

SYS COM DEC

CROSS X IO

SCT-IPD5100

HDMI 2.0/USB AV over IP Decoder



User Manual

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Version: SCT-IPD5100_2024 V1.0.0

Preface

Read this user manual carefully before using the product. Pictures shown in this manual are for reference only. Different models and specifications are subject to real product.

This manual is only for operation instruction, please contact the local distributor for maintenance assistance. The functions described in this version were updated till June, 2021. In the constant effort to improve the product, we reserve the right to make functions or parameters changes without notice or obligation. Please refer to the dealers for the latest details.



SAFETY PRECAUTIONS

To ensure the best from the product, please read all instructions carefully before using the device. Save this manual for further reference.

- Unpack the equipment carefully and save the original box and packing material for possible future shipment.
- Follow basic safety precautions to reduce the risk of fire, electrical shock and injury to persons.
- Do not dismantle the housing or modify the module. It may result in electrical shock or burn.
- Using supplies or parts not meeting the products' specifications may cause damage, deterioration or malfunction.
- Refer all servicing to qualified service personnel.
- To prevent fire or shock hazard, do not expose the unit to rain, moisture or install this product near water.
- Do not put any heavy items on the extension cable in case of extrusion.
- Do not remove the housing of the device as opening or removing housing may expose you to dangerous voltage or other hazards.
- Install the device in a place with fine ventilation to avoid damage caused by overheating.
- Keep the module away from liquids.
- Spillage into the housing may result in fire, electrical shock, or equipment damage. If an object or liquid falls or spills on to the housing, unplug the module immediately.
- Do not twist or pull by force ends of the cable. It can cause malfunction.
- Do not use liquid or aerosol cleaners to clean this unit. Always unplug the power to the device before cleaning.
- Unplug the power cord when left unused for a long period of time.
- Information on disposal for scrapped devices: do not burn or mix with general household waste, please treat them as normal electrical wastes.

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1. Introduction

1.1. Overview

The SCT-IPD5102 series decoders are designed to work with SCT-IPE5100 series encoders for UHD media up to 3840 x 2160@60Hz 4:4:4 to be switched and distributed over standard Gigabit Ethernet networks, where audio, video together with USB, RS232 signals can be routed separately or as a whole. Equipped with Dante technology, they realize perfect interconnectivity and interoperability with Dante audio systems.

Dual Ethernet ports are equipped. HDCP 2.2/2.3 specifications are employed. A local area network is covered with a range up to 330ft (100m) over a single Cat 5e cable or above. Standard features like HDMI ARC audio return, bidirectional serial, and independent analog audio output are included. USB extension or roaming are supported to control the remote computer through a keyboard and a mouse. Control methods of Telnet/SSH/REST API, IP controller are provided. The decoders are ideal for any low latency and signal routing applications, such as homes, classrooms, conference rooms, sport bars, auditoriums, etc.

1.2. Features

- Built-in dual Ethernet ports, any one of which can be used for transmission of A/V streams, control data and Dante audio streams.
- Supports input and output resolutions up to 3840 x 2160@60Hz 4:4:4.
- Features video wall up to the size of 16 x 16.
- Supports HDR10 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.
- HDMI ARC audio return.

- Analog de-embedding.
- HDCP 2.2/2.3 compliant.
- Flexible routing policies, allowing audio, video, USB, and RS232 signals to be routed separately or as a whole throughout the matrix system.
- Delivers audio, video, USB, RS232, and power signals up to 328ft/100m over a single Cat 5e cable or above.
- Ultra low latency that is down to 4ms.
- Supports bidirectional serial communication.
- Dual USB engine for high performance USB 2.0 over IP with improved support for cameras as well as 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.
- Provides fit in or stretch out mode for video wall processing as well as video rotation management: decoded video can fill a video wall, maintain aspect ratio therein, and rotate 180° and 270° clockwise, presenting imagery that meets customers' expectations.
- Supports DHCP by default, and will fall back to AutoIP if there's no DHCP server in the system.
- Controlled by Telnet/SSH/REST API and IP controller.
- Supports communications protocols of Telnet, SSH, HTTP, HTTPS.
- Supports 2 x 2 Dante audio transmission.

