ANTIK technology

User Manual

Brighten Your Digital View!

EN-8000

8-way H.264 HD/SD Encoder and Modulator Series

Contents

1. Features and Order Information

- Complies with H.264/AVC HP@L4.0 & MPEG-2 MP@ML
- Built-in reMUX handles MPTS and SPTS
- Three TS/IP modes
- Single 128-way IPTV output @ 400Mb/s
- Dual 32-way IPTV output, one main and one redundant, 200Mb/s each
- Full duplex DVB MPTS TS/IP with ProMPEG FEC, 80Mb/s each way
- Audio encoding standards: MPEG1-L2, MPEG-2/4 AAC-LC/HE-AAC；
- RF total output level 120dBμV；
- SNMP and HTTP remote control
- Dual redundant power supplies

2 Model List

	Description	RF Output	Encoder Input	Encoder Way	TS/IP（Full Duplex /IPTV Output）	AAC (Audio Encode）
1	EN-8000-80HC	DVB-C	HDMI	8	N	Y
2	EN-8000-80HT	DVB-T				
3	EN-8000-80HT2	DVB-T2				
4	EN-8000-82HC	DVB-C	HDMI	8	Y	Y
5	EN-8000-82HT	DVB-T				
6	EN-8000-82HT2	DVB-T2				
7	EN-8000-40HC	DVB-C	HDMI	4	N	Y
8	EN-8000-40HT	DVB-T				
9	EN-8000-40HT2	DVB-T2				
10	EN-8000-42HC	DVB-C	HDMI	4	Y	Y

11	EN-8000-42HT	DVB-T				
12	EN-8000-42HT2	DVB-T2				
13	EN-8000-80SC	DVB-C	SDI	8	N	Y
14	EN-8000-80ST	DVB-T				
15	EN-8000-80ST2	DVB-T2				
16	EN-8000-82SC	DVB-C	SDI	8	Y	Y
17	EN-8000-82ST	DVB-T				
18	EN-8000-82ST2	DVB-T2				
19	EN-8000-40SC	DVB-C	SDI	4	N	Y
20	EN-8000-40ST	DVB-T				
21	EN-8000-40ST2	DVB-T2				
22	EN-8000-42SC	DVB-C	SDI	4	Y	Y
23	EN-8000-42ST	DVB-T				
24	EN-8000-42ST2	DVB-T2				
25	EN-8000-80CC	DVB-C	CVBS&Audio	8	N	N
26	EN-8000-80CT	DVB-T				
27	EN-8000-80CT2	DVB-T2				
28	EN-8000-82CC	DVB-C	CVBS&Audio	8	Y	N
29	EN-8000-82CT	DVB-T				
30	EN-8000-82CT2	DVB-T2				
31	EN-8000-40CC	DVB-C	CVBS&Audio	4	N	N
32	EN-8000-40CT	DVB-T				
33	EN-8000-40CT2	DVB-T2				
34	EN-8000-42CC	DVB-C	CVBS&Audio	4	Y	N
35	EN-8000-42CT	DVB-T				
36	EN-8000-42CT2	DVB-T2				

3 Specifications

Video Inputs & Compression	
Video Input Interfaces	HDMI x 8 / HD-SDI x 8, or CVBS RCA-female 75Ω x 8 (see the model numbers)
Video Compression	H.264/AVC HP@L4.0 & MPEG-2 MP@ML
Chrominance Sampling Format	4:2:0

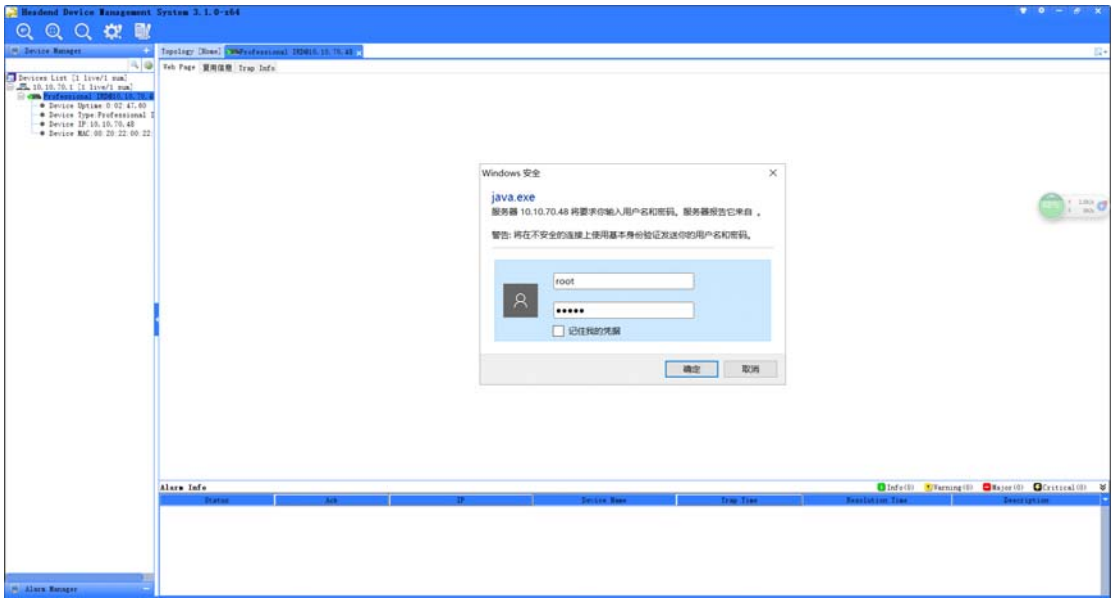
Video Resolutions & their Recommended Compression Bit Rates H.264	1080i（1920×1080）@25Hz,29.97Hz:SMPTE274M: 1~13Mb/s 720p（1280×720）@50Hz,59.94Hz::SMPTE296M: 1~13Mb/s 480i（720×480）@29.97Hz:SMPTE656M: 600K~8Mb/s 576i（720×576）@25Hz: SMPTE656M:600K~8Mb/s
Video Resolutions & their Recommended Compression Bit Rates MPEG-2	480i (720×480) @29.97Hz:SMPTE656M: 3.5~8Mb/s 576i (720×576) @25Hz: SMPTE656M: 3.5~8Mb/s
Video Scaler	Manually adjustable,
Aspect Ratio	4:3 or 16:9
Audio Inputs & Compression	
Audio Inputs	HDMI/SDI Embedded or Analog RCA (see model numbers)
Audio Compression	MPEG1 Layer II
	MPEG-2/4 AAC-LC/HE-AAC(V1,V2)
Sampling Rate	48KHz
Compression Bit Rate	MPEG1 Layer II :32~192Kbps(mono), 64~384Kbps(Stereo), MPEG2/4 AAC-LC :24~256Kbps(mono), 48~512Kbps(stereo) MPEG2/HE-AAC(V1,V2):16~128Kbps(mono), 32~256Kbps(stereo)
TS/IP, Mode 1: Single Port, Full Duplex	
Standard	IEEE 802.3, 10/100/1000 Base-T
Maximum Bit Rate	80Mb/s in + 80Mb/s out
Data Encapsulation	UDP, RTP, SPTS or MPTS
Protocol	ICMP, ARP, IGMPv2/v3
TS/IP, Mode 2: 128-way IPTV output (Single Port)	
Standard	IEEE 802.3, 10/100/1000 Base-T
Maximum Output Bit Rate	400Mb/s
Data Encapsulation	UDP, RTP, SPTS or MPTS
Protocol	ICMP, ARP, IGMPv2/v3
TS/IP, Mode 3: 32-way IPTV output （Dual Port as redundant output）	
Standard	IEEE 802.3, 10/100/1000 Base-T
Maximum Output Bit Rate	200Mb/s+2000Mb/s (200Mb/s each Port）
Data Encapsulation	UDP, RTP, SPTS or MPTS
Protocol	ICMP, ARP, IGMPv2/v3
RF Output	
Output Interface	F-female，75Ω
Output Frequency Range	100 ~ 862MHz，step by 10 KHz
Output Level	90~120dBμV +2dB, step by 1dB
Spurious Rejection	>55dBc @ 120dBuV

Return Loss	≥12dB（typ.）
Interfaces on Rear Panel	
HDMI Inputs	HDMI (see model list) x 8
HD-SDI Inputs	BNC Female, 75Ω x 8
CVBS & Audio Inputs	RCA Female, 75Ω (see model list) x 8
RF Output	F-female, 75Ω x 1
Interfaces on Front Panel	
Control/IP	RJ-45, 10/100 Base-T x 1, USB x 1
TS/IP	RJ-45, 10/100/1000 Base-T x 2；1 Backup Output Only
Display	2x16 LCD module
RF Monitor -20dB	F-female, 75Ω x 1
General	
Power Supply Input Voltage	AC100~260V 50/60Hz
Operating Temperature	0 ~ 40℃
Storage Temperature	-10 ~ 60℃
Humidity	10 ~ 90%, (Non-condensed)

