



861v8

Reference Digital Surround Controller



Meridian has invented a number of significant concepts in high quality home audio/video, including the audiophile Compact Disc player, the DSP loudspeaker and the digital surround processor.

Meridian has established an unequalled reputation for outstanding use of digital audio and DSP (Digital Signal Processing) technology in our products, giving us unprecedented quality, flexibility and functionality. The 861 represents the most advanced representation of Meridian's ground-breaking DSP control and processing system for high-quality audio and video signals.

Its card-based construction allows the unit to be configured to suit your personal requirements – as well as helping to future-proof the system by being able to accept new cards with additional features as they are developed.

The 861 features Meridian's unique 'apodising' upsampling filter, which makes standard resolution audio sources sound like high-resolution. It also includes Meridian Room Correction, an innovative, semi-automated method of managing a room's acoustic behaviour for improved clarity, imaging and overall realism, advanced DSP algorithms that audibly improve audio performance and a linear power supply along with carefully-selected audiophile-grade components.

Since its introduction in 1998, the Meridian 861 Reference Digital Surround Controller has consistently offered the industry's highest standard in surround processing and system control.

The 861's modular architecture allows each unit to be individually specified and manufactured. Modular architecture also means that as technology standards advance and new features are developed existing 861s can be upgraded – adding new processing features and connectivity; a service that maintains the value of the customer's original investment.

The 861v8 Reference Digital Surround Controller, the most recent version of this landmark processor, incorporates the latest linear power supply design, USB input, enhanced SpeakerLink control and output connectivity for up to eight channels of Meridian DSP Loudspeakers and an eight-channel MMHR input as standard features. It also incorporates a number of other connectivity and performance updates which makes the 861 ideal for today's market and easy to specify.

861v8 makes a perfect front end for the 'Class A' rated Meridian Digital Theatre, where the 861 can receive super-high-resolution MMHR digital signals from a Meridian product such as the HD621 HDMI Audio Processor.

Product highlights

The heart of the ultimate movie system, 861v8 links all your audio sources at the very highest quality, with advanced DSP algorithms and loudspeaker management.

Latest design of linear power supply for enhanced overall performance.

8-channel SpeakerLink outputs maximise performance with Meridian DSP Loudspeakers, make installation quicker and easier, and include enhanced loudspeaker controls including Centre Elevation and Enhanced Bass Alignment with supported loudspeakers.

Includes, as standard, digital outputs to drive a full Meridian Digital Theatre, plus an 8-channel MMHR input, fully compatible with HD621 for HDMI sources such as Blu-ray Disc.

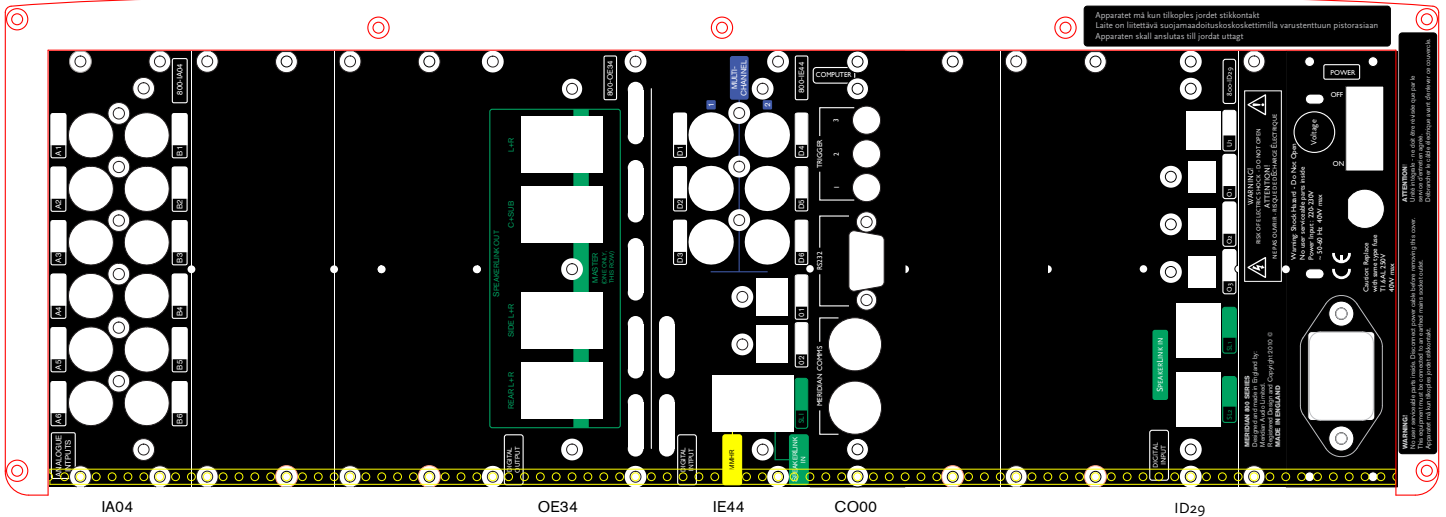
Meridian Room Correction measures room acoustics and applies filters to smooth out resonances, increasing clarity, definition and imaging for a more natural, convincing listening experience.

