About us

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IDK delivers world-class, state-of-the-art ProAV solutions for use in corporate, educational, entertainment, healthcare, retail, and government applications.

IDK strives to contribute to a more efficient, prosperous, effective and enjoyable planet with the highest-quality ProAV products. Our signal management solutions portfolio includes native-signal digital multi-switchers, AV over IP, signal extenders and signal splitters. These products enable our customers to create, control, monitor and manage their audiovisual systems.

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IP-NINJAR 10GbE Base 4K@60 (4:4:4) AV over IP Solution

IP-NINJAR System
To meet growing global demand for 4K video, IDK has developed a state of the art AV System Solution: IP-NINJAR is a game changing IP based, truekey, high definition Audio/Video signal delivery solution. System Control, Signal Extension, Distribution, Seamless/KVM Switching, Videowall, and Multiviewing capabilities are fully integrated into the platform. Boasting full format agility, true 4K/60 4:4:4 HDR HDCP 2.2 capabilities, edge-to-edge zero frame delay and unparalleled stability, the IP-NINJAR leverages off-the-shelf 10Gb Ethernet infrastructure to replace traditional baseband AV architectures. With an elegantly simple architecture, unlimited I/O and footprint scalability and individual node-level monitoring, the IP-NINJAR unleashes valuable signal management advantages for Pro AV and IT.

IP-NINJAR Key Features

Video/Audio:
- 4K@60 (4:4:4)/HDR and HDCP 1.4/2.2
- Multi format input support: HDMI/3G-SDI
- Zero frame latency with Standard Switching mode
- 2-frame latency at maximum with Fast & Scale Switching mode
- Digital/Analog audio breakaway switching and Audio De-/Embedding
- Point-to-Point extension, Videowall, and Multiview
- KVM switching using external USB extenders

Dante Network Audio Bridge:
IP-NINJAR uses proprietary codec to distribute audio, and it can route audio signals only in IP-NINJAR Network. NJR-AB08DAN provides ability to convert and bridge audio signals between Dante Audio and IP-NINJAR Audio.

IP-NINJAR System Control from 3rd party external controller:
IP-NINJAR Management & Control Platform NJR-CTB takes care all controls for IP-NINJAR endpoint units. To control IP-NINJAR system from 3rd party external control device, all commands to control the system send to NJR-CTB using provided simple IDK command lines.

Control Bridge:
Since IP-NINJAR endpoint units have RS-232C and LAN communication ports, by connecting IP-NINJAR Network and Control Network with proper network settings, you can control any devices which are connected to IP-NINJAR endpoint unit.

NJR-CTB - Key Features

Status:
- Monitoring devices online/offline, video & audio signals info., HDCP status & stream type
- Alarm output using SNMP trap; Status alert sends to a system or registered email
- Remote support & trouble shooting

Control:
- Controlling all IP-NINJAR units on the network; Centralizing control from 3rd party controller
- Breakaway switching for Video, Digital/Analog(Network Audio, USB, and RS-232C
- KVM switching by linking 3rd party USB network extender

Setup:
- Set up each device settings/link 3rd party USB extender to device for KVM switching
- Videowall/Multiview configuration using preset patterns
- Virtual Matrix set up to create different level of accessibility in a system
- "Tag" function for filtering devices in a system

Maintenance:
- User accounts & authorization management
- Get system log, back up, and restore the system

Redundancy:
- Available for when connecting multiple NJR-CTB units in a system

Security:
- HTTPS encrypted communication

NJR-CTB - Management & Control Platform for IP-NINJAR
The NJR-CTB is an advanced management & control platform that opens up the possibility of your IP-NINJAR AV over IP system. The Web GUI helps customers to easily manage the system. The NJR-CTB enables to control IP-NINJAR system from 3rd party external controllers. 
The NJR-P01UF and NJR-P01UC are an AV over IP solution for high definition signal transmission via fiber optic cables. The NJR-P01UF is an AV over IP solution for high definition signal transmission via fiber optic cables. This IP-NINJAR model employs Neutrik’s robust connector and rugged and lightweight chassis to accommodate event/staging market needs. This 4K solution leverages 10 Gb Ethernet switches and enables signal management of 4K@60 (4:4:4) signals with zero latency. RS-232C bidirectional communication and LAN transmission are also supported. The NJR-P01UF and NJR-P01UC can be used with other IP-NINJAR products.

**Features**
- Up to 4K@60 (4:4:4) • HDCP 1.4/2.2 • HDR • Transmission distances: fiber optic cable (NJR-P01UF-T/MM, NJR-P01UF-R/MM): 6.21 mi. (10 km) • Singlemode fiber (OS1) up to 24.85 mi. (40 km, optional) • Multimode fiber (OM3): up to 984 ft. (300 m) • Digital Video/Audio • RS-232C • LAN • USB
- Max. Distance: Singlemode fiber (OS1): 24.85 mi. (40 km, optional) • Multimode fiber (OM3): 984 ft. (300 m) • Cat6A cable: Up to 328 ft. (100 m)
- Up to 4K@60 (4:4:4) • HDCP 1.4/2.2 • HDR • Transmission distances: fiber optic cable (NJR-P01UC-T/MM, NJR-P01UC-R/MM): 6.21 mi. (10 km) • Singlemode fiber (OS1) up to 24.85 mi. (40 km, optional) • Multimode fiber (OM3): up to 984 ft. (300 m) • Digital Video/Audio • RS-232C • LAN • USB
- Max. Distance: Singlemode fiber (OS1): 6.21 mi. (10 km) • Multimode fiber (OM3): 984 ft. (300 m) • Cat6A cable: Up to 328 ft. (100 m)

**Models**
- NJR-P01UF-T
- NJR-P01UF-R
- NJR-P01UC-T
- NJR-P01UC-R

**Network**
- 10 Gb switch allows extension, distribution, matrix switching, switching, and matrix. • Controllable through network using RJ45-CTB • IP-NINJAR encoders and decoders can easily be added and replaced
- Neutrik’s robust connector and rugged and lightweight chassis to accommodate event/staging market needs

**Others**
- EDC emulation • EDC buffer • Connection Reset • AC adapter with locking mechanism • Power supplied (PD) (NJR-P01UC-T, NJR-P01UC-R)

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The NJR-P01UFR is an AV over IP solution for high definition signal transmission via fiber optic cables. This IP-NINJAR model employs Neutrik’s robust connector and rugged chassis to accommodate event/staging market needs. This 4K solution leverages 10 Gb Ethernet switches and enables signal management of 4K@60 (4:4:4) signals with zero latency. LAN transmission is also supported. The NJR-P01UFR can be used with other IP-NINJAR products. Using an NJR-T01UHD with an NJR-R01UHD enables 4K@60 (4:4:4) signals to be displayed on four full HD sink devices. Conversely, using an NJR-TW01UHD with an NJR-01UHD enables four ports’ 1080p@60 signals that is sent from the NJR-T04HD to four ports’ 1080p@60 signals on sink devices as well as an NJR-TW01UHD with an NJR-01UHD enables four ports’ 1080p@60 signals that is sent from the NJR-T04HD to four ports’ 1080p@60 signals on sink devices. The NJR-01UHD can be used with other IP-NINJAR products. Using an NJR-T01UHD with an NJR-R01UHD enables 4K@60 (4:4:4) signals to be displayed on four full HD sink devices. Conversely, using an NJR-TW01UHD with an NJR-01UHD enables four ports’ 1080p@60 signals that is sent from the NJR-T04HD to four ports’ 1080p@60 signals on sink devices.

