

ST-IPHD-IR-LC

HDMI over Gigabit IP Extender with IR and RS232

User Manual



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INTRODUCTION

The HDMI over IP Extender with LED extends HDMI signal over just one 100 Ohm Cat.5e/Cat.6 cable -- up to 100 meters away. The extender supports Full HD 1080p resolution. DVI-D Computer video can also be transmitted with a DVI-to-HDMI cable or adaptor (Note: Audio is not included in a DVI-D signal). Maximum screen resolution and system performance is entirely dependent on the bandwidth and features made available to the HDMI over IP Extender devices on the local Gigabit network.

By using standard and widely available 100 Ohm Cat.6 cable, the HDMI over IP Extender with LED makes HDMI signal networking easier than larger, more expensive HDMI copper cable and more robust than optical fiber cable.

HOW IT CONNECTS

Point to Point

The HDMI over IP Extender with LED system consists of a Transmitter and a Receiver (sold separately). The HDMI source (set-top box, DVD/BluRay player, gaming console, etc.) connects to the Transmitter unit. The Receiver unit connects to the HDTV display in the same way. One 100 Ohm Cat5e/Cat.6 cable (up to 100 meters long) links the Transmitter and Receiver. Power is applied to the Transmitter and Receiver with 5V DC power supply (included). High Definition picture and Sound are then transmitted into the HDTV screen. HDMI Source Device can also be controlled remotely using the built-in IR repeater in the System at the Receiver side.

Point to Multi-Point

The HDMI source connects to Transmitter unit via a high quality HDMI cable. 100 Ohm Cat.5e/Cat.6 cables (each up to 100 meters in length) link the Transmitter and Receivers via a Gigabit Full Duplex network switch. The Receiver units connect to each of the HDTV displays via a high quality HDMI cable. Power is applied to the Transmitters and Receivers with 5V DC power supply (included). High Definition picture and Sound are then transmitted into the HDTV screens, provided each receiver unit which is set to the required source channel (remote control supplied). HDMI Source Devices can also be controlled remotely using the built in IR repeater in the HDMI over IP Extender V2.0 with LED System at Receiver side.

Multi-Point to Multi-Point

The HDMI source devices connect to each Transmitter unit (64 Max) via a high quality HDMI cable. 100Ohm Cat.6 cables (each up to 100 meters in length) link the Transmitters and Receivers via a Gigabit Full Duplex network switch that must support IGMP functionality. The Receiver units connect to each of the HDTV displays via a high quality HDMI cable. Power is applied to the Transmitters and Receivers with 5V DC power supply (included). High Definition picture and Sound are then transmitted into the HDTV screens, provided each receiver unit is set to the required source channel (remote control supplied). HDMI Source Devices can also be controlled remotely using the built in IR repeater in the HDMI over IP Extender with LED System at Receiver side.

Note : ST-IPHD-IR-LC is HDCP 2.0 compliant.

FEATURES

- HDMI signal extension up to 100 meters
- Supports HDTV resolution up to 1080p@60Hz
- Supports PCM 2 Ch audio
- Compliant with HDCP 2.0 standards
- Audio and video are transmitted digitally over the 100 Ohm Cat.6 cable for lower signal loss
- Supports IR Pass thru function and control HDMI source devices (set-top box, DVD player and Blue ray DVD Player) in Receiver by its IR remote controller
- It could control source channel from provided IR remote control, and LED panel will show display source channel, which is easier for end user to control.

Transmitter Package Includes

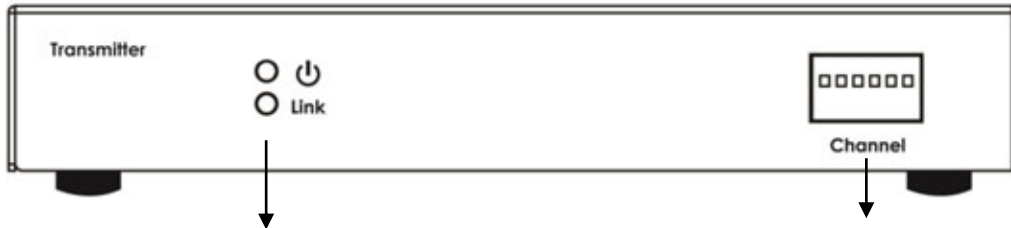
- (1) 1x Transmitter
- (2) 1x 5V DC Power Supply for Transmitter or Receiver
- (3) 1x User Manual
- (4) 1x RS232 Cable

