ANTIK technology

Digital Headend System

Solution . System .

GX-5000

Digital Contents Processing Platform

Operation Guide

Version 1.0

www.antiktech.com

About this Guide

Thank you for purchasing the digital TV headend equipment from ANTIK. This operation guide is intended for technical personnel who use Digital Contents Processing Platform, GX-5000, It describes the operation of the equipment. In the following table, we provide the document release history.

Revision History

Version	Date	Document Change
1.0	2017.05	Initial Version

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WARRANTY AND SERVICE

ANTIK warrants to the Purchaser that the Products and any Repaired Products (Repairs) will be free from defects in material and workmanship for a period of one years from the date of shipment to the Purchaser.

The obligation of ANTIK under this warranty is limited to replacing or repairing, at ANTIK's option,Products or Repairs found by ANTIK to be defective within the warranty period. All such replacements and repairs shall be performed at facilities designated by ANTIK and shall be performed only after the customer has received a Return Material Authorization (RMA) number from ANTIK and has returned the Product to ANTIK, shipping and insurance prepaid by Purchaser.

The returned Product must be accompanied by the customer's name, address and telephone number, the model and serial number of the Product, a statement of the purchase date and a detailed description of the problem. Products and Repairs returned by Purchaser shall be repaired by ANTIK using new or refurbished parts and shall be returned to Purchaser by ANTIK , shipping prepaid by ANTIK.

This warranty shall immediately become null and void if, in ANTIK's sole judgment, the Product has been subject to unauthorized modification, misuse, neglect, accident, improper installation or application, alteration or neglect in use, storage, transportation or handling, or if the serial number and/or other Product markings have been removed, defaced or altered.

ANTIK may,at its discretion, perform out-of-warranty repairs at ANTIK facilities in exchange of customary charges, or offer a written agreement extending the terms of this warranty at a price stated in such agreement. All repairs performed out of warranty or pursuant to an extended warranty agreement shall be subject to all of the applicable limitations and procedures of this Agreement.

The above warranties are in lieu of all other warranties, expressed, implied, or statutory or arising by custom of trade usage, including any warranty of merchantability of fitness for any unique, special or express purpose, and of all other obligations of liabilities whether in contract, tort or otherwise including, without limitation, liability for damages (whether general or special, direct or indirect,

consequential, incidental, exemplary) or any claim for the loss of profits or business or for damage to goodwill.

EXTENDED WARRANTY OPTIONS

Please contact Customer Service or your reseller for information on optional extended warranties.

CUSTOMER SERVICE

Support functions provided by ANTIK's Customer Service include complete factory repair for both in-warranty and out-of-warranty equipment. You can contact your local ANTIK product distributor or reseller. Or you can call us or write to us for Customer Support.

A Customer Service engineer will answer warranty-related questions, discuss your specific equipment problems, and when necessary, give you shipping instructions for returning equipment to ANTIK for repair.

To return a Product for service or repair, you must obtain a RMA number from ANTIK Customer Service. The following information is required:

Customer name, address, telephone number
Model number
Serial number
Detailed description of problem

All customer-returned units must be shipped to ANTIK freight prepaid, in the original carton or equivalent. ANTIK is not responsible for damage in transit. All repairs will require return of the entire equipment to ANTIK. No individual modules will be accepted for repair under this contract.

Table of Contents

1. SAFETY PROTECTION

This User Guide is written for operators/users of the GX-5000 to assist in installation and operation. Please read this User Guide carefully before installation and use of the device.

This equipment is provided with a protective earth grounding 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 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. 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 10C° to 30C°. 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 ambient temperature should not exceed the limit of 45C°.

2. INTRODUCTION

2. 1. Appearance

GX-5000 appearance is shown as Fig.2-1 GX-5000 Appearance.

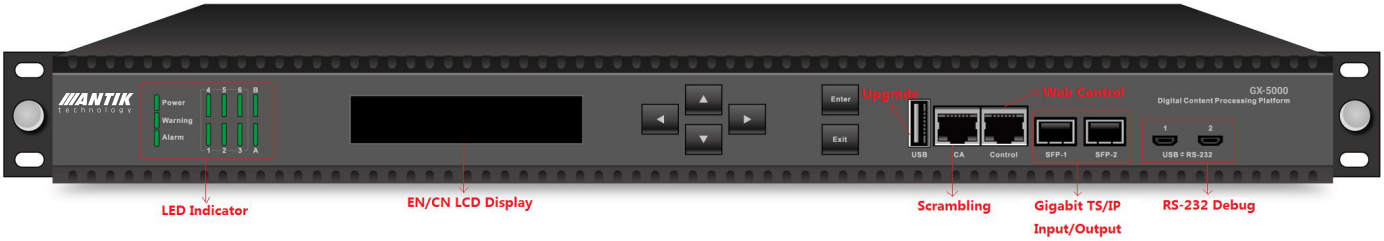


Fig.2-1 GX-5000 Appearance

➢ LED Indicators

There are 11 LED indicators on GX-5000 front panel which refer to Fig.2-2, including,

1. Power
2. Warning
3. Alarm
4. Module 1-6 Status
5. User-defined A/B (not available in this version, and LED A is defined for P01MS)

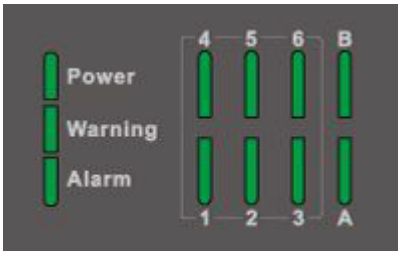
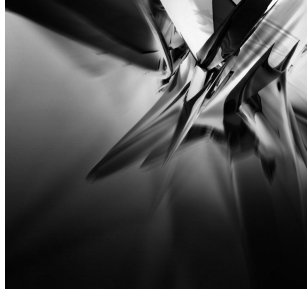


Fig.2-2 LED Indicators

Connect to the power supply, the LED indicator of Power keep lighting. The LED indicator of Waring and Alarm will not be lighted when the device starts and operators normally. These two indicators will turn orange or red when the device operators abnormally, which prompts the user that an error has occurred.Operating indicators of Module 1-6 are used to indicate the operating status of slot 1 to 6 respectively, and the indicator of Warning and Alarm is used to indicate the device status.



➢ **LCD**

LCD is mainly for showing unit's IP address for management. There are also some simple menus for main frame configurations. And user can make the daughter board reboot via LCD menu. For more details, please refer LCD menu.

➢ **Key pad**

There are six keys on front panel, UP, Down, Left, Right, Enter and Exit. User can check and setup LCD Menu with them.

➢ **USB**

USB is just for firmware update. USB is one of GX-5000 three (USB, Telnet and Web) different types of firmware update methods. User need to put firmware into USB key root folder, update it through upgrade menu of LCD.

➢ **RJ45**

There are two RJ45 ports, CA and Control. CA is for scrambler connecting CA server. Control is the management port of GX-5000.

➢ **SFP**

There are two SFP ports for TS over IP. They can work as backup or independent.

➢ **Mini USB**

Mini USB is for debugging problem. They are USB to RS232 port actually. Before using this function, user need to install a RS232, for example putty.exe, to enable this function.

2. 2. Function Cards introduction

2. 2. 1. P01MS（reMUX & Scrambler Extenson Module）

- 24 independent TS reMUX's and Scramblers (s/w option: 48 TS reMUX only, no scrambler)

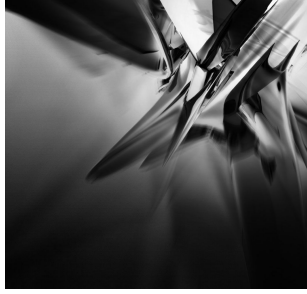
- 15Gbps data processing capability
- Compliant with ISO13818 & EN300 468
- MEPG/H.264 TS re-Multiplexing & Scrambling
- Local & Remote CAS multi-crypt
- DVB CAS & BISS
- PID filtering, remapping, pass through & mapping
- Insert & Edit PSI/SI tables
- EIT pass through or re-construction
- PCR re-stamp & calibrate
- Self temperature monitoring

2. 2. 2. D01S2（4 x DVB-S/S2 Demodulator Module）

- 4 x F type Female, 75Ω
- Input Frequency Range: 950 ~ 2150 MHz
- Input RF level: -65dBm ~ -25dBm
- Symbol Rate: 2 ~ 45MSps
- Roll Off factor: 0.35(DVB-S QPSK), 0.35/0.25/0.2(DVB-S2 8PSK)
- FEC Puncture Rate: 2/3, 3/4, 3/5, 5/6, 8/9, 9/10(DVB-S2 8PSK), 1/2, 2/3, 3/4, 5/6, 6/7, 7/8(DVB-S QPSK)
- Support BISS-1/E de-encryption(up to 40 PIDs de-encryption per tuner input)
- Support T2-MI(up to 8 PLP IDs demodulation per tuner input)

2. 2. 3. D02S2（4 x DVB-S/S2 Demodulator Module, Support Input Stream Indentifier）

- 4 x F type Female, 75Ω
- Input Frequency Range: 950 ~ 2150 MHz
- Input RF level: -65dBm ~ -25dBm
- Symbol Rate: 2 ~ 45MSps
- Roll Off factor: 0.35(DVB-S QPSK), 0.35/0.25/0.2(DVB-S2 8PSK)
- FEC Puncture Rate: 2/3, 3/4, 3/5, 5/6, 8/9, 9/10(DVB-S2 8PSK), 1/2, 2/3, 3/4, 5/6, 6/7, 7/8(DVB-S QPSK)
- Support BISS-1/E de-encryption(up to 40 PIDs de-encryption per tuner input)
- Support T2-MI(up to 8 PLP IDs demodulation per tuner input)



- ISI ID: 1 ~ 255 user configurable

2. 2. 4. D01T2（4 x DVB-C/T/T2 Demodulator Module）

- 4 x F type Female, 75Ω
- Full compliant for DVB-T2 v1.3
- Input Frequency, 48 ~ 860 MHz(DVB-C), 104 ~ 862 MHz(DVB-T/T2)
- Input Level, -15~ 15dBm(DVB-C), -70 ~ -20dBm(QEF, DVB-T/T2)
- Symbol Rate, 1 ~ 7MSps（ITU J.83 Annex A DVB-C）
- Constellation, 16/32/64/128/256 QAM(DVB-C), QPSK/16 QAM/64 QAM(DVB-T), QPSK/16 QAM/64 QAM/256 QAM(DVB-T2)
- Bandwidth, 6/7/8 MHz
- FFT Mode, 2K/8K(DVB-T), 1K/2K/4K/8K/16K/32K(DVB-T2)
- Guard Interval, 1/4, 1/8, 1/16, 1/32(DVB-T) 1/4, 5/32, 1/8, 5/64, 1/16, 1/32, 1/64, 1/128(DVB-T2)
- FEC Code Rate, 1/2, 2/3, 3/4, 5/6, 7/8(DVB-T) 1/2, 3/5, 2/3, 3/4, 4/5, 5/6(DVB-T2)

2. 2. 5. P01CI（4 x CI De-encryption Module）

- 4 x Independent Common Interface(DVB-CI)slots
- Multiple programs CSA or BISS-1/E De-encryption
- CAM watchdog
- Compatible with most of popular CA systems

2. 2. 6. C01QAM（8 x QAM Modulator Module）

- 2 x F type Female, 75Ω（1 x main output， 1 x -20dB monitor output）
- 2 groups of 4 adjacent channel carriers QAM RF output
- ITU-T J.83 Annex A, C
- 16QAM, 32QAM, 64QAM， 128QAM， 256QAM
- RF output range: 48 ~ 996MHz, step by 1KHz
- Symbol rate: 2.5 ~ 6.99MBauds
- RF total output level: 94 ~ 120dBuV(111dBuV each carrier)
- MER > 36dB

- BER < 10E-9
- Spurious rejection > 55dB
- Output return loss -10dB

2. 2. 7. C01MOD（8 x QAM/4 x COFDM Modulator Module）

- 2 x F type Female, 75Ω（1 x main output，1 x -20dB monitor output）
- Support QAM/COFDM Modulation Mode(cannot work at the same time)
- 2 groups of 4 adjacent channel carriers QAM RF output, 2 groups of 2 adjacent channel carries COFDM RF output
- RF output range: 48 ~ 996MHz, step by 1KHz
- Symbol rate: 2.5 ~ 6.99MBauds
- RF total output level: 94 ~ 120dBuV(111dBuV each carrier)
- Spurious rejection > 55dB
- Output return loss -10dB
- QAM Modulation, support ITU-T J.83 Annex A, C
- Constellation, 16QAM, 32QAM, 64QAM，128QAM，256QAM
- MER > 36dB, BER < 10E-9

2. 2. 8. C01ASI（5 x ASI In/Out Module）

- 5 x BNC Female, 75Ω
- Standard: DVB-ASI, EN50083-9
- Up to 5 x ASI Input
- Up to 5 x ASI Output
- Maximum bit rate(each ASI): 213Mbps
- Minimum accepting sensitivity: 200mV
- Maximum input Voltage: 880mV
- Support T2-MI (In the T2-MI mode, ASI-5 is configured to input which can process 4 PLP ID, ASI-1 to ASI-4 are configured to output which can select PLP ID TS to output via Web)

2. 2. 9. P01DA（2 x DS3 Input/2 x DS3 Output/1 x ASI Adaptor Module）

- 5 x BNC Female, 75Ω
- Standard: DVB-ASI, EN50083-9 / ITU-T G.703
- Frame Structure: ITU-T G.752 / ITU-T G.804
- ASI Input or Output can be switched
- Bit rate: 44.736Mbps

2. 2. 10. D01PA（2 x Channels Multi-format Signal SD/HD Decoder Module）

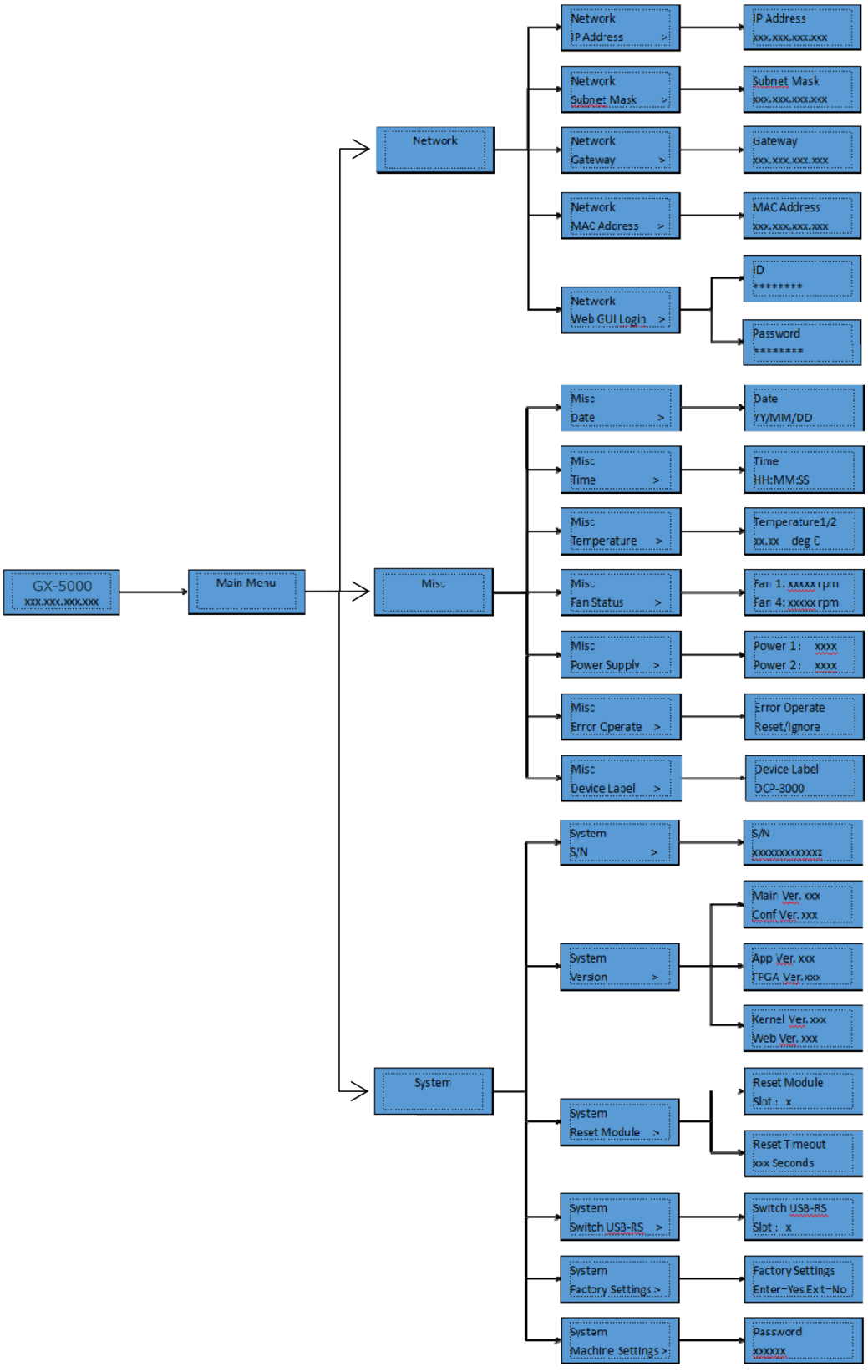
- 2 x HDMI 1.3(up to 1080i), 1 x D-sub 15 female(can be translated 2 x CVBS via cable)
- Video Format: MPEG-2(MP@ML for SD, MP@HL for HD), MPEG-4/H.264 AVC Part 10(MP@L3 for SD,HP@L4.1 for HD), AVS+
- Audio Format: MPEG-1 Layer II, AAC-LC, HE AAC V1/V2
- Aspect Ratio: 16:9, 4:3 Self-adaptation
- Resolution and Frame Rate: 1080ix30, 1080ix29.97, 1080ix25, 720px60, 720px59.94, 720px50, 576ix25, 480ix29.97
- Video PID Bit Rate: < = 50Mbps

2. 2. 11. P01EC（4 x HDMI MPEG-2/H.264 Transcoder/Encoder Module）

- 4 x HDMI Input interface
- Compliant with H.264/AVC Baseline, Main & High Profile @ L4.0 or less & MPEG-2 MP@ML
- Independent Transcoding/Encoding mode control
- Video Input Resolution: 1080i, 720p, 576i, 480i.
- Support video resoultion downscaling(vertical & horizontal adjustable respectively).
- Audio Coding: MPEG-1 Layer II, MPEG-2/4, AAC-LC/HE-AAC
- Support VBR & CBR mode
- Sampling Format: 4:2:0, 10-bit, YCbCr
- Compression Bit Rate: 300K ~ 20Mbps
- Aspect Ratio: 4:3, 16:9

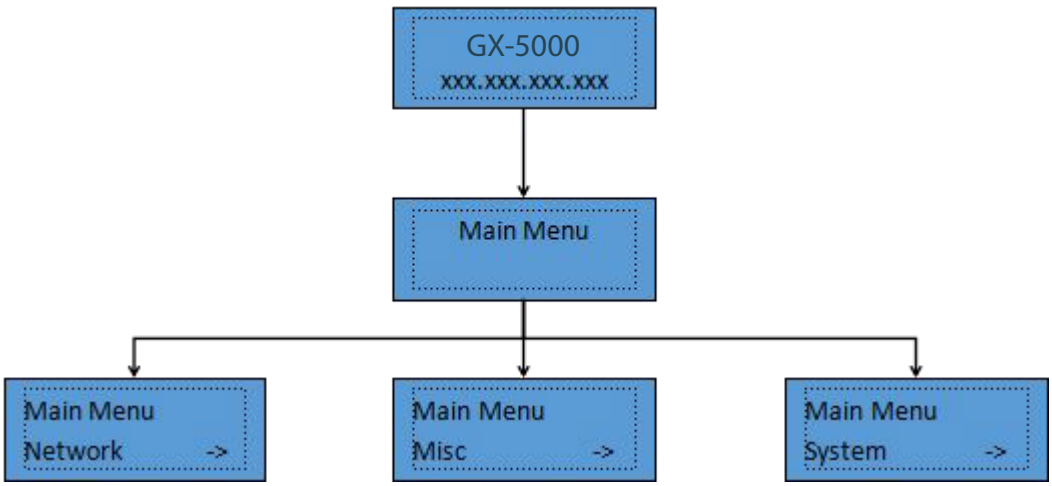
3. LCD Menu

There is a LCD Menu for users to configure main frame and front interfaces. User can press enter key to start to setup the unit. The LCD menu overview showed as below:


GX-5000
xxx.xxx.xxx.xxx
Main Menu
Network
Network
IP Address >
IP Address
xxx.xxx.xxx.xxx
Network
Subnet Mask >
Subnet Mask
xxx.xxx.xxx.xxx
Network
Gateway >
Gateway
xxx.xxx.xxx.xxx
Network
MAC Address >
MAC Address
xxx.xxx.xxx.xxx
Network
Web GUI Login >
ID
****
Password
****
Misc
Misc
Date >
Date
YY/MM/DD
Misc
Time >
Time
HH:MM:SS
Misc
Temperature >
Temperature1/2
xx.xx deg C
Misc
Fan Status >
Fan 1: xxxxx rpm
Fan 4: xxxxx rpm
Misc
Power Supply >
Power 1: xxxx
Power 2: xxxx
Misc
Error Operate >
Error Operate
Reset/Ignore
Misc
Device Label >
Device Label
DCP-3000
System
System
S/N >
S/N
xxxxxxxxxxxx
System
Version >
Main Ver. xxx
Conf Ver. xxx
App Ver. xxx
FPGA Ver. xxx
Kernel Ver. xxx
Web Ver. xxx
System
Reset Module >
Reset Module
Slot : x
Reset Timeout
xxx Seconds
System
Switch USB-RS >
Switch USB-RS
Slot : x
System
Factory Settings >
Factory Settings
Enter-Yes Ext-No
System
Machine Settings >
Password
xxxxxx

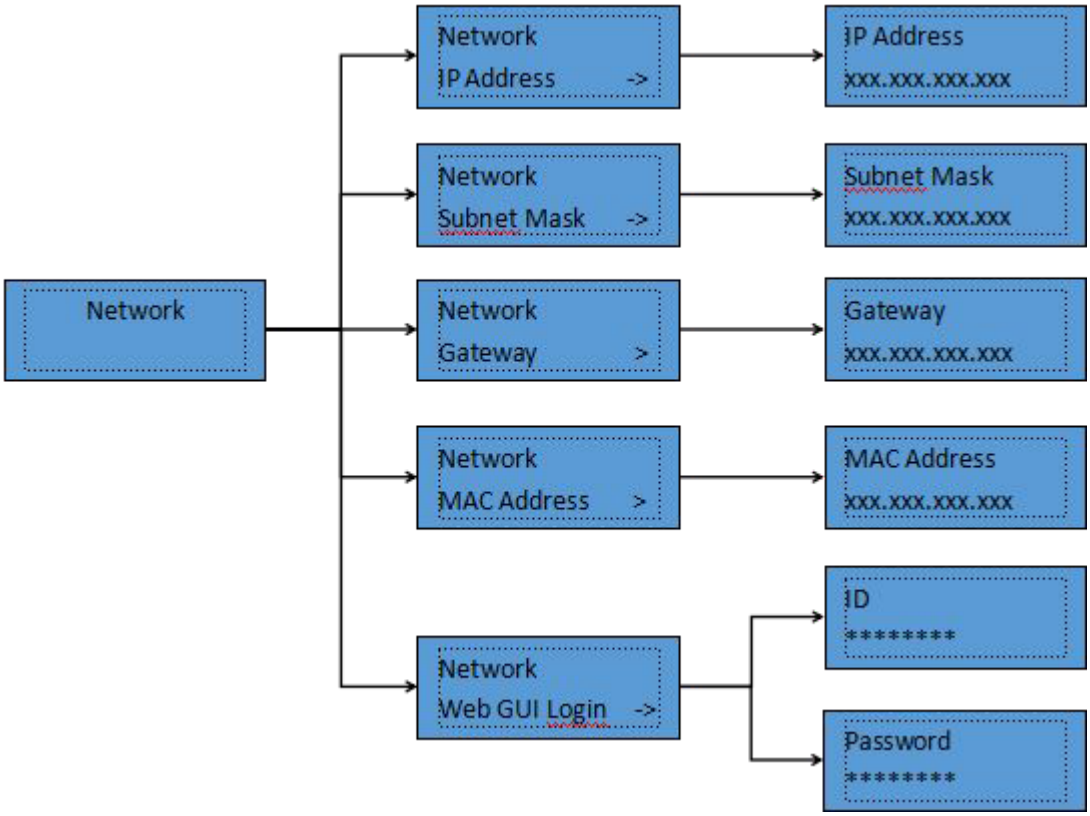
3.1. Main Menu

The LCD will show GX-5000 and management IP address when it boot up. User can press any key of front panel to enter Main menu. Main menu includes 3 submenus, Network, Misc and System.



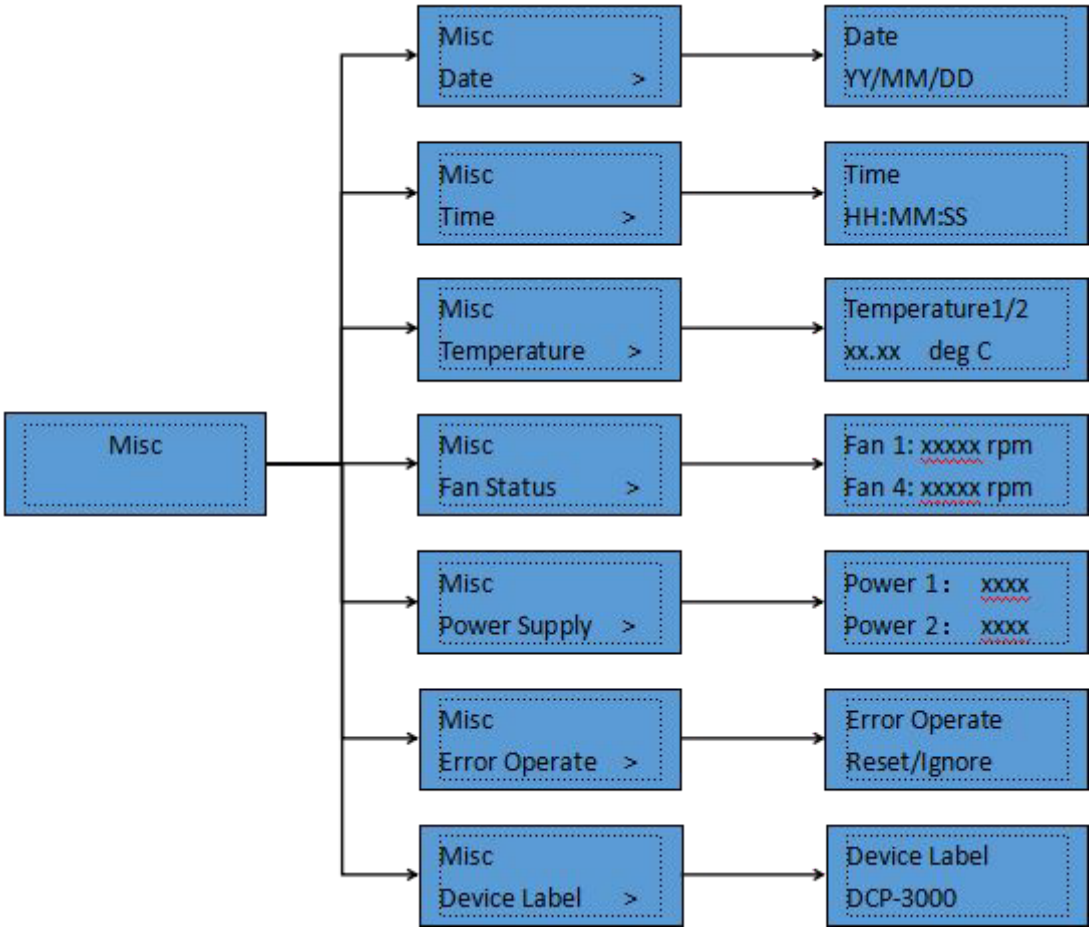
3.2. Network

Network menu includes IP address, Subnet Mask, Gateway, MAC Address and Web GUI Login for management RJ45 port. User can see the below graph as reference. MAC address is read only. Web GUI Login is for setup or reset web browser login ID and password, especially users forgot the ID or password.



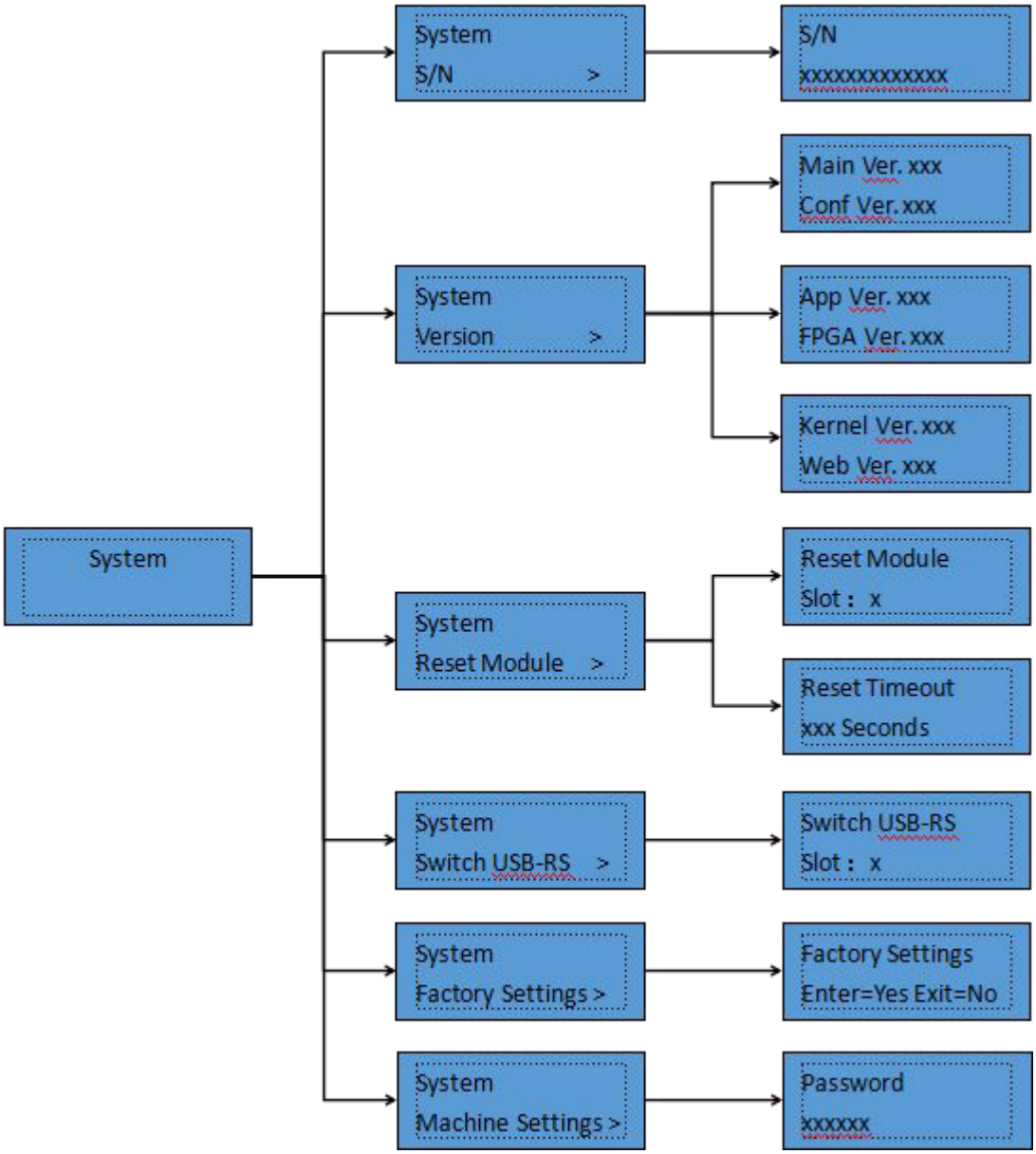
3.3. Misc

This menu includes several unit's status, Date, Time, Temperature, Fan status, Power supply, Error Operate and Device label. User can setup Date and Time to display via front panel. Temperature is unit inside temperature. Fan status will show error if any fan does not work. Power supply is the dual power supply's status. It will show error information when the power supply doesn't work. Error Operate is to reset warned errors. Device label is for setting up unit names which will show on LED and Web browser.



3.4. System

System menu includes these sub-menus, S/N, Version, Reset Module, Switch USB-RS, Factory Settings and Machine Settings. S/N is the identification of the unit and it is an unique series number for each unit. It helps to verify if the unit comes original or not. Version is the information of firmware of the main frame. Reset Module is the function for reset daughter cards. Switches USB-RS is for setting up debug information output port. Factory Settings is for reset all settings to factory default. Machine Settings is limited for users.

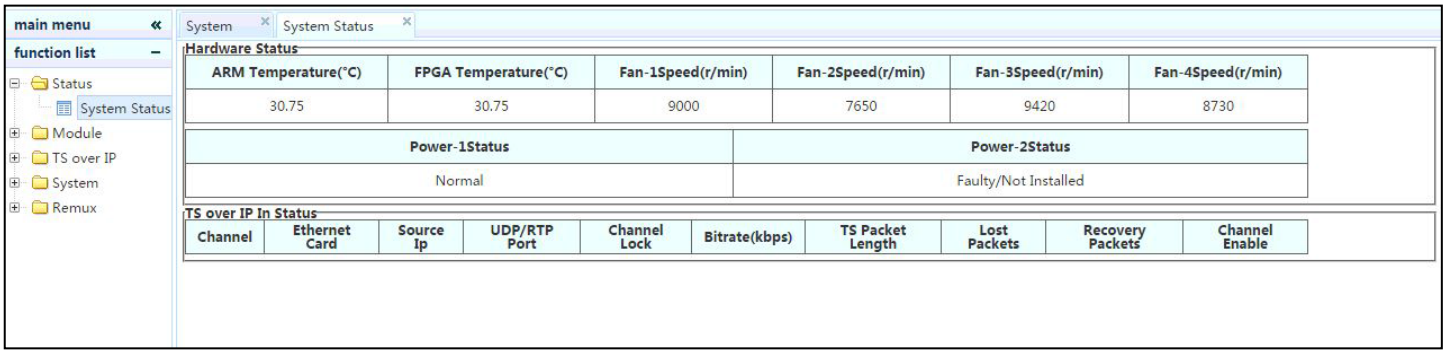

System
System S/N >
S/N xxxxxxxxxxxx
System Version >
Main Ver. xxx
Conf Ver. xxx
App Ver. xxx
FPGA Ver. xxx
Kernel Ver. xxx
Web Ver. xxx
System Reset Module >
Reset Module Slot : x
Reset Timeout xxx Seconds
System Switch USB-RS >
Switch USB-RS Slot : x
System Factory Settings >
Factory Settings Enter=Yes Exit=No
System Machine Settings >
Password xxxxxx

4. Web Interface

Web browser is the main management interface of GX-5000. User can check the unit working status, setup and reset it etc. The suggestion browsers are Chome, IE version 11 or higher.

4.1. System Status

This is the page for main frame working status. It includes hardware working temperature, fans speed, power supply status and TS over IP ports status. If power status shows faulty, it means that the power is crashed or not installed.



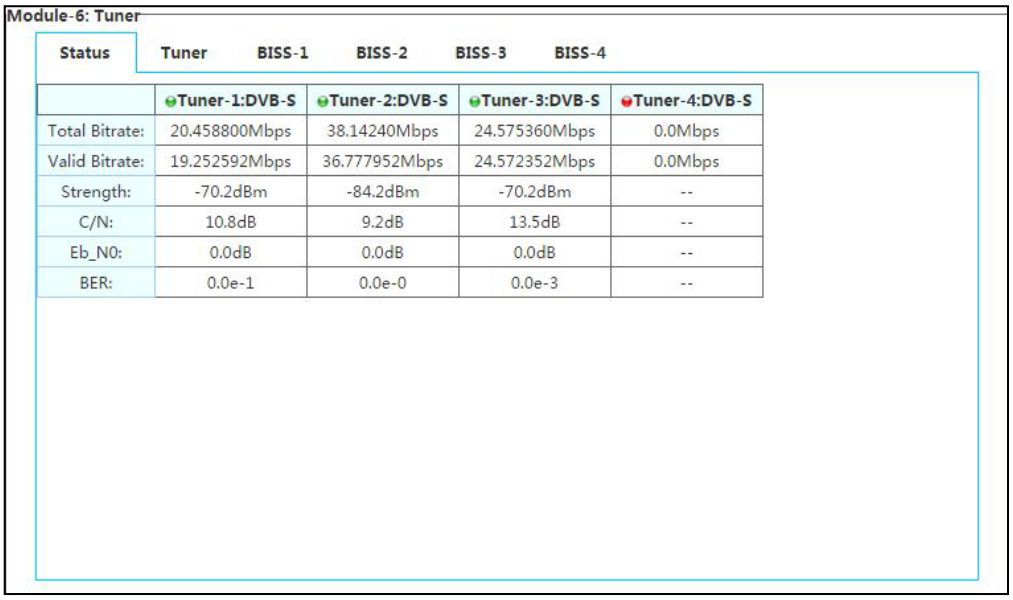
4.2. Modules

4.2.1. P01MS（reMUX & Scrambler Extenson Module）

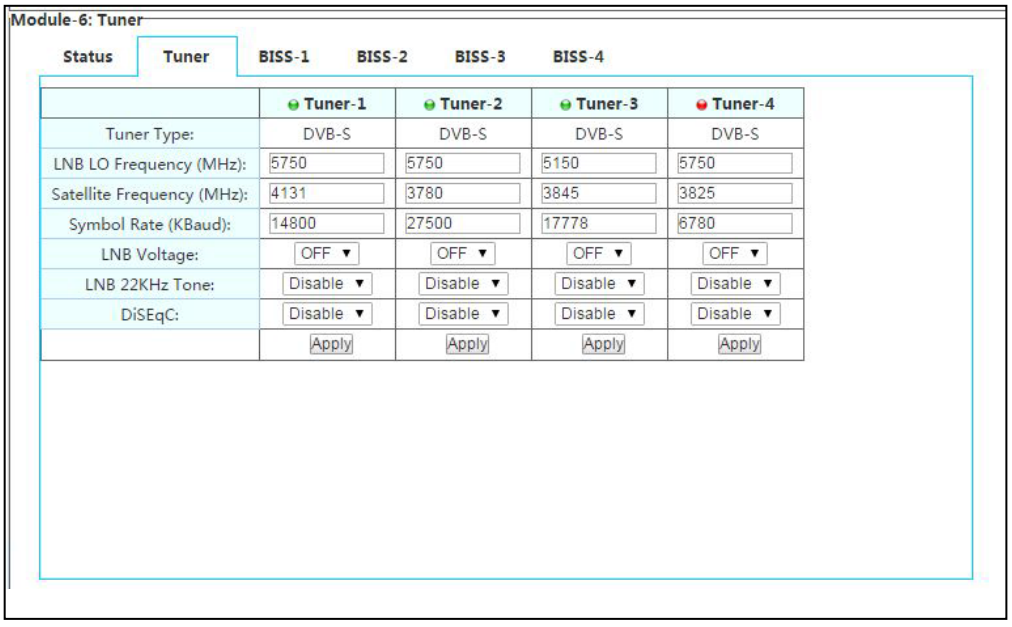
Under development!!!

4.2.2. D01S2（4 x DVB-S/S2 Demodulator Module）

The D01S2 is a 4 independent channels DVB-S/S2 demodulator module, users can setup them separately. And this card supports both BISS-1 and BISS-E decryption function too. There are 8 preset BISS keys for each transport stream.



