USER MANUAL

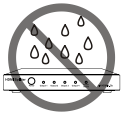
HDTV5100

WolfPack 4K 60 4:4:4 AV over IP Transceiver with IR, RS232, HDMI 2.0 & HDCP 2.3/2.2

V1.0.0 | Apr 28, 2026

Contents

Important Safety Instructions



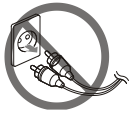
1. Do not expose this apparatus to rain, moisture, dripping or splashing and that no objects filled with liquids, such as vases, shall be placed on the apparatus.

6. Clean this apparatus only with dry cloth.

2. Do not install or place this unit in a bookcase, built-in cabinet or in another confined space. Ensure the unit is well ventilated.

7. Unplug this apparatus during lightning storms or when unused for long periods of time.

3. To prevent risk of electric shock or fire hazard due to overheating, do not obstruct the unit's ventilation openings with newspapers, tablecloths, curtains, and similar items.



8. Protect the power cord from being walked on or pinched particularly at plugs.

4. Do not install near any heat sources such as radiators, heat registers, stoves, or other apparatus (including amplifiers) that produce heat.

9. Only use attachments / accessories specified by the manufacturer.

5. Do not place sources of naked flames, such as lighted candles, on the unit.

10. Refer all servicing to qualified service personnel.

1. Introduction

1.1 Overview

The HDTV5100 is a compact AV over IP device configurable as either an encoder or decoder for flexible system deployment. It supports HDMI input and output up to 4K@60Hz 4:4:4 with HDR formats, along with multi-channel audio support.

The device enables transmission of AV, RS-232, and IR signals over a standard Gigabit network, supporting flexible routing within a matrix system and video wall applications. With support for Dante AV-A and AES67 audio, it integrates seamlessly into IP-based audio and video environments.

Designed for reliability and ease of integration, it offers low latency performance, PoE support, and centralized management via the SC010 controller, making it suitable for AV distribution and control applications.

1.2 Features

- Configurable as an encoder or decoder.
- Supports HDMI input and output resolutions up to 3840 x 2160@60Hz 4:4:4 with HDCP 2.3 compliance.
- Supports HDR10, HDR10+, and Dolby Vision.
- Supports multi-channel audio, including PCM 7.1, Dolby Atmos, DTS-HD Master audio, and DTS:X.
- Supports Dante AV-A via firmware (not activated by default).
- Supports AES67 audio:
  - AES67 standalone
  - AES67 with integrated Dante (Dante activation required)
- Flexible routing of AV, RS-232 and IR signals independently or together within the matrix system.

- Supports 1-frame latency, with Ultra Low Latency (ULL) mode as low as 4ms.
- Transmits or receives signals over a single Cat 5e (or higher) cable up to 328ft (100m).
- Supports bidirectional RS-232 communication for device control or signal passthrough.
- Provides a configurable IR port for input and output, supporting IR control and passthrough.
- Interoperable with the IP5100 series for matrix routing and video walls.
- Supports PoE (802.3af) for power supply via a remote PoE-capable switch.
- Supports IEEE 802.1X authentication.
- Compatible with the SC010 controller for centralized device management.
- Supports fail-safe firmware upgrade to prevent device corruption during updates.

1.3 Package Contents

- 1 x Transceiver Unit
- 1 x 3.5mm 3-pin Phoenix Male Connector
- 1 x Broadband IR Receiver (30–50 kHz, 1m)
- 1 x IR Emitter (1.2m)
- 2 x Wall Mount Brackets (with 2 x Screws)