4.Web Server

4.1 Login

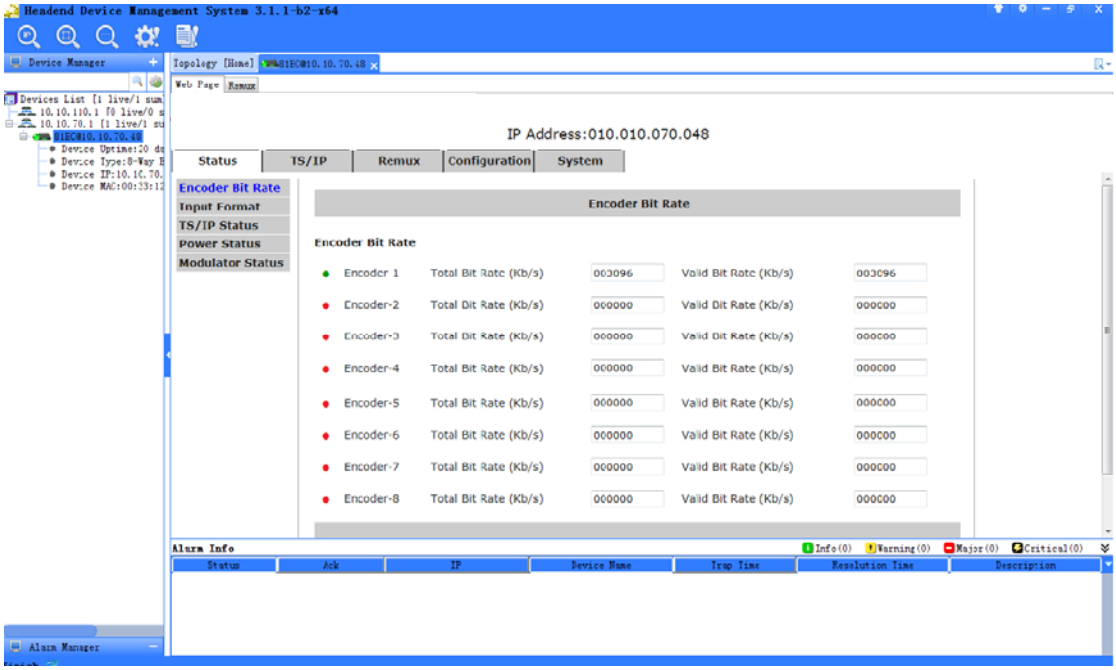
Enter the IP address of the EN-8000 on to URL row on any web browser, there will be a pop-up showed and asking for login user and password. The default user name and password are “root” and “12345”, respectively. The username and password can be changed by user via front panel or via submenu under the system web page. If the username and password are forgotten, user have to set a new one via front panel.



Login

4.2 Status

Via the status page, user can have an overview of the current status of the connected EN-8000, Include Input Bit Status,Input Format,Input Bit Status，TS/IP Status,Power Status,Modulator Status.



Status

4.3 TS/IP

All models provide three TS/IP operation modes. First, “Full Duplex mode”, which allows one MPTS or SPTS inputted, then make up a new MPTS with local encoders/IP input, then sends the new one over IP & ASI_out. The second mode is “IPTV mode” up to 128 TS are sent over IP, all null packets are removed to save bandwidth. The cost of IPTV, obviously, is poor PCR accuracy that may be ignored in most of IPTV applications. User is reminded that PCR accuracy is essential for DVB applications, and should not deliver TS with this mode for those cases.

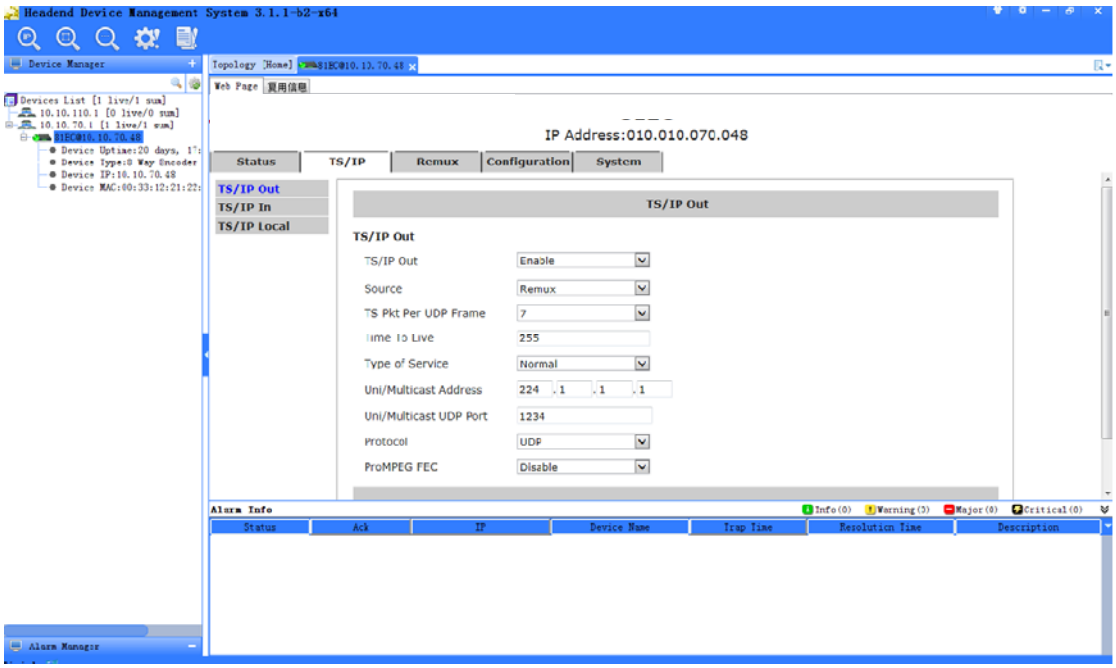
The management web pages of these three modes are different and will be presented automatically following the change of the operation mode.

4.3.1 Full Duplex mode：

Under Full Duplex mode, the device supports single uni/multicast output and single uni/multicast input at maximum bit rate of 80Mb/s both. The default source for TS/IP output is the built-in remux.

TS/IP Out

The parameters of TS/IP Out under Full Duplex mode could be set on the following page.



TS/IP Out

TS/IP Out Switch: Enable or Disable the IP output

Source: select the source for the IP output in the dropdown list

TS Pkts Per UDP: select the number of TS packets that can be carried by each UDP packet

Time To Live: set TTL to the output IP packets

Type of Service: select the service type for the outputted IP streaming

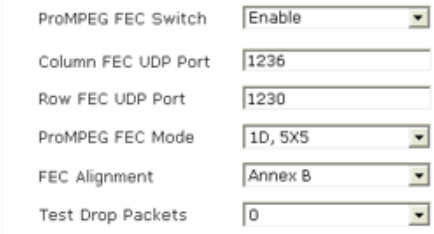
Uni/Multi IP Address: set the unicast or multicast IP address for the output IP streaming

Uni/Multi UDP Port: set the port number, valid range from 1~65535

Protocol: select UDP or RTP protocol for the IP output

ProMPEG FEC Switch: Enable or Disable the ProMPEG FEC *(NOTE: ProMPEG only active with RTP protocol)*

(NOTE:the submenus below are available only when the ProMPEG FEC is switched on and RTP is applied)



ProMPEG FEC Mode: select the mode of ProMPEG FEC from the dropdown list

Column FEC UDP Port: set the port number for column FEC

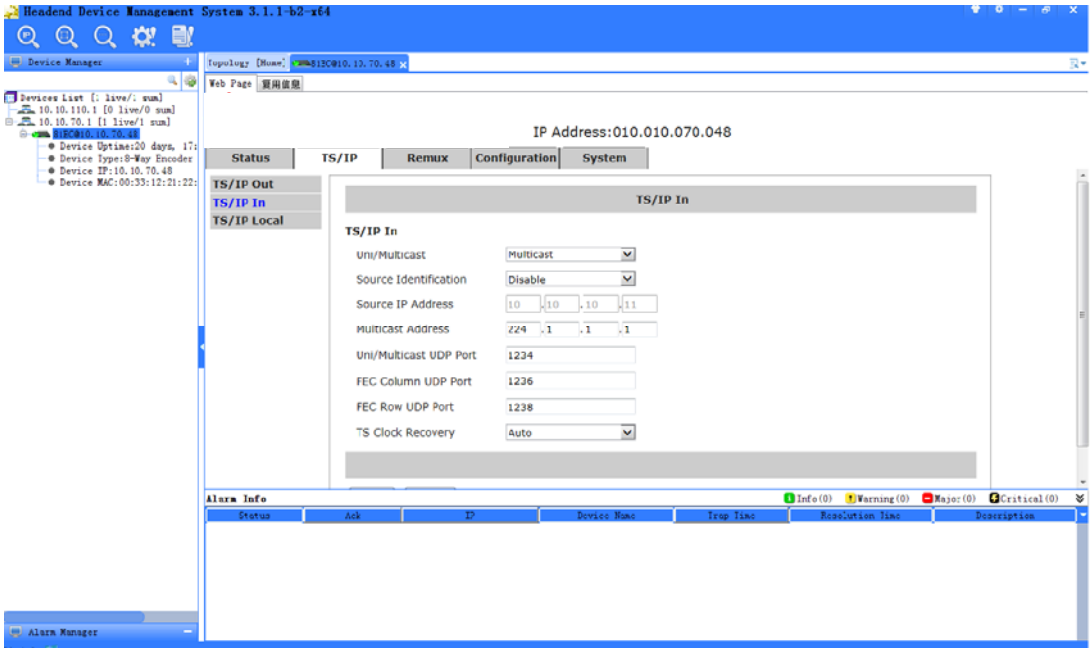
Row FEC UDP Port: set the port number for row FEC

FEC Alignment: set the alignment for FEC

Test Drop Packets: set the test drop packets

TS/IP In

Under Full Duplex Mode, the device supports single uni/multicast reception. Set the uni/multicast target IP address and port number on the page below.



TS/IP In

Uni/Multicast: select the type of IP streamcast over IP, Unicast or multicast

Source Identification: enable/disable the source identification of IP streamcast. When it is enable, please specify the source IP address *(see next item).* Only the stream from a specified IP can be received. Stream(s) from other device(s) will be ignored even with the same stream IP address.

Source IP Address: set the physical IP address of an unique device in an IP network. DXP-8000EM/8100EM will receive IP stream only this device. It can be Ignored if Source Identification is disable *(see previous item)* .

Uni/Multicast UDP Port: set the port number for the incoming IP streaming.