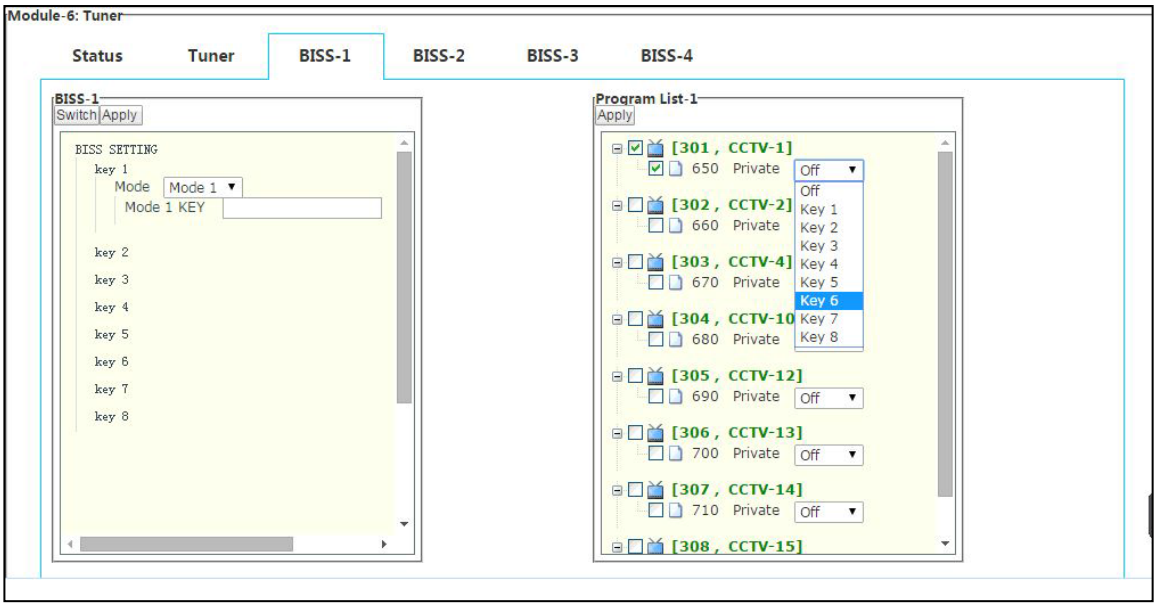
Tuner Status



Tuner configure

Menu Name	Description
LNB LO Frequency	To configure the local oscillator frequency according to the right satellite, its range is from 1000 to 26,500MHz.
Satellite Frequency	To configure the satellite down link frequency according to the right satellite, its range is from 1000 to 26,500MHz.
Symbol Rate	To configure the symbol rate of QPSK signal, its range is from 1000 to

	45,000KBaud.
LNB Voltage	To select the correct LNB voltage output from the F-connector, user can choose between Off, 13V and 18V.
LNB 22KHz	To activate the LNB 22KHz control signal to the LNB, user can select between On and Off.
DiSEqC	To configure the DiSEqC control, user can select Port A, Port B, Port C, Port D or DiSEqC OFF.
PLS Gold Code	To configure the PLS gold code, its range is from 0 to 262,141.



BISS configure

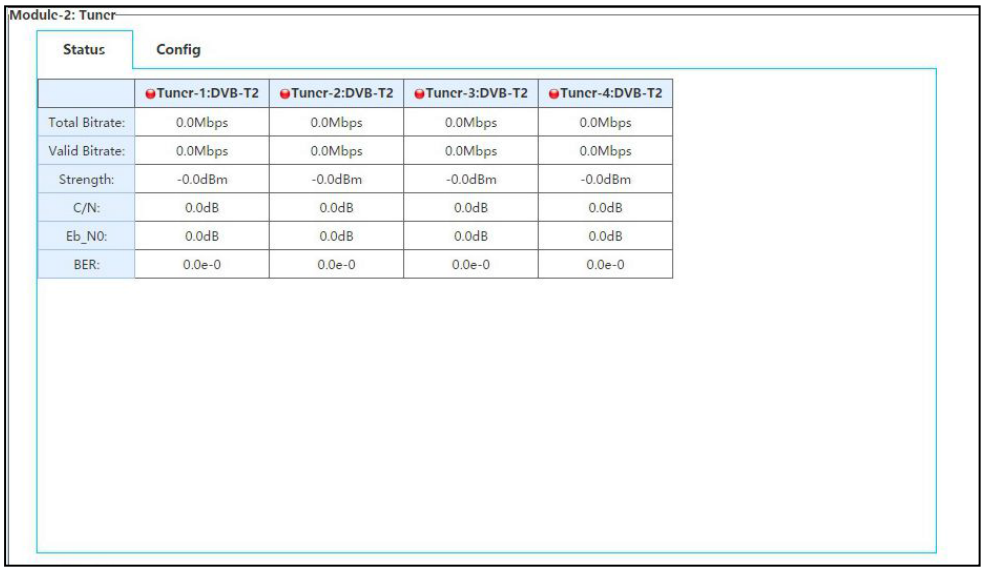
Menu Name	Description
BISS1-4	1 to 1 (BISS1 to Tuner1) BISS setup menu
BISS Mode	To setup the BISS mode, user can choose between Mode-1 and Mode-E.
ID and Key	Input Key in BISS-1 mode and input ID and Key in BISS-E mode.
Program List	To configure the programs should be decrypted.

4.2.3. D02S2 （4 x DVB-S/S2 Demodulator Module, Support Input Stream Indentifier）

Please refer 4.2.2.

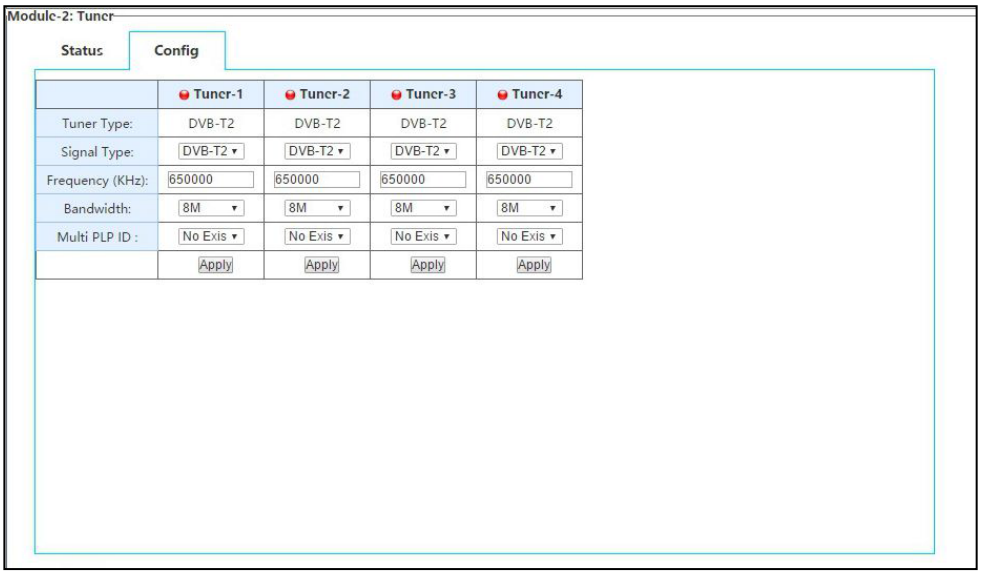
4.2.4. D01T2（4 x DVB-C/T/T2 Demodulator Module）

The D01T2 is a 4 independent channels DVB-T2/T/C demodulator module, it supports 3 different demodulation modes, DVB-T2, DVB-T and DVB-C. User can select the requirement modes. For setup as below:

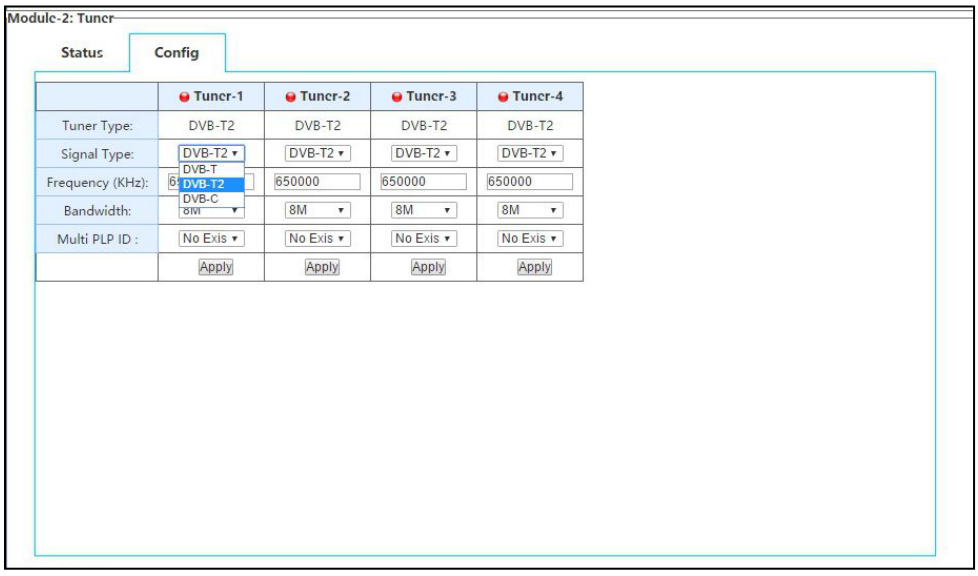


Status

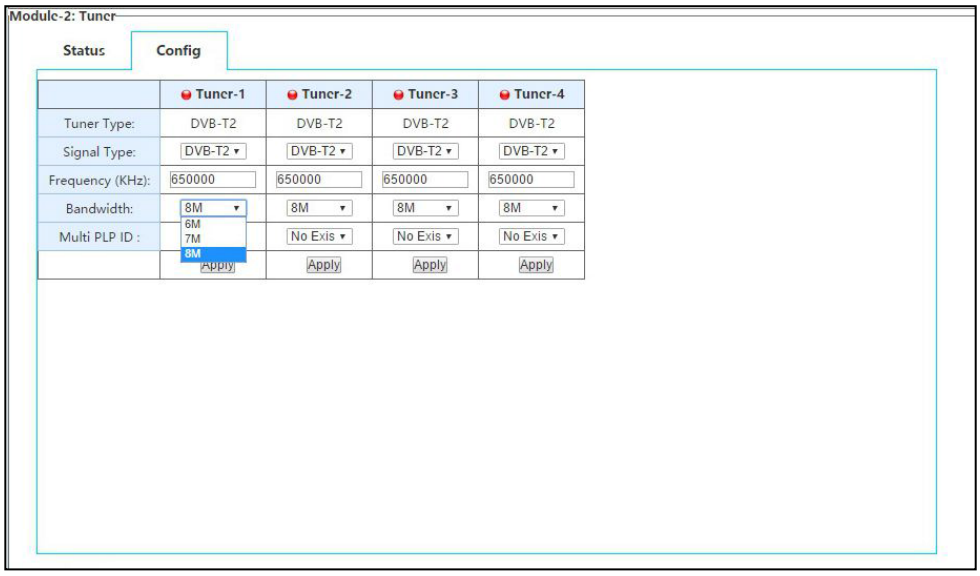
The default demodulation mode is DVB-T2, as below figure.



Default demodulation mode



Demodulation mode

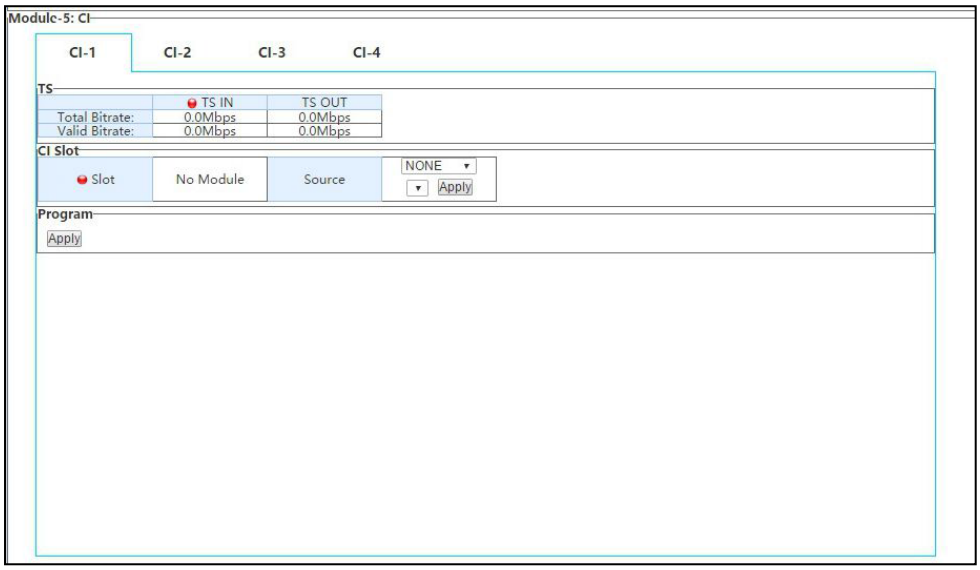


Default demodulation bandwidth

Menu Name	Description
Signal Type	Demodulation mode option
Frequency	Receiving signal frequency option
Bandwidth	Bandwidth option
Multi PLP ID	PLP option (Just for stream which includes PLP ID)

4.2.5. P01CI（4 x CI De-encryption Module）

The P01CI is a card for installing CAMs to decrypt scrambled services. It supports up to 4 CAM slots(2 inside, 2 outside). On the configure page, user will see total bitrate and valid bitrate which the slot using, CAM name which installed, transport stream source option and program list etc.

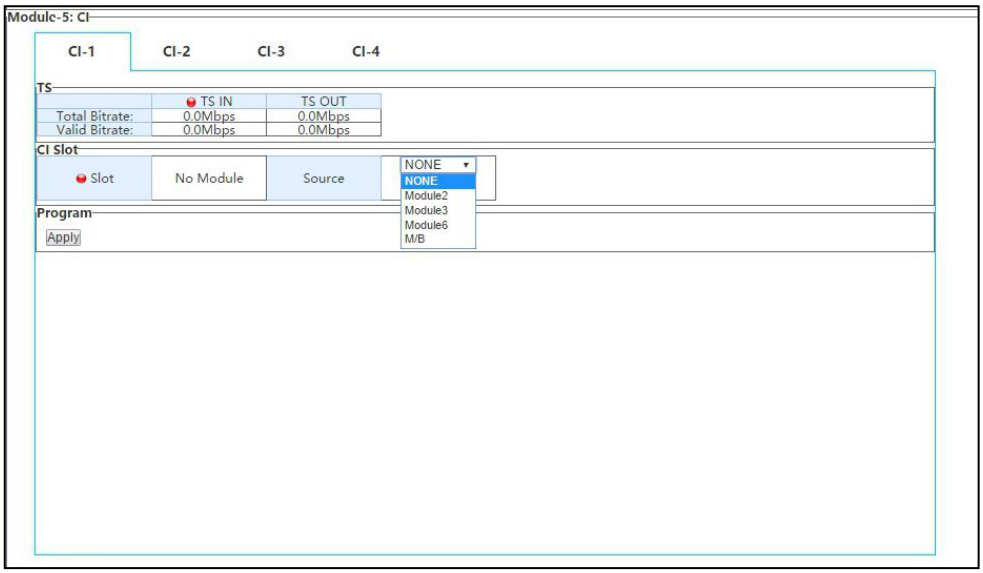


Default status

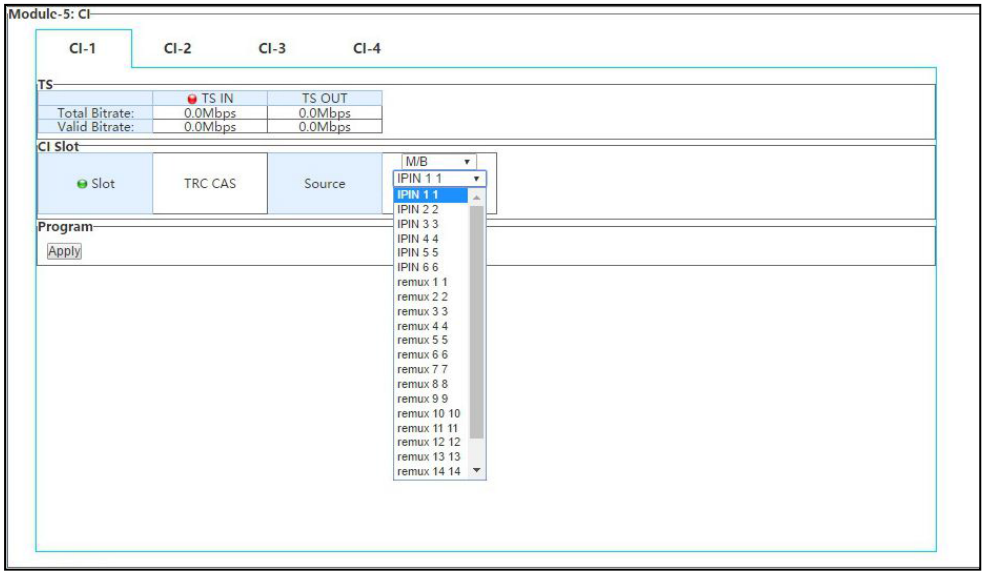
Menu Name	Description
TS IN/TS OUT	Transport stream which input and output the CI slot
Slot	CAM name or No Module which mean CAM not installed or recognized
Source	Transport stream used for CI slot, it will show which module and source are available
Program	Program list from the selected transport stream

Below is an example for CI setup:

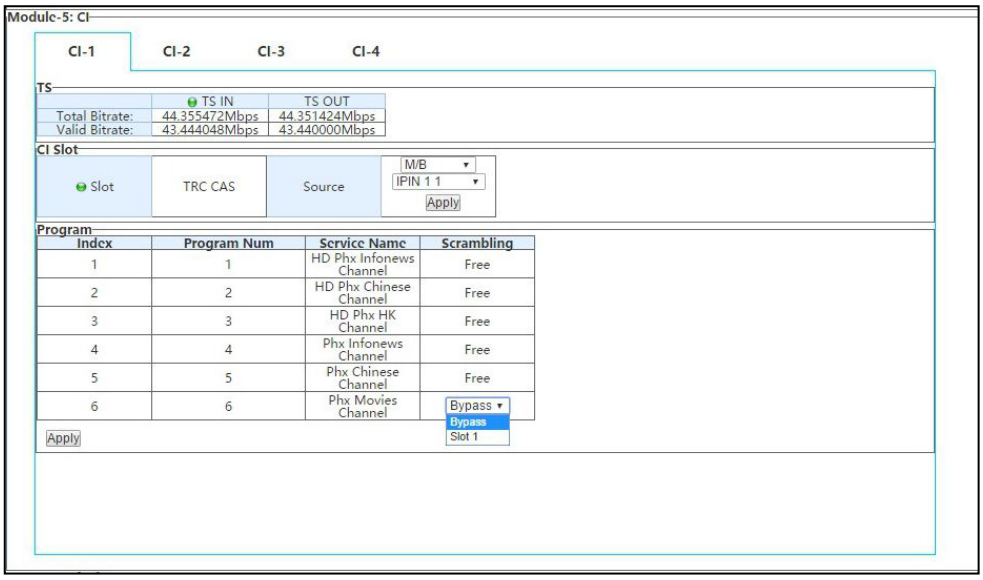
Step1: select one available module or M/B (Main board)



Step2: select the transport stream which will be used for CI slot;

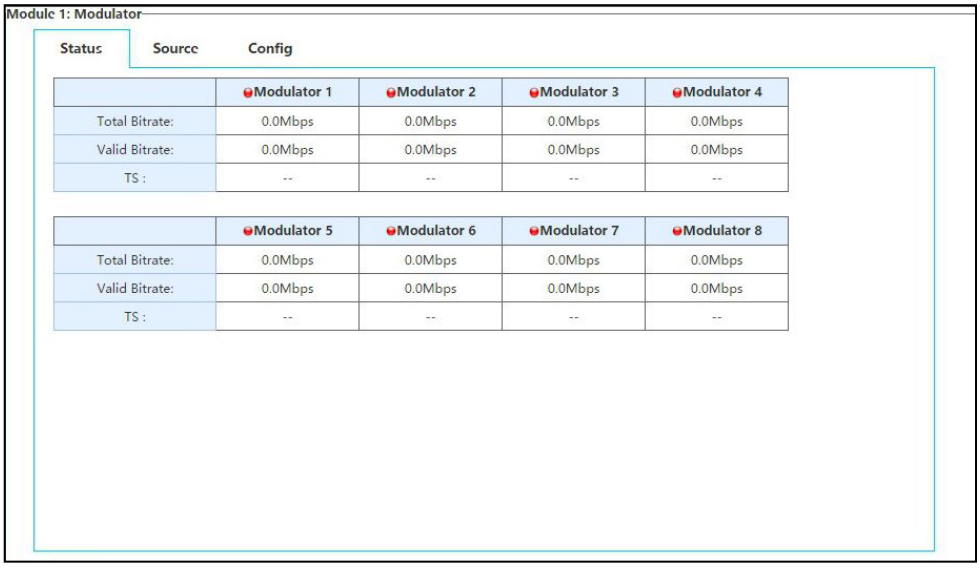


Step3: Select services which need to decrypting and click apply.

