



GX-5000

Digital Content Processing Platform



Operation Guide

Version 2.2

May 2021

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, based on main ver.1xxx FW
1.1	2018.04	Add new modules and improve other functions, based on main ver.30xx FW
2.0	2020.06	Increased Indicator LED
2.1	2020.7	Increased TS/IP Backup
2.2	2021.3	Update web browser interfaces

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Model number

Serial number

Detailed description of problem

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Content

1. INTRODUCTION.....	1
1.1. Appearance	1
1.1.1. LED Indicators	1
1.1.2. LCD	2
1.1.3. Key pad.....	2
1.1.4. USB	2
1.1.5. RJ45.....	2
1.1.6. SFP	2
1.1.7. Mini USB.....	2
1.2. Function Cards Introduction.....	3
1.2.1. P01MS (reMUX & Scrambler Extension Subboard)	3
1.2.2. D01S2 (4 x DVB-S/S2 Demodulator Module)	3
1.2.3. D02S2 (4 x DVB-S/S2 Demodulator Module, Support Input Stream Identifier)	3
1.2.4. D03S2 (4 x DVB-S/S2/S2x Demodulator Module, Support ISI)	4
1.2.5. D01T2 (4 x DVB-C/T/T2 Demodulator Module)	5
1.2.6. P01CI (4 x CI De-encryption Module)	5
1.2.7. C01MOD (8 x QAM/2 x COFDM Modulator Module)	5
1.2.8. C01TM (4 x COFDM Modulator Module)	6
1.2.9. C01ASI (5 x ASI Input/Output Module)	6
1.2.10. P01DA (2 x DS3 Input/2 x DS3 Output/1 x ASI Adaptor Module)	7
1.2.11. D01PA (2 x Channels HDMI/CVBS SD/HD Decoder Module)	7
1.2.12. D02PA (2 x Channels SDI/CVBS SD/HD Decoder Module)	7
1.2.13. P01EC (4 x HDMI MPEG-2/H.264 Transcoder/Encoder Module)	8
1.2.14. P02EC (4 x SDI MPEG-2/H.264 Transcoder/Encoder Module)	8
1.2.15. P01AT (4 x H.265/AVS+/MPEG-2/H.264 HD/SD Transcoder Module)	9
2. LCD MENU	10
2.1. Main Menu	11



2.2. Network	12
2.3. Misc	12
2.4. System	14
3. Web	15
3.1. Status	15
3.1.1. System Status.....	15
3.1.2. TS/IP-In Status	15
3.1.3. TS/IP-Out Status.....	16
3.2. Modules	17
3.2.1. P01MS (reMUX & Scrambler)	17
3.2.2. D01S2 (4 x DVB-S/S2 Demodulator Module)	29
3.2.3. D02/03S2 (4 x DVB-S/S2 Demodulator Module, Support ISI)	33
3.2.4. D01T2 (4 x DVB-C/T/T2 Demodulator Module)	33
3.2.5. P01CI (4 x CI De-encryption Module)	34
3.2.6. C01MOD (8 x QAM/2 x COFDM Modulator Module)	37
3.2.7. C01TM (4 x COFDM Modulator Module)	42
3.2.8. C01ASI (5 x ASI Input/Output Module)	45
3.2.9. D01PA (2 x Channels HDMI/CVBS SD/HD Decoder Module)	48
3.2.10. D02PA (2 x Channels SDI/CVBS SD/HD Decoder Module)	51
3.2.11. P01EC (4 x HDMI MPEG-2/H.264 Transcoder/Encoder Module)	52
3.2.12. P02EC (4 x SDI MPEG-2/H.264 Transcoder/Encoder Module)	58
3.2.13. P01AT (4 x H.265/AVS+/MPEG-2/H.264 HD/SD Transcoder Module)	64
3.3. TS over IP	71
3.3.1. TS/IP In.....	71
3.3.2. TS/IP Out	72
3.3.3. TS/IP Local.....	72
3.3.4. TS/IP Backup.....	73
3.4. System	75
3.4.1. Network	75
3.4.2. System	76

3.4.3. Misc	77
3.5. Remux.....	78

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 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 ambient temperature should not exceed the limit of 45C°.

1. INTRODUCTION

1.1. Appearance

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



Fig.2-1 GX-5000 Appearance

1.1.1. 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. A/B (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 Warning 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.



1.1.2. 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.

1.1.3. 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.

1.1.4. 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 needs to put firmware into USB key root folder, update it through upgrade menu of LCD.

1.1.5. RJ45

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

1.1.6. SFP

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

1.1.7. Mini USB

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

USB port 1 for all modules which could be installed into chassis including P01MS installed on main board;

USB port 2 only for main board.



1.2. Function Cards Introduction

1.2.1. P01MS (reMUX & Scrambler Extension Subboard)

- 32 independent DVB-TS re-Multiplex and Scramblers
- Compliant with ISO13818 & EN300 468
- Support 4 different local or remote CAS Simulcrypt processing
- Support DVB CAS & BISS 1/E
- Support error alarm of TS level
- Support PID filtering, pass through and remapping
- Support PSI/SI tables insertion or re-generation
- Support PCR re-stamp & calibrate
- Self temperature monitoring

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

- 4 x F type Female, 75 Ω
- 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)

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

- 4 x F type Female, 75 Ω
- 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)
- Support PLS (0 ~ 262141)
- ISI ID: 1 ~ 255 user configurable

1.2.4. D03S2 (4 x DVB-S/S2/S2x Demodulator Module, Support ISI)

- 4 x F type Female, 75Ω
- Input Frequency Range: 950 ~ 2150 MHz
- Input RF level: -65dBm ~ -25dBm
- Symbol Rate:
 - 5 ~ 45MSps (DVB-S QPSK)
 - 10 ~ 31MSps (DVB-S2 8PSK)
 - 1 ~ 55MBaud (32APSK)
 - 1 ~ 58MBaud (16APSK)
 - 1 ~ 34MBaud (64APSK)
- Roll Off factor:
 - 0.35 (DVB-S QPSK)
 - 0.35/0.25/0.2 (DVB-S2 8PSK)
 - 0.35/0.25/0.2/ 0.15/0.1/ 0.05 (DVB-S2X)
- FEC Puncture Rate:
 - 1/2, 2/3, 3/4, 5/6, 6/7, 7/8 (DVB-S QPSK)
 - 2/3, 3/4, 3/5, 5/6, 8/9, 9/10 (DVB-S2 8PSK)
 - 2/3, 3/4, 4/5, 5/6, 8/9, 9/10 (16 APSK)
 - 3/4, 4/5, 5/6, 8/9 (32 APSK)
 - Normal (64800 bits) FECFRAME supported
- 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 configurabl



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

- 4 x F type Female, 75 Ω
- 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/16QAM/64QAM(DVB-T), QPSK/16QAM/64QAM/256QAM(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)

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

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

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

- 2 x F type Female, 75 Ω (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 x Un-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 ~ 118dBuV(110dBuV each carrier)
- FFT Mode, 2K/4K/8K
- Spurious rejection > 55dB

- Output return loss -10dB
- QAM Modulation, support ITU-T J.83 Annex A, C
- Modulation Mode, 16QAM, 32QAM, 64QAM, 128QAM, 256QAM
- MER > 36dB, BER < 10E-9

1.2.8. C01TM (4 x COFDM Modulator Module)

- 2 x F type Female, 75Ω (1 x main output, 1 x -20dB monitor output)
- 4 x Un-adjacent channel carries COFDM RF output
- RF output range: 100 ~ 862MHz, step by 10KHz
- RF total output level: 84 ~ 114dBuV
- Modulation Mode, QPSK/16QAM/64QAM
- FFT Mode, 2K/4K/8K
- Spurious rejection > 55dB
- Output return loss -10dB
- MER > 36dB, BER < 10E-5

1.2.9. C01ASI (5 x ASI Input/Output 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
- ASI Input or Output can be switched
- 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)

**1.2.10. 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

1.2.11. D01PA (2 x Channels HDMI/CVBS 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, AC3, AC3+
- Aspect Ratio: 16:9, 4:3 Self-adaptation
- Resolution and Frame Rate: 1080i30, 1080i29.97, 1080i25, 720px60, 720px59.94, 720px50, 576i25, 480i29.97
- Video PID Bit Rate: <= 50Mbps

1.2.12. D02PA (2 x Channels SDI/CVBS SD/HD Decoder Module)

- 3 x BNC Female 75Ω for 2 x ASI/SDI , 1 x Genlock input
- BNC for SDI Output or ASI Input/Output can be switched
- 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, AC3, AC3+
- Aspect Ratio: 16:9, 4:3 Self-adaptation
- Resolution and Frame Rate: 1080i30, 1080i29.97, 1080i25, 720px60, 720px59.94, 720px50, 576i25, 480i29.97
- Video PID Bit Rate: <= 50Mbps



1.2.13. 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 resolution downscaling(vertical & horizontal adjustable respectively).
- Audio Coding: MPEG-1 Layer II, MPEG-2/4, AAC-LC/HE-AAC
- Support VBR & CBR mode
- Support GOP settings
- Sampling Format: 4:2:0, 10-bit, YCbCr
- Compression Bit Rate: 300K ~ 20Mbps
- Aspect Ratio: 4:3, 16:9

1.2.14. P02EC (4 x SDI MPEG-2/H.264 Transcoder/Encoder Module)

- 4 x SDI Input, BNC Female 75Ω
- 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 resolution downscaling(vertical & horizontal adjustable respectively).
- Audio Coding: MPEG-1 Layer II, MPEG-2/4, AAC-LC/HE-AAC
- Support VBR & CBR mode
- Support GOP settings
- Sampling Format: 4:2:0, 10-bit, YCbCr
- Compression Bit Rate: 300K ~ 20Mbps
- Aspect Ratio: 4:3, 16:9
- Support second audio encoding with the extension card (only P02EC-PLUS)
- Up to 8 x transcoder with the extension card (only P02EC-PLUS)

