Warranty Terms and Conditions DATATRONIX 1-Year Limited Warranty DATATRONIX. (the "Company") warrants to the Original Purchaser that the item purchased is free from defects in workmanship or material under normal use. This warranty starts on the date of shipment of the hardware to the Original Purchaser. During the warranty period, the Company agrees to repair or replace, at its sole option, without charge to Original Purchaser, any defective component. To obtain service, the Original Purchaser must return the item to the Company properly packaged for shipping. All defective products must be returned to the Company within thirty (30) days of failure. Products must be returned with a description of the failure and Return Merchandise Authorization (RMA) number supplied by the Company. To receive an RMA number and a return shipping address on where to deliver the hardware, call 610-429-1821. The shipping, and insurance charges incurred in shipping to the Company will be paid by Original Purchaser, and all risk for the hardware shall remain with the Original Purchaser until such time as Company takes receipt of the hardware. Upon receipt, the Company will promptly repair or replace the defective unit, and then return said unit to Original Purchaser, shipping prepaid. The Company may use reconditioned or like-new parts or units, at its sole option, when repairing any hardware. Repaired products shall carry the same amount of outstanding warranty as from original purchase. Any claim under the warranty must include dated proof of purchase or invoice. In any event, the Company's liability for defective hardware is limited to repairing or replacing the hardware. This warranty is contingent upon proper use of the hardware by Original Purchaser and does not cover: if damage is due to Acts of God (including fire, flood, earthquake, storm, hurricane or other natural disaster), accident, unusual physical, electrical, or electromechanical stress, modifications, neglect, misuse, operation with media not approved by the Company, tampering 26 with or altering of the hardware, riot, war, invasion, act of foreign enemies, hostilities (regardless of whether war is declared), civil war, rebellion, revolution, insurrection, military or usurped power or confiscation, terrorist activities, nationalization, government sanction, blockage, embargo, labor dispute, strike, lockout or interruption or failure of electricity, air conditioning, or humidity control, internet, network, or telephone service The warranties given herein, together with any implied warranties covering the hardware, including any warranties of merchantability or fitness for a particular purpose, are limited in duration to one year from the date of shipment to the Original Purchaser. Jurisdictions vary with regard to the enforceability of warranty limitations, and you should check the laws of your local jurisdiction to find out whether the above limitation applies to you. The Company shall not be liable to you for loss of data, loss of profits, lost savings, special, incidental, consequential, indirect, or other similar damages arising from breach of warranty, breach of contract, negligence, or other legal action even if the Company or its agent has been advised of the possibility of such damages, or for any claim brought against you by another party. Jurisdictions vary with regard to the enforceability of provisions excluding or limiting liability for incidental or consequential damages. You should check the laws of your local jurisdiction to find out whether the above exclusion applies to you. This warranty allocates risks of product failure between Original Purchaser and the Company. The Company's hardware pricing reflects this allocation of risk and the limitations of liability contained in this warranty. The warranty set forth above is in lieu of all other express warranties, whether oral or written. The agents, employees, distributors, and dealers of the Company are not authorized to make modification to this warranty, or additional warranties binding on the Company. Accordingly, additional statements such as dealer advertising or presentations, whether oral or written, do not constitute warranties by the Company and should not be relied upon. This warranty gives you specific legal rights. You may also have other rights which vary from one jurisdiction to another.