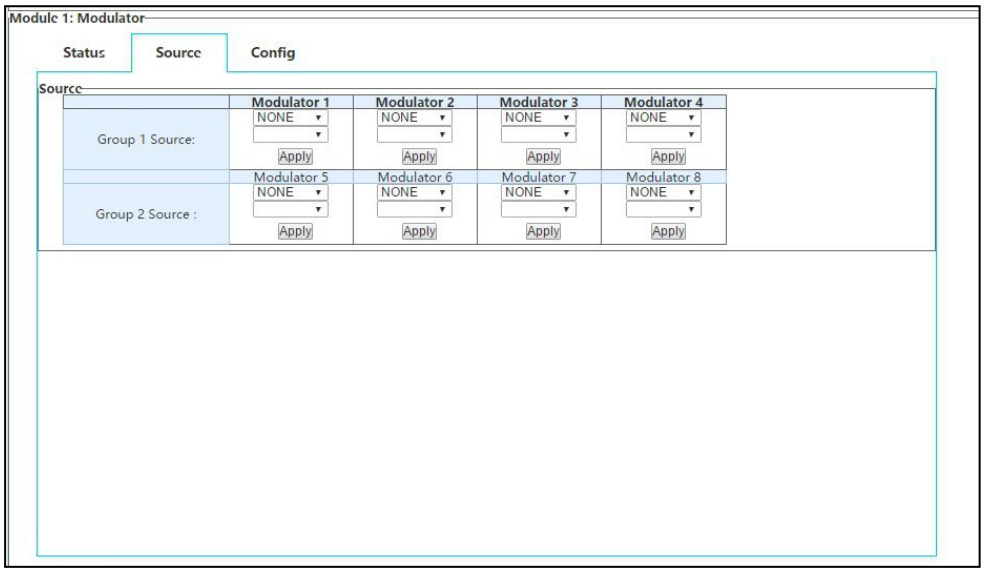


4.2.6. C01QAM（8 x QAM Modulator Module）

The C01QAM is a 8 channels, 2 groups 4 adjacent frequencies, QAM modulator. Each channel has switch for enable or disable the RF output. And each channel also can be configured with independent transport stream. Status page will show each channels working status. The spot red means channel is off or not working, green means working fine.



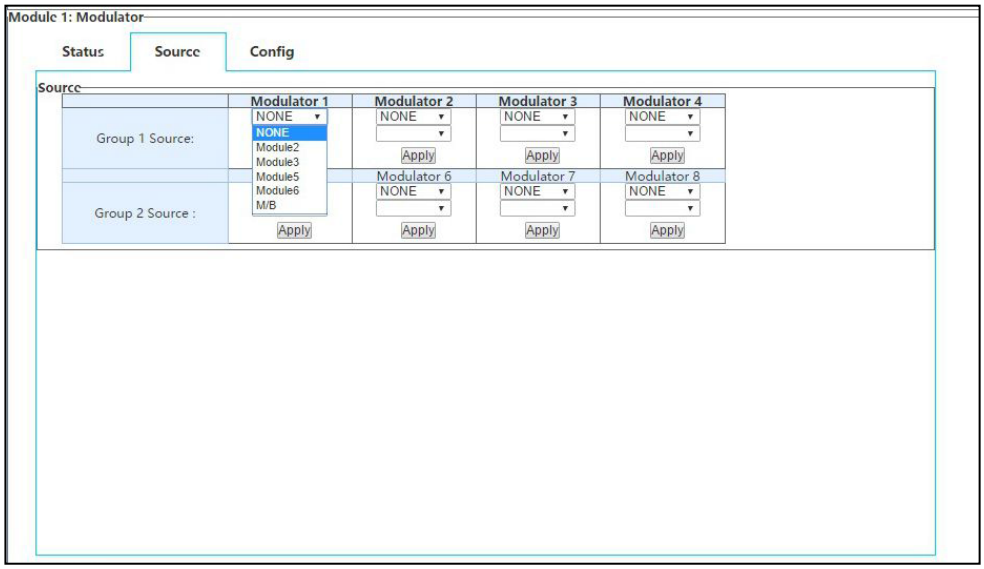
Modulators Status



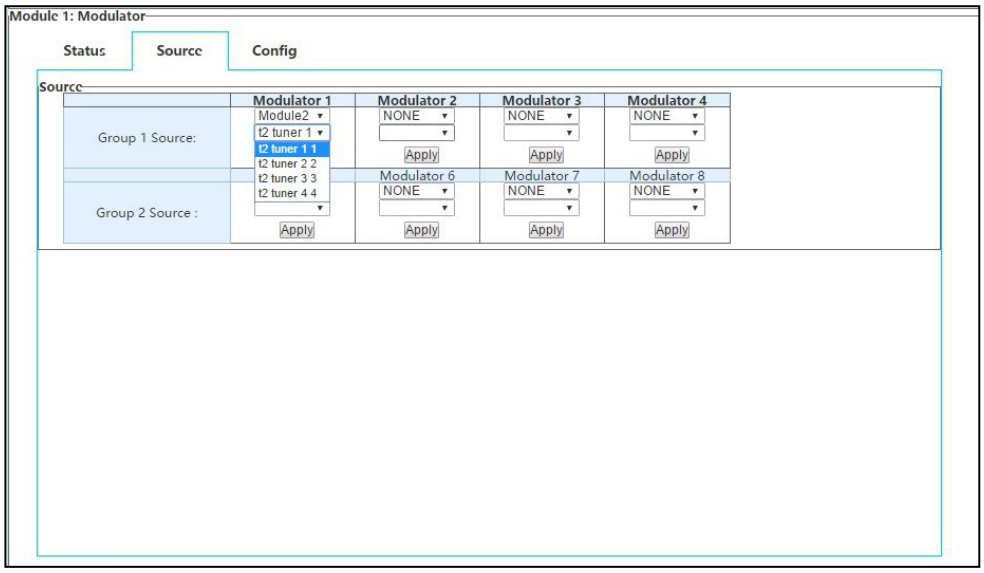
Default source options

Below is the procedure for setup modulator:

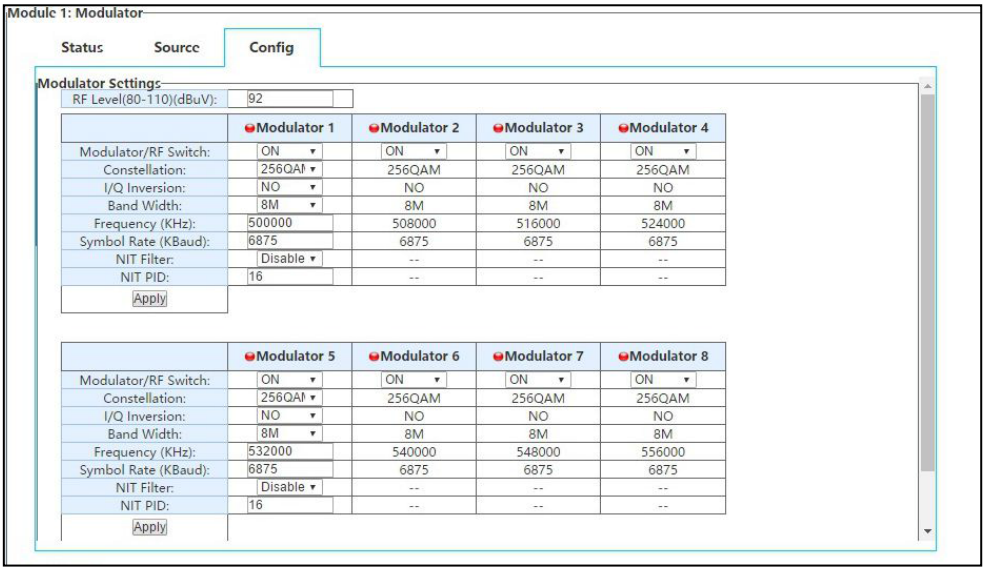
Step1: select module or M/B which will be used for modulator



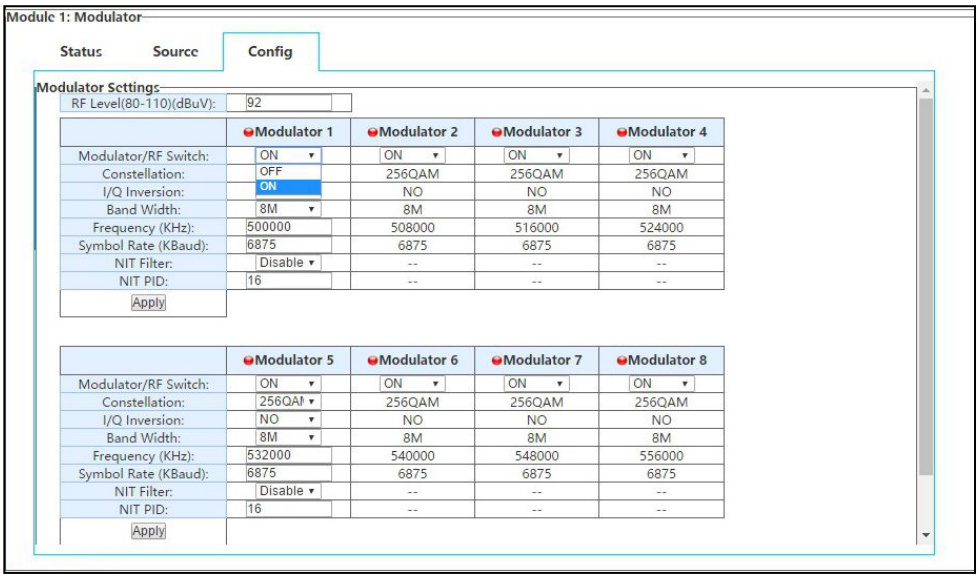
Step2: select the specific transport stream for modulator



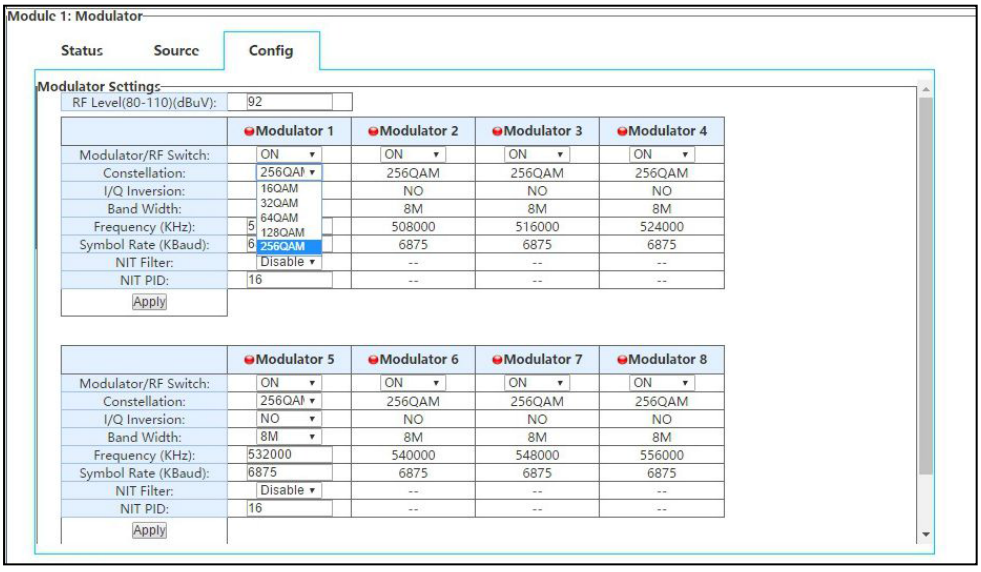
Step3: setup RF Level for output:



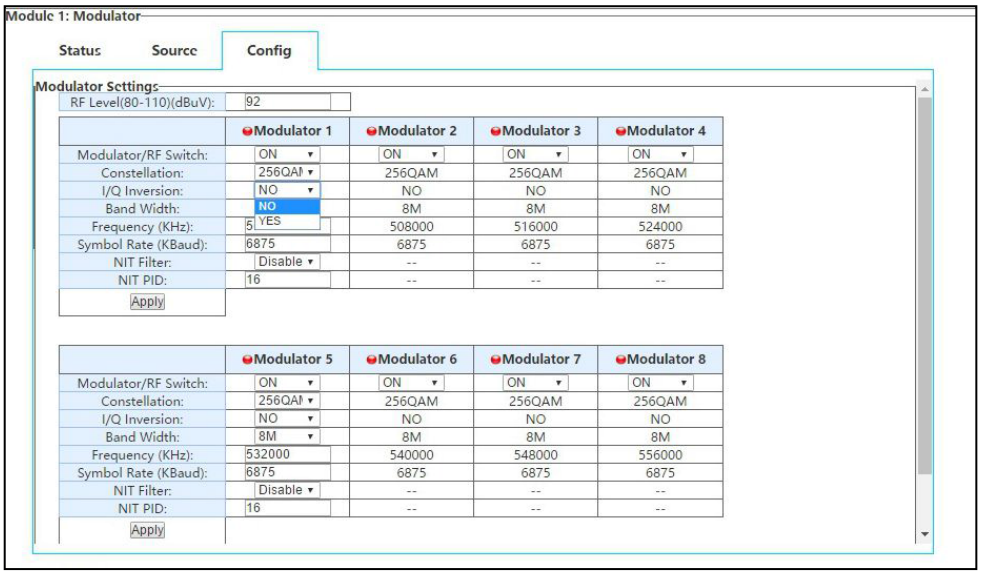
Step4: to setup modulation/RF switch as ON



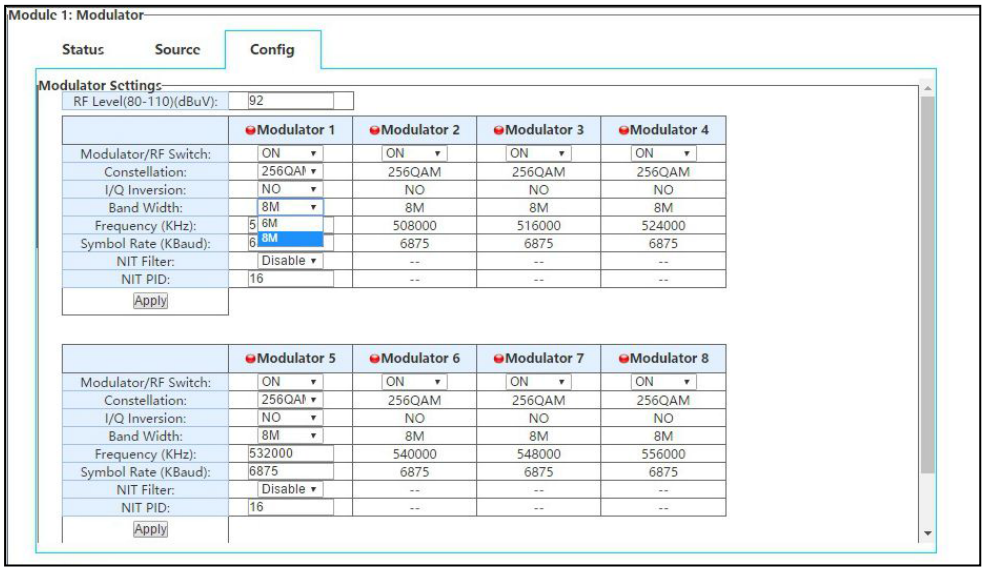
Step4: to setup constellation



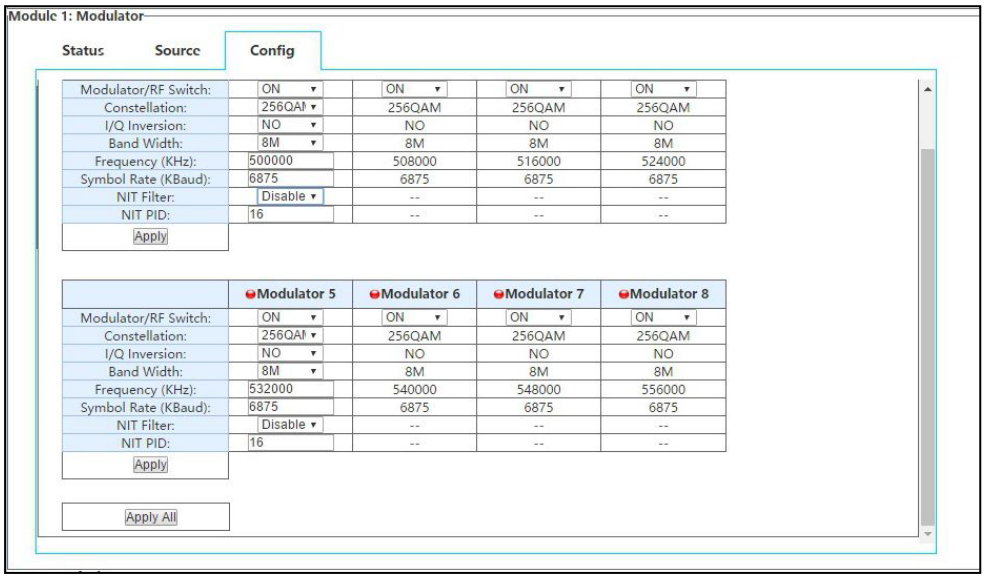
Step5: to setup I/Q Inversion



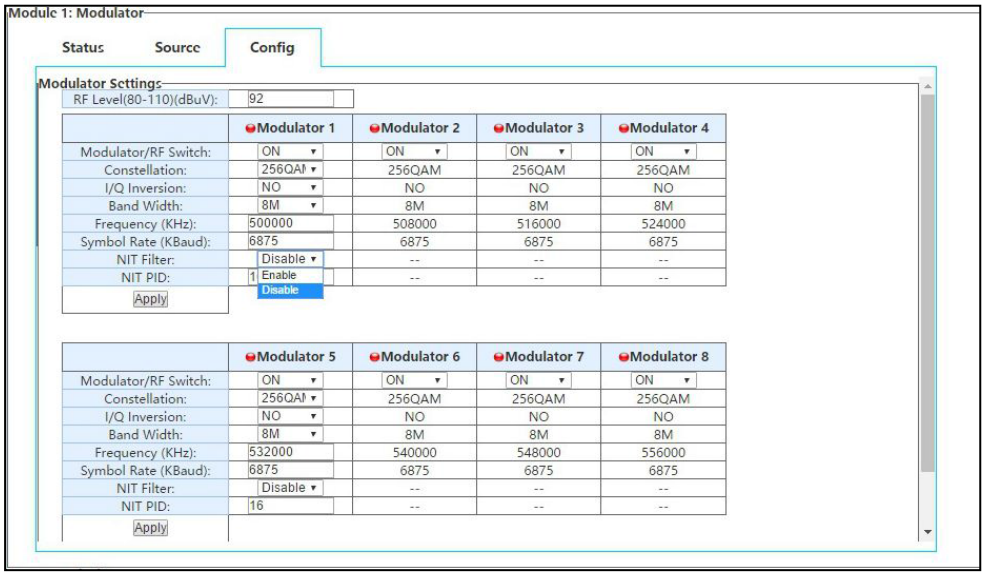
Step6: to setup band width:



Step7: to enter Frequency and Symbol rate, this just for Modulator-1 and Modulator-5, the reset will increased following up according to bandwidth.



Step8: to setup NIT filter, it will pass NIT if the option is enable, Disable will not pass through NIT. NIT PID is for customer defined PID which instead NIT pass through.



Step9: after all setups, need to click Apply to save and enable all of them.