Receiver Package Includes

- (1) 1x Receiver
- (2) 1x IR Receiver Cable
- (3) 1x Remote Control
- (4) 1x 5V DC Power Supply for Transmitter or Receiver
- (5) 1x User Manual
- (6) 1x RS232 Cable

TRANSMITTER UNIT PANEL LAYOUT

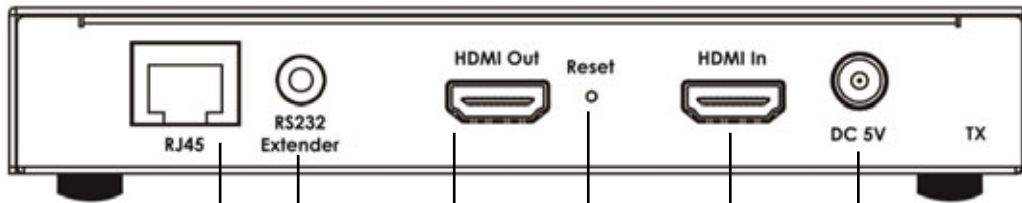
Front Panel



Power LED
Link LED

Dip Switch

Back Panel



RJ45 Port

RS232 Extender Port

HDMI Output Port

Reset Button

HDMI Input Port

Power Input port

TRANSMITTER UNIT PANEL DESCRIPTION

1. Power LED

This LED indicator will activate once the included 5V DC power adapter has been properly connected between the Transmitter unit and a power socket.

Note: the LED will blink during the initial power up time during which it is loading the device firmware.

2. Link LED

This LED indicator will flash once Cat.6 cable has been properly connected between the Transmitter and Receiver unit. Once both devices are connected and powered up this LED will stop flashing and stay on to indicate successful connection between Transmitter and Receiver.

3. DIP Switch

It is possible (when network bandwidth allows) to have up to 64 transmitters and corresponding source devices running at once. The DIP switch is designed to differentiate each transmitter unit and its source device. System installers can change the combination of DIP switch. If user differs DIP switch setting after system is set up, user will need to reset the transmitter in order to let system identify new source definition.

4. Power Input Port

Connect 5V DC power supply to this input port.

5. RJ45 Port

Connect a 100Ohm Cat.6 cable between this output port and the RJ45 input port on Receiver unit or Gigabit network switch.

Note: for best performance we encourage the use of Stranded CAT6 shielded cable STP (750Mhz), as a minimum though please ensure CAT6 UTP (550Mhz) cable is used or poor performance may result.

6. HDMI Input Port

Connect one HDMI cable between this port and HDMI output port of the source device (DVD, Set-top box, blue-ray DVD)

7. HDMI Output Port

Connect on HDMI cable between this port and HDMI input port of the display device can enable user to monitor the display from 100m

away. The output from this port will be the same with the outpour from receiver side.

8. RS232 Extender Port

Connect a serial communications port to this 3.5 mm connector for bidirectional RS-232 communication.

Port Setup Parameters:

Baud Rate : 2400.

Data: 8bit.

Parity: none.

Stop:1bit.

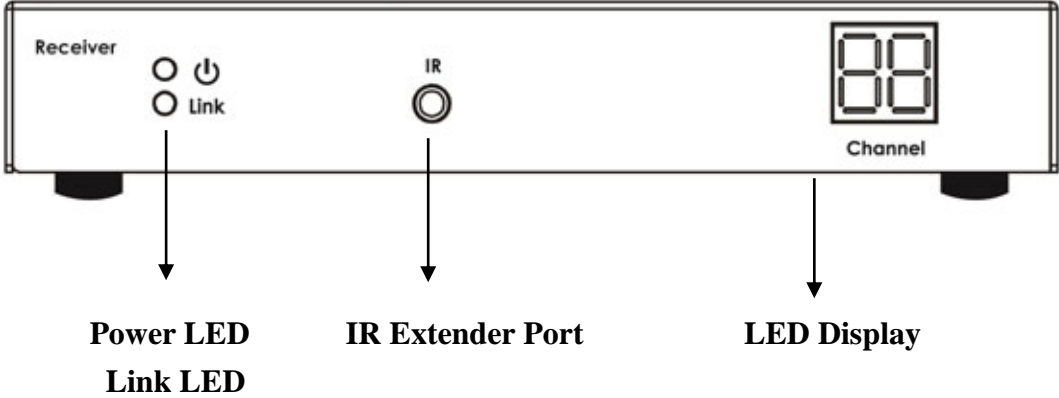
Flow Control: none.

