ANTIK technology

USER MANUAL

EX-5108

8-Way H.264 HD/SD Encoder

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Notices

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WARRANTY

This warranty does not cover parts which may become defective due to misuse of the information contained in this manual.
Read this manual carefully and make sure you understand the instructions provided. For your safety, be aware of the following precautions.

WARNING! IMPORTATNT SAFETY INSTRUCTIONS
CAUTION: TO REDUCE THE RISK OF ELECTRIC SHOCK, DO NOT REMOVE COVER (OR BACK). NO USER SERVICEABLE PARTS INSIDE. REFER SERVICING TO QUALIFIED SERVICE PERSONNEL.

WARNING

- To reduce the risk of fire or electric shock, do not expose this apparatus to rain or moisture.
- To avoid explosion danger, do not dispose of batteries in an open fire.

CE MARK FOR EUROPEAN HARMONISED STANDARDS

The CE mark which is attached to these products means it conforms to EMC Directive (89/336/EEC) and Low Voltage Directive (73/23/EEC).

IMPORTANT INFORMATION

Please retain the original packaging, should it be necessary at some stage to return the device.

Disposal of Old Electrical and Electronic Equipment (Applicable in the European Union and other European countries with separate collection systems)

This symbol on the product or on its packaging indicates that this product shall not be treated as household waste. Instead it shall be handed over to the applicable collection point for the recycling of electrical and electronic equipment. By ensuring this product is disposed of correctly, you will help prevent potential negative consequences for the environment and human health, which could otherwise be caused by inappropriate waste handling of this product. The recycling of materials will help to conserve natural resources. For more detailed information about recycling of this product, please contact your local Civic Office, your household waste disposal service, or the shop where you purchased the product.

COPYRIGHTS

Television programs, movies, video tapes, discs, and other materials may be copyrighted. Unauthorized recording of copyrighted material may be against the copyright laws in your region. Also, use of this product with cable television transmissions may require authorization from the cable television operator or transmitter/owner.

VENTILATION

- Do not expose the product to high temperatures, such as placing it on top of other product that produce heat or in places exposed to direct sunlight or spot lights.
- The ventilation slots on top of the product must be left uncovered to allow proper airflow into the device.
- Do not stand the product on soft furnishings or carpets.
- Do not stack electronic equipment on top of the product.
- Do not place the product in a location subject to extreme changes in temperature. The temperature gradient should be less than 10 degrees C/hour.
- Place the product in a location with adequate ventilation to prevent the build-up of heat inside the product. The minimum ventilation space around the device should be 7 cm. The ventilation should not be impeded by covering the ventilation openings with items, such as newspapers, table cloth, curtains, etc.

POWER SOURCES

- The product is not disconnected from the AC power source (mains) as long as it is connected to the power outlet or wall socket, even if the product is turned off.
- If the product will not be used for a long period of time, disconnect it from the AC power outlet or wall socket.

Before Using the Device

Thank you for purchasing the EX-5108 8-Way H.264 HD/SD Encoder. This User Manual is written for operators/users of the EX-5108 to assist in installation and operation. Please read this user manual carefully before installation and use of the device.

FOR YOUR SAFETY

This equipment is provided with a protective earthing ground incorporated in the power cord. The main plug shall only be inserted in a socket outlet provided with a protective earth contact. Any interruption of the protective conductor, inside or outside the device, is likely to make the device dangerous. Do not remove the covers of this equipment. Hazardous voltages are present within this equipment and may be exposed if the covers are removed. Only Beijing Jaeger trained and approved service engineers are permitted to service this equipment.

The supplied AC power cable must be used to power the device. If the power cord becomes damaged it must be replaced. No operator serviceable parts inside. Refer servicing to Beijing Jaeger trained and approved service engineers. For the correct and safe use of the device, it is essential that both operating and servicing personnel follow generally accepted safety procedures in addition to the safety precautions specified in this manual. Whenever it is likely that safety protection is impaired, the device must be made in-operative and secured against unintended operation. The appropriate servicing authority must be informed. For example, safety is likely to be impaired if the device fails to perform the intended measurements or shows visible damage.

WARNINGS

- The mounting environment should be relatively dust free, free of excessive vibration and the ambient temperature between 0C° to 40C°. Relative humidity of 20% to 80% (non-condensed) is recommended.
- Avoid direct contact with water.
- Never place the equipment in direct sunlight.
- The outside of the equipment may be cleaned using a lightly dampened cloth. Do not use any cleaning liquids containing alcohol, methylated spirit or ammonia etc.
- For continued protection against fire hazard, replace line fused only with same type.
- Air intake for cooling is achieved via holes at the side of the device and the fans inside. The air flow should not be obstructed. Therefore, the device has to be placed on a flat surface, leaving some space at the sides of the device.
- When in operation, the internal temperature should not exceed the limit of 70C°.

EX-5108 Series 8-Way H.264 HD/SD Encoder

1 Overview

EX-5108 is a series of high density real-time H.264 HD/SD Encoders that can support up to eight High Definition (HD) A/V signals compressing and encoding simultaneously. These A/V signals can be fed into the device via 8x HDMI or 8x SDI input ports as different factory options. The encoded streams can be then remultiplexed and output over its GbE IP and ASI ports. All models support Time Base Correction (TBC) to ensure the audio and video synchronization, the features necessary for the professional TV signal flow. The series provide two TS/IP operation modes. The first is “Full Duplex”, which allows one MPTS or SPTS inputted over 1 multicast/unicast to make up a new MPTS with local encoders, then sends out the new one over 1 multicast/unicast. In the second mode “Multiple output” which delivers up to 9 streams over IP. There are 8 un-stuffed SPTS (lower bit rate but less PCR accurate than normal SPTS, from local encoders) and 1 MPTS (from internal reMultiplexer) over the IP with different Unicast or Multicast IP addresses. EX-5108 allows user to configure, monitoring and manage over the informative front panel and keypad, or Web interface, or SNMP based management software from 3rd party. This Encoder family presents brilliant picture quality, high density design, high stability system architecture, and the hot-swappable power supply.

2 Features

- Compile with H.264/AVC HP@L4.0
- MPEG1 Layer II, MPEG2 AAC-LC, MPEG4 AAC-LC audio compression (see ordering information)
- 8-way real time encoder with re-multiplexed integrated
- Built-in re-Mux accepts up to 10 SPTS/MPTS (8 from local encoders, 2 from external input over IP and ASI)
- 1 ASI input (for daisy chain) & Redundant ASI output
- Full duplex Gigabit TS over IP I/O (under Full duplex operation mode)
- Up to 9 multicast/unicast output (under Multiple-channle operation mode)
- VBR and CBR encoding mode
- Free resolution downscale at same frame rate
- SNMP & HTTP WEB
- Redundant Power Supplies
- 19” x 1 U EIA standard chassis

3 Technical Specifications

Video input & compression	
Number of input ports	HDMI x 8 or HD-SDI x 8
Compression Standard	H.264/AVC HP@L4.0
Video Sampling Format	4:2:0, 8-bit, YCbCr
Video Encoding Bit Rate	2~30Mbps for each channel
Video Resolution & Recommended Bit Rate	1080p（1920×1080）@ 59.94 Hz，50 Hz：SMPTE296M: 6~30Mb/s 1080i（1920×1080）@25Hz,29.97Hz,30Hz:SMPTE274M: 6~24Mb/s 1080i（1440×1080）@25Hz,29.97Hz,30Hz:SMPTE274M: 5~24Mb/s 720p（1280×720）@50Hz,59.94Hz,60Hz:SMPTE296M: 4~24Mb/s 480i（720×480）@29.97Hz:SMPTE656M: 2~10Mb/s 576i（720×576）@25Hz: SMPTE656M: 2~10Mb/s
Other Video Resolution	Free resolution downscale at same frame rate
Aspect Ratio	4:3/16:9 Selectable
Audio Input & compression	
Input	HDMI or SDI Embedded audio
Audio Compression	MPEG1 Layer II, (MPEG2 AAC-LC, MPEG4 AAC-LC option for EX-5108)
Sampling Rate	48KHz
Compression Bit Rate	32~192Kbps(Mono), 64~384Kbps(Stereo), 128~512Kbps(AAC LC)
DVB-ASI Input	
Interface	BNC Female, 75Ω
Maximum Input Bit rate	100 Mb/s
Data Transfer type	Byte
Packet Length	188 or 204 Bytes
Signal Level	200 ~ 880mVp-p
DVB-ASI Output	
Interface	BNC Female, 75Ω
Max. Effective Data Rate	120 Mb/s
Data Transfer type	Byte
Packet Length	188 or 204 Bytes
Signal Level	800±80mV
Gigabit TS_over_IP (Full Duplex Mode)	
Standard	IEEE 802.3, 10/100/1000 Base-T, Full Duplex
Number of Multi/Unicast	x 9
Max. Effective Bit Rate	80Mb/s
Data Protocol	UDP or RTP, SPTS or MPTS
Control Protocol	ICMP, ARP, IGMPv2