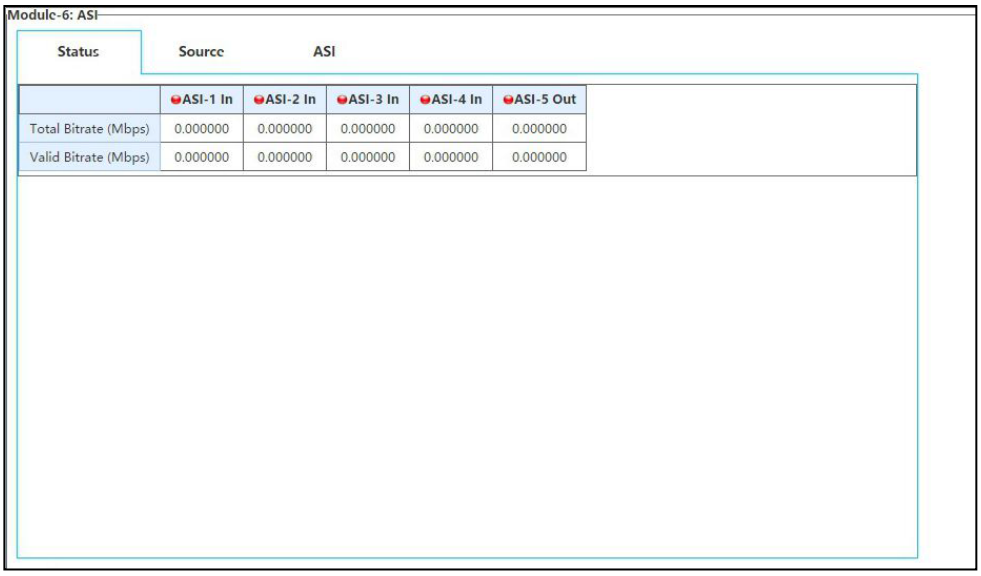
4.2.7. C01MOD（8 x QAM/4 x COFDM Modulator Module）

Under development!!!

4.2.8. C01ASI（5 x ASI Input/Output Module）

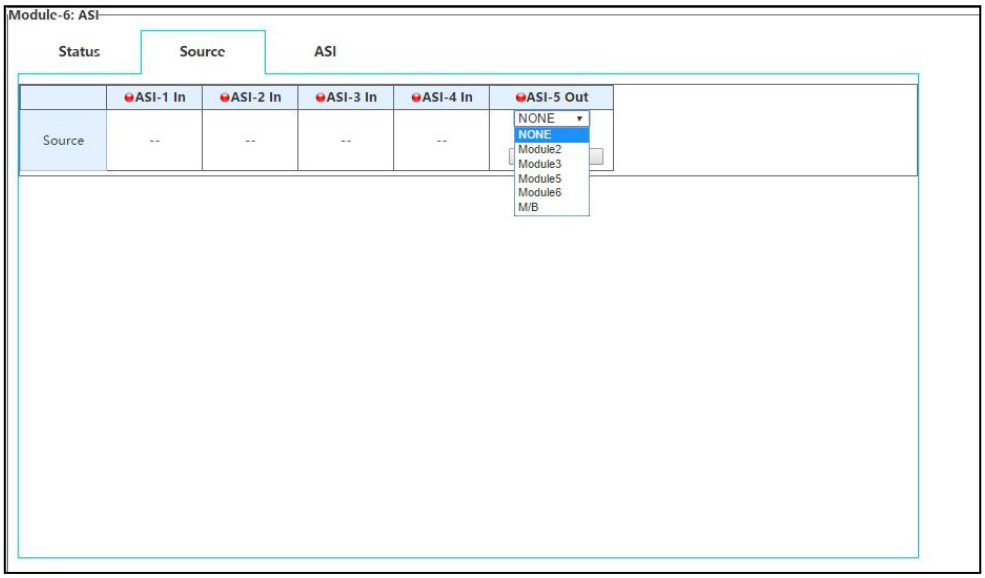
This is a 5 BNC for ASI input and output software option card. User can define the input and output via Web interface configuration. And there is additional option for demodulating T2MI.

This Status page will show bitrate input or output from each of 5 BNC.

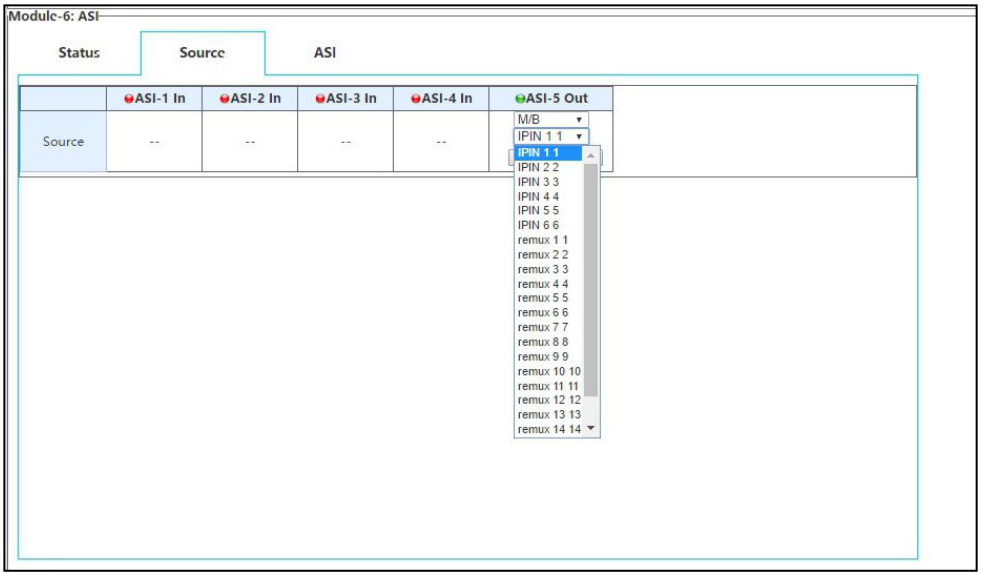


Status

This Source page just for ASI output option. If the BNC configured as input, there is no option on this page. When the BNC configured as Output, user will see options as below. User needs to select card module as picture or M/B first ASI output-1, and then select stream from the shown source as picture ASI output-2.

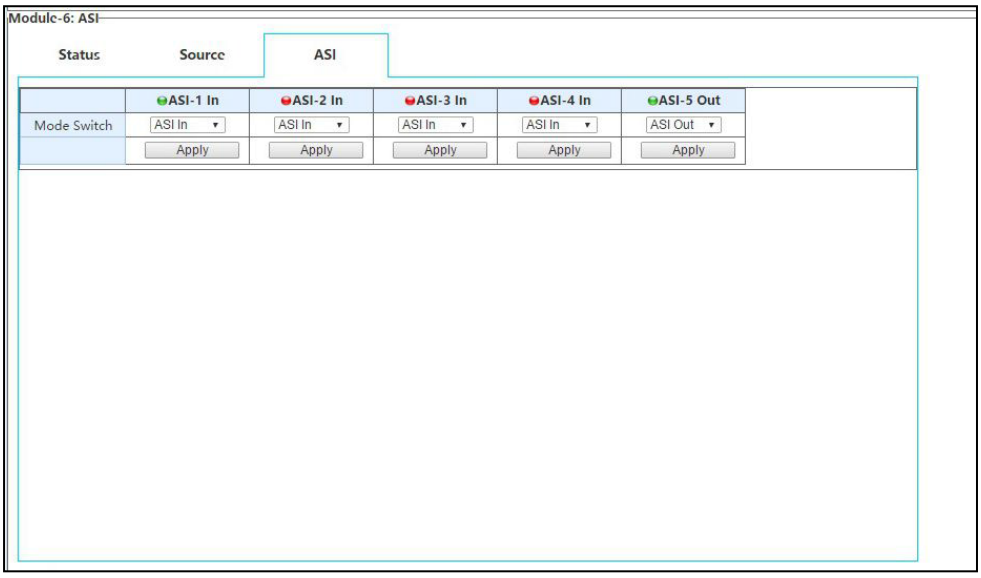


ASI output-1



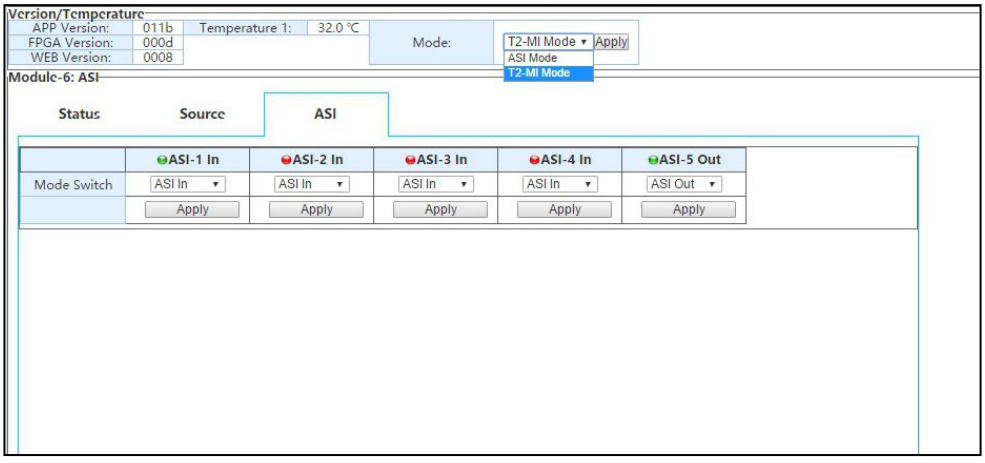
ASI output-2

The ASI page is for configure BNC, input or output. There are two options for each BNC, ASI In or ASI Out.



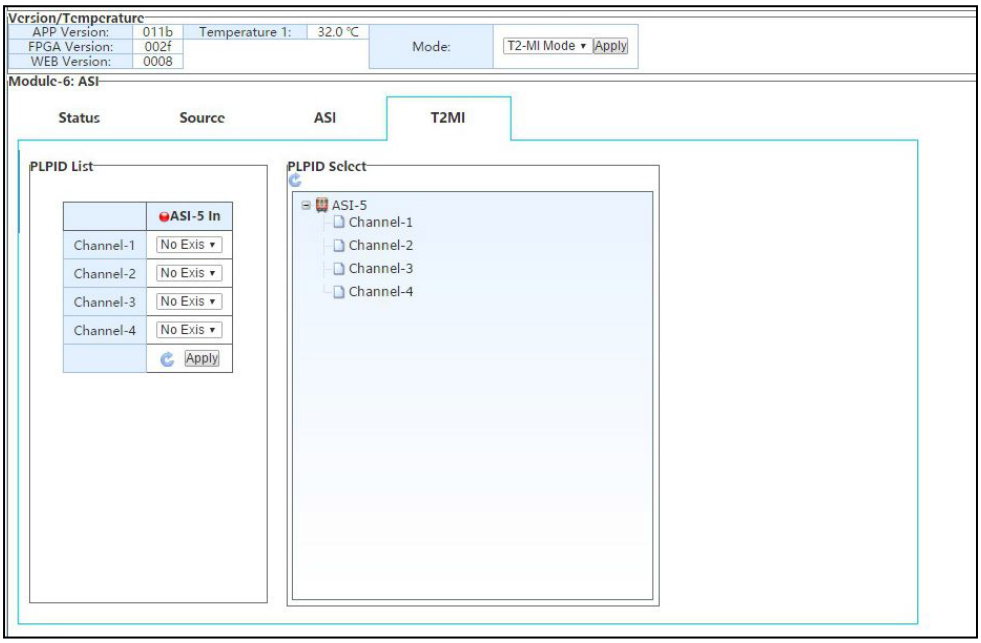
BNC configure

For special using, user can set this card mode as T2MI mode, as picture showed below. After setup as T2MI mode, BNC 5 will fixed as ASI input for T2MI function.



Mode option

T2MI page will show up when the card set as T2MI mode. It will support demodulate 4 PLPs at same time. As below, user will see PLP ID List on left. There will be PLP IDs if the input stream included.



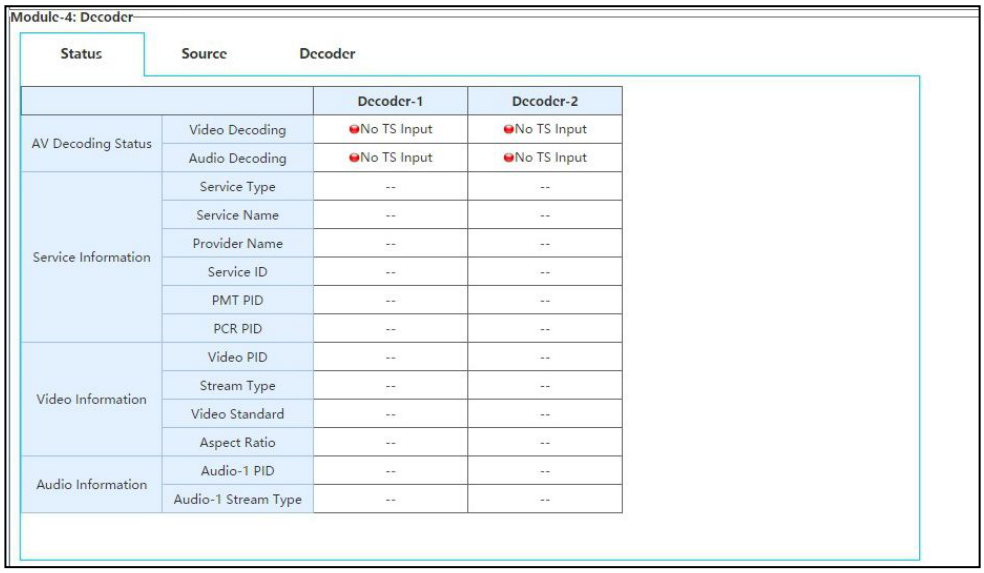
T2MI configure

4.2.9. P01DA（2 x DS3 Input/2 x DS3 Output/1 x ASI Adaptor Module）

Under development!!!

4.2.10. D01PA（2 x Channels Multi-format Signal SD/HD Decoder Module）

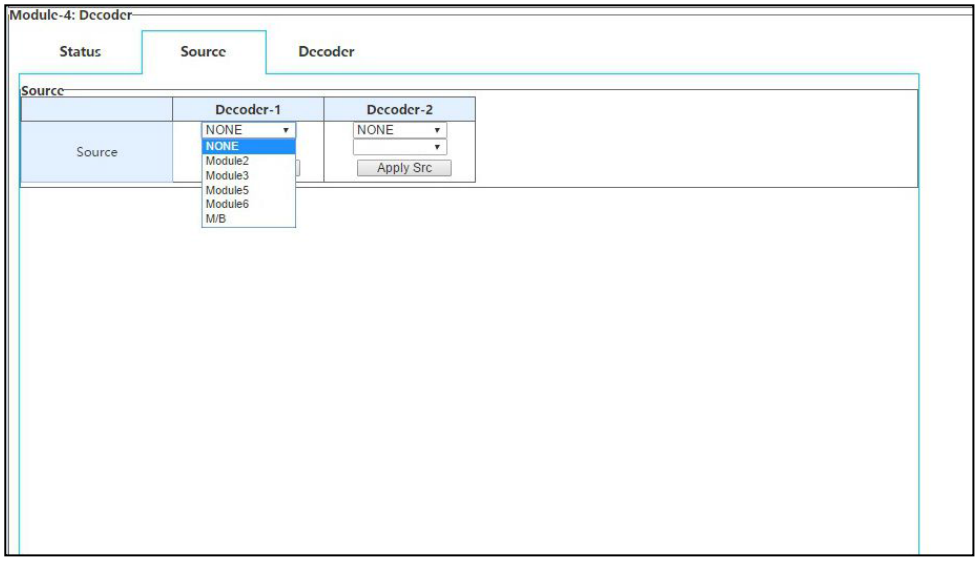
This the decoder card is two channels decoders with HDMI and CVBS interfaces. User can select stream from source menu and to configure the decoding on Decoder menu. Status page will show current decoding services status.



Decoder Status

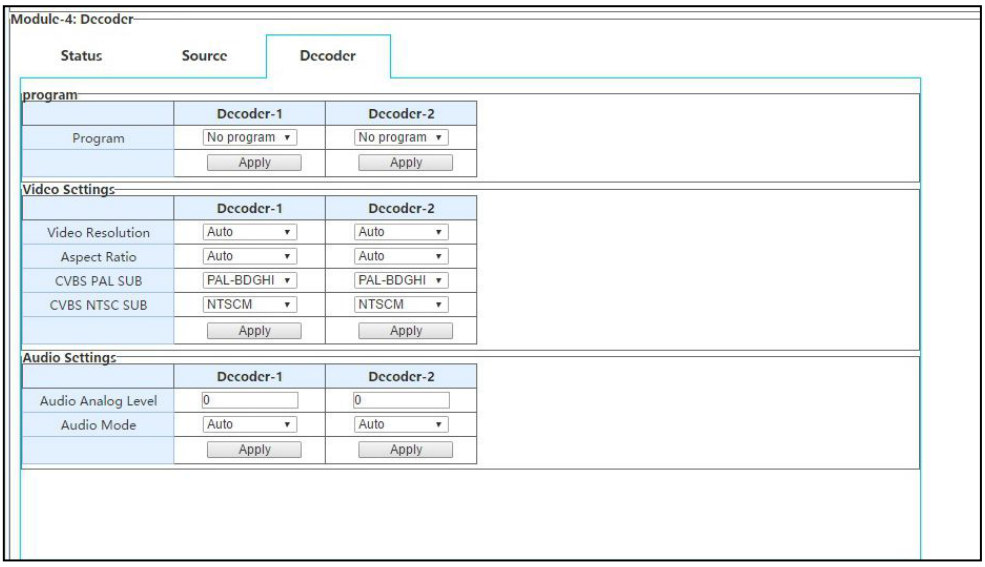
Below is the procedure for setup Decoder:

Step1: select module or M/B which will be used for decoder and select stream from the selected module or M/B;



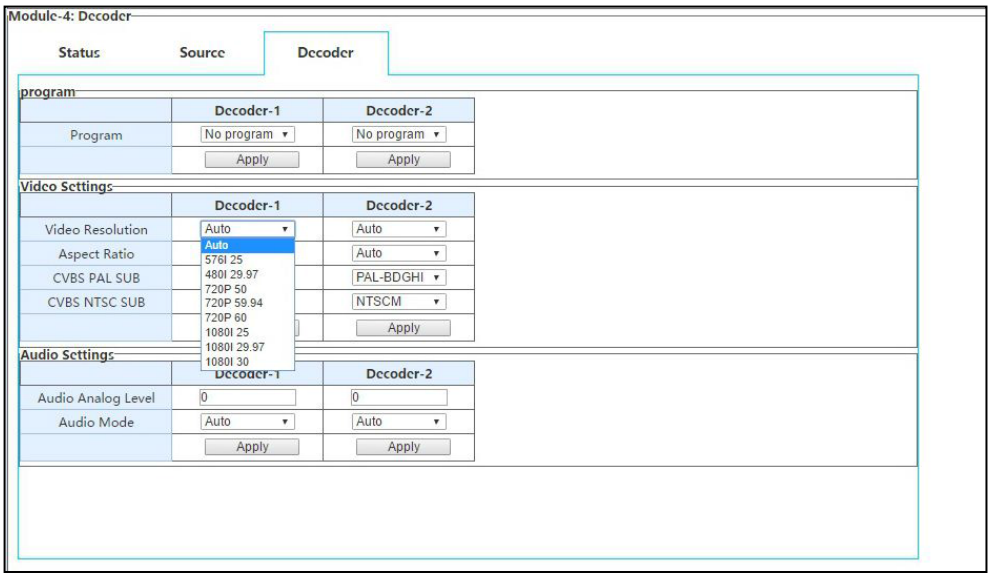
Decoder source-1

Step2: select which service will be used for decoding, user will see output from HDMI or CVBS after this step.Please refer Status page if there is no output. The possible issue could be the service is encrypted.