9. Reset

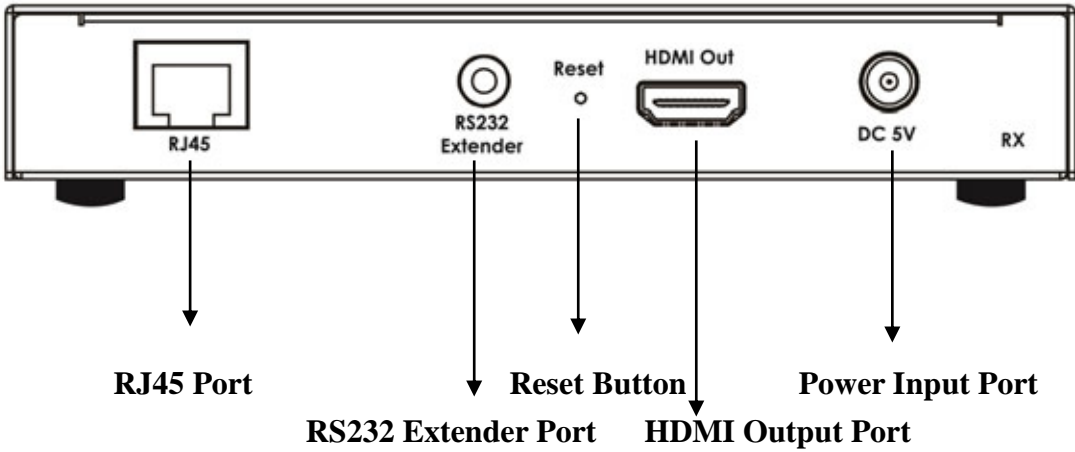
Occasionally like many network devices (routers, modems etc) it may be necessary to reset the Transmitter. This can be done by using a small tool (eg: toothpick) to gently press and hold the reset switch for approximately 3 seconds. Upon releasing the switch the unit will reboot and restore its factory settings. DIP switch settings will remain as previously set and normal function should resume shortly. Alternatively removing the Power Supply from the Power Input Port for approximately 5 minutes will achieve the same result.

RECEIVER UNIT PANEL LAYOUT

Front Panel



Back Panel



RECEIVER UNIT PANEL DESCRIPTION

1. Power LED

This LED indicator will activate once the included 5V DC power adapter has been properly connected between the Transmitter unit and a power socket.

Note: the LED will blink during the initial power up time during which it is loading the device firmware.

2. Link LED

This LED indicator will flash once Cat 6. cable has been properly connected between the Transmitter and Receiver unit. Once both devices are connected and powered up this LED will stop flashing and stay on to indicate successful connection between Transmitter and Receiver.

3. IR Extender Port

Please connect the provided IR Extender cable to this port. This allows the supplied remote control to function; the source device can now also be controlled from the location of this receiver unit by way of its original IR remote control or a universal type IR remote control.

4. LED Display

The LED Display is designed to identify which source device channel the receiver is set to display. User can select source channel via the provided remote control.

5. Power Input Port

Connect 5V DC power supply to this input port.

6. RJ45 Port

Connect a 100Ohm Cat.6 cable between this input port and the RJ45 output port from Transmitter unit or Gigabit network switch.

Note: for best performance we encourage the use of Stranded CAT6A shielded cable STP (750Mhz), as a minimum though please ensure CAT6 UTP (550Mhz) cable is used or poor performance may result.

7. HDMI Output Port

Connect one HDMI cable between this output port and HDMI input port of HDTV display.

8. RS232 Extender Port

Connect a serial communications port to this 3.5 mm connector for bidirectional RS-232 communication.

Port Setup Parameters:

Baud Rate : 2400.

Data: 8bit.

Parity: none.

Stop:1bit.

