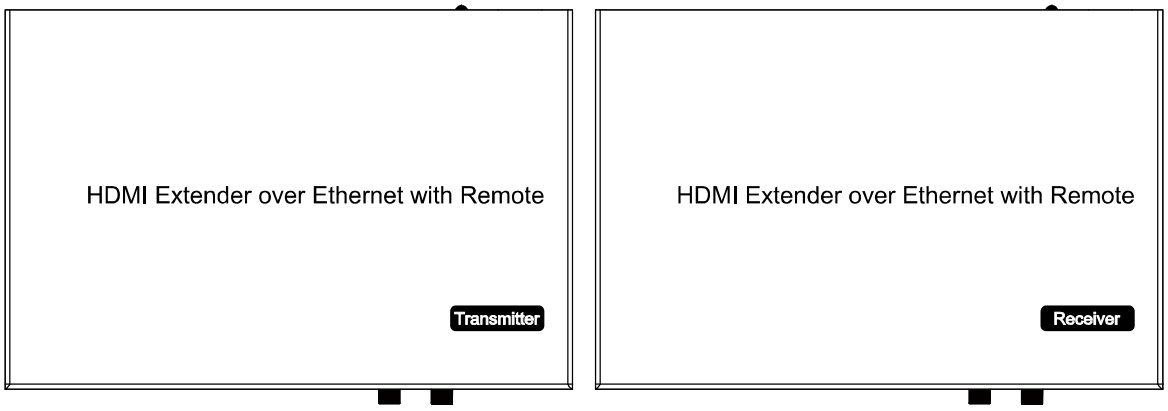
H.264 HDMI Extender over IP Extender With LED, Remote, POE, RS232

Operating Instruction



Introduction

This HDMI over IP Extender use the advanced H.264 as the compression type, which makes it occupy lower bandwidth and transmit over the LAN more smoothly. It supports 120m over single cat5e/6 cable at point to point, as well as point to many and many to many over Ethernet switch. The over IP solution is widely used in various locations, like meeting room, class room, metro, airport, home, mall advertisement...etc.

1. Features

1). Using H.264 compression encoding, support resolution up to 1080p@60hz
2). Transmit up to 120m over single Cat5e/6 cable, with 1x looping HDMI output
3). With IR Remote to choose the source, with LED to show the Group ID
4). Comply with TCP/IP protocol, streaming bit rate is up to 15Mbps
5). Support LPCM audio format
6). Smart IP Address Setting: Dynamic Host Configuration Protocol (DHCP)
7). Wide-band IR pass through to control the source (38khz to 56khz)
8). By pass 2 way UART/RS232 (Up to 115200), use remote controller to select 8 group Baud rate
9). Support one to one, one to many, many to one, many to many modes, with large cascade
10). Dual power input: 802.3af compliant POE & DC 5V (No need power supply when connecting with POE Switch)
11). HDCP Compliant
12). Support PC tool control
13). DC 5V 1A power supply

2. 1 Specifications

Performance	
Protocol	H.264 encoder 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	Default 2400bps, total 8 kinds optional
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 looping output
RS232	Phoenix RS232 port
IR	IR TX port (Support 38K-56KHz) IR Ext port (Support 38KHz)
Connectors on Receiver	
Input	1xRJ45 input
Output	1x HDMI Female port looping output
RS232	Phoenix RS232 port
IR	IR RX port (Support 38K-56KHz) IR Ext port (Support 38KHz)
Environmental & Power Requirements	
Operating temperature	-5 to +35 ℃ （+23 to +95℉）
Operating Humidity Range	5 to 90%RH (No Condensation)
Power supply	DC 5V 1A
Power consumption	Max 3 watt
Physical	
Dimension	TX: 119x79.5x28mm ; RX: 119x79.5x28mm
Net Weight	TX: 0.28KG ; RX:0.28KG

2. 1 Supported input resolution

Frequency	Resolution
50Hz	576i
	576P
	720P
	1080P
	1080i
60Hz/59.94Hz	480i
	480P
	720P
	1080P
30Hz/29.97Hz	1080P
24Hz	1080P
25Hz	1080P

VESA Resolution

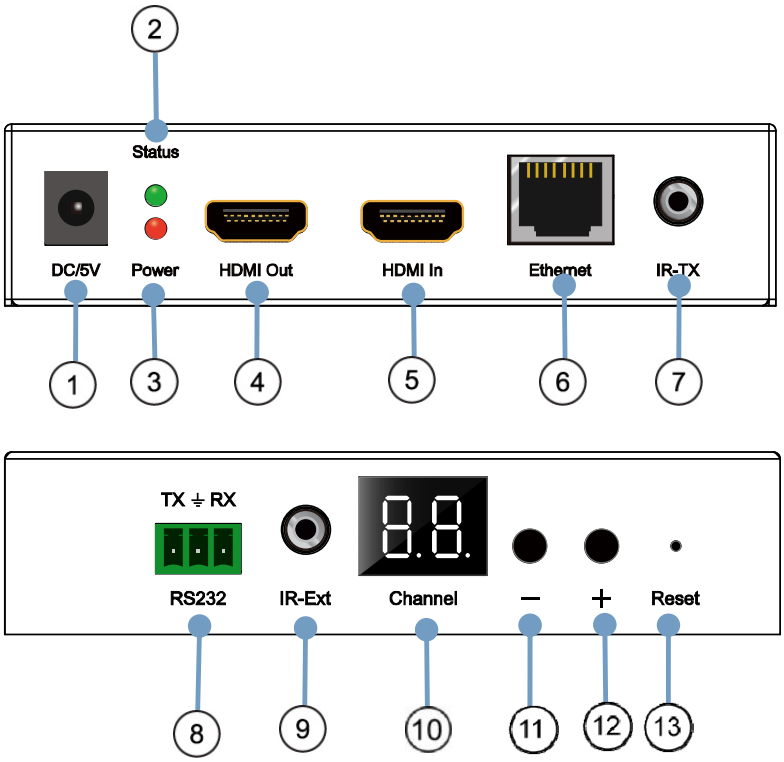
Frequency	Resolution
50Hz	576i
	576P
	720P
	1080P
	1080i
60Hz/59.94Hz	480i
	480P
	720P
	1080P
30Hz/29.97Hz	1080P
24Hz	1080P
25Hz	1080P

3. Packing content

1). 1x Transmitter
2). 1x Receiver
3). 1x IR-TX cable
4). 1x IR-RX cable
5). 2X IR Ext Cable
6). 1x Manual
7). 8x screws
8). 4x detachable mounting ears
9). 2x Phoenix plugs for RS232 cable termination
10). 2x Remote controller
11). 2x Power adapter 5V 1A

4. Panel description

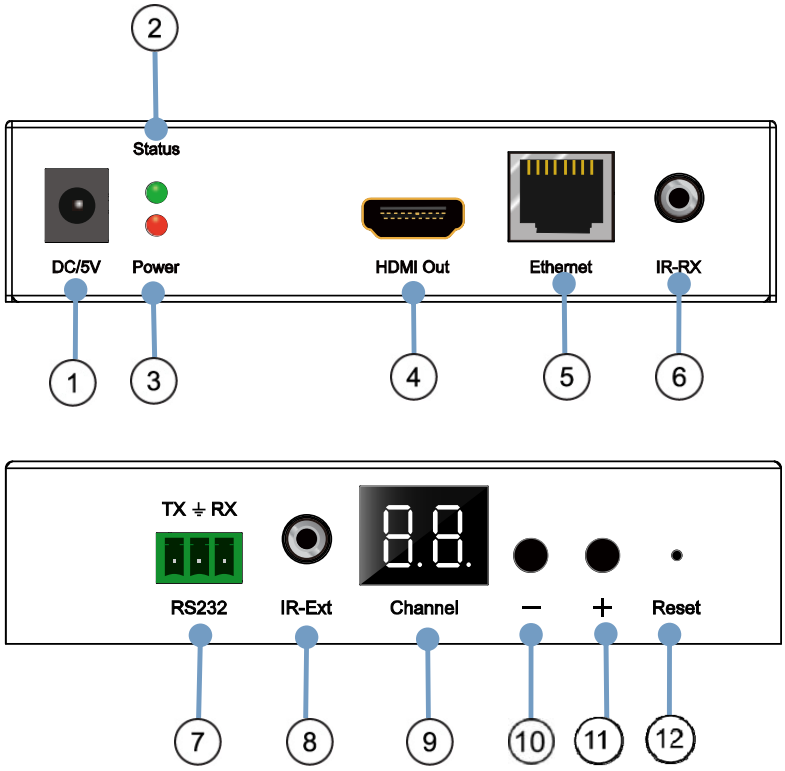
1). TX



1) DC 5V 1A input
2) Green indicator of data status ①
3) Red indicator of power input ②
4) HDMI output for local display
5) HDMI input
6) CAT5e/6 output
7) IR-TX
8) RS232 port
9) IR-Ext
10) LED to show the Group ID
11) Press the button for the previous Group ID
12) Press the button for the next Group ID
13) Reset button

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

2). RX



1) DC 5V 1A input
2) Green indicator of data status ①
3) Red indicator of power input ②
4) HDMI output
5) CAT5e/6 input
6) IR-RX
7) RS232 port
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12) Reset button

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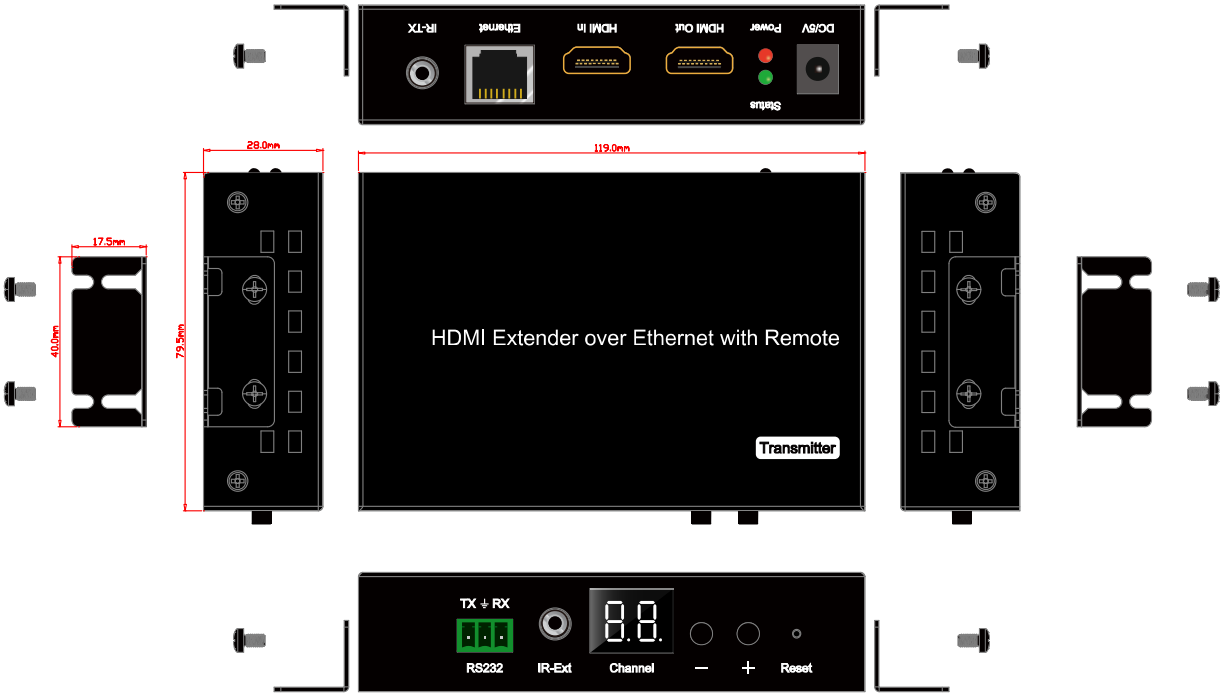
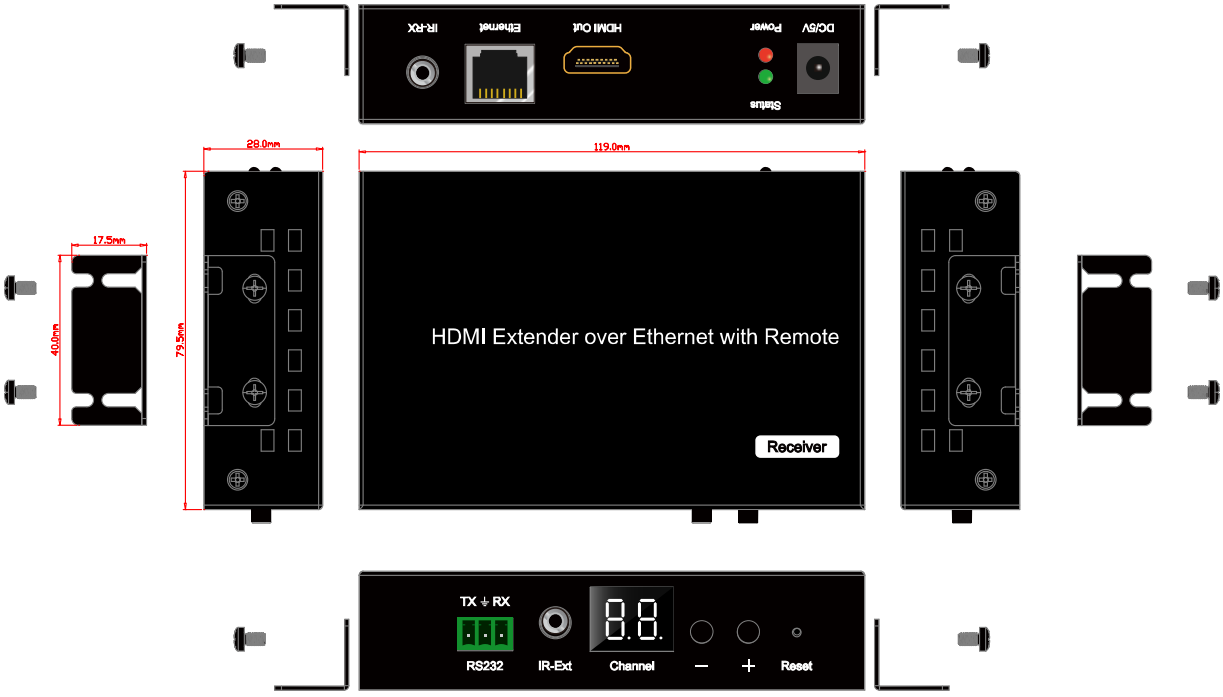
3). How to connect the IR Cable