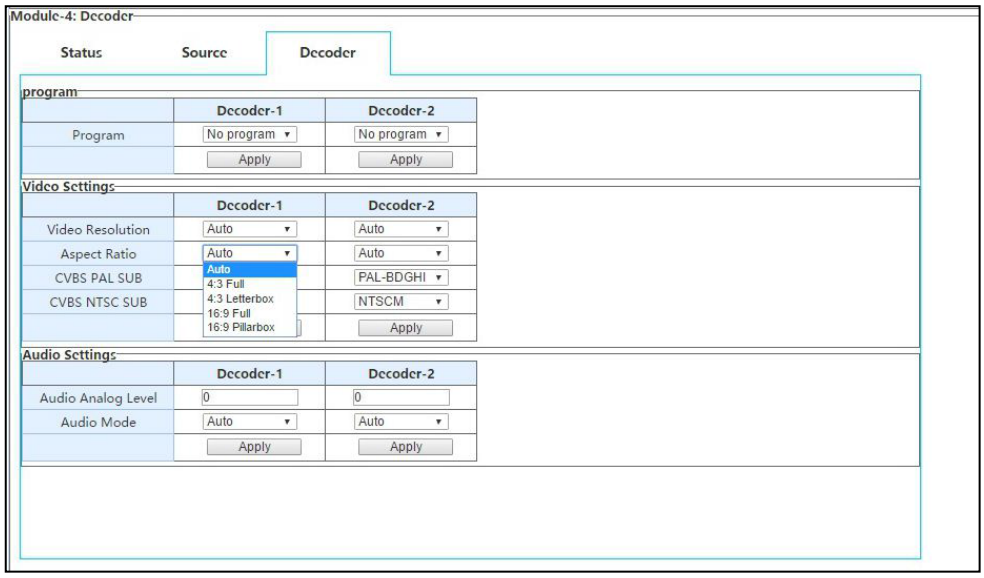
Decoder

Step3: user can adjust out video resolution if user want to see the particular resolution.



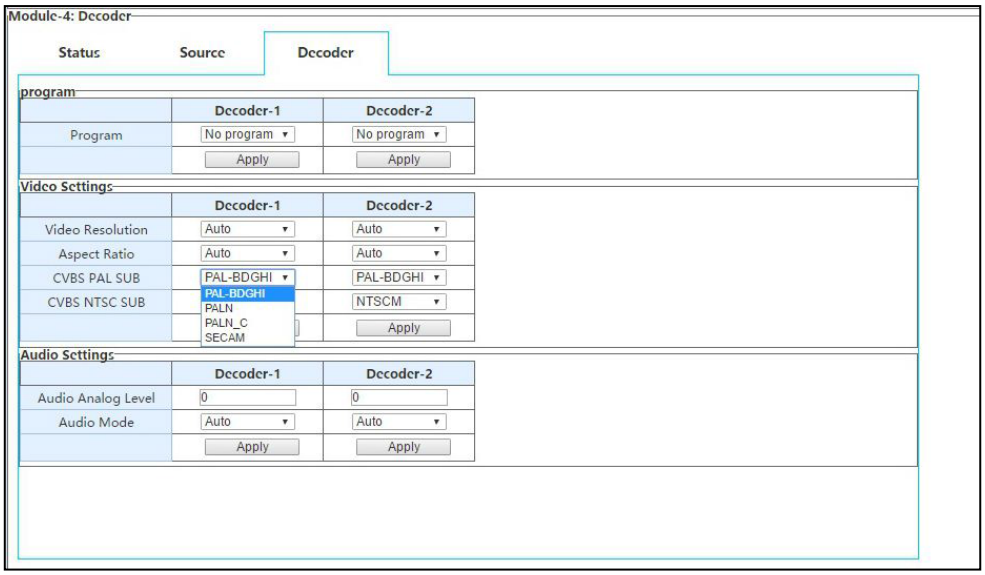
Resolution configure

Step4: user can adjust out Aspect Ratio too if user want to see the particular aspect ratio.



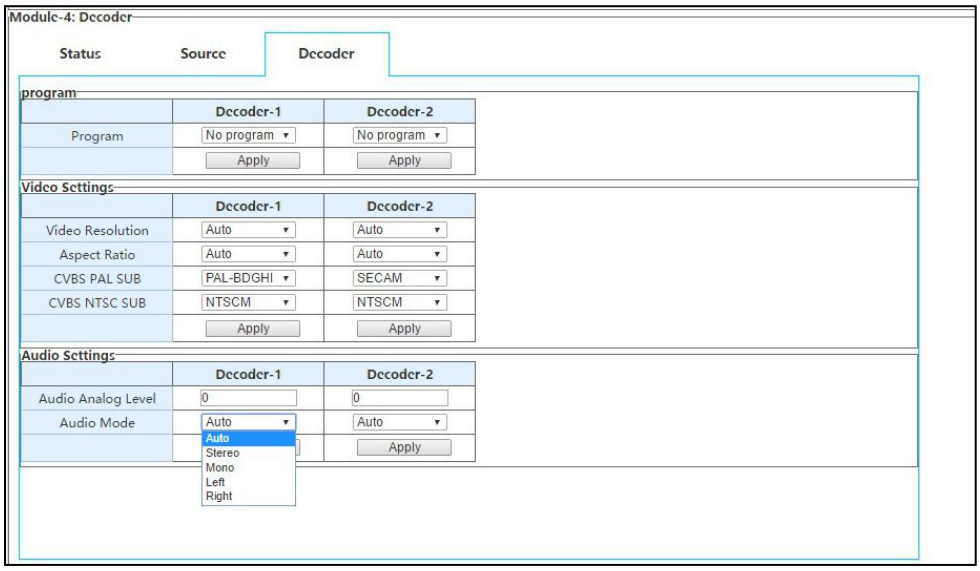
Aspect Ratio

Step5: user can use default setting under most situation, and configure it as required.



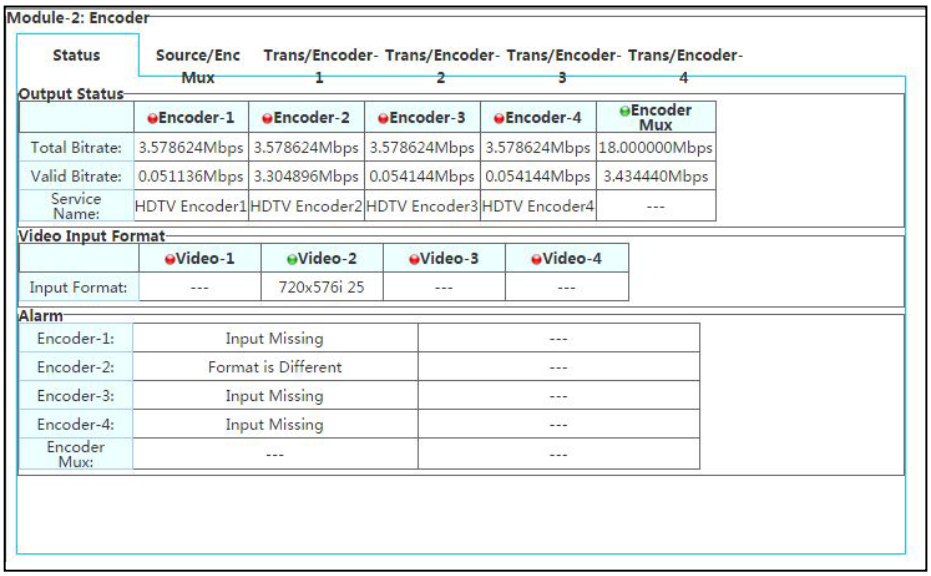
CVBS PAL

Step6: Audio mode include Auto, Stereo, Mono, Left and right. User can configure it as required.



4.2.11. P01EC（4 x HDMI MPEG-2/H.264 Transcoder/Encoder Module）

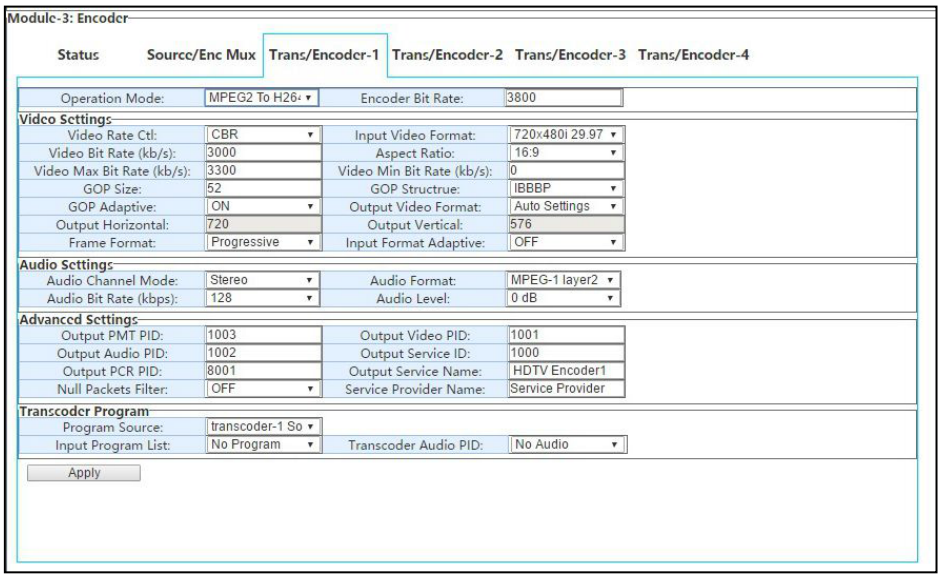
This the HDMI encoder card of GX-5000. It supports 4 channels HDMI encoder, and it can be used as a transcoder too. The 4 encoders are independent hardware, the options for each encoder will not effect others. Specially, there is a simple remux core on the card, user can use the remux to manage the streams after encoding or transcoding.



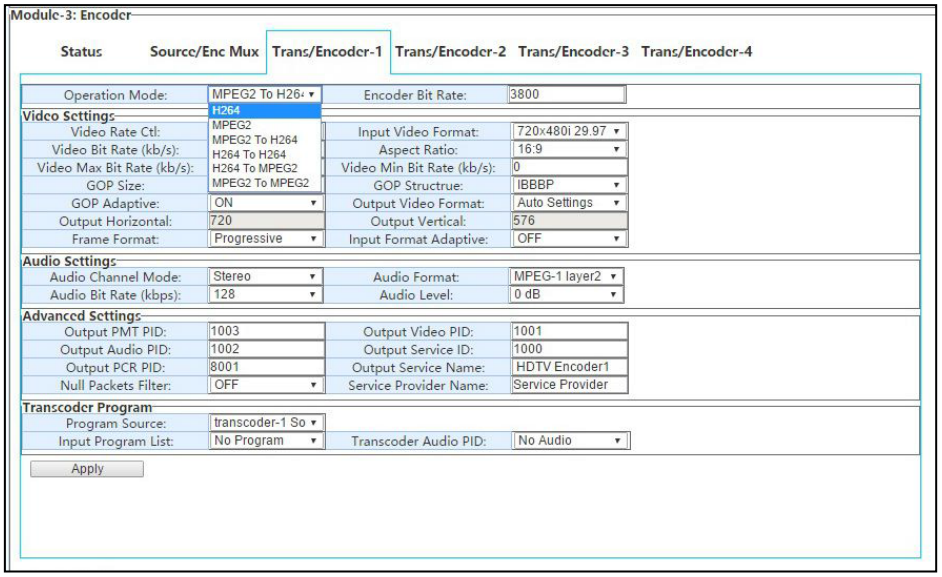
Encoder Status

Quick setup example:

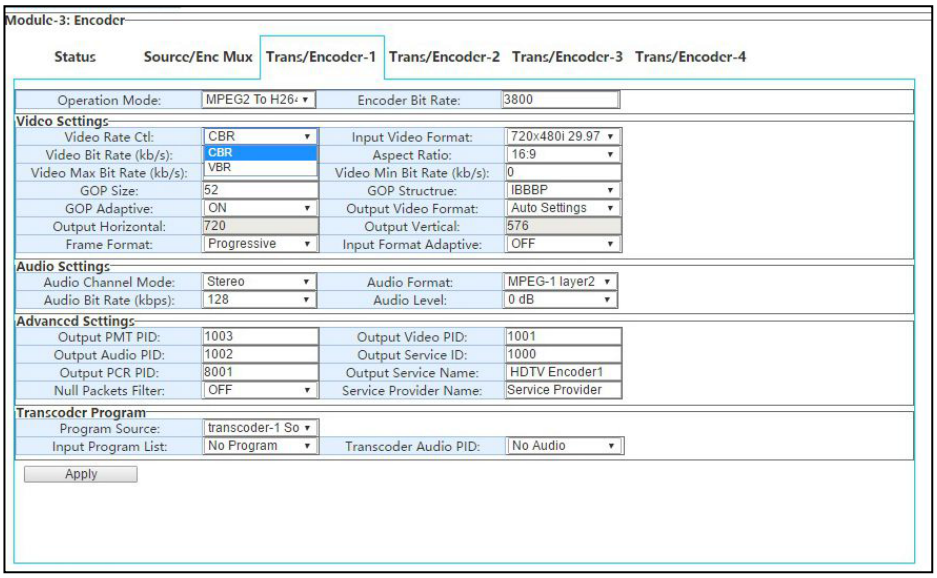
Step1: select on encoder page from encoder 1 to 4.



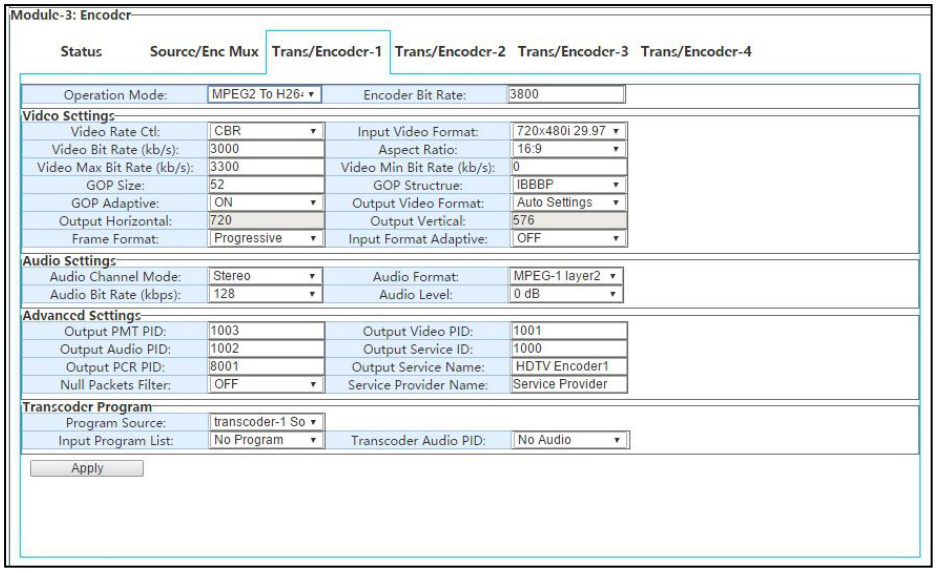
Step2: configure the card operation mode, H264 or MPEG2 encoding or MPEG2 To H264 transcoding. Encoder Bit Rate is for encoding output bit rate, Video + Audio + Null packets.



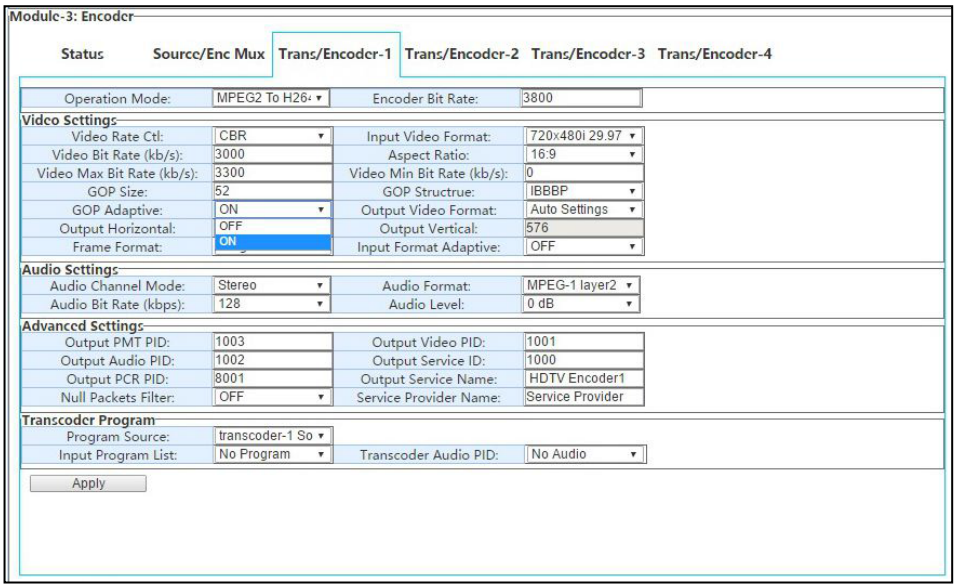
Step3: user can select Video Rate control from CBR and VBR.



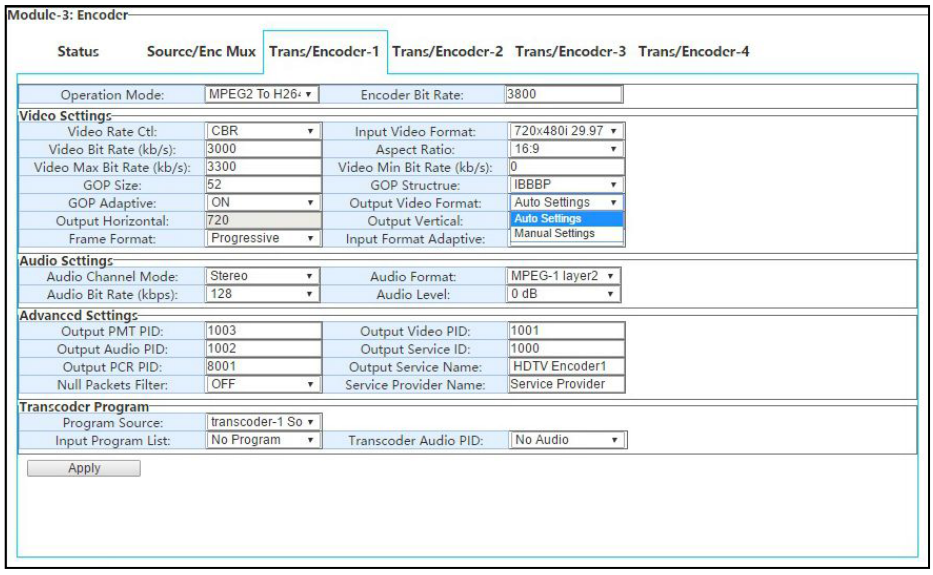
Step4: user can setup video bit rate, video max bit rate and video min bit rate. The difference between Max and Min is the range for video encoding or transcoding. Aspect Ratio will be 16:9 or 4:3.



Step5: GOP size option will be enabled while the GOP Adaptive option is OFF. GOP Structure will IBBP, IPPP, IBP and IBBBP four options.



Step6: The Output Horizontal and Vertical can be enabled when the Output video format is Manual Settings. If it is Auto Settings, video output format will be same as input. The Input Format adaptive is for recognize input video format automatically. The Input video format menu will be disabled if it is ON. And, there will be one more option if the module card Operation Mode is encoding(option: h264 and MPEG2). It is Low delay mode. The delay could be less than 100ms if it is on.



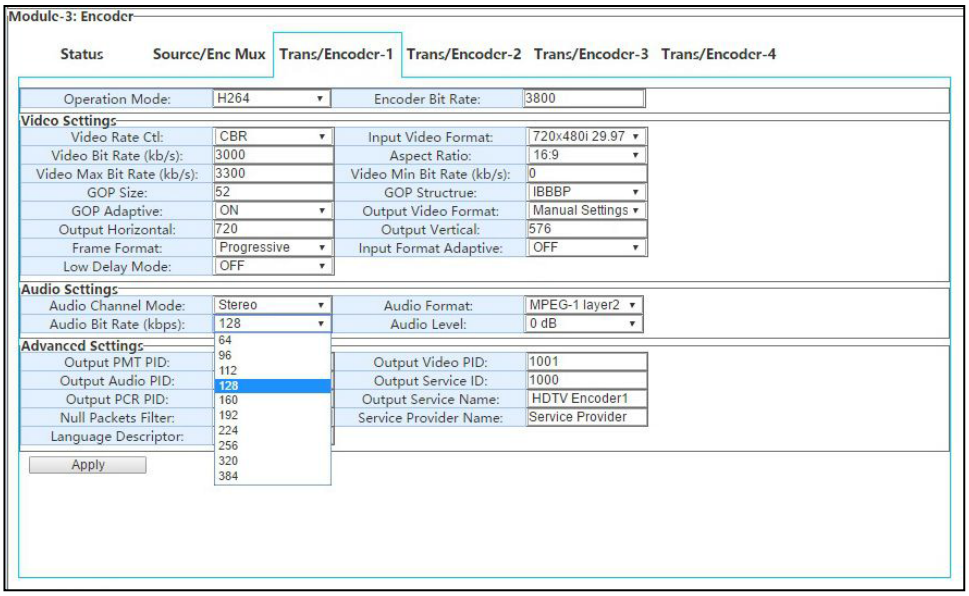
Step7: There are four options of Audio Settings, such as Audio Channel Mode, Audio Format, Audio Bit rate and Audio level.

