EX-57AP

HDMI2.0 over IP Multicast System
with Video Wall support & PoE support

User Manual

Transmitter   Receiver

rev: 230901
Made in Taiwan

INTRODUCTION

The **EX-57AP HDMI2.0 over IP Multicast System with Video Wall support & PoE support** boosts up your video/audio transmission distance up to 120m(396ft) in UHD 4K2K format. With cost effective Ethernet cable, users can readily extend UHD sources from DVD players, Blu-ray Disc player, PS5, PC, and any other HDMI sources broadcasting to distant display monitors including HDMI or DVI enabled TV sets or LCD PC monitors. In addition, EX-57AP is HDCP compliant, and supports PoE, IR and RS-232 pass-through path.

With broadcasting management software and Gigabit Ethernet network switch (supporting IGMP and jumbo frame), EX-57AP is a complete UHD video broadcasting solution for digital signage. It can transmit Ultra HD 4K2K60 HDMI video broadcasting over IP network. The broadcasting format can be Point to Point, Point to Many, and Multi-Casting. Multi-casting is based on Managed Gigabit Switch with 802.1Q VLAN function which provides control remotely and so multi video sources are allowed and supported.

FEATURES

- Supports resolution up to 4K2K@60 4:4:4 8bits
- Supports High Dynamic Range (HDR)[1]
- HDMI 2.0a compliant
- HDCP 2.2 compliant
- Flexible and scalable UHD Video Broadcasting by Gigabit Ethernet LAN/Switch
- one to one, one to many & multi-casting broadcasting architecture
- Each transmitter can be theoretically multicast up to an unlimited number of displays in video wall applications or unlimited displays in multicast applications
- Supports full frequency IR signal from 20KHz to 60KHz
- Bi-directional IR path
- Full Duplex RS-232 control up to 115,200 bps through connector
- Up to 1,023 Groups Multi-Casting
- Easy Dip Switch matching for multi-casting group configuration
- Supports Video Wall function
- Supports 90, 180 and 270 clockwise image rotation[2]
- Supports USB flash driver (USBoIP) and keyboard/mouse (KMoIP) [3]
- Supports USB webcam and USB audio device over IP (HW-USBoIP) [4]
- Wall mounting housing design for easy and robust installation

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⚠ 1. Due to the video compression, some distortion in terms of visual perception may happen in HDR mode.
2. The rotation function ONLY supports on video wall mode
3. For KMoIP function,
    a. the TX channel ID must set between 0001 to 0008 (Total quantity of TX devices support up to 8 units)
    b. the RX channel ID must set to ID=0 [↑ - ↑ - ↑ - ↑ - ↑ - ↑]
    c. the hotkey switching TX must click three times. ex. click "5 key" on the numeric keypad three times to switch to ID=0005(TX)
4. For HW-USBoIP function,
    a. do not attach devices other than USB webcam and USB audio device
    b. the RX's webcam and video signal must always from the same TX

PACKAGE CONTENTS

EX-57AP-TX
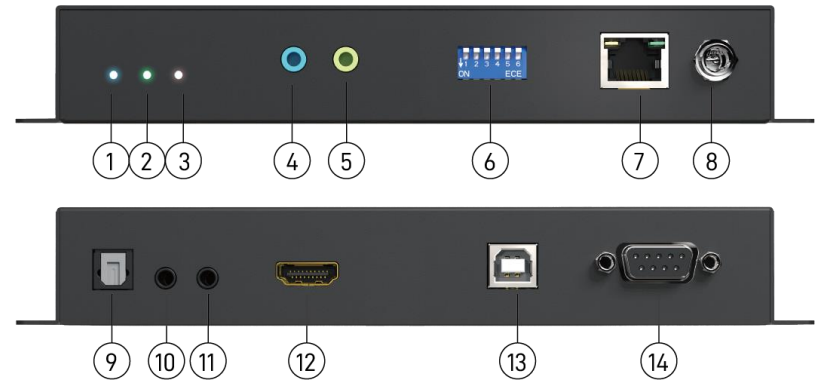
- 1x EX-57AP-TX
- 1x IR blaster cable
- 1x User Manual

