STOLTEN®

APOLLO

1080P HDMI over IP Encoder & Decoder

SA-3000E & SA-3000D

USER MANUAL

Important Safety Information

1. Read, follow, and keep these instructions.
2. Heed all warnings.
3. Do not use this product near water. Keep away from wet places, such as: spas, pools, sinks, laundries, wet basements, etc.
4. When cleaning, unplug the unit and wipe with a dry cloth. Do not use damp cloths, cleaning fluids, or aerosols which may result in electric shock, fire, or unit damage.
5. Operate this product using only the included power supply and/or power cable. Use of an unapproved power implement may impair performance, damage the product, or cause fires.
6. Do not block any ventilation openings. Install in accordance with the manufacturer's instructions.
7. Do not install or place this product near any heat sources such as radiators, heat registers, stoves, or other apparatus (including amplifiers) that produce heat.
8. Protect the power cord from being walked on or pinched particularly at plugs, convenience receptacles, and the point where they exit from the product.
9. Only use attachments/accessories specified by Stoltzen to avoid fire, shock, or other hazards.
10. To reduce the risk of electric shock and/or damage to this product, never handle or touch this unit or power cord if your hands are wet or damp. Do not expose this product to rain or moisture.
11. Unplug this product during lightning storms or when unused for long periods of time.
12. Never open, remove unit panels, or make any adjustments not described in this manual. Attempting to do so could result in electric shock, damage to the unit, or other hazards.

The lightning flash with arrowhead symbol, within an equilateral triangle, is intended to alert the user to the presence of uninsulated dangerous voltage within the product's enclosure that may be of sufficient magnitude to constitute a risk of electric shock to persons.

The exclamation point within an equilateral triangle is intended to alert the user to the presence of important operating and maintenance (servicing) instructions in the literature accompanying the appliance.

CAUTION

TO REDUCT THE RISK OF ELECTRIC SHOCK
DO NOT OPEN ENCLOSURE OR EXPOSE
TO RAIN OR MOISTURE.
NO USER-SERVICEABLE PARTS
INSIDE REFER SERVICING TO
QUALIFIED SERVICE PERSONNEL.

Contents

Introduction

The H.264 IP encoder (SA-3000E) and decoder (SA-3000D) can work together to provide complete end-to-end streaming systems. Video, audio and RS232 signals can be routed together or separately throughout the matrix system. They can also function video wall up to the dimensions of 16 x 16 with input and output HDMI resolutions supported up to 1920 x 1080@60Hz.

They can also be powered by compatible power source equipment (e.g. PoE Ethernet switch) through PoE, eliminating the need for a nearby power outlet. They provide simple, flexible control options, including RS232, IP control box (SA-C), PC configurator (Apollo Configurator), Apollo Visual Composer Touch and Apollo Maintenance Tool (for firmware upgrade). The decoder also features CEC function to realize power on and off control on displays. They offer solutions for conference rooms, shopping malls, hotels, monitoring centers, schools and corporate training environments, etc.

Features

- Streams HDMI signal over IP networks.
- Encoder supports resolutions up to 1920 x 1080@60Hz.
- Decoder offers auto scaler with output resolutions supported from 480p@60Hz to 1920 x 1080@60Hz scaling based on the EDID of display.
- Able to output two IP streams.
  - One large IP stream supports streaming resolution from 480p@60Hz to 1920 x 1080@60Hz to view a video on the decoder side.
  - The other small one supports streaming resolution 352x288@5Hz to easily preview a video on a third party device (e.g. tablet).

- Features video wall up to the dimensions of 16 x 16.
- Available API interface for third party control system integration, offers control through IP control box (SA-C), PC configurator (Apollo Configurator) and Apollo Visual Composer Touch on iPad.
- Supports firmware upgrade through Apollo Maintenance Tool.
- Supports audio de-embedding output.
- Allows video, audio and RS232 signals to be routed together or separately.
- Supports EDID import to encoder and export from display to decoder.
- Supports CEC one-touch-play and standby commands to power on and off the display.
- Supports decoder to turn off the output through API when no source is detected.
- Supports decoder to report CEC commands that come from display to IP control box.
- Supports HDCP.
- Configurable encoding bit rate up to 30 Mbps.
- Supports seamless switching.
- Supports PoE to be powered by power source equipment.
- Supports Auto IP (zeroconf) -- automatically generates a dynamic IP address at startup in the absence of a DHCP server.
- Supports communications protocols such as H.264, TCP/IP, Telnet, UDP and IGMP.