**Features**
- Up to 4K@60 HDMI Encoder/Decoder, Rugged Chassis
- Communication: RS-232C (when High-speed HDMI cable is used)
- LAN supported
- AC adapter with locking mechanism
- Neutrik’s robust connector with locking mechanism and rugged and lightweight chassis • Fanless (No fan noise)

**Models**
- NJR-P01UFR-T
- NJR-P01UFR-R

**Network**
- 10 Gb switch allows extension, distribution, matrix switching, switching, and matrix. • Controllable through network using RJ45-CTB • IP-NINJAR encoders and decoders can easily be added and replaced

**Others**
- EDC emulation • EDC buffer • Connection Reset • AC adapter with locking mechanism

---

The NJR-01UHD is a point-to-point AV over IP solution for high definition signal extension via fiber optic cables. This IP-NINJAR model employs Neutrik’s robust connector and rugged and lightweight chassis to accommodate event/staging market needs. The NJR-01UHD leverages 10 Gb Ethernet switches to control 4K@60 (4:4:4) signals with zero latency. RS-232C bidirectional communication and LAN transmission are also supported. Combined with the NJR-4000, 4000EX4-4:4:4 signal that is sent from the NJR-TW01UHD can be divided into four 1080p@60 signals and be displayed on sink devices. When using the NJR-TW01UHD and the NJR-RW01UHD together, four ports’ 1080p@60 signals that is sent from the NJR-TW01UHD can be displayed as 4K@60 (4:4:4) signals on a sink device.

**Features**
- Up to 4K@60 HDMI Encoder/Decoder, Rugged Chassis
- Communication: RS-232C
- LAN supported
- AC adapter with locking mechanism

**Models**
- NJR-01UHD

**Network**
- 10 Gb switch allows extension, distribution, matrix switching, switching, and matrix. • Controllable through network using RJ45-CTB • IP-NINJAR encoders and decoders can easily be added and replaced

**Others**
- EDC emulation • EDC buffer • Connection Reset • Neutrik’s robust connector with locking mechanism and rugged and lightweight chassis • Fanless (No fan noise)
### 3G/HD/SD-SDI Encoder | NJR-T01SDI

The NJR-T01SDI is a 3G/HD/SD-SDI input-capable encoder. It is designed to transport SDI input signals to local and long-range transmission over fiber optic cables. The NJR-T01SDI converts SDI input signals into HDMI signals and enables SDI signal management within the IP-NINJAR system domain. The NJR-T01SDI features a local monitor output, enabling video recording and monitoring, using an HDMI monitor. It also offers RS-232C bidirectional communication and 10G network transmission.

**Features**
- HDMI 2.0a:
  - Extended Dynamic Range
  - Deep Color 12-bit
  - Supports AV signals to HDMI signals
- HDMI EDID:
  - Support for 1.4a and 2.0a
  - EDID compatible with HDMI 2.0a
- Audio:
  - 6.1/7.1/8.1 Digital Audio
  - 32bit AES/EBU
- Power:
  - 40Watts

### Dante Audio Bridge Interface | NJR-AB08DAN

The NJR-AB08DAN transcodes audio directly between the IP-NINJAR and Dante protocol environments. Audio signal transport is enabled from NJR encoders to Dante devices and from Dante device to NJR decoders. The NJR-AB08DAN can receive up to four audio streams from IP-NINJAR encoders and output up to eight channels in Dante protocol. The bridge can also accept up to 8-channel audio from Dante sources and outputting IP-NINJAR protocol up to four audio streams.

**Features**
- Supports Dante protocol
- Supports IP-NINJAR protocol
- Routes both IP-NINJAR and Dante audio
- Adds Dante audio to IP-NINJAR protocol
- Routes Dante audio signal to IP-NINJAR protocol

### 4-channel HDMI Encoder/Decoder | NJR-04HD

The NJR-04HD is a 4-channel HDMI network encoder and decoder set having a built-in scan converter. It supports both standard RS-232C communication and LAN transmission. The NJR-04HD can be used with other IP-NINJAR products. Using an NJR-04HD/R with an NJR-T01UHD enables full HD signals to be displayed on a sink device as 4K@60 signals.

**Features**
- Supports 3G/HD/SD-SDI input:
  - 3G-SDI (1080p/59.94i, 29.97i)
  - HD-SDI (1080p/50i, 25i, 60i, 24i)
  - HD-SDI (1080p/59.94i, 29.97i, 24i)
  - SD-SDI (525i, 625i, 480i)
- Supports 4K@60 signals:
  - 4K (4096x2160p, 2048x1080p, 2048x1080i, 2048x1080p24, 2048x1080p50, 2048x1080p60)
- Audio:
  - Supports 8-channel audio:
    - 192kHz/24bit (8 channels)
    - 96kHz/24bit (8 channels)
    - 48kHz/24bit (8 channels)
- Power:
  - 24Watts per unit

### IP-NINJAR Management Platform | NJR-CTB

The NJR-CTB is an advanced control box that expands the possibility for IP-NINJAR products. The NJR-CTB automatically recognizes IP-NINJAR products, monitors and controls units, and enables control commands. Audio signal transport is enabled from NJR encoders to Dante devices and from Dante devices to NJR decoders.

**Features**
- Recognizes IP-NINJAR products, automatically and assigning channels
- Sends control commands to IP-NINJAR products
- Sends control commands to Dante devices
- Sends control commands to NJR encoders
- Sends control commands to NJR decoders
- Sends control commands to external devices
- Sends control commands to network

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This document provides detailed specifications and features for various components, including encoders, decoders, and management platforms, designed for networked AV systems. Each section elaborates on specific functionalities, supported protocols, and connectivity options, ensuring compatibility and ease of use within integrated AV solutions.
**Digital Multi Switcher with 5 Inputs & 2 Outputs**  
**MSD-S51/MSD-S52**

The MSD-S51 and MSD-S52 are digital presentation switcher with 5 inputs and 2 outputs. For video, seven digital and two analog inputs accept a wide variety of video formats including HDMI, DVI, Composite video, RGB, and YPbPr. Input video signals are output to HDBaseT and HDMI signals simultaneously up to 4K@60Hz and 1080p. For selected input video signals can be displayed on a single screen in picture-in-picture or side-by-side layout. The overlay bitmap function is also supported.

The MSD-S51 and MSD-S52 include five digital and three analog audio inputs and outputs audio to both of digital and analog connectors. Audio level of each input/output can be set individually. The Lip Sync function adjusts the gap between video and audio.

**Features**
- Up to 1080p/4K@60Hz (Reduced Blanking)
- Motion adaptive interlaced/progressive conversion
- Scan conversion: Analog video control
- Seamless switching with one black frame
- Analog/Digital conversion
- Four video output (1-4) : 10 bit wide
- Two video combinations: PinP and side-by-side
- Overlay bitmap: Up to 1080p (10 bit) over Cat6 cable in long reach mode

**Connection Diagram**

---

**Digital Multi Switcher with 7 Inputs & 2 Outputs**  
**MSD-S71/MSD-S72**

The MSD-S71 and MSD-S72 are digital presentation switch with seven inputs and two outputs.

For video, seven digital and two analog inputs accept a wide variety of video formats including HDMI, DVI, Composite video, RGB, and YPbPr. Input video signals are output to HDBaseT and HDMI signals simultaneously up to 4K@60Hz and 1080p. For selected input video signals can be displayed on a single screen in picture-in-picture or side-by-side layout. The overlay bitmap function is also supported.