EX-57AP -RX

- 1x EX-57AP-RX
- 1x IR receiver cable

SPECIFICATIONS

Model Name	EX-57AP	
Technical	**EX-57AP [Tx]**	**EX-57AP [Rx]**
Role of usage	Transmitter [TX]	Receiver [RX]
HDMI compliance	HDMI	
HDCP compliance	Yes	
Video support	Up to 4K2K@60 (4:4:4 8bits)	
Latency	2 frames (33 ms) maximum	
HDMI over UTP transmission [24-bit]	Ultra HD (4K2K60)-120m (396ft) [CAT.X]	
Audio support	Surround sound (up to 7.1ch) or stereo digital audio	
Input TMDS signal	1.2 Volts [peak-to-peak]	
Input DDC signal	5 Volts [peak-to-peak, TTL]	
ESD protection	Human body model — ±15kV [air-gap discharge] & ±8kV [contact discharge]	
IR pass-thru	Full-duplex bi-directional	
RS-232 support	Yes	
Input	1x HDMI + 2x 3.5mm + 1x USB	1x RJ45 + 1x HDMI + 2x 3.5mm + 1x S/PDIF
Output	1x RJ45 + 1x S/PDIF + 2x 3.5mm	2x 3.5mm + 4x USB
In/ Out	1x DIN9	1x DIN9
HDMI source control	Controllable via IR pass-through from RX to TX and from TX to RX with IR extenders	
IR remote control	Electro-optical characteristics: τ = 25° / Carrier frequency: 20-60kHz	
HDMI connector	Type A [19-pin female]	
Min DIN connector	DIN-9	
RJ45 connector	WE/SS 8P8C with 2 LED indicators	
3.5mm connector	Analog audio / IR blaster & IR receiver	
Mechanical		
Housing	Metal enclosure	
Dimensions [L x W x H] — Model	194 x 133 x 28 mm[7.6" x 5.2" x 1.1"]	194 x 133 x 28 mm[7.6" x 5.2" x 1.1"]
Dimensions [L x W x H] — Package	264 x 170 x 77mm[10.3" x 6.7" x 3"]	
Dimensions [L x W x H] — Carton	430 x 358 x 291mm[1'4" x 1'2" x 11.5"]	
Weight — Model	663g [1.5 lbs]	644g [1.4 lbs]
Weight — Package	1528g [3.4 lbs]	
Fixedness	Wall-mounting case with screws	
Power supply	5V DC/ / 48V POE	
Power consumption	6 Watts [max]	7 Watts [max]
Operation temperature	0~40°C [32~104°F]	
Storage temperature	-20~60°C [-4~140°F]	
Relative humidity	20~90% RH [no condensation]	

PANEL DESCRIPTIONS

Transmitting unit ► EX-57AP-TX

1. **Power LED indicator:**

   [Blink] When unit connect a power supply unit

   [Shine] After booting, when device become stably

2. **Link LED indicator:**

   [Blink] When unit connect a Cat-5/5e/6 cable

   [Shine] When transmitting unit connect to a HDMI source and linked to the receiving unit

3. **Info LED indicator:** When user click the LED button from software, the LED light will blink 30 seconds.

4. **IR Blaster:** Infrared 3.5mm socket for plugging in the extension cable of IR blaster

5. **IR Receiver:** Infrared 3.5mm socket for plugging in the extension cable of IR receiver

