# AVP-DE/EN6K-101

## AV Over IP 4K60 System

**User Manual**

Version: 20250220

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# Introduction

## Overview

AVP-4K60 series encoders and decoders provide the flexible, powerful, and scalable solution at resolutions up to 3840 x 2160@60Hz 4:4:4. They allow 4K UHD media to be switched and distributed over standard gigabit Ethernet networks, providing complete end-to-end streaming systems. Audio, video together with IR, and USB signals can be routed separately or as a whole throughout the matrix system. Encoders can be used with decoders to function video wall up to the dimensions of 16 x 16. Both of them have the capacity to handle and output up to 7.1 channel audio, allowing you to enjoy the finest sound.

HDCP 2.2/2.3 specifications are employed. A local area network is covered with a range up to 100m (330ft) over a single Cat 5e cable or Higher. Standard features like, bi-directional serial, bi-directional IR, and independent analog audio input/output are included. The codecs allow roaming/USB extension to take place to control a keyboard and a mouse. Flexible control options are offered -- Windows PC configurator (OverIPConsole), AGS-i TOUCH on iPad and Web GUI (need to use Control box). They are the perfect solution for any low latency and signal routing applications. Common applications include homes, classrooms, conference rooms and broadcasts system.

# Features

- Selects between either the 1G Optical port or 1G BASE-T port automatically for IP stream stable transmission.
- Distributes and switches 4K UHD AV signals via standard gigabit Ethernet networks, providing complete end-to-end streaming systems.
- Supports HDMI input and output resolutions up to 3840 x 2160@60Hz 4:4:4.
- Supports streaming resolutions up to 3840 x 2160@60Hz 4:4:4.
- Features video wall up to the dimensions of 16 x 16.
- Supports HDR10/10+ and Dolby Vision.
- Supports CEC one-touch-play and standby commands to power on and off the display, as well as CEC Frame.
- Supports multi-channel audio up to PCM 7.1, Dolby Atmos, DTS HD Master and DTS:X.
- Analog audio embedding and de-embedding.
- S/PDIF audio return from decoder to encoder.
- HDMI ARC audio return
- HDCP 2.2/2.3 compliant.
- Flexible routing policies, allowing audio, video, USB, IR and RS232 signals to be routed separately or as a whole throughout the matrix system.
- Allows AV, USB, IR, RS232 and power signals to be delivered up to 100m/328ft over a single Cat 5e cable or higher.
- 1 frame latency.
- Supports bi-directional serial communication, allowing control of remote

RS232 devices between Encoders/Decoders and Control Box, or between Encoders and Decoders.

- Supports bi-directional IR pass-through, allowing control of remote source and display devices between encoders and decoders.
- Supports IR generation – send IR codes through API.
- USB can Support high performance USB 2.0 over IP with improved support for cameras, Also for KM over IP seamless switching and roaming.
- Supports point-to-point, point-to-multipoint, multipoint-to-point, multipoint-to-multipoint applications.
- Supports PoE to be remotely powered by compatible power source equipment such as a PoE-enabled Ethernet switch, eliminating the need for a nearby power outlet.
- Supports user-selectable output HDCP configuration via PC configurator or AVP-Control Box.
- Fit in/stretch out video wall, and rotate video management -- Decoded video can fill a video wall, maintain aspect ratio in a video wall, or can be rotated 90°,180°and 270°clockwise, presenting imagery that meets customer expectations.
- Supports DHCP by default, and will fall back to Auto-IP if there's no DHCP server in the system.
- Flexible control options - AGS-i TOUCH app on iPad and AVP-Control Box
- Supports communications protocols of Telnet, SSH, HTTP, HTTPS.

# Package Contents

## AVP-EN6K-101 (Encoder)

- 1 x Encoder
- 1 x DC 12V Power Adapter with US Pins
- 1 x 3.5mm 3-Pin Phoenix Male Connector
- 1 x IR Emitter (1.2m /3.9ft)
- 1 x Broadband IR Receiver (1.2m /3.9ft, 30 kHz ~ 50 kHz)
- 2 x Wall Brackets

## AVP-DE6K-101 (Decoder)

- 1 x Decoder
- 1 x DC 12V Power Adapter with US Pins
- 1 x 3.5mm 3-Pin Phoenix Male Connector
- 1 x IR Emitter (1.2m /3.9ft)
- 1 x Broadband IR Receiver (1.2m /3.9ft, 30 kHz ~ 50 kHz)
- 2 x Wall Brackets