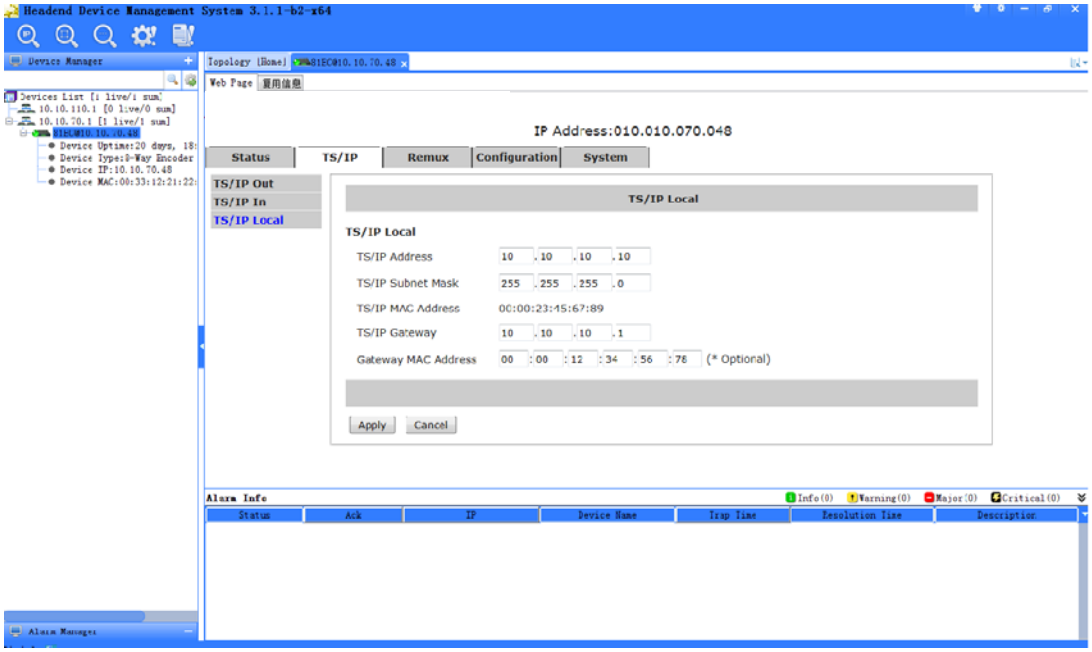
TS Clock Recover:

Auto: it is suggested to set Auto when there is accurate PCR carried by the inputted TS/IP

Fixed Rate: for system verification only, not recommend to use. When fixed rate is selected, a highly precise bit rate has to be set to receive the TS.

TS/IP Local

Set the parameters for the TS/IP Local Settings on the page below.



TS/IP Local

TS/IP Address: set the IP address of the IP port

TS/IP Subnet Mask: set the net mask of the IP port

TS/IP MAC Address: display the MAC address of the IP port, cannot be modified by user

TS/IP Gateway: set the gateway address under which the IP port is connected

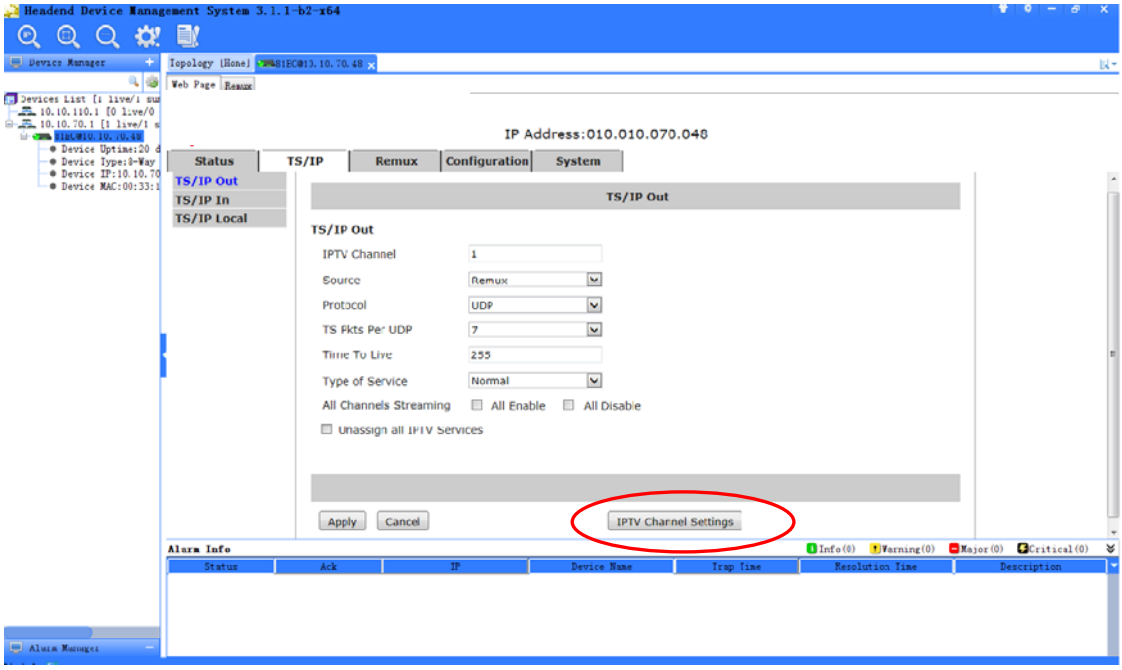
Gateway MAC Address: set the MAC address of the gateway under which the device is connected, this is necessary when the IP streaming is needed to pass through the gateways

4.3.2 128-Way IPTV Mode：

The pages below are displayed under IPTV mode. Up to 128 un-stuffed TS streams can be delivered with different IP streamcast addresses. The maximum total bit rate is 400Mb/s. All stuffing null packets are removed to save output bandwidth. User should notice the PCR accuracy will be degraded unpredictably as in the usual cases of IP TV applications. Since the high complexity, only web pages are used for configuration in this mode.

TS/IP Out

The parameters of TS/IP output under IPTV mode could be set on the following page.



TS/IP Out

IPTV Channel Settings: assign an IPTV streamcast output channel that is going to be configured *(refer as the current channel below)*

Source: set a source for the current IPTV channel, need to select program(s) in “IPTV channels Setup” then. Default is Remux.

Protocol: select UDP or RTP protocol for the IP output. Default is UDP.

TS Pkts Per UDP: select the number of TS packets that can be carried by each UDP packet. Default is 7.

Time To Live: set TTL to the output IP packets. Default is 255.

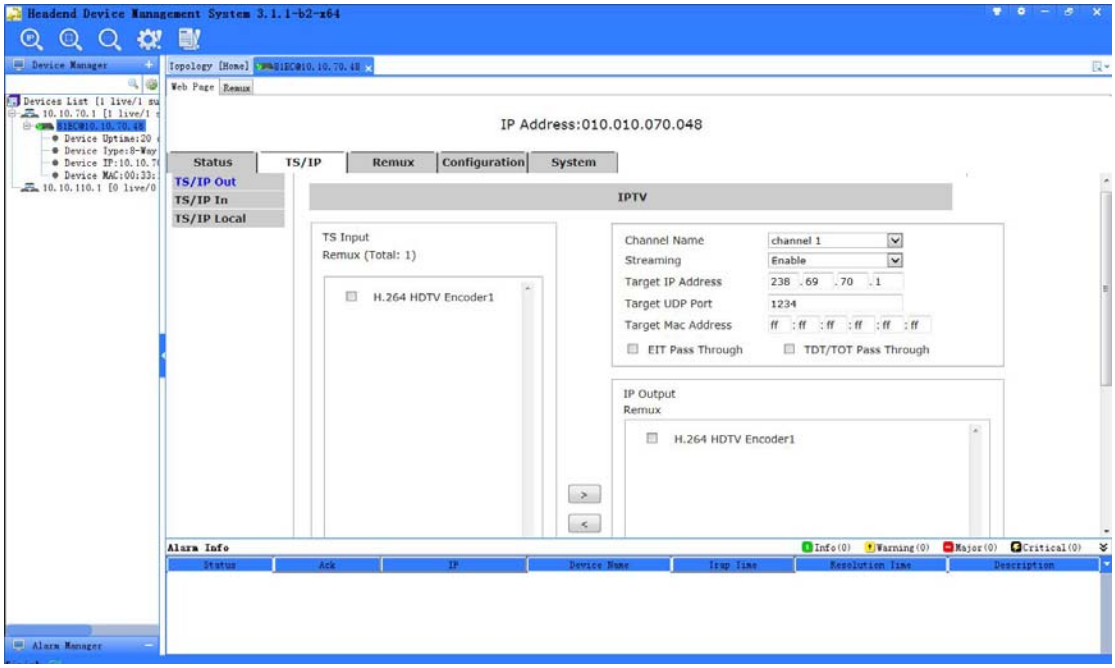
Type of Service: select the service type for the outputted IP streaming. Default is Min Delay.

All Channels Streaming: enable/disable all IPTV streamcast outputs at once

Unassign All IPTV Programs: remove all programs mapped for all IPTV streamcast outputs at once

IPTV Channel Settings:*(see the red circle on the TS/IP output page)*

Enter this page, as below, to set parameters and programs mapping/assignment for a specified IPTV channel.



IPTV Channel Settings

TS Input: display the TS source selected in previous step for the current channel *(channel 110 for this example)*, and the total program/service number detected will be shown in the brackets. The program(s)/service(s) detected from the select TS source will be listed in the box beneath.

Channel Name: Set the IPTV streamcast channel as the one is going to be configured *(refer to the current channel below).*

Streaming: enable/disable the current channel streamcast output. Default is Disable.

Target IP Address: set the streamcast IP address for the current channel. Default is 238.1.1.j for jth channel.

