The IDK MSD-6203 is a high-performance digital multi switcher with a scan converter and up to 8 inputs and 3 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. Video input 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-6203 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>Input</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>HDMI/DVI</td>
<td>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 Built-in cable EQ, EDID emulation, CEC Connector: Female HDMI Type A (19-pin)</td>
</tr>
<tr>
<td>HDBaseT</td>
<td>2 inputs HDBaseT (*1) HDCP 1.4 (*2) EDID emulation, RS-232C, LAN, CEC, PoH power supply (IEEE 802.3af) (*3) Connector: RJ-45 (*4) Cable: CAT.5E, Cat5e UTP/STP, Cat6 UTP/STP (*5)</td>
</tr>
<tr>
<td>Video</td>
<td>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 HSV/SVS 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)</td>
</tr>
<tr>
<td>Universal Analog</td>
<td>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 HSV/SVS 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)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Audio</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Digital</td>
<td>8 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 32 bit Reference level: -20 dBFS, Max. input level: 0 dBFS Connector: 4 female HDMI Type A (19-pin), 2 RJ-45 (*4), 2 female DVI-I (29-pin)</td>
</tr>
<tr>
<td>Analog</td>
<td>2 inputs Switch-selectable between digital audio Balanced/Unbalanced Stereo LR Input impedance: 48k Ω balanced/24 kΩ unbalanced Reference level: -10 dBu, Max. input level: +10 dBu Connector: Terminal block (5-pin)</td>
</tr>
</tbody>
</table>
### Video

**HDMI/DVI**
- 3 outputs
- The output video is switch-selectable between HDMI output and HDBaseT output.
- HDMI Deep Color (®)
- TMDS single link, HDCP 1.4
- TMDS clocks: 65 MHz to 297 MHz, TMDS data rate: 1.95 Gbps to 8.91 Gbps
- Built-in cable EQ, CEC
- Connector: Female HDMI Type A (19-pin)

**HDBaseT**
- 3 outputs
- The output video is switch-selectable between HDMI output and HDBaseT output.
- HDBaseT®:
  - HDCP 1.4 (®)
  - RS-232C, LAN, CEC
  - Connector: RJ-45 (®)
- Cable: CAT.5E, CAT.5, CAT.6, RJ45
- **Format**
  - VGA / WXGA (1280x768) / WXGA (1280x800) / Quad-VGA / SXGA / WXGA / WXGA (1366x768) / WXGA (1440x900) / SXGA+/ WXGA+/ WXGA+++/ UXGA / UXGA+/ WUXGA+/ VESAHD / QWXGA
  - For VESAHD / WXGA / QWXGA, only Reduced Blanking is supported.
- **270p / 1080i / 1080p / 4K (3840 x 2160) (®)**
- **4K (4096 x 2160) (®)**

**Digital**
- 3 outputs
- The output audio is switch-selectable between HDMI output and HDBaseT output.
- Multi-channel LPCM up to 8 channels
- Sampling frequency: 192 kHz.
- Sampling size: 16 bit to 24 bit
- Reference level: -20 dBFS.
- Max. output level: 0 dBFS
  - Connector: 3 female HDMI Type A (19-pin), 3 RJ-45 (®)

### Audio

**Analog**
- 1 output
- 1 of 3 digital audio outputs can be selected to be output as analog audio.
- Balanced/Unbalanced Stereo LR
- Output impedance: 100 Ω balanced / 50 Ω unbalanced
- Reference level: -10 dBu, Max. output level: +10 dBu
- Connector: Terminal block (5-pin)

**Network audio (Option)**
- 1 output
- Format: Dante protocol
- Sampling frequency: 48 kHz
- Sample size: 24 bit
- The number of outputs: 64 channels
- Connector: 2 RJ-45 (Primary/Secondary) (®)

### Maximum transmission distance

**Digital Input**
- HDMI/DVI: 98 ft. (30 m)
- 1080p (60 ft. (20 m))
- 4K (30 ft. (10 m))
- Long reach mode is used (®)

**Digital output**
- HDMI/DVI: 131 ft. (40 m)
- 1080p (60 ft. (20 m))
- 4K (30 ft. (10 m))
- Long reach mode is used (®)

### Analog video processing unit
- 3D Y/C separation

### Functions

- **Scan Converter**
  - Motion adaptive interfaced/progressive conversion, Aspect Ratio Control, Picture adjustment (brightness, contrast, display position, display size, etc.), Seamless Switching (®)
- **Others**
  - Multiview function (®)
  - Horizontal flip (®)
  - WEB Browser control
  - Input channel automatic switching, 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 (72 commands), Button security lockout, Standby switch

### Control

- **RS-232C**
  - 1 port/terminal block (3-pin)
- **LAN**
  - 1 port/RJ-45 10Base-T/100Base-TX (Auto Negotiation), Auto MDI/MDI-X
- **Contact closure**
  - 9 terminal port/terminal block (®)
  - Non-voltage contact input up to 24 V 5 mA
- **External control**
  - RS-232C, LAN, contact closure, PJLink (class 1), CEC (Power control of sink device) (®)

### General

- **Power**
  - 100 - 240 VAC ± 10%, 50 Hz/60 Hz ± 3 Hz
- **Power consumption**
  - About 118 Watts
  - About 125 Watts with Dante (optional)
- **Dimensions**
  - 16.9 (W) x 3.5 (H) x 15.7 (D) (430 (W) x 88 (H) x 400 (D) mm)
  - (2U high) (Excluding connectors and the like)
- **Weight**
  - 14.8 lbs. (6.7 kg)
  - 15.4 lbs. (7.1 kg) with Dante (optional)
- **Temperature**
  - Operating: 32°F to 104°F (0°C to +40°C)
  - Storage: -4°F to +176°F (-20°C to +80°C)
- **Humidity**
  - Operating/Storage: 20% to 90% (Non Condensing)

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*30 bit/pixel (10 bit/component) Deep Color is supported while x.v.Color, 3D, ARC and HEVC are not supported.