4.1. Panel Drawing

Transmitter



Receiver



5. Installation and Configuration

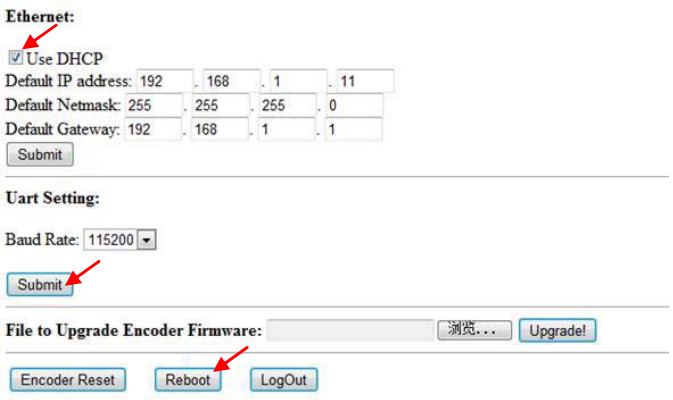
5.1 Setup HDMI TX and RX

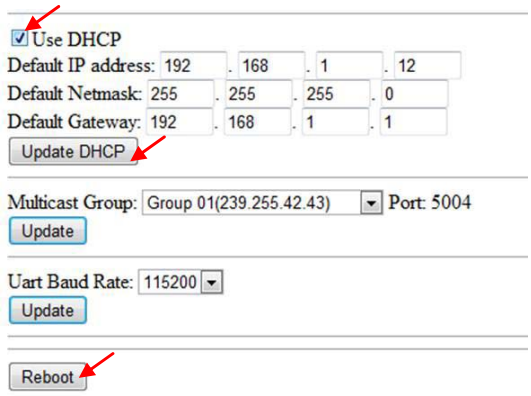
When connecting point to point, no need to configure TX and RX,
When connecting point to many, many to point and many to many, please make sure every TX and RX has unique IP and MAC address, every TX has unique group ID.
Our this over IP Extender has been assigned unique default MAC address for every TX and RX, so you don't have to set the MAC for the units.
You just need to set the IP address and Group ID following bellowing steps.

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 an unique IP for TX and RX, and you don't need to change the IP for the units manually.





B). Set the IP via web browser

If you are using a Switch that doesn't support DHCP, please change the default IP for TX (192.168.1.11) and RX (192.168.1.12) manually.
A HTTP server is embedded in each TX and RX. You can set up IP address for HDMI Extender via 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: Make sure the Transmitter and PC are in the same domain.
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 fi eld to 192.168.1.1
(0-255). After that press "OK" to save the configuration.

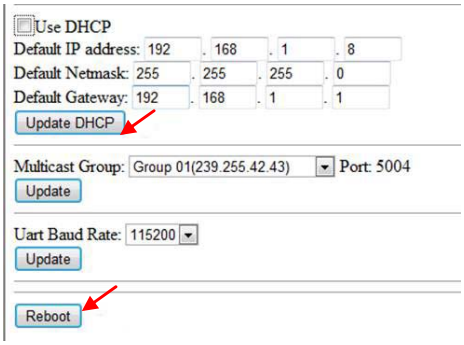
Note ※ The PC and TX/RX should be in the same domain.
※ The IP address of PC should be different from the IP address of TX and RX.

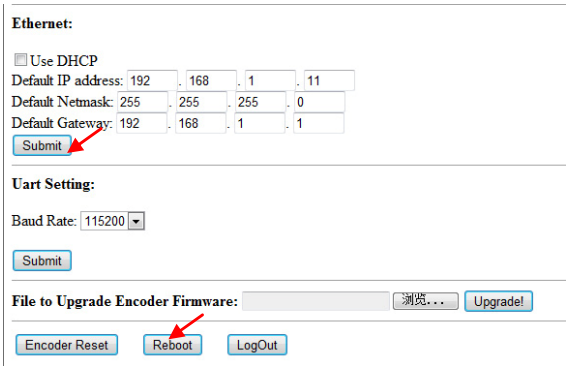
Step 2: Use an Ethernet Cable to connect the PC (or laptop) and the extender. the power LED for the extender is red and the green status is blinking.

Step 3: Login in IE: 192.168.1.11 (default IP for TX) or 192.168.1.12(default IP for RX), You can setup IP address for the TX and 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 address for TX and RX must be different and can't be same as the PC's address.)

Step 4: After selecting "Use DHCP" or reset the IP Address, click "Submit" (transmitter) or "update DHCP" (Receiver).

Step 5: Click "Reboot".

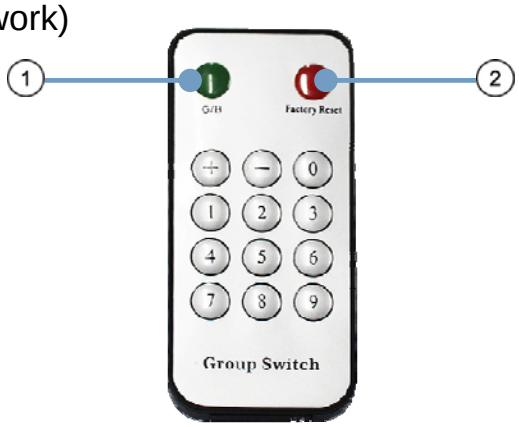




Step 6: Restart the extender after resting the IP Address.

5.1.2 Choose the Group ID and Baud Rate by Remote controller

(When the LED shows “00”, it’s ready to work)



① Press the button, switch to choose the Group ID or Baud rate.

② Factory reset. Press the button for 3 seconds, the LED will flicker then turn to “00”, you have successfully finished the factory reset.

Choose Group ID 00-63

1). Press “+” or “–” to change to the previous or next Group ID.
2). Press the No to change Group ID. For example, if you need change to 01, press “0”, then press“1”.

Choose the Baud Rate

Press the Button, switch to Baud Rate mode, press “+” or “–” to change the Baud Rate.

F0 = 2400 (default)
F1 = 4800
F2 = 9600
F3 = 19200
F4 = 28800
F5 = 38400
F6 = 57600
F7 = 115200

3). How to choose the source:
For example, when the connection is:
Source (DVD1) - TX (TX1) - Gigabit Switch – RX (RX1) - TV1
Source (DVD2) - TX (TX2) - Gigabit Switch – RX (RX2) - TV2
Source (DVD3) - TX (TX3) - Gigabit Switch – RX (RX3) - TV3

The group ID of transmitters is:
TX1 (01)
TX2 (02)
TX3 (03)

If you need display Source on TV1, then just set Group ID of RX1 same as TX1: 01(see below picture).

TX 1

RX 1

5.1.3 Set the group ID for TX and RX via web browser

Step 1: Make sure the Transmitter and PC are in the same domain. (Refer to 5.1.1)

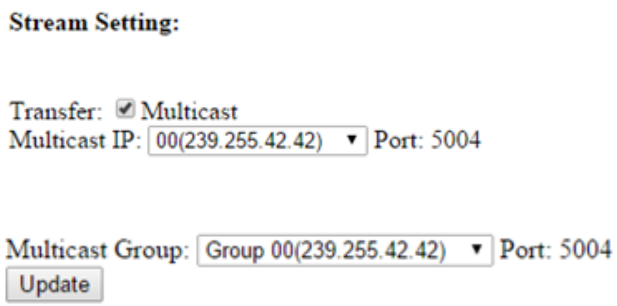
Step 2: Use an Ethernet Cable to connect the PC (or laptop) and the Extender. the power LED for the extender is red and the green status LED is blinking.

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

Step 4: Login in 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” here **which can be chosen from 00 to 63.**

Step 6: Click “Submit” (transmitter) or update (receiver).



Note※ When you change the group ID on both Web browser and Remote controller, the units will follow the latest one.

※ **If you change the Group ID on web browser, it can’t be shown on the LED.**

5.2 Preparing the switch

When doing point to many and many to many, it requires a switch to distribute the sources. We suggest you use the Switch that supports IGMP and DHCP. IGMP feature help to manage the group ID which is related to switch the sources; DHCP allow the switch to assign an IP for TX and RX automatically, please enable DHCP of the switch.

5.3 Connection

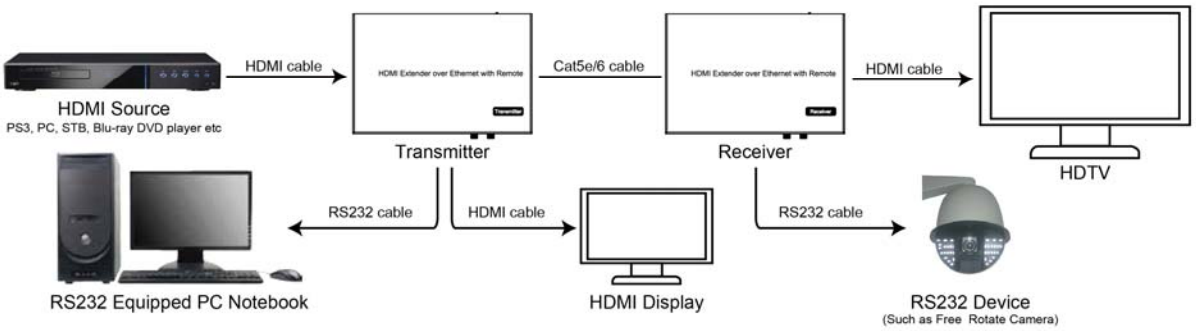
Note※ Please don’t insert into or pull out HDMI cable when power on. Please connect cable only when power is off.

