The IDK MSD-6204 is a high-performance digital multi switcher with a scan converter and up to 8 inputs and 4 outputs.

For video input, 8 digital and 2 analog inputs are included and the following signals are supported: HDMI, DVI, HDBaseT, composite video, Y/C, analog RGB, and analog YPbPr signals. HDBaseT input supports Power over HDBaseT (PoH) that can power the connected devices. Input video signals are converted to HDMI/DVI or HDBaseT signals and output at a resolution up to 4K@30.

For audio input, 8 digital and 2 analog inputs are included. Selected audio signals are output to digital audio, and 1 of 8 digital audio outputs can be selected to be output as analog audio. The lip sync function corrects the gap between the video and audio.

This switcher also has RS-232C and LAN ports as communication ports for control to enable you to set menus remotely. You can also control external devices that are connected to the MSD-6204 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.

Dante output is available as an optional extra.

With the network audio, 64-channel at 48 kHz-sample frequency audio can be delivered over a LAN cable.

### Specification

<table>
<thead>
<tr>
<th>Item</th>
<th>Description</th>
</tr>
</thead>
</table>
| **HDMI/DVI**  | 1 input  
   HDMI Deep Color (*1)/DVI 1.0  
   TMDS single link, HDCP 1.4  
   TMDS clocks: 25 MHz to 300 MHz, TMDS data rate: 0.75 Gbps to 9 Gbps  
   Built-in cable EQ, EDID emulation, CEC  
   Connector: Female HDMI Type A (19-pin) |
| **HDBaseT**   | 2 inputs  
   HDBaseT (*1)  
   DVI 1.4 (*2)  
   EDID emulation, RS-232C, LAN, CEC, PoH power supply (IEEE 802.3af) (*3)  
   Connector: RJ-45 (*4)  
   Cable: CAT.5E HDC, Cat5e UTP/STP, Cat6 UTP/STP (*5) |
| **Universal** | 2 inputs  
   Switch-selectable between digital and analog  
   Composite video/Y/C/Analog RGB/Analog YPbPr (auto-recognition)  
   Composite video (VBS Signal): 1.0 V[p-p]/75 Ω  
   Y/C: 1.0 V[p-p]/0.286 V[p-p]/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]/0.7 V[p-p]/75 Ω  
   EDID emulation  
   Connector: Female DVI-I (29-pin) |
| **Audio**     | 2 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), 2 RJ-45 (*4), 2 female DVI-I (29-pin) |
| **Video**     | 1 input  
   VGA to 4K (Dot clock: 25 MHz to 300 MHz)  
   480i / 480p / 576i / 576p / 720p / 1080i / 1080p / 4K (up to 4K@30) |
| **Format**    | 5 inputs  
   VGA to WUXGA (Dot clock: 25 MHz to 165 MHz)  
   For WUXGA/QWXGA, only Reduced Blanking is supported.  
   480i / 480p / 576i / 576p / 720p / 1080i / 1080p |
| **HDBaseT**   | VGA to 4K (Dot clock: 25 MHz to 300 MHz)  
   480i / 480p / 576i / 576p / 720p / 1080i / 1080p / 4K (up to 4K@30) |
| **Universal** | VGA to WUXGA (Dot clock: 25 MHz to 165 MHz)  
   For WUXGA/QWXGA, only Reduced Blanking is supported.  
   NTSC/PAL  
   480i / 480p / 576i / 576p / 720p / 1080i / 1080p |

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### Description

**Video**

<table>
<thead>
<tr>
<th>Format</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>VGA / WXGA (1280x768) / WXGA (1280x800)</td>
<td>Organizational scheme of video signals output by the device.</td>
</tr>
<tr>
<td>Quad-VGA / SXGA / WXGA / WXGA (1366x768)</td>
<td>Supports various video resolutions.</td>
</tr>
<tr>
<td>For VESAHD/WXGA/QWXGA, only Reduced Blanking is supported.</td>
<td>Reduces the blanking time for VESAHD/WXGA/QWXGA signals.</td>
</tr>
<tr>
<td>720p / 1080p / 1080i / 4K (3840 x 2160)</td>
<td>Supports inputs from a variety of video sources.</td>
</tr>
<tr>
<td>(4K) / (4K08x2160) (36) / 4K (4096 x 2160)</td>
<td>Extended support for 4K signals.</td>
</tr>
<tr>
<td>4K outputs</td>
<td>Outputs video signals in 4K resolution.</td>
</tr>
<tr>
<td>Seamless switching with a black frame.</td>
<td>Provides seamless switching between outputs with a black frame overlay.</td>
</tr>
</tbody>
</table>

**Output**

<table>
<thead>
<tr>
<th>Format</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>HDBaseT (*1)</td>
<td>HDMI Type A (*19-pin)</td>
</tr>
<tr>
<td>HDCP 1.4 (*2), RS-232C, LAN, CEC</td>
<td>Supports various output formats.</td>
</tr>
<tr>
<td>Cable: CAT.5E HDC, Cat6 UTP/STP, Cat6 UTP/STP (*5)</td>
<td>Connects to a variety of sink devices.</td>
</tr>
</tbody>
</table>

