

Video over IP with Preview  
4K/60Hz 4:4:4  
Streaming Transceiver  
SDVoE



User Manual  
Version 4.0

### Thank you for purchasing this product

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 November, 2020. 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.

### FCC Statement

This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. It has been tested and found to comply with the limits for a Class A digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a commercial installation.

Operation of this equipment in a residential area is likely to cause interference, in which case the user at their own expense will be required to take whatever measures may be necessary to correct the interference. Any changes or modifications not expressly approved by the manufacture would void the user's authority to operate the equipment.



## SAFETY PRECAUTIONS

To ensure the best performance 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 overheat.
- 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 optical 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

The ENT-SDVoE10G is a network AV Transceiver with HDMI input and output supporting up to 4K@60Hz 4:4:4, HDR. It is designed for HDMI transmission over IP networks with external audio and control signals using 10G switches, web browser or API's to control a variety of functions.

The transceiver provides one of the most advanced IP Streaming solutions on the market utilizing BlueRiver™ technology, bringing various IP/AV standards to work together as one. It combines a variety of 4K IP technologies and features one unified protocol using a simplified topology. Features include, uncompressed video with zero-latency from transmitter to receiver, seamless switching, Video wall, Multi-view, 1G Ethernet, IR, RS232, audio embedding/de-embedding, audio down-mixing, etc. It can be controlled by the IPA Manager software.

Compares with traditional HDBaseT matrix AV Switching. The ENT-SDVoE10G is a low cost, easy to install and flexible solution for high-definition signal switching. It is ideal for distributing AV over 10 Gigabit Ethernet in enterprises and other large-scale installations.

### 1.1 About 10G Network

Unlike traditional AV extension technology, such as HDBaseT, where transmitters and receivers are connected point to point or joined together using custom matrix switches, the ENT-SDVoE10G is based on the inter compatible BlueRiver™ technology and connected using standard, off the shelf 10G Layer 2/3 network switches.

This architecture makes use of data packages that can be easily and independently routed to the desired unit. A variety of transmission modes is possible this way, from one unit to another unit (point to point) or one unit to many units (point to multipoint) or many units to many units (multipoint to multipoint) with a software controllable video wall integration.

An added benefit of packet data transmission is that each signal type (video, audio, RS232, etc.) is routed independently and not necessarily to the same destination. For example, the HDMI video from a particular unit is routed to other 4 units, while the audio goes to all receivers in the setup. This unlimitedly scalable and independent signal routing enables multiple, scalable applications, including signal extension, splitting, switching, matrix routing and video wall functionality.

### 1.2 Features

- Designed with BlueRiver™ technology
- Transceiver is software selectable, either Transmitter or Receiver
- Streams uncompressed video with zero latency
- Switch and route HDMI, RS232, IR and Audio independently
- Supports resolutions up to 4K/60Hz, 4:4:4
- Supports HDMI 2.0b, HDCP 2.2, HDR10 and Dolby Vision™
- Point-to-Point, Point-to-Multipoint & Multipoint-to-Multipoint
- Video Wall 9 x 9 and Multi-View up to 25 images
- Selectable output resolutions up to 4K scaling
- Receiver supports video preview
- Uses 10G Ethernet
- PoE (Power over Ethernet)
- Control: RS232, TCP/IP, Web Interface

## 2. Specifications

### Connections

**HDMI Input:** 1 x HDMI Type-A Female  
**HDMI Output:** 1 x HDMI Type-A Female  
**Audio In:** 1 x 3.5mm Stereo Jack Socket  
**Audio Out:** 1 x 3.5mm Stereo Jack Socket  
**Infra-Red In:** 1 x 3.5mm Stereo Jack Socket  
**Infra-Red Out:** 1 x 3.5mm Stereo Jack Socket  
**RS232:** 4-Pin Phoenix Terminal  
**USB 2.0 Host:** Type B, 4-Pin Female  
**USB 2.0 Devices:** Type A, 4-Pin Female  
**1G LAN:** RJ45 Data Socket  
**10G BASE-T:** RJ45 Data Socket (PoE)  
**10G SFP+:** Fibre Slot  
**DC Power:** 2.1mm Jack

### Signals

**Signal Input:** HDMI  
**Standards:** HDMI 2.0b, HDCP 2.2  
**Bandwidth:** 18Gbps  
**Video Resolutions:** Up to 4K/60Hz  
**Colour Space:** RGB/YCbCr 4:4:4, YCbCr 4:2:2, YUV 4:2:0, HDR, HDR10, Dolby Vision™  
**Colour Depth:** 8/10/12-bit  
**HDMI Audio:** LPCM 7.1, Dolby Atmos™, Dolby True HD™, Dolby Digital™ Plus, DTS: X™, DTS-  
HD™ Master Audio™ pass through  
**Analogue Audio:** PCM 2CH Stereo  
**Infra-Red:** Wide Bandwidth, Frequency 30KHz to 56KHz (940nm)  
**1G Ethernet:** End to End connection  
**10G Ethernet:** HDMI Streaming  
**HDMI Cable Lengths:** 5m @ 4K/60 | 10m @ 4K/30 | 15m @ 1080p/60