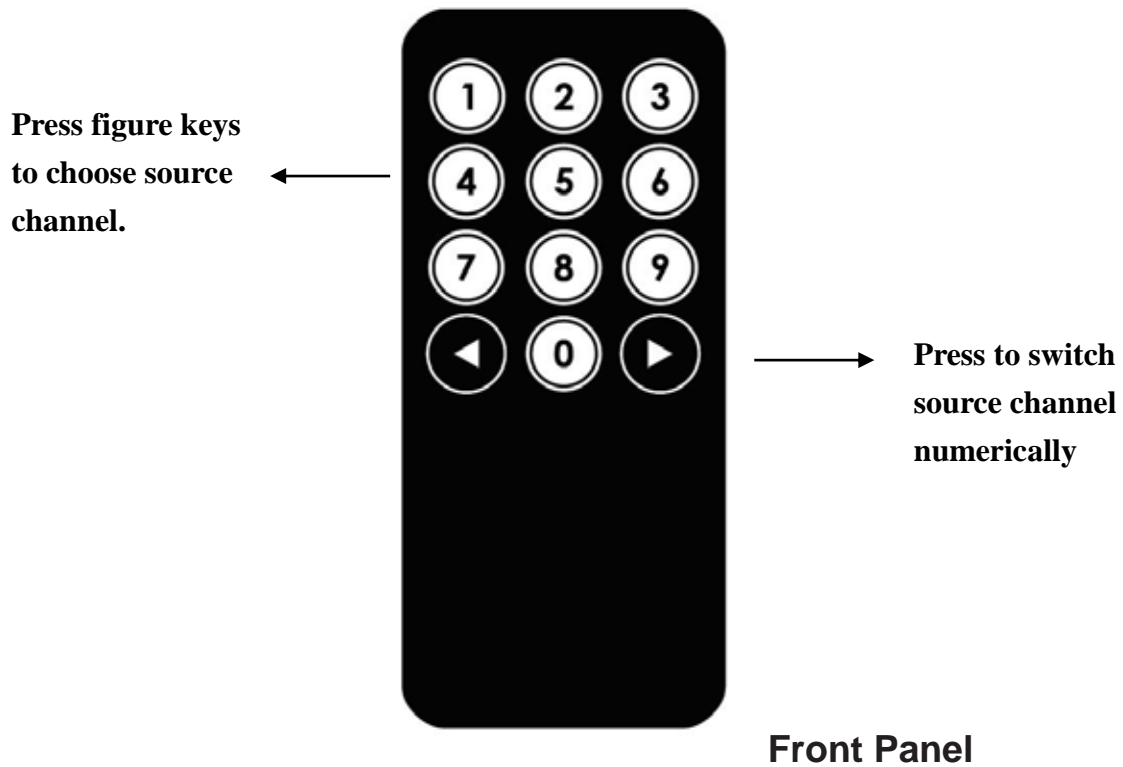
Flow Control: none.

9. Reset

Occasionally like many network devices (routers, modems etc) it may be necessary to reset the Receiver. This can be done by using a small tool (eg: toothpick) to gently press and hold the reset switch for approximately 3 seconds. Upon releasing the switch the unit will reboot and restore its factory settings. Source channel settings will remain as previously set and normal function should resume shortly. Alternatively removing the Power Supply from the Power Input Port for approximately 5 minutes will achieve the same result.

REMOTE CONTROL

PANEL LAYOUT & DISCRPTION



1. Figure Keys : 0-9

The figure keys allows user to key in the source channel and shows channel number on LED display of receiver. (It is ten-digit on LED display, from CH00 – CH99, limitation depends on the quantity of sources).

2. Upward Selection Button

This button allows user to switch to a higher source channel (from source 00 to source 63). Hold this button down to change quickly.

3. Downward Selection Button

This button allows user to switch to a lower source channel (from source 63 to source 00). Hold this button down to change quickly.

CONNECTING AND OPERATING

How to Connect HDMI Over IP Extender with LED One Source to One Display

1. Connect one HDMI Cable between the HDMI output port of source device and the HDMI input port of Transmitter unit (5 Meters Max)
2. Connect one HDMI Cable between the HDMI input port of display device and the HDMI output port of Receiver unit. (5 Meters Max)
3. Connect one 100 Ohm Cat.6 cable between the RJ45 port of Transmitter unit and RJ45 port of Receiver unit.