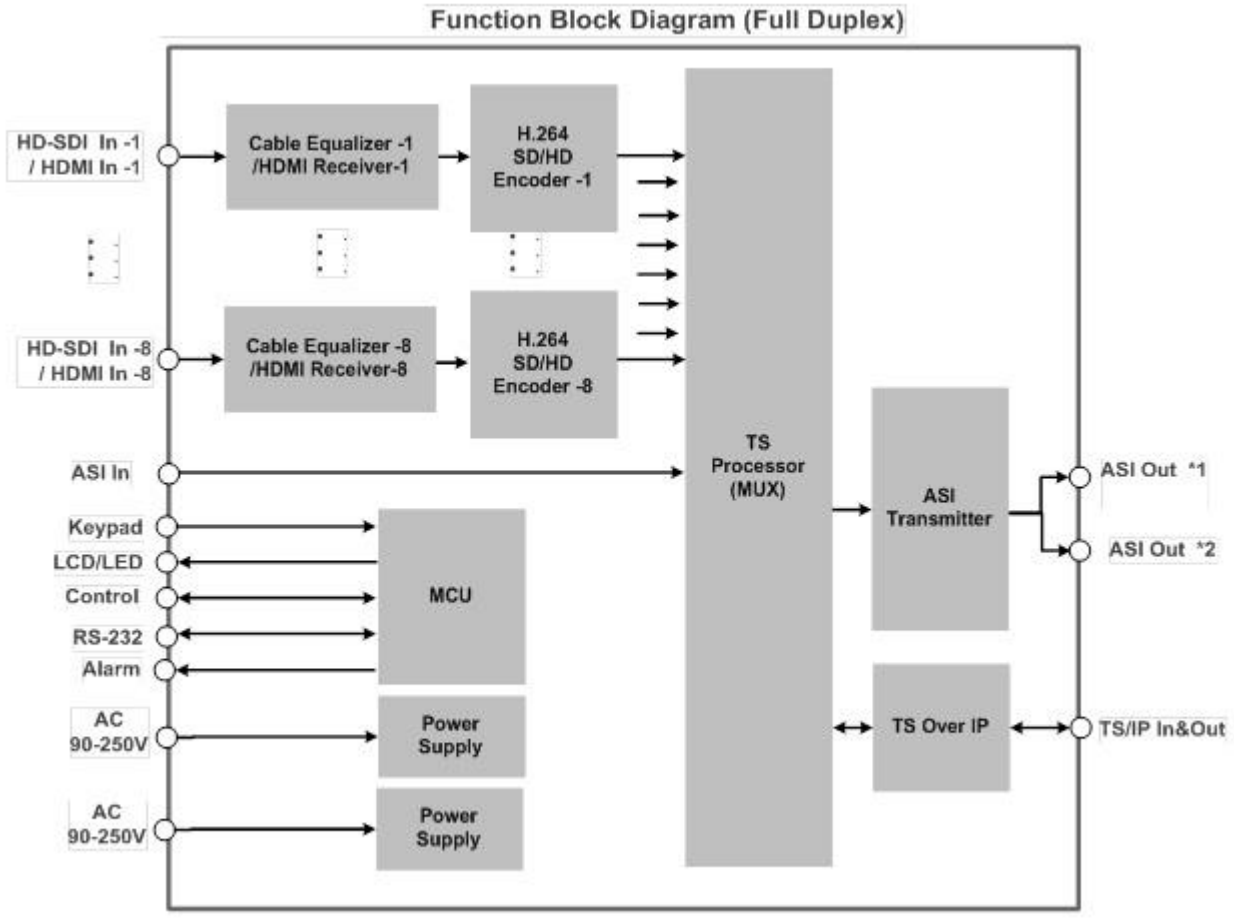
Gigabit TS_over_IP Output (Multi-Channel IPTV Mode)	
Standard	IEEE 802.3, 10/100/1000 Base-T,
Max. Effective Bit Rate	200Mb/s
Data Protocol	UDP or RTP, SPTS or MPTS
Control Protocol	ICMP, ARP, IGMPv2
Rear Panel	
ASI In	1 x BNC Female, 75Ω
HD-SDI In	8 x BNC Female, 75Ω (EX-5108)
HDMI In	8 x HDMI Male, 75Ω (EX-5108)
ASI Out	2×BNC Female, 75Ω(1 Backup)
Front Panel	
Control	1×RJ-45, 10/100 Base-T
TS/IP	1× IP (GbE), RJ-45, 10/100/1000 Base-T
Display	2 x 20 LCD Display
Others	
Power Supply	AC90~260V 50/60Hz
Operating Temperature	0 ~ 45℃
Storage Temperature	-10 ~ 60℃
Operation Humidity	10 ~ 90%, (Non-condensed)

4 Ordering Information

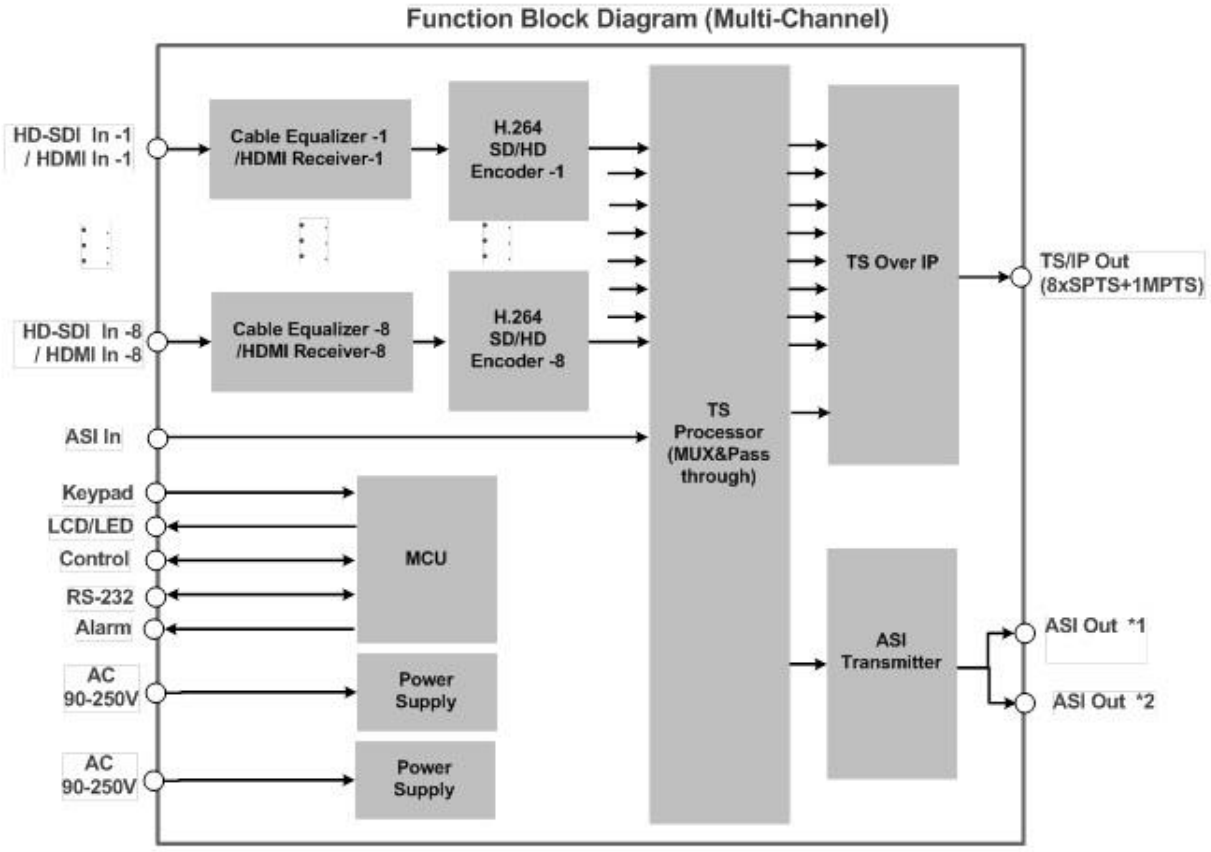
Function \ Model		EX-5108 -H	EX-5108 -H	EX-5108 -S	EX-5108 -S
Input	HDMI	x 8	x 8		
	HD-SDI (BNC)			x 8	x 8
	ASI (BNC)	●	●	●	●
	TS/IP (under full duplex mode)	●	●	●	●
Output	ASI (mirrored)	x 2	x 2	x 2	x 2
	TS/IP (GbE)	●	●	●	●
AAC-LC Audio Support		●		●	
Alarm		●	●	●	●
Control		●	●	●	●
RS-232		●	●	●	●

