

# G91 DVD Audio Player Controller Tuner



G91 rear panel composite drawing (actual panel layout and legend may differ slightly)

## Outline Specifications

<p><b>Formats:</b> DVD-Audio, DVD-Video, DVD-R; Video CD (VCD), CVCD, MP3; CD Audio (CD-DA), CD-R and hybrids such as SACD (CD layer only) and CD/DVD-AV (Dual-Disc)</p> <p><b>Audio inputs:</b> Analogue: three stereo inputs, unbalanced 0.5–2.5Vrms on phono. Digital S/PDIF: two stereo coax inputs and two stereo Toslink optical inputs.</p> <p><b>Tuner:</b> Tuner includes its own 24/96 A/D converter. AM (Long/Medium Wave, 150–285/525–1605 kHz); FM (VHF Band II, 87.5–108 MHz), sensitivity 2µV. DSP processing for FM stereo/mono blend and width; AM lowpass filter and whistle filter</p> <p><b>Audio outputs:</b> Analogue: Stereo preamp output, variable up to 3V rms. Digital: MHR Smart Link digital output (15 Pin 'D' type connector) and 3 x coax, 1 x auxiliary preamp out (digital coax), 1 x aux digital transport out (digital coax). HDMI 2-ch/bitstream output (with video)</p> <p><b>On-Screen Display:</b> Switchable custom On-Screen Display allows instant review of disc status. Screen saver with user timeout options. Logo screen with PLUGE bars enables set-up of display device</p> <p><b>Video features:</b> Automatic PAL or NTSC encoding on Composite and S-Video. NTSC black-level setup adjustable as 0 or 7.5IRE. 16:9 and 4:3 displays supported</p>	<p><b>Video Processor:</b> Two composite video inputs, one component input, three S-Video inputs; composite, S-Video, component and HDMI outputs (DVI-compatible, HDMI also carries 2-ch audio), outputs all simultaneously active; selected video input is converted to all formats at valid resolutions (except non-interlaced component input which bypasses processor). Faroudja DCDi® scaling and de-interlacing technology. HDMI port supports 480p, 576p, 720p, and 1080i. Analogue component out at 480p and 576p</p> <p><b>Controls:</b> Front-panel soft key functions include Play, Stop, Pause, Previous, Next, plus Home and More keys. Off, Display and Open/Close buttons. Off gently illuminated when off; keys back-illuminated when on</p> <p><b>Comms:</b> Full RS232 control and status enables custom integration or automation. Meridian Comms (2 x DIN plus BNC)</p> <p><b>Trigger:</b> 12v trigger output allows control of power amps, etc</p> <p><b>Panel Display:</b> Multi-character dot-matrix graphic Vacuum Fluorescent Display (VFD)</p> <p><b>Dimensions:</b> Width: 440mm (17.32in); Depth: 350mm (13.78in) plus connectors; Height: 90mm (3.54in)</p> <p><b>Rack Mounting:</b> Kit available from Meridian authorized dealers</p> <p><b>Weight:</b> 9kg (19.8lbs)</p> <p><b>Power:</b> Universal supply 100–240V, 50–60Hz, 25W</p>
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composite, S-video, and interlaced component video, and convert between the formats, or to the HDMI (high-density multimedia interface) standard, to provide a single video output for all the video sources in your system. A bypass function allows progressive or high definition component video to be routed directly to the component output only.

The HDMI port also carries high-resolution digital audio, either two channels of PCM at up to 96kHz or a 5.1 bitstream, while broadcast-quality video circuitry delivers the most advanced, high-quality video available today. The HDMI port supports a wide range of high quality digital video options including 480p, 576p, 720p, and 1080i. A unique feature of HDMI is that it

is able to 'handshake' between the source and the display to find the highest quality format. Analogue component out is available at 480p and 576p.

The video processor includes picture controls, available via the MSR+ and front-panel display. For the internal DVD and external video inputs you can adjust the the horizontal/vertical picture position. In addition, the brightness, contrast, colour, and hue (NTSC) are adjustable on the video inputs.

