EX-57AL-O-2K

HDMI 2.0 over IP (Fiber) Light Compression Multicast System

User Manual

Transmitter

Receiver

rev: 200520
Made in Taiwan

TABLE OF CONTENTS

INTRODUCTION

The **EX-57AL-O-2K HDMI 2.0 over IP (Fiber) Light Compression Multicast System** boosts up your video/audio transmission distance up to 100m(330ft) over multi-mode fiber optic cable in Ultra-HD 4K2K@60(4:4:4) format. Users can readily extend Ultra-HD sources from Blu-ray Disc player, PS3, PC, and any other HDMI sources broadcasting to distant display monitors including HDMI or DVI enabled TV sets or LCD PC monitors. Besides EX-57AL-O-2K is HDCP compliant, and supports IR and RS-232 pass-through path.

With broadcasting management software and 10 Gigabit Ethernet network switch (supported IGMP Snooping), EX-57AL-O-2K is a complete Ultra-HD 4K2K@60(4:4:4) video broadcasting solution for digital signage. It can transmit Ultra-HD 4K2K@60(4:4:4) 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, so multi video and source allowed and supported.

> (!) Up to 4K@60 4:4:4 (4K@60 4:4:4 needs light compresssssion)
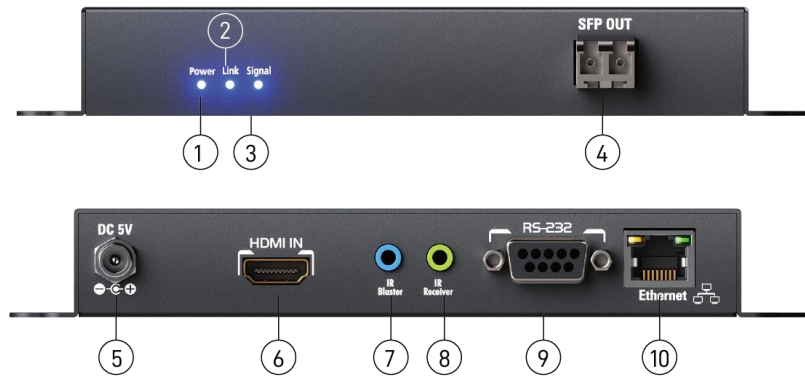
FEATURES

- Supports uncompressed HDMI Deep Color, full 3D & 4K2K@60(4:4:4)
- HDCP & EDID Bypass
- CEC support
- Auto equalization
- Pure unaltered uncompressed 7.1ch digital HDMI over fiber transmission
- DTS-HD Master Audio and Dolby TrueHD high bit rate audio support
- Supports full frequency IR signal from 20KHz to 60KHz
- Bi-directional IR path-through
- Full Duplex RS-232 control up to 115,200 bps through connector
- Integrated port for LAN/ network device
- Fiber extension and connection to a 10GbE Ethernet Switch (supported IGMP Snooping)
- Supports software to configure & update device and to control the switching operation of the various signal types
- Supports IP pass-through
- Supports seamless switching

SPECIFICATIONS

Model Name	EX-57AL-O-2K	
Technical		
Role of usage	Transmitter [TX]	Receiver [RX]
HDMI compliance	HDMI Deep Color, full 3D & 4K2K@60(4:4:4)	
HDCP compliance	Yes (HDCP 2.2)	
Video bandwidth	Single-link 594MHz [18Gbps]	
Video support	480i / 480p / 720p / 1080i / 1080p60 / 4K2K@30 / 4K2K@60(4:4:4)	
HDMI over fiber	Yes	
Audio support	Surround sound [up to 7.1ch] or stereo digital audio	
Equalization	Auto	
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	Bi-directional	
RS-232 support	Yes	
Input	1x HDMI / 1x 3.5mm	1x Fiber / 1x 3.5mm
Output	1x Fiber / 1x 3.5mm	1x HDMI / 1x 3.5mm
In / Out	1x RS-232 / 1x RJ-45(Ethernet)	1x RS-232 / 1x RJ-45(Ethernet)
HDMI source control	Controllable via IR pass-through from RX to TX with IR extenders	
HDMI connector	Type A [19-pin female]	
RJ-45 connector	WE/SS 8P8C	
3.5mm connector	IR receiver / IR blaster	IR receiver / IR blaster
Mechanical		
Housing	Metal enclosure	
Dimensions [L x W x H] — Model	155 x 122 x 25mm[6.1" x 4.8" x 1"]	
Dimensions [L x W x H] — Package	371 x 170 x 77mm[1'5" x 6.7" x 3"]	
Dimensions [L x W x H] — Carton	410 x 368 x 393mm[1'3" x 1'4" x 1'5"]	
Weight — Model	654g [23oz]	654g [23oz]
Weight — Package	2078g [4.6lbs]	
Fixedness	Wall-mounting case with screws	
Power supply	5V 4A	
Power consumption	Max 15W	
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-57AL-O-2K-TX