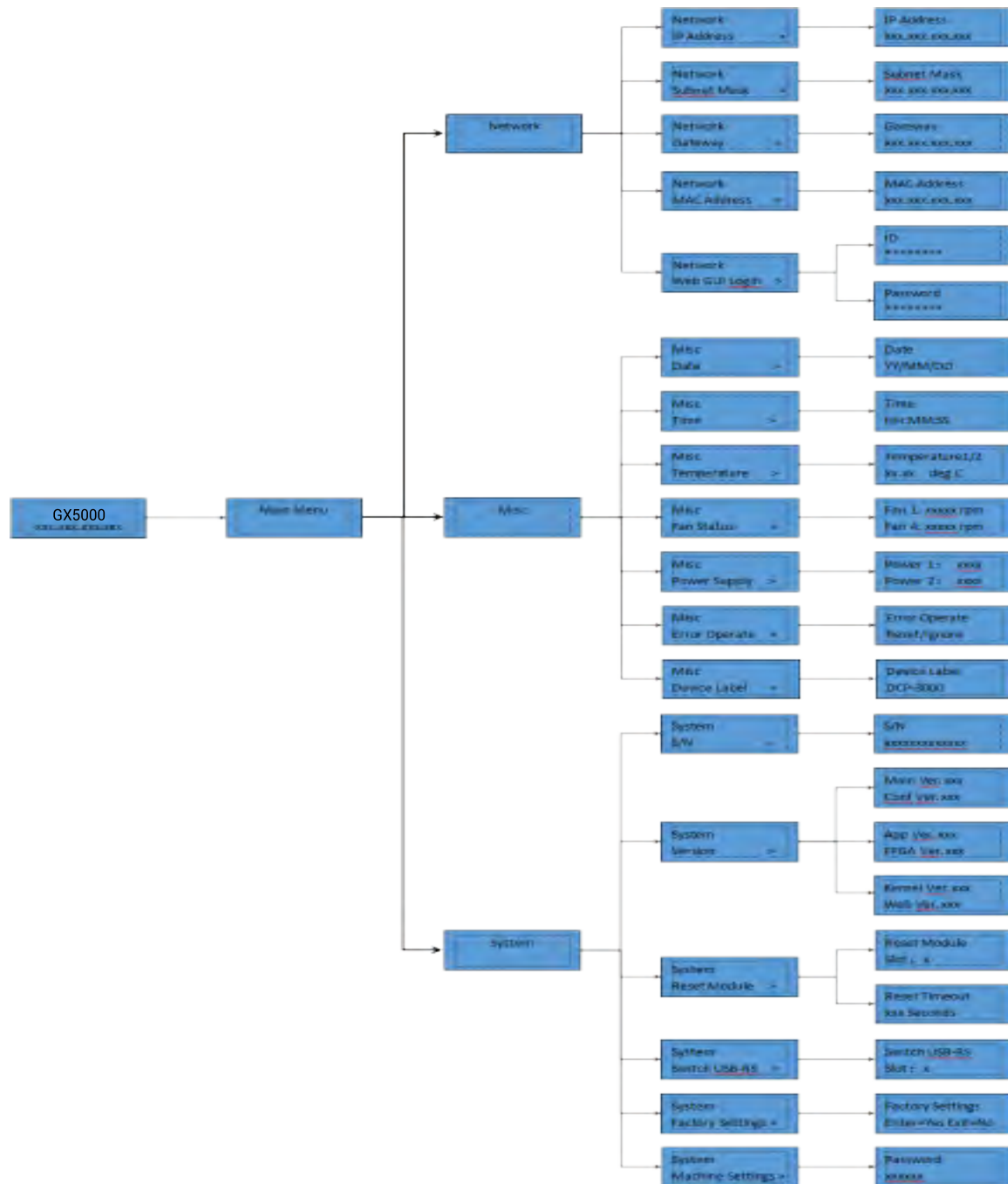


1.2.15. P01AT (4 x H.265/AVS+/MPEG-2/H.264 HD/SD Transcoder Module)

- Support H.265/AVS+ HD/SD transcode to H.264 HD/SD or MPEG2 SD, and MPEG2 HD/SD transcode to H.264 HD/SD, and H.264 HD/SD transcode to MPEG2 SD
- Support AC/AC3+ transcode to MPEG/AAC, or passthrough(cannot work in the same time)
- Compliant with H.264/AVC Baseline, Main & High Profile @ L4.0 or less & MPEG-2 MP@ML
- Support video resolution downscaling(vertical & horizontal adjustable respectively).
- Audio Format: MPEG-1 Layer II, MPEG-2/4, AAC-LC/HE-AAC
- Support VBR & CBR mode
- Support GOP settings
- Sampling Format: 4:2:0, 10-bit, YCbCr
- Compression Bit Rate: 300K ~ 20Mbps
- Aspect Ratio: 4:3, 16:9

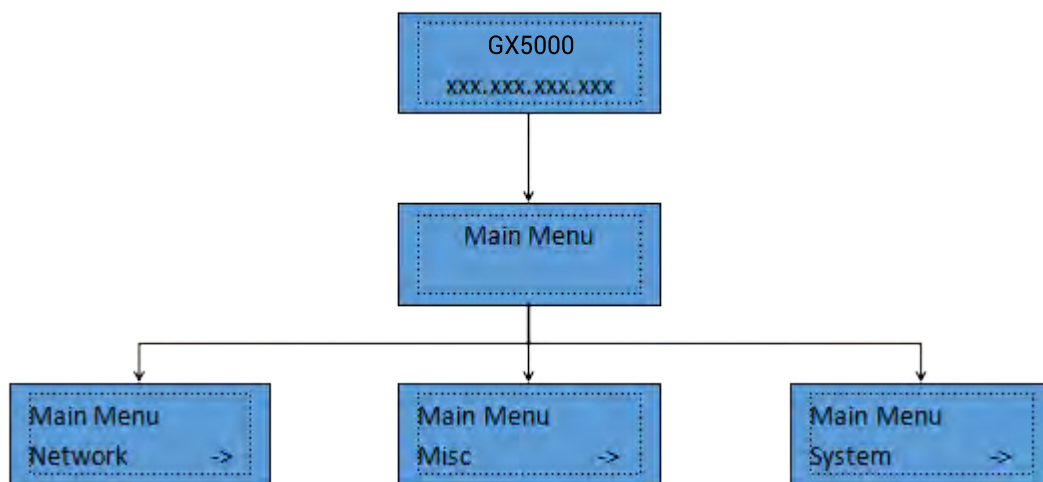
2. LCD MENU

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:



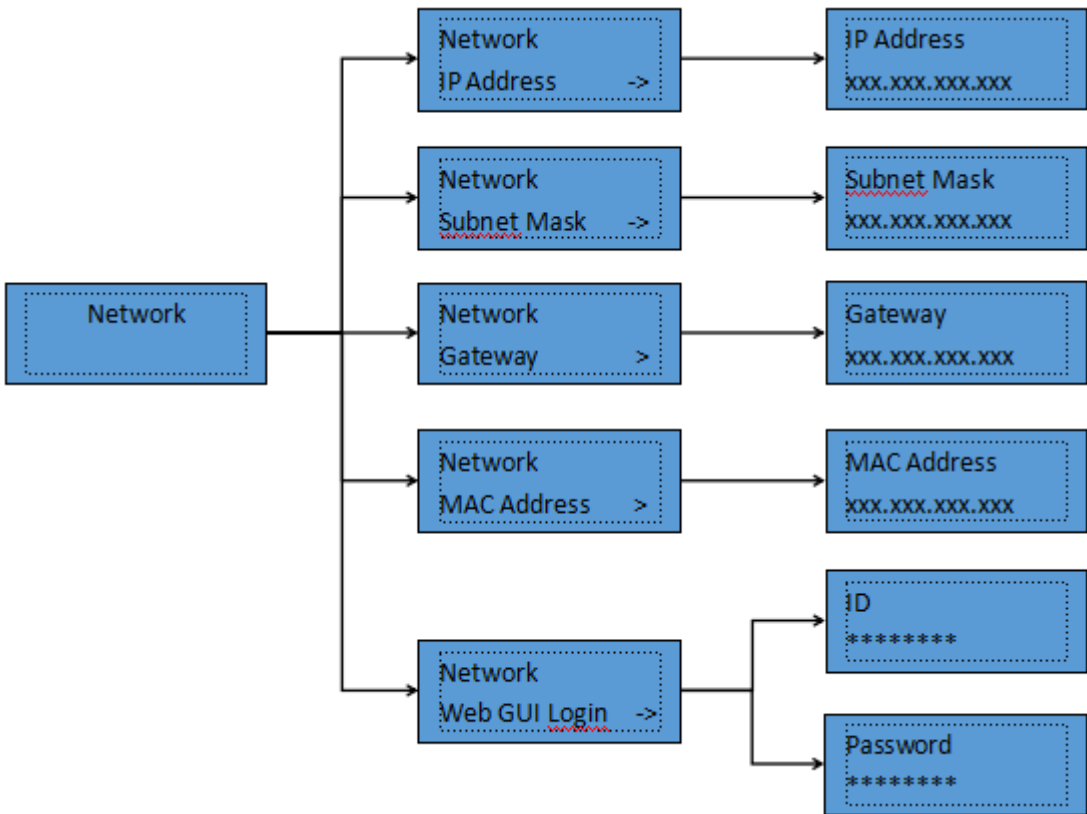
2.1. Main Menu

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.