Each 861 is individually built for its owner, with optional cards allowing inclusion of specific features to suit the individual installation.

USB input for computer playback, plus optional ID41 card for ultimate quality integration with Meridian Digital Media Systems.

Improved DSP feeding the analogue outputs provides a sweeter sound.

Redesigned master oscillator and clocking circuitry reducing jitter by 40% compared to previous models, and the unique proprietary 'apodising' upsampling filter pioneered in the 808.2 for enhanced performance.



861v8 rear panel layout showing core cards (see panel below)

Movie sound

861v8 includes an MMHR (Meridian Multichannel High Resolution) input allowing eight channels of audio to be sourced from a Meridian HD621 with a single RJ45 cable plus Meridian Comms.

The 3D-compatible HD621 is designed to maximise audio quality from HDMI-

equipped High Definition sources such as Blu-ray Disc players. It splits audio and video components and sends them to the Controller and the display respectively. There's simply no better way to get the very highest audio quality from HD sources.

Dolby Digital (AC-3) remains a common sound format on video, and the unique

Meridian Dolby Digital decoder in the 861 delivers the highest quality sound of which this format is capable. The 861 also decodes MPEG and DTS signals from DVD – as well as DTS surround CDs.

Improved performance

Meridian's 861 uses carefully-crafted processing to gain the maximum benefit from high-precision PCM inputs. The 861 accepts multiple input channels of 24-bit, 96kHz sampling PCM, and delivers the maximum resolution on these signals.

The processor also performs improved high-resolution up-sampling on signals coming in at lower sampling rates, de-jittering them and significantly improving their audio quality. Meridian's acclaimed 'apodising' upsampling filter and redesigned oscillators and clocking structure new to 861v8 reduce jitter by 40%, significantly improving audio quality for all sources managed by the 861.

SpeakerLink in and out

Meridian's SpeakerLink technology allows two channels of balanced digital audio plus all associated Meridian Comms and control signals to be carried between components via a single, low-profile, inexpensive Screened Twisted Pair (STP) cable.

861v8 includes three SpeakerLink inputs for the connection of components like the 808 CD Player, and a full eight channels of SpeakerLink out – able to drive a complete Meridian Digital Theatre consisting of Meridian's high-performance DSP Loudspeakers – making the 861 particularly easy to specify and to install. 861 now includes the latest SpeakerLink

Core and optional cards

Core Cards

The following cards are fitted as standard inside a Meridian 861 Version 8 (See above):