# Specifications

## AVP-EN6K-101 (Encoder)

| Video | |
|---|---|
| Input Video Port | 1 x female HDMI type A (19 pins) |
| Input Video Type | HDMI 2.0, HDCP 2.2/2.3 |
| Input Resolutions | 3840 x 2160p@24Hz 4:4:4,<br>3840 x 2160p@30Hz 4:4:4,<br>3840 x 2160p@50Hz 4:4:4,<br>3840 x 2160p@60Hz 4:4:4,<br>640 x 480p@60Hz, 720 x 480p@60Hz<br>1280 x 720p@60Hz, 1920 x 1080i@60Hz,<br>1920 x 1080p@60Hz, 720 x 576p@50Hz<br>1280 x 720p@50Hz, 1920 x 1080i@50Hz<br>1920 x 1080p@50Hz, 1920 x 1080p@24Hz<br>1920 x 1080p@25Hz, 640 x 480@60Hz,<br>800 x 600@60Hz<br><br>1024 x 768@60Hz, 1280 x 720@60Hz<br>1280 x 768@60Hz, 1280 x 800@60Hz<br>1280 x 960@60Hz, 1280 x 1024@60Hz<br>1360 x 768@60Hz, 1366 x 768@60Hz<br>1400 x 1050@60Hz, 1440 x 900@60Hz<br>1600 x 900@60Hz, 1600 x 1200@60Hz<br>1680 x 1050@60Hz, 1920 x 1080@60Hz<br>1920 x 1200@60Hz |
| Output Video Port | 1 x female RJ-45, 1 x Optical |
| Output Video Type | IP Stream |
| Output Resolutions | Up to 3840 x 2160p@60Hz 4:4:4 |
| Average Encoding Data Rate | 3840 x 2160@60Hz: 650Mbps (avg) / 900Mbps (max) |
| End-to-End Time Latency | 1 frame |
| Input/Output Video Signal | 0.5~1.2 V p-p |
| Input/Output DDC Signal | 5 V p-p (TTL) |
| Video Impendence | 100 Ω |
| Maximum Data Rate | 18 Gbps (6 Gbps per channel) |
| Maximum Pixel Clock | 600 MHz |

| Audio | |
|---|---|
| Input Audio Port | 1 x HDMI; 1 x 3.5 mm stereo jack |
| Input Audio Signal | • HDMI: Fully supports audio formats in HDMI 2.0 specification, including PCM 2.0/5.1/7.1, Dolby TrueHD, Dolby Atmos, DTS-HD Master Audio and DTS:X;<br>• Audio In: analog |
| Output Audio Port | 1 x 3.5 mm stereo jack; 1 x S/PDIF Out; 1 x LAN/Optical |
| Output Audio Signal | • Audio Out: analog<br>• S/PDIF Out: digital audio<br>• LAN/Optical: Fully supports audio formats in HDMI 2.0 specification, including PCM 2.0/5.1/7.1, Dolby TrueHD, Dolby Atmos, DTS-HD Master Audio and DTS:X |

| Control | |
|---|---|
| Control Method | 1. HDMI Console (OverIPConsole)。<br>2. Aegis AGS i-Touch on iPad。<br>3. Web GUI (AVP-Control Box)。 |

| General | |
|---|---|
| Operating Temperature/ Humidity | 0°C ~ +45°C (+32°F ~ +113°F)<br>10% ~ 90%, non-condensing |
| Storage Temperature/ Humidity | -20°C ~ +70°C (-4°F ~ +158°F)<br>10% ~ 90%, non-condensing |
| Power | DC 12V2A; PoE |
| Power Consumption | 7W (Max) |
| ESD Protection | Human body model:<br>• ±8 kV (air-gap discharge)<br>• ±4 kV (contact discharge) |
| Dimensions (W x L x D) | 130.2 x 220 x 25 mm (5.1' x 8.7" x 1") |
| Net Weight | 0.74 kg (1.63 lbs) |