Package Contents

Encoder

- 1 x SA-3000E Unit
- 1 x DC 12V Power Adapter (with US, UK, EU, AU pins)
- 2 x Phoenix Male Connector (3.5 mm, 3 Pins)
- 2 x Mounting Brackets (with Screws)

Decoder

- 1 x SA-3000D Unit
- 1 x DC 12V Power Adapter (with US, UK, EU, AU pins)
- 2 x Phoenix Male Connector (3.5 mm, 3 Pins)
- 2 x Mounting Brackets (with Screws)

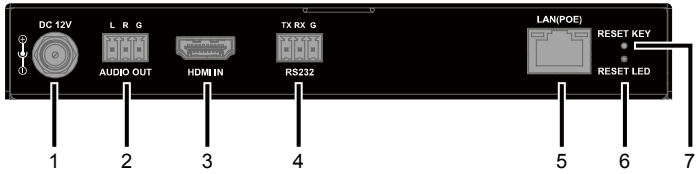
Panel Description

Encoder

Front Panel

No.	Name	Description
1	Power LED	• **On:** Encoder is powered on. • **Off:** Encoder is powered off.
2	Status LED	• **On:** Encoder detects valid signal input. • **Blinking:** Encoder detects no signal input. • **Off:** Encoder is powered off or in the boot process.

Rear Panel



No.	Name	Description
1	DC 12V	Connect to the power adapter provided.
2	Audio Out	Connect to an audio decoder such as an amplifier for audio de-embedding output from HDMI source.
3	HDMI In	Connect to an HDMI source device.
4	RS232	Connect this port to a RS232 device such as a computer to bi-directionally communicate with a RS232 device at the IP controller or decoder side.
5	LAN (POE)	Connect to an Ethernet Switch for IP streaming output and device control. **Note:** The encoder and decoder can be powered by either a PoE-enabled Ethernet switch via this port or

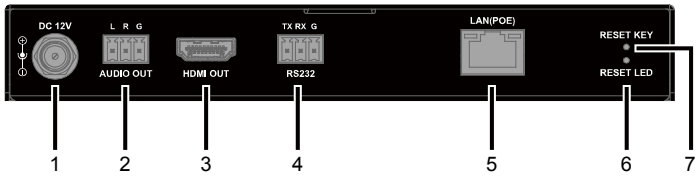
No.	Name	Description
		power adapters.
6	Reset LED	Reset key is used to reset device. Use a pointed stylus to hold down this key, when Reset LED is on for about 1 second and then off, release this key, encoder reboots and restores to its factory default.
7	Reset Key	

Decoder

Front Panel

No.	Name	Description
1	Power LED	• **On:** Decoder is powered on. • **Off:** Decoder is powered off.
2	Status LED	• **On:** Decoder is connected to an encoder and detects valid signal input. • **Blinking:** Decoder is not connected to an encoder or detects no signal input. • **Off:** Decoder is powered off or in the boot process.
3	ID Key	Press to display information of encoder and decoder on the screen, including IP mode, MAC and IP address.

Rear Panel



No.	Name	Description
1	DC 12V	Connect to the power adapter provided.
2	Audio Out	Connect to an audio decoder such as an amplifier for audio de-embedding output from HDMI source.