The HDMI output can be connected to a DVI input if the device supports HDCP copy protection, using a suitable adaptor cable.

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Meridian's G Series line of high performance digital & analogue consumer audio components feature a stylish cabinet design in traditional black or a sleek silver finish.

Designed to be either free-standing or rack-mounted, G Series components build on their predecessors, the multi-award-winning 500 and our flagship 800 Series, and include entirely new circuitry developed specifically for the G Series.

Multi-layer boards reduce system noise and improve performance. In products which include video capabilities, broadcast-quality, wide-bandwidth video components are employed for maximum image integrity.

G Series units are easy to use. Where appropriate, a knob is included to control volume. The positive-action front-panel keys are software-defined: their legends are presented in the vacuum fluorescent display and change intelligently according to context.

Full installation configuration of many G Series components is achieved by running a special setup program on a Windows computer, connected to the G Series unit via a serial link, or direct from the front panel.

G Series products also include serial ports for remote operation and configuration, along with infra-red sensor input and trigger capabilities, plus Meridian communications ports. A comprehensive back-lit learning/programmable remote is included with products other than amplifiers.

Ideal heart of a stereo or multichannel audio/video system

Plays all CD and DVD format discs including hybrids

Multiple analogue and digital inputs

Powerful video processor with HDMI/DVI

Digital upsampling and buffering delivers a spectacular improvement in quality

ROM drive improves error-correction over ten times

AM/FM tuner with RDS

Software updateable

Virtually every piece of audio equipment has its own, characteristic sound. But at Meridian, our intention is to represent the original acoustic or studio event as accurately as possible. The characteristic sound of Meridian, therefore, is clear: it's the real thing. We achieve this sound in many ways, including careful choice of the right components, the right signal processing, the shortest possible analogue chain, precision digital design and the lowest jitter.

The G91 plays audio CDs, MP3 CDs, Video CDs, DVD-Video, and DVD-Audio discs. It can decode Dolby Digital, DTS, MPEG, MP3, and MLP data streams to PCM for stereo, and in some cases multichannel, playback, and it can optionally output Dolby Digital, DTS, and MPEG bitstreams for connection to a surround controller such as the G68.

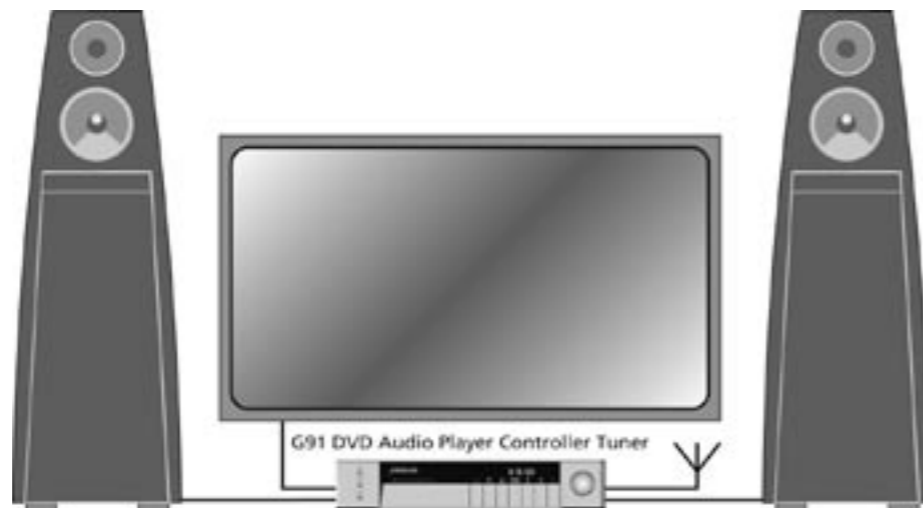
The G91 incorporates a two-channel preamplifier with two coax digital inputs, two optical inputs, and three analogue inputs. It provides both analogue and fixed digital stereo outputs. The G91 includes digital signal processing to upsample decoded streams, or decode bitstreams from external sources. It also includes a high-quality FM/AM tuner with RDS/RDBS.