5.3.1 Point to point

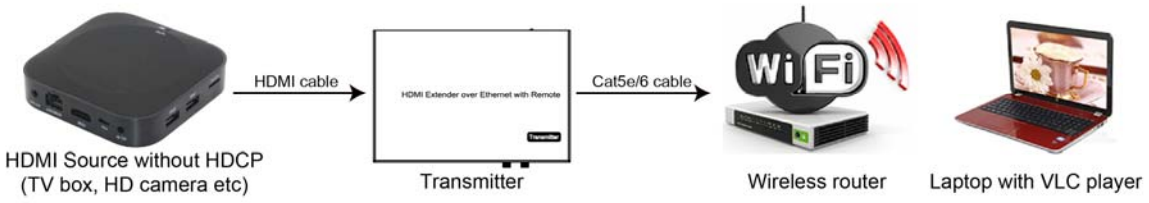
1. Connect the source device and the Transmitter unit with HDMI Cable.
2. Connect the HDMI looping output of the Transmitter to the local HDMI display.

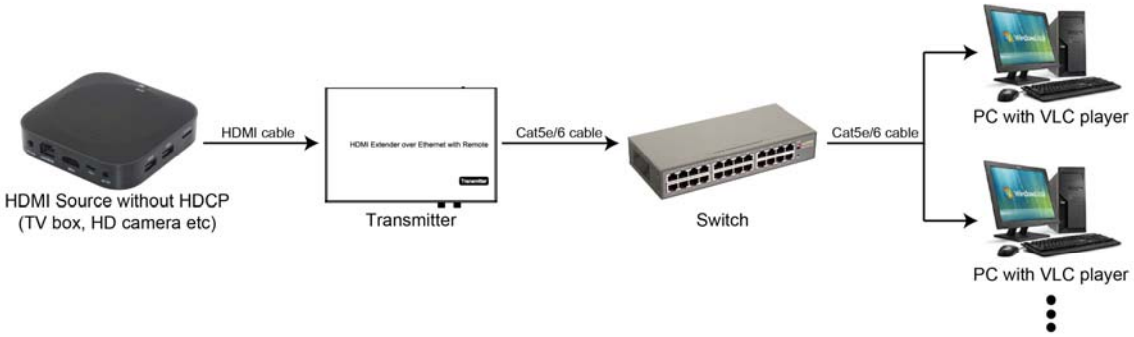
3. Connect another HDMI display and the HDMI Receiver unit with HDMI Cable.
4. Connect the Transmitter and Receiver with Cat5e/6 cable
5. Connect the IR TX cable into “IR TX” port of the transmitter; Connect the IR RX cable into “IR RX” port of the receiver. Then you can control the source at the RX 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 Transmitter and Receiver with adapter 5V 1A.

NOTE: Insert/Extract cables gently.



5.3.2 Compatible with Video Player such as VLC etc



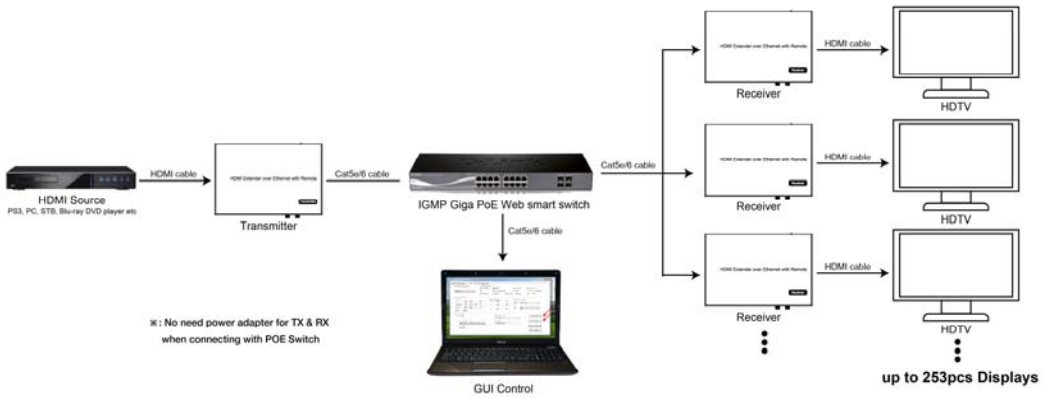


5.3.3 Point to many

1. Setting the IP address for Transmitter & Receiver and preparing the switch following the steps as instructed above (5.1.1&5.2)
2. Connect the source device and the Transmitter unit with HDMI Cable.

3. Connect the HDMI looping 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 HDMI Cable.
7. Connect the IR TX cable into “IR TX” port of the transmitter; Connect the IR RX cable 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 Transmitter and Receiver with adapter 5V1A, power on the switch with its adapter.

Note ※ Daisy chain the switch if its RJ45 port is not enough.
※ The quantity of Receiver is up to 255pcs.

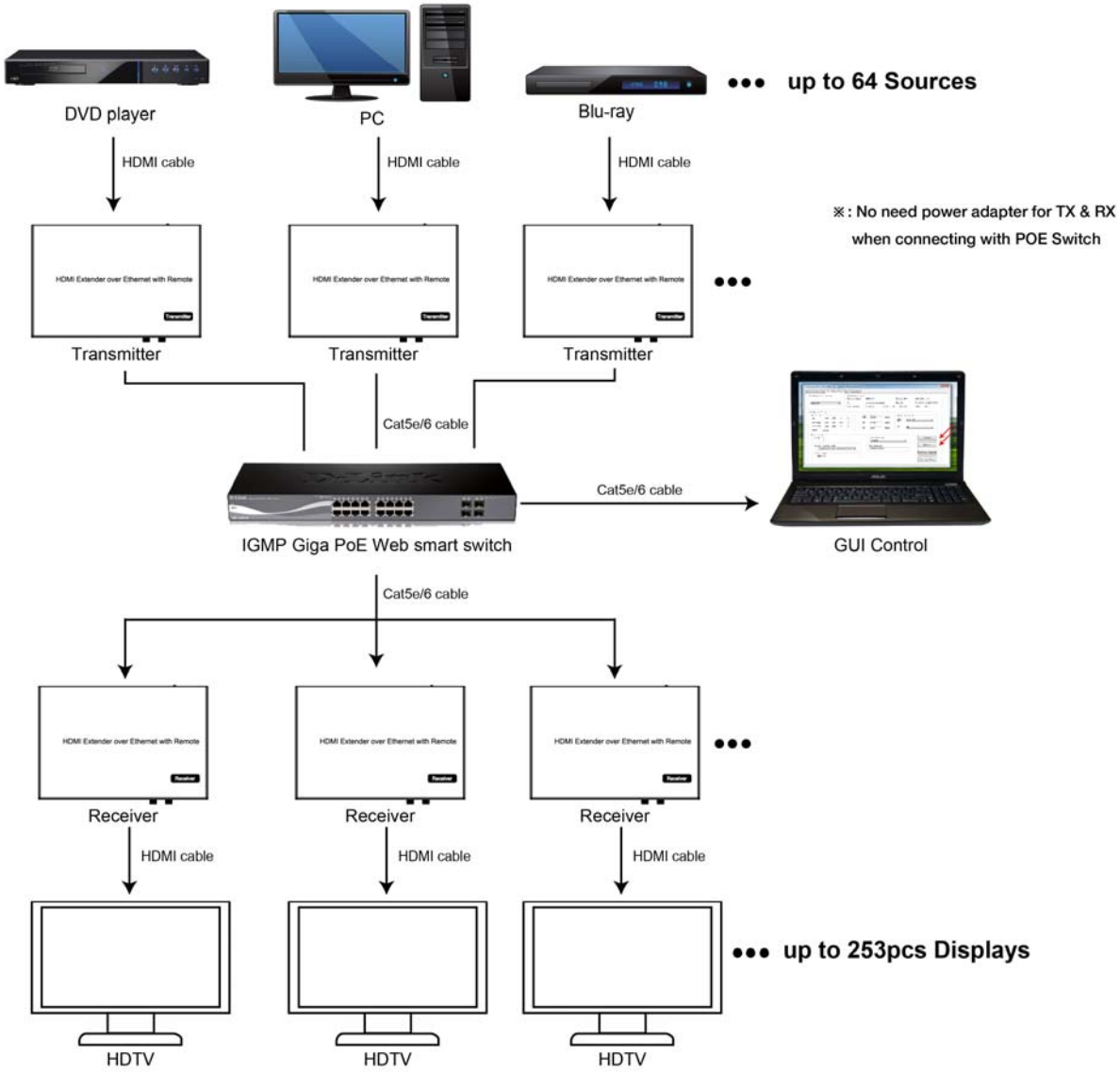


5.3.4 Many to many

1. Setting the IP address for Transmitter & Receiver and preparing the switch following the steps as instructed above (5.1.1&5.2)
2. Connect the source device and the Transmitter unit with HDMI Cable.
3. Connect the HDMI looping output of the Transmitter to the local HDMI Display.
4. Connect the transmitters and the switch/router with 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 HDMI Cable.
7. Connect the IR TX cable into “IR TX” port of the transmitter; Connect the IR RX cable 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 Transmitter and Receiver with adapter 5V1A, power on the switch with its adapter.

10. Choose the source by Remote controller or Web browser as instructed above (5.1.2)

Note ※ Daisy chain the switch if its RJ45 port is not enough.
※ The quantity of Transmitter is no more than 64 pcs.
※ The total quantity of Transmitter and Receiver is less than 256 pcs.



Note ※The total qty of TX, RX, Switch is less than 256pcs.

6. RS232 and Baud rate

The unit provides a path to pass through the RS232 signal, RS232 passes

from TX to RX or from RX to TX, connect to your RS232 devices, such as PC, IP Camera, Creston control panel, Smart Matrix, printer and Scanner and so on. It works when TX, RX and your RS232 devices baud rate is the same. The default baud rate of TX and RX is 2400 which is frequently used for most devices.

6.2 Baud rate setting

6.2.1 Setting the Baud rate via Web Browser

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

Note※ When you change the Baud rate on both Web browser and Remote controller, the units will follow the latest one.

※ Please send the data in the same group ID.

7. Firmware update

We provide the firmware to upgrade the units when it is necessary. Please follow up bellowing steps to update the firmware.

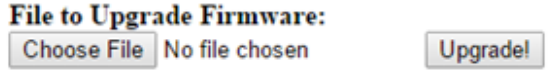
Step1: Connect TX / RX to the PC with a short Cat5e cable

Step2: Power on TX/ RX with power adapter 5V1A.

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 find out the latest version firmware

Step5: Click “Upgrade”, the process will takes seconds, please DO NOT interrupt or power off the units during the time.