The MSD-S71 and MSD-S72 include seven digital and three analog audio inputs and outputs audio to both of digital and analog connectors. Audio level of each input/output can be set individually. The Lip Sync function adjusts the gap between video and audio.

**Features**
- Up to 1080p/4K@60Hz (Reduced Blanking)
- Motion adaptive interlaced/progressive conversion
- Scan conversion: Analog video control
- Seamless switching with one black frame
- Analog/Digital conversion
- Four video output (1-4) : 10 bit wide
- Two video combinations: PinP and side-by-side
- Overlay bitmap: Up to 1080p (10 bit) over Cat6 cable in long reach mode

**Connection Diagram**

---
Digital Multi Switcher with Integrated Audio Power Amplifier/7 Inputs & 1 Output MSD-701AMP

The MSD-701AMP is a seven-input digital presentation switcher with built-in audio power amplifier. The seven digital and two analog inputs accept a wide variety of video formats including HDMI, DVI, HDBaseT, Composite video, RGB, and YPbPr. Input video signals are converted to HDBaseT and HDMI signals at up to 1080p/60Hz. Two selected input video signals can be displayed on a single screen in picture-in-picture or side-by-side layout. Up to three audio can be mixed one of seven digital audio, one of three analog audio, one mic, and one line. Audio is output to digital connectors, an analog connector, and two speaker. Enhanced audio features include compressing, limiting, and seven-band equalizer for mic input and tone controls for speaker output. Additionally, the MSD-701AMP includes key security lockout and button caps to prevent accidental or inappropriate changes.

Features

- **Options**
  - Up to 164 ft (50 m) (Reduced Blanklining)
  - Aspect ratio control
  - Motion adaptive interlaced/progressive conversion
  - Cross video combinations: Picture-in-picture and side-by-side
  - Scan conversion: Seamless switching with one black frame
  - Anti-snow
  - Analog Digital conversion
  - Up to 4K@30 (1080p 60 Hz 24 bit or less)

- **Audio**
  - Embedding/De-embedding
  - Volume adjustment (Input/Output)
  - Mic./Line level control
  - Source volume control
  - Lip Sync
  - Audio Downmix
  - Embedding/De-embedding
  - Volume adjustment (Input/Output)
  - Mic./Line level control
  - Source volume control
  - Lip Sync
  - Audio Downmix

- **Control**
  - Control command output (e.g. controlling projectors)
  - PJLink
  - RS-232C
  - LAN
  - Contact closure
  - Power distribution unit control

- **Power**
  - Up to 98 ft (30 m)
  - Up to 131 ft (40 m)
  - Up to 98 ft (30 m)
  - Up to 131 ft (40 m)
  - Up to 1080p/QWXGA (Reduced Blanking)
  - Aspect ratio control

Connection Diagram

- **Inputs**
  - HD/SDI, HDBaseT
  - HDMI, DVI
  - Composite Video
  - S-Video
  - RGB
  - Analog Audio

- **Outputs**
  - HDMI
  - DVI
  - Audio

4K Digital Multi Switcher with 8 Inputs & 3 to 8 Outputs MSD-6200 Series

The MSD-6200 series is a high performance, digital presentation switcher with built-in scan converters. The following input signal formats are supported: HDMI, DVI, composite video, S-video, analog RGB/HV, and analog YPbPr. All video input signals are converted to HDMI or HDBaseT signals and output at user definable resolution formats up to 4K@60Hz. For audio input and output, digital audio and analog audio formats are supported, and they are cross-mutable. Audio levels of each input and output can be set individually. With Dante (optional), up to 64 input audio channels (48 kHz) can be transmitted as DANTE format.

Features

- **Video**
  - Up to 4K@60
  - HDCP 1.4
  - Motion adaptive interlaced/progressive conversion
  - Cross video combinations: Picture-in-picture and side-by-side
  - Scan conversion: Seamless switching with one black frame
  - Analog Digital conversion
  - Up to 492 ft (150 m) over Cat6 cable in Long reach mode

- **Audio**
  - Embedding/De-embedding
  - Volume adjustment (Input/Output)
  - Mic./Line level control
  - Source volume control
  - Lip Sync
  - Audio Downmix
  - Sampling rate conversion

Connection Diagram

- **Inputs**
  - HD/SDI, HDBaseT
  - HDMI, DVI
  - Composite Video
  - S-Video
  - RGB
  - Analog Audio

- **Outputs**
  - HDMI
  - DVI
  - Audio

*If using with HDBaseT products supporting 1080p 60 Hz transmission*
The MSD-701UHD and 702UHD are seven inputs and switches outputs digital multi switcher with a scan converter. They are HDBaseT 2.2 compliant and support video resolutions up to 4K (4:4:4). The MSD-701UHD and 702UHD include seven inputs in total: two HDMI for up to 4K, two HDMI+ one HDBaseT for up to 1080p and analog video. Input signals are converted into up to 4K and distributed into HDMI and HDBaseT.

## Features

**Video**
- Up to 4K@60 (4:4:4); HDCP 1.4/2.2
- Motion adaptive interpolation/progressive conversion • Scan conversion • Aspect ratio control • Seamless switching with one black frame
- Analog/Digital conversion • Anti-snow
- Up to 492 ft. (150 m) over Cat6 cable at 1080p (24 bit) in Long reach mode

**Audio**
- A/D, D/A conversion • Volume adjustment (Input/Output) • Lip Sync
- RS-232C, LAN • Contact closure
- Contact security lockout
- EDID emulation • All functions and configuration settings accessible through browser
- CEC (Control sink device power) • Contact closure • PJLink
- Input channel automatic switching • Crosspoint memory • Preset memory • Last memory • Connection Reset • Button security lockout
- CEC (Control sink device power) • Contact closure • PJLink
- Input channel automatic switching • Crosspoint memory • Preset memory • Last memory • Connection Reset • Button security lockout
- CEC (Control sink device power) • Contact closure • PJLink
- Input channel automatic switching • Crosspoint memory • Preset memory • Last memory • Connection Reset • Button security lockout

## Models

**MSD-701UHD**
- 7 Inputs & 1 Output

**MSD-702UHD**
- 7 Inputs & 2 Outputs

**MSD-7200UHD Series**

**Features**

**Video**
- Up to 4K@60 (4:4:4); HDCP 1.4/2.2 • Crosspoint memory
- Aspect ratio control • Seamless switching with one black frame • Analog/Digital conversion • Anti-snow

**Audio**
- A/D, D/A conversion • Volume adjustment (Input/Output) • Lip Sync

**Control Input**
- RS-232C • LAN

**Control Output**
- Crosspoint memory • Preset memory • Last memory • Connection Reset • Button security lockout
- CEC (Control sink device power) • Contact closure • PJLink

**Others**
- CEC (Control sink device power) • Contact closure • PJLink
- Input channel automatic switching • Crosspoint memory • Preset memory • Last memory • Connection Reset • Button security lockout
- CEC (Control sink device power) • Contact closure • PJLink
- Input channel automatic switching • Crosspoint memory • Preset memory • Last memory • Connection Reset • Button security lockout

## Models

**MSD-7200UHD Series**
- 9 Inputs & 1 to 4 Outputs

**MSD-801UHD**
- 7 Inputs & 1 Output

**MSD-802UHD**
- 7 Inputs & 2 Outputs

The MSD-801UHD and 802UHD include seven inputs in total: two HDMI for up to 4K, two HDMI+ one HDBaseT for up to 1080p and analog video. Input signals are converted into up to 4K and distributed into HDMI and HDBaseT.