DATA-TRONIX®

DT-HDVD-M2MLT-ENC

H.264 HDMI video Encoder

and

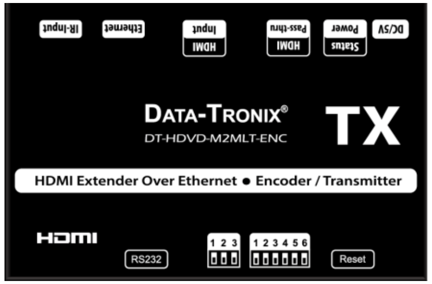
DT-HDVD-M2MLT-RX

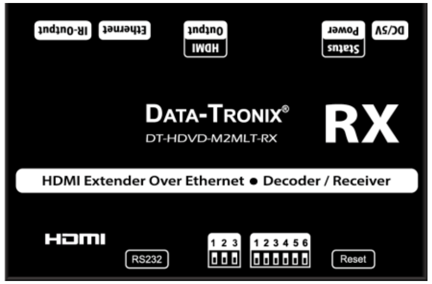
H.264 HDMI video Decoder

Data-Tronix®

Version: V1.0.0

Operating Instruction





Introduction

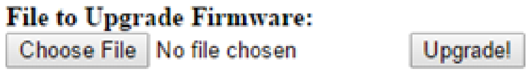
This HDMI over IP Extender uses H.264 compression. It supports transmission up to 330’ over a single cat5e/6 cable when the TX and RX are connected directly using an ethernet cable (no switch) also known as point to point. When using an ethernet switch topology, the signal transmission length will be consistent with Ethernet distance limitations. For extremely long runs, fiber optic transmission systems can be employed.

1. Features

1). Uses H.264 compression
2). Supports resolutions up to 1080p @ 60HZ, with data transmission speed up to 2.25 Gbps
3). Supports LPCM audio format, sample rate is 48 kHz
4). Complies with TCP/IP protocol for transmission, with streaming bit rates up to 15Mbps.
5). HDCP compliant
6). Supports RS232 pass through
7). Supports Wide-band IR (38 kHz ~ 56 kHz)
8). Supports single and multi-point configurations
9). Supports DHCP, automatic assignment for Transmitter and Receiver
10). 3 Bit DIP switch to manage baud rate
11). 6 Bit DIP switch to manage group ID
12). Local HDMI output on transmitter
13). 5V DC 1A power supply, power consumption is less than 3 W

7. Firmware update

Firmware updates if available can be obtained by contacting Data-Tronix. Please follow the steps below to update the firmware.
Step1: Connect TX / RX to a PC with a network cable (cat5/etc.)
Step2: Power on TX/ RX with the supplied power adapter.
Step3: Login TX or RX with their default IP (TX: 192.168.1.11; RX: 192.168.1.12) on web browser, TX requires user name: **admin** and password: **admin**
Step4: Click “choose File” on the interface and select the update file.
Step5: Click “Upgrade”, the process will take a few seconds, please **DO NOT** interrupt or power off the units during the time.



8. Factory reset

If needed, you can perform a factory reset of the TX / RX by inserting a pin into the reset hole, and holding for 10 second while the unit is powered on.

9. After sale Service and Warranty

See following page for full warranty information

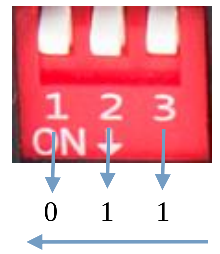
6.2 Baud rate setting for System communication and RS232 Data

6.2.1 Use the 3-Bit DIP Switch to select the desired Baud rate

The 3 Bit switch is binary as well, when in the “UP” position, its value is “0”; when pulled down, its value is “1”. The table below details the switch positions to obtain the desired baud rate.

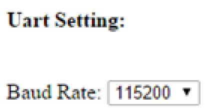
000 = 2400 (default)
001 = 4800
010 = 9600
011 = 19200
100 = 28800
101 = 38400
110 = 57600
111 = 115200

Change the baud rate according to your RS232 devices’ baud rate. the DIP setting order is 321, for example DIP setting 110 the first number “1” follows the 3rd Bit, the 3rd number “0” follows the first Bit, it will be 011 on the DIP switch



6.2.2 Setting the Baud rate via Web Browser

Login to the TX and RX with their default IP (TX: 192.168.1.11; RX: 192.168.1.12) to modify the Baud Rate which ranges from 2400 (default) to 115200.



Note ※When you change the Baud rate on both Web browser and 6 Bit DIP switch, the units will adopt the most recent change.
※Please send the data in the same group ID.

