The IDK MSD-501 is a high-performance digital multi switcher with a scan converter and up to 5 inputs and 1 output. Video signals HDMI, DVI, Composite Video, S-Video, Analog RGB, and Analog YPbPr can be input and converted up to QWXGA or 1080p. The MSD-501 includes an HDMI output and an HDBaseT output that can output simultaneously. The MSD-501 also has 3 digital and 5 analog audio inputs. Audio signals of IN1 to IN3 are switch-selectable between digital audio (HDMI) and analog audio (RCA), and audio output is simultaneous output both digital and analog output. Sound level of input and output can be set respectively. Gaps between video and audio can be compensated by Lip Sync. Front Panel VFD Menu is a useful for checking input and output signal status on the switcher and set or changes the settings of the switcher to support AV systems in a field. The MSD-501 also has other features such as built-in scan converter, Seamless Switching, and Aspect Ratio Control for complete AV switching and distribution.

### Specification

<table>
<thead>
<tr>
<th>Item</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>HDMI/DVI</td>
<td>3 inputs HDMI Deep Color (*1)/DV1 1.0 TMD single link, HDCP 1.4, TMD clock: 25 MHz to 225 MHz Built-in cable EQ, EDID emulation, CEC Connector: Female HDMI Type A (19-pin)</td>
</tr>
<tr>
<td>Universal</td>
<td>2 inputs Composite video/YC/ Analog RGB/ Analog YPbPr (auto-recognition) Composite video (VBS Signal): 1.0 V[p-p]/75 Ω Y/C: 1.0 V[p-p]/Y:0.286 V[p-p] (C) /75 Ω Analog RGB: 0.7 V[p-p] (1.0 V[p-p] Sync on Green) /75 Ω HS/VS TTL level, CS TTL level, Sync on Green Analog YPbPr: 1.0 V[p-p]/Y:0.7 V[p-p] (Pr/Pr) /75 Ω EDID emulation Connector: Female high-density D-sub (15-pin)</td>
</tr>
<tr>
<td>Analog</td>
<td>3 inputs Analog (NTSC/PAL Analog/HDMI/DVI: VGA to QWXGA (Dot clock: 25 MHz to 165 MHz) * For WUXGA/QWXGA, only Reduced Blanking is supported. Analog/HDMI/DVI: 480 / 480p / 576 / 576p / 720p / 1080i / 1080p</td>
</tr>
<tr>
<td>Digital</td>
<td>3 inputs * Switch-selectable between analog audio Multi-channel LPCM up to 8 channels Sampling frequency: 32 kHz to 192 kHz, Sample size: 16 bit to 24 bit Reference level: -20 dBFS, Max. input level: 0 dBFS Connector: Female HDMI Type A (19-pin)</td>
</tr>
<tr>
<td>HDMI/DVI</td>
<td>1 output HDMI Deep Color (*1)/DV1 1.0 TMD single link, HDCP 1.4 Built-in cable EQ, CEC Connector: Female HDMI Type A (19-pin)</td>
</tr>
<tr>
<td>HDBaseT</td>
<td>1 output * Output video can be distributed to an HDMI/DVI and HDBaseT simultaneously. HDMI Deep Color (*1)/DV1 1.0 TMD single link, HDCP 1.4 Built-in cable EQ, CEC Connector: Female HDMI Type A (19-pin)</td>
</tr>
<tr>
<td>Output</td>
<td>1 output * Output video can be distributed to an HDMI/DVI and HDBaseT simultaneously. HDBaseT (*2) RS-232C, LAN, CEC Connector: RJ-45 (*3) Cable: CAT5E UTP/STP, Cat6 UTP/STP (*4)</td>
</tr>
<tr>
<td>Format</td>
<td>VGA / SVGA / XGA / WXGA (1360x768) / WXGA (1280x800) / Quad-VGA / SXGA / WXGA (1360x768) / WXGA (1366x768) / SXGA+ / WXGA+ / UXGA / WSXGA+ / VESAHD / UXGA / QWXGA * For VESAHD/WUXGA/QWXGA, only Reduced Blanking is supported. 480 / 480p / 576 / 576p / 720p / 1080i / 1080p</td>
</tr>
<tr>
<td>Audio</td>
<td>1 output * Audio can be distributed to an HDMI output and an HDBaseT output simultaneously. Multi-channel LPCM up to 8 channels Sampling frequency: 32 kHz to 192 kHz, Sample size: 16 bit to 24 bit Reference level: -20 dBFS, Max. output level: 0 dBFS Connector: Female HDMI Type A (19-pin), RJ-45</td>
</tr>
<tr>
<td>Lip Sync</td>
<td>1 output Stereo LR unbalanced Output impedance: 75 Ω, Sample size: -10 dBu, Max. output level: +10 dBu Connector: RCA pin jack</td>
</tr>
<tr>
<td>Maximum transmission distances</td>
<td>Digital input: 96 ft. (30 m) (*5) Digital output: 164 ft. (50 m) (*5), HDBaseT: 328 ft. (100 m) (*6)</td>
</tr>
</tbody>
</table>

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The maximum transmission distance was obtained when IDK’s CAT.5E HDC cable was used. The distance may not be extended with some device combinations, cabling method, or other manufacturer’s devices; please check the operation beforehand or contact us. The maximum transmission distance is the shorter distance of connected HDBaseT product or sink device’s cable. Video may be disturbed or may not be output even if signals are within the range mentioned above.

Seamless switching with one black frame.

Volume adjustment (volumes of input and output ports can be set separately), Lip Sync, Audio Downmix, Audio breakaway for independent audio and video switching, Input channel automatic switching, Crosspoint memory (7 settings), Preset memory (8 settings), Last memory, Anti-snow (*8), Connection Reset (*9), External control commands (32 commands), Front key function lock

The maximum cable distance depends on the connected devices. The distance may not be extended with some device combinations, cabling method, or other manufacturer’s cable. Video may be disturbed or may not be output even if signals are within the range mentioned above. Operations may not be stable with some LCD devices; please check the operation beforehand or contact us. The maximum transmission distance is the shorter distance of connected HDBaseT product or sink device’s maximum transmission distance.

Seamless switching with a black frame.

Some sink devices cannot be controlled from the MSD through CEC.

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IDK Corporation

Ver.1.8.0 (191001)
### Diagram

#### MSD-501 Diagram and Features

**Video**
- Up to 1080p/QWXGA (Reduced Blanking)
- Automatic input signal equalization
  - Input: Up to 98 ft. (30 m)
  - Output: Up to 164 ft. (50 m)
- Up to 328 ft. (100 m) over Cat6 cable
- Motion adaptive interlaced/progressive conversion
- Scan conversion
- Aspect ratio control
- Seamless switching with one black frame
- Analog/Digital conversion
- Anti-snow

**Audio**
- Embedding/De-embedding
- Volume adjustment (Input/Output)
- Lip Sync
- Audio Downmix

**Control Input**
- RS-232C
- LAN

**Control Output**
- Control command output (e.g. controlling projectors)
- PJLink
- CEC (Control sink device power)

**Others**
- EDID emulation
- Audio breakaway for independent audio and video switching
- Input channel automatic switching
- Front panel HDMI input connector
- Crosspoint memory
- Preset memory
- Last memory
- Connection Reset
- Front key function lock
- HDBaseT: RS-232C, LAN and CEC are supported

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