8. One key recovery to default setting

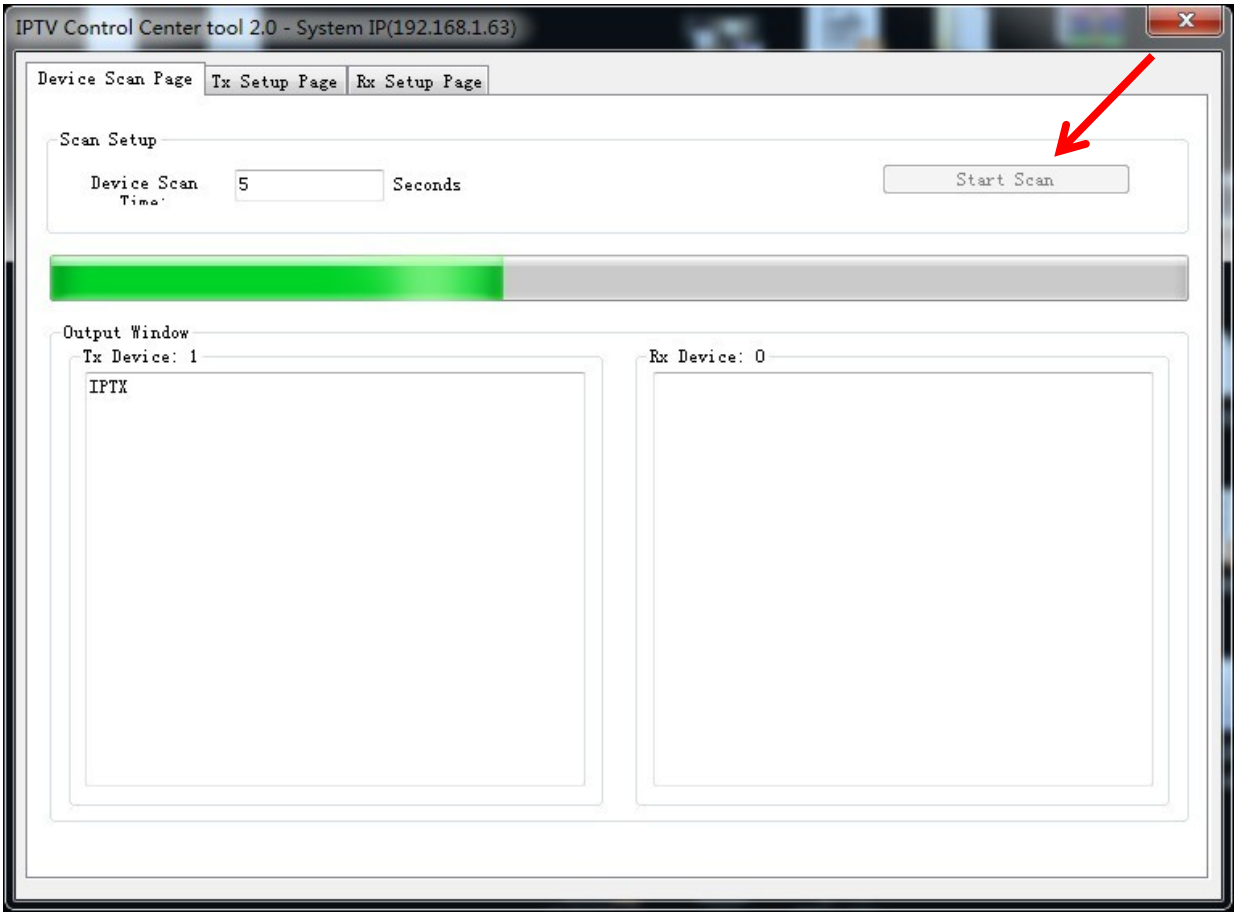
It is available to recover the setting to factory setting, use a tiny pin to insert the reset hole and hold about 10 seconds, when the unit is connected.

9. PC Tool Instructions

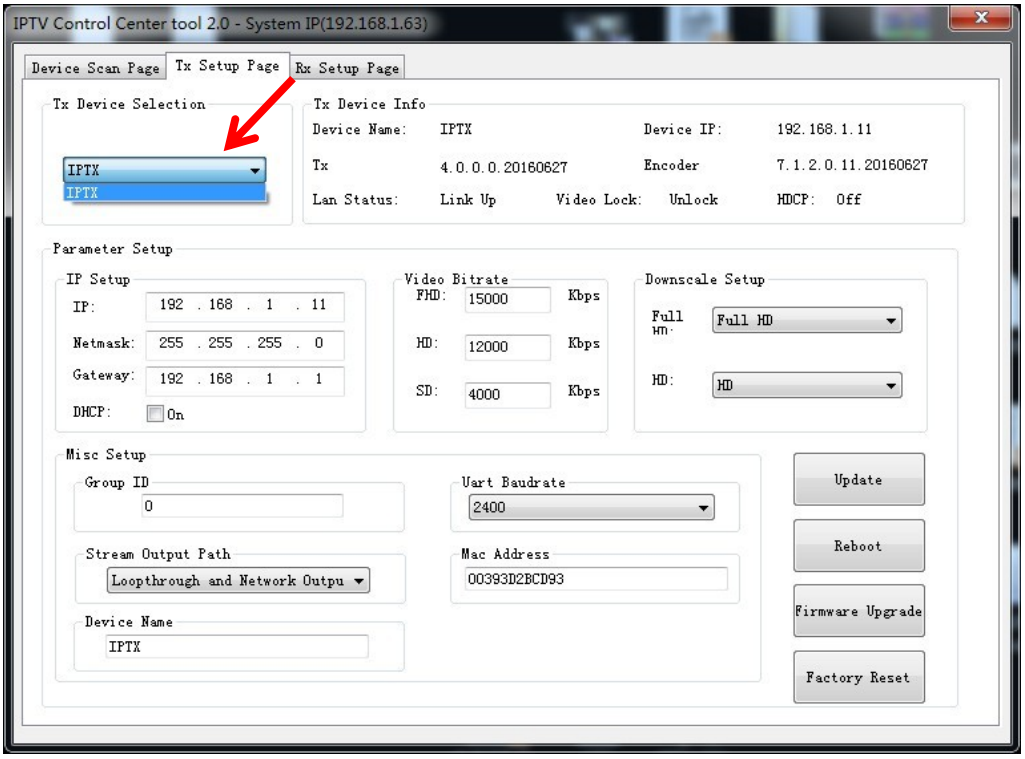
Step 1: Make sure the Transmitter and PC are in the same domain. (Refer to 5.1.1)

Step 2: Open the PC Tool.

Step 3: Click “Start Scan”.



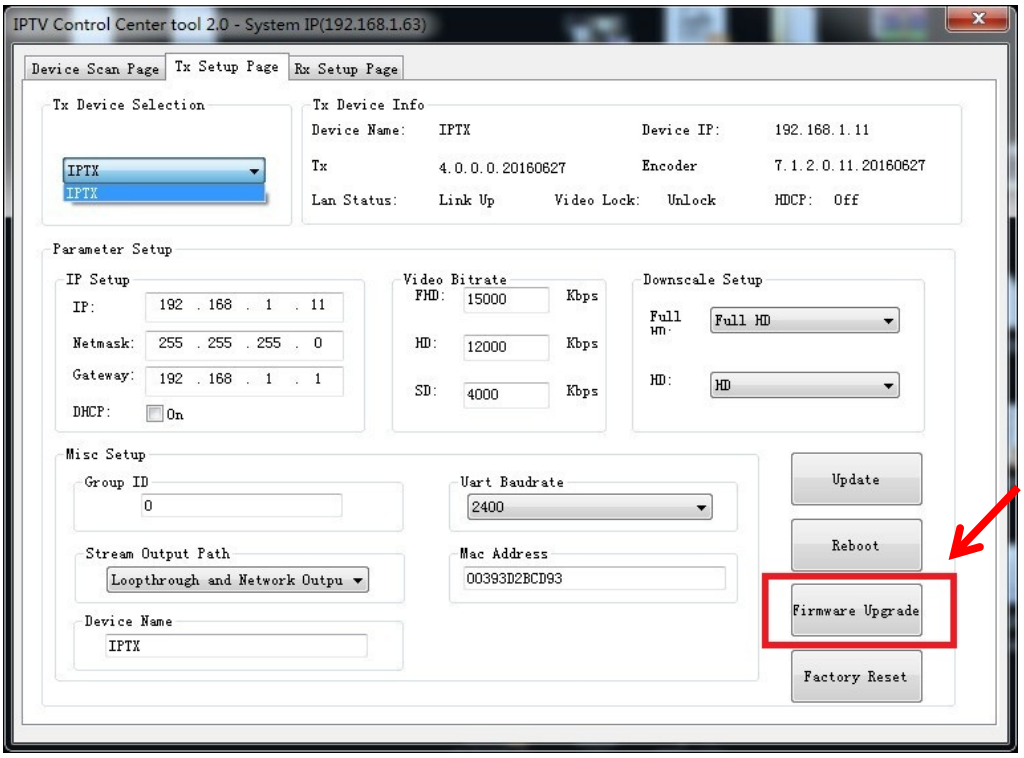
Step 4: Choose the TX or RX Name.