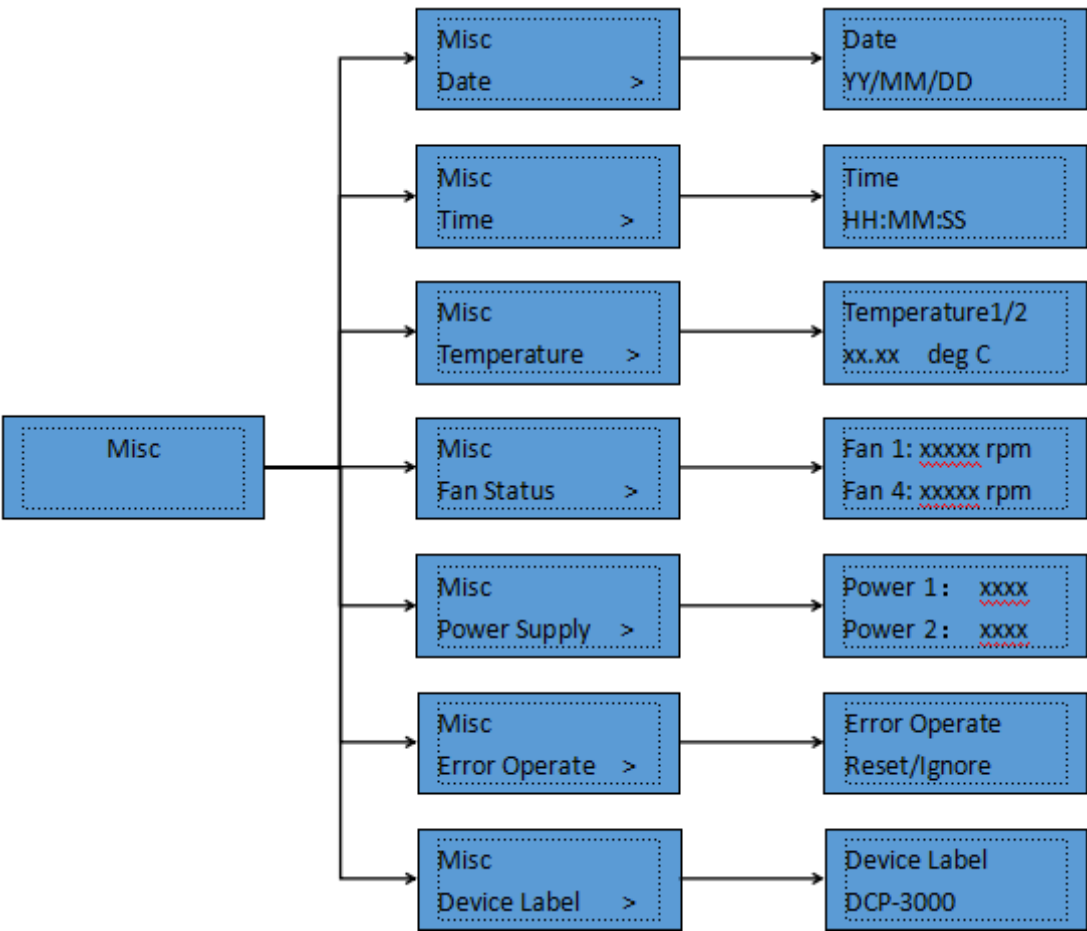
2.2. Network

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.



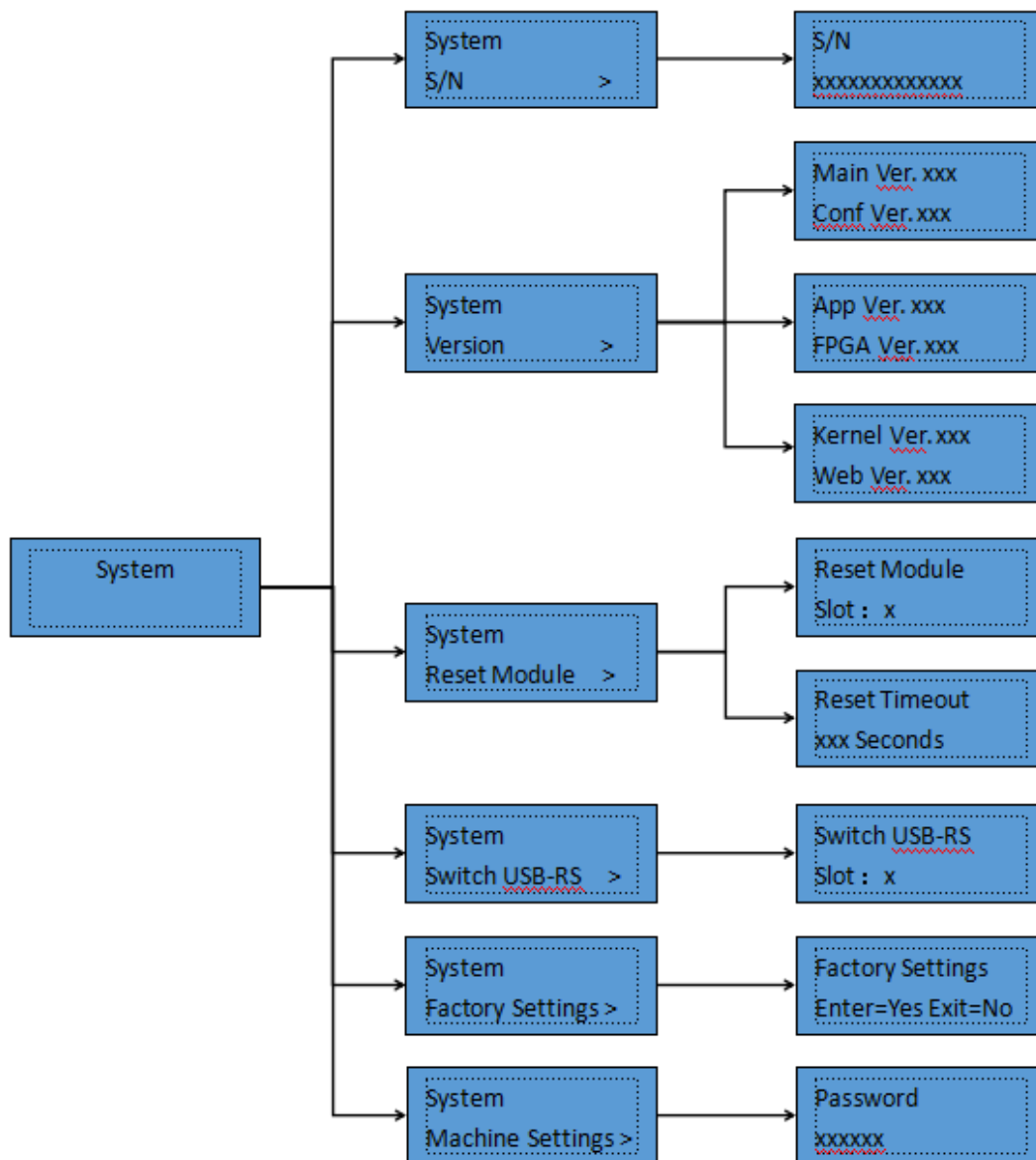
2.3. Misc

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.



2.4. 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.



3. Web

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 Firefox and Chrome.

Initial Login ID: root

Initial Password: 12345

3.1. Status

3.1.1. System Status

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

main menu

function list

Status

System Status

Module

TS over IP

System

Remux

System

System Status

Hardware Status

ARM Temperature(°C)	FPGA Temperature(°C)	Fan-1Speed(r/min)	Fan-2Speed(r/min)	Fan-3Speed(r/min)	Fan-4Speed(r/min)
30.75	30.75	9000	7650	9420	8730
Power-1Status			Power-2Status		
Normal			Faulty/Not Installed		

TS over IP In Status

Channel	Ethernet Card	Source Ip	UDP/RTP Port	Channel Lock	Bitrate(kbps)	TS Packet Length	Lost Packets	Recovery Packets	Channel Enable
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3.1.2. TS/IP-In Status

This is the page of TS over IP Input status. It includes port, source IP, protocol, target IP, port number, lock status, bit rate, packet length, IP frame and enable status.

TS over IP In Status										
Channel	Ethernet Card	Source IP	Protocol	Target IP	UDP/RTP Port	Channel Lock	Bitrate(kbps)	TS Packet Length	TS Packets/IP Frame	Channel Enable
1	Port 1	192.168.0.10	UDP	224.1.1.1	1234	lock	13064	188	7	Enable
2	Port 1	192.168.0.10	UDP	224.1.1.2	1234	lock	48109	188	7	Enable
3	Port 1	192.168.0.10	UDP	224.1.1.3	1234	lock	45404	188	7	Enable
4	Port 1	192.168.0.10	UDP	224.1.1.4	1234	lock	12178	188	7	Enable
5	Port 1	192.168.0.10	UDP	224.1.1.5	1234	lock	77625	188	7	Enable
6	Port 1	192.168.0.10	UDP	224.1.1.6	1234	lock	7634	188	7	Enable
7	Port 1	192.168.0.10	UDP	224.1.1.7	1234	lock	26399	188	7	Enable
8	Port 1	192.168.0.10	UDP	224.1.1.8	1234	unlock	0	188	7	Disable
9	Port 1	192.168.0.10	UDP	224.1.1.9	1234	lock	37783	188	7	Enable
10	Port 1	192.168.0.10	UDP	224.1.1.10	1234	lock	22286	188	7	Enable
11	Port 1	192.168.0.10	UDP	224.1.1.11	1234	lock	43392	188	7	Enable
12	Port 1	192.168.0.10	UDP	224.1.1.12	1234	lock	41967	188	7	Enable
13	Port 1	192.168.0.10	UDP	224.1.1.13	1234	lock	42227	188	7	Enable
14	Port 1	192.168.0.10	UDP	224.1.1.14	1234	lock	40942	188	7	Enable
15	Port 1	192.168.0.10	UDP	224.1.1.15	1234	lock	41069	188	7	Enable
16	Port 1	192.168.0.10	UDP	224.1.1.16	1234	lock	39769	188	7	Enable
17	Port 1	192.168.0.10	UDP	224.1.1.17	1234	lock	23828	188	7	Enable

3.1.3. TS/IP-Out Status

This is the page of TS over IP Output status. It includes port, protocol, target IP, port number, mode, program and enable status. The “Program” item will display the bit rate(Kbps) in the “DVB” mode.

TS over IP Out Status								
Channel	Ethernet Card	Uni/Multicast	Protocol	Target IP	UDP/RTP Port	Mode	Program	Channel Enable
1	Port 1	Multicast	UDP	224.1.1.1	1234	DVB	12576	Enable
2	Port 1	Multicast	UDP	224.1.1.2	1234	DVB	44352	Enable
3	Port 1	Multicast	UDP	224.1.1.3	1234	DVB	41928	Enable
4	Port 1	Multicast	UDP	224.1.1.4	1234	IPTV	XING KONG	Enable
5	Port 1	Multicast	UDP	224.1.1.5	1234	IPTV	Channel [V]	Enable
6	Port 1	Multicast	UDP	224.1.1.6	1234	IPTV	XINGKONG INT	Enable
7	Port 1	Multicast	UDP	224.1.1.7	1234	DVB	71984	Enable
8	Port 1	Multicast	UDP	224.1.1.8	1234	IPTV	1349 Channel [V]	Enable
9	Port 1	Multicast	UDP	224.1.1.9	1234	IPTV	1353 Fox News H	Enable
10	Port 1	Multicast	UDP	224.1.1.10	1234	IPTV	1362 Fox Crime	Enable