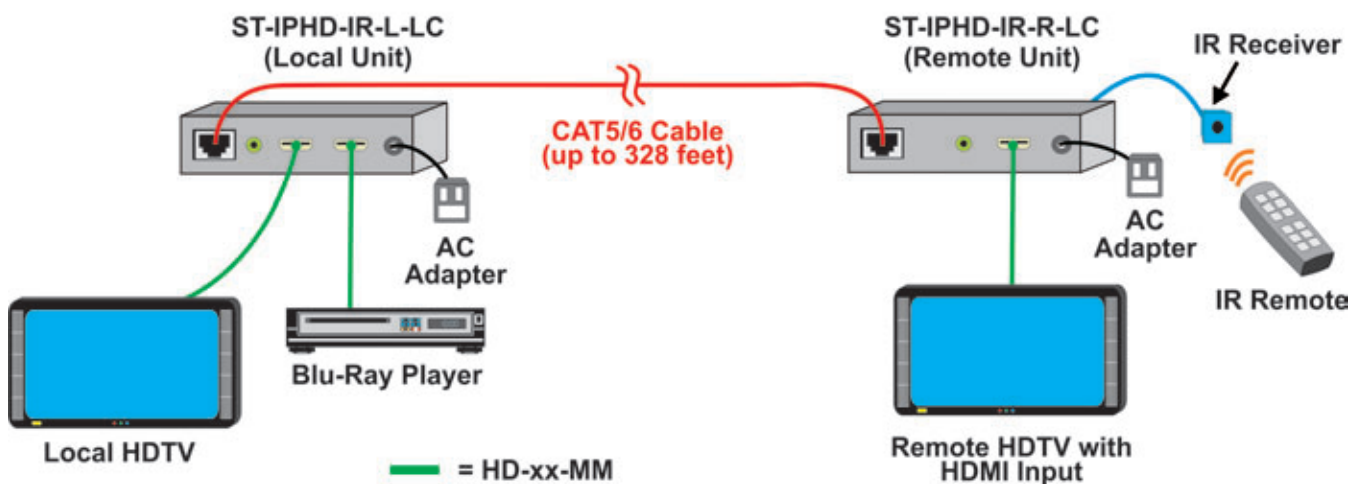
Note: CAT.6 is to be no longer than 100 meters in length and should not run parallel to mains power cables.

4. Connect 5V DC power supplies to both Transmitter and Receiver unit.
5. Power on the display device first and then the source device.
6. Use the supplied remote control to select the related channels that have been set to on the transmitters.

Note:

IR Function is able to receive signal from the IR remote control of your source device and the remote control supplied with the Receiver unit.