# AVP-DE6K-101 (Decoder)

| Video | |
|---|---|
| Input Video Port | 1 x female RJ-45, 1 x Optical |
| Input Video Type | IP Stream |
| Input Resolutions | 3840 x 2160p@24Hz 4:4:4,<br>3840 x 2160p@30Hz 4:4:4,<br>3840 x 2160p@50Hz 4:4:4,<br>3840 x 2160p@60Hz 4:4:4,<br>640 x 480p@60Hz, 720 x 480p@60Hz<br>1280 x 720p@60Hz, 1920 x 1080i@60Hz,<br>1920 x 1080p@60Hz, 720 x 576p@50Hz<br>1280 x 720p@50Hz, 1920 x 1080i@50Hz<br>1920 x 1080p@50Hz, 1920 x 1080p@24Hz<br>1920 x 1080p@25Hz, 640 x 480@60Hz,<br>800 x 600@60Hz<br><br>1024 x 768@60Hz, 1280 x 720@60Hz<br>1280 x 768@60Hz, 1280 x 800@60Hz<br>1280 x 960@60Hz, 1280 x 1024@60Hz<br>1360 x 768@60Hz, 1366 x 768@60Hz<br>1400 x 1050@60Hz, 1440 x 900@60Hz<br>1600 x 900@60Hz, 1600 x 1200@60Hz<br>1680 x 1050@60Hz, 1920 x 1080@60Hz<br>1920 x 1200@60Hz |
| Output Video Port | 1 x female HDMI type A (19 pins) |
| Output Video Type | HDMI 2.0, HDCP 2.2/2.3 |
| Output Resolutions | Up to 3840 x 2160p@60Hz 4:4:4 |
| Average Encoding Data Rate | 3840 x 2160@60Hz: 650Mbps (avg) / 900Mbps (max) |
| End-to-End Time Latency | 1 frame |
| Input/Output Video Signal | 0.5~1.2 V p-p |
| Input/Output DDC Signal | 5 V p-p (TTL) |
| Video Impendence | 100 Ω |
| Maximum Data Rate | 18 Gbps (6 Gbps per channel) |
| Maximum Pixel Clock | 600 MHz |

| Audio | |
|---|---|
| Input Audio Port | 1 x S/PDIF IN; 1 x LAN/Optical |
| Input Audio Signal | • S/PDIF In: digital audio |

| Audio | |
|---|---|
| | • LAN/Optical: Fully supports audio formats in HDMI 2.0 specification, including PCM 2.0/5.1/7.1, Dolby TrueHD, Dolby Atmos, DTS-HD Master Audio and DTS:X |
| Output Audio Port | 1 x HDMI; 1 x 3.5 mm stereo jack |
| Output Audio Signal | • HDMI: Fully supports audio formats in HDMI 2.0 specification, including PCM 2.0/5.1/7.1, Dolby TrueHD, Dolby Atmos, DTS-HD Master Audio and DTS:X;<br>• Audio Out: Analog |

| Control | |
|---|---|
| Control Method | 4. HDMI Console (OverIPConsole)。<br>5. Aegis AGS i-Touch for iPad。<br>6. Web GUI (AVP-Control Box)。 |

| General | |
|---|---|
| Operating Temperature/ Humidity | 0°C ~ +45°C (+32°F ~ +113°F)<br>10% ~ 90%, non-condensing |
| Storage Temperature/ Humidity | -20°C ~ +70°C (-4°F ~ +158°F)<br>10% ~ 90%, non-condensing |
| Power | DC 12V2A; PoE |
| Power Consumption | 8.5W (Max) |
| ESD Protection | Human body model:<br>• ±8 kV (air-gap discharge)<br>• ±4 kV (contact discharge) |
| Dimensions (W x L x D) | 130.2 x 220 x 25 mm (5.1' x 8.7" x 1") |
| Net Weight | 0.74 kg (1.63 lbs) |

# Panel Description

## AVP-EN6K-101 (Encoder)

**Front Panel**


| No. | Name | Description | |
|---|---|---|---|
| 1 | POWER LED | On | The device is powered on. |
| | | Blinking | The device is booting. |
| | | Off | The device is powered off. |
| 2 | STATUS LED | Solid On | The device is connected to an active video source. |
| | | Blinking | The device is not connected to an active video source. |
| | | Off | • The device is powered off.<br>• The device is booting.<br>• Network is down. |

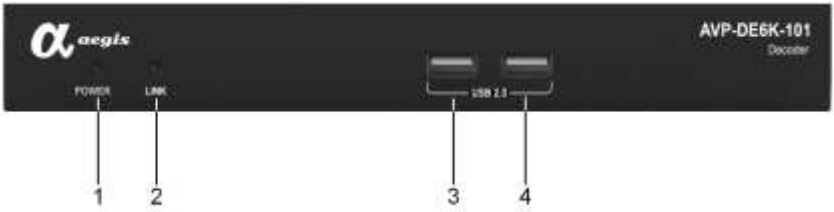
## Rear Panel


| No. | Name | Description |
|---|---|---|
| 1 | 12V | Connect this port to the 12 V 2 A power adapter. |
| 2 | RESET | When the device is powered on, use a pointed stylus to hold down the RESET button for five or more seconds, and then release it, it will reboot and restore to its factory defaults.<br>**Note:** When the settings are restored, your custom data is lost. Therefore, exercise caution when using the RESET button. |
| 3 | LAN (POE) | Connect either the LAN (POE) port or Optical port to a gigabit Ethernet switch for IP stream output and device control (the device can be powered by a PoE-enabled switch through LAN (POE) port).<br>Default IP Mode: DHCP<br><br>**Note:**<br>1) Connect the Optical port to the Ethernet switch using a single-mode or multi-mode SFP module (not included in package). The transmission distance may vary depending on the specific SFP module used.<br>2) DO NOT connect both the LAN (POE) port and Optical port to the Ethernet switch simultaneously, or device exceptions may occur. |
| 4 | OPTICAL | |
| 5 | HDMI IN | Connect this port to an HDMI source device. |