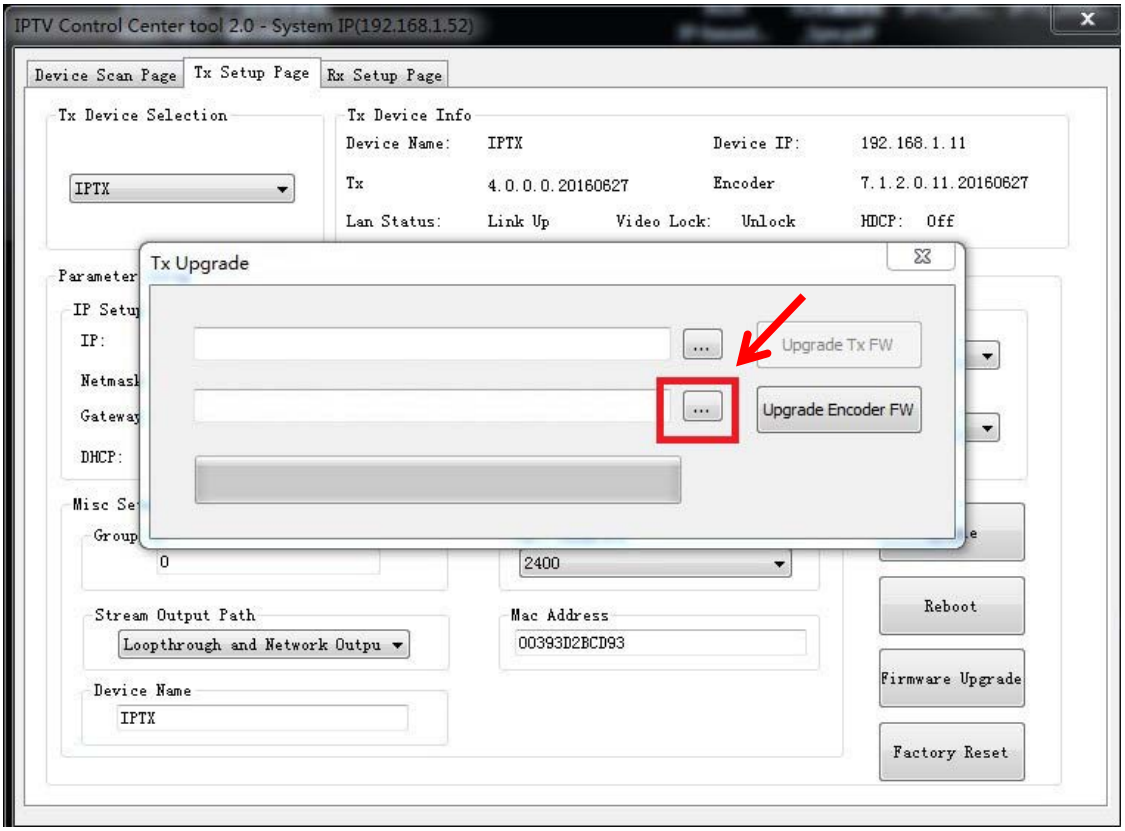
9.1 Firmware Upgrade

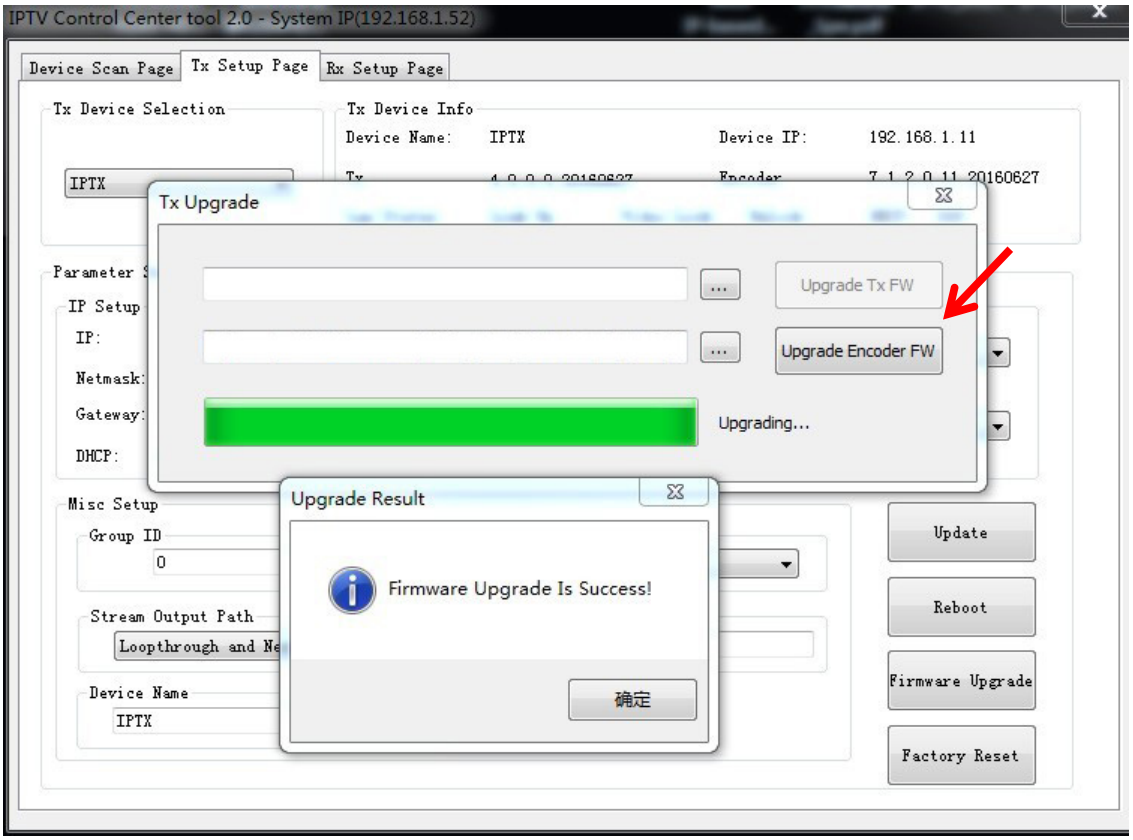
Upgrade for TX

Step 1: Click “Firmware Upgrade”.

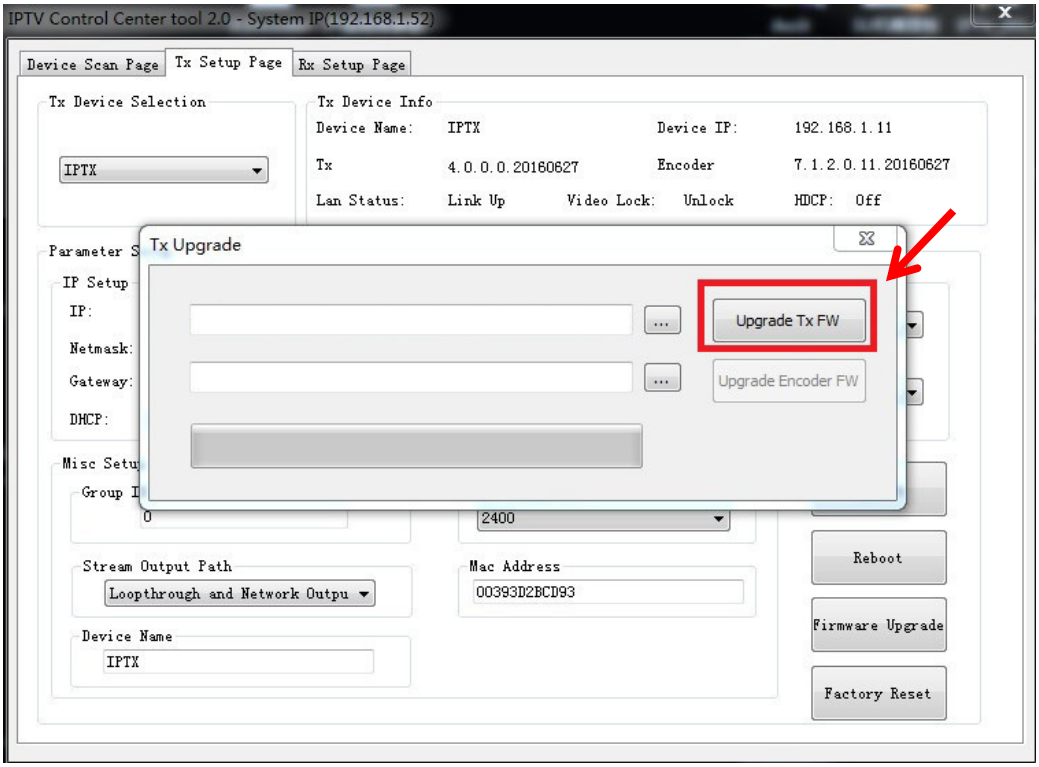


Step 2: Click “Upgrade Encoder FW” first.



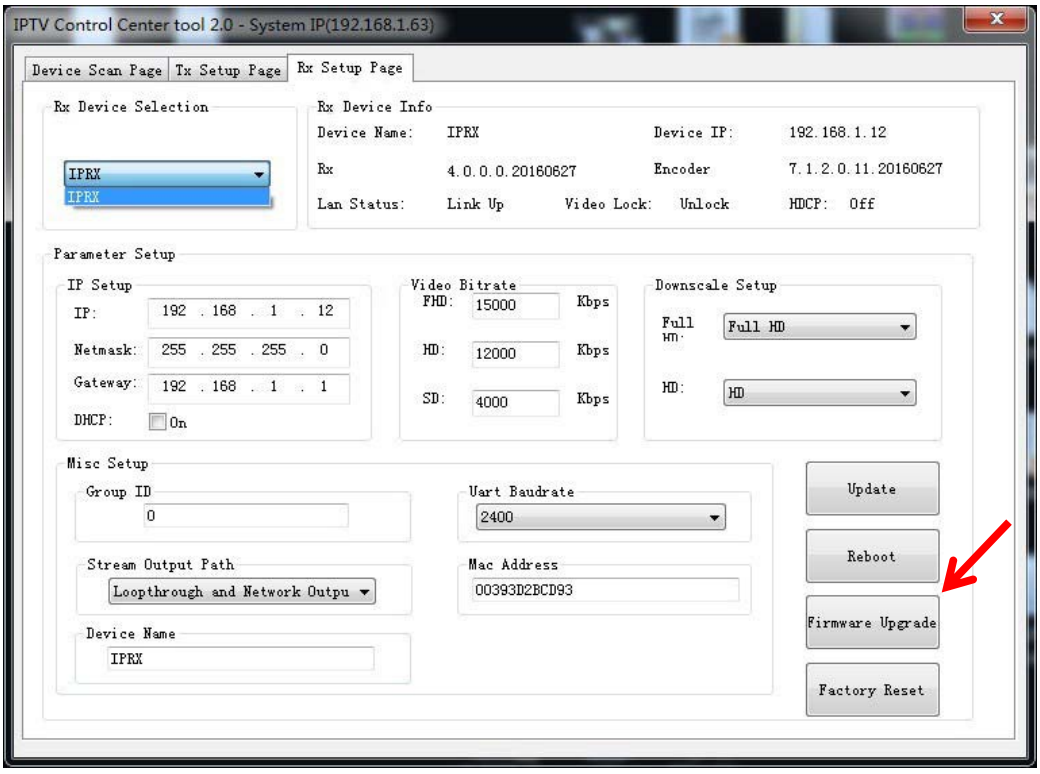


Step 3: After the step 2 is finished, click “Firmware Upgrade” again, then click “Upgrade TX FW”.

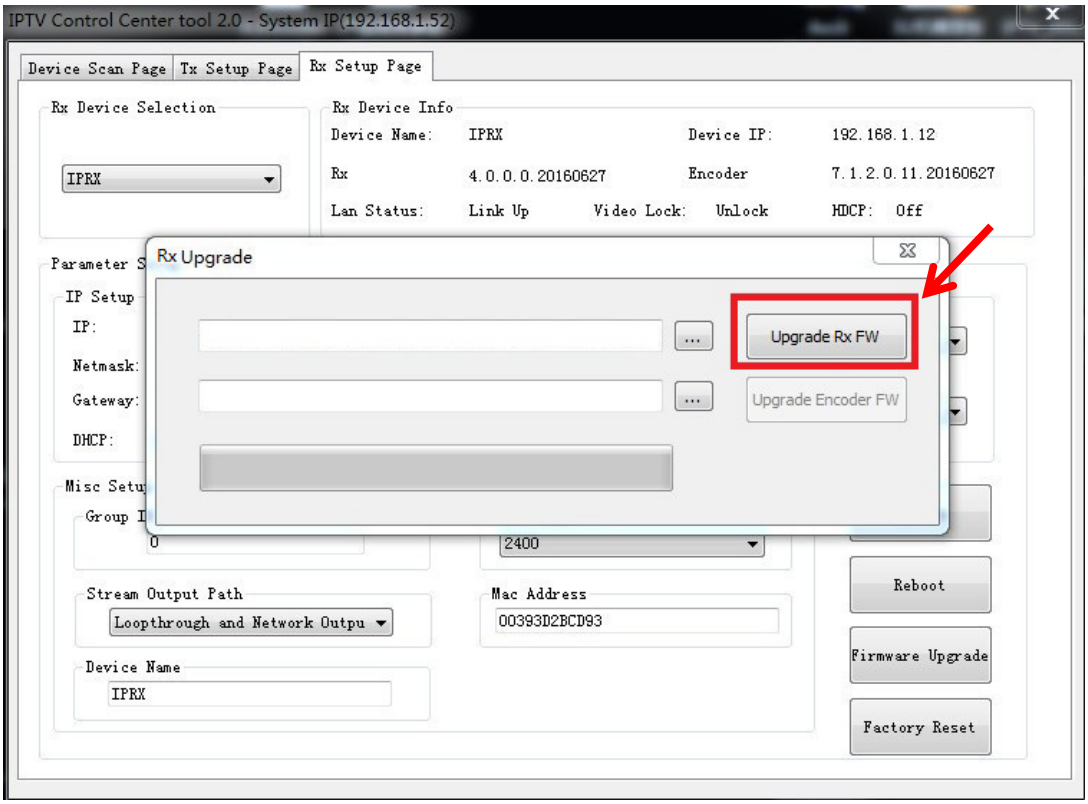


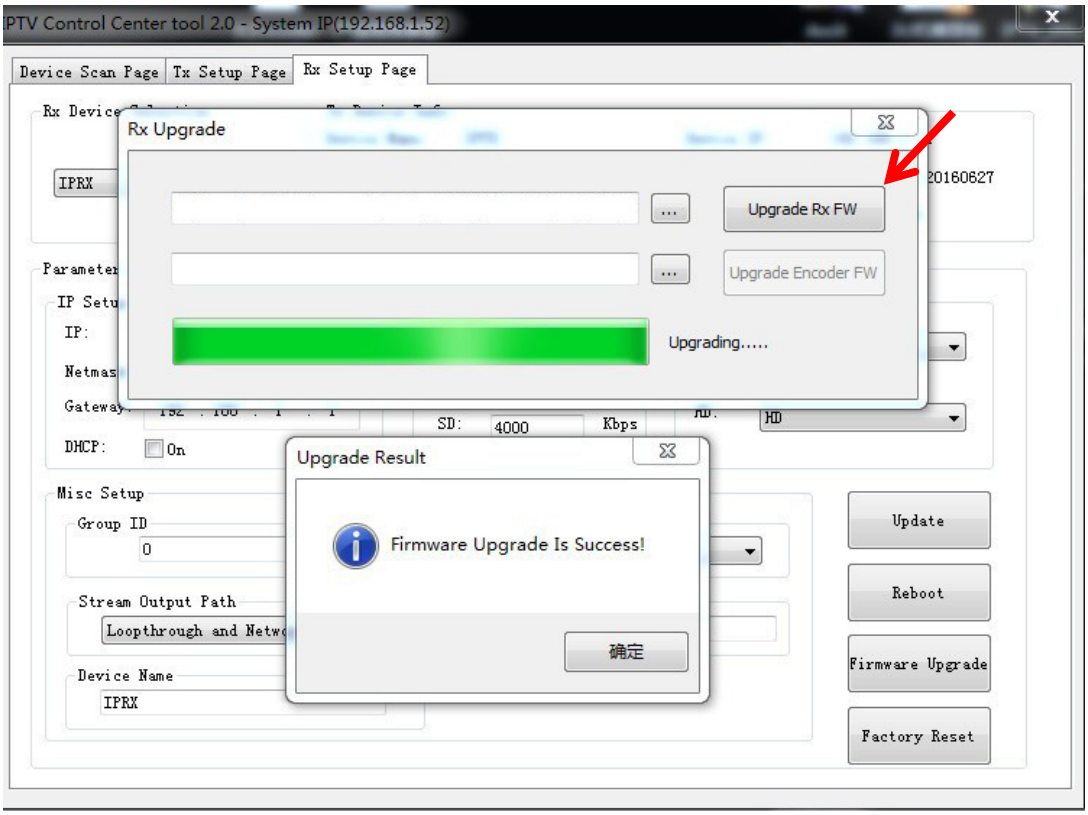
Upgrade for RX

Step 1: Click “Firmware Upgrade”.