**Digital**

| Multi-channel LPCM up to 8 channels         | Supports extended audio channels.                                            |
| Sampling frequency: 3 to 192 kHz, Sample size: 16 bit to 24 bit | Extended audio signal processing.                                           |
| Reference level: -20 dBFS, Max. output level: 0 dBFS | Ensures accurate audio output.                                               |
| 4 outputs                                   | Outputs multiple video signals.                                              |
| The output video is switch-selectable between HDMI output and HDBaseT output. | Ensures seamless switching.                                                  |

**Audio**

<table>
<thead>
<tr>
<th>Format</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>RJ-45 (Primary/Secondary)</td>
<td>Provides separate audio channels.</td>
</tr>
<tr>
<td>Network audio (Option)</td>
<td>Supports network audio functionalities.</td>
</tr>
<tr>
<td>Format: Dante protocol</td>
<td>Dante protocol is used for network audio connections.</td>
</tr>
<tr>
<td>Sampling frequency: 48 kHz, Sample size: 24 bit</td>
<td>Ensures high-quality audio output.</td>
</tr>
<tr>
<td>The number of outputs: 64 channels</td>
<td>Supports multiple audio outputs.</td>
</tr>
<tr>
<td>Connector: 2 RJ-45</td>
<td>Connects to a variety of audio devices.</td>
</tr>
</tbody>
</table>

**Maximum transmission distance**

<table>
<thead>
<tr>
<th>Format</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>HDBaseT: 328 ft. (100 m), up to 492 ft. (150 m)</td>
<td>Supports extended transmission distances.</td>
</tr>
<tr>
<td>(Long reach mode is used)</td>
<td>Uses Long reach mode for extended transmission.</td>
</tr>
</tbody>
</table>

**Analog**

<table>
<thead>
<tr>
<th>Format</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Analog video processing unit 3D Y/C separation</td>
<td>Ensures proper video signal processing.</td>
</tr>
</tbody>
</table>

**Functions**

<table>
<thead>
<tr>
<th>Scan Converter</th>
<th>Motion adaptive interfaced/progressive conversion.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Multi-view function (*11)</td>
<td>Supports extended viewing functionalities.</td>
</tr>
<tr>
<td>Horizontal flip (*12)</td>
<td>Supports horizontal flip functionalities.</td>
</tr>
<tr>
<td>Input channel automatic switching</td>
<td>Supports automatic switching for video channels.</td>
</tr>
<tr>
<td>Volume adjustment (volumes of input and output ports can be set separately), Lip Sync (Max. 16 frames), Audio Downmix, Audio breakaway for independent audio and video switching, Crosspoint memory (9 settings), Preset memory (12 settings), Last memory, Anti-Snow (*13), Connection Reset (*14), External control commands (32 commands), Button security lockout, Standby switch</td>
<td>Extends audio and video functionalities.</td>
</tr>
</tbody>
</table>

**Control**

| Connection Reset                             | Preset memory (12 settings), Last memory, Anti-Snow (*13), Connection Reset (*14), External control commands (32 commands), Button security lockout, Standby switch | Supports extended control functionalities.                                   |
|---------------------------------------------|-----------------------------------------------------------------------------|
| 1 port/terminal block (3-pin)               | Provides single audio output functionalities.                                |
| LAN                                          | Supports network connectivity.                                              |
| 1 port/45 RJ-45 IOBase-T1/IOBase-TX (Auto Negotiation), Auto MDI/MDI-X | Supports extended network functionalities.                                  |

**Power**

<table>
<thead>
<tr>
<th>Function</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Power consumption</td>
<td>About 121 Watts</td>
</tr>
<tr>
<td>Dimensions</td>
<td>About 129.3 Watts</td>
</tr>
<tr>
<td>Weight</td>
<td>14.8 lbs. (6.7 kg), 15.4 lbs. (7 kg) with Dante (optional)</td>
</tr>
<tr>
<td>Temperature</td>
<td>Operating: 32°F to 104°F (0°C to +40°C), Storage: -4°F to +176°F (-20°C to +80°C)</td>
</tr>
</tbody>
</table>

**General**

<table>
<thead>
<tr>
<th>Function</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
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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.

The sink device must support CEC. Some sink devices cannot be controlled from the MSD through CEC.

*14  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.