6. **Dip Switch:** Video channel selection

7. **RJ-45:** Gigabit Ethernet port

8. **+5V DC:** Connect to 5V DC power supply

9. **S/PDIF:** Reserved
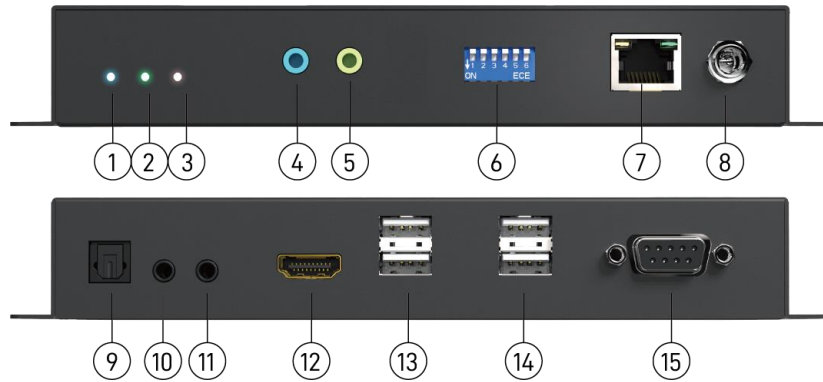
10. **Analog audio line in:** Connect to audio source

11. **Analog audio line out:** Connect to headphone

12. **HDMI IN:** Connects to a HDMI source with a HDMI male-male cable

13. **USB:** Connect to USB host (keyboard/mouse & USB flash driver function)

14. **RS-232:** Connect to PC serial port with a DSUB-9 male-male cable here

Receiver unit ► EX-57AP-RX

1. **Power LED indicator:**

   [Blink] When unit connect a power supply unit

   [Shine] After booting, when device become stably

2. **Link LED indicator:**

   [Blink] When unit connect a Cat-5/5e/6 cable

   [Shine] When transmitting unit connect to a HDMI source and linked to the receiving unit

3. **Info LED indicator:** When user click the LED button from software, the LED light will blink 30 seconds.

4. **IR Blaster:** Infrared 3.5mm socket for plugging in the extension cable of IR blaster

5. **IR Receiver:** Infrared 3.5mm socket for plugging in the extension cable of IR receiver

6. **Dip Switch:** Video channel selection

7. **RJ-45:** Gigabit Ethernet port

8. **+5V DC:** Connect to 5V DC power supply

9. **S/PDIF:** Reserved

10. **Analog audio mic in (for unitcast only):** Connect to microphone

11. **Analog audio line out:** Connect to headphone

12. **HDMI OUT:** Connect to a HDMI display with a HDMI male-male cable.

13. **USB(USB 1.1 port):** Connect to keyboard/mouse

14. **USB(USB 2.0 port):** Connect to USB flash driver

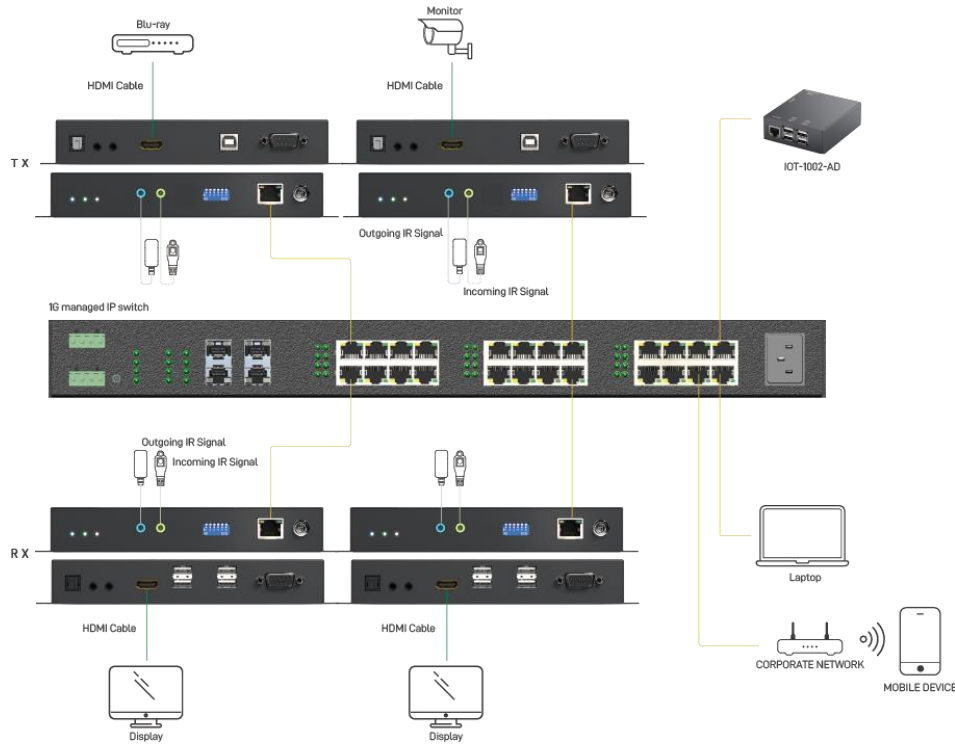15. **RS-232:** Connect to PC serial port with a DSUB-9 male-male cable here