## Features

**Video**
- Up to 4K@60 (4:4:4); HDCP 1.4/2.2 • Crosspoint memory
- Aspect ratio control • Seamless switching with one black frame • Analog/Digital conversion • Anti-snow

**Audio**
- A/D, D/A conversion • Volume adjustment (Input/Output) • Lip Sync

**Control Input**
- RS-232C • LAN

**Control Output**
- Crosspoint memory • Preset memory • Last memory • Connection Reset • Button security lockout
- CEC (Control sink device power) • Contact closure • PJLink

**Others**
- CEC (Control sink device power) • Contact closure • PJLink
- Input channel automatic switching • Crosspoint memory • Preset memory • Last memory • Connection Reset • Button security lockout
- CEC (Control sink device power) • Contact closure • PJLink
- Input channel automatic switching • Crosspoint memory • Preset memory • Last memory • Connection Reset • Button security lockout

## Models

**MSD-801UHD**
- 7 Inputs & 1 Output

**MSD-802UHD**
- 7 Inputs & 2 Outputs

**MSD-801UHD**

**Features**

**Video**
- Up to 4K@60 (4:4:4); HDCP 1.4/2.2 • Crosspoint memory
- Aspect ratio control • Seamless switching with one black frame • Analog/Digital conversion • Anti-snow

**Audio**
- A/D, D/A conversion • Volume adjustment (Input/Output) • Lip Sync

**Control Input**
- RS-232C • LAN

**Control Output**
- Crosspoint memory • Preset memory • Last memory • Connection Reset • Button security lockout
- CEC (Control sink device power) • Contact closure • PJLink

**Others**
- CEC (Control sink device power) • Contact closure • PJLink
- Input channel automatic switching • Crosspoint memory • Preset memory • Last memory • Connection Reset • Button security lockout
- CEC (Control sink device power) • Contact closure • PJLink
- Input channel automatic switching • Crosspoint memory • Preset memory • Last memory • Connection Reset • Button security lockout

## Models

**MSD-801UHD**
- 7 Inputs & 1 Output

**MSD-802UHD**
- 7 Inputs & 2 Outputs
The FDX-S08 and FDX-S08U are HDCP-compliant modular digital matrix switchers that support resolutions up to 4K UHD/60Hz. They provide up to 16 inputs and 16 outputs. Video and embedded audio can be switched simultaneously. The FDX-S08 and FDX-S08U feature RS-232/LAN ports for remote control, redundant power supply, and system check that outputs an alarm in case an abnormality is detected in power supply voltage, fans, internal temperature, or board. The redundant power supply ensures constant availability and minimizes the chance of a failure even for mission-critical environments.

**Features**
- RS-232/LAN Ports
- Analog audio LR
- Dante Audio
- Digital Video/Audio 4K SC
- HDBaseT
- 4K@60 (4:4:4)
- up to 4K@60 (4:4:4)*3
- 3G-SDI: Up to 459 ft. (140 m)
- 3G/HD/SD-SDI: Up to 984 ft. (300 m)
- HDMI/DVI: Up to 98 ft. (30 m)
- 3D (4K digital/4K HDBaseT I/O board)*2
- Audio Option
- **Connection Diagram**
- **Control Input:** RS-232/LAN
- **Others:** Analog audio input, CPU board, fan unit, and power unit can be replaced without removing from rack. Redundant power supply (Optional)

The FDX-S32 and FDX-S32U are HDCP-compliant modular digital matrix switchers that support resolutions up to 4K UHD/60Hz. They provide up to 32 inputs and 32 outputs. Video and embedded audio can be switched simultaneously. The FDX-S32 and FDX-S32U feature RS-232/LAN ports for remote control, redundant power supply, and system check that outputs an alarm in case an abnormality is detected in power supply voltage, fans, internal temperature, or board. The redundant power supply ensures constant availability and minimizes the chance of a failure even for mission-critical environments.

**Features**
- RS-232/LAN Ports
- Analog audio LR
- Dante Audio
- Digital Video/Audio 4K SC
- HDBaseT
- 4K@60 (4:4:4)
- up to 4K@60 (4:4:4)*3
- 3G-SDI: Up to 459 ft. (140 m)
- 3G/HD/SD-SDI: Up to 984 ft. (300 m)
- HDMI/DVI: Up to 98 ft. (30 m)
- 3D (4K digital/4K HDBaseT I/O board)*2
- Audio Option
- **Connection Diagram**
- **Control Input:** RS-232/LAN
- **Others:** Analog audio input, CPU board, fan unit, and power unit can be replaced without removing from rack. Redundant power supply (Optional)

**Connection Diagram**

**FDX-S08/FDX-S08U**

**FDX-S32/FDX-S32U**
The FDX-S64 is a HDCP-compliant modular digital matrix switcher that supports resolutions up to 4K@30. It provides up to 64 inputs and 64 outputs. Video and embedded audio can be switched simultaneously.

The FDX-S64 features RS-232C/LAN ports for remote control, redundant power supply, and system check that outputs an alarm in case an abnormality is detected in power supply voltage, fans, internal temperature, or board. The redundant power supply ensures constant availability and minimizes the chance of a failure even for mission-critical environments.

### Features
- **Connection Diagram**
- **Features**
  - 4K@30 Modular Matrix Switcher with 64 Inputs & 64 Outputs
  - **FDX-S64**

### Video
- **4K@30 Modular Matrix Switcher with 64 Inputs & 64 Outputs**
- **FDX-S64**
  - **Amplifiers/Extenders**
  - **Connection Diagram**
  - **Features**
  - **Others**

### Audio
- **4K@30 Modular Matrix Switcher with 64 Inputs & 64 Outputs**
- **FDX-S64**
  - **Amplifiers/Extenders**
  - **Connection Diagram**
  - **Features**
  - **Others**

### Control input
- **4K@30 Modular Matrix Switcher with 64 Inputs & 64 Outputs**
- **FDX-S64**
  - **Amplifiers/Extenders**
  - **Connection Diagram**
  - **Features**
  - **Others**

### Redundant power supply (optional) is included in the picture above.
- **4K@30 Modular Matrix Switcher with 64 Inputs & 64 Outputs**
- **FDX-S64**
  - **Amplifiers/Extenders**
  - **Connection Diagram**
  - **Features**
  - **Others**

### 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.
**HDC-S01U**

The HDC-S01U is an extender for HDBaseT signals using a single category cable to transmit data over a long distance. The product supports 4K@60 video signals, extending them digitally end-to-end. Bidirectional RS-232C and LAN communication are also supported. Input video signal is converted to HDBaseT signal and sent up to 328 ft. (100 m).

**Features**

- **Video**
  - Up to 4K@60 4:4:4
  - HDCP 2.2 (Pass-through)
  - Transmission over Cat5e STP cable
- **Digital Video/Audio**
  - Up to 98 ft. (30 m)
- **HDMI/DVI**
  - Up to 328 ft. (100 m) over Cat5e STP cable
- **RS-232C**
  - Up to 4 units can be installed in a 1U rack
- **LAN**
  - Up to 328 ft. (100 m)

*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.

### Application Example

- **HDMI/Analog HDBaseT Transmitter with 2 Inputs & 1 Output**

The HDC-TH200 is an HDBaseT transmitter that features both HDMI/AV and analog input signals. It also acts as a simple switcher, automatic sending and switching to an active input. The HDC-TH200 can also embed the analog video into the digital stream. Pair with any of IDK's HDBaseT receivers for video and audio extension to 328 ft. (100 m).