### Power (If not using PoE)

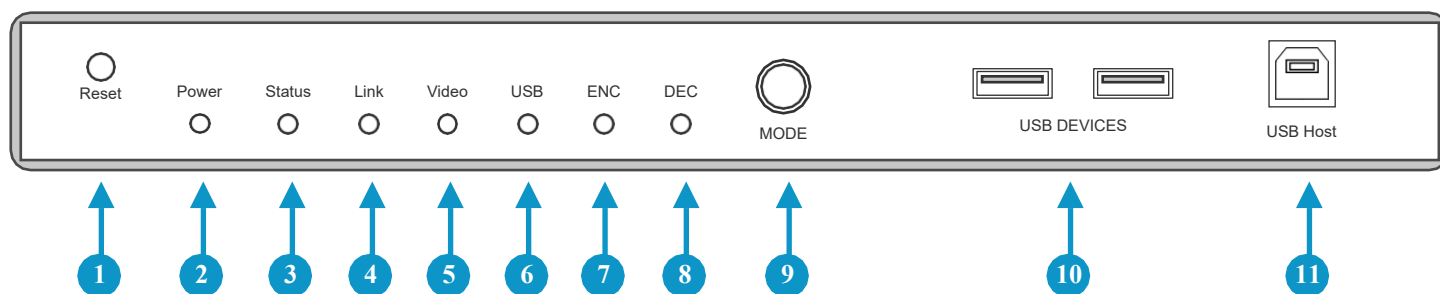
**Input:** 100 ~ 240V AC 50/60Hz  
**Output:** 12V/2.5A  
**Consumption:** 13.5W (max)

### Environment

**Operating Temperature:** -0° to 40°C  
**Storage Temperature:** -20° to 60°C  
**Operating Humidity:** 20 to 90% RH (no condensation)  
**Dimensions:** (W) 230 x (D) 120 x (H) 25  
**Weight:** 693g  
**Colour:** Black  
**ESD:** Human Body - +/-8kV, (air gap discharge) & +/-4kV (contact discharge)  
**Safety and Emissions:** CE, FCC, RoHS

### 3. Panel Description

#### 3.1 Front Panel

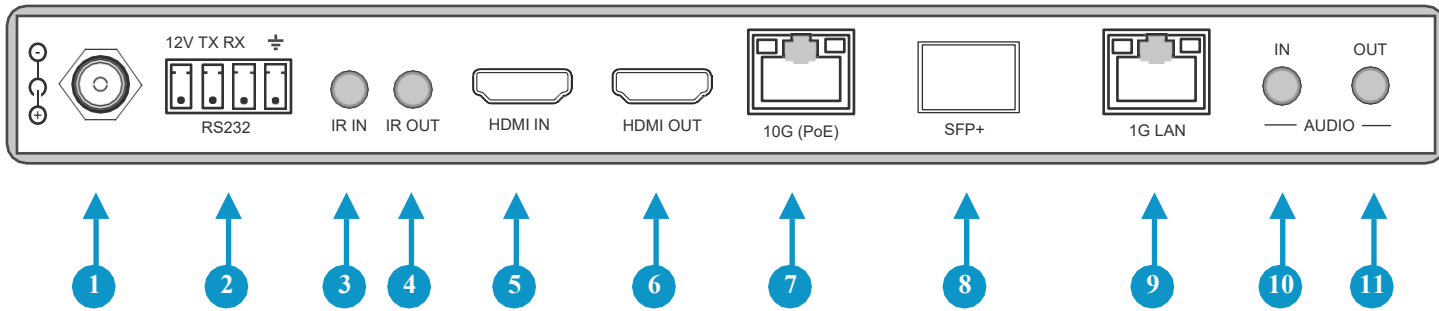


Number	Name	Function
1	Reset Button	Press and hold for 5 seconds to restore factory default settings.
2	Power	The LED illuminates RED when powered on.
3	Status	LED On: Normal LED Flashing/Off: Firmware Error or Hardware Error
4	Link	LED On: 10G Ethernet Connection Detected LED Off: No 10G Ethernet Detected
5	Video	The LED illuminates when HDMI is detected on input or output
6	USB	LED On: USB devices detected and transmitting data.
7	ENC	The LED illuminates GREEN when in ENC mode.
8	DEC	The LED illuminates GREEN when in DEC mode.
9	MODE	Press and hold for 5 seconds to switch between ENC and DEC.
10	USB Devices	Connect a keyboard, mouse or disk when in DEC mode.
11	USB Host	Connect to a PC when in ENC mode.