*15  The sink device must support CEC. Some sink devices cannot be controlled from the MSD through CEC.
MSD-6204 Diagram and Features

![Diagram](image_url)

- **Diagram**: MSD-6204 Diagram and Features

- **Input**:
  - Digital video/audio: HDMI, DVI
  - Analog video: Composite, Y/C, RGB, YPbPr
  - Analog audio: Balanced/Unbalanced LR

- **Processing**: Scan converter, Digital video/audio: HDMI, DVI

- **Outputs**:
  - Video: HDMI, DVI
  - Audio: Balanced/Unbalanced LR
  - Dante
  - LAN

- **Transmission Distances**:
  - Up to 98 ft. (30 m): 1080p@60
  - Up to 66 ft. (20 m): 4K@30 (IN1 only)
  - Up to 131 ft. (40 m): 1080p@60
  - Up to 98 ft. (30 m): 4K@30
  - Up to 328 ft. (100 m): 4K@30
  - Up to 492 ft. (150 m): 1080p (24 bit) in Long reach mode
  - For long reach mode, video signals up to 1080p (24 bit) can be transmitted to 492 ft. (150 m) at maximum

- **Additional Features**:
  - EDID emulator
  - PoH
  - RS-232C
  - Audio matrix switch
  - Video matrix switch

- **Optional Features**:
  - Dante output
  - HDMI control
  - Dante
  - LAN

- **RoHS**: Compliant

---

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MSD-6204
**Application Example**

**<Regular mode: Full HD Video>**

![Diagram showing application example](image)

- **A**
  - Full HD Monitor
  - Blu-ray player
  - HDMI/DVI Up to 131 ft. (40 m)
  - Category cable Up to 328 ft. (100 m)

- **B**
  - Full HD Monitor
  - Blu-ray player
  - HDMI/DVI Up to 131 ft. (40 m)

- **C**
  - Full HD Monitor
  - Blu-ray player
  - HDMI/DVI Up to 131 ft. (40 m)

- **D**
  - Full HD Monitor
  - Blu-ray player
  - HDMI/DVI Up to 131 ft. (40 m)

- **HDMI/DVI**
  - Up to 98 ft. (30 m)

- **Power amp. (Dante supported)**
  - Analog audio
  - Network audio

- **Screen**
  - Full HD

- **Projector (PJLink)**
  - HDMI/DVI
  - Up to 131 ft. (40 m)

- **HDBaseT receiver**
  - Category cable Up to 328 ft. (100 m)

- **HDC-TH100WP**
  - HDMI/DVI

- **Laptop**
  - HDMI/DVI

- **Screen**
  - Full HD

- **Microphone**

---

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MSD-6204
<Image combination mode: Full HD Video (Multiview)>

A  B  C  D

Full HD

Blu-ray player

HDMI/DVI
Up to 131 ft. (40 m)

A  B  C  D

Full HD

Blu-ray player

HDMI/DVI
Up to 98 ft. (30 m)

A  B  C  D

Full HD

Blu-ray player

HDMI/DVI
Up to 98 ft. (30 m)

A  B  C  D

Full HD

Blu-ray player

HDMI/DVI
Up to 98 ft. (30 m)

A  B  C  D

Full HD

Blu-ray player

HDMI/DVI
Up to 98 ft. (30 m)

Network audio

HDC-TH100WP

HDMI/DVI

Category cable
Up to 328 ft. (100 m)\(^2\)

HDC-TH100WP

HDMI/DVI

Laptop

HDC-TH100WP

HDMI/DVI

Laptop

HDC-TH100WP

HDMI/DVI

Laptop

HDC-TH100WP

HDMI/DVI

Laptop

\(^1\) Dante output is optional.

\(^2\) Maximum transmission distances

Up to 328 ft. (100 m) : 4K@30

Up to 492 ft. (150 m) : 1080p (24 bit) in Long reach mode

For long reach mode, video signals up to 1080p (24 bit) can be transmitted to 492 ft. (150 m) at maximum if using with IDK's HDBaseT products supporting 328 ft. (100 m) transmission.
<4K mode: 4K Video>

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* Dante output is optional.
[Features]

■ Video
  - Up to 4K@30
  - Automatic input signal equalization
  - Input  Up to 98 ft. (30 m) : 1080p@60, Up to 66 ft. (20 m) : 4K@30
  - Output Up to 131 ft. (40 m) : 1080p@60, Up to 98 ft. (30 m) : 4K@30
  - Motion adaptive interlaced/progressive conversion
  - Scan conversion
  - Aspect ratio control
  - Horizontal flip
  - Seamless switching with one black frame
  - Analog/Digital conversion
  - Anti-snow
  - Up to 492 ft. (150 m) over a Cat6 cable in Long reach mode

■ Audio
  - Embedding/De-embedding
  - Volume adjustment (Input/Output)
  - Lip Sync
  - Audio Downmix
  - Dante output (Optional)

■ Video combination
  - Simultaneous display of up to 4 input images on a screen
  - Window display priority setting
  - Window displaying/hiding

■ Control Input
  - RS-232C
  - LAN

■ Control output
  - Control command output (e.g. controlling projectors)
  - PJLink
  - CEC (Control sink device power)
  - Contact closure

■ Others
  - PoH (HDBaseT input)
  - EDID emulation
  - WEB browser control
  - Input channel automatic switching
  - Audio breakaway for independent audio and video switching
  - Crosspoint memory
  - Preset memory
  - Last memory
  - Connection Reset
  - Button security lockout
  - HDBaseT: RS-232C, LAN and CEC are supported
  - Standby switch

*1 4K format is not supported.
*2 For long reach mode, video signals up to 1080p (24 bit) can be transmitted to 492 ft. (150 m) at maximum if using with IDK's HDBaseT products supporting 328 ft. (100 m) transmission.