2. Specifications

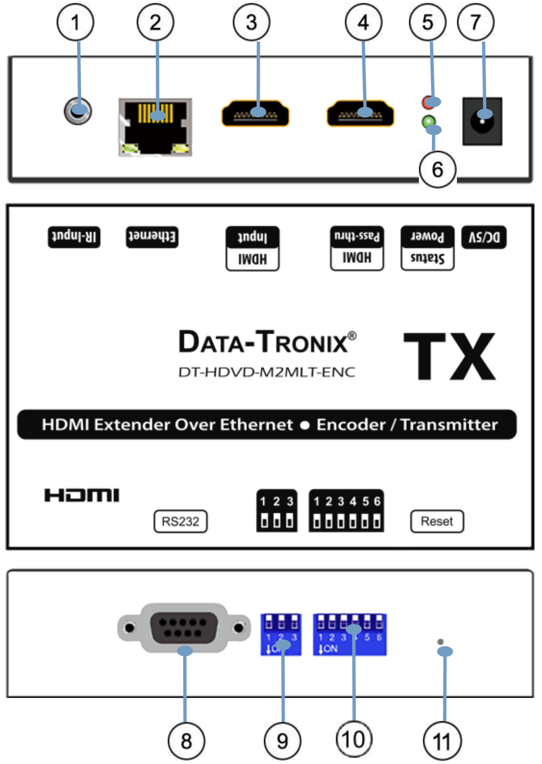
Performance	
Protocol	H.264 encoding over TCP/IP
Support Video format	480i/480p/576i/576p/720p/1080i/1080p@60HZ
Support Audio format	LPCM, Audio sampling rate 48kHz
Streaming Bit Rate	15Mbps
HDCP	Compliant
IR Frequency	38 -56 kHz
RS232 Baud rate	2400 (default) - 115200
IP setting &Group ID setting	
Default IP	TX: 192.168.1.11 ; RX: 192.168.1.12
Group ID	Group 00 - group 63
Request for Switch/Router	Support IGMP, support DHCP
Connectors on Transmitter	
Input	1xHDMI Female port
Output	1x RJ45 output , 1x HDMI local output
RS232	DB9 Female port
IR	IR TX port
Connectors on Receiver	
Input	1xRJ45 input
Output	1x HDMI Female port
RS232	DB9 Male port
IR	IR RX port
Environmental & Power Requirements	
Operating temperature	23° to 95°F
Operating Humidity Range	5% to 90%RH (No Condensation)
Power supply	5V DC 1A
Power consumption	Max 3 watt
Physical	
Dimension	4.7”x3.1”x1.1”
Net Weight	TX: 0.6 lbs. : RX:0.6 lbs.

3. Packaging contents

1). 1x Transmitter (TX)
2). 1x Receiver (RX)
3). 1x IR-Emitter
4). 1x IR-Receiver
5). 1x Manual
6). 2x Power adapters (5V DC 1A)

4. Panel description

1). TX



1) IR-TX
2) CAT5e/6 output
3) HDMI input
4) HDMI output for local display
5) Red indicator of power input①
6) Green indicator of data status②
7) 5V DC 1A power input
8) RS232 female
9) 3 Bit DIP for baud rate
10) 6 Bit DIP for group ID
11) Reset button

Note ①The LED indicator will glow bright red once the power supply is connected.
②The green LED will blink while the unit is in operation.

6. RS232 and Baud rate

The unit provides a path to pass through RS232 signals, RS232 passes from TX to RX or from RX to TX. You can connect to various RS232 devices, such as PCs, IP Cameras, Creston control panels, Smart Matrix, etc. TX, RX, and RS232 device must be all utilizing the same baud rate settings.

6.1 RS232 Connector

The TX and RX use the DB-9 connector, TX: Female connector; RX: Male connector.