Target UDP Port: set the streamcast IP UDP port for the current channel. Defaults are 1234 for all channels.

Target MAC Address: set the MAC address of the IP port of the destination device for the current channel in case of necessity. Default is ff:ff:ff:ff:ff:ff, this just imply to get the MAC address with Target IP Address and ARP protocol automatically, not really send stream to a device with MAC=ff:ff:ff:ff:ff:ff .

EIT Pass Through: enabel EIT pass through from the source to the current channel

TDT/TOT Pass Through: enabel TDT/TOT pass through from the source to the current channel

IP Output: the window displaying all program(s)/service(s) already mapped (or selected) to be encapsulated from the source onto the current channel.

How to assign program/service onto the current channel:

1. To add program(s)/service(s), click the check box on the left of program(s)/service(s) name which is being mapped to the current channel in the TS Input window. Click the right arrow

button [>] between TS Input window and IP Output window, then the program(s)/service(s) checked will appear in the IP Output window.

2. To remove program(s)/service(s), click the check box on the left of program(s)/service(s) name which is being removed from the current channel in the IP Output window. Click the left arrow button [<] between TS Input window and IP Output window, the the program(s)/service(s) checked will disappear from the IP Output window.

3. Click the Apply button [Apply] at the bottom of this page to apply the settings just entered, or the Close button [Close] to discard and return to the previous web page.

4. A pop up will be displayed to confirm settings are accepted and applied.

5. Click the Close button [Close] after settings confirmed to return to previous page.

6. Click the Cancel button [Cancel] anytime to discard settings without return to the previous page.

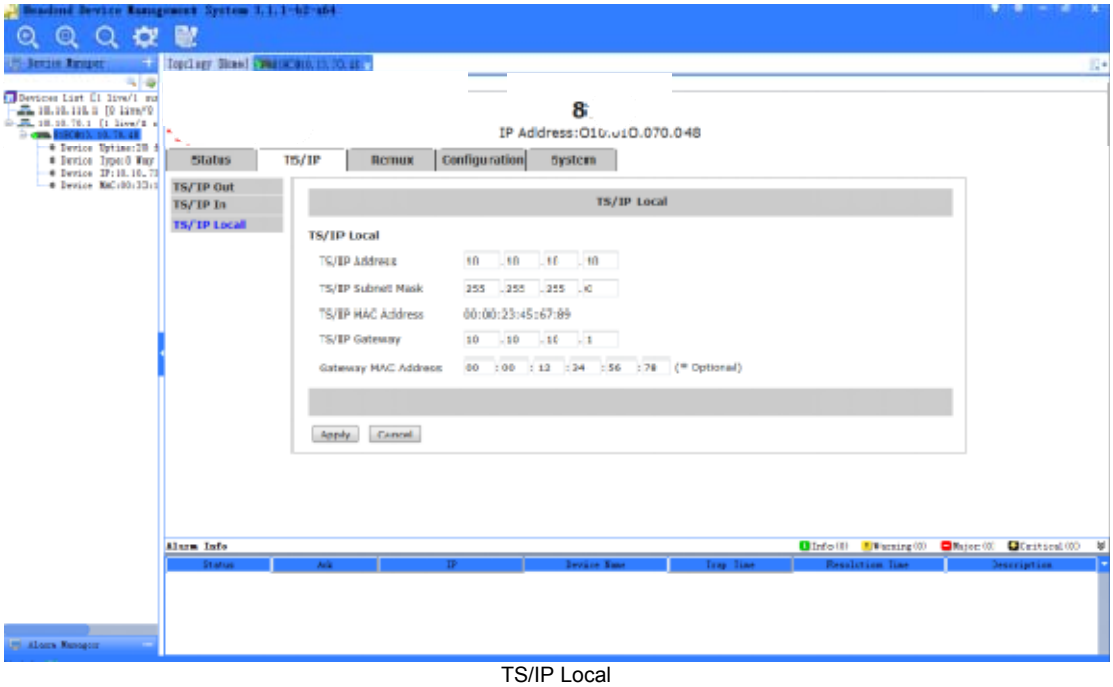
7. Since there is only one TS source for each IPTV output channel. User could make up a remuxed TS from multiple TS sources first, then add multiple programs/services from this single TS remuxed. In such way, use can assign programs/services to the particular IPTV channel(s) from multiple TS sources. The maximum data output bit rate of the build-in remux is 216Mb/s.

TS/IP In

Under IPTV mode, the TS/IP In is not available.

TS/IP Local

Set the parameters for the TS/IP Local Settings on the page below.



TS/IP Local

TS/IP Address: set the IP address of the IP port

TS/IP Subnet Mask: set the net mask of the IP port

TS/IP MAC Address: display the MAC address of the IP port, cannot be modified by user

TS/IP Gateway: set the gateway address under which the IP port is connected

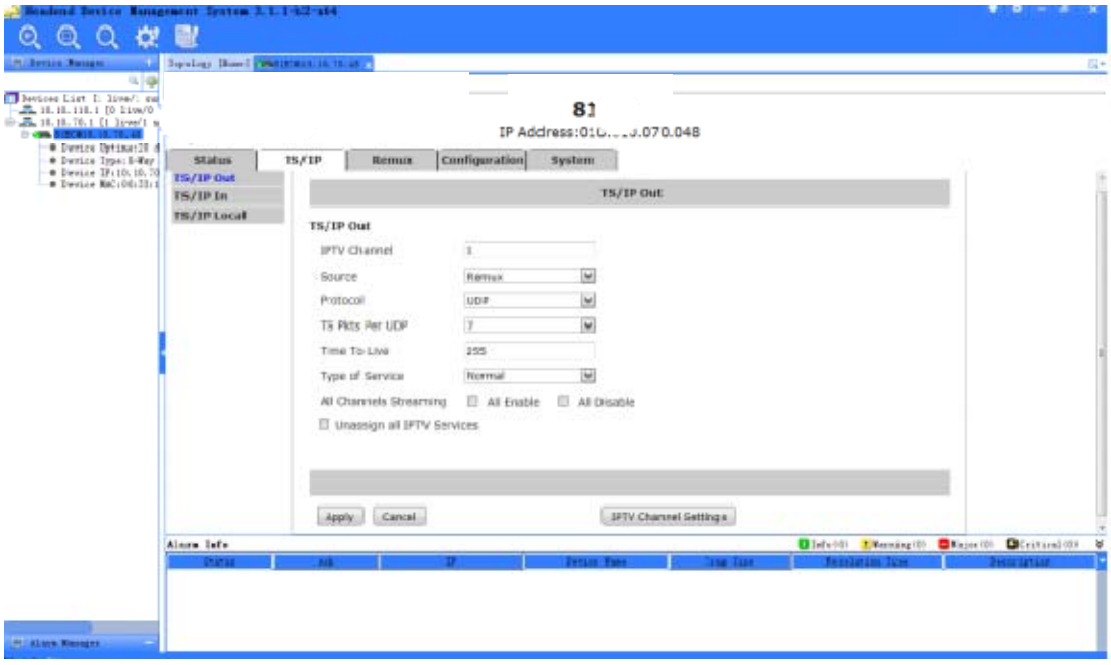
Gateway MAC Address: set the MAC address of the gateway under which the device is connected, this is necessary when the IP streaming is needed to pass through the gateways

4.3.2 32 -Way IPTV Mode：

The pages below are displayed under IPTV mode. Up to 32 un-stuffed TS streams can be delivered with different IP streamcast addresses. Two IP ports maximum total bit rate is 400Mb/s. All stuffing null packets are removed to save output bandwidth. User should notice the PCR accuracy will be degraded unpredictably as in the usual cases of IP TV applications. Since the high complexity, only web pages are used for configuration in this mode.

TS/IP Out

The parameters of TS/IP output under IPTV mode could be set on the following page.



TS/IP Out

IPTV Channel: assign an IPTV streamcast output channel that is going to be configured *(refer as the current channel below)*

Source: set a source for the current IPTV channel, need to select program(s) in “IPTV channels Setup” then. Default is Remux.

Protocol: select UDP or RTP protocol for the IP output. Default is UDP.

TS Pkts Per UDP: select the number of TS packets that can be carried by each UDP packet. Default is 7.

Time To Live: set TTL to the output IP packets. Default is 255.

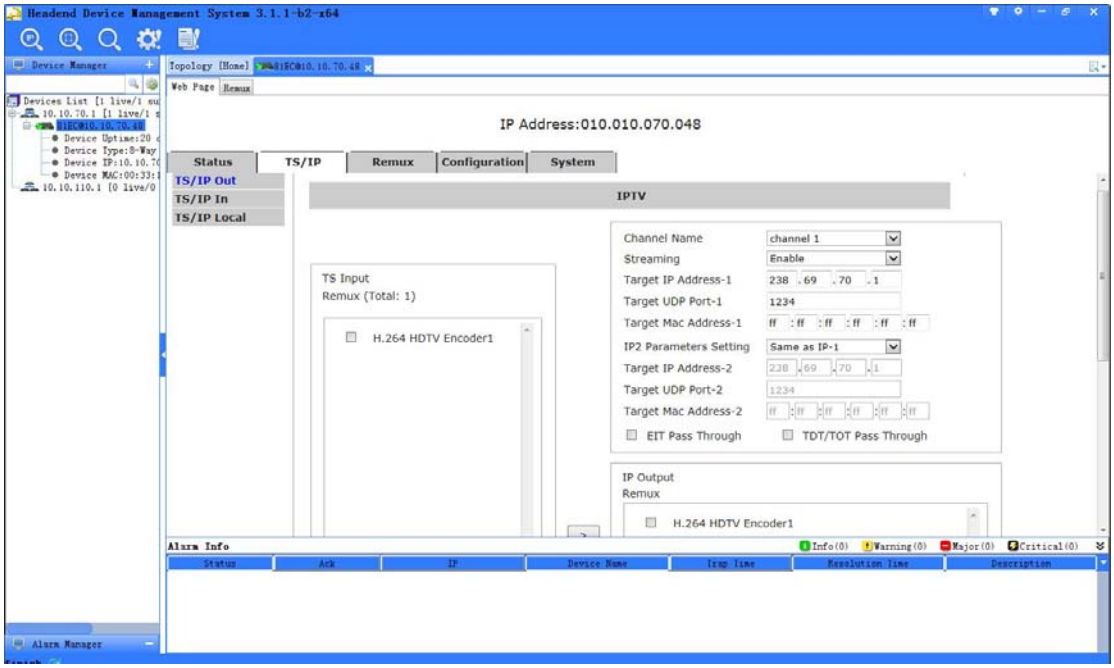
Type of Service: select the service type for the outputted IP streaming. Default is Min Delay.