Configure Point-to-Point Connections



CONNECTING AND OPERATING

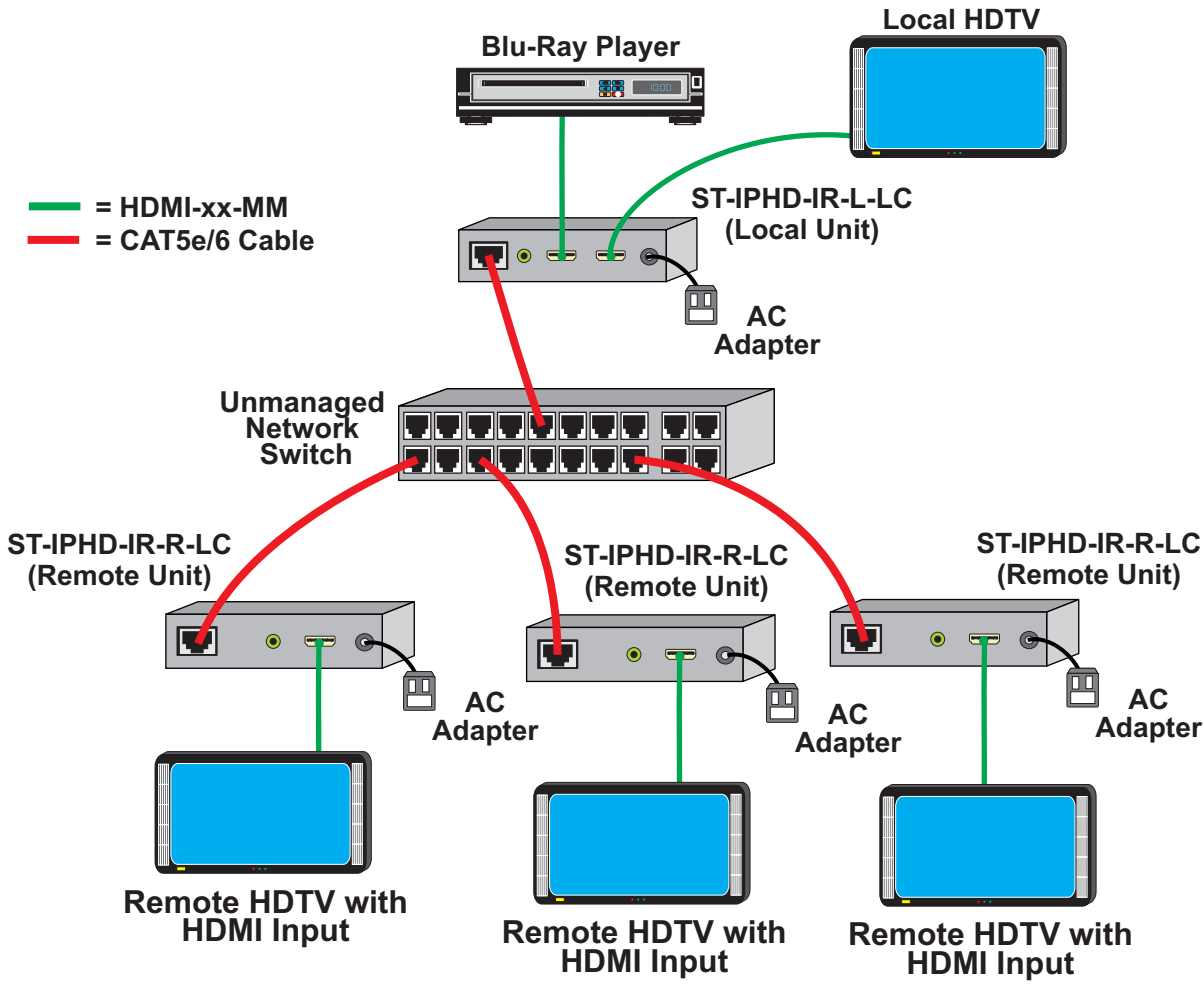
How to Connect HDMI Over IP Extender with LED One Source to Many Displays

1. Connect one HDMI Cable between the HDMI output port of source device and the HDMI input port of Transmitter unit (5 Meters Max)
2. Connect one HDMI Cable between the HDMI input port of display device and the HDMI output port of Receiver units. (5 Meters Max)
3. Connect one 100 Ohm Cat.6 cable between the RJ45 port of transmitter and input port of a Full Duplex Gigabit Ethernet switch (consult your network specialist for advice on choosing a suitable Gigabit switch). Note: CAT.6 is to be no longer than 100 meters in length and should not run parallel to mains power cables.
4. Connect one 100 Ohm Cat.6 cable between the output ports of the Full Duplex Gigabit Ethernet switch and RJ45 port of each Receiver unit. Note: CAT.6 is to be no longer than 100 meters in length and should not run parallel to mains power cables.
5. Connect 5V DC power supplies to both Transmitter and Receiver unit.
6. Power ON the Display device first and then the source device.
7. Use the supplied remote control to select the related channels that the transmitters have been set to.

Note:

1. IR Function is able to receive signal from the IR remote control of your source devices (or Universal Remote Control) and the remote control supplied with the Receiver unit.
2. As the Transmitter units can support over 60,000 IP address for different receiver units, it can connect up to 60,000 Receiver units at once, this function, however, is completely limited by the Gigabit LAN's Bandwidth capacity. At times it may be necessary to reduce the output resolution of your source devices to compensate for lower than required bandwidth availability within the network.
3. Please note that the Ethernet switch should be a Full Duplex Gigabit Ethernet switch.