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Notes: TX/RX group ID dip-switch setting

1. For ID=1~63, please refer the table below to set up (Hardware control)
2. For ID=64~1023, please adjust the DIP switch to ID=0, and the real ID can be decided by the external software (Software control)

ID	Pin1	Pin2	Pin3	Pin4	Pin5	Pin6
0	↑	↑	↑	↑	↑	↑
1	↓	↑	↑	↑	↑	↑
2	↑	↓	↑	↑	↑	↑
3	↓	↓	↑	↑	↑	↑
4	↑	↑	↓	↑	↑	↑
5	↓	↑	↓	↑	↑	↑
6	↑	↓	↓	↑	↑	↑
7	↓	↓	↓	↑	↑	↑
8	↑	↑	↑	↓	↑	↑
9	↓	↑	↑	↓	↑	↑
10	↑	↓	↑	↓	↑	↑
11	↓	↓	↑	↓	↑	↑
12	↑	↑	↓	↓	↑	↑
13	↓	↑	↓	↓	↑	↑
14	↑	↓	↓	↓	↑	↑
15	↓	↓	↓	↓	↑	↑
16	↑	↑	↑	↑	↓	↑
17	↓	↑	↑	↑	↓	↑
18	↑	↓	↑	↑	↓	↑
19	↓	↓	↑	↑	↓	↑
20	↑	↑	↓	↑	↓	↑
21	↓	↑	↓	↑	↓	↑
22	↑	↓	↓	↑	↓	↑
23	↓	↓	↓	↑	↓	↑
24	↑	↑	↑	↓	↓	↑
25	↓	↑	↑	↓	↓	↑
26	↑	↓	↑	↓	↓	↑
27	↓	↓	↑	↓	↓	↑
28	↑	↑	↓	↓	↓	↑
29	↓	↑	↓	↓	↓	↑
30	↑	↓	↓	↓	↓	↑
31	↓	↓	↓	↓	↓	↑

ID	Pin1	Pin2	Pin3	Pin4	Pin5	Pin6
32	↑	↑	↑	↑	↑	↓
33	↓	↑	↑	↑	↑	↓
34	↑	↓	↑	↑	↑	↓
35	↓	↓	↑	↑	↑	↓
36	↑	↑	↓	↑	↑	↓
37	↓	↑	↓	↑	↑	↓
38	↑	↓	↓	↑	↑	↓
39	↓	↓	↓	↑	↑	↓
40	↑	↑	↑	↓	↑	↓
41	↓	↑	↑	↓	↑	↓
42	↑	↓	↑	↓	↑	↓
43	↓	↓	↑	↓	↑	↓
44	↑	↑	↓	↓	↑	↓
45	↓	↑	↓	↓	↑	↓
46	↑	↓	↓	↓	↑	↓
47	↓	↓	↓	↓	↑	↓
48	↑	↑	↑	↑	↓	↓
49	↓	↑	↑	↑	↓	↓
50	↑	↓	↑	↑	↓	↓
51	↓	↓	↑	↑	↓	↓
52	↑	↑	↓	↑	↓	↓
53	↓	↑	↓	↑	↓	↓
54	↑	↓	↓	↑	↓	↓
55	↓	↓	↓	↑	↓	↓
56	↑	↑	↑	↓	↓	↓
57	↓	↑	↑	↓	↓	↓
58	↑	↓	↑	↓	↓	↓
59	↓	↓	↑	↓	↓	↓
60	↑	↑	↓	↓	↓	↓
61	↓	↑	↓	↓	↓	↓
62	↑	↓	↓	↓	↓	↓
63	↓	↓	↓	↓	↓	↓

