The IDK MSD-7203UHDTB is a high-performance digital multi switcher with a scan converter and up to 9 inputs and 3 outputs.

For video input, 9 digital and 2 analog inputs are included and the following signals are supported: HDMI, DVI, composite video, Y/C, analog RGB, and analog YPbPr signals. Input video signals are converted to HDMI and these signals are output at a resolution up to 4K@60.

For audio input, 9 digital and 9 analog inputs are included. Selected audio signals are output to digital audio and analog audio. Audio level of each input can be set individually. The lip sync function corrects the gap between the video and audio.

This switcher also has two RS-232C ports and a LAN port as communication ports for control to enable you to set menus remotely. You can also control external devices that are connected to the MSD-802UHD over RS-232C, LAN, CEC, or contact closure by registering external control commands. The waiting function helps you to send external commands after cooling time passes as power supply control of projectors or the like. External control commands can be executed from front keys, RS-232C, or LAN; they can also be executed when input channel selection keys or power supply key is operated.

## 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) / DVI 1.0 TMDS single link, HDCP 1.4 / 2.2 TMDS clock: 25 MHz to 300 MHz, TMDS data rate: 0.75 Gbps to 18 Gbps EDID emulation Connector: Female HDMI Type A (19-pin)</td>
</tr>
<tr>
<td>Video</td>
<td>4 inputs HDMI Deep Color (*1) / DVI 1.0 TMDS single link, HDCP 1.4 TMDS clock: 25 MHz to 300 MHz, TMDS data rate: 0.75 Gbps to 9 Gbps EDID emulation Connector: Female HDMI Type A (19-pin)</td>
</tr>
<tr>
<td>Audio</td>
<td>2 inputs *Switch-selectable between digital and analog HDMI Deep Color (*1) / DVI 1.0 TMDS single link, HDCP 1.4 TMDS clock: 25 MHz to 225 MHz, TMDS data rate: 0.75 Gbps to 6.75 Gbps EDID emulation Connector: Female DVI-I (29-pin)</td>
</tr>
<tr>
<td>Digital</td>
<td>2 inputs *Switch-selectable between digital and analog Composite video / Y/C / Analog RGB / Analog YPbPr (auto-recognition) Composite video: 1.0 V[p-p] / 75 Ω Y/C: 1.0 V<a href="Y">p-p</a> / 0.286 V<a href="C">p-p</a> / 75 Ω Analog RGB: 0.7 V[p-p](1.0 V[p-p] Sync on Green) / 75 Ω HVS/TTL level, CS TTL level, Sync on Green Analog YPbPr: 1.0 V<a href="Y">p-p</a> / 0.7 V<a href="Pb/Pr">p-p</a> / 75 Ω EDID emulation Connector: Female DVI-I (29-pin)</td>
</tr>
<tr>
<td>Analog</td>
<td>3 inputs VGA to WQXGA (Dot clock: 25 MHz to 300 MHz) 480i / 480p / 576i / 576p / 720p / 1080i / 1080p / 4K (Up to 4K@60 (4:4:4)) (*2)</td>
</tr>
<tr>
<td>Format</td>
<td>4 inputs VGA to WQXGA (Dot clock: 25 MHz to 300 MHz) 480i / 480p / 576i / 576p / 720p / 1080i / 1080p / 4K (Up to 4K@60 (4:4:4)) *2)</td>
</tr>
<tr>
<td>Input</td>
<td>2 inputs VGA to WQXGA (Dot clock: 25 MHz to 165 MHz) * For WUXGA / QWXGA, only Reduced Blanking is supported. 480i / 480p / 576i / 576p / 720p / 1080i / 1080p</td>
</tr>
<tr>
<td>Universal</td>
<td>VGA to WQXGA (Dot clock: 25 MHz to 165 MHz) * For WUXGA / QWXGA, only Reduced Blanking is supported. NTSC / PAL 480i / 480p / 576i / 576p / 720p / 1080i / 1080p</td>
</tr>
</tbody>
</table>

This switcher supports the following inputs:

- 9 digital and 2 analog inputs for video input
- 9 digital and 9 analog inputs for audio input
- 9 digital and 2 analog inputs for HDMI input
- 9 digital and 2 analog inputs for DVI input

All specifications and drawings are subject to change without notice. Please do not use the supplied AC adapter and power supply cable for other products. The terms HDMI and HDMI High-Definition Multimedia Interface, and the HDMI Logo are trademarks or registered trademarks of HDMI Licensing Administrator, Inc. in the United States and other countries.