All Channels Streaming: enable/disable all IPTV streamcast outputs at once

Unassign All IPTV Programs: remove all programs mapped for all IPTV streamcast outputs at once

IPTV channels Settings *(see the red circle on the TS/IP output page)*

Enter this page, as below, to set parameters and programs mapping/assignment for a specified IPTV channel.



IPTV channels Settings

TS Input: display the TS source selected in previous step for the current channel *(channel 110 for this example)*, and the total program/service number detected will be shown in the brackets. The program(s)/service(s) detected from the select TS source will be listed in the box beneath.

Channel Name: Set the IPTV streamcast channel as the one is going to be configured *(refer to the current channel below).*

Streaming: enable/disable the current channel streamcast output. Default is Disable.

Target IP Address-1: set the streamcast IP address for the current channel. Default is 238.1.1.j for jth channel.

Target UDP Port -1: set the streamcast IP UDP port for the current channel. Defaults are 1234 for all channels.

Target MAC Address-1: set the MAC address of the IP port of the destination device for the current channel in case of necessity. Default is ff:ff:ff:ff:ff:ff, this just imply to get the MAC address with Target IP Address and ARP protocol automatically, not really send stream to a device with MAC=ff:ff:ff:ff:ff:ff .

IP2 parameters setting: Same as the port1 or set new parameters.

Target IP Address-2: set the streamcast IP address for the current channel. Default is 238.1.1.j for jth channel.

Target UDP Port -2: set the streamcast IP UDP port for the current channel. Defaults are 1234 for all channels.

Target MAC Address-2: set the MAC address of the IP port of the destination device for the current channel in case of necessity. Default is ff:ff:ff:ff:ff:ff, this just imply to get the MAC address with Target IP Address and ARP protocol automatically, not really send stream to a device with MAC=ff:ff:ff:ff:ff:ff .

EIT Pass Through: enabel EIT pass through from the source to the current channel

TDT/TOT Pass Through: enabel TDT/TOT pass through from the source to the current channel

IP Output: the window displaying all program(s)/service(s) already mapped (or selected) to be encapsulated from the source onto the current channel.

How to assign program/service onto the current channel:

8. To add program(s)/service(s), click the check box on the left of program(s)/service(s) name which is being mapped to the current channel in the TS Input window. Click the right arrow button  between TS Input window and IP Output window, then the program(s)/service(s) checked will appear in the IP Output window.

9. To remove program(s)/service(s), click the check box on the left of program(s)/service(s) name which is being removed from the current channel in the IP Output window. Click the left arrow button  between TS Input window and IP Output window, the the program(s)/service(s) checked will disappear from the IP Output window.

10. Click the Apply button  at he bottom of this page to apply the settings just entered, or the Close button  to discard and return to the previous web page.

11. A pop up will be displayed to confirm settings are accepted and applied.

12. Click the Close button  after settings confirmed to return to previous page.

13. Click the Cancel button  anytime to discard settings without return to the previous page.

14. Since there is only one TS source for each IPTV output channel. User could make up a remuxed TS from multiple TS sources first, then add multiple programs/services from this single TS remuxed. In such way, use can assign programs/services to the particular IPTV channel(s) from multiple TS sources. The maximum data output bit rate of the build-in remux is

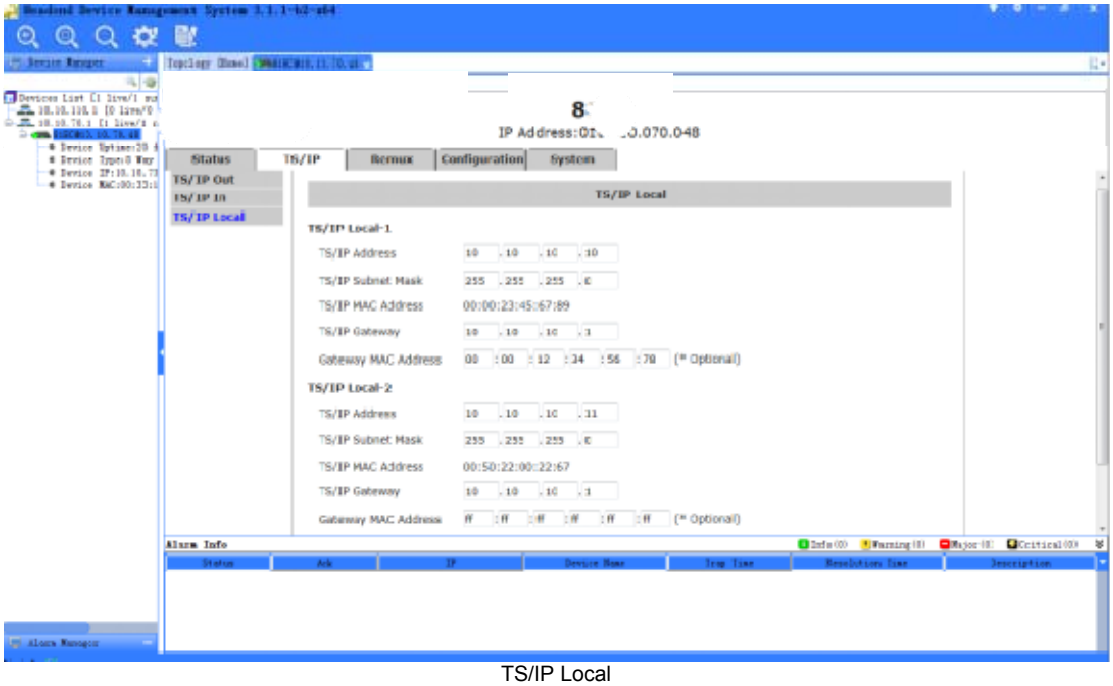
216Mb/s.

TS/IP In

Under IPTV mode, the TS/IP In is not available.

TS/IP Local

Set the parameters for the TS/IP Local Settings on the page below.



TS/IP Local

TS/IP Address: set the IP address of the IP port

TS/IP Subnet Mask: set the net mask of the IP port

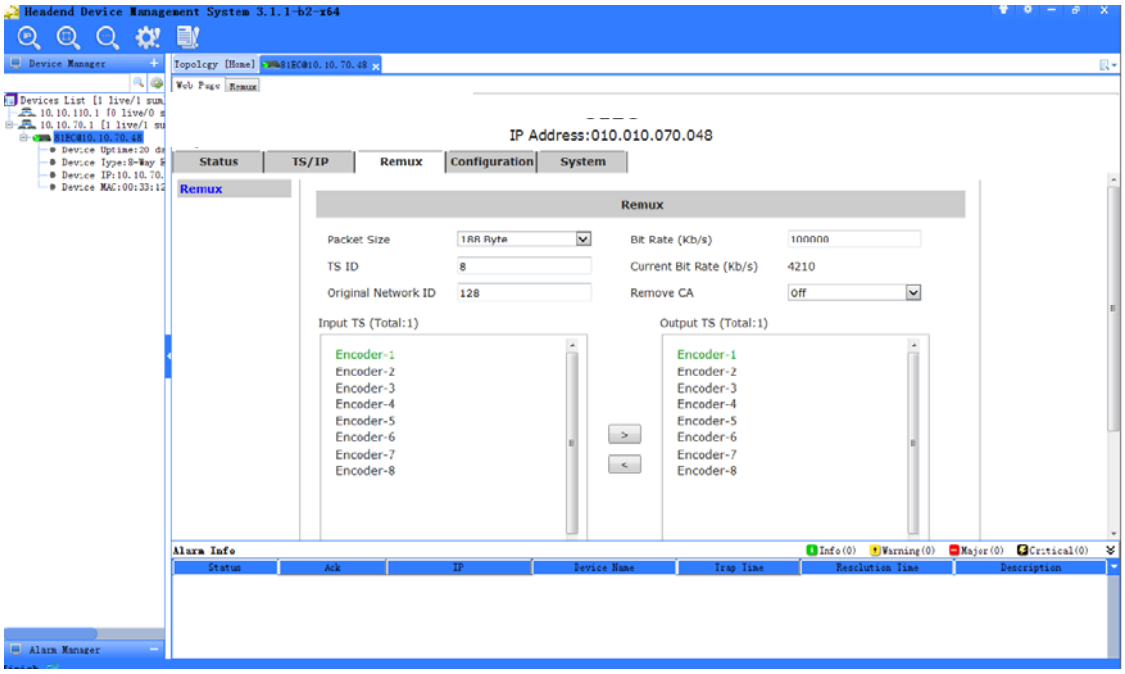
TS/IP MAC Address: display the MAC address of the IP port, cannot be modified by user

TS/IP Gateway: set the gateway address under which the IP port is connected

Gateway MAC Address: set the MAC address of the gateway under which the device is connected, this is necessary when the IP streaming is needed to pass through the gateways

4.4 Remux

The build-in TS remux can receive 8 SPTS generated by the encoders, TS from TS/IP *(under Full Duplex mode only)*.