3.2. Modules

3.2.1. P01MS (reMUX & Scrambler)

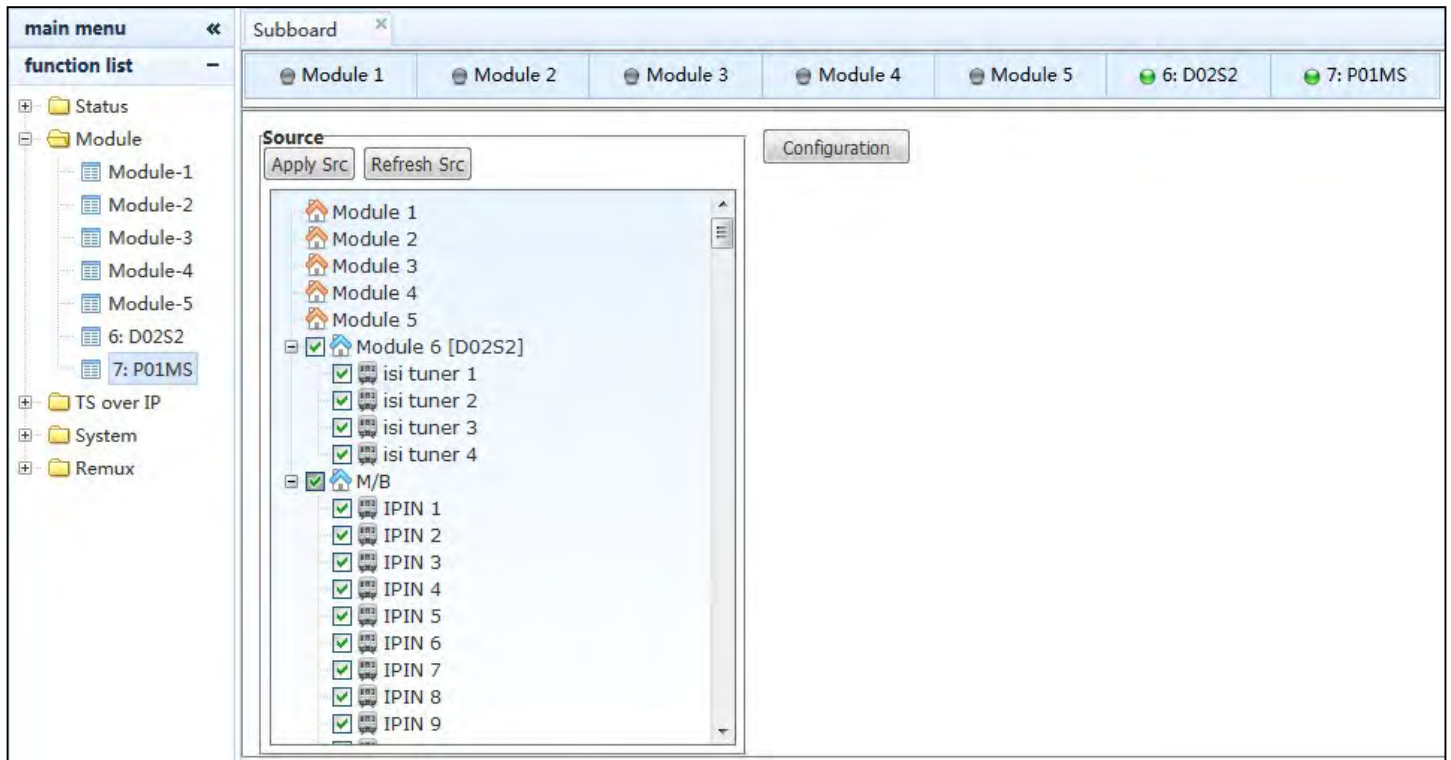
The P01MS is a 32 independent channels DVB-TS re-multiplex and Scrambler subboard which can support 32 scrambling transport streams to the TS/IP or other modules to output. There is no hardware input/output interface. It only can be installed on the main board in the chassis. It can support up to four different Simulcrypt scramble or BISS 1/E scramble by using the DVB common scrambling algorithm and built-in CW generator.

4.2.1.1. Source and Services Settings

P01MS needs to be installed in the 'Module-7' to receive the TS from the TS/IP or other modules, operation steps of input source and services are as follows.

Step 1:

User needs to select the channels from TS/IP or other modules to send TS to P01MS firstly, and then click 'Apply Src' to get into the configuration page of P01MS, as it shown in figure below. (Note: this part is flash required.)



Step 2:

User needs to add the channels in the P01MS to receive the TS from the TS/IP or other modules. Such as, select the 'TS/IP In-1' of the left list, and then click the 'Add Channel' to input 1 and 24. User will build 24 TS channels between the TS/IP-1 and P01MS, as it shown in figure below.



After that, user can click the 'Scan All' to check the programs and bit rate of each channel, as it shown in figure below.

The screenshot shows the 'Subboard' window with 'Module 6: D02S2' and 'Module 7: P01MS' selected. The 'IP In-1' network is active. The 'Scan All' button is visible on the right. The table below shows the results of the scan.

Index	Channel	TotalProgram	Valid Bit Rate(Kbps)	Total Bit Rate(Kbps)
1	1	4	12573	12591
2	2	6	43447	44353
3	3	12	27703	41921
4	4	3	11123	11295
5	5	9	45420	71989
6	6	9	59429	71990
7	7	52	18657	24414
8	8	3	31818	39816
9	9	2	31298	34563
10	10	8	19248	20455
11	11	7	34733	38016
12	12	7	35897	38014
13	13	3	36252	38016
14	14	3	36117	38016
15	15	3	36073	38016
16	16	3	36126	38016
17	17	2	21574	22002
18	18	2	21230	38005
19	19	51	13845	16580
20	20	10	12546	14496
21	21	2	11433	12159

Step 3:

User can click 'Channel10-1' to 'Channel10-24' to get into the configuration page. As it shown in figure below, the programs can be selected to MUX-1 to MUX-32. And also, user can check the service and PSI information.

The screenshot shows the configuration page for 'Channel10-1'. The 'Program Choice Table' allows selecting programs for MUX-1 to MUX-32. The 'Service Information' and 'PSI Information' tabs are visible. The 'Service Information' table shows details for 'Pashto 1'.

MUX-1	MUX-2	MUX-3	MUX-4	MUX-5	MUX-6	MUX-7	MUX-8	Service N...	Service ID	Bit Rate...	Max Bit R...	CA	CC Error	Provider...
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	AVT Khyber	0x0001(1)	3335	3336	No	0	
<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Khyber New	0x0002(2)	2924	2928	No	0	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Kay-2	0x0003(3)	3330	3337	No	0	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Pashto 1	0x0004(4)	2924	2928	No	0	

PID Type	PID Value	Bit Rate(Kbps)	CC Error
Service Name	Pashto 1		
Service ID	0x0004(4)		
PMT_PID	0x0135(309)	15	0
PCR_PID	0x006d(109)	2777	0

Index	PID	Name	Type	Bit Rate(K...	CC Error
1	0x0000(0)		PAT	15	0
2	0x0001(1)		CAT	15	0
3	0x0010(16)		NIT	0	0
4	0x0011(17)		SDT	1	0

***Attention:** The selection of MUX programs only be saved after the configuration of Step 4.

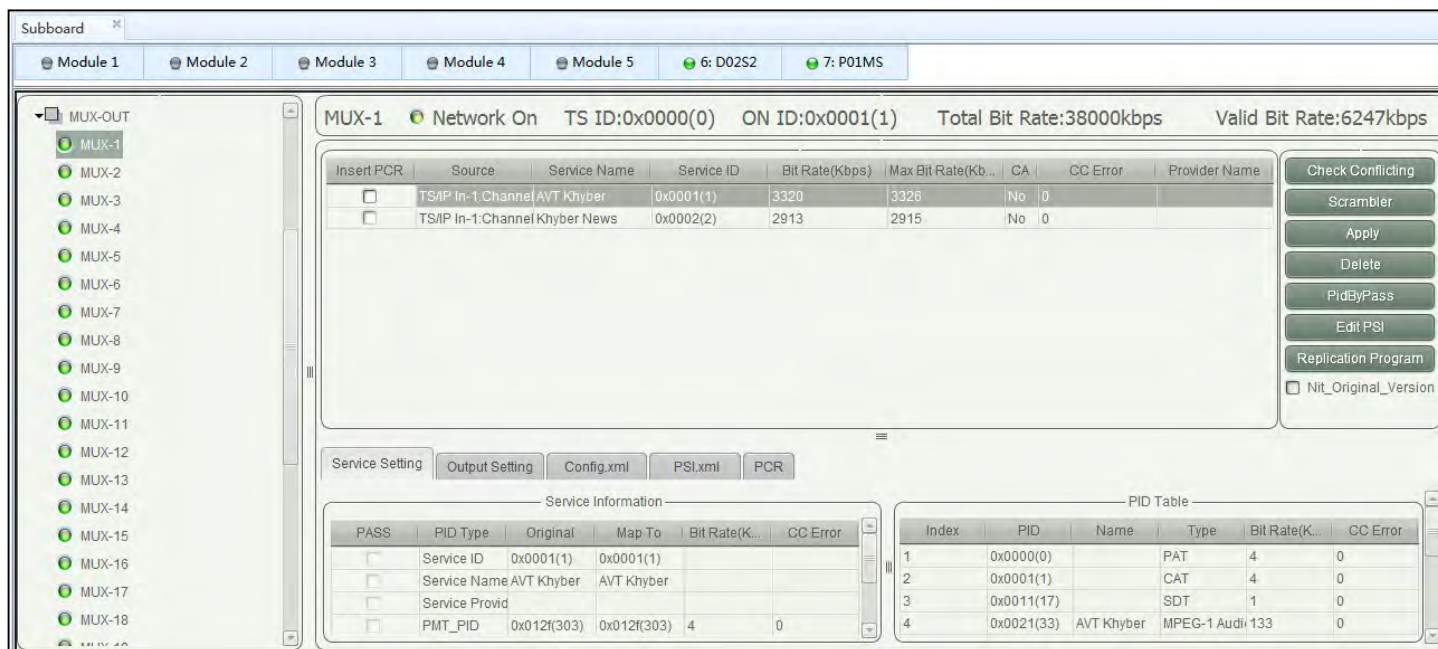
4.2.1.2. Services Re-Multiplex

P01MS has 32 independent multiplexed TS to the GX-5000 chassis for output of TS/IP ports or other modules,, operation steps of services re-multiplex are as follows.

Step 1:

User can click ‘MUX-1’ to ‘MUX-32’ of ‘MUX-OUT’ to get into the configuration page. As it shown in figure below, all selected programs from other modules or TS/IP are listed here, user can also check some information of each program. The button ‘Check Conflicting’ is used to rearrange service ID for all programs to avoid ID confliction. User also can bypass some PID and configure PSI/SI data here. User can insert PCR for every program by hooking in the small box.

