

Broadcast-quality, High-Definition HDMI/DVI extender & four-way switch

Allows cable runs of up to 50 metres (150+ ft)

Improved image quality: lower noise, greater stability

Automatic signal correction

4-into-1 HDMI switch box allows simple input selection under remote control

Carries HDMI 6-channel 24/96 & bitstream audio, and video at up to 1080p

DVI compatible (adaptor cables required)

Placed towards the display end of the HDMI path, the 121 Extender allows HDMI cable runs of up to about 50 metres (150+ feet)*. This is particularly useful when a digital video display device such as a projector is a considerable distance from the video source driving it. The unit is typically placed near the projector or other display device. Proprietary active termination, automatic cable equalisation, buffering and de-jittering technology visibly improve image quality, reduce noise and stabilise the video – even on short cable runs. The automatic signal correction allows signals between -20dB and +6dB to be restored to perfect level, edges and eye pattern, making the Extender an ideal HDMI or DVI problem-solver.

The 121 Extender is a small box designed to bolt into position unobtrusively near the display unit; it may also be positioned part-way down the signal path. The unit has one input and one output: the output is connected via a short HDMI cable to the display while the input is connected via a long cable to the video source component. DVI/HDMI cables can be used with DVI sources and destinations.

The 121 Extender is powered by an external universal voltage supply or may be operated by any DC supply from 6 to 15V at under 2W consumption. It can also be powered from the HDMI cable itself in some circumstances. An indicator LED illuminates when lock is established; a power indicator LED is also included.

The 421 Switch is a four input, one output HDMI switching unit with extremely wide bandwidth and employing proprietary technology to switch high-resolution digital HDMI video and audio. Each input also includes Meridian's HDMI Extender technology to improve image quality and stability and reduce noise and jitter on both short and long cable runs.



HD MAX 421 Switch (top) and 121 Extender (right). Above: rear panels showing connections. Not to the same scale.



The High-Density Multimedia Interface, or HDMI, is ideal for connecting High Definition digital video sources to digital displays such as projectors and flat panels. HDMI also allows high-quality digital audio to be carried along the same cable.

In addition, HDMI carries digital video with definitions up to 1080p, the highest definition currently available on display equipment and significantly in advance of the capabilities of existing HD broadcasters (which are generally 720p or 1080i).

The latest release of the specification allows up to six channels of high-resolution 24-bit digital audio to be carried at sampling rates up to 96 kHz, in addition to bitstream data. This corresponds to the multichannel specification for high-resolution audio disc formats such as DVD-Audio and DualDisc, and emerging high-density audio/video disc formats.

The HD MAX 121 Extender uses active termination, automatic cable equalisation, buffering and de-jittering to achieve extended HDMI/DVI cable runs, while the HD MAX 421 Switcher offers four-into-one HDMI switching with both local and multiple remote control capability.

Common specifications

Cable lengths:	0 to 50m over 24 AWG Shielded twisted pair 0 to 36m over 28 AWG STP 0 to 30m over 30 AWG STP
Compatibility:	480i, 480p, 720p, 1080i, and 1080p DTV resolutions
Auto correction:	Signals between -20dB and +6dB are restored to perfect level, edges and eye pattern
Construction:	Mild steel finished in matte black
Power supply:	Universal voltage external PSU G29043 supplied.

121 Extender Specifications

Dimensions:	73 x 30 x 130 mm/2.85 x 1.2 x 5.1 in (WxHxD overall)
I/O:	One HDMI input connector One HDMI output connector Power input socket (barrel type, centre positive)
Indicators:	Power, lock LEDs
Power:	Unit accepts DC in the range 6-15V, <2VA (W)

421 Switcher Specifications

Dimensions:	220 x 44 x 120 mm/8.6 x 1.75 x 4.7 in (WxHxD inc feet)
I/O:	Four HDMI connectors for inputs 1-4 Input 1 includes special sensing for Meridian player One HDMI output connector One Meridian Comms DIN connector One Meridian Comms BNC connector One DB9 RS232 interface (9600 bits/sec, 8N1) Power input socket (barrel type, centre positive)
Indicators:	Per-input LED indicates valid (solid)/invalid (flashing) HDMI input selected
Controls:	Front-panel button manually steps through inputs; RS232 input selection; control via Meridian DVD-A/V player; infrared control with G12 sensor (not supplied)
Power:	Unit accepts DC in the range 6-15V, <3VA (W)

The 421 Switch can be controlled in several ways. For direct use, a front-panel button allows the users to step through the inputs. LEDs indicate which input is selected.