CONNECTION DIAGRAM

Notes:

1. **Choose a Network Switch**

   The selected network switch must support the following:
   - Gigabit (or faster) Ethernet port
   - IGMP Snooping
   - IGMP v2 Snooping (multicast)
   - IGMP Querier
   - IGMP Snooping Fast Leave
   - Multicast forwarding or filtering
   - Jumbo frames up to 9KB (9000 bytes)

2. **Configure Your Network Switch**

   Configuring your switch properly will pass data more efficiently, please refer to the following settings:
   - Enable IGMP Snooping on Layer2 switches
   - Enable IGMP Querier on the Layer 3 switches
   - Enable IGMP Fast-Leave on all switches that have VE units connected directly to them
   - Enable the jumbo frame on switch to improve data transfer efficiency

IR PASS-THROUGH

【IR Extenders】

IR Blaster	IR Receiver

【IR Sockets】

IR BLASTER: plug in the IR blaster to emit all IR command signals received from the IR receiver from the other end to control the devices corresponding to the IR signals.

IR RECEIVER: plug in the IR receiver to receive all IR command signals from the IR remote controls of the corresponding devices.

> **CAUTION!** Incorrect placement of IR Blaster and Receiver may result in the failure of the IR extenders. Please check carefully before plugging in the IR extender to the respective IR sockets. Warranty will not cover the damage.

【Definition of IR Earphone Jack】

IR Blaster

1. IR Signal
2. Grounding

IR Receiver

1. IR Signal [30-56 kHz]
2. Grounding
3. Power

> You can buy any IR extension cables in the market that are compatible to the definition of the IR sockets for the extender if necessary for replacement use. However, IR cables longer than 2m (6-ft) may not work.

WARRANTY

The SELLER warrants the **EX-57AP HDMI2.0 over IP Multicast System with Video Wall support & PoE support** free from defects in the material and workmanship for 1 year from the date of purchase from the SELLER or an authorized dealer. Should this product fail to be in good working order within 1 year warranty period, The SELLER, at its option, repair or replace the unit, provided that the unit has not been subjected to accident, disaster, abuse or any unauthorized modifications including static discharge and power surge. This warranty is offered by the SELLER for its BUYER with direct transaction only. This warranty is void if the warranty seal on the metal housing is broken.

Unit that fails under conditions other than those covered will be repaired at the current price of parts and labor in effect at the time of repair. Such repairs are warranted for 90 days from the day of reshipment to the BUYER. If the unit is delivered by mail, customers agree to insure the unit or assume the risk of loss or damage in transit. Under no circumstances will a unit be accepted without a return authorization number.

The warranty is in lieu of all other warranties expressed or implied, including without limitations, any other implied warranty or fitness or merchantability for any particular purpose, all of which are expressly disclaimed.

Proof of sale may be required in order to claim warranty. Customers outside Taiwan are responsible for shipping charges to and from the SELLER. Cables and power adapters are limited to a 30 day warranty and must be free from any markings, scratches, and neatly coiled.

The content of this manual has been carefully checked and is believed to be accurate. However, The SELLER assumes no responsibility for any inaccuracies that may be contained in this manual. The SELLER will NOT be liable for direct, indirect, incidental, special, or consequential damages resulting from any defect or omission in this manual, even if advised of the possibility of such damages. **Also, the technical information contained herein regarding the EX-57AP features and specifications is subject to change without further notice.**