1. **Power LED:** Power indicator LED
2. **Link LED:** Link indicator LED
3. **Signal LED:** When user connect to the source, the indicator LED will light
4. **SFP OUT:** Plug in single/multi-mode fiber optic cables that needs to be linked to the receiving unit EX-57AL-O-2K-RX
5. **+5V DC:** Connect to a 5V power supply unit
6. **HDMI IN:** Connect to a HDMI source with a HDMI male-male cable
7. **IR Blaster:** Infrared 3.5mm socket for plugging in the extension cable of IR blaster
8. **IR Receiver:** Infrared 3.5mm socket for plugging in the extension cable of IR receiver
9. **RS-232:** Connect to serial port device with a DSUB-9 male-male or male-female cable here
10. **Ethernet Port:** Ethernet control port
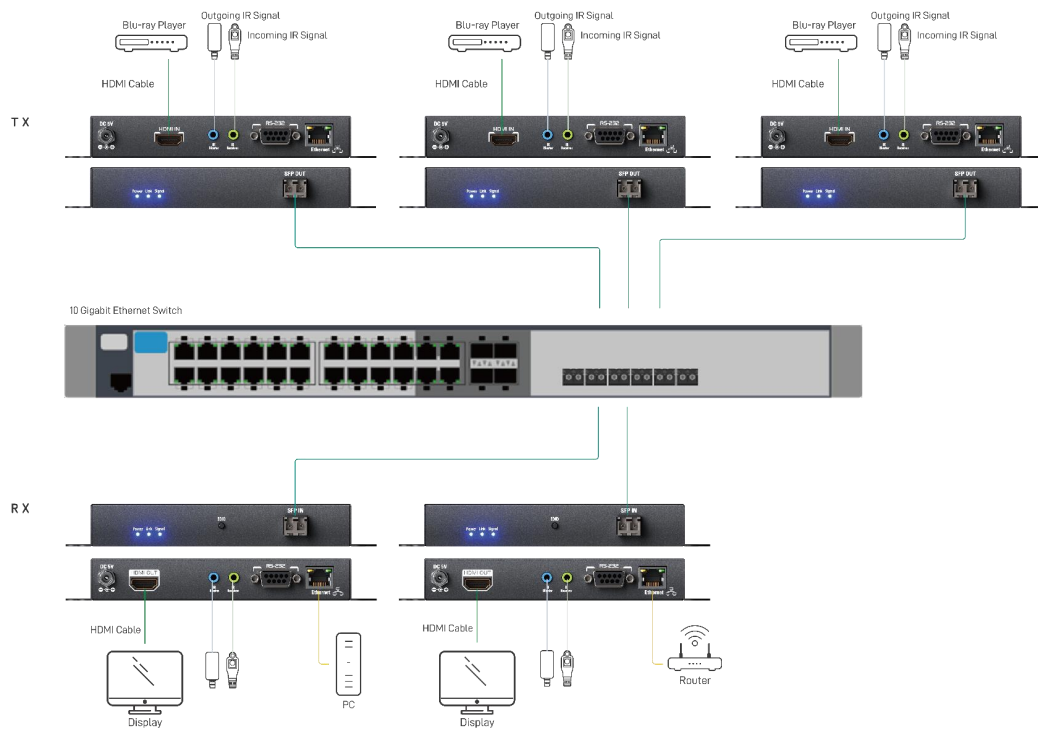
Receiving unit ▸ EX-57AL-O-2K-RX