1.4 Specifications

Technical	
Input Video Port	• 1 x HDMI Type-A • 1 x LAN RJ-45 Female Connector (Decoder mode)
Input Video Type	• HDMI 2.0, HDCP 2.2/2.3 • IP Stream
Input Resolutions	3840 x 2160p@24/25/30/50/60Hz 4:4:4, 1920 x 1200@50/60Hz, 2400x1350p@60Hz, 1920 x 1080p@24/25/30/50/60/100/120Hz, 1920 x 1080i@50/60Hz, 1680 x 1050@60Hz, 1600 x 1200@60Hz, 1600 x 900@60Hz, 1400 x 1050@60Hz, 1440 x 900@60Hz, 1366 x 768@60Hz, 1360 x 768@60Hz, 1280 x 1024@60Hz, 1280 x 960@60Hz, 1280 x 800@60Hz, 1280 x 768@60Hz, 1280 x 720p@60/100/120Hz, 1024 x 768@60Hz, 800 x 600@60Hz, 720 x 576p@50Hz, 720 x 480p@60Hz, 640 x 480p@60Hz
Output Video Port	• 1 x HDMI Type-A • 1 x LAN RJ-45 Female Connector (Encoder mode)
Output Video Type	• HDMI 2.0, HDCP 2.2/2.3 • IP Stream (Encoder mode)
Output Resolutions	Same as the input resolutions
Input Audio Port	• 1 x HDMI Type-A • 1 x LAN RJ-45 Female Connector (Decoder mode)
Output Audio Port	• 1 x HDMI Type-A • 1 x LAN RJ-45 Female Connector (Encoder mode)
Audio Format	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
Dante Audio Type	LPCM 2.0, 44.1/48/88.2/96 kHz
Input/Output Video Signal	0.5~1.2 V p-p
Input/Output DDC Signal	5V p-p (TTL)
Video Impendence	100Ω
End-to-End Latency	For 4K@60Hz: • Normal mode: 19ms • Ultra Low Latency mode: 4ms
Maximum Data Rate	18Gbps (6Gbps per color)
Maximum Pixel Clock	600MHz

Control	
Control Method	Telnet API; SC010 Controller

General	
Operating Temperature/ Humidity	32–113°F (0–45°C), 10%–90% RH, non-condensing

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Storage Temperature/ Humidity	-4–158°F (-20–70°C), 10%–90% RH, non-condensing
ESD Protection	Human body model: ±8kV (air-gap discharge) / ±4kV (contact discharge)
Power	PoE
Power Consumption (Max)	7.8W
Dimensions (W x H x D)	3.15" x 0.80" x 5.59" (80mm x 20.2mm x 142mm)
Net Weight	0.62lb (0.28kg)

2. Panel Overview

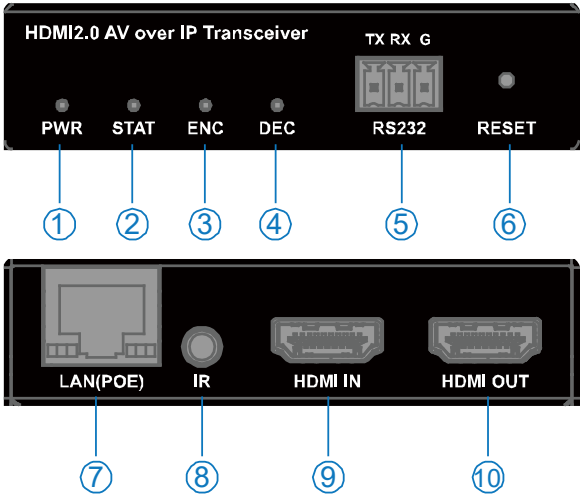


Figure 1: Panel Overview

#	Name	Description
1	PWR	• On: The device is powered on. • Blinking: The device is booting. • Off: The device is powered off.
2	STAT	• On: The device is connected to the network and streaming. • Blinking rapidly: Device identification command received ("Find Me" mode is active). • Blinking: The device is connected to the network but not streaming. • Blinking slowly: Firmware is being upgraded. • Off: The device is not connected to the network.

#	Name	Description
3	ENC	• On: Device is operating in Encoder mode (default). • Off: Device is not in Encoder mode.
4	DEC	• On: Device is operating in Decoder mode. • Off: Device is not in Decoder mode.
5	RS232	3-pin 3.5mm Phoenix connector for bidirectional RS-232 communication, supporting device control and signal extension. For advanced configuration, refer to the API guide.
6	RESET	Recessed button. Press and hold for five seconds to reset the device to factory default settings and reboot.
7	LAN(POE)	Connect to a Gigabit Ethernet switch for streaming, device management (via Telnet API) and PoE power supply.
8	IR	3.5mm TRS connector configurable as IR input or output (via Telnet API) for bidirectional IR signal extension. ⇨ IR output voltage: 3.3V ⇨ Default direction: IR Output
9	HDMI IN	Connect to an HDMI source.
10	HDMI OUT	Connect to an HDMI display.

3. Installation

Note:

- Ensure the device is disconnected from the power source before installation.
- The recommended installation height is within 6.5ft (2m) above the ground.