5 Block Diagram (with different applications)

5.1 TS/IP “Full Duplex” mode (EX-5108 -H/–S)

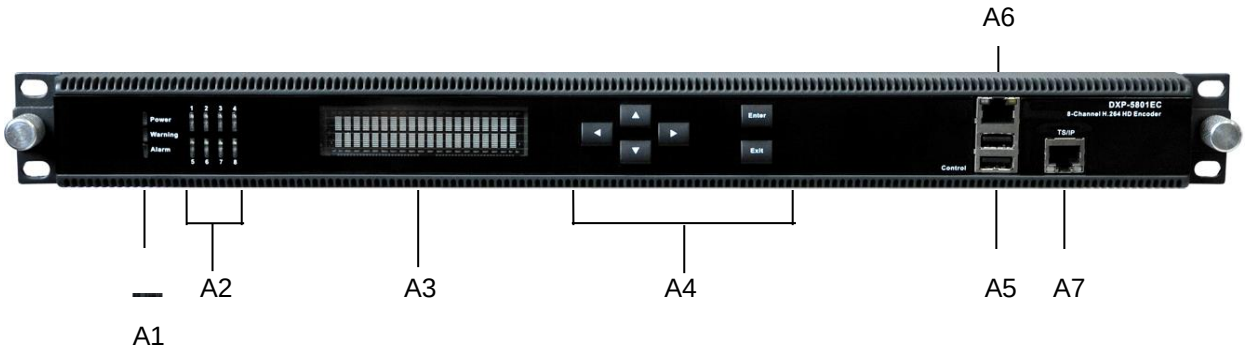


5.2 TS/IP “Multiple Output” mode (EX-5108 -H/S)



6 Front panel and rear panel instructions

6.1 Front panel

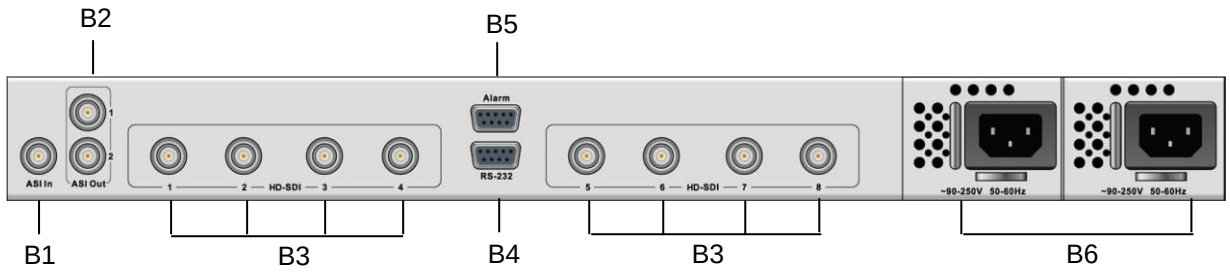


A1 Status LEDs	Power: green when power is on, red when one of the power supply unit malfunction Warning: red when function faulty Alarm: red when function critical

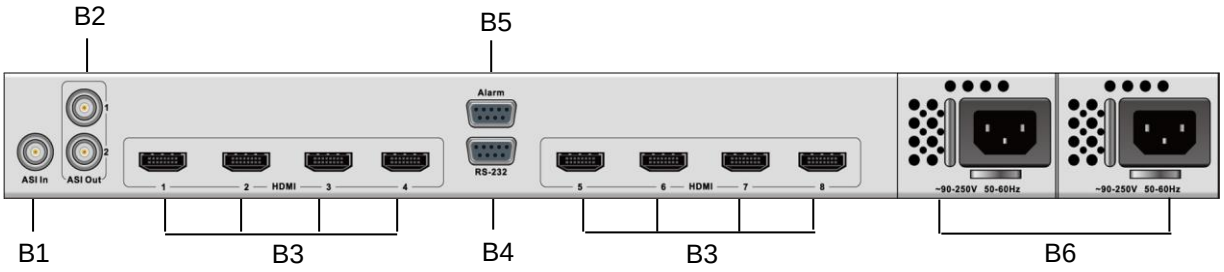
A2 Encoder Status	Encoder 1~8 working status, green light indicates the corresponding encoder module is under working, red when the corresponding encoder module malfunction or stop or input is invalid
A3 VFD Panel	
A4 Keypad	6 keys for local control
A5 USB	Used to upgrade software version of this device
A6 Management	Ethernet (10/100 LAN) control port
A7 TS/IP	TS over IP I/O port

6.2 Rear panel of EX-5108

EX-5108 -S



EX-5108 -H



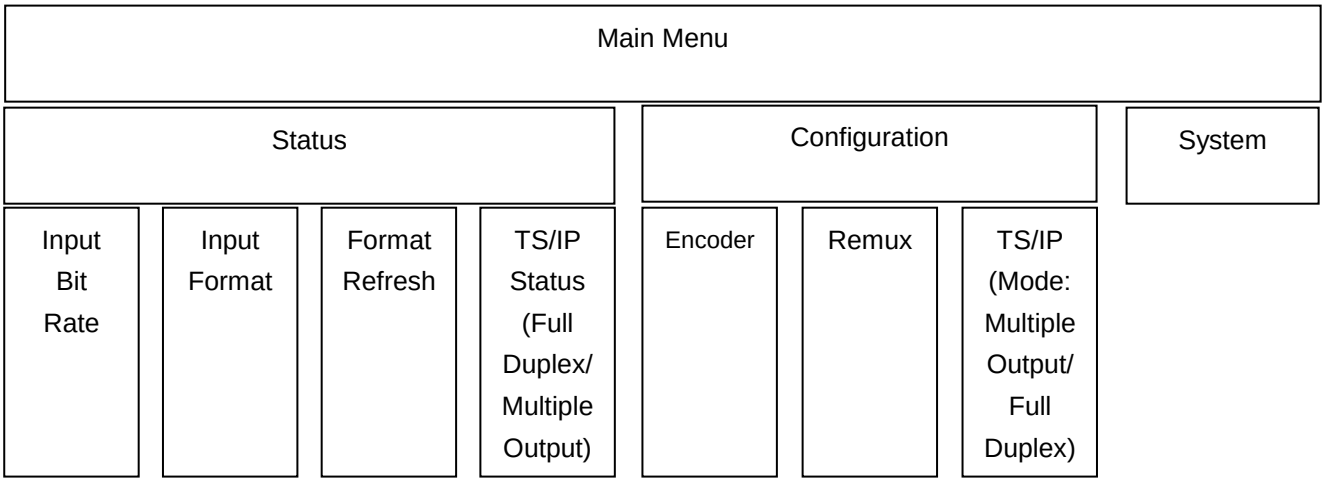
B1 ASI IN	ASI input interface
B2 ASI OUT	2 ASI output interface (output in mirror)
B3 Digital Audio Video IN	SDI/HDMI input interface
B4 RS232	Reserved for factory use
B5 Alarm	Alarm relay interface
B6 Power Socket	AC Power Input

7 Control with Front Panel

With the keypad and display panel on the front panel, user can configure the device locally.

7.1 Overview of the Menu

Power on the device and wait for initialization complete, the Local IP address will be displayed on the VFD panel. Press〔ENTER〕to get into the main menu.



(1) Status: show the status of the device

(2) Configuration: Configure and monitor parameters of encoding/transcoding

(3) System: Configure the local settings of the device

7.2 Description of menu

The main menu items can be selected with the keypad. By pressing the [Enter], the user navigates to the sub-menus, which are selected in the same manner.

7.2.1 Status

Sub-Menu	Sub-menu Parameter	Description	Factory Default Value
Input Bit Rate	Encoder 1 Bit Rate	Display encoder 1 bit rate	
	Encoder 2 Bit Rate	Display encoder 2 bit rate	
	Encoder 3 Bit Rate	Display encoder 3 bit rate	
	Encoder 4 Bit Rate	Display encoder 4 bit rate	
	Encoder 5 Bit Rate	Display encoder 5 bit rate	
	Encoder 6 Bit Rate	Display encoder 6 bit rate	
	Encoder 7 Bit Rate	Display encoder 7 bit rate	
	Encoder 8 Bit Rate	Display encoder 8 bit rate	
	ASI Input Bit rate	Display the input ASI signal bit rate	
	TS/IP Input Bit Rate	Display the TSoverIP input bit rate	
Input Format	Video 1 Input Format	Display the video format of input port 1	
	Video 2 Input Format	Display the video format of input port 2	
	Video 3 Input Format	Display the video format of input port 3	
	Video 4 Input Format	Display the video format of input port 4	
	Video 5 Input Format	Display the video format of input port 5	
	Video 6 Input Format	Display the video format of input port 6	
	Video 7 Input Format	Display the video format of input port 7	
	Video 8 Input Format	Display the video format of input port 8	
Format Refresh	Yes/No	Select to refresh the input video format	
TS/IP Status (Full Duplex)	Link Status	Display IP link status:10M/100M/1000M	
	IP Out Status	Display IP out UDP packet/s	
		Display IP out column FEC packet/s	
		Display IP out row FEC packet/s	
	IP In Status	Display IP in lock status and lock bitrate	
		Display IP in protocol	
		Display IP in mode of column FEC and row FEC	
		Display IP in packets per UDP frame	
		Display IP in received TS frames	
		Display IP in fixed RTP frames	
TS/IP Status (Multiple Output)	Link Status	Display IP link Status: 10M/100M/1000M/Disconnect	

7.2.2 Configuration

Sub-Menu	Sub-menu Parameter	Description	Factory Default Value
Encoder	Encoder Select	**Encoder Select:** **Encoder 1:** the encoder 1 is active for configuration **Encoder 2:** the encoder 2 is active for configuration **Encoder 3:** the encoder 3 is active for configuration **Encoder 4:** the encoder 4 is active for configuration **Encoder 5:** the encoder 5 is active for configuration **Encoder 6:** the encoder 6 is active for configuration **Encoder 7:** the encoder 7 is active for configuration **Encoder 8:** the encoder 8 is active for configuration	
Encoder	Video Settings	**Video Rate Ctl:** **CBR:** set constant bit rate mode **VBR:** set variable bit rate mode **Input Video Format:** 1920x1080i 29.97 / 1920x1080i 25 / 1440x1080i 29.97 / 1440x1080i 25 / 1280x720p 59.94 / 1280x720p 50 / 720x480i 29.97 / 720x576i 25 / 1920x1080p 59.94 / 1920x1080p 50 **Video Bit Rate:** **300~45000Kb/s:** set the video bit rate **Aspect Ratio:** **4:3:** set video aspect ratio to 4:3 **16:9:** set video aspect ratio to 16:9	Video Rate Ctl: VBR Input Video Format: 1920x1080i 29.97 Video Bit Rate: 3000Kb/s Aspect Ratio: 4:3