Configure Point-to-Many Connections using Un-Managed Network Switch



CONNECTING AND OPERATING

How to Connect HDMI Over IP Extender with LED Many Sources to Many Displays

1. Connect one HDMI Cable between the HDMI output port of source device and the HDMI input port of Transmitter unit (5 Meters Max)
2. Connect one HDMI Cable between the HDMI input port of display device and the HDMI output port of Receiver unit. (5 Meters Max)
3. Connect one 100 Ohm Cat.6 cable between the RJ45 port of each transmitter and the input ports of a Full Duplex Gigabit Ethernet switch (consult your network specialist for advice on choosing a suitable Gigabit switch). Note: CAT.6 is to be no longer than 100 meters in length and should not run parallel to mains power cables.
4. Connect one 100 Ohm Cat.6 cable between the output ports of the Full Duplex Gigabit Ethernet switch and RJ45 port of each Receiver unit. Note: CAT.6 is to be no longer than 100 meters in length and should not run parallel to mains power cables.
5. Connect 5V DC power supplies to all Transmitter units and Receiver units.
6. For each Transmitter, please use a different DIP switch combination to differentiate its ID. User can connect at most 64 Transmitters to the system as our DIP switch gives at most 64 combinations. After setting up ID for each Transmitter, users can select the required source device which is chosen to display on each screen by using the supplied remote control with each Receiver unit to select the associated channel.

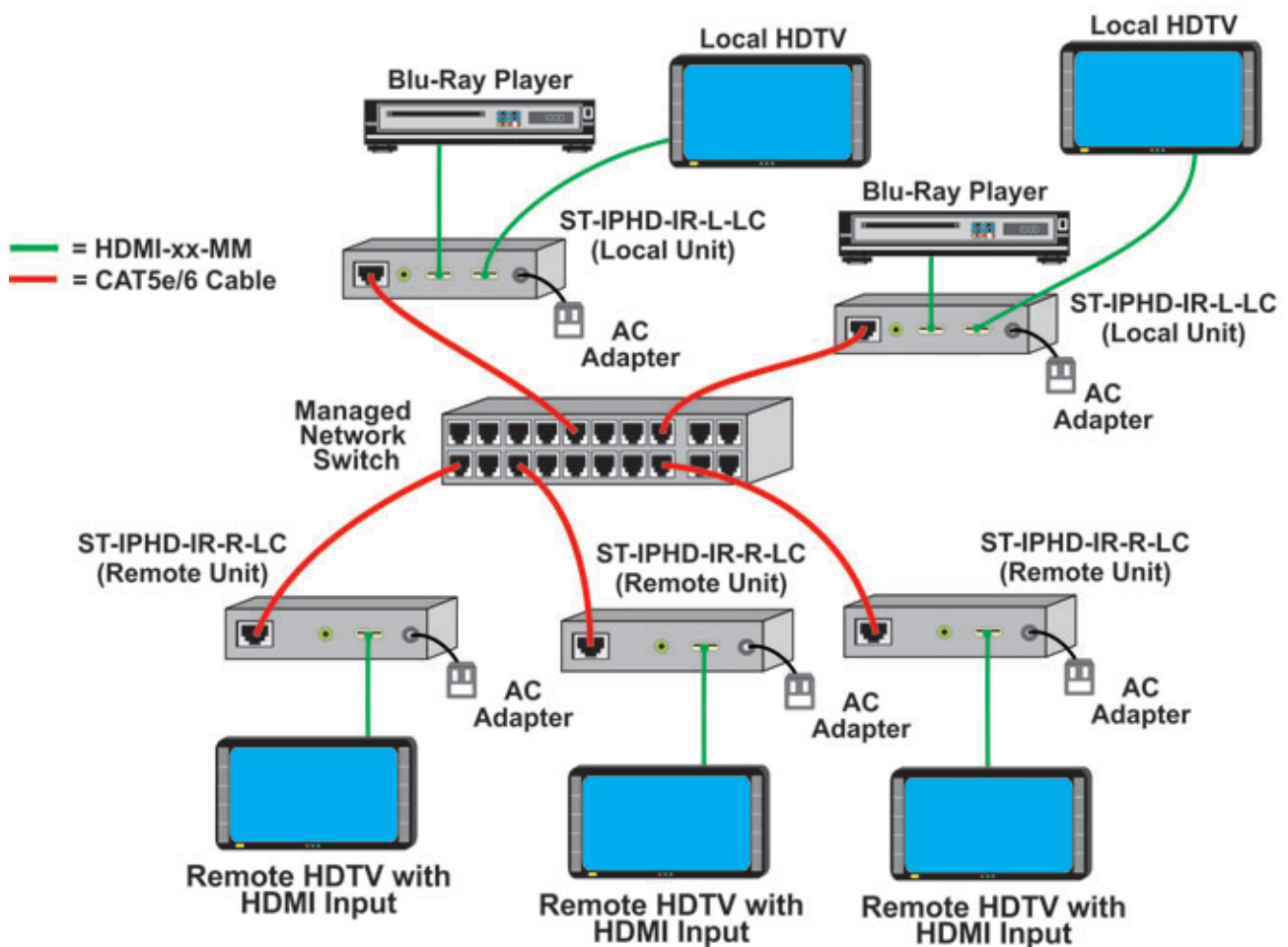
Note.