The G91 is designed to connect directly to a pair of analogue active speakers, or power amplifiers and passive speakers. Alternatively, it can be connected to a pair of Meridian DSP Loudspeakers to create a complete two-channel AV system.

## G91 DVD Audio Player Controller Tuner

The illustration right 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 by the G91's front-panel knob via the communications link, or via the remote.

With the G91, 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 stereo digital ins (two optical and two coax), the unit will support a wide selection of inputs, and when playing a multichannel disc, it is expertly downmixed to stereo.



In addition, the G91 provides a multichannel digital output to allow connection to a surround controller with multichannel digital inputs such as the G68. Alternatively the multichannel digital output and stereo analogue output can be used to directly drive a basic 5.1 surround system based on Meridian DSP Loudspeakers and up to two analogue speakers (left and right, centre, subwoofer, centre and subwoofer, or rear left and right).

The G91 includes a powerful video processor and scaler which can simultaneously provide composite and S-video outputs, plus progressive component video and up to 1080i on an HDMI output. It provides two composite, three S-video, and one interlaced component video input, all of which can be routed to any of the video outputs with appropriate scaling.

G91 (above) with G68



At the heart of the G91 is a high-speed computer-style DVD-ROM drive – the best type of drive to use to ensure accurate data recovery from all types of disc, while providing a stable platform that can be changed in the future, if necessary, to keep pace with new requirements.

The drive normally operates at standard speed; however, it is capable of recovering data a great deal faster when required, enabling it to make more attempts to recover accurate data from a problem disc. Because of this, the drive can perfectly recover the data from almost any compatible disc.

Unlike other players that use a mechanical approach to attempt to lower jitter by minimising drive vibration, the G91 employs a triple buffering system to minimise jitter, maximizing HF transparency and sound stage precision and stability. The result of this sophisticated approach is that the players deliver ultra-low jitter, with sound and picture quality second only to Meridian's 800 Reference DVD/CD Player.

The digital electronics as a whole are driven by a new design of high-stability clocking system which further reduces jitter and ensures that the highest level of detail is recovered from a disc. All digital data is accurately re-clocked, and multiple power supplies ensure that digital and analogue circuitry are kept separate.

The G91 includes a comprehensive front-panel user interface which allows access to all the features of the unit. The player can be set to a standard 'Type' which configures all the required settings as required for a particular application. In addition, an on-screen display (OSD) allows you to configure specific settings individually.

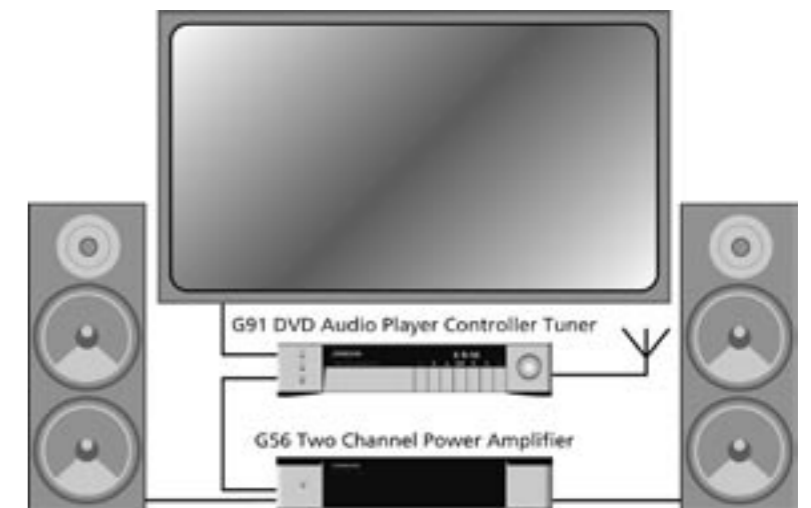
The player employs Flash ROM memory for the operating system, so software updates can be downloaded from the Internet and installed via a PC connected to the serial port on the rear panel. The serial port also allows full remote control and configuration of the unit.

