The DSP7200 cabinet, like that of the DSP8000, is crafted from Meridian's innovative, multi-layered 'sandwich' of selected woods and metal, formed in curved, pressure-laminated panels that produce almost perfectly vibration- and resonance-free enclosures, for unmatched freedom from coloration. The exteriors of these unique cabinets are painstakingly finished in Meridian gloss piano lacquer black or white colours, with the full range of Meridian Select colours available to order.

Outline Technical Specification

Performance

- Frequency response in-room within 3dB from 30Hz to over 20kHz.
- Maximum output >112dB spl @ 1m on music material.
- Noise less than 15dB spl.
- Overall electronic distortion typically <0.02% at any frequency or level.

Inputs

- 1x phono digital input (S/PDIF)
- 1x balanced digital (AES/EBU) input on RJ45; 32kHz–96kHz sampling rates at up to 24 bit; MHR support. RJ45 input also carries RS232 and trigger.

Outputs

- 1x RJ45 with balanced digital audio and control for a second loudspeaker. Carries infra-red pickup for system automation.

Construction

- '3½-way' acoustic reflex system.
- Digital crossovers at 200Hz and 2.6kHz.
- 2 x 200mm long-throw bass drivers.
- 1 x 160mm polypropylene mid driver.
- 1 x 25mm composite-dome tweeter, silver wire, dual magnet, semi-horn-loaded.
- Gloss black or white piano-lacquer cabinet, other colours available to order.

Electronics

- FIFO memory buffer input for the lowest possible jitter from almost any source.
- Analogue gain & filtering with proprietary Meridian Class-A discrete amplification.
- Digital & conversion electronics utilise advanced surface-mount techniques and partitioned 6-layer printed-circuit boards.
- 4x 24-bit 128x oversampling D/A converters for maximum audio quality.
- 4x 150W/4Ω power amplifiers – one per driver (2xbass, 1xmid, 1xHF).

Dimensions:

- Vertical version: 1072 (42.25) H (no feet), 350/180 (13.75/7.1) W, 415/217 (16.5/8.5) D [base/top, mm (in)]
- HC version: 295 (11.6) H, 1060.5 (41.75), D 478.25 (18.8) max [mm/(in)]. Measure actual unit before specifying.

Weight:

- 55kg (121 lb) each (vertical version).
- 64kg (141 lb) (horizontal centre version)

Controls

- Rear-panel controls for Power On/Off. MSR+ and via SpeakerLink

Front display

- Eight-character display w/ system lights

Power

- 20W standby, 920W max