Remux

Packet Size: set the packet length of the TS re-multiplexed to 188 or 204 Byte.

Bit Rate (Kb/s): set the bit rate for the new generated MPTS, valid range from 100~216000 Kb/s. The bit rate should be at least bigger than the total bit rate of selected programs, otherwise, packets may be dropped.

TS ID: set the TSID of the new generated transport stream, valid range from 0 to 65535 decimal.

Current Bit Rate(Kb/s): display the actual valid bit rate that the Remux is delivering, including all programs,/services, PSI/SI and null packets.

Original Network ID:set the Original Network ID

Remove CA: ON: remove the CA descriptors that are carried within the inputted TS over ASI or IP, OFF: keep the CA descriptors as they are

How to assign program/service onto the re-multiplexed (remuxed) TS:

1. To add program(s)/service(s), click the check box on the left of program(s)/service(s) name which is going to be remuxed in the Input TS window. Click the right arrow button [>] between Input TS window and Output TS window, then the program(s)/service(s) checked will appear in the Output TS window.

2. To remove program(s)/service(s), click the check box on the left of program(s)/service(s) name which is going to be removed from the remuxed TS in the Output TS window. Click the left arrow button [<] between Input TS window and Output TS window, the the program(s)/service(s) checked will disappear from the Output TS window.

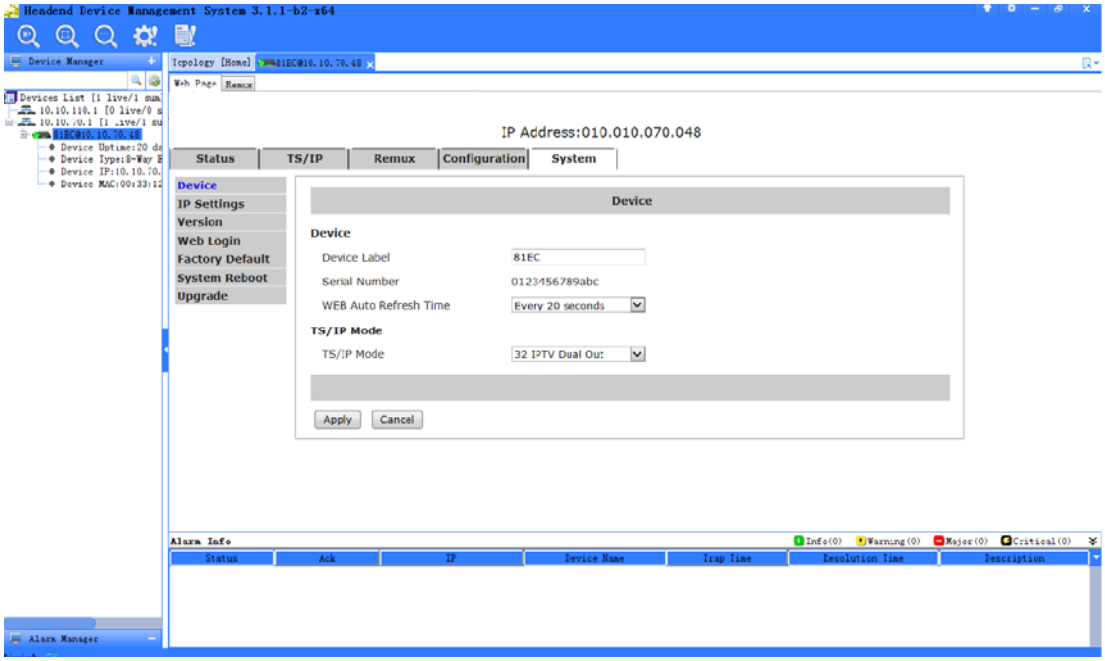
3. Click the Apply button [Apply] at the bottom of this page to apply the settings just entered, a new TS is being re-multplexed. Or, click the Cancel button [Cancel] anytime to discard.

4. A pop up will be displayed to confirm settings are accepted and applied.
5. The maximum output data bit rate of the build-in remux is 216Mb/s.

4.5 System

The system page gives all information of this device including device name, serial number, software version, and so on. User can implement the alarm switch configuration, network settings, TS/IP operation mode, reboot, preset parameters (save & load with a PC) and software upgrade under system page.

Device



Device

Device Label: set the label of this device. User can assign a label (or nickname) for this device, the Device Label should be less than 24 characters and will be shown on the LCD front panel continuously, just above device's IP address, and on the page index of most of web browsers.

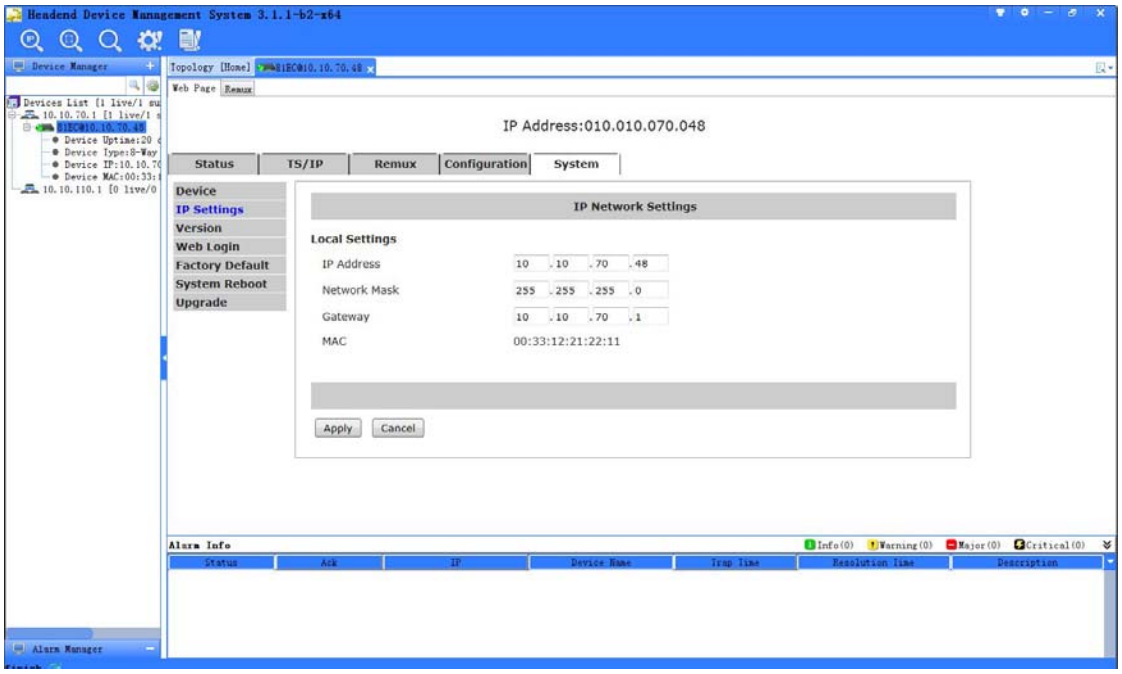
Serial Number: show the serial number for the device, read-only.

WEB Auto Refresh Time: set the time interval of web page refresh.

TS/IP Mode: switch the TS/IP operation mode among "Multiple Output", "128 -Way IPTV"and"32-Way IPTV" modes. The device will reboot automatically after change applied. It takes about 3 minutes.

IP Settings

The IP settings for the device can be found and configured under the page below.



IP Settings

IP Address: set the address of the IP control port of this device.

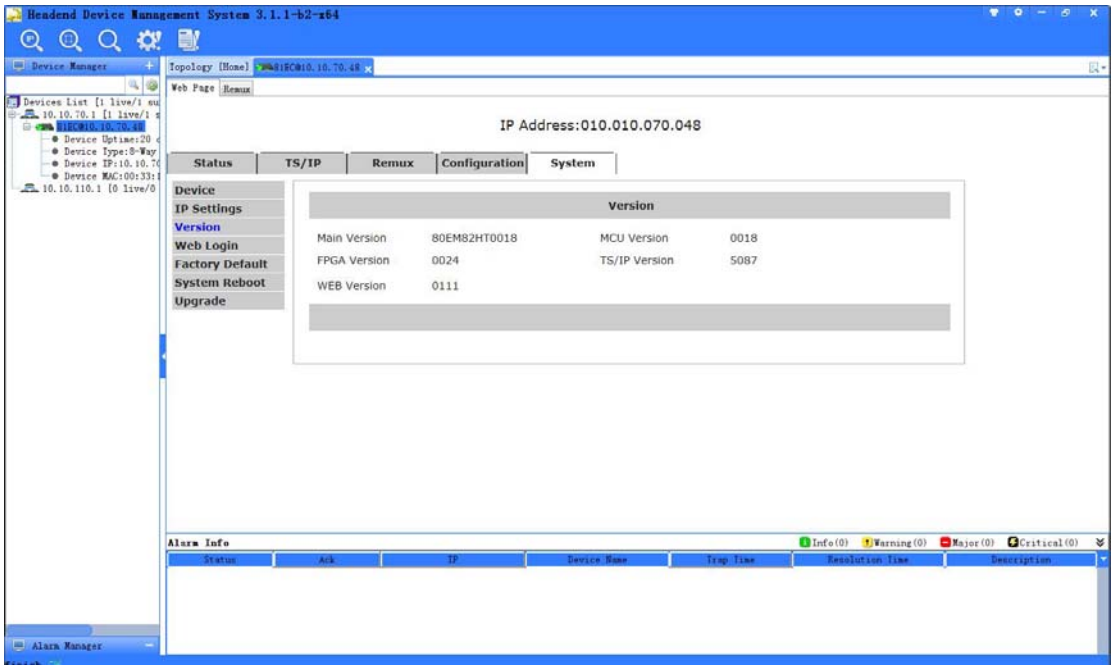
Network Mask: set the subnet mask for this device.