**Features**

- **Video**
  - Up to 1080p/50/60Hz (Reduced Bandwidth) HDBaseT 1.x
  - 32 bit separation for HDMI and LAN signals
  - Input: Up to 58 ft. (18 m)
  - Output: UP to 328 ft. (100 m) over Cat5e STP cable
- **Audio**
  - Embedding
- **Communication**
  - LAN
- **Others**
  - EDID emulation
  - Input channel automatic switching

### Connection Diagram

- **Analog Video**
  - 1 Input
- **Digital Video/Audio**
  - 1 Input
- **HDMI/DVI**
  - 1 Input
- **RS-232C**
  - 1 Input
- **LAN**
  - 1 Input

*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.

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**HDC-H100**

The HDC-H100 is an extender for HDBaseT signals using a single category cable to transmit data over a long distance. The product supports 4K@60 video signals, extending them digitally end-to-end. Bidirectional RS-232C and LAN communication are also supported. Input video signal is converted to HDBaseT signal and sent up to 328 ft. (100 m).

**Features**

- **Video**
  - Up to 4K@60 4:4:4
  - Transmission over Cat5e STP cable
  - Transmission over Cat6 UTP cable at 1080p (24 bit)
  - Transmission over Cat6 UTP cable at 1080p (24 bit) in Long reach mode
- **Audio**
  - No virtual delay (10 μs or less/328 ft. (100 m))
- **Digital Video/Audio**
  - Up to 4K@60 (4:2:0)
  - HDCP 1.4/2.2 (Pass-through)
- **RS-232C**
  - Up to 16 ft. (5 m)
- **LAN**
  - Up to 16 ft. (5 m)

*If using with IDK's HDBaseT products supporting 328 ft. (100 m) transmission.*

### Application Example

- **HDMI/Analog HDBaseT Transmitter with 4 Outputs**

The HDC-TH100WP is a wall-mountable transmitter for a long haul transmission of HDMI signal over one single category cable. The image quality will not be deteriorated, since video signals are transmitted at a resolution up to one single category cable.

**Features**

- **Video**
  - Up to 1080p/60Hz (Reduced Bandwidth) HDBaseT 1.x
  - 32 bit separation for HDMI and LAN signals
  - Transmission over Cat5e STP cable
- **Audio**
  - No virtual delay (10 μs or less/328 ft. (100 m))
  - Up to 328 ft. (100 m) in Long reach mode
- **Communication**
  - LAN
- **Others**
  - EDID emulation
  - Input channel automatic switching
  - 5-Wire control
  - Button security feature
  - RS-232C (HDBaseT)

### Connection Diagram

- **Digital Video/Audio**
  - 1 Input
- **Analog Audio**
  - 1 Input
- **Digital Video/Audio**
  - 1 Input
- **HDMI/DVI**
  - 1 Input
- **RS-232C**
  - 1 Input
- **LAN**
  - 1 Input

*If using with IDK's HDBaseT products supporting 328 ft. (100 m) transmission.*
The HDC-TH100WPJ is a wall-mountable transmitter for 1080p (24 bit) video signals up to 492 ft. (150 m) in Long reach mode (1080p 60 Hz 24 bit or less)\(^*3\). Video signals can be sent up to 100 m (328 ft.) for sending HDMI, DVI, and HDBaseT input signals at up to 4K@60(4:4:4) over a Category cable without compression or processing. For long reach mode, video signals up to 1080p (24 bit) can be transmitted to 492 ft. (150 m) in Long reach mode. The HDC-TH100WPJ includes one HDMI input and one HDBaseT output. The HDMI OUT enables down conversion outputting 4K input signals to 1080p automatically depending on sink device status. The two video inputs can be controlled by the front panel or an external controller. For video signals that is distributed to an HDMI/DVI and HDBaseT simultaneously, video/audio can be off for each output.

Internal Web pages provide system status for troubleshooting and device monitoring using a browser. It supports bidirectional RS-232 communication and LAN management. Communication features include RS-232C, WEB browser control, Status notification, HDCast status display, II signal status display, Input channel automatic switching, CEC (Pass-Through), and Status notification. The two video inputs can be controlled by the front panel or an external controller.

**Features**

- **Up to 492 ft. (150 m) in Long reach mode (1080p 60 Hz 24 bit or less)\(^*3\)**
- **EDM Transmission distance**
  - Up to 98 ft. (30 m): 1080p@60
  - Up to 328 ft. (100 m): 4K@60 (4:2:0)
- **Maximum transmission distances**
  - HDMI (100 m) / DVI (180 m) / HDBaseT (100 m) (24 bit)
- **DIGI transmission distance**
  - Up to 492 ft. (150 m) in Long reach mode (1080p 60 Hz 24 bit or less)\(^*3\)
  - EDM Transmission distance
  - Up to 58 ft. (20 m): 1080p@60
- **DIGI transmission distance**
  - Up to 328 ft. (100 m): 4K@60 (4:2:0)
- **EDM transmission distance**
  - Up to 492 ft. (150 m) in Long reach mode (1080p 60 Hz 24 bit or less)\(^*3\)
  - EDM Transmission distance
  - Up to 58 ft. (20 m): 1080p@60
- **DIGI transmission distance**
  - Up to 328 ft. (100 m): 4K@60 (4:2:0)
- **DIGI transmission distance**
  - Up to 492 ft. (150 m) in Long reach mode (1080p 60 Hz 24 bit or less)\(^*3\)
  - EDM Transmission distance
- **DIGI transmission distance**
  - Up to 328 ft. (100 m): 4K@60 (4:2:0)
- **DIGI transmission distance**
  - Up to 492 ft. (150 m) in Long reach mode (1080p 60 Hz 24 bit or less)\(^*3\)
  - EDM Transmission distance
- **DIGI transmission distance**
  - Up to 328 ft. (100 m): 4K@60 (4:2:0)
- **DIGI transmission distance**
  - Up to 492 ft. (150 m) in Long reach mode (1080p 60 Hz 24 bit or less)\(^*3\)
  - EDM Transmission distance

**Video**

- **Up to 492 ft. (150 m) in Long reach mode (1080p 60 Hz 24 bit or less)\(^*3\)**
- **Up to 1080p (24 bit) video signals can be sent up to 492 ft. (150 m) in Long reach mode.**
- **Up to 328 ft. (100 m): 4K@60 (4:2:0)**
- **Up to 492 ft. (150 m) in Long reach mode (1080p 60 Hz 24 bit or less)\(^*3\)**
- **Digital Video/Audio**
- **HDMI DVI**
- **HDBaseT**
- **Audio**
- **Coaxial**
- **LR Unbalanced**
- **LR Balanced**
- **LR Unbalanced**
- **LR Balanced**
- **LR Balanced**

**Audio**

- **Coaxial**
- **LR Unbalanced**
- **LR Balanced**
- **LR Unbalanced**
- **LR Balanced**
- **LR Balanced**