1.3. Package Contents

- 1 x Decoder
- 1 x 3.5mm 3-Pin Phoenix Male Connector
- 1 x 3.5mm 5-Pin Phoenix Male Connector
- 4 x Mounting Brackets
- 4 x Screws
- 1 x User Manual

1.4. Specifications

Video	
Input Video Port	2 x RJ-45
Input Video Type	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 (19 Pins)
Output Video Type	HDMI 2.0, HDCP 2.2/2.3
Output Resolutions	Up to 3840 x 2160p@60Hz 4:4:4
Input/Output Video Signal	0.5~1.2 V p-p
Input/Output DDC Signal	5V p-p (TTL)
Video Impedence	100Ω
End-to-End Latency	Down to 4ms (Ultra Low Latency)
Maximum Data Rate	18Gbps (6Gbps per color)
Maximum Pixel Clock	600MHz

Audio	
Input Audio Port	2 x RJ-45
Input Audio Signal	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 3.5mm 5-Pin Phoenix Connector

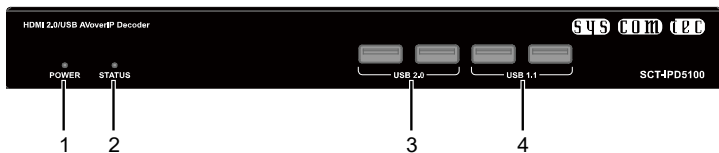
Audio	
Output Audio Signal	<ul style="list-style-type: none"> HDMI: Fully supports audio formats in HDMI 2.0 specification, including PCM 2.0/5.1/7.1, Dolby TrueHD, Dolby Atmos, DTS-HD Master Audio and DTS:X AUDIO OUT: Analog
Dante Audio Type	LPCM 2.0, 44.1/48/88.2/96KHz

Control	
Control Method	Telnet/SSH/REST API, IP Controller

General	
Operating Temperature/ Humidity	32°F ~ 113°F (0°C ~ 45°C), 10% ~ 90%, non-condensing
Storage Temperature/ Humidity	-4°F ~ 158°F (-20°C ~ 70°C), 10% ~ 90%, non-condensing
Power	12V DC 3A; PoE+
Power Consumption	21W (Max)
ESD Protection	Human body model: ±8kV (air-gap discharge)/±4kV (contact discharge)
Dimensions (W x H x D)	8.46" x 0.98" x 6.30" (215mm x 25mm x 160mm)
Net Weight	2lbs (0.91kg)

1.5. Panel Descriptions

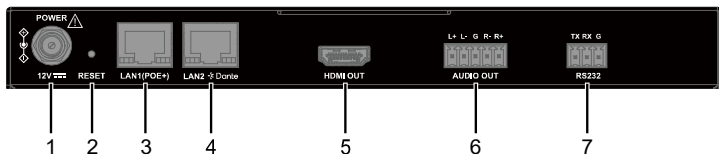
Front Panel



#	Name	Description
1	POWER LED	<ul style="list-style-type: none"> On: The device is powered on. Blinking: The device is booting. Off: The device is powered off.
2	STATUS LED	<ul style="list-style-type: none"> On: The device is working properly. Blinking: The device is connected to the network but doesn't detect valid signal input. / The device is connected to the network but doesn't route to any encoder. Blinking slowly: The device is being upgraded. Blinking quickly: Find me function is activated through Telnet/SSH/REST API for positioning the desired device. For more information refer to the separate API document. Off: Network is down.

#	Name	Description
3	USB 2.0	2 x USB-A ports. Connect to a USB device for transmitting USB 2.0 data, such as USB extension or roaming. Two ports' power output totals 1.5A.
4	USB 1.1	2 x USB-A ports. Connect to a USB device for transmitting USB 1.1 data, such as USB extension or roaming. Two ports' power output totals 1A.