- IE44** 6x Digital Audio Inputs, Phono, D1 to D6 can be configured as 2x six-channel digital inputs with Meridian SmartLink performance. 2x Optical Audio Inputs, Toslink. SpeakerLink Input, RJ45. Meridian Multi-channel High Resolution (MMHR) Input, RJ45.
- IA04** 6x Analogue Stereo Inputs, Phono. Can be configured as 2x six-channel analogue inputs.
- ID29** Digital Input card with 1x USB input, 3x Optical Audio Inputs, Toslink, 2x SpeakerLink inputs, RJ45.
- OE34** 8x Digital Output, SpeakerLink. L, R, C, SUB, Side L, Side R, Rear L, Rear R.
- CD20 & EF20:** Internal (no rear panel) 48-bit DSP cards each containing two Motorola 56367 chips running in dual precision mode, each card offering 300 MIPS (million instructions per second) capability.
- CO00** Control computer card. Complete with Flash memory, RS232 port for control and status, 3x configurable trigger outputs and 2x Meridian Comms.

Optional Cards

- OA18** Analogue Output card 4x Analogue Outputs, XLR, configurable, with 24-bit, 192kHz DAC.
- OA08** Analogue Output card, with 4x Analogue Outputs, Phono, configurable, with 24-bit, 192kHz DAC.
- ID41** Digital Media System Card. Audio endpoint card with 1x Ethernet network, RJ45.

The press on Meridian's 861

"Brilliant in conception, mind-boggling in execution, more powerful and better-sounding than almost anything else ever made."

—*What Hi-Fi*

"...the 861 is beyond reproach....There is no need for discussion, it is simply the best."

—*Home Entertainment*

"A life-changing experience..."

—*The Absolute Sound*

"...the best AV technology that money can buy... a benchmark to which all others can be judged."

—*Audio & Video Lifestyle*

"...the most flexible and capable device in audio. ...it offers as much insurance against the winds of technological change as is possible. It's a formidable machine."

—*Stereophile*

"...this 'reference-grade' pairing [of 800 & 861] is top-notch. ...the strength of these components is their ability to... take domestic sound reproduction to a new level of enjoyment and involvement."

—*Hi-Fi Choice*

"Has the 861 brought me the best playback to date I have heard in my own home and in my room? Without a doubt it has by far. The 861 is a technological tour-de-force... the reference standard ... Meridian Room Correction... places the 861 into the realm of truly reference grade products. Meridian's flagship processor is a great product... a leading contender for the best preamp/processor on the market."

—*Widescreen Review*

"The 861 has always been and still is: the best-sounding audio processor I have heard."

—*Stereophile*

"If you wanted to make the argument that the Meridian 861 was the best-sounding AV preamp money can buy – I wouldn't argue with you. It's that good."

—*Home Theater Review*

features such as Centre Elevation – which allows the image height of a compatible centre-channel loudspeaker to be elevated to the centre of the screen, for example, when mounted beneath it – and Enhanced Bass Alignment, which ensures that all bass frequencies are time-aligned.

With both digital and analogue output capability, the 861 is also ideally suited to driving conventional amplifiers and passive loudspeakers. 861v8's analogue outputs include improved DSP with filter optimisation, giving a sweeter sound than ever before.

Digital Media System Integration

The optional ID41 Card delivers the highest possible playback quality from a Meridian Digital Media System as well as offering Stop/Play/Previous/Next control of the current Play Queue from the MSR+ remote control.

In addition to Meridian Digital Media System compatibility, the 861 includes a built-in USB input, allowing the 861 to replay computer sources at the highest possible quality, limited only by the source material.

What makes 861 so special?

The single most important feature in all our DSP products – including the 861 – is the incredibly high standard we set for sonic performance.

Instead of using chips that have their firmware irrevocably 'burned into' them, Meridian's signal processing is software based, and therefore can be improved or modified in future – for example, Dolby, DTS and THX specifications have all advanced a great deal since the initial standards were set. Meridian's solution gives the customer exceptional value over the years to come – a Meridian 800 Series system does not go out of date. Most important, however, is the quality sound resulting from including highly accurate decoding algorithms at the heart of the surround decoder. Signals are processed with 48-bit precision where possible.