No.	Name	Description
3	HDMI Out	Connect to an HDMI display device.
4	RS232	Connect this port to a RS232 device to bidirectionally communicate with a RS232 device at the IP controller or encoder side.
5	LAN (POE)	Connect to an Ethernet Switch for IP streaming input and device control. **Note:** The encoder and decoder can be powered by either a PoE-enabled Ethernet switch via this port or power adapters.
6	Reset LED	Reset key is used to reset device. Use a pointed stylus to hold down this key, when Reset LED is on for about 1 second and then off, release this key, decoder reboots and restores to its factory default.
7	Reset Key	

Specifications

Encoder

Technical	
Input Video Port	1 x HDMI
Input Video Type	HDMI 1.3, HDCP 1.4
Input Resolution	640 x 480@60Hz, 480p@60Hz，576i@50Hz, 576P@50Hz, 800 x 600@60Hz, 1024 x 768@60Hz, 720p@50Hz, 720p@60Hz, 1280 x 800@60Hz, 1280 x 1024@60Hz, 1360 x 768@60Hz, 1366 x 768@60Hz, 1400 x 1050@60Hz, 1440 x 900@60Hz, 1680 x 1050@60Hz, 1920 x 540@60Hz, 1080i@50Hz, 1080i@60Hz, 1080p@50Hz, 1080p@60Hz
Input Video Signal	0.5~1.2 V p-p
Encoding Data Rate	Up to 30 Mbps, configurable
Output Video Port	1 x LAN
Output Video Type	H.264/MPEG-4 AVC
Output Resolution	• Large IP stream: from 480p@60Hz to 1920 x 1080@60Hz • Small IP stream: 352x288@5Hz
Video Impendence	100 Ω
Input DDC Signal	5 V p-p (TTL)
End-to-End Time Latency	When works with decoder: • About 50 ms (Low latency mode) • About 250 ms (High quality mode)
Input Audio Port	1 x HDMI
Input Audio Format	LPCM 2.0
Output Audio Port	1 x Phoenix connector
Output Audio Format	Stereo
Control Method	IP Control Box (SA-C), PC configurator (Apollo Configurator), Apollo Visual Composer Touch on iPad

General	
Operating Temperature	0°C to 45°C (32°F to 113°F)
Storage Temperature	-20°C to 70°C (-4°F to 158°F)
Humidity	10% to 90%, non-condensing
ESD Protection	Human-body Model: ±8kV (Air-gap discharge)/ ±4kV (Contact discharge)
Power Supply	12 V 1 A DC
Power Consumption	6W (Max.)

General	
Device Dimension (W x H x D)	175 mm x 25 mm x 100.2 mm / 6.9" x 0.98" x 3.9"
Net Weight	0.60kg / 1.32lbs

Decoder

Technical	
Input Video Port	1 x LAN
Input Video Type	H.264/MPEG-4 AVC
Input Resolution	From 480p@60Hz to 1920x1080@60Hz
Output Video Port	1 x HDMI
Output Video Type	HDMI 1.3, HDCP 1.4
Output Resolution	640 x 480@60Hz, 480p@60Hz, 576P@50Hz, 800 x 600@60Hz, 1024 x 768@60Hz, 720p@50Hz, 720p@60Hz, 1280 x 800@60Hz, 1280 x 1024@60Hz, 1366 x 768@60Hz, 1400 x 1050@60Hz, 1440 x 900@60Hz, 1680 x 1050@60Hz, 1920 x 540@60Hz, 1080p@24Hz, 1080p@25Hz, 1080p@30Hz, 1080p@50Hz, 1080p@60Hz
Video Impendence	100 Ω
End-to-End Time Latency	When works with encoder: • About 50 ms (Low latency mode) • About 250 ms (High quality mode)
Input Audio Port	1 x LAN
Input Audio Format	Audio embedded in streaming media input
Output Audio Port	• 1 x Phoenix connector • 1 x HDMI
Output Audio Format	LPCM 2.0
Control Method	IP Control Box (SA-C), Apollo Configurator, Apollo Visual Composer Touch on iPad

General	
Operating Temperature	0°C to 45°C (32°F to 113°F)
Storage Temperature	-20°C to 70°C (-4°F to 158°F)
Humidity	10% to 90%, non-condensing
ESD Protection	Human-body Model: ±8kV (Air-gap discharge)/ ±4kV (Contact discharge)
Power Supply	12 V 1 A DC
Power Consumption	6W (Max.)
Device Dimension (W x H x D)	175 mm x 25 mm x 100.2 mm / 6.9" x 0.98" x 3.9"

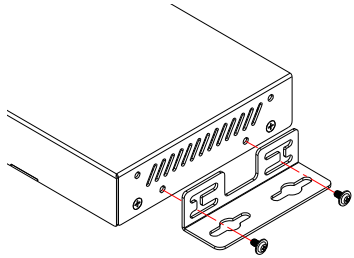
General	
Net Weight	0.60kg / 1.32lbs

Installation

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

Steps to install the device in a suitable location:

1. Attach the mounting bracket to the enclosure using the screws provided in the package separately.
   The bracket is attached to the enclosure as shown.