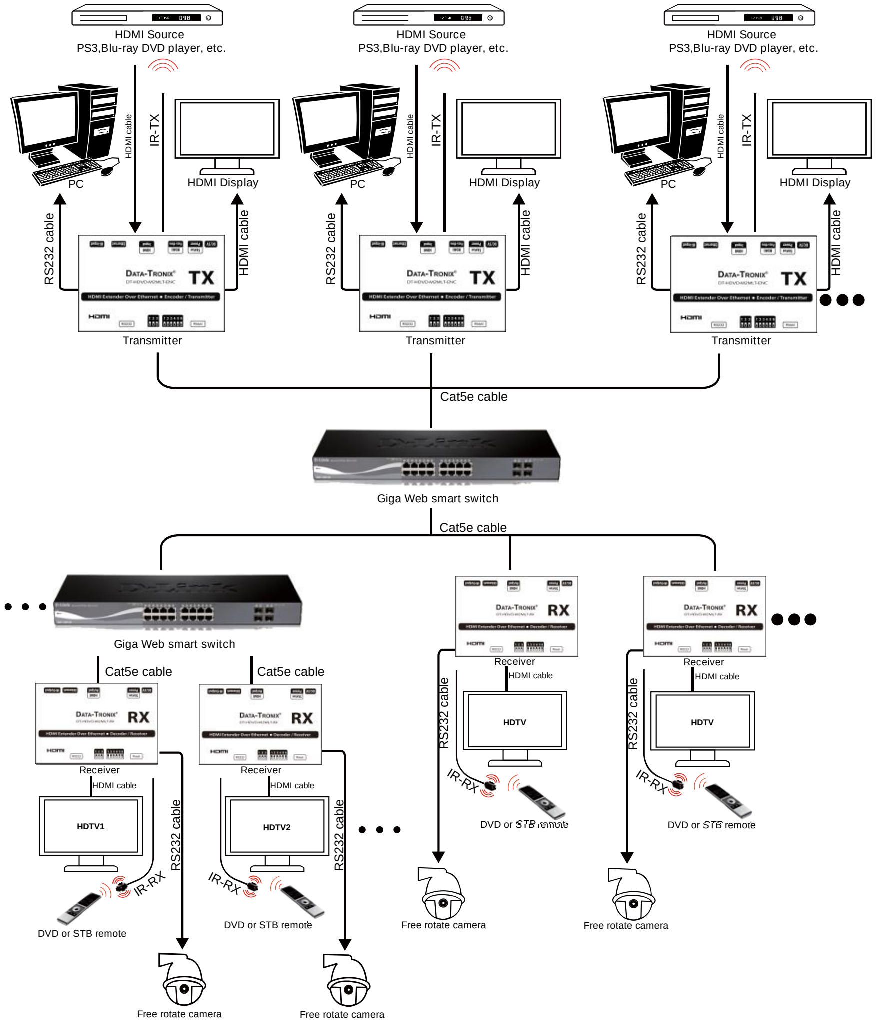
```
DB-9 Male（Pin Side）        DB-9 Female (Pin Side）
 -------------                -------------
 \ 1 2 3 4 5 /                \ 5 4 3 2 1 /
  \ 6 7 8 9 /                  \ 9 8 7 6 /
   ---------                    ---------
```

TX PIN Definition
1 NC
2 TxD
3 RxD
4 NC
5 GND
6 NC
7 NC
8 NC
9 NC
RX PIN Definition
1 NC
2 RxD
3 TxD
4 NC
5 GND
6 NC
7 NC
8 NC
9 NC

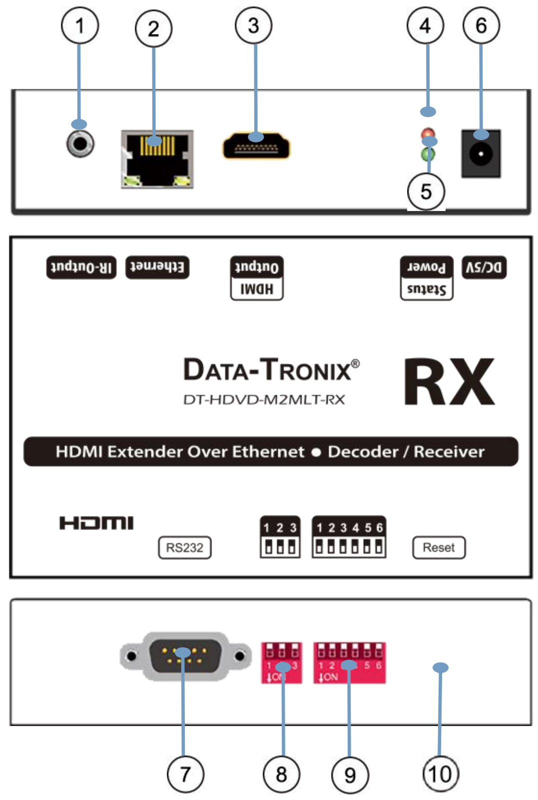
Baud Rate: 2400 (Default)
Data Bit: 8 bits
Parity: None
Stop Bit: 1 bit
Flow Control: None

Note ※The quantity of Transmitters is not to exceed more than 64 pcs. according to the 6-bit DIP switch.

※ The total quantity of Transmitters and Receivers cannot exceed 256 pcs. A single system cannot exceed 64 Transmitters.