#### Selecting Encoder or Decoder

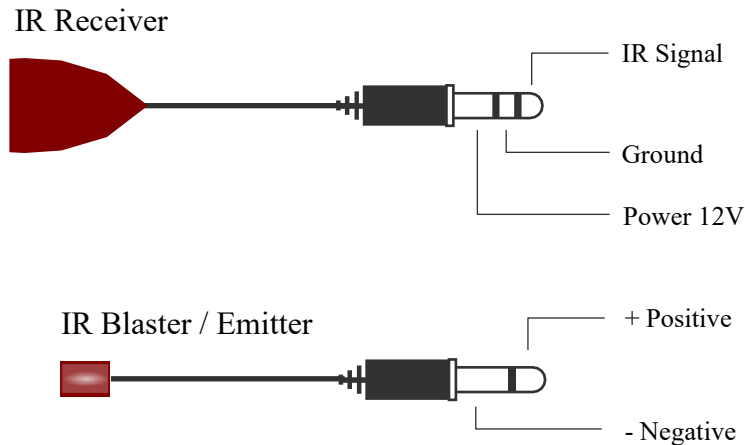
1. When powered on the ENC/DEC LED flashes for 15 seconds and then remains on indicating the selected mode. Press and hold the “MODE” button for 5 seconds to switch modes, the corresponding ENC/DEC LED flashes for 30 seconds and then remains on indicating a successful switch.
2. The “Show Me” mode can also be activated using the ENT-SDVoECON Network Controller. When activated the corresponding LED illuminates.

3.2 Rear Panel Description



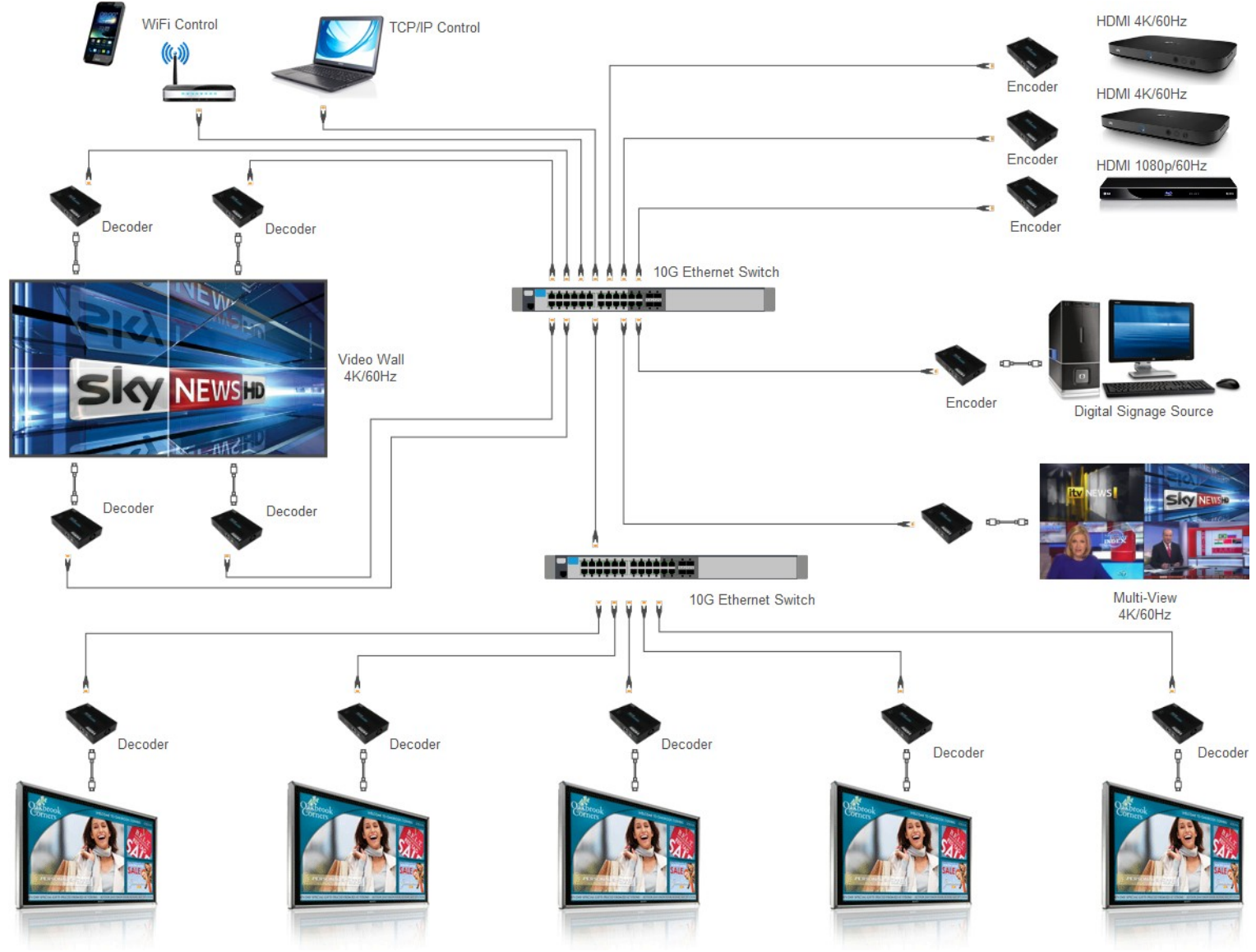
Number	Name	Function
1	DC 12V	12 Volt DC Power Input
2	RS-232	Connects to a PC or control device for RS232 Pass-Through
3	IR Input	Infrared input for sending IR data.
4	IR Output	Infrared output for connecting IR emitter.
5	HDMI Input	Connects to HDMI source device.
6	HDMI Output	<ul style="list-style-type: none"> <li>ENC Mode: The HDMI output is a loop through</li> <li>DEC Mode: Connects to display.</li> </ul>
7	10G BASE-T	Connects to 10G network switch.
8	SFP+	Optical Fibre for for 10G network switch.
9	1G LAN	1G Ethernet LAN Pass-Through
10	Audio Input	Analogue Stereo Audio input, this can be embedded in HDMI signal.
11	Audio Output	Analogue Stereo Audio output extracted from HDMI input.