Encoder	Audio Settings	**Audio Format:** **MPEG1 Layer2:** set the audio compression format MPEG-1 Layer II *MPEG2 AAC-LC, MPEG4 AAC-LC can be selected on* EX-5108 *series only*	Audio Format: MPEG1 Layer2
		Audio Bit Rate: 32k bps /48k bps /56k bps /64k bps /80k bps /96k bps /112k bps128k bps /160k bps /192k bps /224k bps /256k bps /320k bps /384k bps	Audio Bit Rate: 128 Kbps
		Audio Channel Mode: **Stereo:** set stereo mode **Mono:** set mono mode. NOTE: only Left audio channel will be encoded	Audio Channel Mode: Stereo
		Audio Level: **+12dB~-17dB:** set the gain of output volume **Mute:** mute the output audio	Audio1 Level: 0dB
		Audio SDI EMB: (the menu is displayed on EX-5108 -S only) **EMB1/EMB2/EMB3/EMB4:** select the group of embedded audio from input SDI signal	Audio SDI EMB:EMB1
	Encoder Bit Rate	**Encoder Bit Rate:** 600~48000Kbps. set the output bit rate of the selected encoder. *Note: Encoder bit rate must greater than the sum of video bit rate + audio bit rate + PSI (150Kbps) + buffering (100Kbps) + encoder error (150Kbps)*	Encoder Bit Rate: 5000Kb/s
	Advanced Settings	**PMT PID:** set PMT PID, valid range from 32 to 8190 decimal	Output PMT PID: 43
		Video PID: set Video PID, valid range from 32 to 8190 decimal	Output Video PID: 4001
		Audio PID: set audio PID, valid range from 32 to 8190 decimal	Output AudioPID:4002
		PCR PID: set PCR PID, valid range from 32 to 8190 decimal	Output PCR PID:8004
		Service PID: set Service PID, valid from 32 to 8190 decimal	Output Service PID:4000
		Service Name: set the service name	Output Service Name: Encoder Video
		Scale: **Disable:** video resolution is the same as input	Scale: Disable

		Enable: rescale the video resolution of the output manually	
		Scale Vertical: set the resolution in vertical	576
		Scale Horizontal: set the resolution in horizon	720
		Null Filter: **On:** filter away the null packages **Off:** the service is stuffed with null packages Note Null packet is essential for DVB applications, don't remove them.	Null Filter: On
	Encode Start out	**Encode Start :** **Enter=Yes:** the settings will be applied to the selected encoder, and start it to encode. **Exit=No:** cancel the settings to the selected encoder, which will keep the previous status	
Remux	Program List	**Program List:** select the programs to remux. Click on Enter to select, double click to cancel. (The program(s) will be marked with an asterisk (*) once be selected) **Encoder 1:** select the SPTS from encoder 1 **Encoder 2:** select the SPTS from encoder 2 **Encoder 3:** select the SPTS from encoder 3 **Encoder 4:** select the SPTS from encoder 4 **Encoder 5:** select the SPTS from encoder 5 **Encoder 6:** select the SPTS from encoder 6 **Encoder 7:** select the SPTS from encoder 7 **Encoder 8:** select the SPTS from encoder 8 **ASI Input:** select the program(s) inputted via ASI input port. **IP Input:** select the program(s) inputted via IP input port. (Note: this sub-menu is displayed only when the IP I/O is configured as full-duplex mode.)	
	Bit Rate	**Output Bit Rate:** key in the bit rate of the newly generated MPTS, valid range from 100~216000 Kb/s	Output Bit Rate: 38015Kb/s
	Packet Size	**188 Byte / 204 Byte**	188 Byte
	TS ID	**TS ID:** key in the TSID of the newly generated MPTS, valid range from 0 to 65535 decimal	TS ID:00008
Remux	Remove CA	**ON:** remove the CA descriptors that are carried within the inputted TS over ASI or IP **OFF:** keep the CA descriptors	OFF

	Insert EIT	**ON:** insert EIT into the output stream, EIT data may come from ASI or IP input port **OFF:** don't insert EIT into the output stream.	OFF
	Output Program	Display the program list of the remux	
TS/IP(Gigabit Mode: Multiple Output)	Channel 1~8 (*the streaming comes from Encoder 1~8 correspondingly.*)	**Uni/Multi IP Address:** set the uni/multicast IP address for the IP output 1~8 **Uni/Multi UDP Port:** set the port number, valid range from 1~65535 **Target MAC Address:** set the destination port number MAC Address **Gigabit Out Switch: ON/OFF:** to switch on/off the current channel	Uni/Multi IP Address: 238.069.070.001 Uni/Multi UDP Port: 01234 Target MAC Address: 00:00:24:56:12:67 Gigabit Out Switch: ON
	Channel 9 (*the streaming comes from the built-in Remux or ASI input.*)	**Uni/Multi IP Address:** set the uni/multicast IP address for the IP output channel 9 **Uni/Multi UDP Port:** set the port number, valid range from 1~65535 **Target MAC Address:** set the destination port number MAC Address **Gigabit Out Switch: ON/OFF:** to switch on/off the current channel **MUX/ASI Out: set the source for IP output channel 9**	Uni/Multi IP Address: 238.069.070.001 Uni/Multi UDP Port: 01234 Target MAC Address: 00:00:24:56:12:67 Gigabit Out Switch: ON MUX/ASI Out: ASI
	Gigabit Local	**Gigabit Address:** set the IP address of the IP port	IP Board IP Address:10.10.80.60
		Gigabit Subnet Mask: set the net mask of the IP port	IP Board Net Mask:255.255.255.0
		Gigabit Gateway: set the gateway of the IP port	IP Board Gateway:10.10.80.1
		Gigabit MAC Address: display the MAC address of the IP port	IP Board MAC Address:
		Protocol: **UDP:** set UDP protocol to IP output **RTP:** set RTP protocol to IP output	Protocol: UDP
		TS Pkts Per UDP: set the number of TS packets that can be carried by each UDP packet, valid range from 1~7	TS Pkts Per UDP: 7
		Time To Live: set TTL to the output IP packets, valid range from 1~255	Time To Live: 255
		Type Of Service: Min Delay/Max Reliability/Max Throughput/Min Monetary Cost/Normal	Type Of Service: Min Delay

		Gateway MAC Address: set the MAC address of the gateway under which the device is connected	Gateway MAC Address: ff:ff:ff:ff:ff:ff
TS/IP (Gigabit Mode: Full Duplex)	Gigabit Output	**Gigabit Out Switch: Enable/Disable**	Gigabit Out Switch: ON
		Protocol: **UDP:** set UDP protocol to IP output **RTP:** set RTP protocol to IP output	Protocol: UDP
		TS Pkts Per UDP: set the number of TS packets that can be carried by each UDP packet, valid range from 1~7	TS Pkts Per UDP: 7
		Time To Live: set TTL to the output IP packets, valid range from 1~255	Time To Live: 1~255
		Type Of Service: Min Delay/Max Reliability/Max Throughput/Min Monetary Cost/Normal	Type Of Service: Min Delay
		Uni/Multi IP Address: set the destination IP address	Uni/Multi Address: 238.069.070.001
		Uni/Multi UDP Port: set the destination port number, valid range from 1~65535	Uni/Multi UDP Port: 01234
		ProMPEG FEC Switch: Enable/Disable	ProMPEG FEC Switch: Disable
		ProMPEG FEC Mode: 1D,5x5/1D,5x20/1D,10x10/2D,5x5/2D,5x20/2D,10x10	**ProMPEG FEC Mode** : 1D,5x5
		FEC Alignment: Annex A/Annex B	**FEC Alignment:** Annex A
	Gigabit Local	**Gigabit Address:** set the IP address of the IP port	Gigabit Adress: 010.010.080.060
		Gigabit Subnet Mask: set the net mask of the IP port	Gigabit Subnet Mask: 255.255.255.000
		Gigabit MAC Address: display the MAC address of the IP port	
		Gigabit Gateway: set the gateway of the IP port	Gigabit IP Gateway: 010.010.080.001
		Gateway MAC Address: set the MAC address of the gateway under which the device is connected	Gateway MAC Address: ff:ff:ff:ff:ff:ff
	Gigabit Input	**Uni/Multi Address:** set the uni/multicast target address of the IP input	Uni/Multi Addres:238.069.070.002
		Uni/Multi UDP Port: set the target port number of the uni/multicast IP input, valid range from 1~65535	Uni/Multi UDP Port: 01234

	Gigabit Input	**TS Clock Recovery:** **Auto:** it is suggested to set Auto when there is accurate PCR carried by the inputted TS/IP **Fixed Rate:** when fixed rate is selected, user has to configure a bit rate to regenerate the TS clock. The configured fixed bit rate has to be a little bit higher than the bit rate of the inputted TS/IP.	TS Clock Recovery: Auto

7.3 System

System	Network Setting	**IP Address:** set the IP address of the device, valid range from 0.0.0.0~255.255.255.255	IP Address: 10.10.70.48
		Subnet Mask: set the net mask of the device, valid range from 0.0.0.0~ 255.255.255.255	Net Mask: 255.255.255.0
		Gateway: set the gateway of the device, valid range from 0.0.0.0~255.255.255.255	Gateway: 10.10.70.1
		MAC Address: to display the MAC address	
	Remote Setting	**Trap IP Address:** set the IP address of the SNMP Trap server, valid range from 0.0.0.0~255.255.255.255	Trap IP Address: 10.10.70.25
	Device Label	**Device Label:** user allows to rename the device, press Enter and key in the name of the device, then press Enter to confirm the setting or press Exit to cancel.	
	Software Version	**Software Version:** display the software version	
	Factory Default	**Factory Default:** **Enter = Yes:** press Enter to recall the factory default settings. **Exit = No:** press Exit to cancel	Note: the IP address of the device is not reset to the factory setting!
	Machine Type	**MAC Address:** to Modify the MAC address	
		S/N: display the serial number of the device	
		Gigabit MAC Address: to Modify the Gigabit MAC address	
		Detail Version: Display the detail version of MCU,FPGA,LINUX OS	
	WEB Login ID	**Edit Login ID:** press Enter and key in the login ID for WEB management	Default Login ID: root
	WEB Login Password	**Edit Login Password:** press Enter and key in the password for WEB management	Default Login Password: 12345