Gateway: set the gateway IP address, to which this device is connected to, if any.

MAC: display the MAC address of the control IP port of this device, read only.

Version

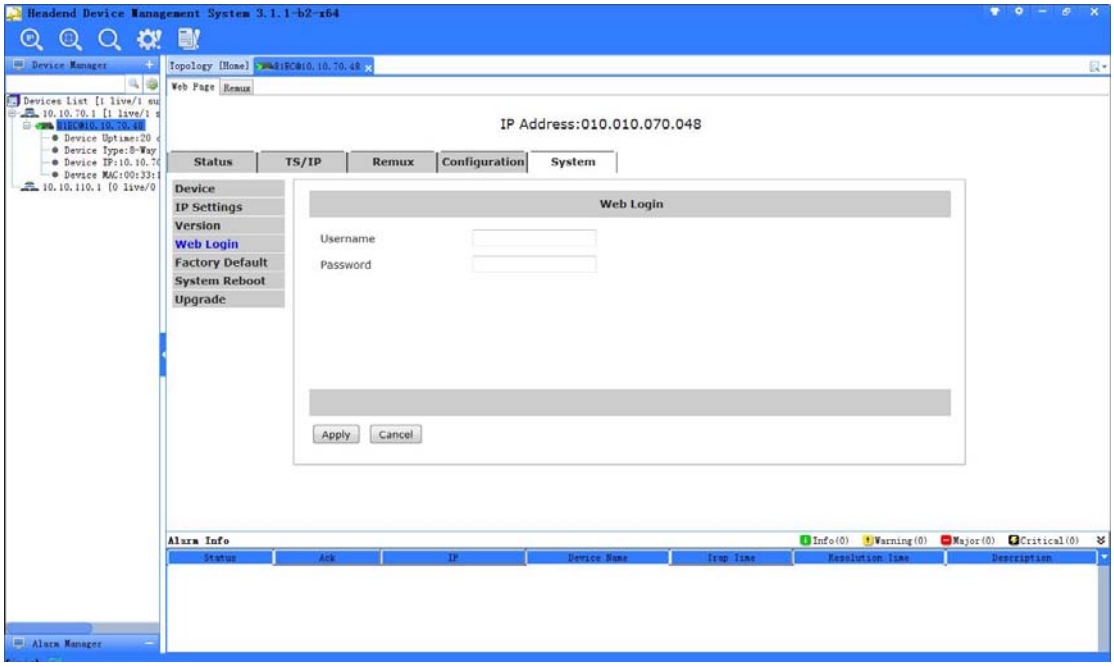
User can check versions of various functional blocks of this device, as shown on the page below.



Version

Web Login

Set the log-in user name and password for the web management server of this device. Default values are root and 12345, respectively. To retrieve these values in case of necessity, set it again on the front panel.

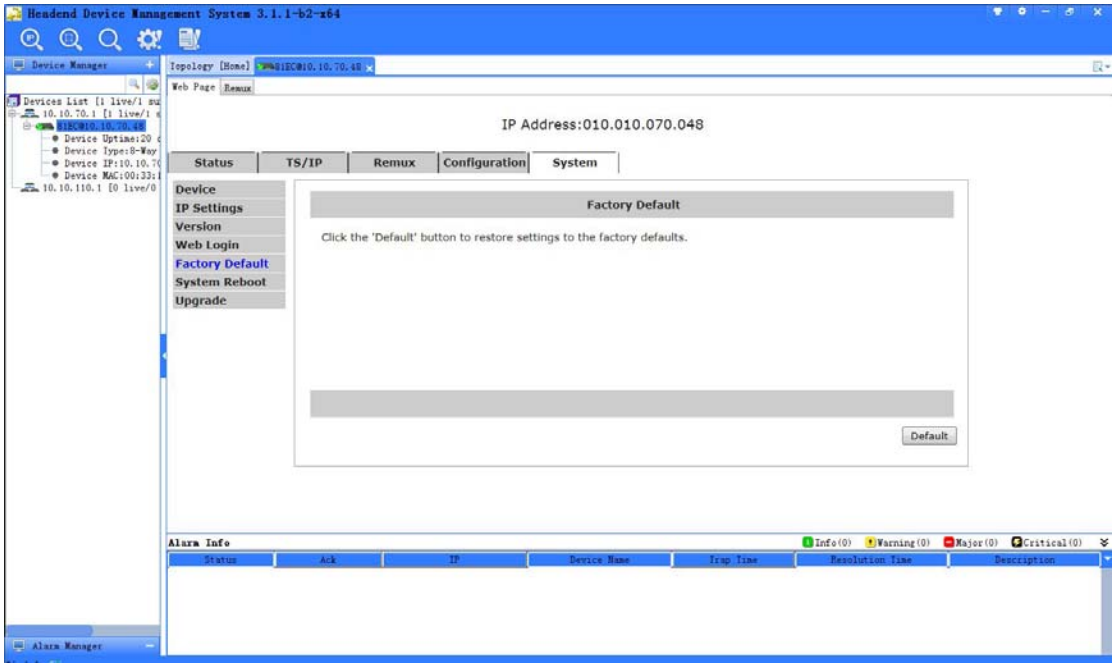


Web Login

Factory Default

Click the Default button [Default] to restore the factory default settings to the device.

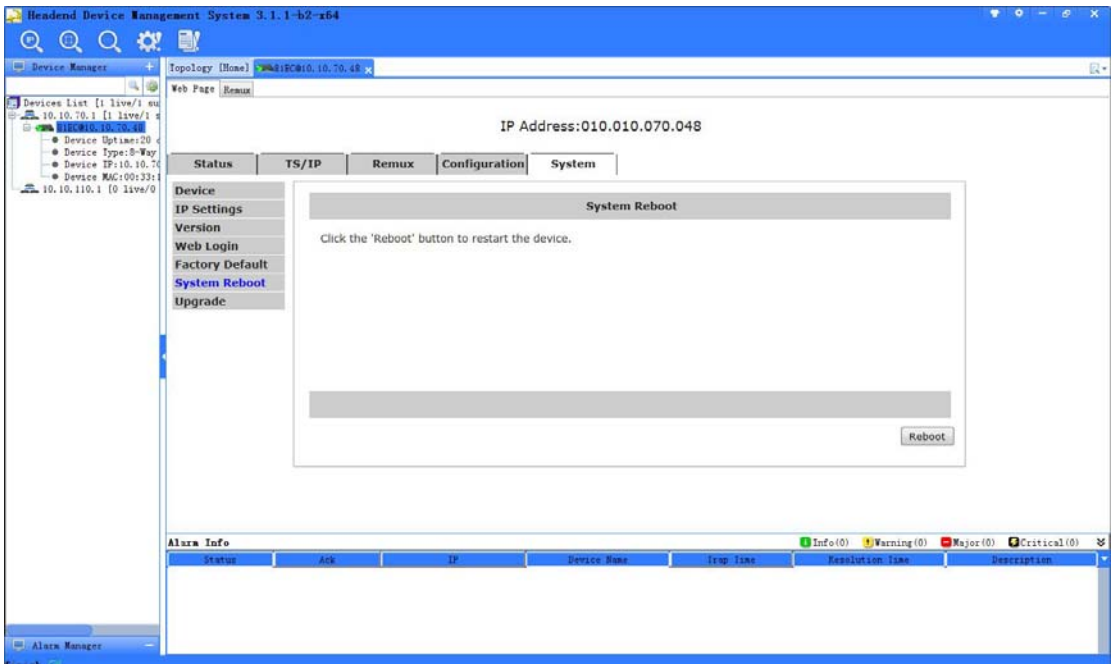
Note: the IP address of the device and the operation mode of the Gigabit board will not be restored.



Factory Default

System Reboot

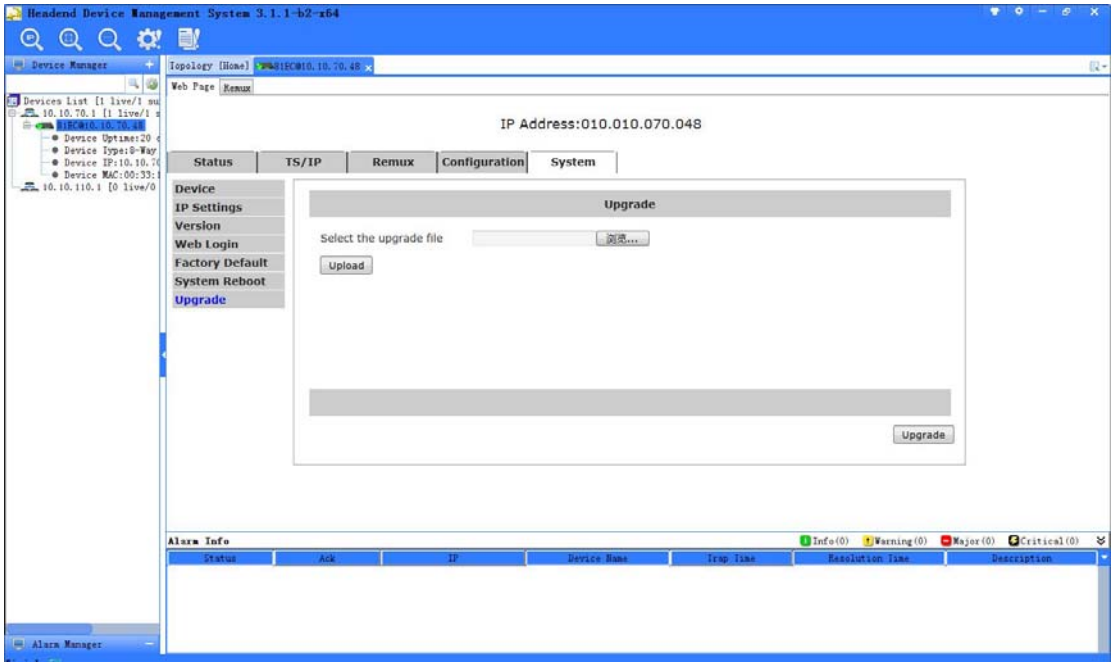
User can reboot this device by clicking the Reboot button [Reboot].