**Power**

- **Up to 328 ft. (100 m): 4K@60 (4:2:0)**
- **Up to 492 ft. (150 m) in Long reach mode (1080p 60 Hz 24 bit or less)\(^*3\)**
- **EDM Transmission distance**
- **Up to 328 ft. (100 m): 4K@60 (4:2:0)**
- **Up to 492 ft. (150 m) in Long reach mode (1080p 60 Hz 24 bit or less)\(^*3\)**
- **EDM Transmission distance**
- **Up to 328 ft. (100 m): 4K@60 (4:2:0)**
- **Up to 492 ft. (150 m) in Long reach mode (1080p 60 Hz 24 bit or less)\(^*3\)**
- **EDM Transmission distance**
- **Up to 328 ft. (100 m): 4K@60 (4:2:0)**
- **Up to 492 ft. (150 m) in Long reach mode (1080p 60 Hz 24 bit or less)\(^*3\)**
- **EDM Transmission distance**

**Connection Diagram**

- **HDC-TH100WPJ**
- **HDC-RH421UHD**
- **HDC-TH221UHD**

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\(^*3\) If exceeding 328 ft. (100 m) in Long reach mode, CAT.5E HDC, Cat5e STP, and Cat6 STP cables are recommended.
HDBaseT Power Injector | HDC-P1502

The HDC-P1502 is a single-port power injector that supplies power to a PoH transmitter and receiver, such as HDC-TH100WP (HDBaseT category 6a cable transmits). Since the receiver provides power to a transmitter and receiver (up to 15 W per device) simultaneously by installing within the HDBaseT transmits line, it eliminates the need for a local power supply. The HDC-P1502 stops supplying power if detecting PoH incompliant, cable's short, overload, and heat problem.

**Features**

- **Video**
  - Up to 4094x2160 (4:2:0) • HDCP 2.2
  - Up to 1080p over CAT5e/6 using HDBaseT: 150m (492 feet)
  - Up to 1080p over Belden 1694A (RG-6): 110 (333 feet)

- **Other**
  - PoH (IEEE 802.3af) • Status monitor
  - Up to 4 units can be installed in a 1U rack
  - PoH (IEEE 802.3af) • Status monitor

**Application Example**

![HDC-P1502 Application Example](image)

**Features**

- **Video**
  - HDMI and serial signal using coaxial cable
  - Remote controller via RS-232
  - EDID emulation, Connection Reset, Built-in test pattern/tone output
  - Daisy chain connection
  - Anti-snow

- **Audio**
  - Embedding/De-embedding

**Connection Diagram**

![HDC-P1502 Connection Diagram](image)

4K@60 HDMI Distribution Amplifier with 1 Input & 2 to 8 Outputs | VAC-S U Series

The VAC-S U series is a HDBaseT 2.2 compliant distribution amplifier for HDMI signals at resolutions up to 4K@60 (4:4:4).

- **Features**
  - Up to 4094x2160 (4:4:4) • HDCP 2.0
  - RS-232 • IR
  - RS-232 • IR

- **Connection Diagram**

![VAC-S U Series Connection Diagram](image)
**4K@60 HDMI Switcher with 4 Inputs & 1 Output | IMP-S41U**

The IMP-S41U is an HDCP 2.2-compliant 4x1 HDMI switcher with four inputs and one output. Digital audio of selected input channel can be de-embedded to analog audio. The switcher also includes RS-232C and LAN as communication ports that offer remote setting from WEB browser or control commands. Additionally, contact inputs/tally outputs enable the IMP-S41U to be controlled from the PC/UG board or a control box.

**Features**

- **Video**
  - Up to 4xHDMI (4:4:4) • HDCP 1.4/2.2 • 4K/60Hz • 3G/HD/SD-SDI
  - HDMI transmission distance: 100m (328 ft) • Up to 98 ft. (30 m)
  - De-embedding of digital audio of selected input channel can be output at a standard audio format.
- **Audio**
  - 4-channel analog audio
  - Output adjustable
- **Communication**
  - RS-232C • LAN • Contact closure
- **Others**
  - EDID emulation • All functions and configuration settings accessible through browser
  - 4-window display
  - Anti-snow

**Connection Diagram**

**4K@60 Multi-Window Video Processor with 4 Inputs & 1 Output | ICP-401UHD**

The ICP-401UHD is a 4x4 (4:4:4) • HDCP 1.4/2.2-compliant four-window video processor that can display multiple video sources on a single screen with customizable layout. The ICP-401UHD can also be used as a 4-input and 1-output truly wireless switcher. Additionally, the LAN port enables you to control the ICP-401UHD remotely.

**Features**

- **Video**
  - Up to 4xHDMI (4:4:4) • HDCP 1.4/2.2
  - Motion adaptive interlace/progressive conversion
  - Truly seamless switching (single-window display)* • Anti-snow
- **Audio**
  - Volume adjustment
- **Video combination**
  - Simultaneous display of up to 4 input images on a single screen
  - Background color
  - Layout order
  - Displaying/hiding
  - Picture size
  - Character size
  - LO/VORB switching effect • 32 window layout patterns
- **Control input**
  - 4-window display
  - EDID emulation • All functions and configuration settings accessible through browser
  - Most recent memory • Last memory • Connection Reset • Button security lockout
- **Others**
  - SMS text input
  - 4-window display

**Connection Diagram**

**4K@60 HDMI Frame Synchronizer/Scaler | DFS-01UHD**

The DFS-01UHD is a digital frame synchronizer with a scan converter 1 input and 1 output. For video input, HDMI or DVI signals can be input. Input video signal is converted and output at a resolution up to 4K 30 Hz. Audio volume can be controlled. The Lip Sync function corrects the gap between the video and audio. The DFS-01UHD also has a LAN port as communication ports for control to enable external control and remote setting.

**Features**

- **Video**
  - Up to 4xHDMI (4:4:4) • HDCP 1.4/2.2
  - Motion adaptive interlace/progressive conversion • Horizontal flip
  - Scan conversion • Aspect ratio control
  - Video rotation (by 90 degrees)* • External synchronization I/O for video and audio
- **Audio**
  - XLR balanced/unbalanced
  - Volume adjustment • Lip Sync
- **Control input**
  - 4-window display
- **Others**
  - XLR (3-pin) • 3.5mm stereo jack
  - All functions and configuration settings accessible through browser
  - Motion adaptive • Last memory • Connection Reset • Button security lockout • System check

**Connection Diagram**
The UHDS-01 is a 4K@60 (4:4:4) and HDCP supported HDMI audio embedder/de-embedder. Input HDMI audio can be converted into analog audio while input analog audio can be embedded into HDMI signals.

Features
- Up to 4K@60 (4:4:4)  • HDCP 1.4/2.2  • HDR  • 3D  • x.v.Color
- Transmission distances
  - 1080p@60: Up to 131 ft. (40 m)
  - 4K@60: Up to 39 ft. (12 m) (when cable supporting 18 Gbps transmission is used)
- Anti-snow
- EDID emulation  • DDC buffer  • CEC (Pass-through)
- CEC (Pass-through)
- Displaying I/O signal status  • Connection Reset
- Embedding/De-embedding

Connection Diagram

Digital Video/Audio

Audio

Up to 131 ft. (40 m)*1

1 Input

1 Output

Up to 131 ft. (40 m)*2

4K@60 HDMI Audio Embedder

UHDS-01

The DDC-03UHD is a 4K@60 (4:4:4) and HDCP 2.2 supported EDID emulator. It includes the built-in EDID to offer plug-and-play between a PC and monitor. The cable equalization for input and CDR (Clock Data Recovery re-clocks input signals degraded by HDMI cables) enable long-haul video transmission.