Step 2: Click “Upgrade Rx FW”.

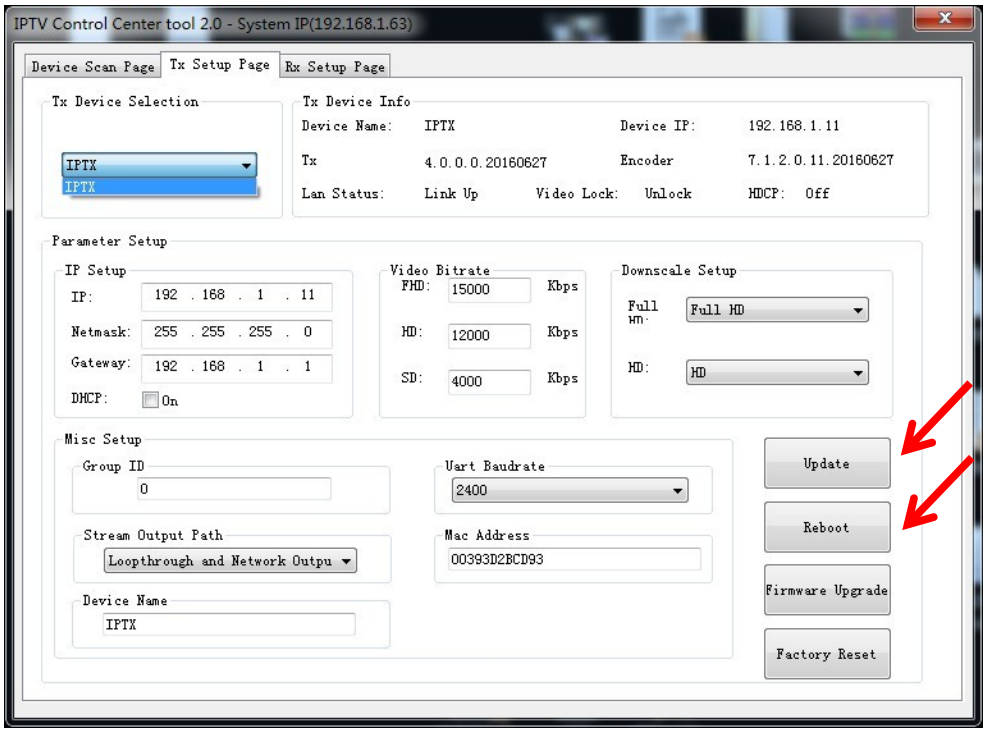


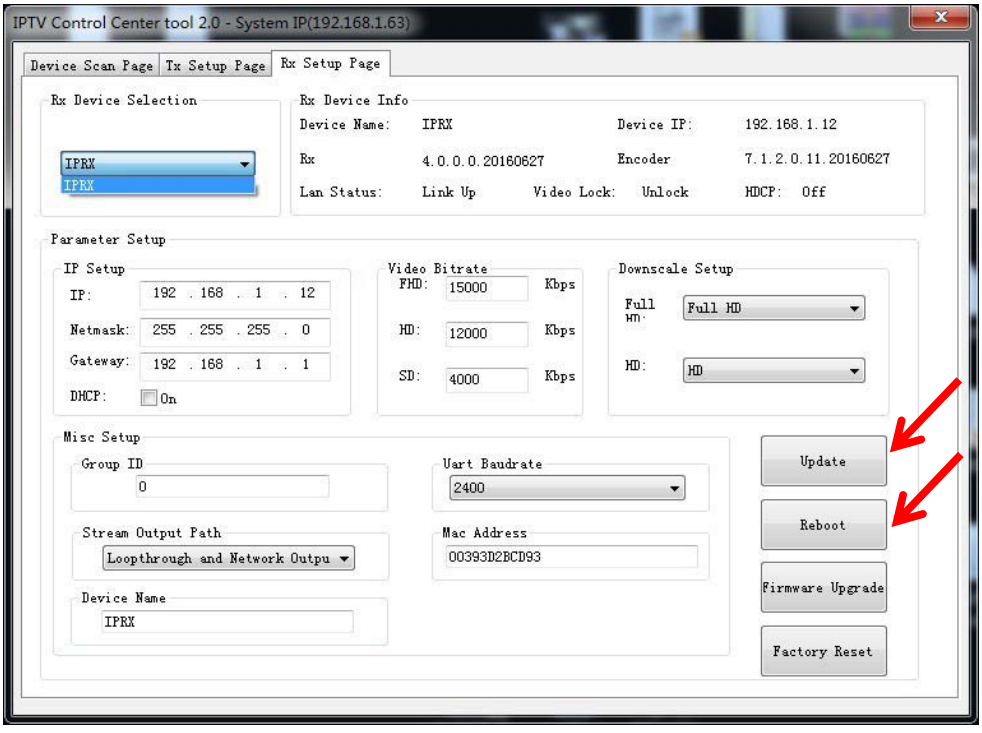


9.2 Other settings

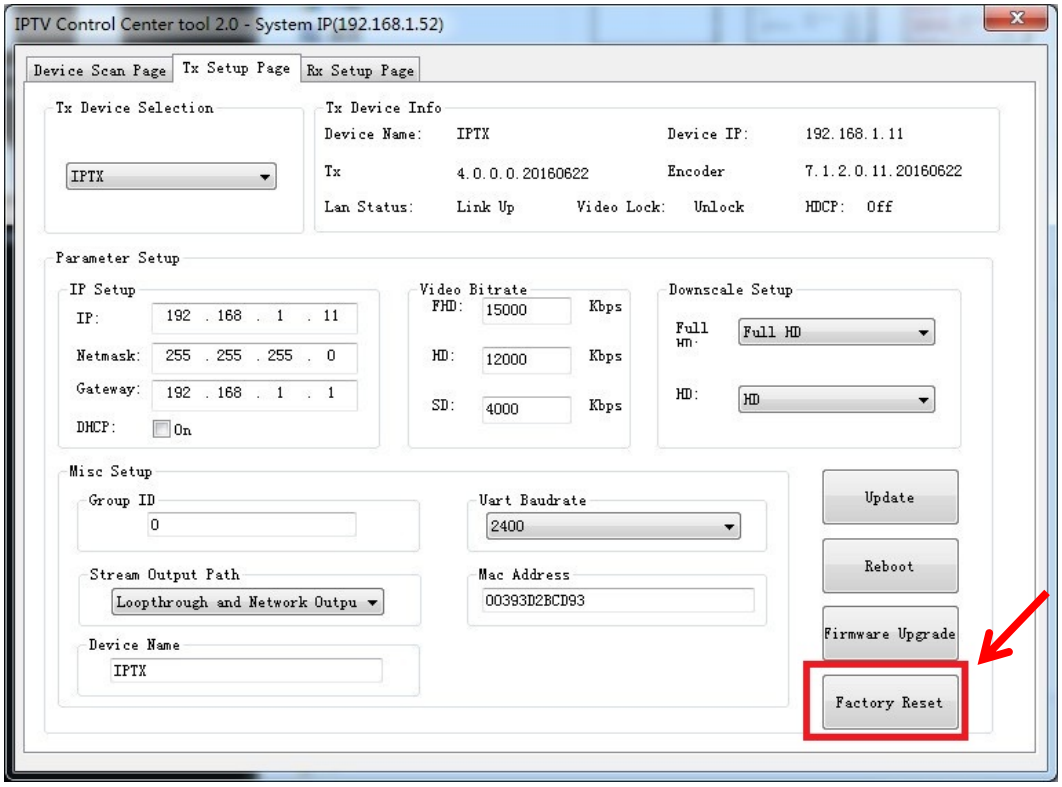
Step 1: Change the IP/Netmask/Gateway/DHCP/Uart Baudrate/Group ID/Mac Address/ Device name on the PC tool interface.

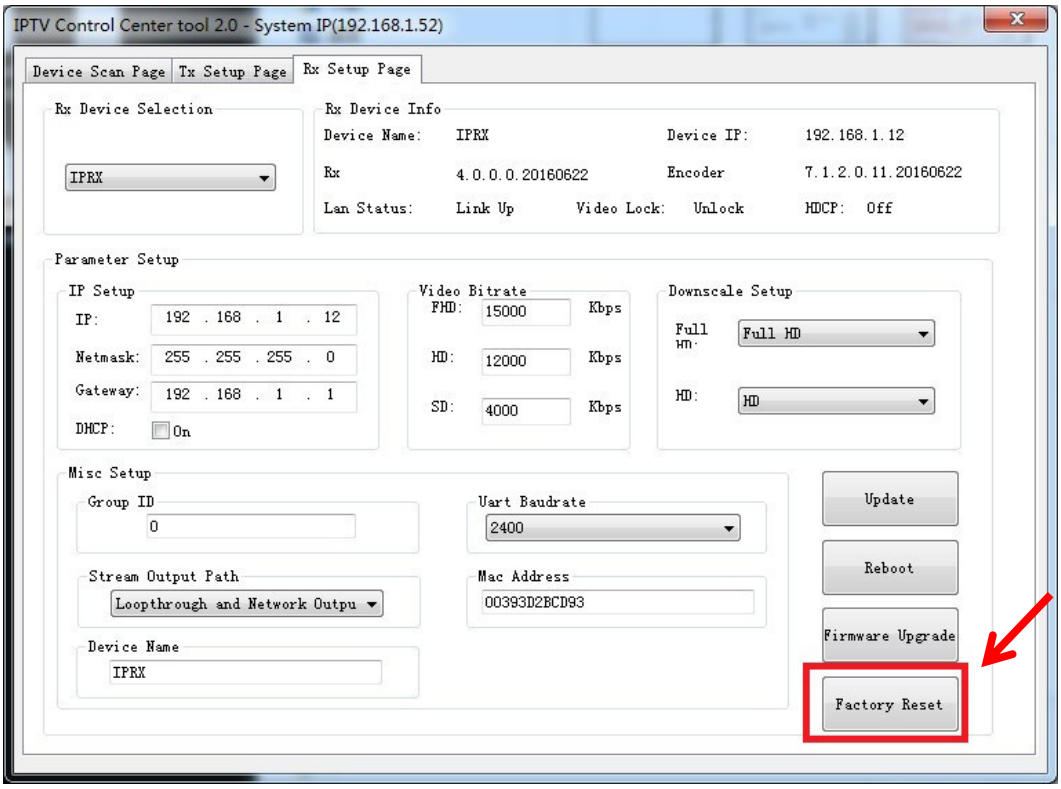
Step 2: Click “Update”, after “Update” is finished, click “Reboot”.