2. Repeat step 1 for the other side of the device.
3. Attach the brackets to the surface you want to hold the unit against using the screws (provided by others).

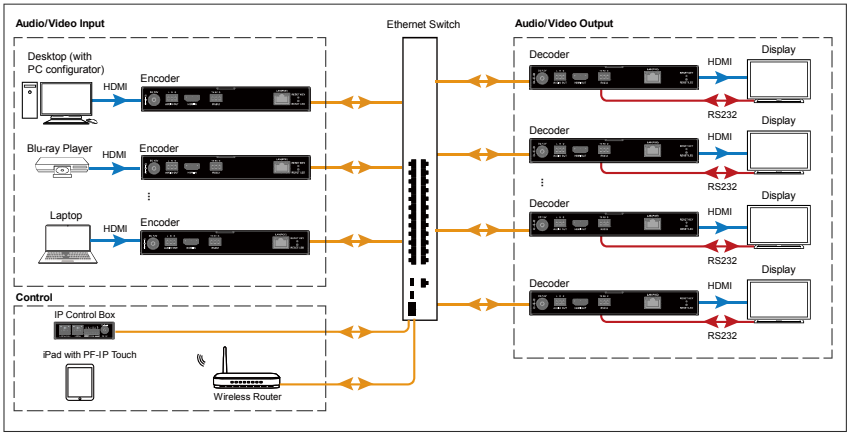
Typical Application

You can use H.264 encoders and decoders to meet different applications. The link relationship between encoders and decoders is as follows.

Link relationship	SA-3000E	SA-3000D
SA-3000D	IP matrix, Video wall	/
SA-MW3000D	Multiview	/
SA-3000VP	Window Roaming	

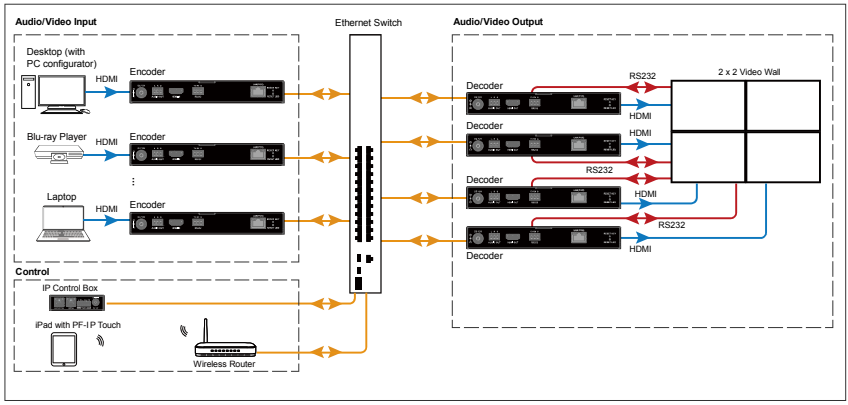
IP Matrix

You can use encoders and decoders to build a network of IP matrix with PC configurator or IP control box.