System Reboot

Upgrade

User can upgrade the software of this device on web.



Upgrade

Firstly, verify a correct upgrade file with correct model and correct version. Consult your technical support person(s) if any ambiguity, this device might be totally out of order if a wrong file is upgraded. Save the correct file for upgrade on a specific path in the PC just connects to this device with the web browser. Enter the path & file name in the row right next to “Select the

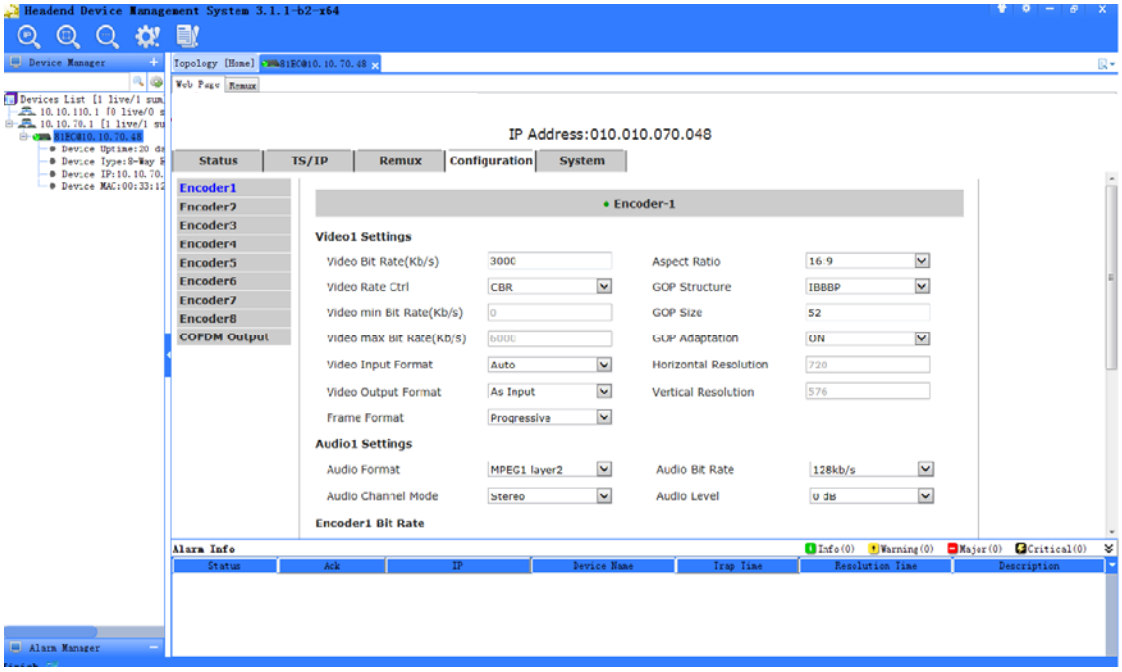
upgrade file". Verify whether the correct file has been entered, again. Click the Upload button

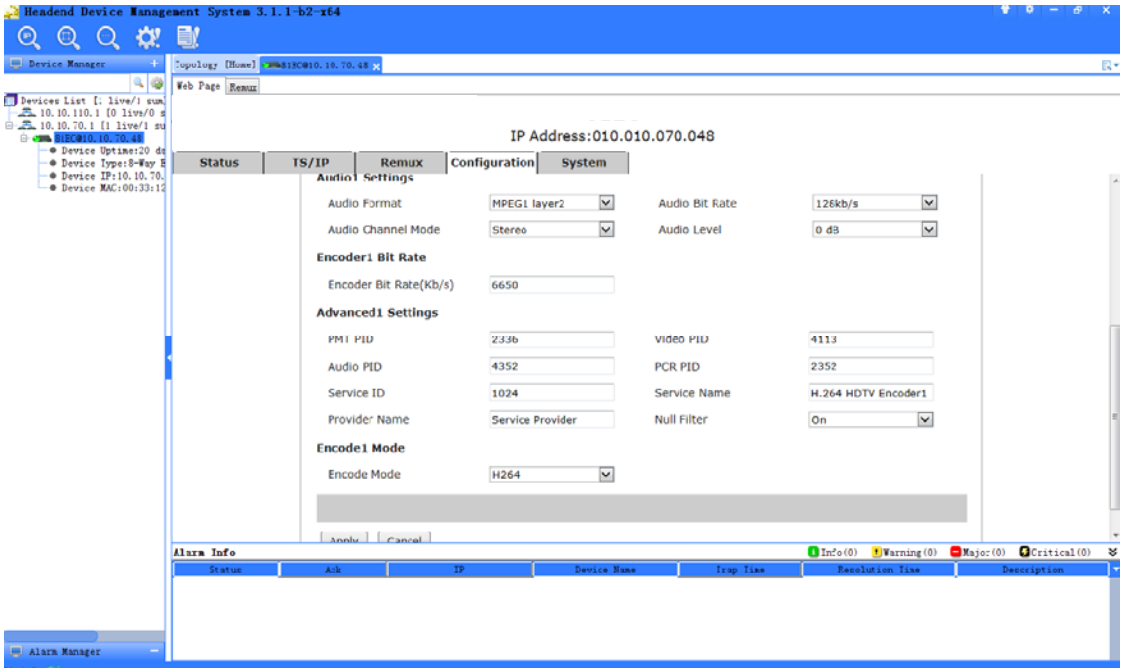
Upload , progress of file upload will be shown and wait until the process is completed. Then Click the Upgrade button on the lower right corner of this page. Wait for few minutes for the upgrade, and this device will reboot automatically after upgrade success. The IP address for control will not be changed even after software upgrade.

4.6 Configuration

4.6.1 Encoder

There are eight encoders integrated on one device, each encoder can work independently. Click on the Encoder-1 to configure the encoder 1, the same for the rests.





Encoder

Video n Settings *(n=1 in this example, same below)*

Video Bit Rate: set the video bit rate. The setting is valid only when the Video Rate Ctl is CBR.

Aspect Ratio: set the aspect ratio for the encoded video, 4:3 or 16:9.

Video Rate Ctl: set constant bit rate (CBR)mode or variable bit rate (VBR) mode for the selected encoder

Video min Bit Rate: set the minimum video bit rate. The setting is valid only when the Video Rate Ctl is VBR.

Video Max Bit Rate: set the Maximum video bit rate. The setting is valid only when the Video Rate Ctl is VBR.

GOP Structure: Set the GOP structure, pull down menu is provided

GOP Size: Set the GOP Size/Length, a long GOP may improve picture quality but increase the latency of encoding.

GOP Adaptation: Enable/Disable GOP size auto-adaption.

Video Input Format: Set the input video format, please select “Auto” if unknown or it will be varied

Video Output Format: Select the video format, video will be scaled before encoded and outputted.

Horizontal Resolution: Set the horizontal resolution for scale *(NOTE:before encoding, valid only when Output Video Format = “manual settings”)*

Vertical Resolution: Set the vertical resolution for scale *(NOTE: before encoding, valid only when Output Video Format = “manual settings”)*

Frame Format: Set video scan mode, video will to be converted before encoding

Audio n Settings

Audio Format: set the audio compression format MPEG-1 Layer II or MPEG2/4 AAC-LC HE-AAC. *(NOTE:MPEG2/4 AAC-LC HE-AAC can be selected on EN-8000 models)* **Audio Bit Rate:** set the audio bit rate.

Audio Channel Mode: set the audio in stereo or mono. *(NOTE: only Left audio channel will be encoded when Mono mode is on.)*

Audio Level: set the gain of volume, audio will be amplified or attenuated before encoding.

Encoder n Bit Rate: set the output bit rate of the current encoder. Encoder bit rate must greater than the sum of video bit rate + audio bit rate + PSI (150Kbps) + buffering (100Kbps) + encoder error (150Kbps), valid range from 300 to 22000Kb/s

Advanced n Settings

PMT PID: set PMT PID, valid range from 32 to 8190 decimal

Video PID: set Video PID, valid range from 32 to 8190 decimal

Audio PID: set audio PID, valid range from 32 to 8190 decimal

PCR PID: set PCR PID, valid range from 32 to 8190 decimal

Service ID: set Service ID / Program Number , valid from 1 to 65535 decimal

Service Name: set the service name for the service/program encoded. The length should be less than 24 characters.

Provider Name: Set the name of provider of this service. This information will be embedded onto the TS encoded, and will be presented with some set top boxes.

Null Filter: Enable/Disable null packet data removal to save bandwidth, please be reminded that PCR accuracy will be degraded if null packets are filtered.

Encoder n Mode: set video encode/compression standard, H.264 (SD/ HD) or MPEG2(for SD only).

5 Installation

It is highly recommended to fix the EN-8000 be mounted in EIA standard 19" rack, any other mounting method may lead to damage of the device.

- Open the box and take out the device with care. Inspect if there is any damage to the appearance of the device.
- Fix the device into the standard EIA 19" rack.
- Connect the input and output cables. It is highly recommended to put the 75Ohm loader onto the ASI output port that is not used.
- Plug the power cable into the AC Power input socket. The POWER Indicator LED (A4) should be green and always light on during working.Needs 5-10minutes to boot up completely.
- Configure the network settings of the device via front panel.
- Make the settings of Encoder, Remux, and IP output step by step following the instruction written in the user manual.

6 Accessories

Certificate of quality /Guarantee card	1PC
Power Cord	2PCS

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