***Attention:** User has to click the ‘Apply’ to save all the settings after the configuration.



Insert PCR	Source	Service Name	Service ID	Bit Rate(Kbps)	Max Bit Rate(Kbps)	CA	CC Error	Provider Name
<input type="checkbox"/>	TS/IP In-1:Channel AVT Khyber		0x0001(1)	3320	3326	No	0	
<input type="checkbox"/>	TS/IP In-1:Channel Khyber News		0x0002(2)	2913	2915	No	0	

PASS	PID Type	Original	Map To	Bit Rate(Kbps)	CC Error
<input type="checkbox"/>	Service ID	0x0001(1)	0x0001(1)		
<input type="checkbox"/>	Service Name	AVT Khyber	AVT Khyber		
<input type="checkbox"/>	Service Provid				
<input type="checkbox"/>	PMT_PID	0x012f(303)	0x012f(303)	4	0

Index	PID	Name	Type	Bit Rate(Kbps)	CC Error
1	0x0000(0)		PAT	4	0
2	0x0001(1)		CAT	4	0
3	0x0011(17)		SDT	1	0
4	0x0021(33)	AVT Khyber	MPEG-1 Audio	133	0

Step 2:

User can check and configure the service information of each program by clicking the sheet ‘Service Setting’, as it shown in figure below.

Service Setting

Output Setting

Config.xml

PSI.xml

PCR

Service Information

PASS	PID Type	Original	Map To	Bit Rate(Kbps)	CC Error
<input type="checkbox"/>	Service ID	0x0001(1)	0x0001(1)		
<input type="checkbox"/>	Service Name	AVT Khyber	AVT Khyber		
<input type="checkbox"/>	Service Provider				
<input type="checkbox"/>	PMT_PID	0x012f(303)	0x0026(38)	6	0
<input checked="" type="checkbox"/>	PCR_PID	0x0067(103)	0x0023(35)	3186	0
<input checked="" type="checkbox"/>	MPEG-1 Audio	0x0021(33)	0x0021(33)	130	0
<input checked="" type="checkbox"/>	H.264 Video	0x0067(103)	0x0023(35)	3186	0

PID Table

Index	PID	Name	Type	Bit Rate(Kbps)	CC Error
1	0x0000(0)		PAT	4	0
2	0x0001(1)		CAT	6	0
3	0x0011(17)		SDT	1	0
4	0x0021(33)	AVT Khyber	MPEG-1 Audio	130	0
5	0x0022(34)	Khyber News	PMT	4	0
6	0x0023(35)	AVT Khyber;	H.264 Video	3186	0
7	0x0024(36)	Khyber News;	H.264 Video	2777	0
8	0x0025(37)	Khyber News	MPEG-1 Audio	132	0
9	0x0026(38)	AVT Khyber	PMT	6	0
10	0x1fff(8191)		NULL	31749	0

User can also check and configure output parameters of each program by clicking the sheet 'Output Setting', as it shown in figure below.

Service Setting

Output Setting

Config.xml

PSI.xml

PCR

Item	Value	Remark
TS ID	0x0000(0)	ID(0~65535/0x0000~0xffff)
Original Network ID	0x0001(1)	ID(0~65535/0x0000~0xffff)
Version Number	0x01	ID(0x01-0x1f/1-31)
Output Bitrate	38000	Unit:kbps
Period of PAT Transmitting	300	Unit:ms
Period of CAT Transmitting	300	Unit:ms
Period of SDT Transmitting	1000	Unit:ms
Period of PMT Transmitting	300	Unit:ms
Period of NIT Transmitting	2000	Unit:ms
Period of BAT Transmitting	1000	Unit:ms

Step 3:

User can bypass some PID by clicking the button 'PidByPass', then a submenu will come up, click the button 'Add' to create a new row of PID setting, as it shown in figure below, user can select a PID from other modules or TS/IP ports, and then set the value of 'map_pid' for output. After selecting PID which will be bypassed, user can click the button 'Apply' to submit.

***Attention:** User can jump this step if there is no need to bypass PID.

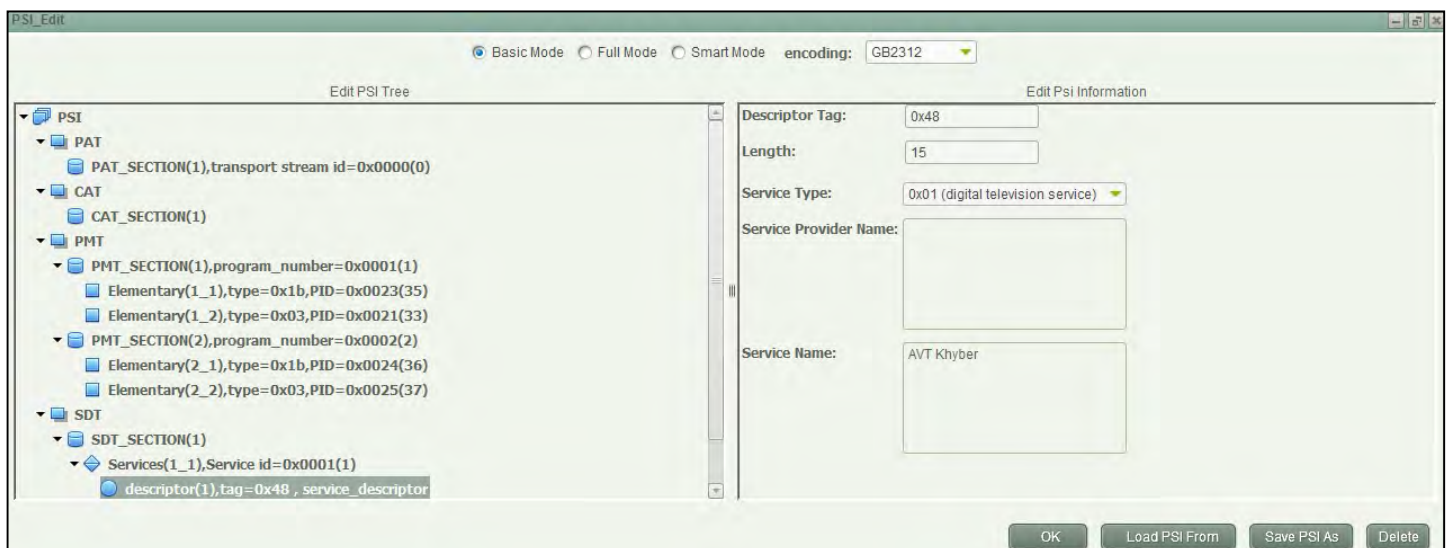


Step 4:

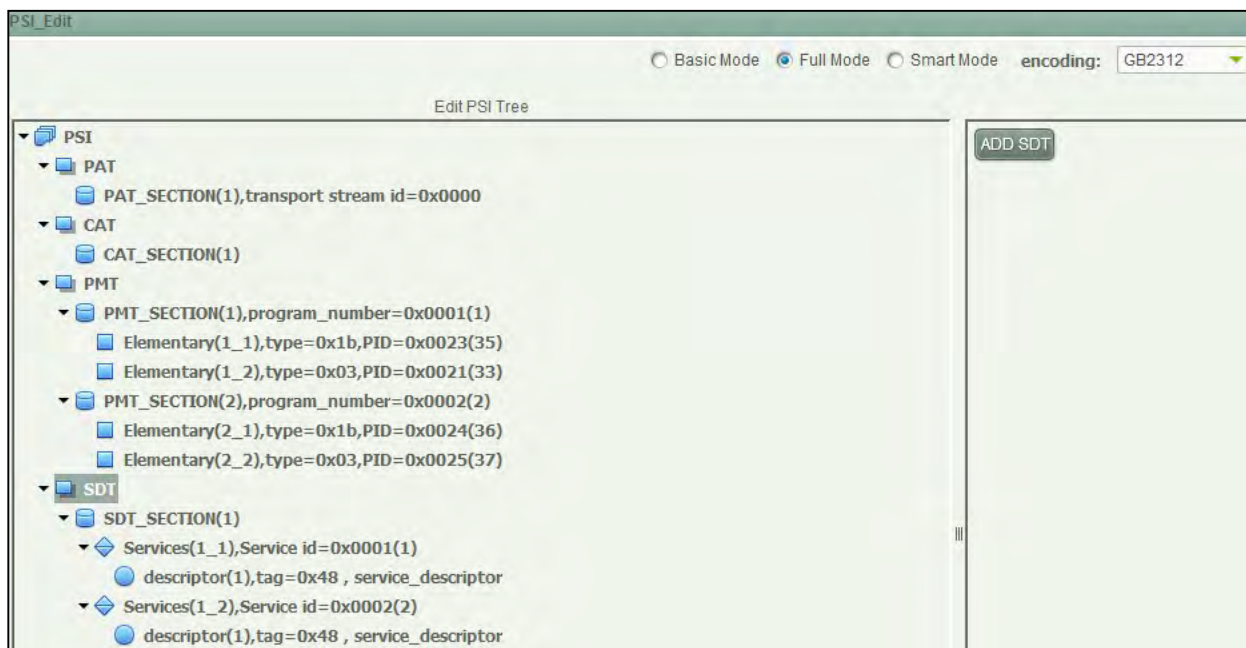
User can edit PSI information here, operation procedures are below.

***Attention:** User can jump this step if there is no need to edit PSI information.

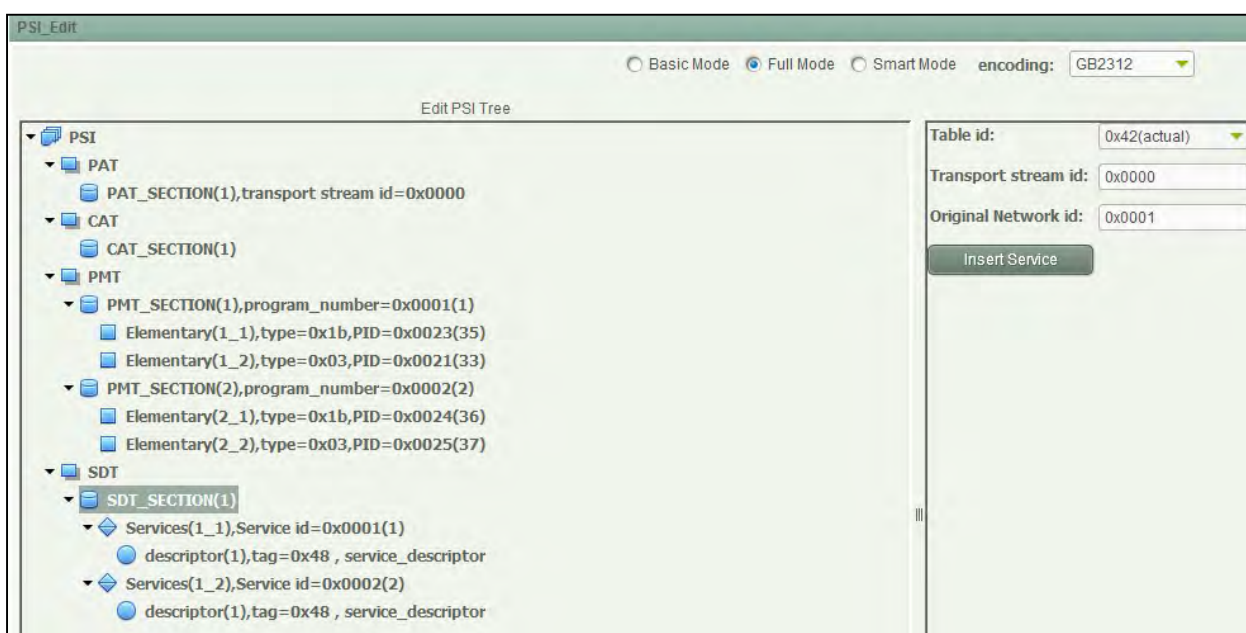
a. Click the button 'Edit PSI', then a submenu will come up, as it shown in figure below, here you can edit the PSI information including PAT, CAT, PMT, and SDT.