Audio Channel Mode: Stereo and Mono.

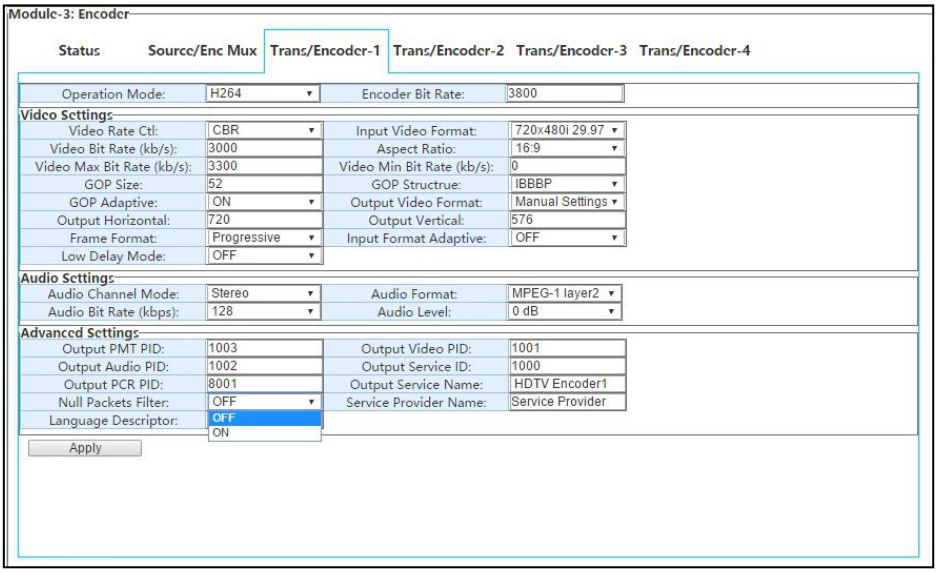
Audio Format: set the audio compression format MPEG-1 Layer II, MPEG-2 AAC LC, MPEG-4 AAC LC, MPEG-2 AAC HE-V1, MPEG-4 AAC HE-V1, MPEG-2 AAC HE-V2, MPEG-4 AAC HE-V2

Audio Bit Rate: Set the audio bitrate, available options: 64k bps /96k bps /112k bps /128k bps /160k bps /192k bps /224k bps /256k bps /320k bps /384k bps

Audio Level: Set the gain of output volume from -7dB to +12dB.

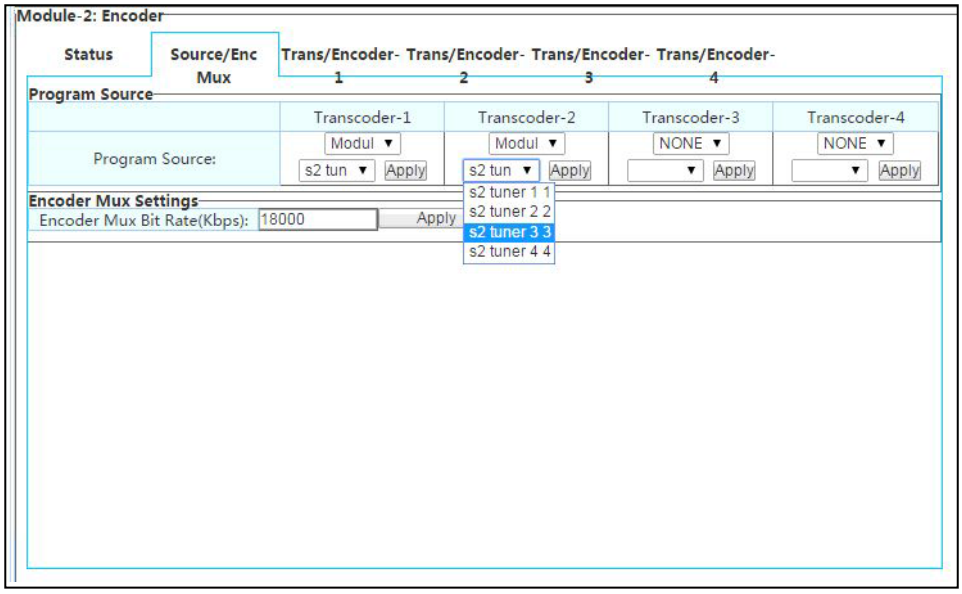


Step7: Advanced Settings is for PSI/SI setup option. User can configure them as required. Null Packets Filter will decide the encoding output stream with null packets or not.

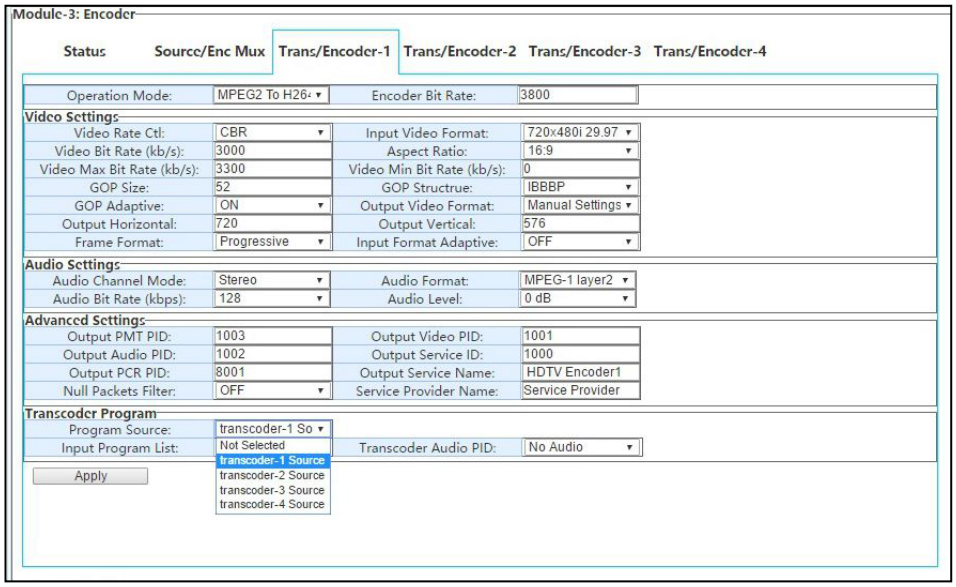


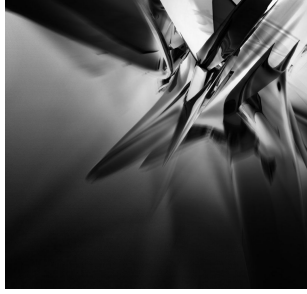
Transcoding function setup is a little different with encoding. User needs to select streams for transcoding first

on the page Source/Enc Mux.



After setup source, user needs to select service and audio on the Trans/Encoder page. The program source could be select from each of four transcoder sources. The rest options please refer to Encoder options process.





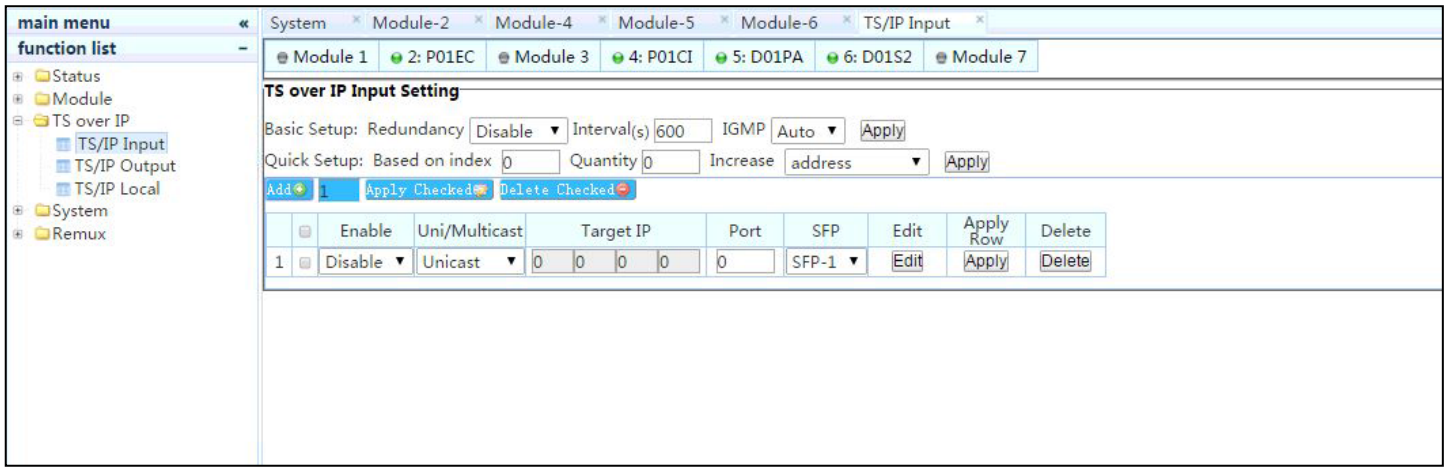
4.3. TS over IP

There are two TS over IP ports on the main chassis. These two ports are duplex mode, can be used as input and output at same time.

TS over IP input:

Before users to setup the IP input channels, they need to Click Add button to add channels for configuring. It is similar when they use Quick setup. They need to add same or more channels as Quantity numbers before apply quick setup.

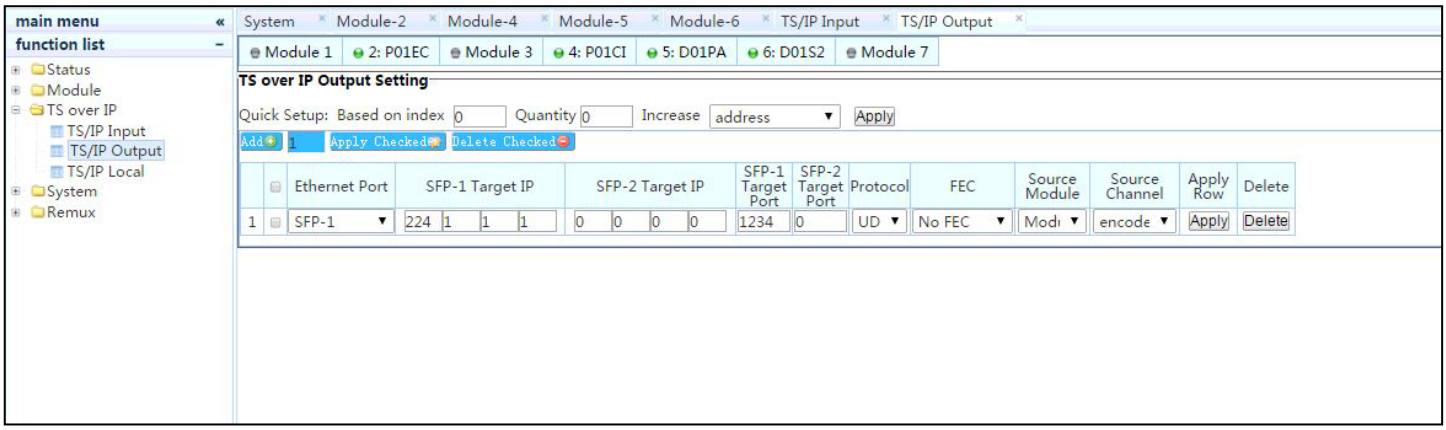
Menu Name	Options
Redundancy	TS/IP port 1 and port 2 backup option
Interval	Web refresh interval
IGMP	IGMP option
Based on index	Quick setup start up index
Quantity	Numbers to setup by quick setup option
Increase	Quick setup by Increasing IP Address or Port number or both
Enable	Enable or disable single IP input stream
Uni/Multicast	IP input by Unicast or Multicast option
Target IP	Input IP address
Port	Input port number
SFP	The SFP will be show up when the redundancy option is disable. It is for select IP input port.
Edit	
Apply	Submit single IP configuration
Delete	Delete single IP configuration
Add	Add IP channels
Apply checked	Enable selected channels
Delete checked	Delete selected channels



TS over IP output:

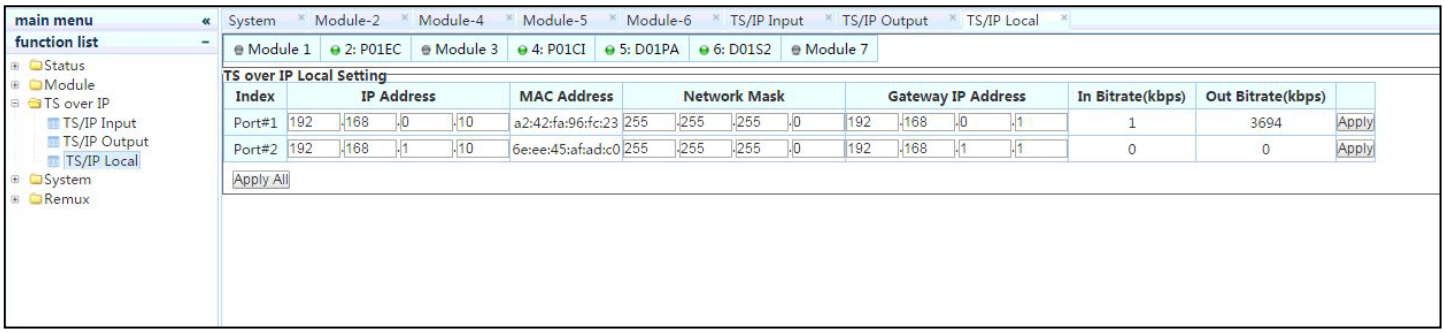
It is same as TS over IP input, there is a Quick setup. The process is same as input too.

Menu Name	Options
Add	Add TS over IP channels
Apply checked	Apply all checked rows settings
Delete checked	Delete all checked rows settings
Ethernet Port	IP channel will be output with SFP-1 or SFP-2
SFP-1 Target IP	Output IP address setup as port 1
SFP-2 Target IP	Output IP address setup as port 2
SFP-1 Target Port	Output target port setup 1
SFP-2 Target Port	Output target port setup 2
Protocol	Stream over IP data protocol
FEC	Enable or disable FEC
Source Module	Source module selection
Source Channel	Source channel selection
Apply Row	Apply row settings
Delete	Delete row settings



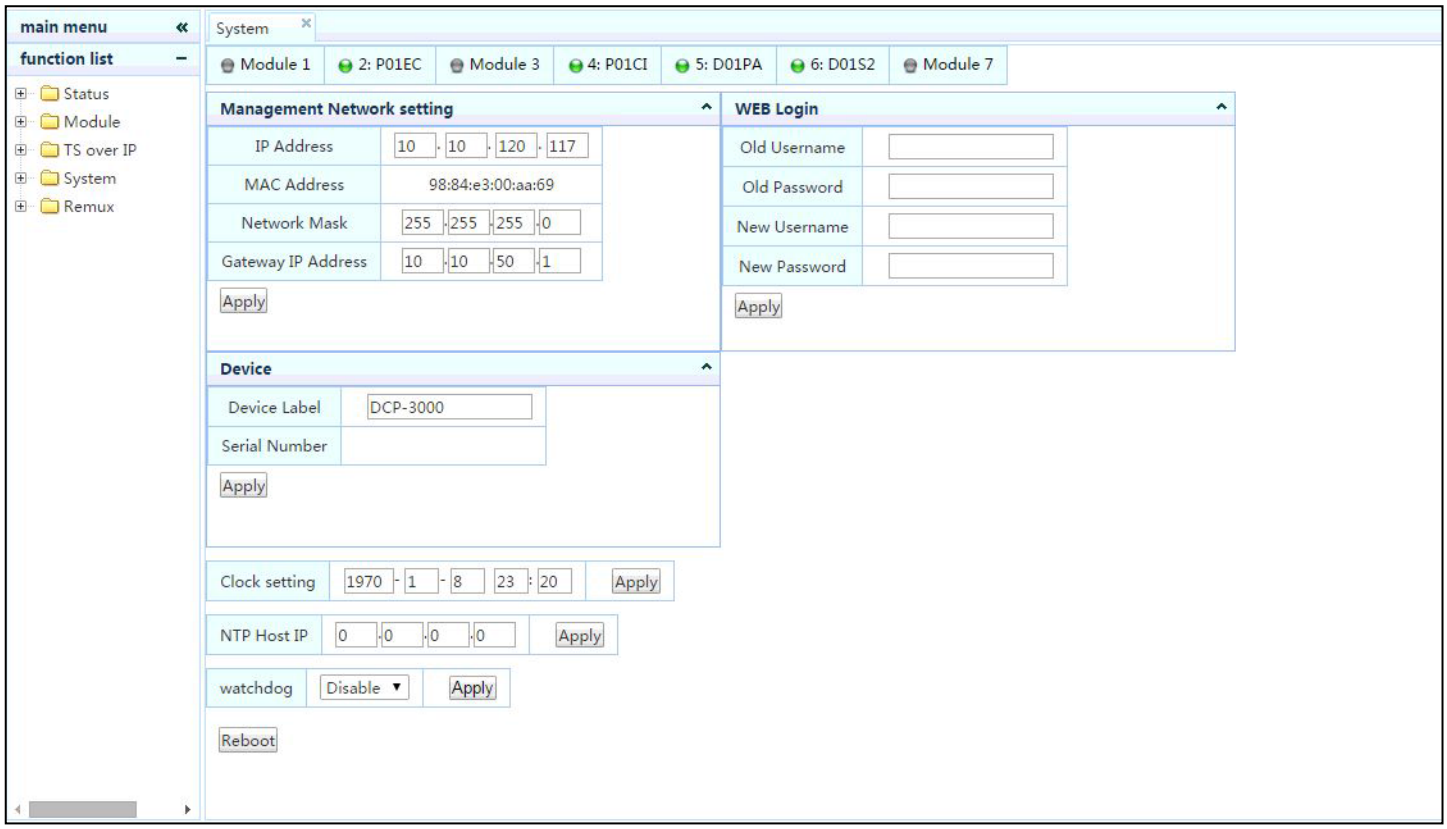
TS/IP Local

This menu is to setup TS over IP ports physical IP address, Network mask and Gateway IP address.

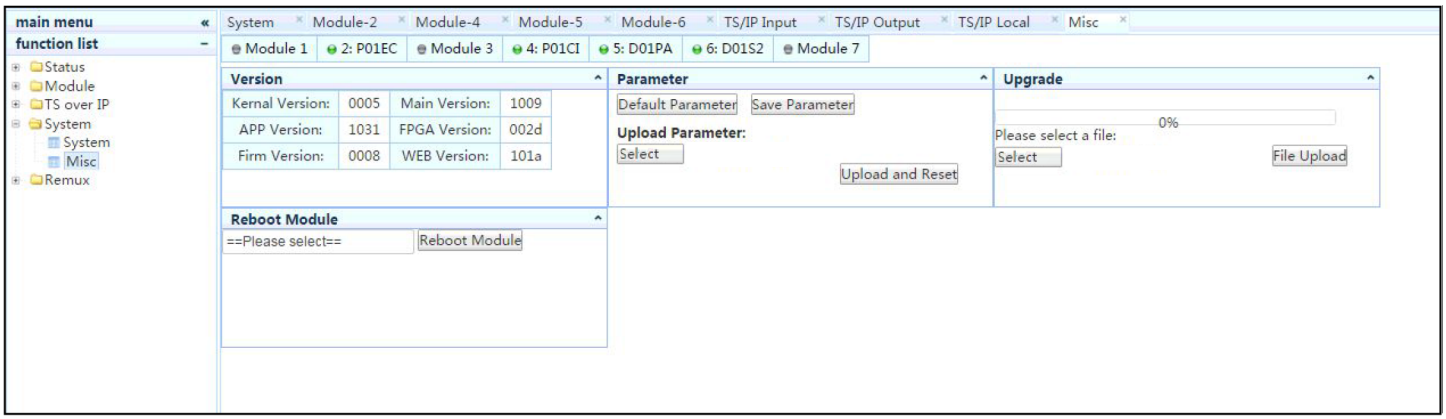


4.4. System

The System page is for configuring management IP, Device label and Web login ID and Password etc.