Rear Panel



#	Name	Description
1	12V	DC 12V power connector. Connect to the DC 12V 2A power adapter for power input.
2	RESET Recessed Button	<ul style="list-style-type: none"> Short press (for not more than 1 second) then release to reboot the device. Press and hold for at least five seconds then release to reset the device to its factory default values. <p>Note: When the settings are restored, your custom data is lost. Therefore, exercise caution when using the RESET button.</p>
3	LAN1 (POE+)	By default, either of LAN1 (POE+) and LAN2 Dante ports can be connected to an Ethernet switch for transmission of A/V streams, Dante audio streams and control data.
4	LAN2 Dante	<p>For LAN1 (POE+):</p> <ul style="list-style-type: none"> Supports PoE+. <p>For LAN2 Dante:</p> <ul style="list-style-type: none"> When LAN2 Dante is configured as an <i>independent Dante port**</i>, it is for transmission of Dante audio streams, and LAN1 (POE+) is for transmission of A/V streams and control data. <p>Note: **This configuration can be implemented through the IP controller (SCT-IPCX). For more information, refer to the controller's Web UI configuration guide.</p> <p>IMPORTANT: To prevent network loop, do not connect both ports to the same network. Ensure that each port is connected to a separate and distinct network.</p>
5	HDMI OUT	19-Pin HDMI Type-A connector. Connect to an HDMI display.

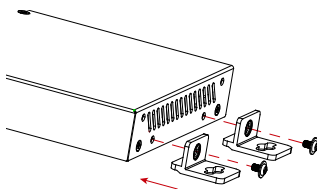
#	Name	Description
6	AUDIO OUT	Connect this 5-Pin 3.5mm phoenix connector to an audio receiver for balanced stereo audio output.
7	RS232	RS232 serial port for bidirectional serial communication.

2. Installation

Note: Before installation, ensure the device is disconnected from the power source.

Steps to install the device on a suitable location:

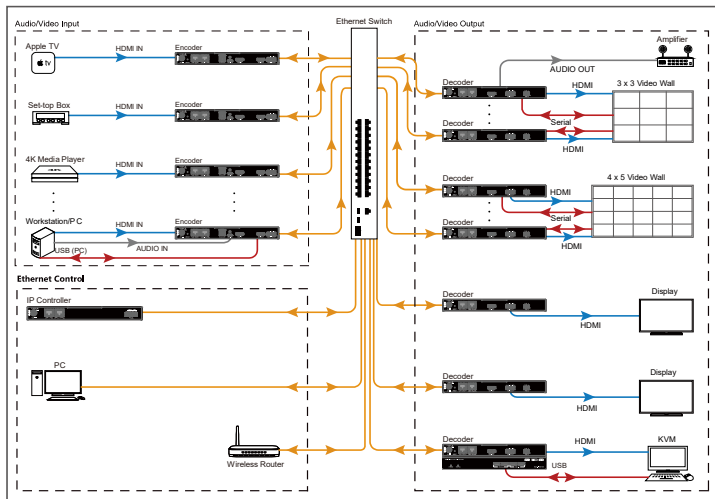
1. Attach the mounting brackets to the panels of both sides using the screws (two on each side) provided in the package.



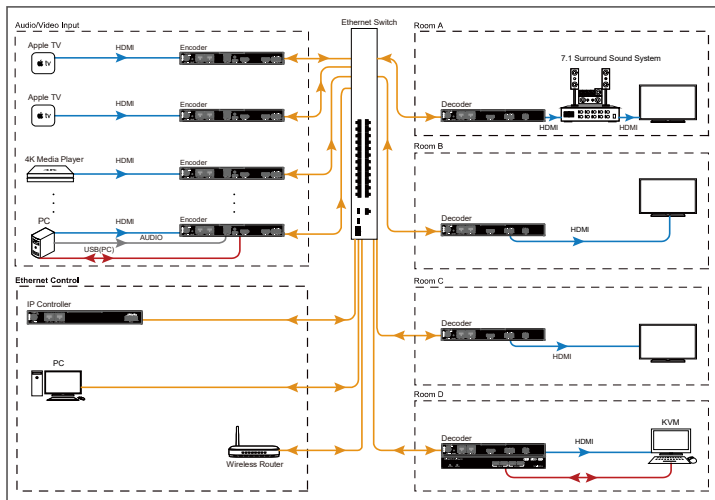
2. Install the brackets on the position as desired using screws (not included).