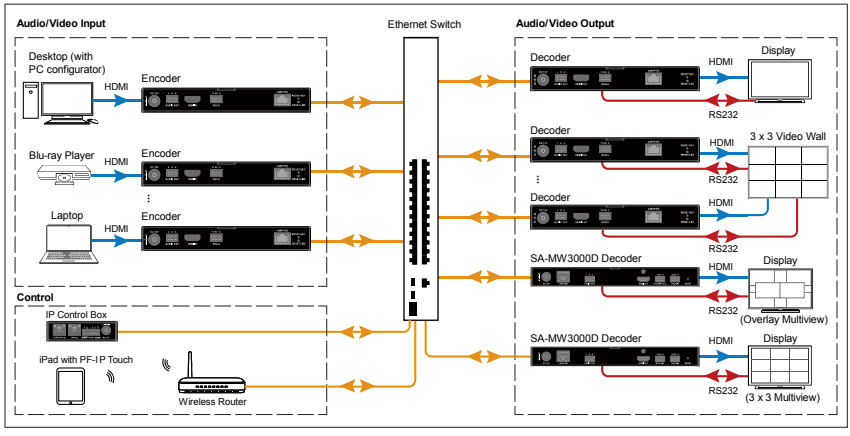
Video Wall

You can use encoders and decoders to build a M x N video wall with PC configurator and IP control box. M, N is an integer ranging from 1 to 16.



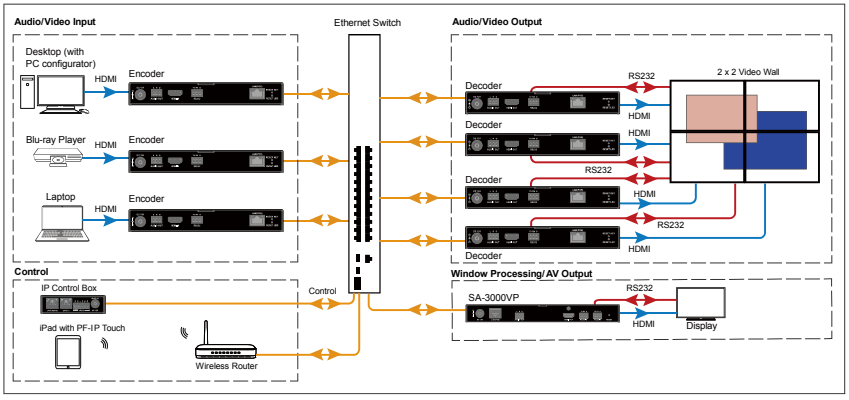
Multiview

You can use encoders and SA-MW3000D decoders to perform multiview with PC configurator and IP control box.

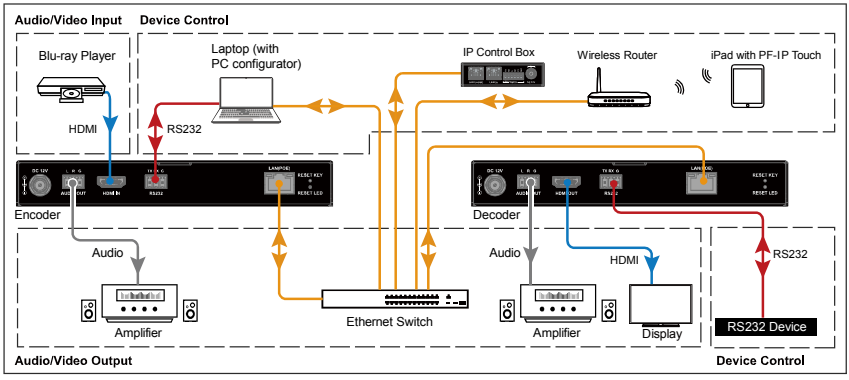


Windowing

You can use encoders, decoders and SA-3000VP windowing processor to realize up to 6 windows overlay and roaming in a video wall or a single display with PC configurator, IP control box and Apollo Visual Composer Touch.



Hardware Installation



Note:

- Before the installation, disconnect the power supplies from all the devices.
- If the switch doesn't support PoE function or is unable to provide enough power, connect encoder and decoder to power supplies.

Device Control

The encoder and decoder allow you to use PC configurator, Apollo Visual Composer Touch and IP control box for controlling them. This section briefly introduces how to route the video from source to the display using these tools. By default, audio, video and RS232 signals are routed together. For more information, see their guides.

The following tables describes how audio, video and RS232 signals are routed using different tools.

Control Tools	Description
PC Configurator	Route audio, video and RS232 signals together.
Apollo Visual Composer Touch	
IP control box	Both of the following routing policies are available. • Route audio, video and RS232 signals together. • Route audio, video and RS232 signals separately via API commands from IP control box.

Note: When audio, video and RS232 signals are routed separately via API commands from IP control box, they can be routed together with other operation tools.

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