2). RX



1) IR-Receiver 2) CAT5e/6 input 3) HDMI output

4) Red indicator of power input① 5) Green indicator of data status②

6) 5v DC 1A input 7) RS232 male 8) 3 Bit DIP for baud rate

9) 6 Bit DIP for group ID 10) reset button

Note ①The LED indicator will glow bright red once the power supply is connected.
②The green LED will blink while the unit is in operation.

5. Installation and Configuration

5.1 Setup HDMI TX and RX

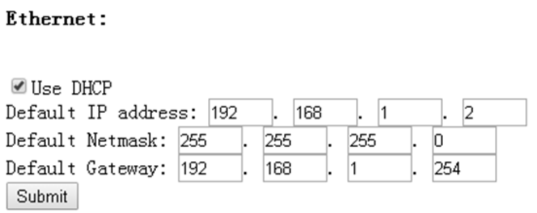
When connecting point to point, there is no need to configure the TX and RX;
When connecting multiple units, please make sure every TX and RX has unique IP and MAC address, every TX has a unique group ID (DIP switch).

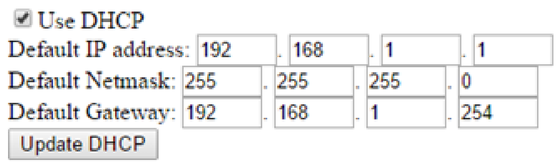
The DT-HDVD-2M2MLT has been assigned unique default MAC addresses for every TX and RX, so you do not need to set the MAC for each unit.
The IP address and group ID are the only aspects that need to be configured.

5.1.1 Setting the IP address

A). DHCP (Dynamic host configuration protocol)

If you are using a Switch that supports DHCP, please enable DHCP so that the Switch will assign a unique IP for the TX and RX,





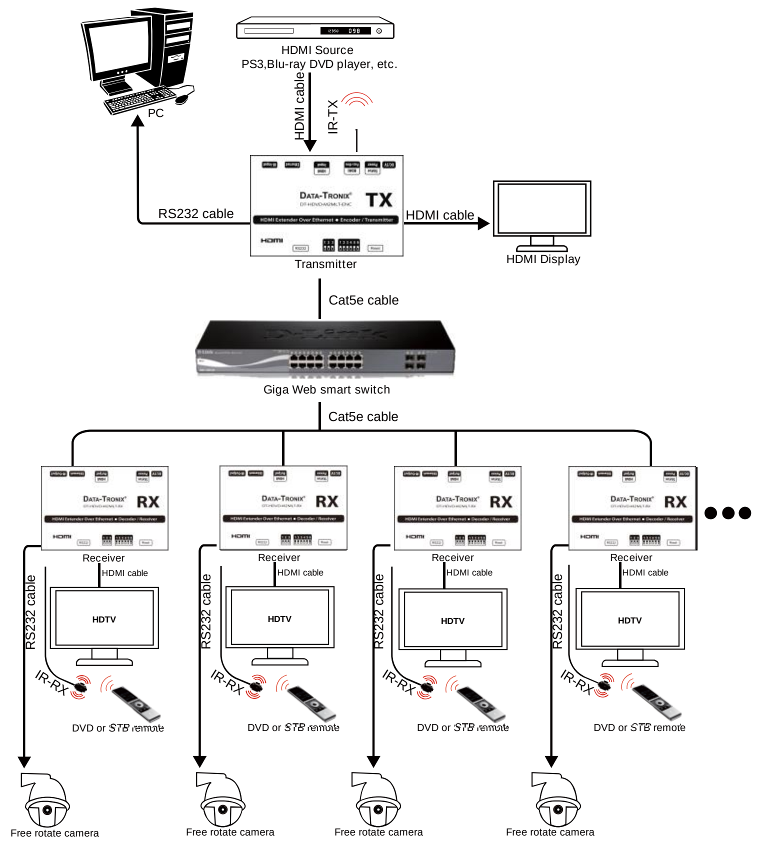
If you are using a Switch that does not support DHCP, please change the default IP for the TX (192.168.1.11) and the RX (192.168.1.12) manually.
An HTTP server is embedded in each TX and RX. You can set the IP addresses for the HDMI Extender via a web browser.