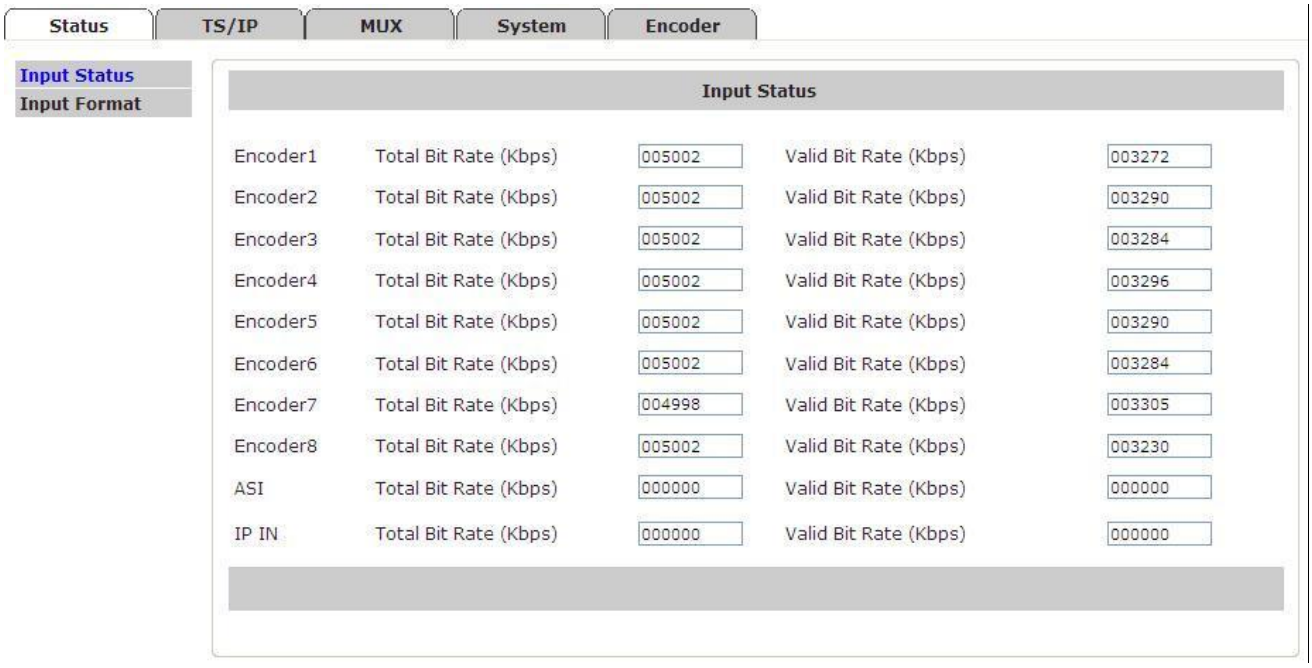
System	Gigabit Mode	**Gigabit Mode:** **Multiple Output:** the IP I/O is configured as multiple uni/multicast output mode, which delivers up to 10 streams over IP. There are 8 stuffed or un-stuffed SPTS (lower bit rate but less PCR accurate than normal SPTS, from local encoders) and two MPTS from built-in remultiplexer and ASI input over the IP with different Unicast or Multicast IP addresses. **Full Duplex:** the IP I/O is configured as full duplex mode, which allows only one MPTS or SPTS over IP input and output in uni/multicast at the same time.	Gigabit Mode: Multiple Output

8. Control with Web Server

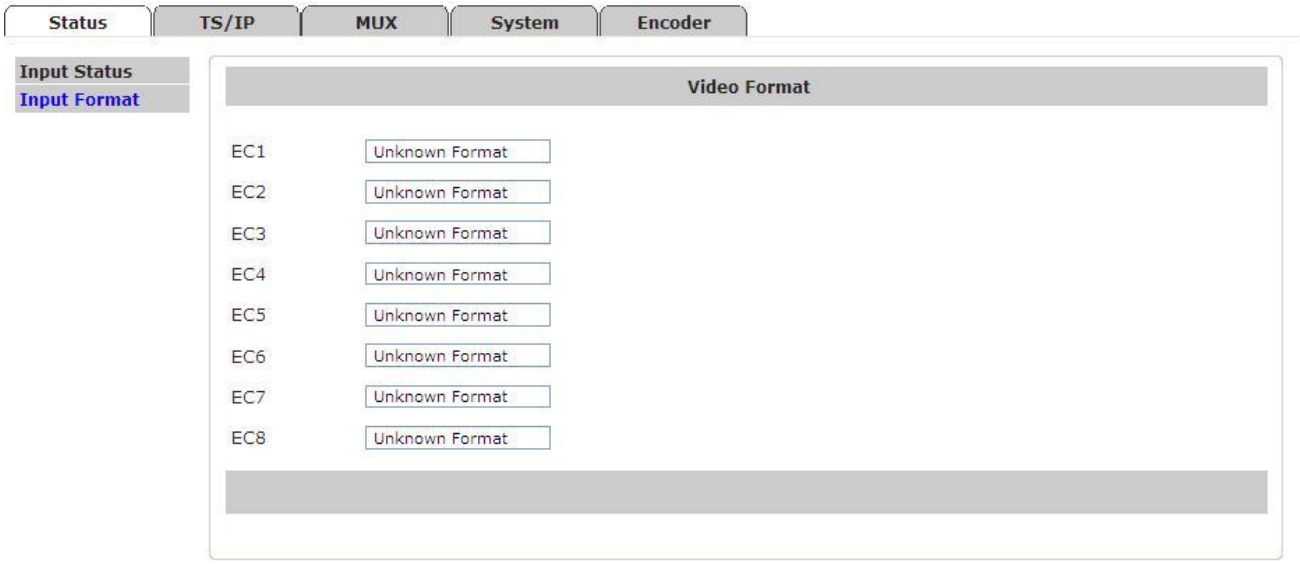
EX-5108 has an integrated web server. This web server allows the configuration and status requests with a standard web browser. To operate a EX-5108, first make sure the Ethernet control port is well connected in the network and could be pinged by the host PC, and then enter the IP address of the EX-5108 into the browser, there will be a pop-up showed asking for login user and password. After login the device can be operated. The default user name and password are respectively “root” and “12345”. The username and password can be changed by user via front panel or via submenu under the system page. If the username and password are forgotten, user have to set a new one via front panel.

8.1 Status

Via the status page, user can have an overview of the current status of the connected EX-5108.