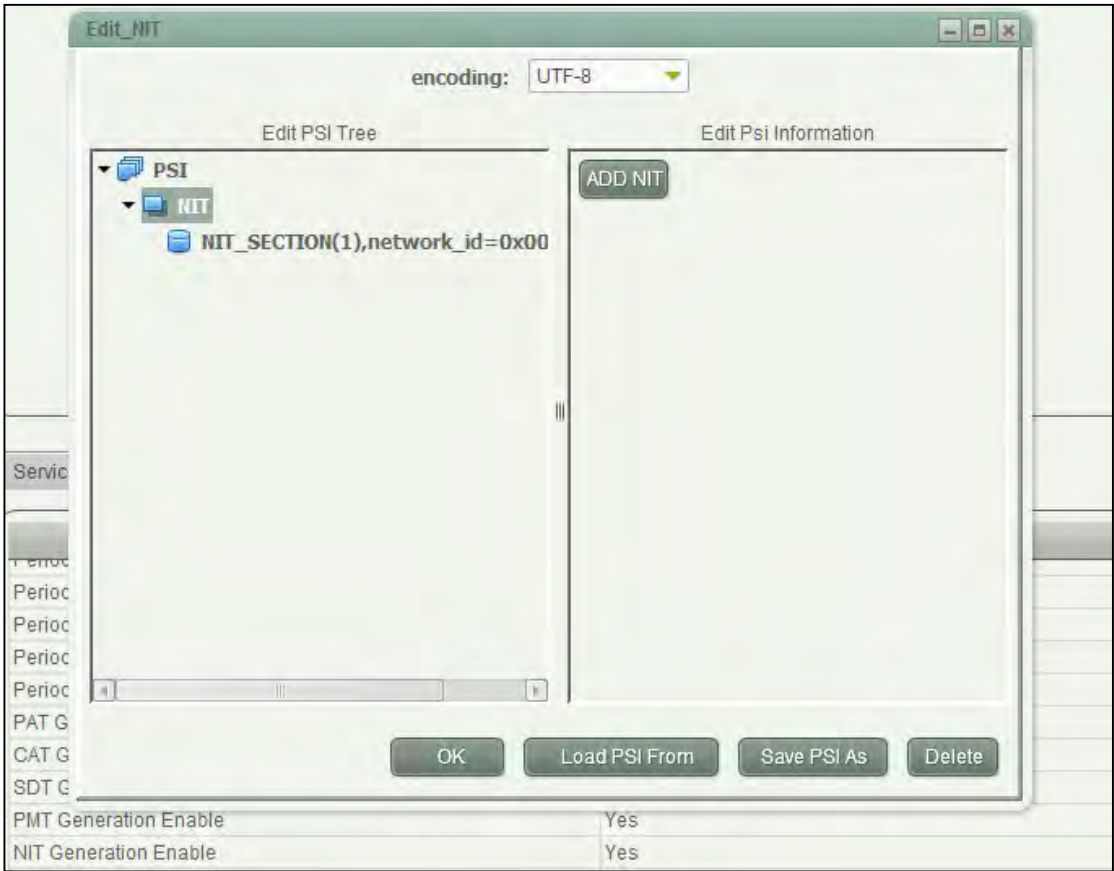
b. For example, if the user wants to add a new piece of SDT information, click “SDT” on the left column, then click the button “ADD SDT” on the right column, after that, an option like “SDT_SECTION(1)……” will come up on the left column, click it, then user can insert service information or TS information.



c. If the user wants to insert service information, click the button “Insert Service”, then a table will come up, in this table, user can select descriptor information which he/she wants to insert, as it shown in below.



d. If the user wants to generate a new piece of NIT or BAT information, select the ‘Yes’ of ‘NIT/BAT Generation Enable’ in the ‘Output Setting’. Firstly, select the NIT source. If the user wants to generate a new NIT, need to select the ‘Current’, then click the button ‘OK’. Secondly, then click the button “ADD NIT” on the right column, after that, an option like “NIT_SECTION(1)……” will come up on the left column, click it, then user can insert service information or TS information, as it shown in below.



Step 5:

After these settings, User can click the button ‘Check Conflicting’ to input the Service ID and PID to confirm whether there are the same ID, as it shown in figure below.



Step 6:

If the user wants to recover the new settings of service ID and other PID from the original values, click the



button ‘Replication Program’. Input the service ID and PMT PID to confirm which service need to re recovered, as it shown in figure below.

Service ID	Bit Rate(Kbps)
0x0001(1)	3324

0: The 1 Program

Service ID:

PMT_PID:

Step 7:

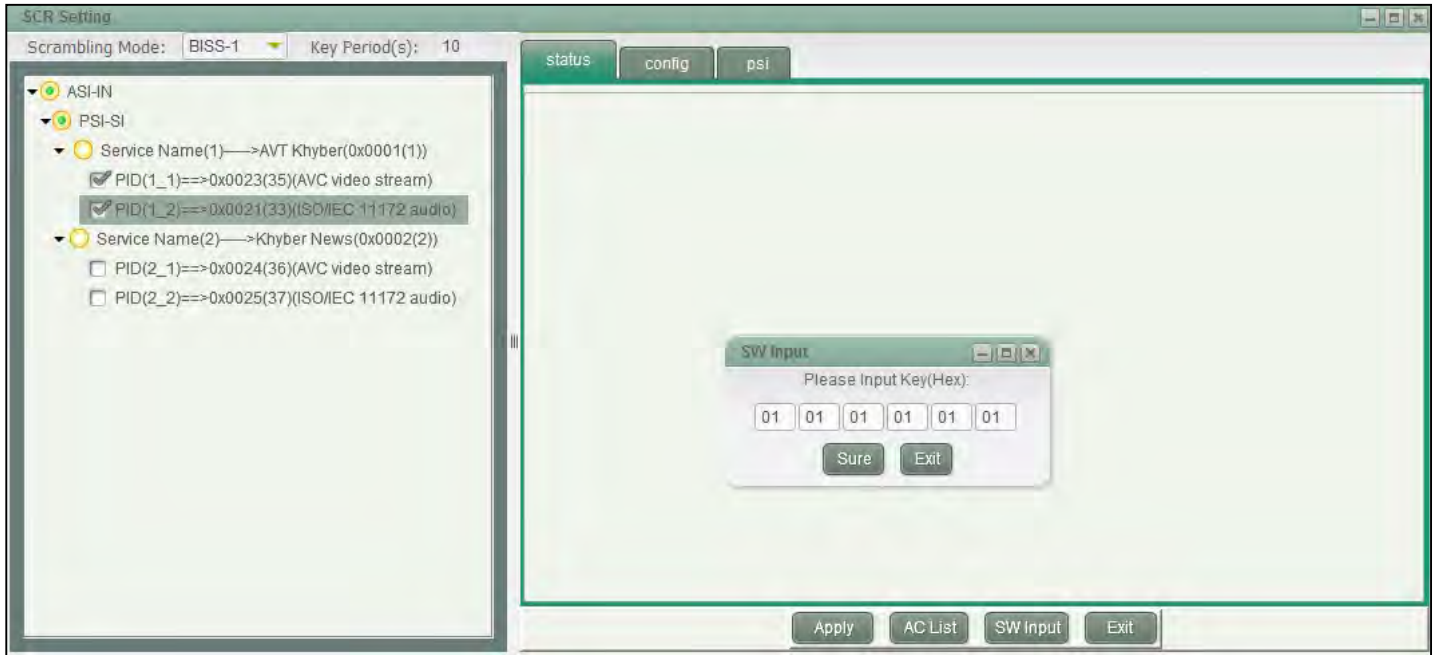
After all parameters are ready, click the button “Apply” to submit your configuration, if it’s working well, the grey light will turn to green, it means there is no error of the re-multiplexed transport stream. If the light is yellow, it means there are some errors in the output transport stream, user has to review all related parameters.

4.2.1.3. Services Scramble

P01MS supports TS scrambling including BISS-1, BISS-E and 4 different Simulcrypt modes. User can scramble the re-multiplexed TS by following the operations below.