3. Typical Applications

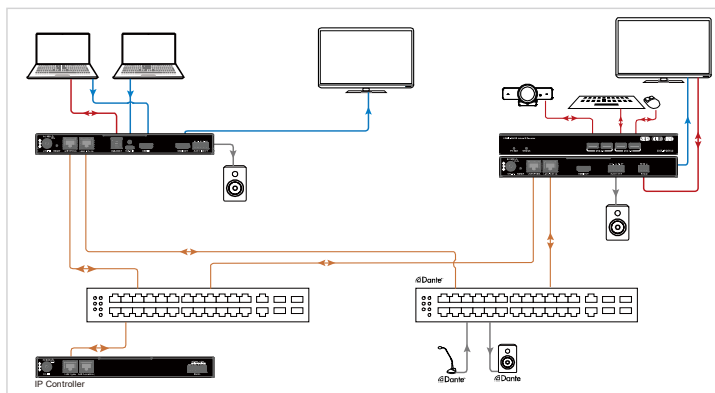
3.1. Application 1



3.2. Application 2

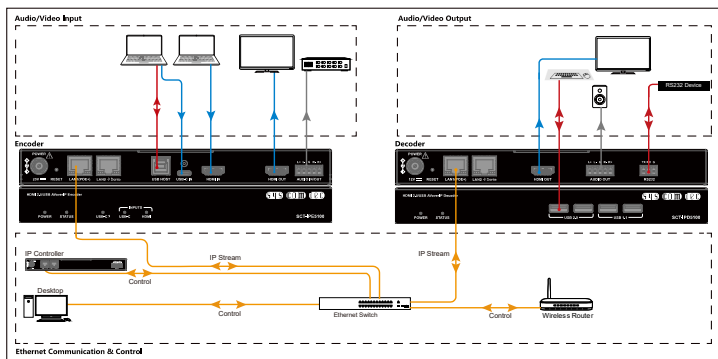


3.3. Application 3



In this application, LAN1 (POE+) port is for transmission of A/V streams and control data; LAN2 Dante is for transmission of Dante audio streams which is routed to a standalone network. Two Ethernet ports are connected to different networks.

4. Hardware Installation



Note: If the Ethernet switch doesn't support PoE, connect encoders and decoders to their power adapters.

5. IP Address Identification

Default IP setting for the device is DHCP. Ensure there's a DHCP server in the network so that the device can obtain a valid IP address when you deploy the system. If DHCP server is not available, e.g. the device is connected to a laptop directly, the device gets a default IP address in the range of 169.254.X.Y. The allocated IP address can be identified through OSD or API Commands.

6. Control of Devices

The device can be controlled and configured by the IP controller, including routing of audio, video, USB and RS232 signals, configurations of audio & video parameters, Dante features, video wall, KM roaming and fast switching, as well as firmware upgrade, etc. For more information, refer to the web configuration guide of the IP controller.

7. Customer Service

The return of a product to our Customer Service implies the full agreement of the terms and conditions hereinafter. These terms and conditions may be changed without prior notice.

7.1. Warranty

The limited warranty period of the product is fixed three years.

7.2. Scope

These terms and conditions of Customer Service apply to the customer service provided for the products or any other items sold by authorized distributor only.

7.3. Warranty Exclusion:

- Warranty expiration.
- Factory applied serial number has been altered or removed from the product.
- Damage, deterioration or malfunction caused by:
 - ✓ Normal wear and tear.
 - ✓ Use of supplies or parts not meeting our specifications.
 - ✓ No certificate or invoice as the proof of warranty.
 - ✓ The product model showed on the warranty card does not match with the model of the product for repairing or had been altered.
 - ✓ Damage caused by force majeure.
 - ✓ Servicing not authorized by distributor.
 - ✓ Any other causes which does not relate to a product defect.
- Shipping fees, installation or labor charges for installation or setup of the product.

7.4. Documentation:

Customer Service will accept defective product(s) in the scope of warranty coverage at the sole condition that the defect has been clearly defined, and upon reception of the documents or copy of invoice, indicating the date of purchase, the type of product, the serial number, and the name of distributor.

Remarks: Please contact your local distributor for further assistance or solutions.



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