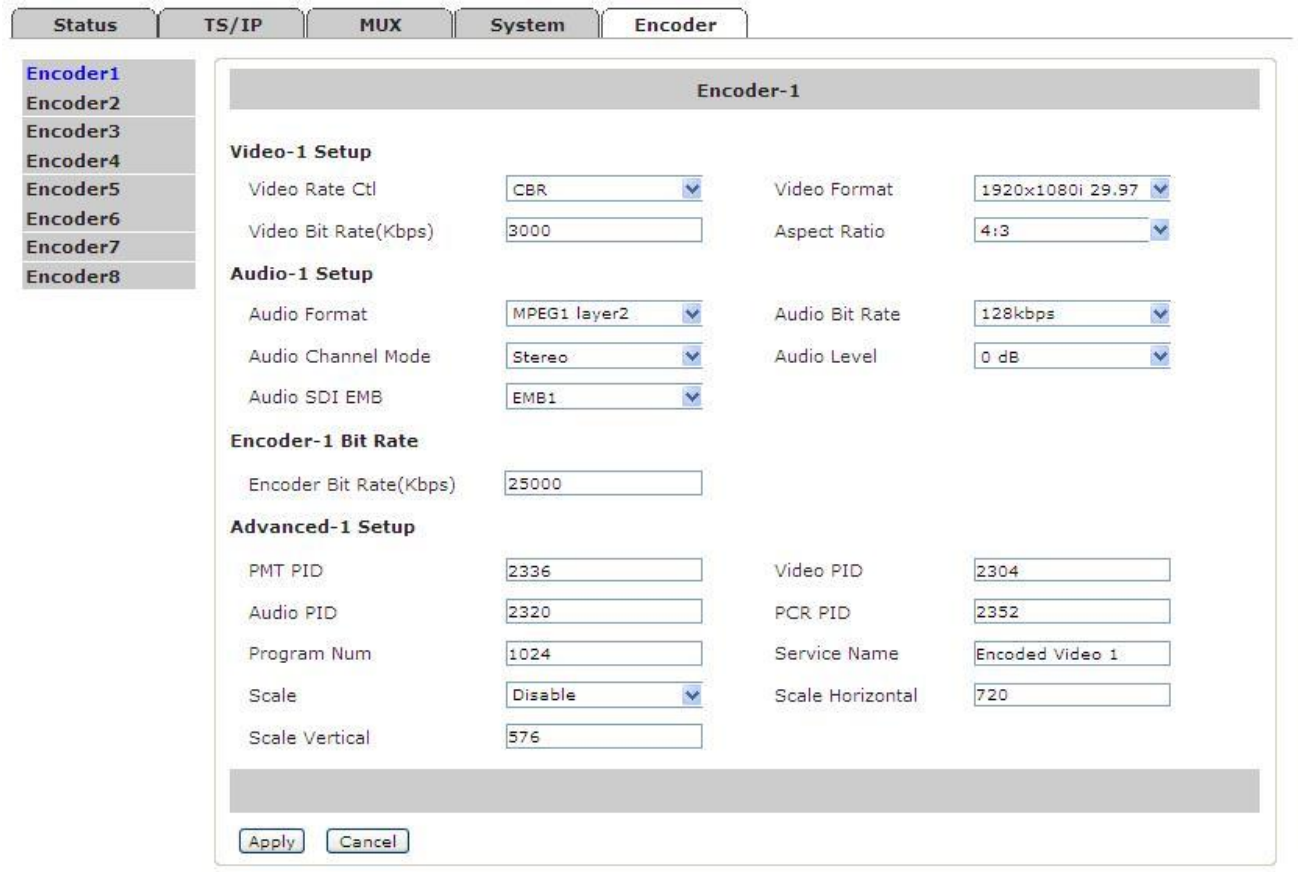
Input Status



Input Video Format

8.2 Encoder

There are eight encoders integrated on one EX-5108, each encoder can work independently. Click on the **Encoder-1** to configure the encoder 1, the same for the rests.



Video Setup

Video Rate Ctl: set constant bit rate mode or variable bit rate mode for the selected encoder

Input Video Format: select the resolution for the encoded video in the dropdown list.

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.

Audio Setup

Audio Format: set the audio compression format MPEG-1 Layer II or MPEG2 AAC-LC. (MPEG4 AAC-LC can be selected on EX-5108 series only)

Audio Bit Rate: set the audio bitrate.

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 output volume.

Audio SDI EMB: select the group of embedded audio from input SDI signal *(the menu is displayed on* EX-5108 *-S only).*

Encoder 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 99999Kb/s

Advanced Setup

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 PID: set Service PID, valid from 32 to 8190 decimal

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

Scale: Enable or Disable the output video resolution rescaling. The following two parameters have to be set manually if the Scale is enabled.

Scale Vertical: set the resolution in vertical

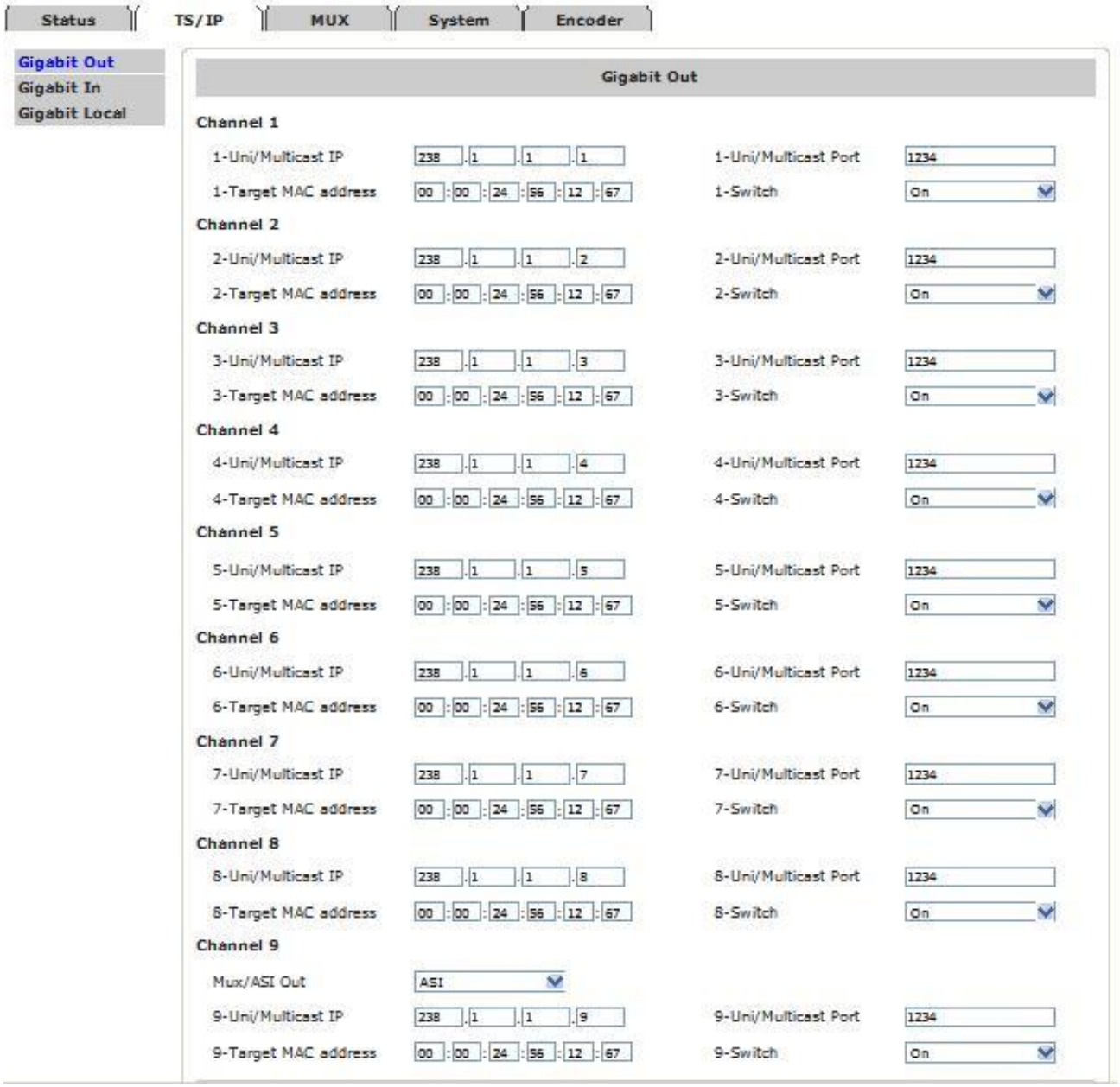
Scale Horizontal: set the resolution in horizon

8.3 TS/IP

All models provide two TS/IP operation modes. The first is “Full Duplex”, which allows one MPTS or SPTS inputted to make up a new MPTS with local encoders, then sends the new one over IP & ASI_out. In the second mode “Multiple output” which delivers up to five streams over IP. There are four stuffed or un-stuffed SPTS and one MPTS (from internal reMultiplexer) over the IP with different Unicast or Multicast IP addresses. The management webpage will be different following the change of the operation mode.

Multiple Output Mode

The pages below are displayed under Multiple Output mode. To change the TS/IP operation mode, please refer to ***chapter 8.5 System-Device***.



Gigabit Output

Under multiple output operation mode, user can set output uni/multicast IP addresses and port number for each encoder, the built-in remux, and ASI input. Each IP output channel can be switched ON/OFF independently. The source for TS/IP output 1-8 is forced to link to the encoder 1-8 respectively and cannot be changed. The source for the 9th uni/multicast output channel can be the built-in remux or ASI input.

(Note: the page below is displayed only when the TS/IP operation mode is Multiple Output mode. To change the TS/IP operation mode, please refer to ***chapter 8.5 System-Device***.)

Gigabit Input

Under Multiple output mode, the Gigabit Input is not available.

Local Settings

Set the parameters for the TS/IP output port.

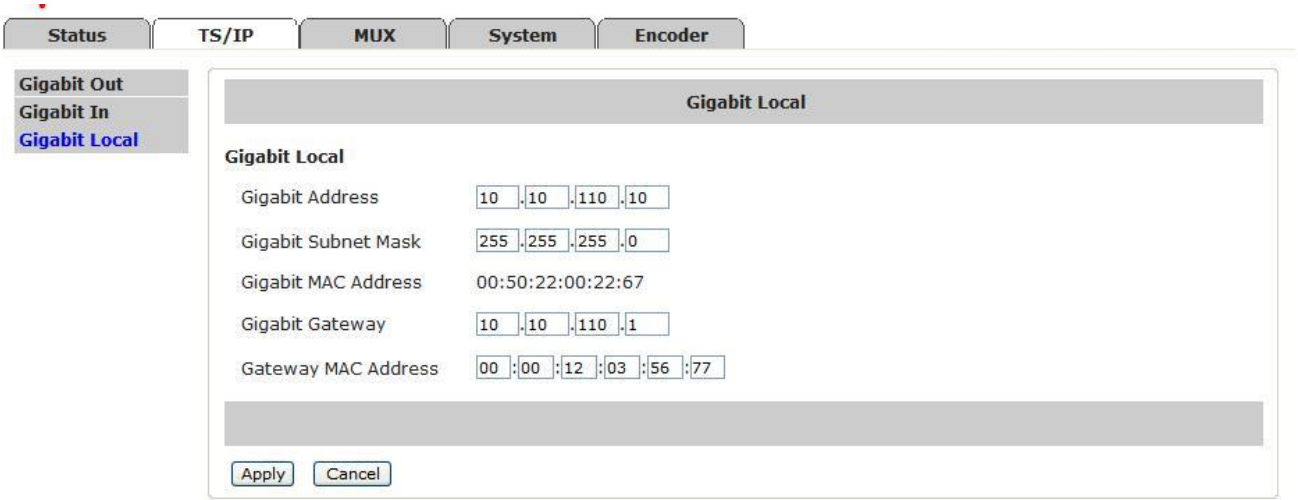
Gigabit Address: set the IP address of the IP port

Gigabit Subnet Mask: set the net mask of the IP port

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

Gigabit 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



Full-duplex Output Mode

The pages below are displayed under Full-duplex mode. To change the TS/IP operation mode, please refer to ***chapter 8.5 System-Device***.