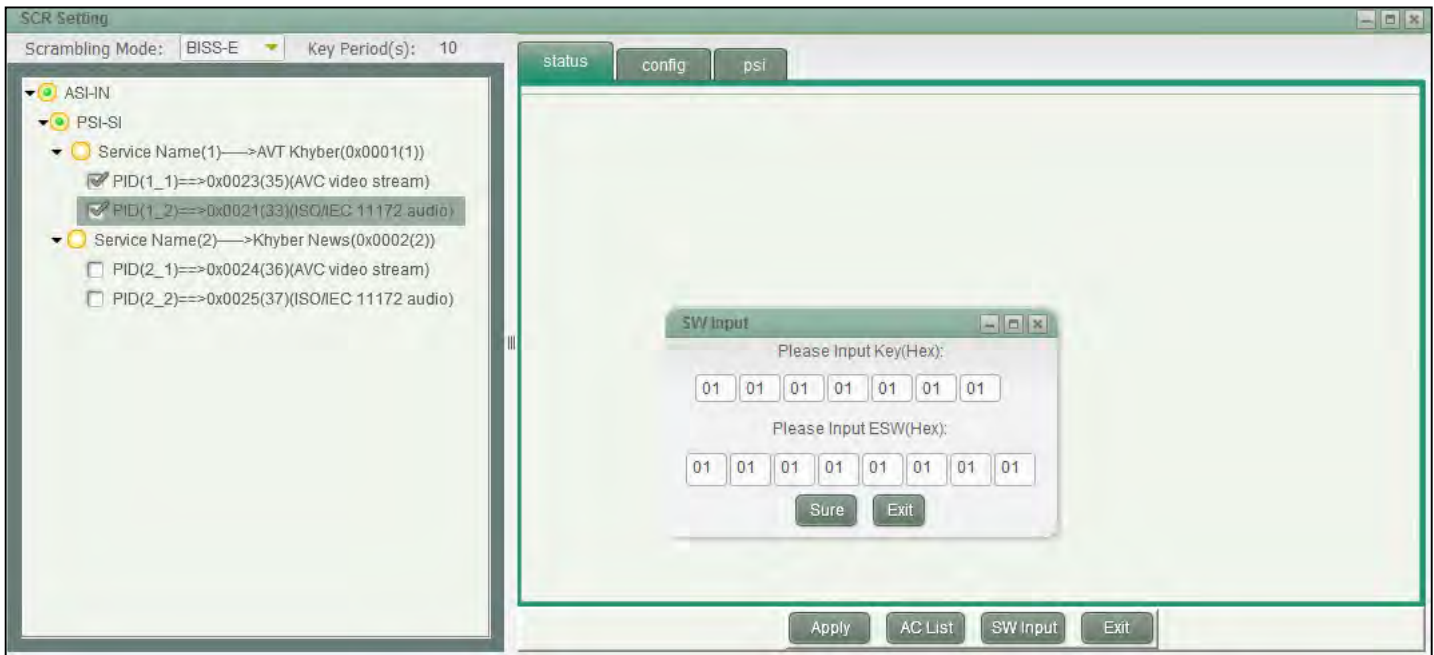
A. BISS-1

On MUX page, click the button ‘Scrambler’ to open a submenu, user can set the option ‘Scrambling Mode’ to ‘BISS-1’ on the top of the submenu, click the button ‘SW Input’ to configure the Hex key, then selecting programs by hooking in the small box, as it shown in figure below. These selected programs will be scrambled, user can also choose only to scramble audio signal or video signal. After all parameters get ready, click the button ‘Apply’ to submit the configuration.



B. BISS-E

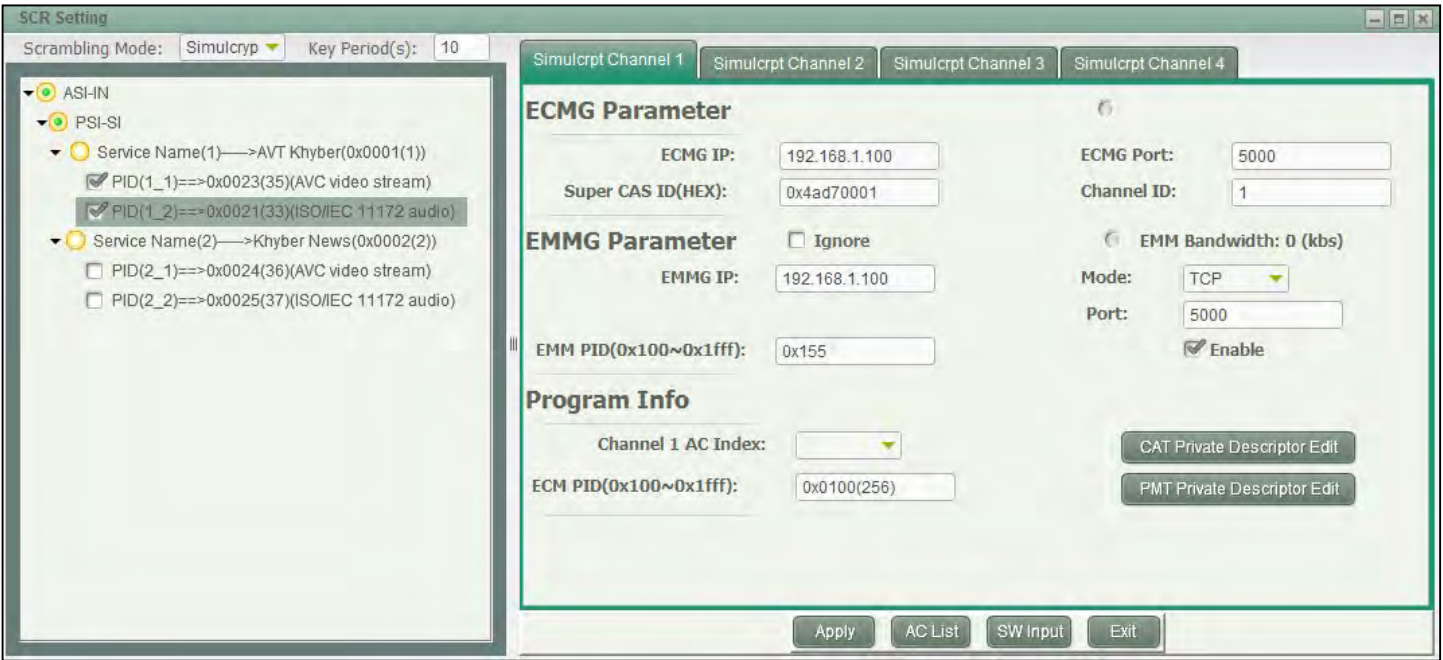
On MUX page, click the button ‘Scrambler’ to open a submenu, user can set the option ‘Scrambling Mode’ to ‘BISS-E’ on the top of the submenu, click the button ‘SW Input’ to configure the Hex key and Hex ESW, then selecting programs by hooking in the small box, as it shown in figure below. These selected programs will be scrambled, user can also choose only to scramble audio signal or video signal. After all parameters get ready, click the button ‘Apply’ to submit the configuration.



C. Simulcrypt

Step 1:

On MUX page, click the button ‘Scrambler’ to open a submenu, user can set the option ‘Scrambling Mode’ to ‘Simulcrypt’ on the top of the submenu. User can choose 4 different simulcrypt system by click sheets ‘Simulcrypt Channel 1/2/3/4’. hook the box ‘Enable’ to enable simulcrypt function, then user can configure parameters of ECM and EMM, as it shown in figure below. User has to configure these parameters according to different simulcrypt systems.

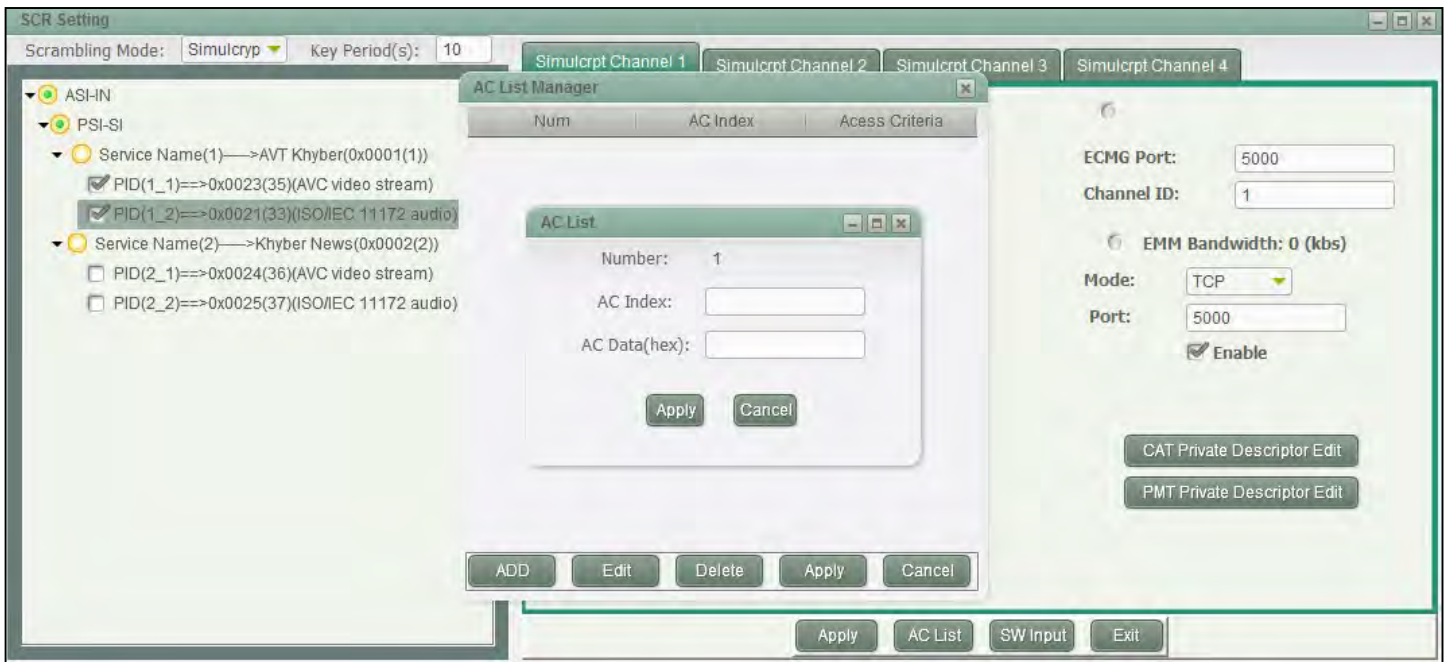


The screenshot shows the 'SCR Setting' window with the 'Simulcrypt' mode selected. The left sidebar shows a tree view with 'ASI-IN' and 'PSI-SI' expanded. Under 'PSI-SI', 'Service Name(1)' is set to 'AVT Khyber(0x0001(1))' and 'Service Name(2)' is set to 'Khyber News(0x0002(2))'. The 'ECMG Parameter' section for 'Simulcrypt Channel 1' is active, showing fields for 'ECMG IP' (192.168.1.100), 'ECMG Port' (5000), 'Super CAS ID(HEX)' (0x4ad70001), 'Channel ID' (1), 'EMMG IP' (192.168.1.100), 'EMMG Port' (5000), 'EMM PID(0x100~0x1fff)' (0x155), and 'Program Info' (Channel 1 AC Index: 0, ECM PID(0x100~0x1fff): 0x0100(256)). The 'EMMG Parameter' section has an 'Ignore' checkbox and an 'EMM Bandwidth: 0 (kbs)' field. The 'Mode' is set to 'TCP'. The 'Enable' checkbox is checked. Buttons for 'Apply', 'AC List', 'SW Input', 'Exit', 'CAT Private Descriptor Edit', and 'PMT Private Descriptor Edit' are visible at the bottom.