Smart Source functionality

With the profusion of formats that may appear at the inputs of a decoder, there is room for confusion. The 861 continually monitors the active digital input and automatically loads the correct decoding

software for the format, speaker layout and encoding of the incoming signal. You can also store separate user parameters for each source, depending on whether the incoming signal is stereo or surround.

These capabilities are enhanced by MHR SmartLink and MMHR (Meridian Multichannel High Resolution), which provide a digital link between a Meridian source and controller, carrying explicit information about the nature of the datastream as well as encrypted high-resolution digital signals.

Bass Management

The 861's bass management system ensures that all bass signals are fed to the speakers that can handle them – seamlessly and optimally, irrespective of the channels from which they originate.

Movie soundtracks have the potential to require a 12dB increase in bass power-handling in a system. Not only can the LFE (Low Frequency Effects – the '0.1' in '5.1') channel convey 10dB more bass, but potentially this can coincide with full bass level in the other five channels. Although the Dolby Digital, DTS and MPEG encoders limit the total bass level to +15dB, the resulting bass energy can still be incredibly demanding for even the very best systems. This amount of bass energy may also be disastrous for other, less capable, speakers.

The Meridian 861 incorporates a highly sophisticated series of bass management schemes for Digital Surround formats. The user can control the overall amount of LFE added in, with Music and Movie modes that address the fundamentally different approaches to bass management that these sources may require. In addition, the 861 has a bass limiting function ensuring that the total amount of bass passed to the system does not exceed operational limits of the downstream components.

The 861 continually monitors all active speaker feeds. Sophisticated DSP determines how hard each individual speaker is working and compares that to a capacity rating for each speaker, measured when the system is installed, via a calibration routine that actually tests the speaker's capabilities. If the signal demands more bass than a speaker can supply, a proprietary, psychoacoustically-

optimised limiting filter momentarily and elegantly manages the load on that speaker. This unique protection method means you can get the most out of all the speakers in the room without any fear of damage or unpleasant overload noises.

Sample rates & de-jittering

The 861 embodies the very latest developments in digital audio, including high sample-rate capability throughout. Meridian, famous for smooth-sounding digital audio components, has made a major breakthrough with a memory-based de-jittering system that renders the processor almost entirely immune to input-signal quality – making it by far the sweetest and most open-sounding controller that Meridian has built to date. 861v8 includes a new master clock and associated circuitry that has made it possible to reduce jitter to levels of 40% or better below previous models.

Digital signals are upsampled to 24-bit, 96kHz sampling using Meridian's unique 'apodising' filter and de-jittered by a powerful DSP processor and FIFO memory buffer, while analogue signals are transferred into the digital domain via precision high-sample-rate 24-bit Delta-Sigma A/D converters.

Inputs

The 861 is a full-system controller/preamp that provides seamless control of up to 12 analogue or digital audio sources. By providing digital as well as analogue inputs, 861 can deliver radically higher sound quality for sources that are originally digital – like CD, DVD and Blu-ray Disc. As well as accepting multichannel digital audio, the 861 will handle S/PDIF-encoded Dolby Digital, DTS or MPEG from sources like DVD and set-top boxes.

Processing

The Meridian 861 is a digital processor, and all signals are handled within the digital domain. The processing engine can consist of between two and ten modular processor cards, each offering an astonishing 300 MIPS of processing power and housing multiple ultra-fast processors running a variety of proprietary algorithms to drive a number of different possible outputs. These can be used to feed a number of speaker layouts, ranging from conventional 2- to 8-speaker stereo/

surround with multiple subwoofers (with adjustable crossover parameters), to more specialised layouts such as with-height configurations and Ambisonic layouts such as square/rectangle, pentagon, hexagon and heptagon. Up to eight loudspeakers can be active simultaneously, though different setups can address different combinations of outputs (for example, one layout might use digital outputs 1–8, while another might use digital outputs 1-6 and two analogue outputs).