The default IP address of the **TX is 192.168.1.11,** user name: **admin**, password: **admin**
The default IP address of the **RX is 192.168.1.12**

Step 1: Access the Network Setting Control Panel in Windows and locate your LAN connection. Under Windows 7, this can be done by clicking Start > Control Panel >Network Sharing center>Change adapter settings >Properties >Internet Protocol Version4 (TCP/IPv4). Change the IP address field to 192.168.1.1(0-255). After that press "OK" to save the configuration.

Note ※The PC and TX/RX should be in the same subnet.
※The IP address of the PC should be different from the IP address of the TX and RX.

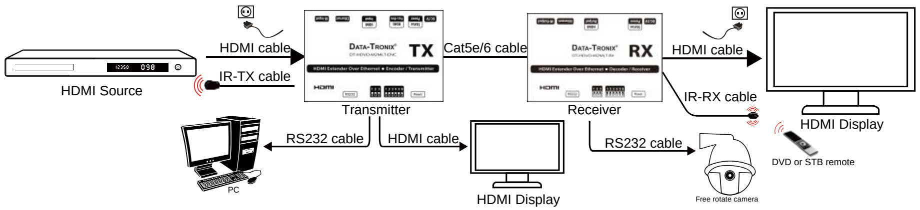
Step 2: Use an Ethernet Cable to connect the PC (or laptop) to the extender. The power LED for the extender is red and the green status is blinking.



5.3.3 Multi-point configuration

1. Set the IP address for the Transmitter & Receiver and prepare the switch according to the steps as instructed above (5.1.1&5.2)
2. Connect the source device and the Transmitter unit with a HDMI Cable.
3. Connect the HDMI loop output of the Transmitter to the local HDMI Display.
4. Connect the transmitters and the switch/router with a cat5e or cat6 cable
5. Connect the receivers and the switch/ router with Cat5e/6 cable
6. Connect the HDMI displays and the HDMI Receiver units with a HDMI Cable.
7. Connect the IR emitter into “IR TX” port of the transmitter; connect the IR Receiver into “IR RX” port of the receiver. Then you can control the source at the RX side with IR.
8. Connect one RS-232 Cable from the PC or automation system to the RS-232 port on the Transmitter; connect one RS-232 cable from the Receiver to the RS-232 device to be controlled.
9. Power on the Transmitter and Receiver with the included 5VDC 1A power supply,
10. Choose the source by DIP switch or Web browser as instructed above (5.1.2)

NOTE: Insert/Extract cables gently.

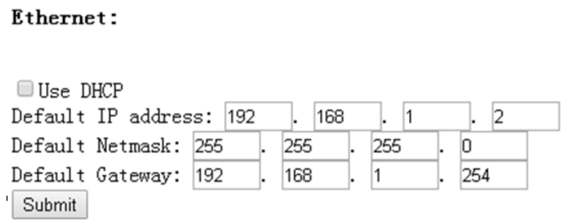


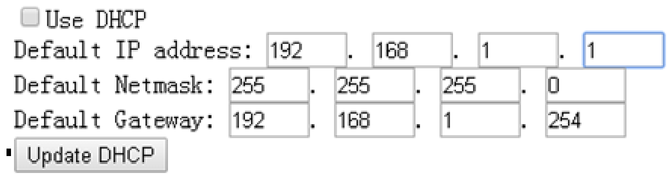
5.3.2 Single Transmitter to multi-point

1. Set the IP address for the Transmitter & Receiver and prepare the switch according to the steps as instructed above (5.1.1&5.2)
2. Connect the source device and the Transmitter unit with a HDMI Cable.
3. Connect the HDMI loop output of the Transmitter to the local HDMI Display.
4. Connect the transmitter and the switch/router with cat5e or cat6 cable.
5. Connect all the Receivers and the switch/ router with Cat5e/6 cable.
6. Connect the HDMI displays and the HDMI Receiver units with a HDMI Cable.
7. Connect the IR transmitter into "IR TX" port of the transmitter; connect the IR receiver into "IR RX" port of the receiver. Then you can control the source at the RX side with IR.
8. Connect one RS-232 Cable from the PC or automation system to the RS-232 port on the transmitter; connect one RS-232 cable from the Receiver to the RS-232 device to be controlled.
9. Power on the Transmitter and Receiver with the supplied 5VDC 1A power supply.

Note ※ You can daisy chain the switches if you need additional RJ45 ports.
※ The number of Receivers cannot exceed 255 pcs.