1. **Power LED:** Power indicator LED
2. **Link LED:** Link indicator LED
3. **Signal LED:** When user connect to the display, the indicator LED will light
4. **EDID Button:** To learn EDID from display
5. **SFP IN:** Plug in single/multi-mode fiber optic cables that needs to be linked to the transmitting unit EX-57AL-O-2K-TX
6. **+5V DC:** Connect to a 5V power supply unit
7. **HDMI OUT:** Connect to a HDMI display with a HDMI male-male cable
8. **IR Blaster:** Infrared 3.5mm socket for plugging in the extension cable of IR blaster
9. **IR Receiver:** Infrared 3.5mm socket for plugging in the extension cable of IR receiver
10. **RS-232:** Connect to serial port device with a DSUB-9 male-male or male-female cable here
11. **Ethernet Port:** Ethernet control port

PACKAGE CONTENTS

- 1x EX-57AL-O-2K [TX & RX]
- 1x IR blaster
- 1x IR receiver
- 2x DC 5V
- 1x Installation software CD
- 1x User Manual

CONNECTION DIAGRAM

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]
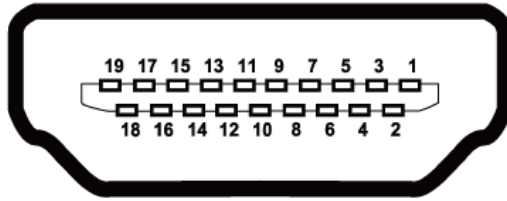
IR Blaster

1. IR Signal
2. Grounding

1 2

IR Receiver

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

1 2 3

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.

HDMI PIN DEFINITION

Type A (Receptacle) HDMI

Pin 1	TMDS Data2+		Pin 11	TMDS Clock Shield
Pin 2	TMDS Data2 Shield		Pin 12	TMDS Clock–
Pin 3	TMDS Data2–		Pin 13	CEC
Pin 4	TMDS Data1+		Pin 14	Reserved (N.C. on device)
Pin 5	TMDS Data1 Shield		Pin 15	SCL
Pin 6	TMDS Data1–		Pin 16	SDA
Pin 7	TMDS Data0+		Pin 17	DDC/CEC Ground
Pin 8	TMDS Data0 Shield		Pin 18	+5V Power
Pin 9	TMDS Data0–		Pin 19	Hot Plug Detect
Pin 10	TMDS Clock+			

OPERATION APPROACH

Software Control through Ethernet port

1. System Requirement

(1) OS information: Microsoft Windows XP/7/8/10

(2) Baud Rate: 57600

(3) Software size: 4MB

(4) Minimum RAM requirement: 256MB

2. Control Interface

When clicking on the executable file, the following dialog will pop up. Please click the connect button to enter the control interface.

Before you start the software control, please click the lower right button (Initial Setting button) of control interface to do some initial configuration.
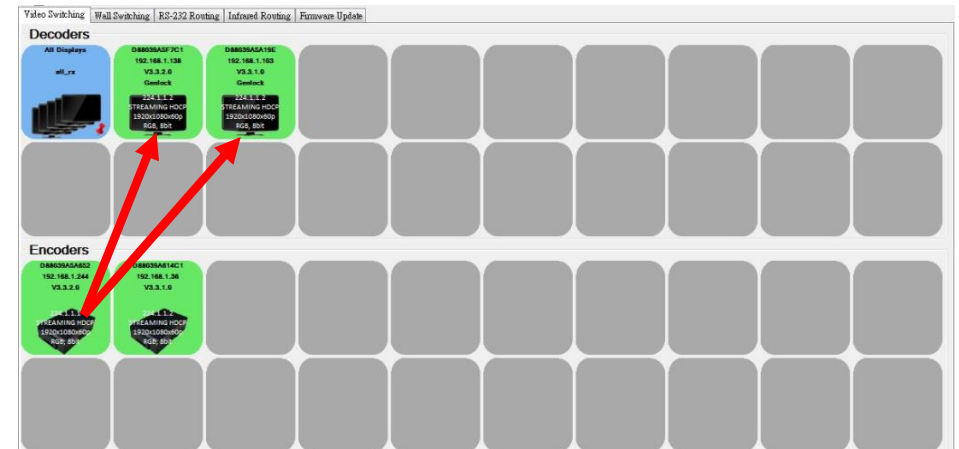