Features
- Up to 4K@60 (4:4:4)  • HDCP 1.4/2.2 (Pass-through)
- HDR  • 3D  • x.v.Color
- Automatic input signal equalization
  - Input: Up to 98 ft. (30 m) (1080p@60)
  - Up to 39 ft. (12 m) (4K@60) (when cable supporting 18 Gbps transmission is used)
- EDID emulation  • CEC (Pass-through)  • DDC buffer  • Clock Data Recovery
- AC adapter with locking mechanism
- Power supply enabled/disabled

Connection Diagram

Digital Video/Audio

Audio

Up to 98 ft. (30 m)*1

1 Input

1 Output

Up to 66 ft. (20 m)*2

DDC-03UHD

The PRV-100 is a thumbnail previewer for NJR-R01UHD output video. The PRV-100 video can be encoded to H.264 format and transmitted in unicast or multicast stream.

Features
- Capturing and viewing up to 100 video channels periodically
- Free thumbnail preview layout
- Up to 128 layouts can be registered
- AC adapter with locking mechanism
- Images of multi sources can be checked on a single screen by using the PRV-100 with NJR’s HDMI products

Connection Diagram

Thumbnail preview images

4K UHD Blu-ray Player

4K PC

10 Gb Ethernet Switch

4K Video Camera

SDVR-100

The PDU-1209 is a power distribution unit that provides power for up to nine compatible model devices. The PDU-1209 has overcurrent protection. If the PDU-1209 detects a power failure or a fan failure, the appropriate front panel LED is illuminated and the PDU-1209 outputs a warning alarm.

Features
- Power supply: 12 V, 9 outputs (Each output 12 VDC 3.3 A)
- Overcurrent protection
- DC power can be distributed up to 9 channels (Each output 12 VDC 3.3 A)

Connection Diagram

DC power can be distributed up to 9 channels

PDU-1209

4K@60 HDMI Audio Embedder/De-Embedder  | UHDS-01

Thumbnail Previewer  | PRV-100

Power Distribution Unit with 12 V, 9 Outputs  | PDU-1209
Power Distribution Unit with 5/12 V, 15 Outputs | PD-S15

The PD-S15 is a power distribution unit with 5V and 12V DC power to support IDK products using dedicated DC cables. One PD-S15 supplies power for up to 15 units or 14 units and an optional exhaust fan unit (RF-4). The PD-S15 can be rack-mounted using IDK’s RM-EX, RM-SH, or RM-SW mounts.

Application Example

DC 5 V Products
DC 12 V Products

PD-S15

Programmable Button Controller | SWC-2000

The SWC-2000 is a remote programmable button controller. Control command can be registered and linked to the buttons by using web browser. The SWC-2000 can control connected units which are connected via LAN or RS-232C. The SWC-2000 can be used on a desk or mounted to a rack.

Features

• Remote controlling IDK products over LAN or RS-232C
• 16 control command buttons (Up to 10 commands per button) • PJLink
• Standby
• System can be customized/unlinked
• Up to 32 commands can be registered over WEB browser
• Suitable for public叫做・EIA rack and tabletop mountable

Optional

For SWC-2000

<table>
<thead>
<tr>
<th>Product</th>
<th>SWC-2000</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bracket drawing</td>
<td></td>
</tr>
<tr>
<td>The number of units</td>
<td>1</td>
</tr>
<tr>
<td>Part number</td>
<td>RM-SWC2001</td>
</tr>
</tbody>
</table>

Native Application for Smartphone & Tablets | iq System

“iq System” is a native app for Smart Phones & Tablets, enabling intuitive control of IDK products. It is an excellent choice for conference rooms, classrooms, meeting spaces and beyond.

Features

• Bring your own device (BYOD) - iPhone, iPad & Android apps put you directly in command
• Design, simple and intuitive - single layer “graphic language” makes any system coherent
• Ready to use – no complicated programming
• User definable naming and icon selection
• Advanced features supporting permissioning and workgroup definition
• System control is provided simultaneously for multiple users and devices
• Control third party equipment

Optional

For SWC-2000

<table>
<thead>
<tr>
<th>Product</th>
<th>SWC-2000</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bracket drawing</td>
<td></td>
</tr>
<tr>
<td>The number of units</td>
<td>1</td>
</tr>
<tr>
<td>Part number</td>
<td>RM-SWC2001</td>
</tr>
</tbody>
</table>

Optional

For SWC-2000

<table>
<thead>
<tr>
<th>Product</th>
<th>SWC-2000</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bracket drawing</td>
<td></td>
</tr>
<tr>
<td>The number of units</td>
<td>1</td>
</tr>
<tr>
<td>Part number</td>
<td>RM-SWC2001</td>
</tr>
</tbody>
</table>
EIA Rack Mounting Hardware/Offset Brackets

**Standard** For 1U, 2U, and 3U height products

1U, 2U, and 3U rack width products can be mounted to the rack using the mounting hardware that is supplied with the products.

**Optional** For 1U and 2U height, offset rack mount

Since these models have a connector on the front panel, stress may be put on the cable when the door is kept closed. This problem can be avoided using the optional brackets.

<table>
<thead>
<tr>
<th>Rack height</th>
<th>1U</th>
<th>2U</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bracket drawing</td>
<td><img src="image1.png" alt="Bracket Drawing" /></td>
<td><img src="image2.png" alt="Bracket Drawing" /></td>
</tr>
<tr>
<td>Part number</td>
<td>RM-OFS100</td>
<td>RM-OFS220</td>
</tr>
</tbody>
</table>

**Optional** For 1U height, half rack width products

<table>
<thead>
<tr>
<th>Rack width</th>
<th>Half-rack</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bracket drawing</td>
<td><img src="image3.png" alt="Bracket Drawing" /></td>
</tr>
<tr>
<td>The number of units</td>
<td>1</td>
</tr>
<tr>
<td>Part number</td>
<td>RM-44S</td>
</tr>
</tbody>
</table>

**Optional** For 1U height, quarter rack width products

<table>
<thead>
<tr>
<th>Rack width</th>
<th>Quarter-rack</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bracket drawing</td>
<td><img src="image4.png" alt="Bracket Drawing" /></td>
</tr>
<tr>
<td>The number of units</td>
<td>1</td>
</tr>
<tr>
<td>Part number</td>
<td>RM-SF</td>
</tr>
</tbody>
</table>
### EIA Rack Mounting Hardware/Multi-unit Rackmount Chassis

**Optional** For Combination of different-size products

<table>
<thead>
<tr>
<th>Rock size</th>
<th>1 Half-rack + 1 Thin type half-rack</th>
<th>1 Half-rack + 2 Quarter-rack</th>
<th>1 Half-rack + 1 Quarter-rack</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bracket drawing</td>
<td><img src="image1" alt="Bracket Drawing" /></td>
<td><img src="image2" alt="Bracket Drawing" /></td>
<td><img src="image3" alt="Bracket Drawing" /></td>
</tr>
<tr>
<td>The number of units</td>
<td>1 half-rack unit (H: 1.73” (44 mm)) + 1 Thin type half-rack</td>
<td>1 half-rack unit (H: 1.73” (44 mm)) + 2 Quarter-rack</td>
<td>1 half-rack unit (H: 1.73” (44 mm)) + 1 Quarter-rack + Quarter-rack blank panel</td>
</tr>
<tr>
<td>Part number</td>
<td>RM-SH</td>
<td>RM-SBP</td>
<td>RM-SBP</td>
</tr>
</tbody>
</table>

**Optional** For half-rack/quarter-rack wide products (Vertically mountable)

The RM-SV5 and RM-SV3 vertically hold up to 14 half-rack and quarter-rack wide units, respectively. Each product can be installed and removed separately.