9.2 Click “Factory Reset” on TX or RX.



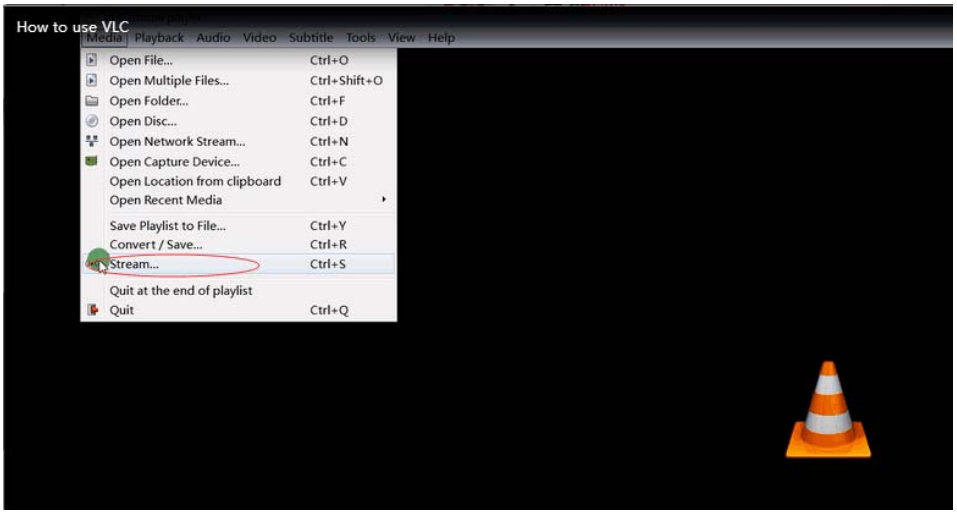


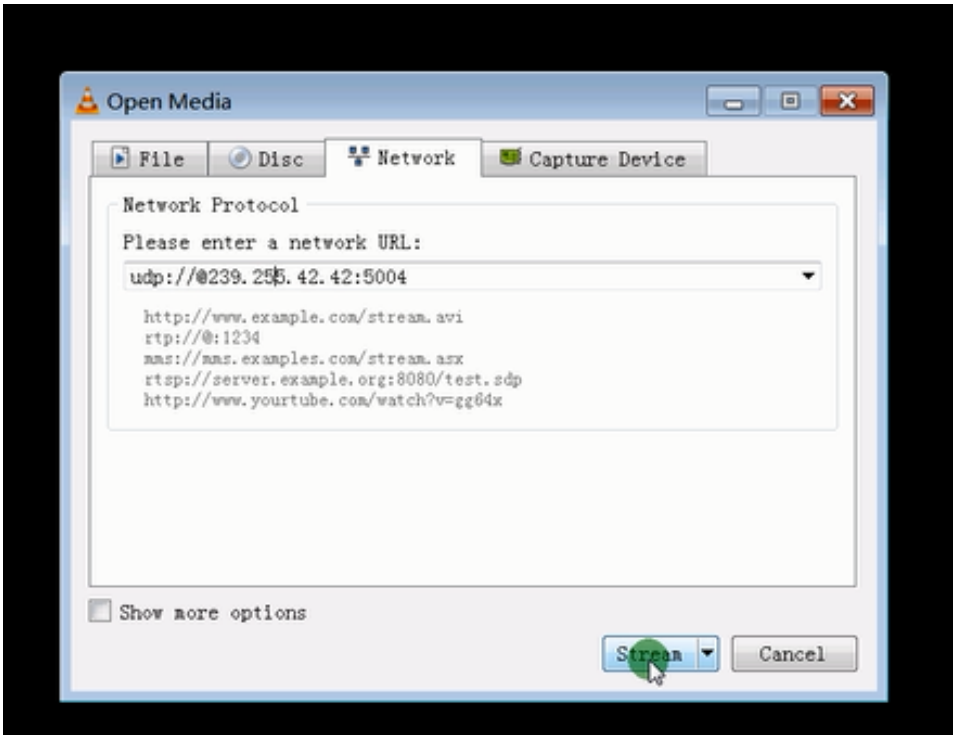
10. After sale Service and Warranty.

11. How to use VLC

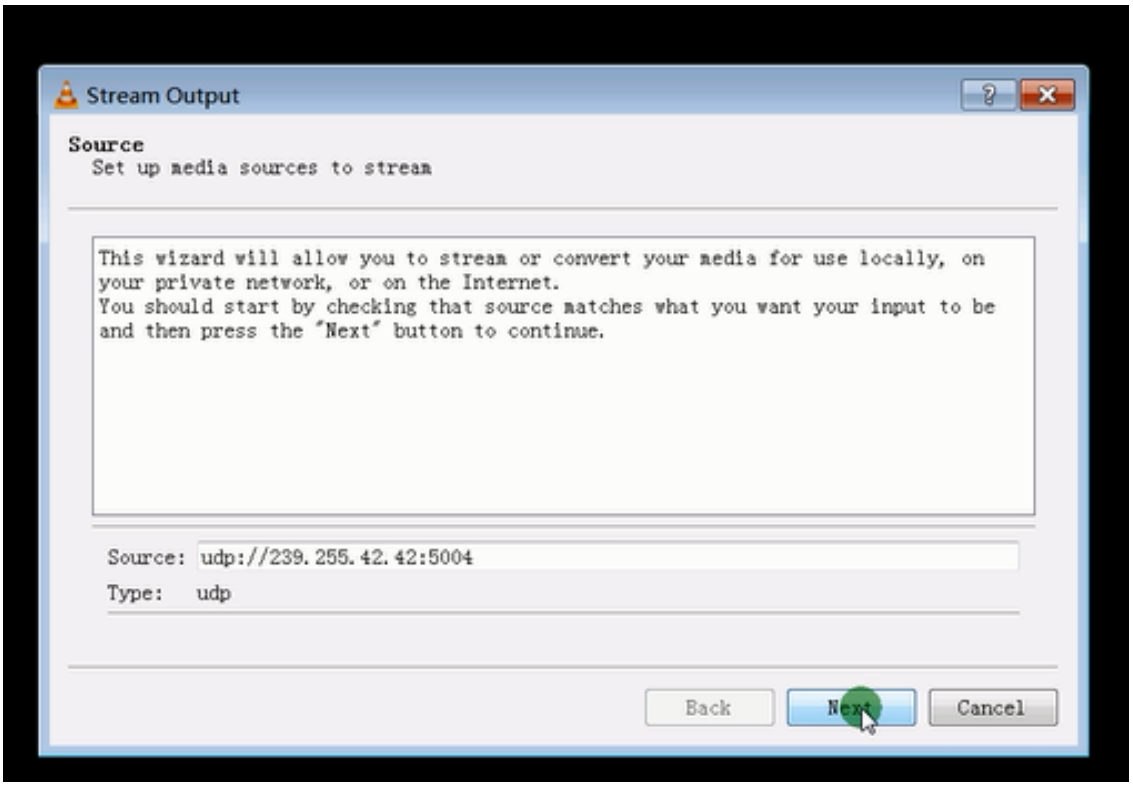
Step1: Make sure the Transmitter and PC are in the same domain.
(Refer to 5.1.1)
Step2: Connect the HDMI Source without HDCP with the transmitter and power on the device.
Step3: Connect the transmitter to the PC.
Step4: Check the Multicast Group on the web (refer to 5.1.3).
Step5: Open the VLC media Player, click “Stream”> “Network”,
Input “UDP: //@ 239.255.42.42 :5004”

Note ※ 239.255.42.42 (Multicast Group) 5004 (Port)

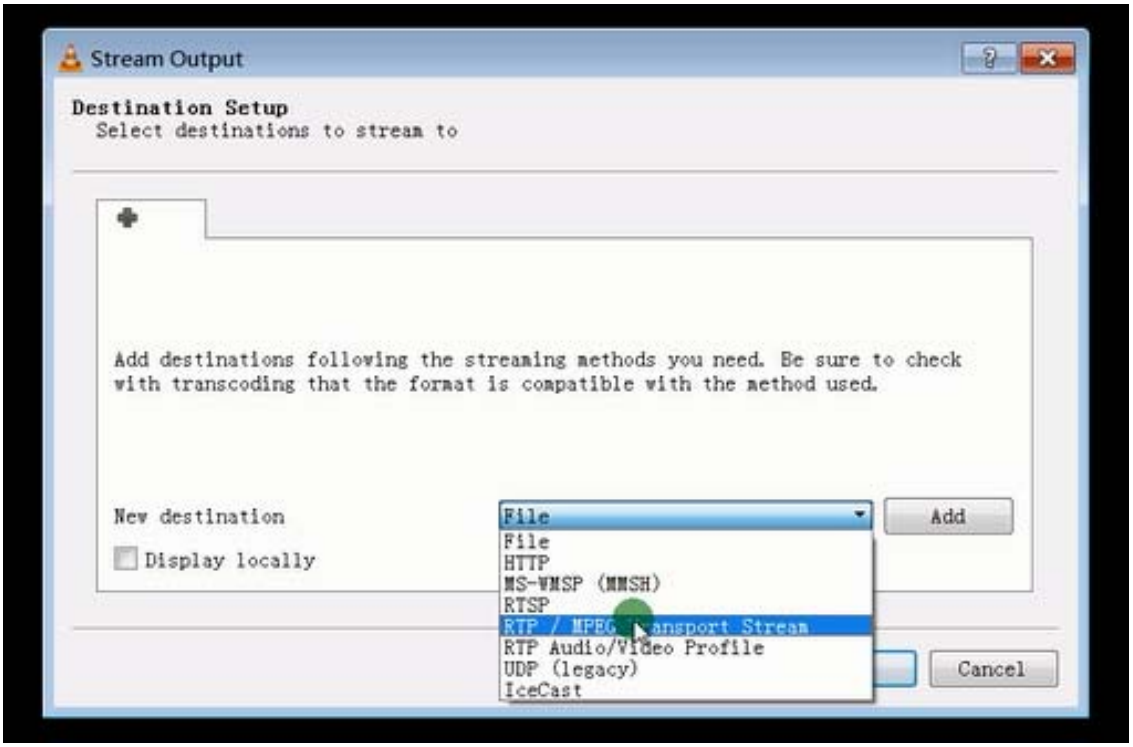




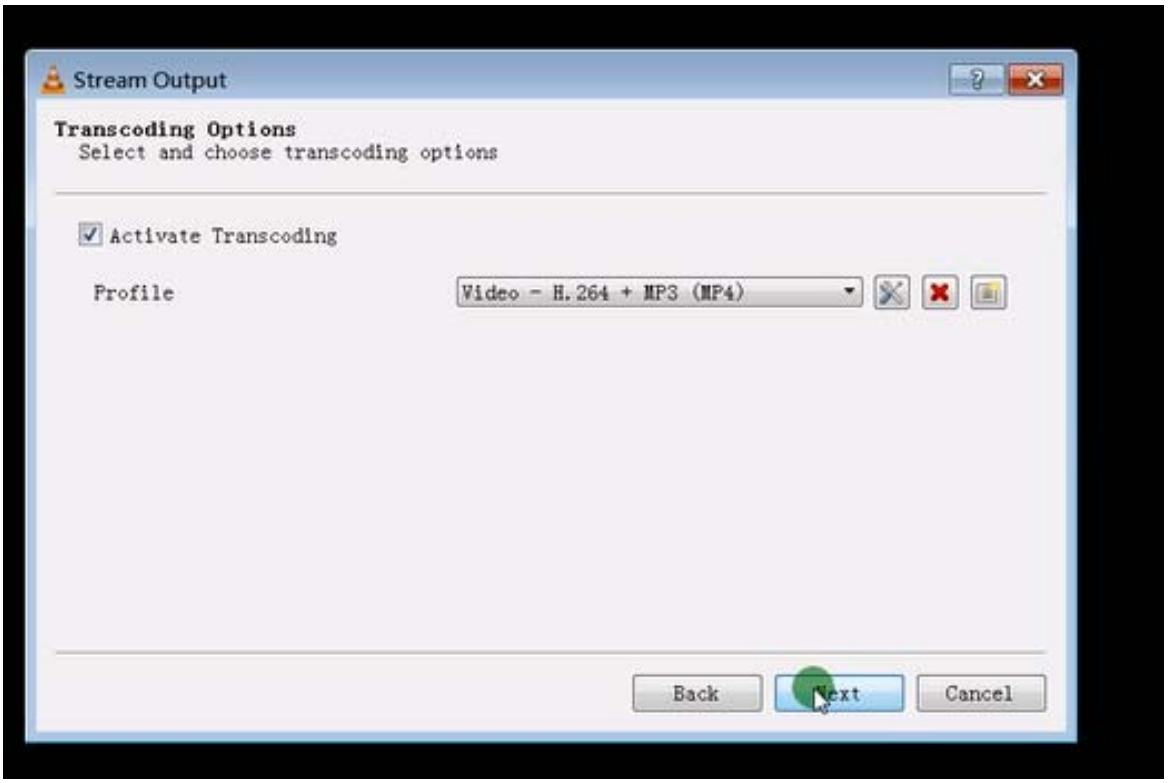
Step 6: Click “Next”.