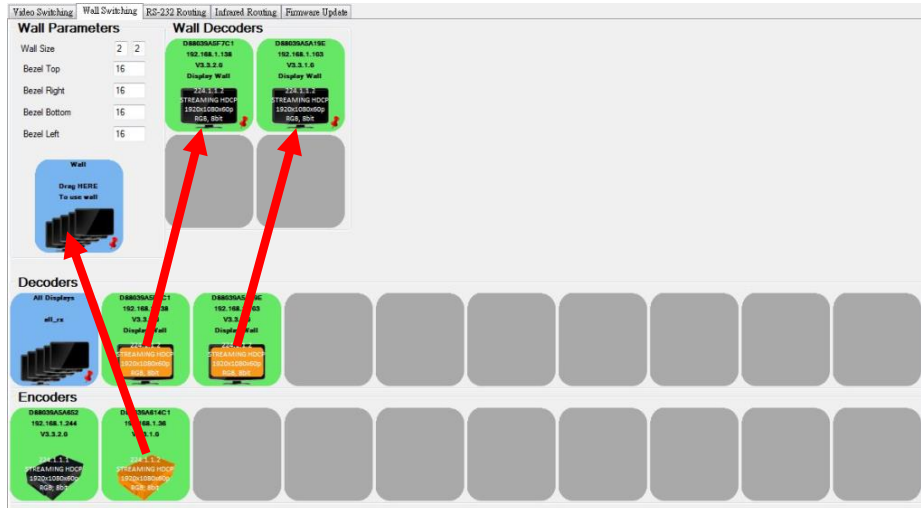| 1	Video Switching (Mapping)	4	Infrared Routing
2	Wall Switching	5	Firmware Update
3	RS-232 Routing	6	Custom Setting

(1) Video Switching (Mapping)

Dragging the Encoders icon to Decoders icon to do input/output mapping. After setting the mapping, you also can click the right button to set up more video mode (ex. stop video)

*If output video is mute, please click right button on corresponding encoders and select the start video function.
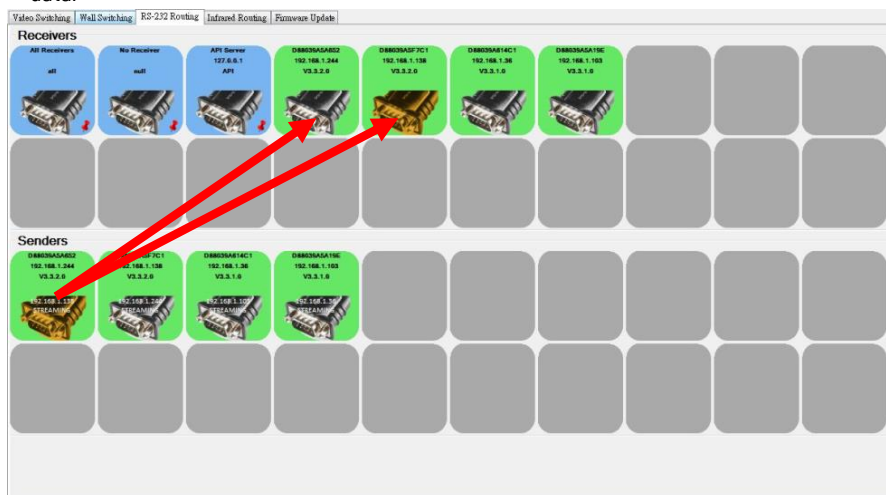
(2) Walls Switching