| No. | Name | Description |
|---|---|---|
| 6 | AUDIO IN | Connect this 3.5 mm stereo tip-ring-sleeve port to an audio source such as a computer for unbalanced stereo audio input. |
| 7 | AUDIO OUT | Connect this 3.5 mm stereo tip-ring-sleeve port to an audio receiver for unbalanced stereo audio output. |
| 8 | S/PDIF OUT | Connect this optical S/PDIF connector for digital audio output. |
| 9 | USB Host | Connect a type A male to type B male USB cable between this port and the USB port of a computer for transmitting USB 2.0 data, or for KMoIP HID seamless switching and roaming. |
| 10 | RS-232 | RS232 serial port for bidirectional serial communication. |
| 11 | IR IN | Connect this port to an IR receiver for IR communication with an IR emitter at the decoder side on the network. |
| 12 | IR OUT | Connect this port to an IR emitter for IR communication with an IR receiver at the decoder side on the network. |

# AVP-DE6K-101 (Decoder)

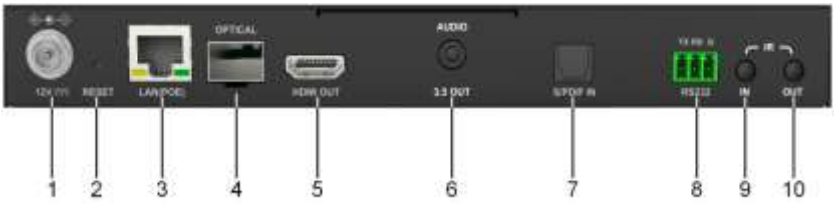
## Front Panel




| No. | Name | Description | |
|---|---|---|---|
| 1 | POWER LED | On | The device is powered on. |
| | | Blinking | The device is booting. |
| | | Off | The device is powered off. |

| No. | Name | Description | |
|---|---|---|---|
| 2 | STATUS LED | Solid On | The device is connected to an encoder and the video is displayed. |
| | | Blinking | The device is not connected to an encoder or the connected encoder has no active video source input. |
| | | Off | • The device is powered off.<br>• The device is booting.<br>• Network is down. |
| 3 | USB DEVICE 1 | Connect to USB devices like a mouse and a keyboard for KMoverIP HID seamless switching and roaming. | |
| 4 | USB DEVICE 2 | Connect to a USB device for transmitting USB 2.0 data. | |

## Rear Panel




| No. | Name | Description |
|---|---|---|
| 1 | 12V | Connect this port to the 12 V 2 A power adapter. |
| 2 | RESET | When the device is powered on, use a pointed stylus to hold down the RESET button for five or more seconds, and then release it, it will reboot and restore to its factory defaults.<br>**Note:** When the settings are restored, your custom data is lost. Therefore, exercise caution when using the RESET button. |
| 3 | LAN (POE) | Connect either the LAN (POE) port or Optical port to a gigabit Ethernet switch for IP stream output and device control (the device can be powered by a PoE-enabled switch through LAN (POE) port).<br>Default IP Mode: DHCP<br><br>**Note:**<br>1) Connect the Optical port to the Ethernet switch using a single-mode or multi-mode SFP module (not included in package). The transmission distance may vary depending on the specific SFP module used.<br>2) DO NOT connect both the LAN (POE) port and the Optical port to the Ethernet switch simultaneously, or device exceptions may occur. |
| 4 | Optical | |
| 5 | HDMI OUT | Connect this port to an HDMI display device. |
| 6 | AUDIO OUT | Connect this 3.5 mm stereo tip-ring-sleeve port to an audio receiver for unbalanced stereo audio output. |

| No. | Name | Description |
|---|---|---|
| 7 | S/PDIF IN | Optical S/PDIF connector for digital audio input (for S/PDIF audio return from decoder to encoder). |
| 8 | RS232 | RS232 serial port for bidirectional serial communication. |
| 9 | IR IN | Connect this port to an IR receiver for IR communication with an IR emitter at the decoder side on the network. |
| 10 | IR OUT | Connect this port to an IR emitter for IR communication with an IR receiver at the decoder side on the network. |