The terms Anti-snow and Connection Reset are registered trademarks of IDK Corporation in Japan. All other company and product names mentioned in this document are either registered trademarks or trademarks of their respective owners. In this document, the “®” or “™” marks may not be specified.
### Video

<table>
<thead>
<tr>
<th>Item</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>HDMI / DVI</td>
<td>3 outputs&lt;br&gt;HDMI Deep Color (*1) / DVI 1.0&lt;br&gt;TMDS single link, HDCP 1.4 / 2.2&lt;br&gt;TMDS clock: 25.175 MHz to 297 MHz, TMDS data rate: 0.755 Gbps to 17.82 Gbps&lt;br&gt;Connector: Female HDMI Type A (19-pin)</td>
</tr>
<tr>
<td>Format</td>
<td>VGA / SVGA / XGA / WXGA (1280x768) / WXGA (1280x800) / Quad-VGA / SXGA / WXGA / WUXGA (1360x768) / WXGA (1366x768) / SXGA+ / WXGA+ / WXGA++ / UXGA / WSXGA+ / VESAHD / WUXGA / QWXGA / WQHD / WQXGA&lt;br&gt;*For VESAHD / WUXGA / QWXGA / WQHD / WQXGA, only Reduced Blanking is supported. 480i / 480p / 576i / 576p / 720p / 1080i / 1080p / 4K (3840 x 2160) / 4K (4096 x 2160)</td>
</tr>
<tr>
<td>Digital</td>
<td>3 outputs&lt;br&gt;Multi-channel LPCM up to 8 channels&lt;br&gt;Sampling frequency: 32 kHz to 192 kHz, Sample size: 16 bit to 24 bit&lt;br&gt;Reference level: -20 dBFS, Max. output level: 0 dBFS&lt;br&gt;Connector: Female HDMI Type A (19-pin)</td>
</tr>
</tbody>
</table>

### Digital

<table>
<thead>
<tr>
<th>Item</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Analog</td>
<td>3 output&lt;br&gt;Output impedance: 100 Ω balanced / 50 Ω unbalanced&lt;br&gt;Reference level: -10 dBu, Max. output level: +10 dBu&lt;br&gt;Connector: 5-pin terminal block</td>
</tr>
<tr>
<td>External control</td>
<td>RS-232C&lt;br&gt;2 ports / 3-pin terminal block</td>
</tr>
<tr>
<td>LAN</td>
<td>1 port / RJ-45 10Base-T / 100Base-TX (Auto Negotiation), Auto MDI / MDI-X</td>
</tr>
<tr>
<td>Contact closure</td>
<td>9 ports / 6-pin terminal block&lt;br&gt;Non-voltage contact input up to DC 24 V 500 mA</td>
</tr>
</tbody>
</table>

### Functions

<table>
<thead>
<tr>
<th>Item</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Analog video processing unit</td>
<td>3D Y/C separation</td>
</tr>
<tr>
<td>Scan Converter</td>
<td>1/P conversion, Aspect Ratio Control, Picture adjustment (brightness, contrast, display position, display size, etc.), Seamless Switching (*4)</td>
</tr>
<tr>
<td>Others</td>
<td>All function setting through browser, Automatic input detection and switching, Volume adjustment (volumes of input and output ports can be set separately), Lip Sync (Max. 16 frames), Audio breakaway enables independent audio and video switching, Cross-point memory (9 settings), Preset memory (8 settings), Last memory, Anti-Snow (*5), Connection Reset (*6), External control commands (32 commands), Security lock</td>
</tr>
</tbody>
</table>

### General

<table>
<thead>
<tr>
<th>Item</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Power</td>
<td>100 - 240 VAC ± 10%, 50 Hz / 60 Hz ± 3 Hz</td>
</tr>
<tr>
<td>Power consumption</td>
<td>About 107 Watts</td>
</tr>
<tr>
<td>Dimensions</td>
<td>16.9 (W) x 5.2 (H) x 13.8 (D) (*1) (430 (W) x 132 (H) x 350 (D) (mm)&lt;br&gt;(EIA 3U high, full rack wide) (Excluding connectors and the like)</td>
</tr>
<tr>
<td>Weight</td>
<td>17 lbs. (7.7 kg)</td>
</tr>
<tr>
<td>Temperature</td>
<td>Operating: 32°F to 104°F (0°C to +40°C)&lt;br&gt;Storage: -4°F to +176°F (-20°C to +80°C)</td>
</tr>
<tr>
<td>Humidity</td>
<td>Operating / Storage: 20% to 90% (Non Condensing)</td>
</tr>
</tbody>
</table>

### Output extension distance

<table>
<thead>
<tr>
<th>Item</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Digital input</td>
<td>1080p@60: 98 ft. (30 m), 4K@60: 39 ft. (12 m) (*3)</td>
</tr>
<tr>
<td>Digital output</td>
<td>1080p@60: 98 ft. (30 m), 4K@60: 39 ft. (12 m) (*3)</td>
</tr>
</tbody>
</table>