Step 3: Login with IE: 192.168.1.11 (default IP for TX) or 192.168.1.12(default IP for RX), TX requires user name: **admin** and password: **admin**
Please set IP address for each TX and each RX, IP: 192.168.1.XX (XX:1-255. all IP addresses for TX and RX must be different and can't be the same as the PC's address.)
Step 4: Click "Submit" (transmitter) or "Update DHCP" (receiver), to save changes.
Step 5: Click "reboot".





5.1.2 Set up Group ID for TX and RX

When using the multi-point configuration, it is required that the TX has unique group ID，RX can have the same group ID in which case multiple RX will match one TX.
When the TX and RX are within same group ID, they get matched in the same group and the RX will display the source TX in this group.
You can use the 6 -Bit DIP switch or a web browser to set up the group ID.

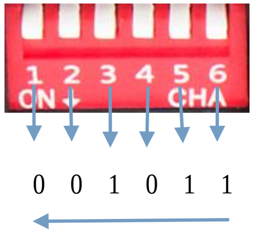
A）. Set the Group ID by 6-Bit DIP Switch

The group ID# is controlled by a 6 Bit binary switch, when the pin is pull up, its value is "0" ; when pulled down, its value is '1". The default setting is "000000"; below is the group number and DIP setting chart for reference.

Group ## = DIP setting

Group 00 = 000000
Group 01 = 000001
Group 02 = 000010
Group 03 = 000011
Group 04 = 000100
.
.
.
Group 60 = 111100
Group 61 = 111101
Group 62 = 111110
Group 63 = 111111

The DIP setting order is 654321, if you want to set 110100, the first number "1" follows the sixth Bit, the sixth number "0" follows the first Bit, so on the DIP switch it will be 001011



B).Set the group ID for TX and RX via web browser

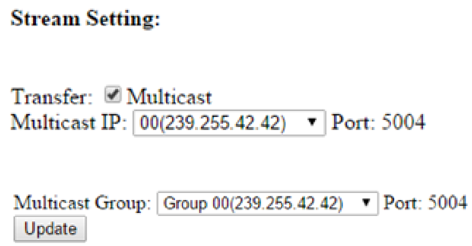
Step 1: Assign the PC (or laptop) IP address on the computer : "Control Panel"→" Network Connections"→"Local Area Connections Status"→"Properties"→"Internet Protocol (TCP/IP)", Type the IP address field with 192.168.1.1 (0-255) . After that press OK to save the configuration.

Step 2: Use an Ethernet Cable to connect the PC (or laptop) to the Extender. The power LED for the extender is red and the green status LED is blinking**.**

Step 3: Power on the TX or RX with the supplied 5VDC 1A power supply.

Step 4: Login in with IE: 192.168.1.11 (default IP for TX) or 192.168.1.12(default IP for RX), TX requires user name: **admin** and password: **admin**.

Step5: Change the group ID at "Stream Setting", "00" means group "00" .**You can select group 00 through 63.**
Step 6: Click "Submit" (transmitter) or update (receiver).



Note ※When you change the group ID on both Web browser and 6 Bit DIP switch, the units will follow the most recent change.

5.2 Preparing the switch

When doing a multi-point configuration, a switch is required to distribute the sources. We suggest you use a Switch that supports IGMP and DHCP. The IGMP feature helps to manage the group ID which is related to switch the sources; and DHCP allows the switch to assign an IP for the transmitters and receivers automatically.

5.3 Connection

Note ※Please don't insert or remove the HDMI cable when powered on. Please connect cables only when the power is off.

5.3.1 Point to point

1. Connect the source device and the Transmitter unit with a HDMI Cable.
2. Connect the HDMI loop output of the Transmitter to the local HDMI display.
3. Connect another HDMI display and the HDMI Receiver unit with a HDMI Cable.
4. Connect the Transmitter and Receiver with a Cat5e/6 cable
5. Connect the IR transmitter into "IR TX" port of the transmitter; connect the IR receiver into "IR RX" port of the receiver. Then you can control the source at the RX side with IR.
6. Connect one RS-232 Cable from the PC or automation system to the RS-232 port on the Transmitter; connect one RS-232 cable from the Receiver to the RS-232 device to be controlled.
7. Power on the Transmitter and Receiver with the supplied 5VDC 1A power supply.