*HDBaseT input/output: DVI signals protected by HDCP are not supported. To transmit those signals, use an IDK’s HDBaseT Products supporting DVI signals.

*3 For PoE power feeding, please use an HDBaseT transmitter supporting IEEE 802.3af. Use a 24 AWG category cable or thicker cable.

*4 RJ-45 (HDBaseT connector) is only for extending digital video and audio signals over a CAT.5E, CAT.6 cable. Use it with IDK’s HDBaseT Products. Do not use for LAN devices.

*5 T568A or T568B straight. The CAT.5E HDC cable is developed by IDK and recommended by HDBaseT alliance.

*6 4K format: Up to 4K@30 is supported.

*7 If multiple sink devices are connected, the actual number of outputs becomes three: OUT1 and OUT2.

*8 RJ-45 (Dante connector) is only for outputting audio at the Dante format.

*9 The maximum cable distance varies depending on the connected devices and was measured under following conditions:
  - 1080p@60: When IDK’s 24 AWG cable was used and signals of 1080p@60 24 bit/pixel (8 bit component) was input or output.
  - 4K@30: When IDK’s 24 AWG cable was used and signals of 4K@30 24 bit/pixel (8 bit component) was input or output.

*10 The maximum cable distance is the shorter distance of connected HDBaseT product or sink device’s maximum transmission distance.

*11 If multiple sink devices are connected, the same video signals are output from OUT1, OUT2, and OUT3. 4K format is not supported.

*12 4K format is not supported.

*13 The anti-snow feature automatically fixes snow noise that is a specific symptom of HDCP-compliant signals and mainly occurs at start-up. This feature does not work when snow noise has already occurred during startup or when it occurs due to a bad condition of the transmission line.
*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.
4K Digital Multi Switcher

MSD-6203 Diagram and Features

- Diagram

IN1 to IN7, IN8 (CH1 to CH4)
- Scan converter
- Digital video/audio
- HDMI
- DVI
- Analog video
- Composite Y/C, RGB, YPbPr

2 Inputs

Analog audio
- Balanced/Unbalanced LR

2 Inputs

IN1 to IN2

MSD-6203
- Video matrix switch
- Switch
- 3 chs

Digital video/audio
- HDMI, DVI

3 Outputs

IN5 to IN6
- Digital video/audio
- Communication for extension
- HDBaseT

2 Inputs

IN7 to IN8

IN1 to IN2

- Audio matrix switch
- Up Sync: 3 chs
- Dante: 64 chs

RoHS

Dante (Optional)

LAN

HUB

Audio
- Matrix switch
- Video

Up to 98 ft. (30 m)*1
Up to 66 ft. (20 m): 4K@30 (IN1 only)

Up to 131 ft. (40 m)*2
Up to 98 ft. (30 m)

Up to 328 ft. (100 m)*3
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.

Up to 131 ft. (40 m): 1080p@60
Up to 98 ft. (30 m): 4K@20

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.

*4 Dante output is optional.

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IDK Corporation
Application Example

<Regular mode: Full HD Video>

A
Blu-ray player
Full HD
HDMI/DVI
Up to 98 ft. (30 m)

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

C
Blu-ray player
Full HD
HDMI/DVI
Up to 98 ft. (30 m)

D
Blu-ray player
Full HD
HDMI/DVI
Up to 98 ft. (30 m)

Full HD
Screen
Projector
(PJLink)
Analog audio
Power amp. (Dante supported)

 Category cable
Up to 328 ft. (100 m)\(^1\)

HDMI/DVI
HDBaseT receiver

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

HDC-T100WP
HDMI/DVI

Laptop
HDMI/DVI

Microphone

Power amp.

Dante output is optional.

*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.

IDK Corporation
<Image combination mode: Full HD Video (Multiview)>

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- IDK Corporation

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**Diagram Description:**

- **A**: Full HD Blu-ray player connected to OUT1.
- **B**: Full HD Blu-ray player connected to OUT2.
- **C**: Full HD Blu-ray player connected to OUT3.

- **Network Audio**: HDMI/DVI up to 328 ft. (100 m) for 4K@30.
- **Category Cable**: HDMI/DVI up to 98 ft. (30 m) for 1080p (24 bit) in Long reach mode.

*1 Dante output is optional.
*2 Maximum transmission distances:
  - Up to 328 ft. (100 m) for 4K@30
  - Up to 452 ft. (150 m) for 1080p (24 bit) in Long reach mode
  
For Long reach mode, video signals up to 1080p (24 bit) can be transmitted to 452 ft. (150 m) at maximum if using with IDK’s HDBaseT products supporting 328 ft. (100 m) transmission.
**<4K mode: 4K Video>**

- **A**
  - 4K@30
  - Blu-ray player
  - 4K monitor

- **B**
  - Full HD
  - Blu-ray player
  - 4K monitor

- **C**
  - Full HD
  - Blu-ray player
  - 4K monitor

- **D**
  - Full HD
  - Blu-ray player
  - 4K monitor

**Network audio**

- **HDC-TH100WP**
  - HDMI/DVI
  - Up to 98 ft. (30 m)
  - Category cable
  - Up to 4K@30

- **HDC-TH100WP**
  - HDMI/DVI
  - Up to 328 ft. (100 m)
  - Composite video/ Y/C/Analog RGB/ Analog YPbPr

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

- **Full HD**
  - 4K@30

* Dante output is optional.

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IDK Corporation
[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.