The G91 provides three principal S/PDIF coax outputs designated L/R, L/R Surround, and

In this analogue alternative to the system shown opposite, the G91 is augmented with a G Series stereo power amplifier, such as the 2 x 100W G56 shown here, or the more powerful G57. The G91's analogue stereo output can be either fixed or variable, and in this case the latter option is used. The power amplifier will drive any pair of conventional passive analogue loudspeakers.

Once again, the video output from the G91 can be selected from any of the available formats. The analogue output is driven by a 24-bit DAC stage that is upsampled to 176.4 or 192 kHz for maximum fidelity, while the stereo analogue output level is control by the front panel knob.

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C/LFE. These typically connect to Meridian processors, or feed a stereo signal to a pair of DSP Loudspeakers. If configured for MHR SmartLink they, or the adjacent combined 15-way D-type connector, carry high-sample rate encrypted data from DVD discs for the highest fidelity of decoding and reproduction. The SmartLink also informs a connected Meridian processor of the signal source, so that it can switch processing modes automatically.

An additional S/PDIF digital output delivers a stereo downmix or bitstream signal.

The G91 includes a preamplifier and integral radio tuner. The main stereo analogue preamp output is either fixed, or variable via the front-panel knob which controls the Meridian proprietary digital/analogue volume control – a design similar to that used in the 800 Series and DSP 8000. The tuner provides AM (LF/MF) and FM (VHF stereo Band II) reception with RDS/RDBS, and is fitted with its own 96kHz, 24-bit A/D stage. Digital signal processing provides a sophisticated FM stereo blend/width control which allows you to minimise noise on a received signal. There is also a DSP-based low-pass filter and a whistle filter for improved AM reception.

The G91 includes upsampling capability, which allows digital filters to be placed far beyond the range of human hearing, as well as offering other audible benefits right across the audio band, including improved transient response. All processing is at 48-bit precision. This results in a more open, transparent sound, tighter bass, and a generally more 'musical' sound overall.

To drive the analogue outputs, signals are upsampled to 176.4/192kHz for digital to analogue conversion – DACs can offer better performance at higher sampling rates – and 88.2/96kHz is used for the digital outputs, all at 24-bit word lengths.

Here again, sending 24 bits at high sample rates via an S/PDIF link reduces jitter as compared with the original 44.1kHz, 16-bit signal from a CD, for example. In addition, high-resolution digital outputs are encrypted, removing cyclic

components from the data stream and further reducing jitter.

All these advanced digital processing features are handled by a powerful DSP engine delivering an impressive 150MIPS (million instructions per second).

In addition, the G91 incorporates digital signal processing to allow the multichannel digital output and stereo analogue output to be used to directly drive a basic 5.1 surround system based on Meridian DSP loudspeakers and up to two analogue speakers.

The built-in surround processing system (software update required) decodes 5.1 Dolby Digital or DTS soundtracks from DVD-A or DVD-V discs, or from the external digital inputs. It will also create a full surround image from 2-channel soundtracks on audio CDs, DVD-A or DVD-V discs, or from the external two-channel digital or analogue inputs.

Several DSP presets are provided to allow you to choose the type of surround processing used for different sources. For 5.1 audio formats a Discrete or Cinema DSP preset is selected automatically, depending on whether the source is music or a movie. For two-channel audio formats the DSP preset can usually be switched between Tri-field (recommended for music), Stereo (uses just the main left and right speakers and subwoofer), or PLII (recommended for movies), using the DSP key on the front panel or MSR+.

On the video side, advanced video circuit designs, matched phase video filters, and a broadcast-quality video encoder are employed to deliver low-noise images of outstanding colour depth and resolution. Separate ultra-low jitter master video and audio oscillators allow picture and sound to be independently optimized, ensuring that the G91 DVD player delivers breathtakingly clear pictures.

The G91 includes a unique broadcast-quality, high-resolution video processor/scaler which combines both Meridian and Faroudja DCDi® technology. This processor can receive