User can define wall size by entering the wall parameters. Dragging Encoders or Decoders to Wall and Wall Decoders icon to setup the video wall function. Please note that the resolution of each Wall Decoders is divided by the wall size. For example, the resolution of wall is 3840x2160 and the wall size is 4 (2x2), the resolution of each decoders is 1920x1080. If you want to mute the video or remove the video wall, please click the right button to select those function.
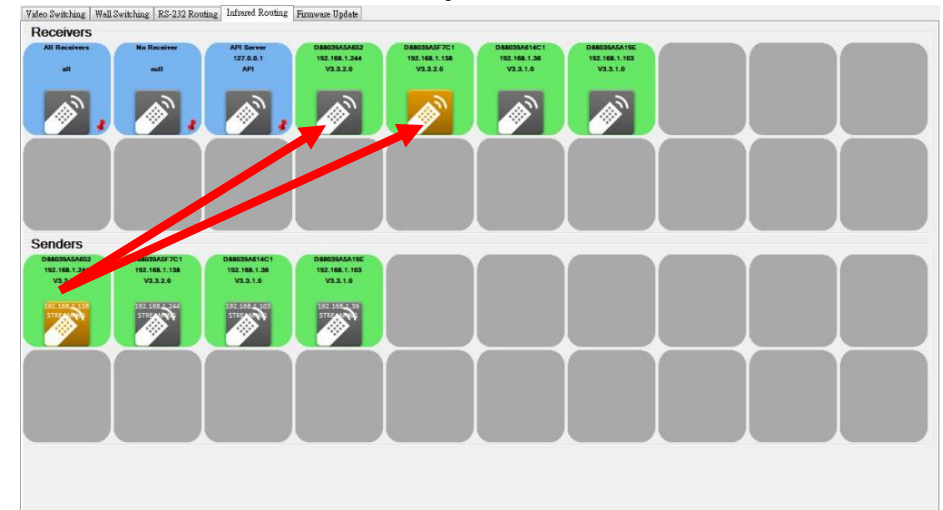

(3) RS-232 Routing

Bi-directional RS-232 Signal are transmitted between the device transmitter and receiver. Dragging the RS-232 icon of Senders to Receivers to make connection and sending/receiving data.
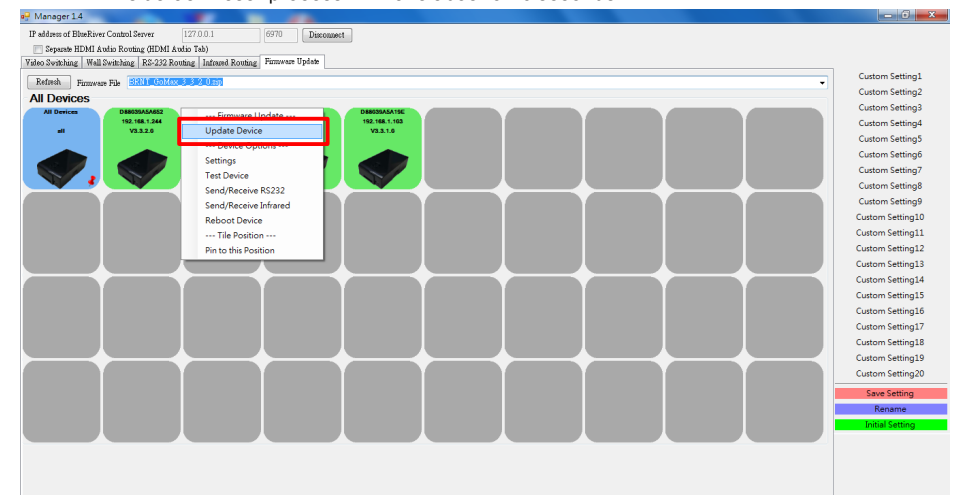

(4) Infrared Routing

Bi-directional IR signal can be transmitted between the transmitter and receiver. The IR signal can be generated either from receiver or a control system. You can drag the Infrared Senders icon to Receivers to do the infrared routing.

(5) Firmware Update

➢ Click the drop-down lists to select the file which you want to write into device
➢ Select the device which you desire to update firmware
➢ Click right button to choose update device item and firmware will start to update
➢ After updating, please reboot the device
➢ This default reset process will take about 5~10 seconds.

(6) Custom Setting

In the right part of the control interface, we provide the save function for user to save the video switching (mapping) into the flash memory. User also can rename the custom setting.

WARRANTY

The SELLER warrants the **EX-57AL-O-2K HDMI 2.0 over IP (Fiber) Light Compression Multicast System** 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-57AL-O-2K features and specifications is subject to change without further notice.