<table>
<thead>
<tr>
<th>Rack width</th>
<th>Half-rack or thin type half-rack</th>
<th>Quarter-rack</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mounting Hardware</td>
<td><img src="image4" alt="Mounting Hardware" /></td>
<td><img src="image5" alt="Mounting Hardware" /></td>
</tr>
<tr>
<td>Part number</td>
<td>RM-SV5</td>
<td>RM-SV3</td>
</tr>
</tbody>
</table>

### EIA Rack Mounting Hardware/FAN Unit

**Optional** RF-4: Fan Unit for RM-SV Series

Each mounted unit is heated from other units in the same rackmount, and it increases the internal temperature. The RF-4 is for preventing temperature increase. A fan unit should be mounted depending on the temperature in rackmount as follows:

For units whose upper operating temperature limit is 104°F (40°C)

<table>
<thead>
<tr>
<th>Presence of fan</th>
<th>Unit with fan</th>
<th>Unit without fan</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fans needed</td>
<td>Fans should be mounted</td>
<td>Fans should be mounted</td>
</tr>
</tbody>
</table>

For units whose upper operating temperature limit is 86°F (30°C)

<table>
<thead>
<tr>
<th>Presence of fan</th>
<th>Unit with fan</th>
<th>Unit without fan</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fans needed</td>
<td>Fans should be mounted</td>
<td>Fans should be mounted</td>
</tr>
</tbody>
</table>

For fans, the intake and release air directions are reversed.

**Optional** SM-AP165: Rack-shelf plate for RM-SV Series

The RM-AP165 provides extra space in the rear side for placing objects. Cables and objects can be secured using cable ties or the like through 6x6 mm square holes.

### Part Numbers

- **RM-44S**: For 1 half-rack product
- **RM-44D**: For 2 half-rack products
- **RM-SH**: Combination of half-rack width and thin type half-rack width or quarter-rack width
- **RM-SF**: For 4 quarter-rack products, 2 thin type half-rack products
- **RM-SBP**: Quarter-rack blank panel
- **RM-OFS100**: For MSD-501/502/701/702/801UHD/802UHD
- **RM-OFS220**: For MSD-701AMP
- **RM-AP165**: Option Tray for RM-SV
- **RF-4**: Option Fan Unit for RM-SV
- **FP-230**: Mounting Bracket for 3.89 in. (100 mm) rack width
- **FP-100**: Mounting Plate for 3.89 in. (100 mm)
- **FP-140**: Mounting Plate for 5.5 in. (140 mm)
**Standard Resolutions**

<table>
<thead>
<tr>
<th>Resolution</th>
<th>General Name</th>
<th>Dot Clock</th>
<th>Horizontal Frequency</th>
<th>Vertical Frequency</th>
<th>Aspect Ratio</th>
</tr>
</thead>
<tbody>
<tr>
<td>640×480</td>
<td>VGA</td>
<td>25.175 MHz</td>
<td>31.469 kHz</td>
<td>59.54 Hz</td>
<td>4:3</td>
</tr>
<tr>
<td>800×600</td>
<td>VGA</td>
<td>30 MHz</td>
<td>37.875 kHz</td>
<td>60 Hz</td>
<td>4:3</td>
</tr>
<tr>
<td>1024×768</td>
<td>VGA</td>
<td>40 MHz</td>
<td>48.16 kHz</td>
<td>60.06 Hz</td>
<td>4:3</td>
</tr>
<tr>
<td>1280×720</td>
<td>VGA</td>
<td>45 MHz</td>
<td>54.09 kHz</td>
<td>60 Hz</td>
<td>4:3</td>
</tr>
<tr>
<td>1280×720</td>
<td>720p (HD/1080i)</td>
<td>74.25 MHz</td>
<td>60 Hz</td>
<td>16:9</td>
<td></td>
</tr>
<tr>
<td>1360×768</td>
<td>WXGA</td>
<td>70 MHz</td>
<td>42.776 kHz</td>
<td>59.87 Hz</td>
<td>16:9</td>
</tr>
<tr>
<td>1440×900</td>
<td>Quad VGA</td>
<td>80 MHz</td>
<td>48.762 kHz</td>
<td>59.81 Hz</td>
<td>16:10</td>
</tr>
<tr>
<td>1360×768</td>
<td>WXGA</td>
<td>108 MHz</td>
<td>60 Hz</td>
<td>16:9</td>
<td></td>
</tr>
<tr>
<td>1440×900</td>
<td>WXGA</td>
<td>108 MHz</td>
<td>60 Hz</td>
<td>16:9</td>
<td></td>
</tr>
<tr>
<td>1360×768</td>
<td>WXGA</td>
<td>108 MHz</td>
<td>60 Hz</td>
<td>16:9</td>
<td></td>
</tr>
<tr>
<td>1600×1050</td>
<td>WUXGA +</td>
<td>108 MHz</td>
<td>60 Hz</td>
<td>16:10</td>
<td></td>
</tr>
<tr>
<td>1600×1050</td>
<td>WUXGA +</td>
<td>108 MHz</td>
<td>60 Hz</td>
<td>16:10</td>
<td></td>
</tr>
<tr>
<td>1680×1050</td>
<td>WUXGA +</td>
<td>105 MHz</td>
<td>60 Hz</td>
<td>16:10</td>
<td></td>
</tr>
<tr>
<td>2048×1152</td>
<td><em>BB</em></td>
<td>307.2 MHz</td>
<td>240 Hz</td>
<td>17:9</td>
<td></td>
</tr>
<tr>
<td>2048×1152</td>
<td><em>BB</em></td>
<td>307.2 MHz</td>
<td>240 Hz</td>
<td>17:9</td>
<td></td>
</tr>
<tr>
<td>2560×1440</td>
<td>4K HDMI 2.0 standards</td>
<td>384 MHz</td>
<td>240 Hz</td>
<td>17:9</td>
<td></td>
</tr>
<tr>
<td>2560×1440</td>
<td>4K HDMI 2.0 standards</td>
<td>384 MHz</td>
<td>240 Hz</td>
<td>17:9</td>
<td></td>
</tr>
<tr>
<td>3840×2160</td>
<td>4K UHD TV HDMI 2.0 standards</td>
<td>576 MHz</td>
<td>240 Hz</td>
<td>17:9</td>
<td></td>
</tr>
<tr>
<td>4096×2160</td>
<td>4K UHD TV HDMI 2.0 standards</td>
<td>576 MHz</td>
<td>240 Hz</td>
<td>17:9</td>
<td></td>
</tr>
</tbody>
</table>

*BB* = Reduced Blanking

---

**Aspect Ratio Control**

The MSD series products support aspect ratio control that is convenient for correcting a mismatch in aspect ratio between source video and display. The feature automatically detects the aspect ratio of source signals and the original aspect ratio can be preserved in a letter box or full screen mode.

<table>
<thead>
<tr>
<th>Input signal</th>
<th>Monitor/Projector aspect</th>
</tr>
</thead>
<tbody>
<tr>
<td>Video signal 4:3</td>
<td>4:3</td>
</tr>
<tr>
<td>Video signal 5:4</td>
<td></td>
</tr>
<tr>
<td>Video signal 5:3</td>
<td></td>
</tr>
<tr>
<td>Video signal 16:9</td>
<td></td>
</tr>
<tr>
<td>Video signal 16:10</td>
<td></td>
</tr>
<tr>
<td>Video signal 14:9</td>
<td></td>
</tr>
</tbody>
</table>

Background color can be changed.