Algorithms include Meridian's own highly transparent Dolby Pro Logic IIx and Dolby Digital implementations, MPEG Surround, DTS, THX extensions, TV Logic and a variety of award-winning music programs including Trifield and Ambisonics – in the latter case handling both 2-channel UHJ and planar B-Format sources.

Trifield, recently brought to prominence through its starring role in Meridian's automotive systems, actually decodes a stereo signal to a three-speaker front soundstage, providing greatly improved stereo imaging and stability irrespective of listener position, as well as extracting surround information from stereo recordings.

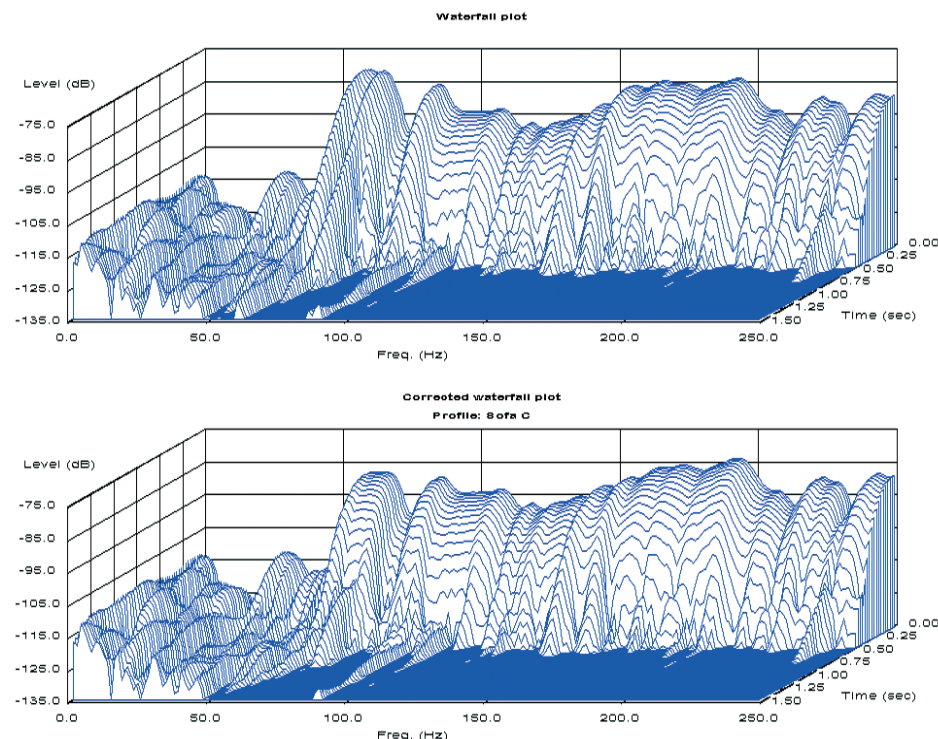
Meridian Room Correction

861 includes Meridian's powerful Room Correction system. A simple microphone is used by the installer to measure a room's resonances. Software then computes digital filters to control these resonances, or "modes", and uploads them to the 861. The result is a dramatic improvement in the sound, with reduced 'muddiness', and enhanced clarity and imaging.

Physical Characteristics

861 architecture provides wide flexibility – future sources, formats and features can be handled by upgrading software and/or cards. 861 includes an advanced linear power supply and a backplane with slots for both digital and analogue audio cards. The slots can be populated with a selection of available 800 Series cards, the total number depending on the owner's specific requirement (see over).

The 861v8 is available as a table-top box, or in a rack-mountable version with or without cover. It is supplied finished in Graphite, Silver or Black; the full range of Meridian Select colour options is also available.



Meridian Room Correction smooths out reverberation and resonance for a cleaner, more precise sound without muddiness.