For serial control, a 9600 baud serial port is provided, allowing interfacing via RS232 command. In addition, sources may be assigned to different inputs, eg Cable = input 1, etc. This allows the unit to be controlled via Meridian Comms (DIN or BNC) so as to select the correct input automatically when a source is selected in a Meridian system. A G12 infrared sensor may be connected via a Comms port for infrared remote control capabilities. In this case the sources on the remote are assigned to the following default inputs:

Input	MSR	MSR+
4	CD	CD
4	Radio	Radio
3	LP	Aux
3	TV	TV
1	Tape1	Tape
2	Tape2	Sat
3	CDR	Disc
3	Cable	Cable
4	DVD	DVD
2	VCR1	VCR1
1	VCR2	VCR2
1	LD	Game

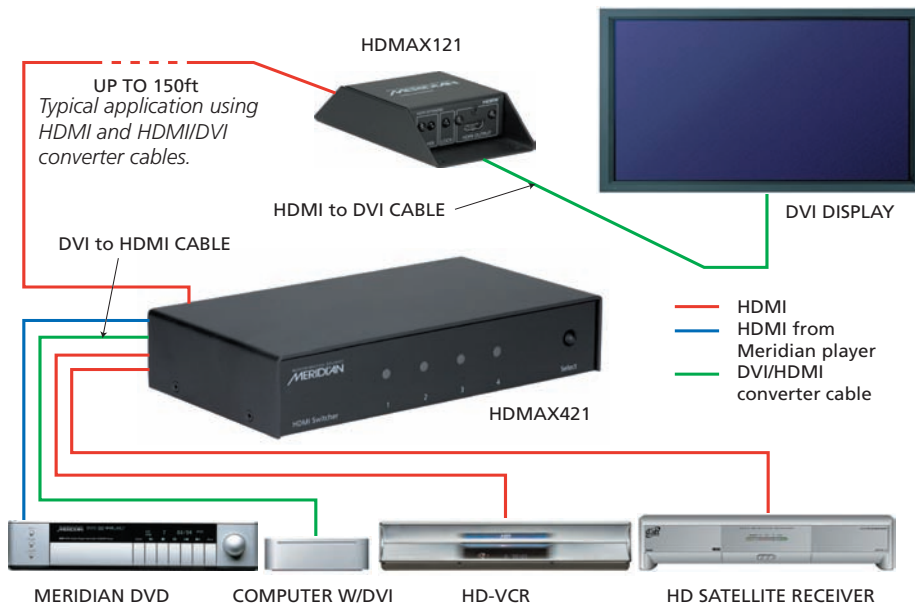
Input assignment can also be carried out in the Meridian configuration application.

Switcher Input 4 automatically senses the presence of a Meridian DVD-Audio/Video player,

making a range of additional options available in the player's on-screen display allowing video sources to be assigned to the other Switcher inputs. (Player firmware revision 1.93 or later required.) The 421 front panel button is automatically locked out when controlled by a player, to avoid inadvertent operation.

The 421 Switch includes indicators corresponding to each input to show which is currently selected. The selected input indicator comes on solidly when an HDMI input is valid, and flashes when invalid. The unit is powered by a separate universal voltage supply or any DC supply from 6 to 15V, at under 3W. The rubber feet may be removed to reveal holes for permanent installation – mounting plates and screws provided.

Both the 121 Extender and 421 Switch pass both HDMI audio and video and are completely transparent to handshaking, control and data signals, with extremely high bandwidth and virtually zero latency.



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