Gigabit Input

Under full-duplex operation mode, the device supports single uni/multicast reception. Set the uni/multicast target IP address and port number in the page.

Uni/Multicast IP Address: set the multicast address for the incoming IP streaming. To receive a unicast streaming, the submenu can be ignored.

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

TS Clock Recover:

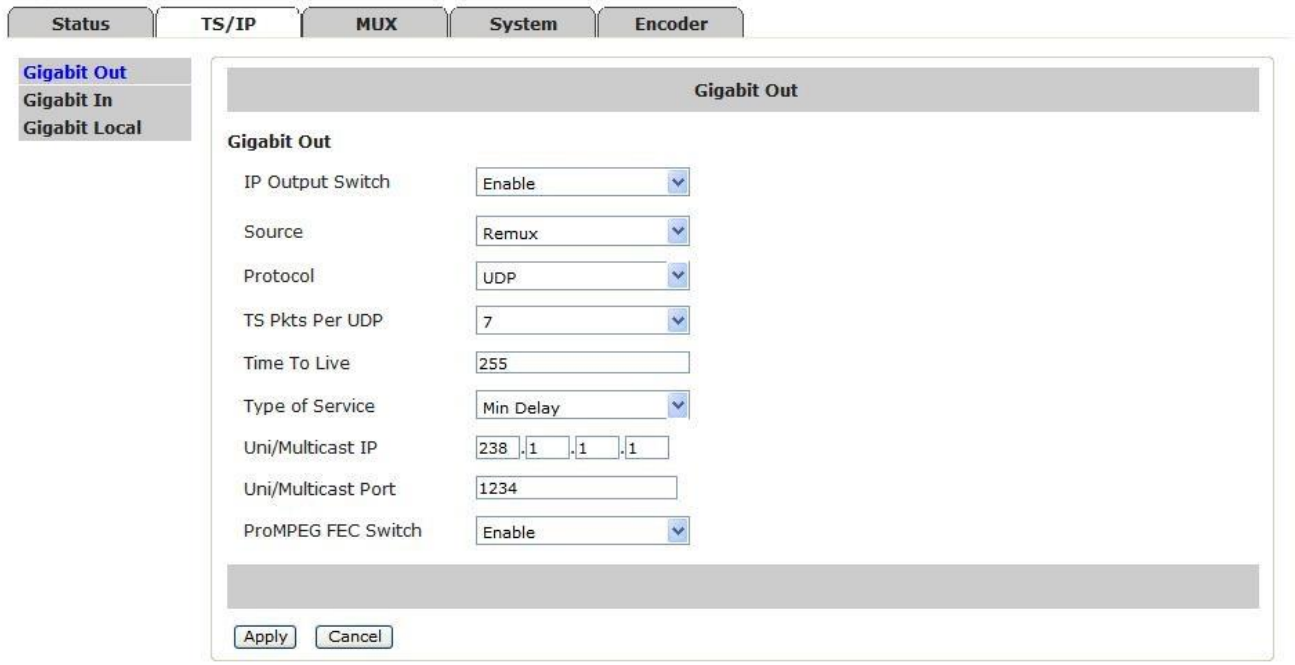
Auto: it is suggested to set Auto when there is accurate PCR carried by the inputted TS/IP

Fixed Rate: when fixed rate is selected, user has to configure a bit rate to regenerate the TS clock. The configured fixed bit rate has to be a higher than the bit rate of the inputted TS/IP.

Gigabit Output

Under full-duplex operation mode, the device supports single uni/multicast output. The default source for TS/IP output is the built-in remux.

(Note: the page below is displayed only when the TS/IP operation mode is Full-duplex mode. To change the TS/IP operation mode, please refer to ***chapter 8.5 System-Device***.)



IP Out Switch: Enable or Disable the IP output

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

Protocol: select UDP or RTP protocol for the IP output

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

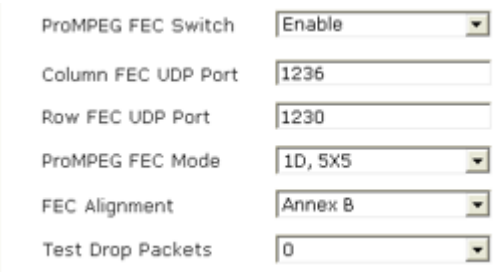
Type of Service: select the service type for the outputted IP streaming

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

ProMPEG FEC Switch: Enable or Disable the ProMPEG FEC

(**Note:** *the submenus below are available only when the ProMPEG FEC is switched on and has be 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

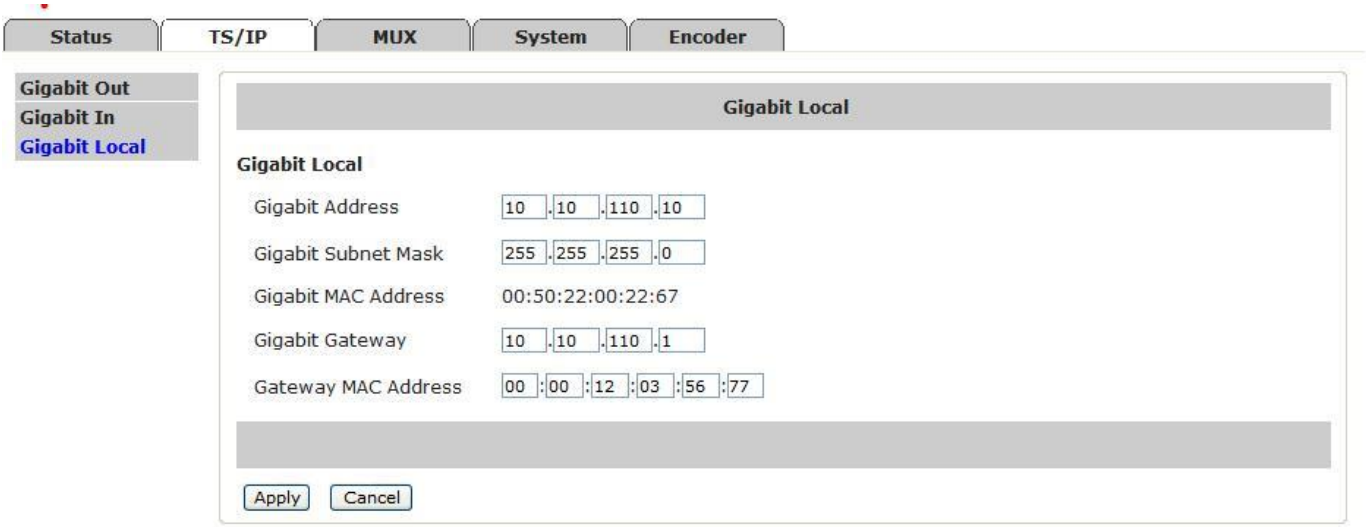
Row FEC UDP Port: set the port number for row FEC

FEC Alignment: set the alignment for FEC

Test Drop Packets: set the test drop packets

Local Settings

Set the parameters for the TS/IP output port.



Gigabit Address: set the IP address of the IP port

Gigabit Subnet Mask: set the net mask of the IP port

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

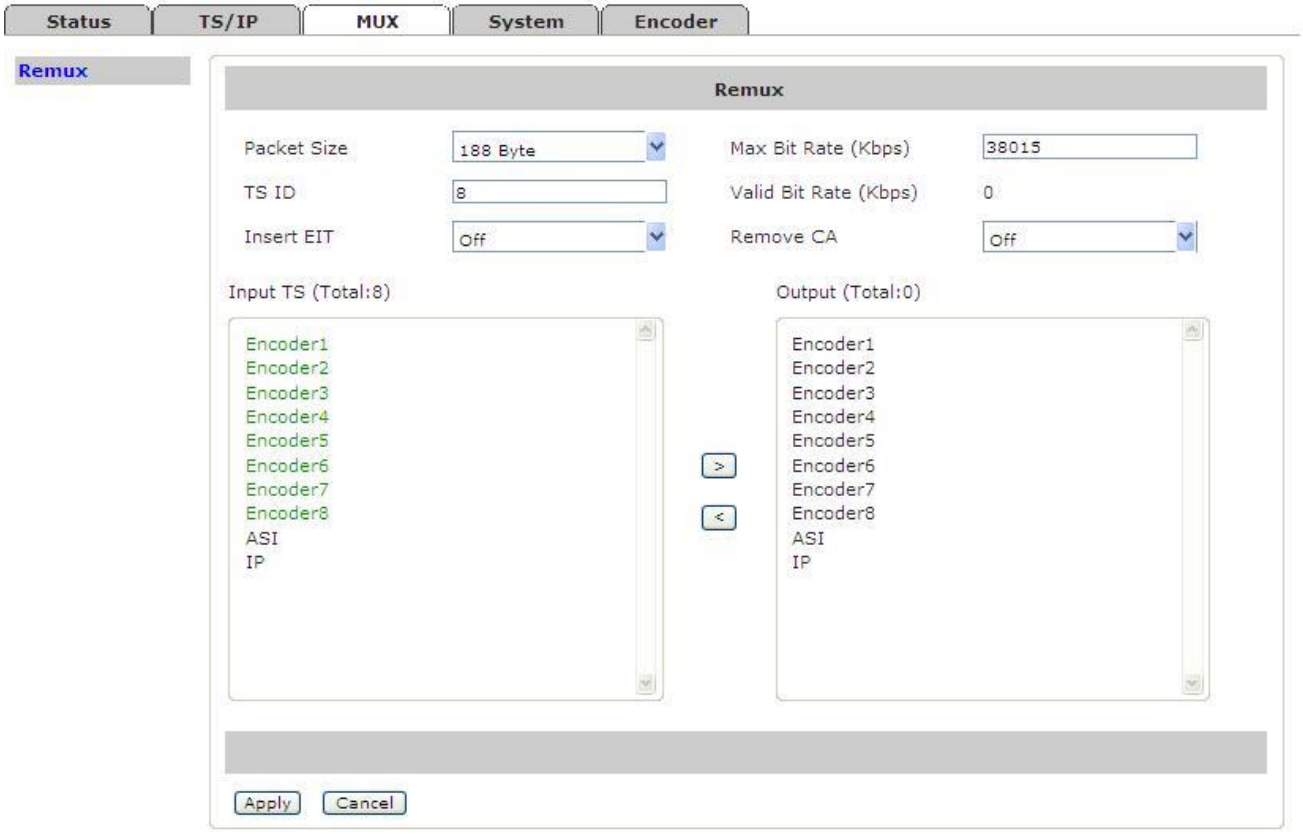
Gigabit Gateway: set the gateway address under which the IP port is connected

