

# USER MANUAL

## HDMI over IP EXTENDER



## Introduction:

The HDMIRHRX101120M is a sophisticated many to many HDMI over IP extender. HDCP 2.0 compliant and resolutions up to 1080P full HD and 1920x1200 (WUXGA) are supported. Multiple receivers can simultaneously connect to any transmitters from a virtual crosspoint matrix of 16 transmitters and many receivers up to 65,000 units theoretically.

## Features:

- ☒ HDMI signal extension up to 100 meters.
- ☒ Supports HDTV resolution up to 1080p .
- ☒ Supports PCM 2.1, 5.1 and 7.1 Ch Audio.
- ☒ Supports one-to-one, one-to-many and many to many connections via managed switch.
- ☒ Supports up to 16 transmitters by Dip switch selection or remote control.
- ☒ Supports up to theoretically 65,000 receivers.
- ☒ IR pass-through.
- ☒ Bi-directional RS232.
- ☒ Line in / Line out.
- ☒ Compliant with HDMI 1.3c and HDCP 2.0 standards.
- ☒ Audio and video are transmitted digitally over the 100Ohm Cat.6 cable for lower signal loss.
- ☒ TV will show display source channel, which is easier for end user to control.
- ☒ LED Digital Display.
- ☒ Remoter control (16 key remoter)

## Specification:

<b>PERFORMANCE</b>	
HDTV Resolutions	480p, 720p, 1080i, 1080p
Color Depth	36 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
<b>I/O CONNECTORS</b>	
<b>Transmitter</b>	
	1 x HDMI-A 19pin socket
	1 x 3.5mm Jack for Microphone

Inputs	1 x 3.5mm Jack for IR extender
	1 x 2.5mm DC Jack for Power
	1 x DB9pin for RS232
Outputs	1 x RJ45 Jack
	1 x HDMI-A 19PIN Socket
	1 x 3.5mm Jack for speaker 1 x 3.5mm Jack for IR Emitter
<b>Receiver</b>	
Inputs	1 x RJ45 Jack
	1 x 3.5mm Jack for Microphone
	1 x 3.5mm Jack for IR extender
	1 x 2.5mm DC Jack for Power
Outputs	1 x DB9pin for RS232
	1 x HDMI-A 19PIN Socket
	1 x 3.5mm Jack for speaker 1 x 3.5mm Jack for IR Emitter
<b>MECHANICAL</b>	
<b>Transmitter</b>	
Dimensions (H-W-D)	200*105*27mm
Weight	0.6kg
<b>Receiver</b>	
Dimensions (H-W-D)	200*105*27mm
Weight	0.61kg
<b>WARRANTY</b>	
Limited Warranty	1 Year Parts and Labor
<b>ENVIRONMENTAL</b>	
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)
<b>POWER REQUIREMENTS</b>	
External Power Supply	5VDC@2.5A
<b>SAFETY</b>	
Certificate	FCC, CE, RoHS
Power Adapter	UL, FCC, CE, RoHS

## DIPSW Remoter select switch



When switch to DIPSW side the system select to DIP function  
 When switch to Remoter side the system select to Remoter function

### 1.. DIP function:



Switch set to DIPSW side.

Setting dip switch to the channel you want (channel 1~9,a,b,c,d,e,f,h, max 16 channel )

When receiver HDMI out want to display transmitter HDMI input ,set the receiver and transmitter DIPSW same each other.

CH	LED Display	DIP4	DIP3	DIP2	DIP1
1	1	ON	ON	ON	ON
2	2	OFF	ON	ON	ON
3	3	ON	OFF	ON	ON
4	4	OFF	OFF	ON	ON
5	5	ON	ON	OFF	ON
6	6	OFF	ON	OFF	ON
7	7	ON	OFF	OFF	ON
8	8	OFF	OFF	OFF	ON
9	9	ON	ON	ON	OFF
10	a	OFF	ON	ON	OFF
11	b	ON	OFF	ON	OFF
12	C	OFF	OFF	ON	OFF
13	d	ON	ON	OFF	OFF

14	E	OFF	ON	OFF	OFF
15	F	ON	OFF	OFF	OFF
16	H	OFF	OFF	OFF	OFF

1.. Remoter function:



Switch set to remote side

Push the remote button select the channel you want.