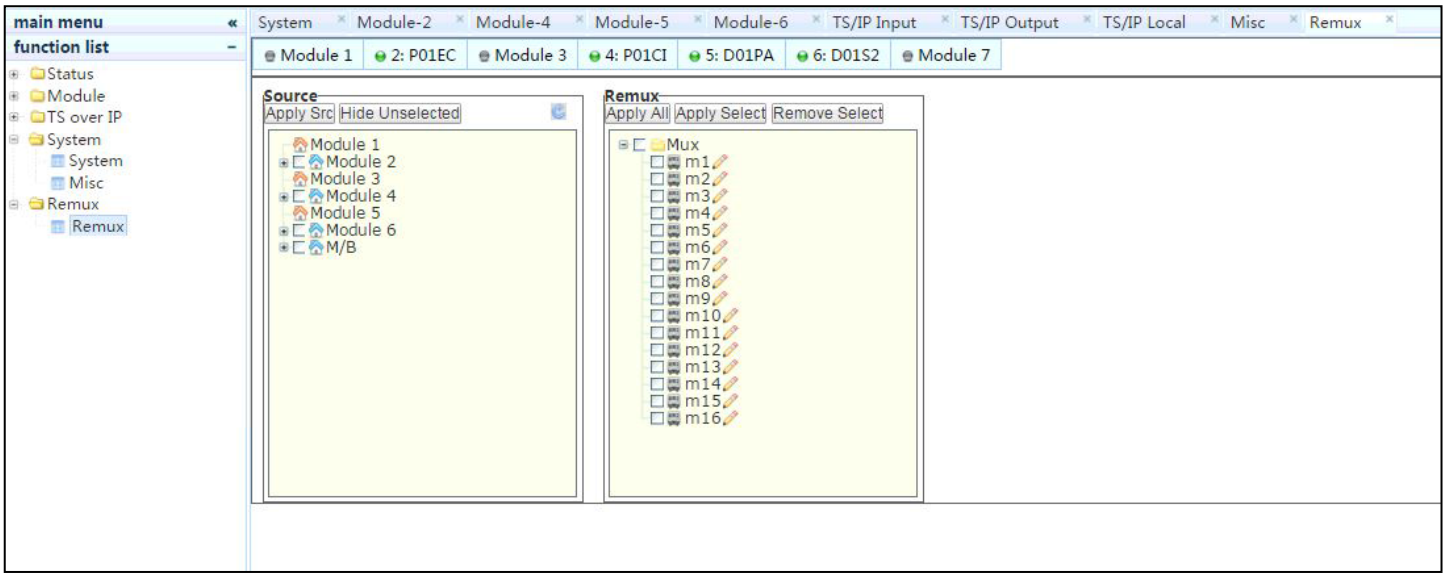
Menu Name	Options
IP Address	Management IP address
MAC Address	MAC address of ethernet
Network Mask	Network mask of management
Gateway IP Address	Gateway of management
Device label	Device label setup option
Serial Number	Serial number of the main chassis
Clock setting	Clock setup option
NTP Host IP	Network time protocol host IP option
Watchdog	Watchdog setup option
Reboot	Soft reboot option
Old user name	Web browser login user name option for change to new user name
Old password	Web browser login password option for change to new password
New user name	Web browser new login user name input
New password	Web browser new password input



Version	Main chassis firmware versions
Reboot Module	Sub-module reboot options, user can specific module to reboot independently
Parameter	Default Parameter is for facotory default Save Parameter is for saving configurations as a file Upload and Reset is for uploading configure file and reset the unit configure as saved file
Upgrade	Main chassis upgrade option

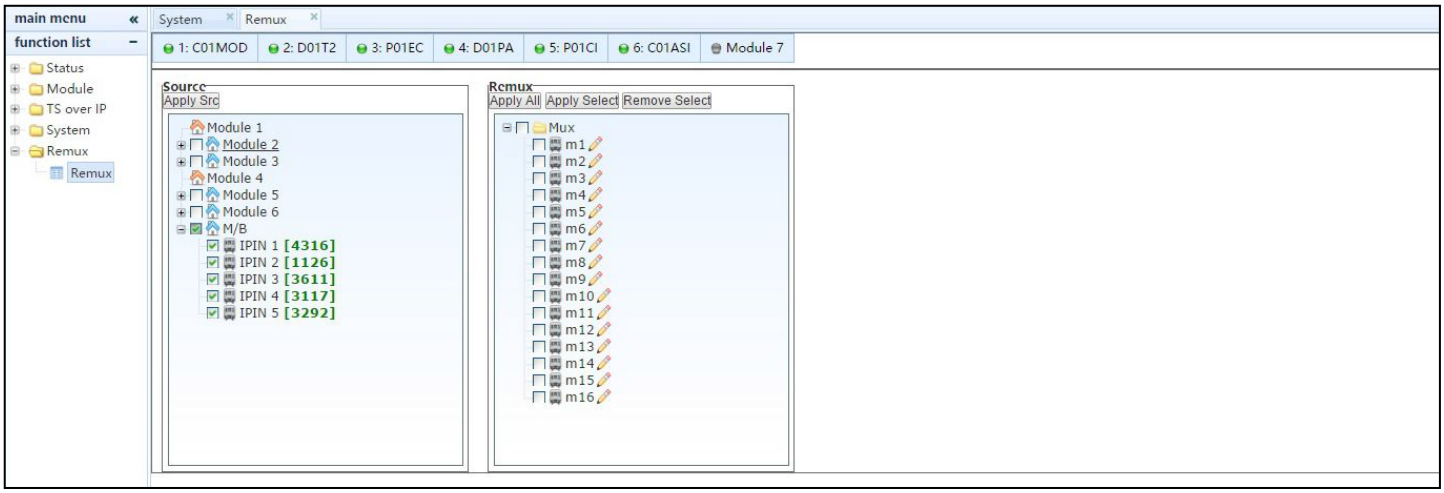
4.5. Remux

The main chassis will install the Remux function, the setup web page will be as below figure. On the left Source menu, user will see all enabled sources. On the right side is remux menu. There are 16 remuxes channels for users to use. These 16 channels can be used as TS over IP source and input source for CI, modulator, etc.

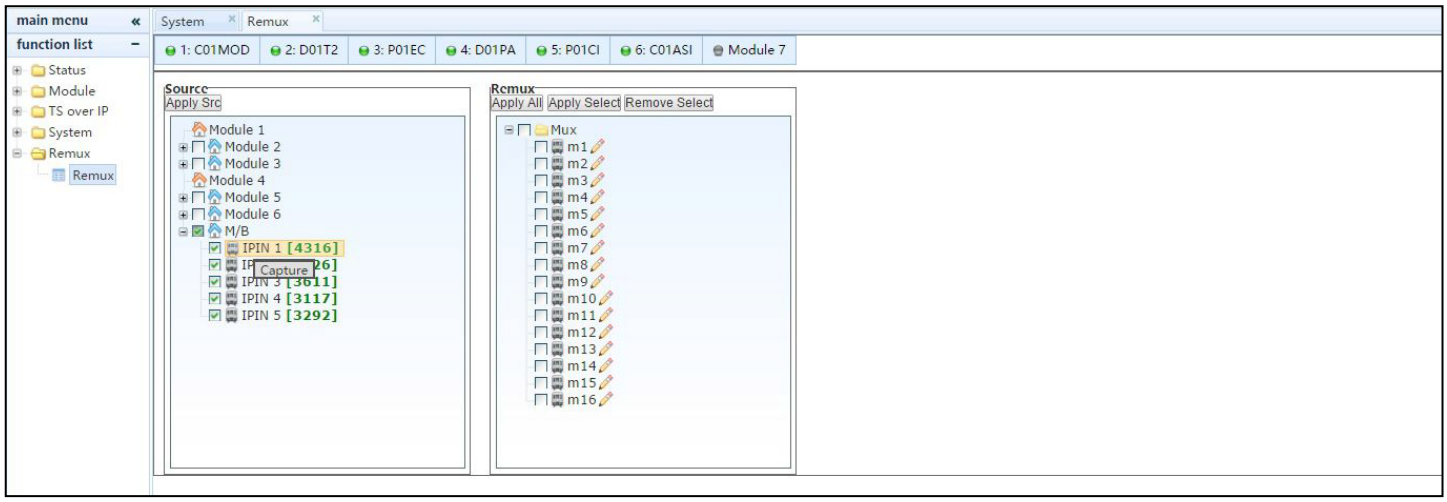


Quick setup example:

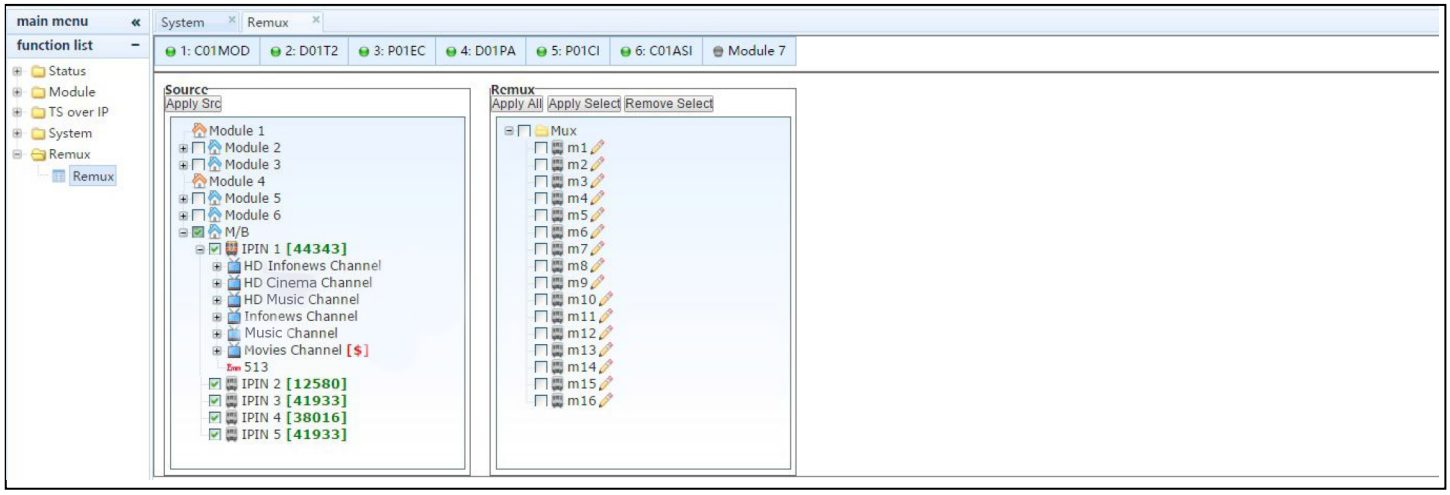
Step 1: select sources will be used as remux source, click Apply Src to sync sources before doing remux;



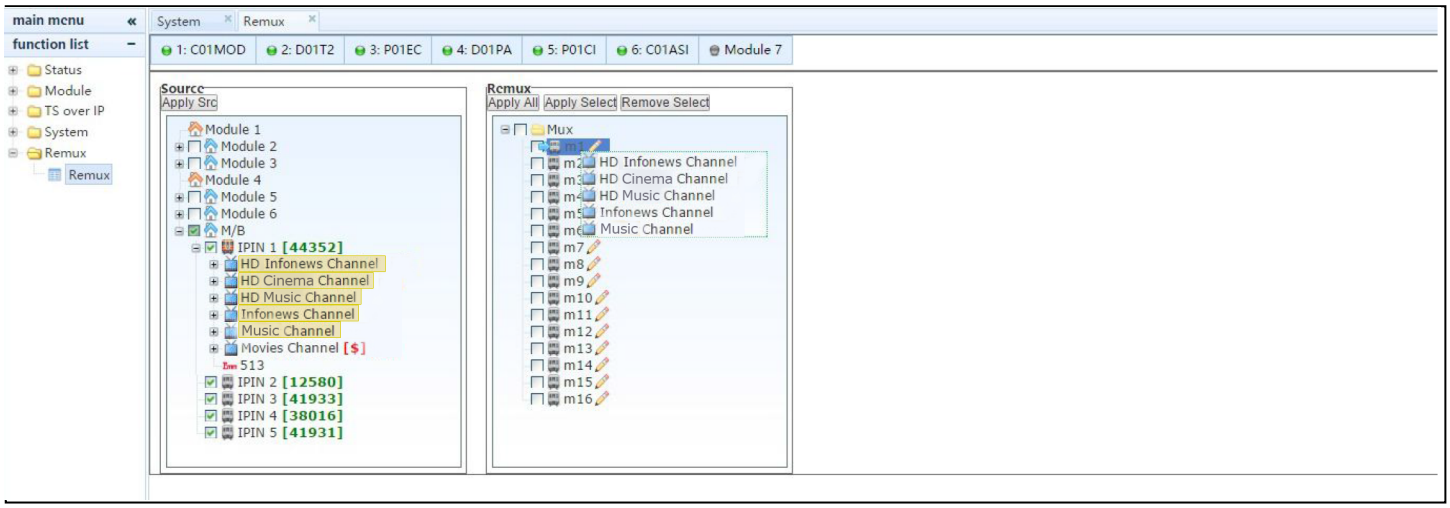
Step 2: move mouse cursor to the channels which under modules and click right button of mouse, Capture button will show up;



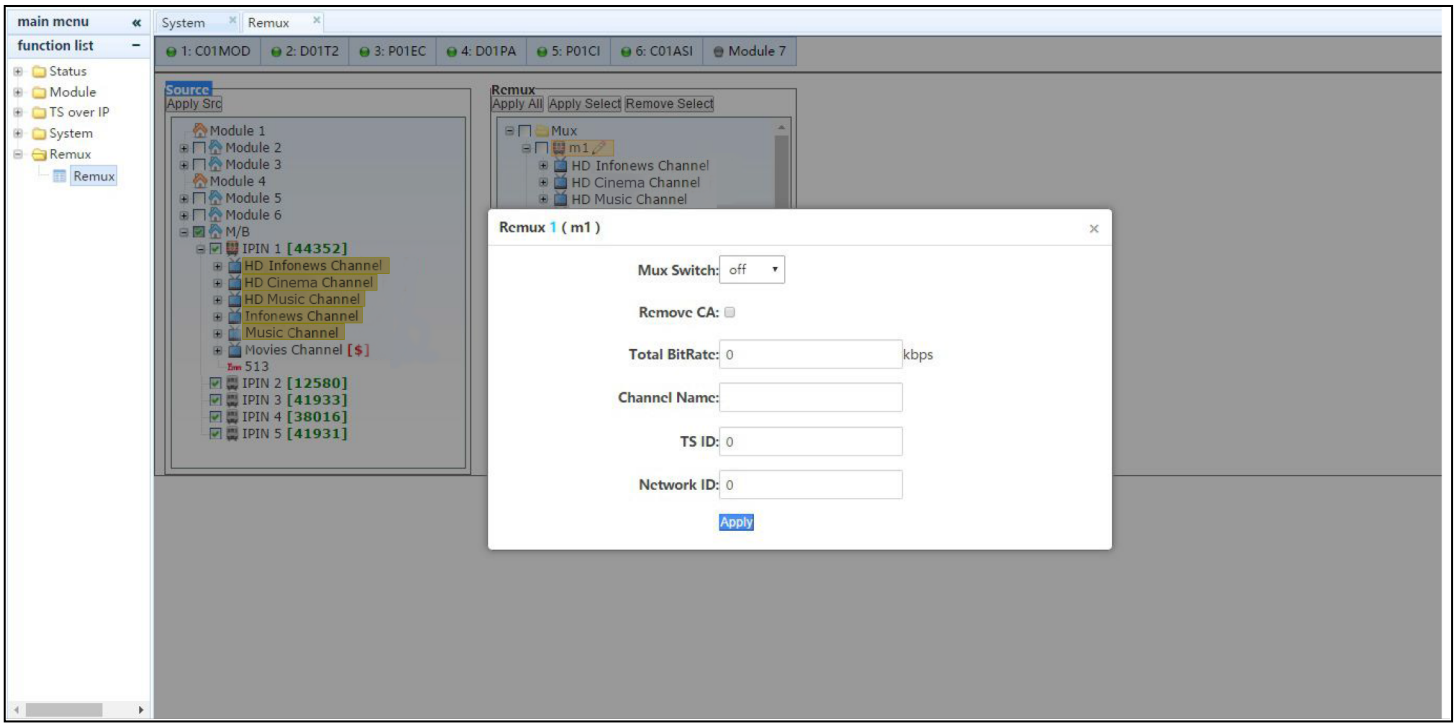
Step 3: click Capture button and all programs information will show up under channel menu;



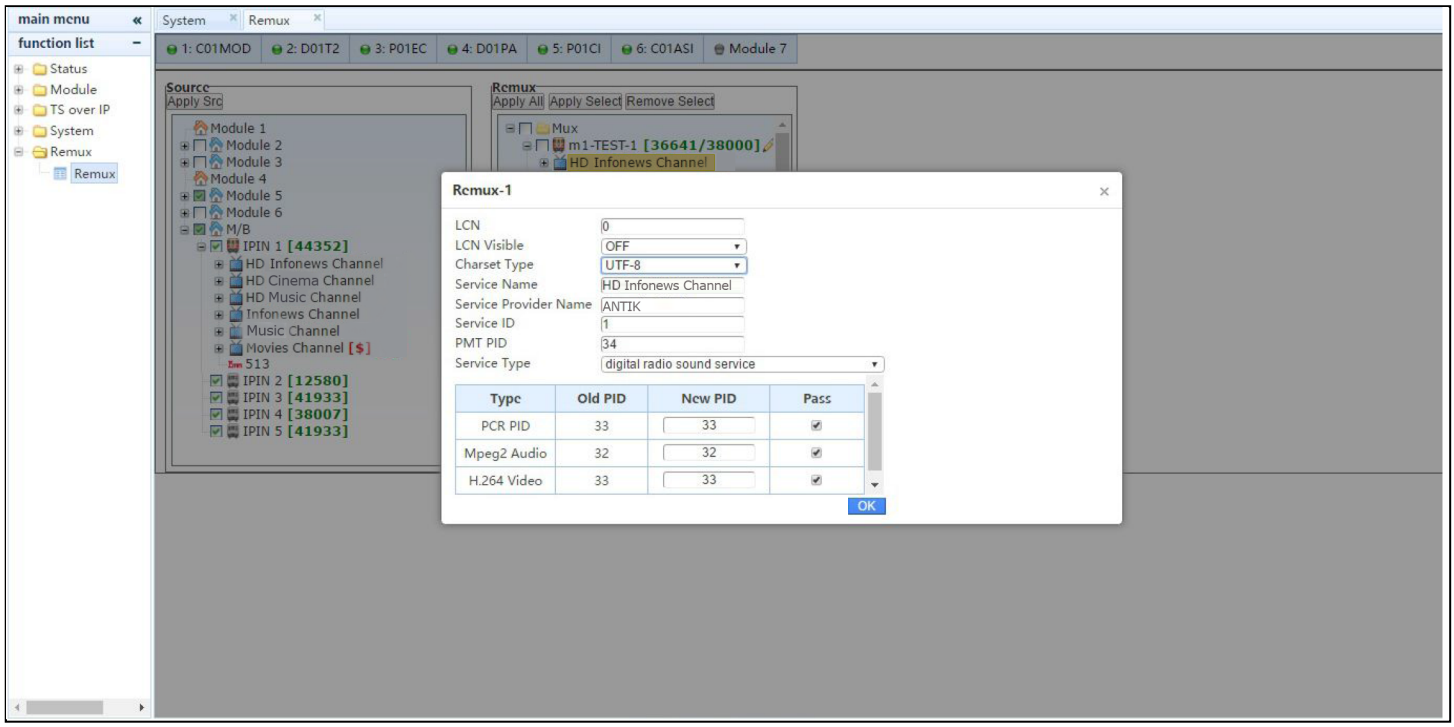
Step 4: move mouse to program which will be used for remux and drag the channel to one of the 16 remux channel, or select more programs and drag to remux menu at once;



Step 5: click m1 edit button to setup remux channel;



Step 6: move mouse to program of remux and click right button of mouse to edit program;



Step 7: the last step is to enable remux channels by click Apply All or Apply Selected button;