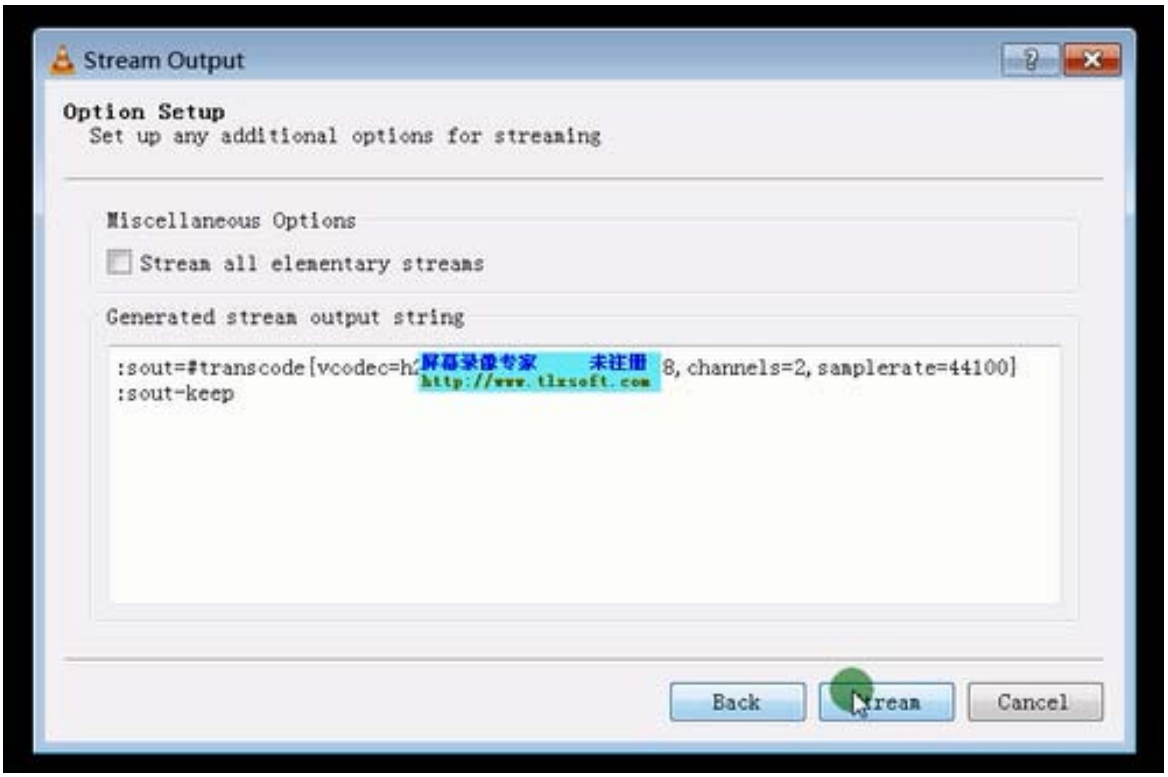
Step 7: Choose “RTP / MPEC Transport Strcan”.



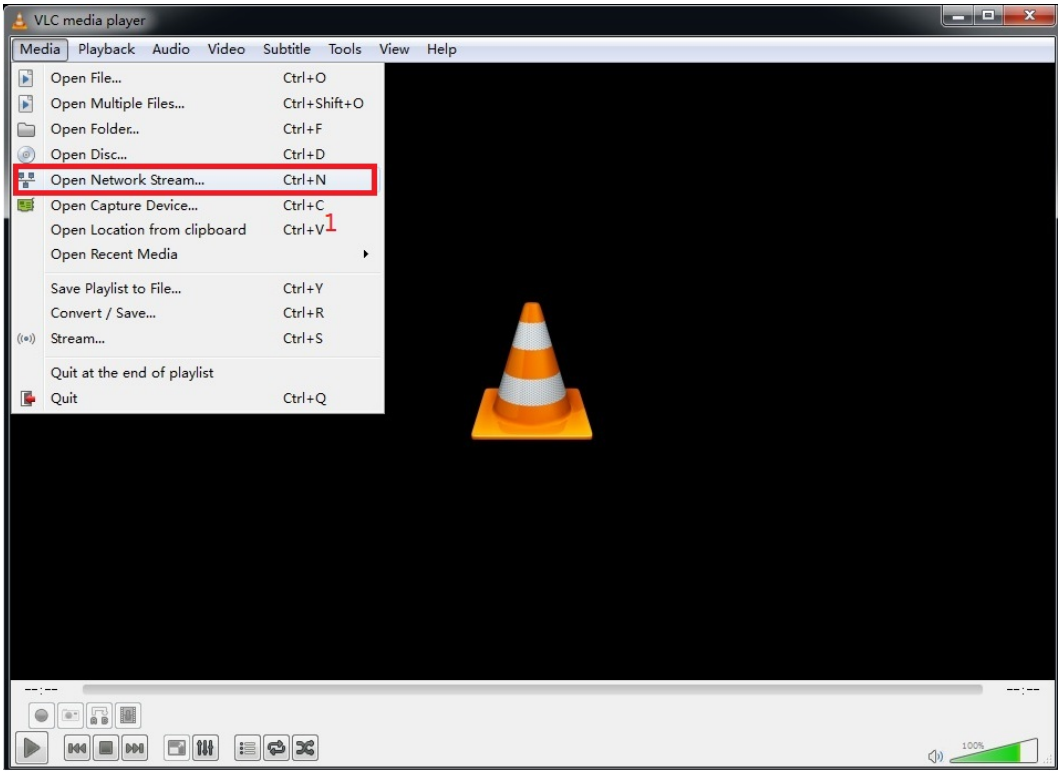
Step 8: Click “Next”.

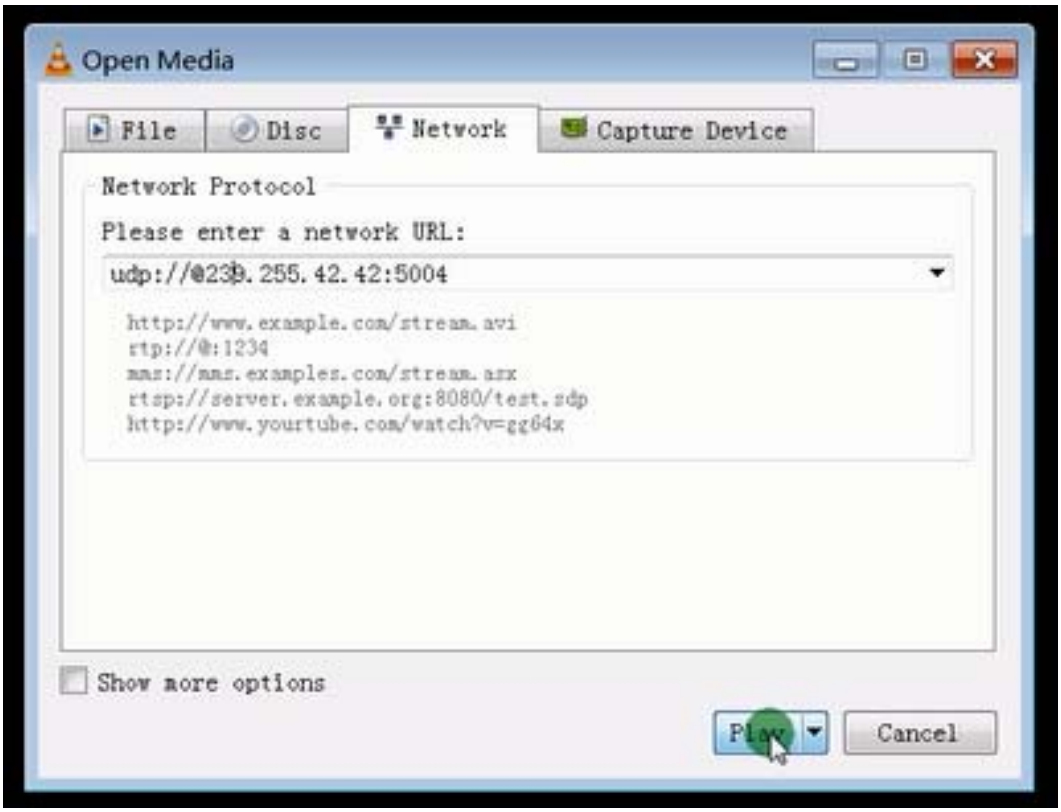


Step 9: Click “Stream”.



Step 10: Click “Open Network Stream”, then you can click “Play” to view the video.





WARRANTY

If your product does not work properly because of a defect in materials or workmanship, our Company (referred to as "the warrantor") will, for the length of the period indicated as below, **(Parts(2)Year, Labor(90) Days)** which starts with the date of original purchase ("Limited Warranty period"), at its option either(a) repair your product with new or refurbished parts, or (b) replace it with a new of a refurbished product. The decision to repair or replace will be made by the warrantor.

During the "Labor" Limited Warranty period there will be no charge for labor. During the "Parts" warranty period, there will be no charge for parts. You must mail-in your product during the warranty period. This Limited Warranty is extended only to the

original purchaser and only covers product purchased as new. A purchase receipt or other proof of original purchase date is required for Limited Warranty service.

MAIL-IN SERVICE

When shipping the unit carefully pack and send it prepaid, adequately insured and preferably in the original carton. Include a letter detailing the complaint and provide a day time phone and/or email address where you can be reached.

LIMITED WARRANTY LIMITS AND EXCLUSIONS

(a)This Limited Warranty ONLY COVERS failures due to defects in materials or workmanship, and DOES NOT COVER normal wear and tear or cosmetic damage.

The Limited Warranty ALSO DOES NOT COVER damages which occurred in shipment,

or failures which are caused by products not supplied by warrantor, or failures which result from accidents, misuse, abuse, neglect, mishandling, misapplication, alteration, faulty installation, set-up adjustments, misadjustment of consumer controls, improper maintenance, power line surge, lightning damage, modification, or service by anyone other than a Factory Service center or other Authorized Server, or damage that is attributable to acts of God.

(b)THERE ARE NO EXPRESS WARRANTIES EXCEPT AS LISTED UNDER "LIMITED WARRANTY COVERAGE". THE WARRANTOR IS NOT LIABLE FOR INCIDENTAL OR CONSEQUENTIAL DAMAGES RESULTING FROM THE USE OF THIS PRODUCT, OR ARISING OUT OF ANY BREACH OF THIS WARRNTY. (As examples, this excludes damages for lost time, cost of having someone remove or re-install an installed unit if applicable,

travel to and from the service, loss of or damage to media or images, data or other recorded content. The items listed are not exclusive, but are for illustration only.)

(c)PARTS AND SERVICE, WHICH ARE NOT COVERED BY THIS LIMITED WARRANTY, ARE YOUR RESPONSIBILITY.