CH	LED Display	Remote key
1	1	1
2	2	2
3	3	3
4	4	4
5	5	5
6	6	6
7	7	7
8	8	8
9	9	9
10	a	10
11	b	11
12	c	12
13	d	13
14	E	14
15	F	15
16	H	16

When receiver HDMI out want display transmitter HDMI input ,set the receiver and transmitter DIPSW same each other

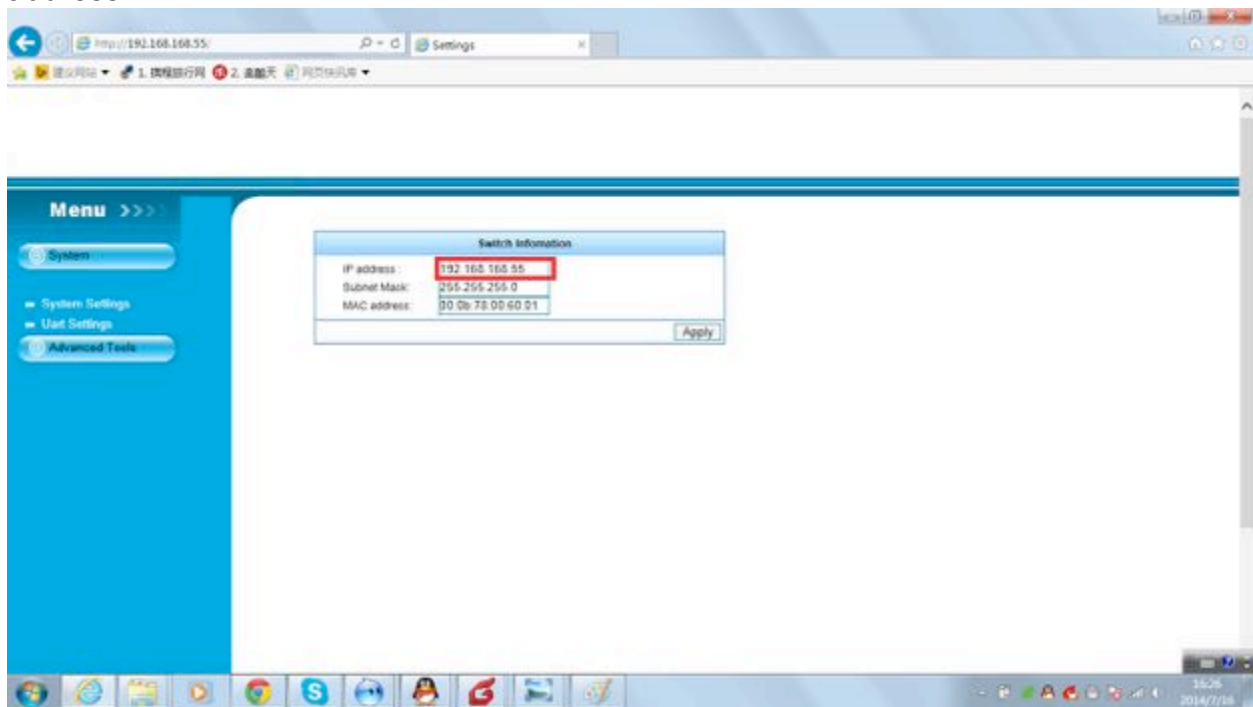
## Matrix Function setting

When you need many input(Transmitter) and many out(Receiver) matrix function you need a internet switch ,this internet switch must have a **IGMP** function and the IGMP function must be enable.

Input each Transmitter IP address and Mac address must difference . Output each Receiver IP address and Mac address must difference .

Transmitter input IP address 192.168.168.55 on IE address field can change IP address

Receiver input IP address 192.168.168.56 on IE address field can change IP address.



Many Transmitter IP address example set to 192.168.168.50, 192.168.168.51, 192.168.168.52, 192.168.168.53, 192.168.168.54, 192.168.168.55...

Many Transmitter Mac address example set to 00: 0b:78:00:01 , 00: 0b:78:00:03, 00: 0b:78:00:05...

Many Receiver IP address example set to 192.168.168.56, 192.168.168.57, 192.168.168.58, 192.168.168.59, 192.168.168.60, 192.168.168.61...

Many Receiver Mac address example set to 00: 0b:78:00:02, 00: 0b:78:00:04, 00: 0b: 78:00:06...

## RS232 Operation:

This function operated by Super Terminal firmware.

Transmitter Device (TX) IP address is: use your set IP address example 192.168.168.55

Receiver. Device (RX) IP address is: use your set IP address example 192.168.168.56

1)Setting RS232 port:

Baud rate: 115200

Data bits: 8

Parity: none

Stop bits: 1

Flow control: none

2)Operation:

**Note: The RS232 commands can be sent from TX to RX or RX to TX are both available.**

a) From **Transmitter(TX)** send data to **Reviver(RX)**:

First write **Receiver** IP address (**192.168.168.56**), HEX format **C0 A8 A8 38**, then write your data (**ASCII CODE**), and then press “send” key, the data will be sent to **Receiver RS232 port**.

b) From **Receiver(RX)** send data to **Sender(TX)**:

First write **Sender** IP address (**192.168.168.55**), HEX format **C0 A8 A8 37**, then write your data (**ASCII CODE**), and then press “send” key, the data will be sent to **Sender RS232 port**.