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

8.4 MUX

The device supports remux the 8 SPTS generated locally with the service(s) carried by the transport stream inputted via ASI In or TS/IP In (available only under full duplex mode).

The “Output Bit Rate” is the bit rate of the remux output, the value has to be equal or greater than the total bit rate of the selected services.



Packet Size: set the packet length of the new 188 or 204 Byte

Max Bit Rate (Kbps): Set the bitrate for the new generated MPTS, valid range from 100~216000 Kb/s. The bitrate should be at least bigger than the total bitrate of selected programs, otherwise, packets may dropout.

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

Insert EIT: ON: insert EIT into the output stream, EIT data may come from ASI or IP input port

OFF: EIT will not be inserted into the output stream.

Remove CA: ON: remove the CA descriptors that are carried within the inputted TS over ASI or IP

OFF: keep the CA descriptors

8.5 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 and software upgrade under system page.

Device

Device Label: Check the name and the serial number of this device. User can resign this product name at will, the device name should be less than 24 characters. The serial number is read-only.

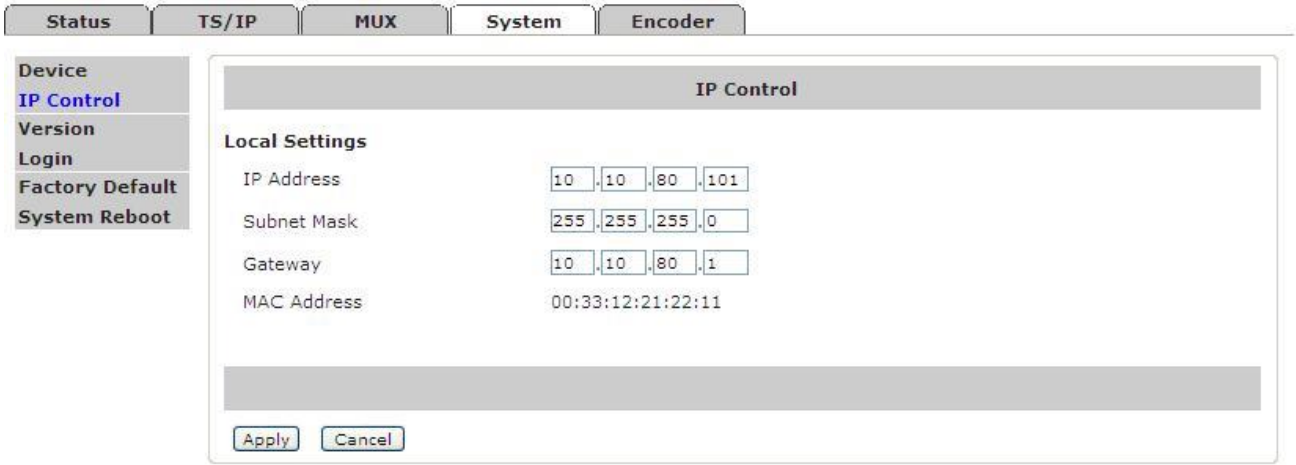
Serial Number: show the serial number for the device, cannot be modified by user.

WEB Auto Refresh Time: set the interval of webpage refresh.

Gigabit Mode: switch the TS/IP operation mode between “Multiple Output” and “Full duplex”. The device will reboot after change.

IP Control

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



IP Address: set the device's IP address

Network Mask: set the net mask of the device

Gateway: set the gateway address of the device

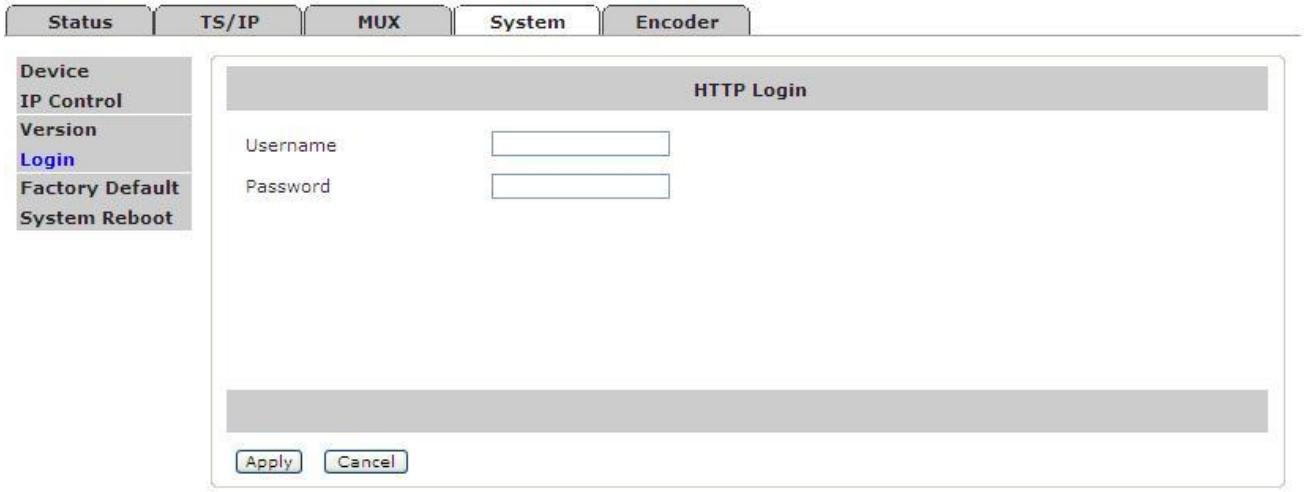
MAC: display the MAC address of the device, cannot be modified by user

Version

User can check versions of various functional blocks of the device, as it shown in figure below.

Login

Set the login ID and password for the web management server of the device.



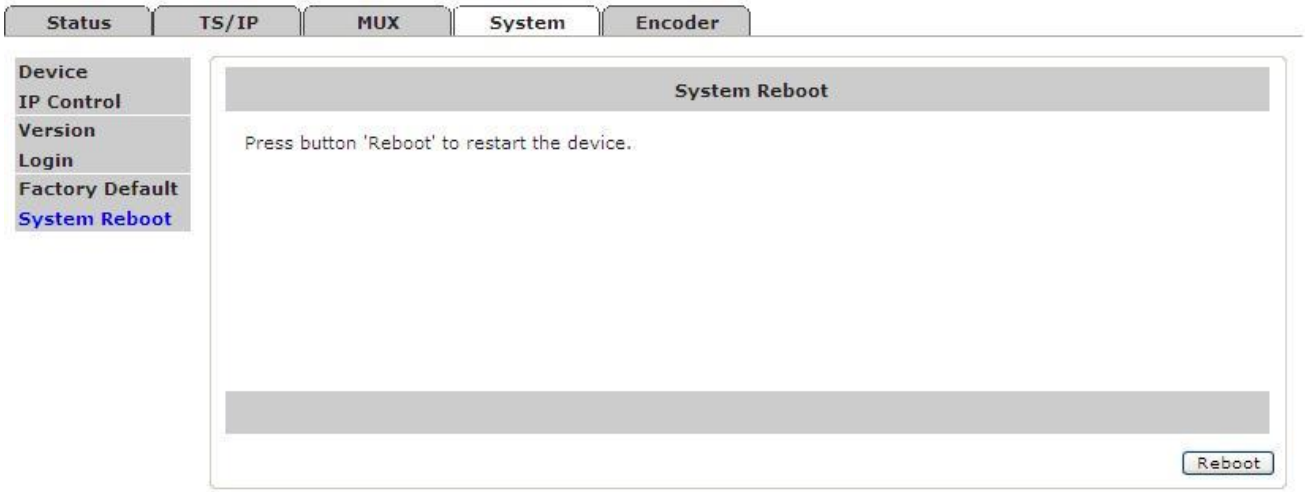
Factory Default

Click the 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.

System Reboot

User can reboot this device by clicking the button “Reboot”.



9 Installation

It is highly recommended to fix the EX-5108 *be mounted in EIA standard 19” rack, any other mounting method may lead to damage to 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. The EX-5108 needs 1.5-2 minutes 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.

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