



HD621

HDMI Audio Processor

Product Information



The Meridian HD621 HDMI Audio Processor extracts the audio signal from the HDMI input and provides audio outputs suitable for a Meridian system. Internal buffering and processing improves audio quality. It is also a 6-into-1 HDMI video switch, allowing all your HDMI-based components to be fed via a single video cable to your display.

HDMI (High Definition Multimedia Interface) connectors are a common sight on HD video and other equipment. Usually employed to carry digital video, HDMI also carries digital audio. However, audio travels down an HDMI cable in bursts, and this can significantly increase the level of jitter in the signal.

Digital video signals have traditionally been the bane of those in search of the best audio quality. They include very high frequency signals with very fast rise-times and thus tend to radiate an enormous spectrum of harmonics. Ideally, therefore, it makes sense to separate audio and video signals, in particular minimising opportunities for audio quality to be degraded by the presence of video.

The HD621 solves these problems, while allowing all your components that deliver video via HDMI a common destination. A single cable can be run from the HD621 to the display, while enhanced digital audio is fed to the sound system. The HD621's audio outputs connect directly to an existing Meridian loudspeaker or surround processor, offering complete and immediate system integration.

The HD621 includes Meridian's highest-performance FIFO buffering system and resolution enhancement. This de-jitters incoming PCM digital audio signals. The result is a significant and audible improvement in quality, including accuracy of stereo and surround imaging and localisation, as well as overall sonic benefits including improved transparency at the high frequency end. The unit also allows for up- and down-sampling of digital audio signals, to provide outputs at standard- or high-resolution sampling rates.

A configurable audio delay system is built in, allowing you to ensure that sound is always in perfect synchronisation with the picture. The HD621 also ensures that the HDMI interface is driven correctly, which may result in improved video as well as audio performance.

The HD621 is housed in an elegant black slimline case and is available in 1U rack-mount and free-standing versions.

Front panel

The front panel (see over) simply shows a Standby LED (which shows that the unit has power but is not active: it goes out when the unit is activated), plus six LEDs indicating which input is currently active. A manual select button allows you to step through the inputs.

Rear Panel

The rear panel (over) features the following connections (L to R):

Product highlights

Six-input HDMI switch.

HDMI video output.

Extracts up to eight channels of high-resolution audio from the HDMI data stream, supplying them to separate audio-only outputs.

Connects HDMI audio direct to a Meridian system.

Smartlink coaxial digital audio output (up to 8 channels).

Multichannel Meridian High Resolution (MMHR): balanced digital audio output via RJ45/Cat 5 cable (up to 8 channels).

Up- and down-sampling of digital audio.

Audio FIFO buffering and resolution enhancement improves PCM audio received via HDMI.

Lip-sync control compensates for latency resulting from external digital video processing.

Keeps HDMI video signals away from your audio equipment, minimising signal degradation.

Outline specification

Form factor

- 1U 19in rack mounting or free-standing

Power

- Internal universal power supply, 100–250V AC

Connections

- Power input (IEC connector)
- DB9M Sub RS232 serial connector
- BNC and DIN Meridian Comms
- Six HDMI input sockets
- HDMI output
- 8-channel MMHR digital audio out (RJ45)
- 8-channel coax digital audio out (4 x phono)

Front-panel Indicators

- Power LED
- 6 x HDMI Input LEDs (selected input lights)



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RS232 DB-9M Sub connector – this enables the processor to be controlled remotely via serial command and configured using the Meridian Configuration Application (Windows). It also permits the installation of firmware updates.

Meridian Comms BNC and DIN connectors – these enable the processor to be integrated with a Meridian audio/video system and controlled by it, for example, switching the HDMI input when the appropriate selection is made via the system controller.

HDMI Inputs H1–H6 – These follow the standard input identification in a Meridian system (this can be overridden when the system is being configured):

H1	DVD
H2	TV
H3	Cable
H4	Satellite
H5	VCR1
H6	Game

HDMI Output: Video – This outputs the video information present on the selected HDMI input. By default, it does not carry the audio information, but can be configured to do so.

MMHR Output – This RJ45 connector carries up to eight channels of balanced digital audio data at up to 96 kHz sample rate conforming to the Meridian Multichannel High Resolution (MMHR) specification, with encryption where required to carry high-resolution audio data.

SmartLink Output – These four phono sockets each carry a pair of digital audio channel signals at up to 96 kHz sample rate: 1/2, 3/4, 5/6 and 7/8. These are encrypted to Meridian High Resolution (MHR) specifications when carrying high resolution data.

Power input socket, power switch and fuse holder – the power supply accepts a standard IEC power connector and is a universal voltage type accepting voltages between 100 and 250V AC at 50/60 Hz.

Up/downsampling of digital audio

The MMHR and SmartLink outputs can be set to deliver either standard (44.1/48 kHz) or high resolution (88.2/96 kHz) sample rate digital audio, with resolution enhancement of up to 24-bit.

When set to standard rates, the output is either 44.1 or 48 kHz irrespective of the input rate, high sample rates being downsampled by a factor of two or four as appropriate. 44.1 and 48 kHz rates are unchanged.

When set to high rates, the output is always either 88.2 or 96 kHz, irrespective of the input rate. Standard sample rates are upsampled by a factor of two using Meridian's powerful apodising technology, so that input signals of 44.1 and 48 kHz are output at 88.2 and 96 kHz respectively.

FIFO Buffering

In addition to the features noted above, the HDMI audio processor de-jitters digital audio received via HDMI using two FIFO (First In, First Out) buffer systems. This ensures that the audio extracted from the HDMI stream is of the highest quality.

Lip-sync Delay

The processor also includes a configurable audio delay of up to 85ms to allow lip-syncing in the event that the display system introduces an appreciable delay into the video presentation.