## Reset Function

Press reset key short the system will reset

Press reset key more than 5s the system will back factory setting

Transmitter Device (TX) IP address will go back 192.168.168.55

Receiver Device(RX) IP address will go back 192.168.168.56

## CONNECTION DIAGRAM

Diagram-1

one-to-one

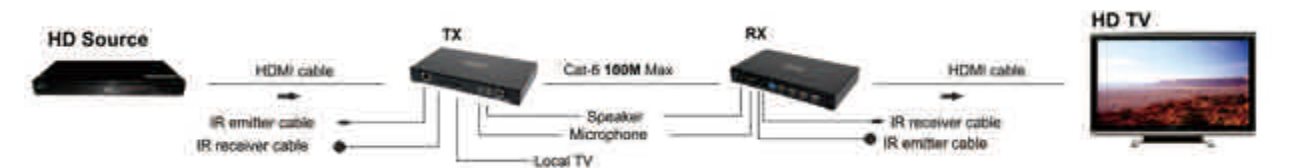


Diagram-2  
one-to-many

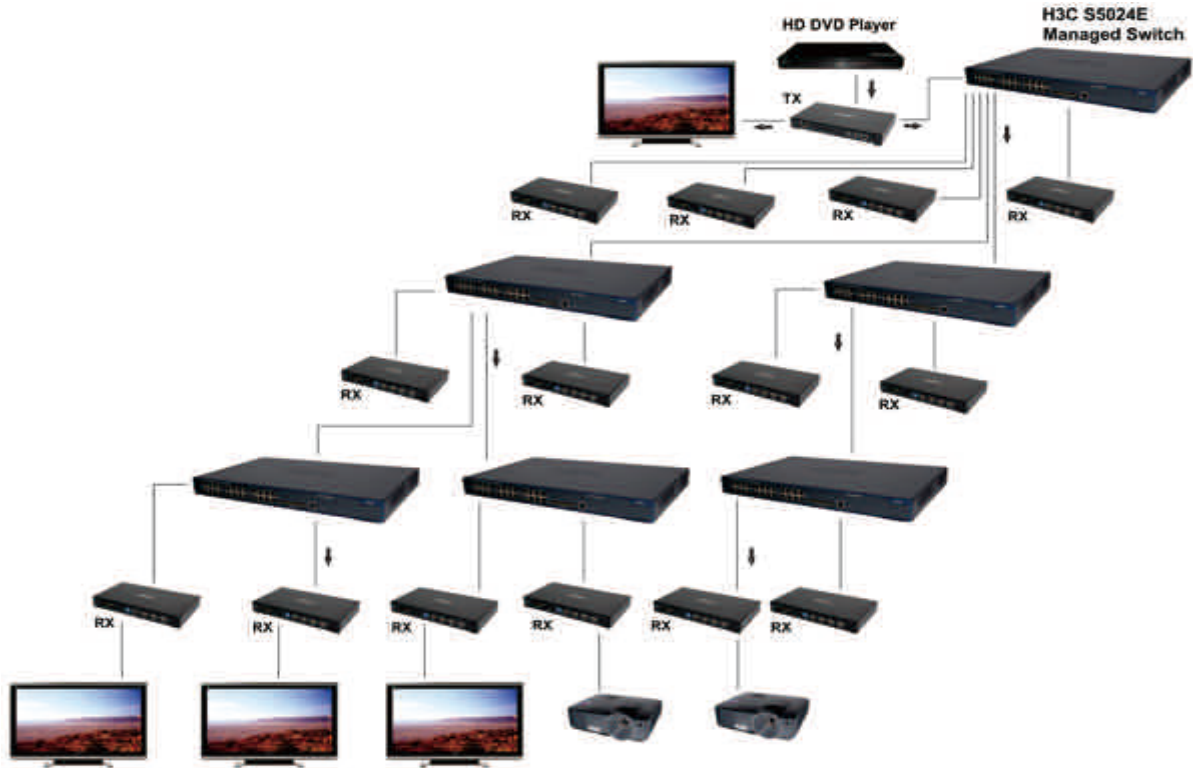


Diagram-3  
many-to-many