Attaching the Wall Mount Brackets

1. Attach a wall mount bracket to one side of the enclosure using the screw provided, as shown in the figure below.

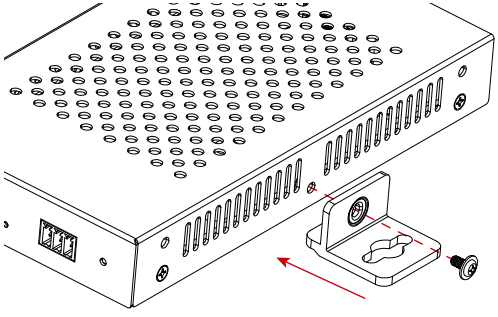


Figure 2: Wall Mount Bracket Installation on the Device

2. Repeat the above step for the other side of the device.
3. Mount the device with the brackets at the desired location using user-supplied screws (not included).

4. Typical Application

4.1 Point-to-Multipoint Application

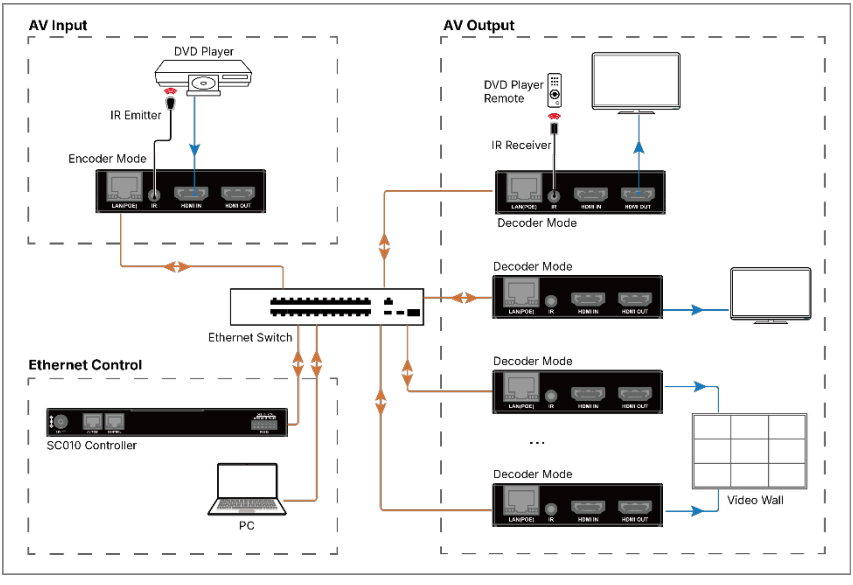
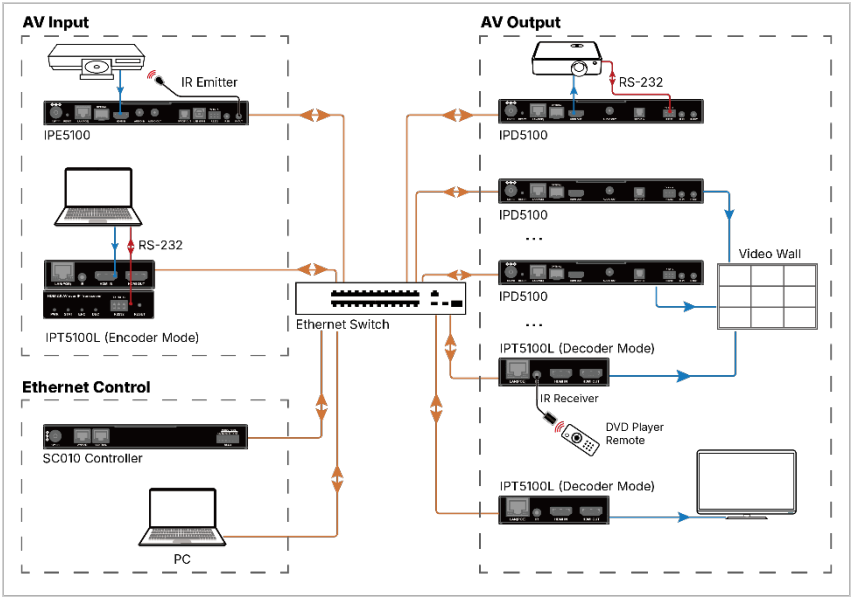


Figure 3: Point-to-Multipoint Application

4.2 Integration with IP5100 Series



5. Device Control Overview

The device supports matrix routing, video wall applications, and advanced system configuration via API and the SC010 controller's Web UI. For configuration details, refer to the API documentation or the SC010 controller user guide.