### Note

*1 30 bit / pixel (10 bit / component) Deep Color is supported while x.v.Color, 3D, ARC and HEC are not supported. WQHD, WQXGA, and 4K format: 24 bit / pixel (8 bit / component) is supported.
*2 4K format: Only CEA-861 timing is supported.
*3 The maximum cable distance varies depending on the connected devices and was measured under following conditions:
- 1080p@60: when IDK’s AWG 24 cable was used and signals of 1080p@60 24 bit / pixel (8 bit / component) was input or output.
- 4K@60: when IDK’s 18 Gbps supported cable was used and signals of 4K@60 24 bit / pixel (8 bit / component) was input or output.
- 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.
*4 Seamless switching with a black frame.
*5 Connection Reset feature will fix these problems automatically without the need to physically plug and unplug the cables. It creates the same condition as if the cable were physically disconnected and reconnected. This feature only works for the MSD’s output. If other devices are connected between the MSD’s output and sink device, this feature may be invalid.
*6 For digital systems, some problems, such as an HDCP authentication error, can often be recovered by physically disconnecting and reconnecting the digital cables. However, the Connection Reset feature will fix these problems automatically without the need to physically plug and unplug the cables. It creates the same condition as if the cable were physically disconnected and reconnected. This feature only works for the MSD’s output. If other devices are connected between the MSD’s output and sink device, this feature may be invalid.
*7 The sink device must support CEC. Some sink devices cannot be controlled from the MSD through CEC.

### Front & Rear Panels

- All specifications and drawings are subject to change without notice.
- Blu-ray Disc and Blu-ray is a trademarks of Blu-ray Disc Association.
- Please do not use the supplied AC adapter and power supply cable for other products. The terms HDMI and HDMI High-Definition Multimedia Interface, and the HDMI Logo are trademarks or registered trademarks of HDMI Licensing Administrator, Inc. in the United States and other countries. PJLink is a trademark in Japan, the United States, and other countries/regions. The terms Anti-snow and Connection Reset are registered trademarks of IDK Corporation in Japan. All other company and product names mentioned in this document are either registered trademarks or trademarks of their respective owners. In this document, the “®” or “” marks may not be specified.
- IDK Corporation

Ver.1.2.0 (180913)
**Diagram**

**MSD-7203UHDTB Diagram and Features**

**Diagram**

**MSD-7203UHDTB**

- **Video Matrix switch**
- **Scan converter**
- **Audio Matrix switch**
- **Lip sync**

**Digital video/audio**
- **HDMI**
- **DVI**

**Inputs**
- IN1 to IN3: up to 98 ft. (30 m)
- IN4 to IN7: up to 98 ft. (30 m)
- IN8 to IN9: up to 98 ft. (30 m)

**Outputs**
- UP to 98 ft. (30 m)

**Application Example**

- **4K projector (PJLink)**
- **Screen**
- **Analog audio**
  - HDMI / DVI
  - Up to 98 ft. (30 m)

- **CD player**
- **PC**
- **SWC-2000**
- **RS-232C**
- **LAN**
- **Contact output**
- **HDMI / DVI**
  - Up to 98 ft. (30 m)

- **4K TV**
- **4K projector (PJLink)**
- **Speakers**
- **Contact output**
- **HDMI / DVI**
  - Up to 98 ft. (30 m)
  - Composite video / Y/C / Analog RGB / Analog YPbPr

- **Blu-ray player**
- **Blu-ray player**
- **Laptop**

*Maximum extension distance
Up to 98 ft. (30 m): 4K@60
Up to 39 ft. (12 m): 4K@60 (when 18 Gbps high-speed cable is used) (IN1, IN2, IN3 and OUT1 only)

**IDK Corporation**

Ver. 1.2.0 (180913)
[Features]

■ Video
- Up to 4K@60 (4:4:4)
- HDCP 1.4 / 2.2
- Scan conversion
- Aspect ratio control
- Seamless switching
- A/D conversion
- Anti-snow

■ Audio
- A/D, D/A conversion
- Volume adjustment
- Lip sync

■ Control Input
- RS-232C
- LAN

■ Control output
- Control command output (controlling projector, etc.)
- PJLink
- Power control of sink device over CEC
- Contact closure

■ Others
- EDID emulation
- All functions setting through browser
- Automatic input detection and switching
- Audio breakaway enables independent audio and video switching
- Cross point memory
- Preset memory
- Last memory
- Connection Reset
- Security lock

*Seamless switching with a black frame.