4.0 IR Pin Connections





5.0 Application Drawing



## 6.0 Maintenance

Clean this unit with a soft, dry cloth. Never use alcohol, pint thinner or benzene to clean these devices.

### 6.1 Servicing

Damage requiring service: This product should be serviced by a qualified service engineer if:

- The DC power cord or AC adaptor has been damaged.
- Objects or liquids have entered the housings.
- The product has been exposed to rain.
- The product has stopped working or shows signs of significant change in operating performance or function.
- The unit has been dropped or severely damaged externally.

Servicing personnel: Do not attempt to service the product beyond that described in these instructions. Refer all other servicing to authorized serving personnel.

Replacement parts: When parts need replacing ensure the service engineer uses parts specified by the manufacture or parts that have the same characteristics as the original parts. Unauthorized substitutes may result in fire, electric shock or other hazards.

Safety check: After a repair or service, ask the engineer to perform safety checks to confirm the product is in proper working condition.

### 6.2 Warranty

If your product does not work properly because of a defect in materials or workmanship, our Company (referred to as "the warrantor" ) will , for the length of the period indicated as below, (Parts and labour 2 years) which starts with the date of original purchase ("Limited Warranty period"), at its option either (a) repair your product with new or refurbished parts, or (b) replace it with a new or a refurbished product. The decision to repair or replace will be made by the warrantor.

During the "Labour" Limited Warranty period there will be no charge for labour. During the "Parts" warranty period, there will be no charge for parts. You must mail-in your product during the warranty period. This Limited Warranty is extended only to the original purchaser and only covers product purchased as new. A purchase receipt or other proof of original purchase date is required for Limited Warranty service.

### 6.3 Returns

When shipping the unit carefully pack and send it prepaid, adequately insured and preferably in the original carton. Include a letter detailing the complaint and provide a day time phone number and/or email address where you can be reached.

#### 6.4 Warranty limitations and Exclusions

This Limited Warranty ONLY COVERS failures due to defects in materials or workmanship, and DOES NOT COVER normal wear and tear or cosmetic damage. The Limited Warranty ALSO DOES NOT COVER damages which occurred in shipment, or failures which are caused by products not supplied by warrantor, or failures which result from accidents, misuse, abuse, neglect, mishandling, misapplication, alteration, faulty installation, set-up adjustments, maladjustment of consumer controls, improper maintenance, power line surge, lightning damage, modification, or service by anyone other than a Factory Service centre or other authorized service engineer, or damage that is attributable to acts of God.

THERE ARE NO EXPRESS WARRANTIES EXCEPT AS LISTED UNDER "LIMITED WARRANTY COVERAGE". THE WARRANTOR IS NOT LIABLE FOR INCIDENTAL OR CONSEQUENTIAL DAMAGES RESULTING FROM THE USE OF THIS PRODUCT, OR ARISING OUT OF ANY BREACH OF THIS WARRANTY. (As examples, this excludes damages for lost time, cost of having someone remove or re-install an installed unit if applicable, travel to and from the service, loss of or damage to media or images, data or other recorded content. The items listed are not exclusive, but are for illustration only).

PARTS AND SERVICE, WHICH ARE NOT COVERED BY THIS LIMITED WARRANTY, ARE YOUR RESPONSIBILITY. This returns policy does not affect your legal rights. Details of your legal rights are available from Trading Standards or Citizens Advice Consumer Service.