1. IR Function is able to receive signal from the IR remote control of your Source Device and the IR remote control Supplied with the Receiver unit.
2. As the Transmitter units can support over 60,000 IP address for different receiver units, it can connect up to 60,000 Receiver units at once, this function however is completely limited by the Gigabit LAN's Bandwidth capacity. At times it may be necessary

to reduce the output resolution of your source devices to compensate for lower than required bandwidth availability within the network.

3. Users can connect at most 64 Transmitters to the system.
4. Please note that the Ethernet switch should be a Full Duplex Gigabit Ethernet switch that supports IGMP functions.

Configure Many-to-Many Connections using Managed Network Switch



SPECIFICATION

PERFORMANCE	
HDTV Resolutions	480p, 720p, 1080i, 1080p
Color Depth	8 Bit
Audio Format	PCM 2 Ch audio
IR Range	30 kHz to 50 kHz
Maximum Cable Range	HDMI Input: 5 meters Max, HDMI Outputs: 5 meters Max
Video Bandwidth	150MHz via LAN
Input Video Signal	3.3 Volts P-P
Input DDC Signal	5.0 Volts P-P
I/O CONNECTORS	
Transmitter	
Inputs	1 x HDMI-A 19PIN Socket
	1 x 2.5mm DC Jack
	1 x 3.5mm RS232 Extender
Outputs	1 x RJ45 Jack
	1 x HDMI-A 19PIN Socket
Receiver	
Inputs	1 x RJ45 Jack
	1 x 2.5mm DC Jack
	1 x 3.5mm RS232 Extender
Outputs	1 x HDMI-A 19PIN Socket
	1 x 3.5 mm Jack - IR Receiver
MECHANICAL	
Transmitter	
Dimensions (H-W-D)	155x79x25mm
Weight	0.7kg
Receiver	
Dimensions (H-W-D)	155x101.5x25mm
Weight	0.6kg
WARRANTY	

Limited Warranty	24 months
ENVIRONMENTAL	
Operating Temperature	+0 to +40° C (+32° to 104° F)
Operating Humidity	10% to 85% (Non-condensing)
Storage Temperature	-20° to +60° (+20° to +140° F)
Storage Humidity	10% to 85% (Non-condensing)
POWER REQUIREMENTS	
External Power Supply	5VDC@2.5A
SAFETY	
Certificate	FCC, CE, RoHS
Power Adapter	UL, FCC, CE, RoHS

Appendix 1.

There are 64 combinations for the DIP switch, please refer to the following table which defines 64 source channels for the Transmitter.

CH	Combination	CH	Combination
00	000000	16	000010
01	100000	17	100010
02	010000	18	010010
03	110000	19	110010
04	001000	20	001010
05	101000	21	101010
06	011000	22	011010
07	111000	23	111010
08	000100	24	000110
09	100100	25	100110
10	010100	26	010110
11	110100	27	110110
12	001100	28	001110
13	101100	29	101110
14	011100	30	011110
15	111100	31	111110

CH	Combination	CH	Combination
32	000001	48	000011
33	100001	49	100011
34	010001	50	010011
35	110001	51	110011
36	001001	52	001011
37	101001	53	101011
38	011001	54	011011
39	111001	55	111011
40	000101	56	000111
41	100101	57	100111
42	010101	58	010111
43	110101	59	110111
44	001101	60	001111
45	101101	61	101111
46	011101	62	011111
47	111101	63	111111

Note:

0 = ▽ Down

1 = △ Up