Menu Name	Description
ECMG IP	The IP address of simulcrypt server for receiving ECM information.
ECMG PORT	The port number of simulcrypt server for receiving ECM information.
Super CAS ID(HEX)	A examination key for exchanging ECM information between the module and the sever.
Channel ID	The sequence number of simulcrypt channel.
Ignore	Some simulcrypt system doesn't need EMMG function, user can close EMMG by hooking in the small box.
EMMG IP	The IP address of simulcrypt server for receiving EMM information.
Mode	The EMM package mode, user can select between TCP and UDP.
Port	The port number of TCP/UDP package.
EMM PID(0x100~0x1fff)	The PID number of EMM.

Step 2:

Following step 1, user has to click the button ‘AC List’ to configure AC data for each program, as it shown in figure below. ‘AC Index’ is the program sequence, ‘AC Data(hex)’ is the hex key of each program. The total quantity of AC list is based on the total quantity of programs which user wants to be scrambled. Click the button ‘Apply’ to submit your configuration.



Step 3:

After setup2, on left column, user can click program’s service name, and assign AC index number for each program. Then user can hook in the small box to select video PID and audio PID, as it shown in figure below, these hooked audio and video signals will be scrambled. User also can edit the CAT/PMT private descriptor data for ECM/EMM.

SCR Setting

Scrambling Mode: Simulcrypt Key Period(s): 10

ASHN

PSI-SI

Service Name(1)→AVT Khyber(0x0001(1))

☒ PID(1_1)⇒0x0023(35)(AVC video stream)

☒ PID(1_2)⇒0x0021(33)(ISO/IEC 11172 audio)

Service Name(2)→Khyber News(0x0002(2))

☐ PID(2_1)⇒0x0024(36)(AVC video stream)

☐ PID(2_2)⇒0x0025(37)(ISO/IEC 11172 audio)

Simulcrpt Channel 1 Simulcrpt Channel 2 Simulcrpt Channel 3 Simulcrpt Channel 4

ECMG Parameter

ECMG IP: 192.168.1.100

ECMG Port: 5000

Super CAS ID(HEX): 0x4ad70001

Channel ID: 1

EMMG Parameter

☐ Ignore

EMMG IP: 192.168.1.100

EMM Bandwidth: 0 (kbs)

Mode: TCP

Port: 5000

☒ Enable

Program Info

Channel 1 AC Index: 1

ECM PID(0x100~0x1fff): 1

2

CAT Private Descriptor Edit

PMT Private Descriptor Edit

Apply AC List SW Input Exit

Step 4:

After setting all configuration ready, click ‘Apply’ to submit. Wait for a while, the two gray lights on this page will turn to green if scrambling successful.

3.2.2. 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 module supports both BISS-1 and BISS-E decryption function too. There are 8 preset BISS keys for each transport stream. This module includes T2-MI demultiplex, up to supports 32 PLP ID. It means this module can transfer 32 TS to chassis from 4 tuners.

4.2.2.1. Status

Status	Config	BISS1	BISS2	BISS3	BISS4	System
Temperature :	42.0 °C					
	 Tuner-1:DVB-S2	 Tuner-2:DVB-S2	 Tuner-3:DVB-S2	 Tuner-4:DVB-S2		
Total Bitrate(Mbps)	39.811872	0.0	0.0	0.0		
Valid Bitrate(Mbps)	31.819616	0.0	0.0	0.0		
Strength(dBm)	-70.20	--	--	--		
SNR(dB)	11.00	--	--	--		
Eb/N0(dB)	9.30	--	--	--		
BER	0.0e-9	--	--	--		
C/N(dB)	11.30	--	--	--		
Link Margin(dB)	5.10	--	--	--		
Constellation	QPSK	--	--	--		
FEC Code Rate	3/4	--	--	--		
Mode	DVBS	--	--	--		
Spectrum Inversion	Inversion	--	--	--		
Frequency Offset(KHz)	300	--	--	--		

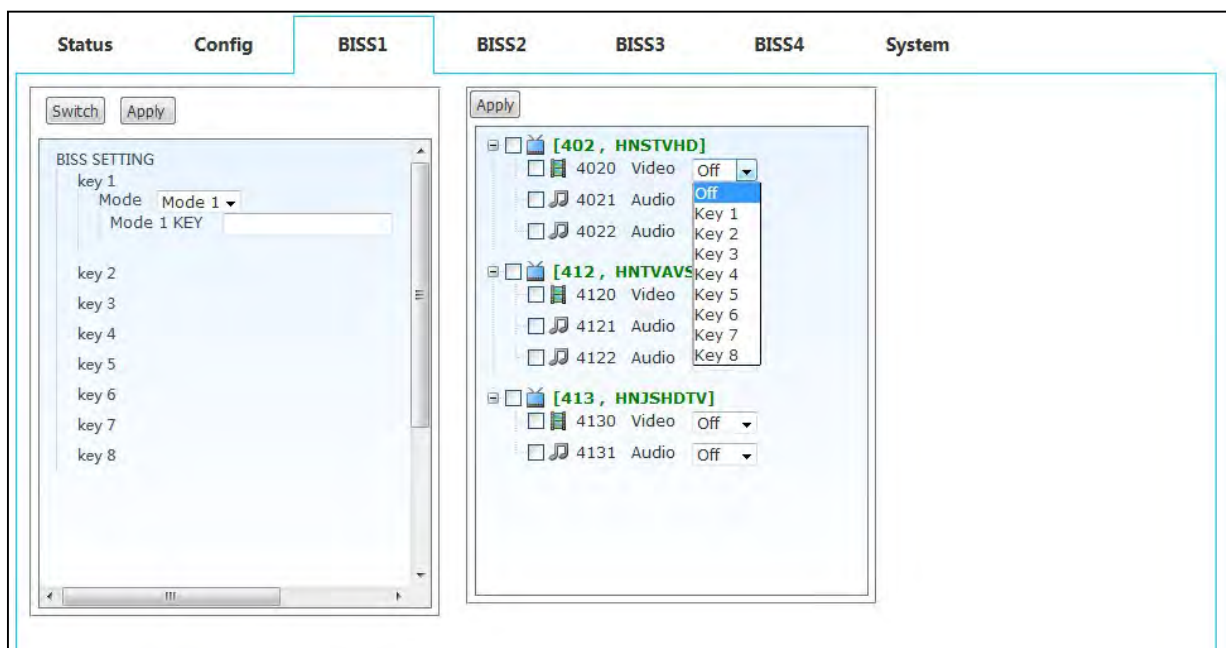
4.2.2.2. Config

Status	Config	BISS1	BISS2	BISS3	BISS4	System
	Tuner-1:DVB-S2	Tuner-2:DVB-S2	Tuner-3:DVB-S2	Tuner-4:DVB-S2		
LNB LO Frequency (MHz)	<input type="text" value="5150"/>	<input type="text" value="10750"/>	<input type="text" value="5150"/>	<input type="text" value="10750"/>		
Satellite Frequency (MHz)	<input type="text" value="3950"/>	<input type="text" value="12660"/>	<input type="text" value="3780"/>	<input type="text" value="12718"/>		
Symbol Rate (KBaud)	<input type="text" value="11406"/>	<input type="text" value="45000"/>	<input type="text" value="27500"/>	<input type="text" value="43200"/>		
LNB Voltage	<input type="text" value="OFF"/>	<input type="text" value="OFF"/>	<input type="text" value="OFF"/>	<input type="text" value="OFF"/>		
LNB 22KHz Tone	<input type="text" value="Disable"/>	<input type="text" value="Disable"/>	<input type="text" value="Disable"/>	<input type="text" value="Disable"/>		
DiSeqC	<input type="text" value="Disable"/>	<input type="text" value="Disable"/>	<input type="text" value="Disable"/>	<input type="text" value="Disable"/>		
Frequency Offset High (KHz)	<input type="text" value="5000"/>	<input type="text" value="5000"/>	<input type="text" value="5000"/>	<input type="text" value="5000"/>		
Frequency Offset Low (KHz)	<input type="text" value="-5000"/>	<input type="text" value="-5000"/>	<input type="text" value="-5000"/>	<input type="text" value="-5000"/>		
	<input type="button" value="Apply"/>	<input type="button" value="Apply"/>	<input type="button" value="Apply"/>	<input type="button" value="Apply"/>		

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.

4.2.2.3. BISS



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.

***Attention:** Up to 5 PID can be decrypted by one key.

4.2.2.4. T2-MI

Status

Config

T2MI

System

	Tuner-1	Tuner-2	Tuner-3	Tuner-4
Ch-1	No Exist ▾	No Exist ▾	No Exist ▾	No Exist ▾
Ch-2	No Exist ▾	No Exist ▾	No Exist ▾	No Exist ▾
Ch-3	No Exist ▾	No Exist ▾	No Exist ▾	No Exist ▾
Ch-4	No Exist ▾	No Exist ▾	No Exist ▾	No Exist ▾
Ch-5	No Exist ▾	No Exist ▾	No Exist ▾	No Exist ▾
Ch-6	No Exist ▾	No Exist ▾	No Exist ▾	No Exist ▾
Ch-7	No Exist ▾	No Exist ▾	No Exist ▾	No Exist ▾
Ch-8	No Exist ▾	No Exist ▾	No Exist ▾	No Exist ▾
	Apply	Apply	Apply	Apply

- Tuner-1
 - Channel-1
 - Channel-2
 - Channel-3
 - Channel-4
 - Channel-5
 - Channel-6
 - Channel-7
 - Channel-8
- Tuner-2
 - Channel-1
 - Channel-2
 - Channel-3
 - Channel-4
 - Channel-5

Menu Name	Description
Left part	There will be a PLP ID list in every channel if the tuner signal locked. User can select one PLP ID to demultiplex to make one TS.
Right part	Display the programs list in one channel after the PLP ID Selection.

***Attention:** There will be up to 32 channels sources supply to other modules to use in the T2-MI mode.

4.2.2.5. System

Menu Name	Description
Mode	Select the working mode of module, includes BISS and T2-MI
Version	The version number of different firmware part
Serial Number	The S/N of the module
Default Parameter	Default factory settings
Upgrade	Upgrade the new firmware after uploading the 'target.tgz' file.

Status

Config

BISS1

BISS2

BISS3

BISS4

System

Mode:

BISS ▾





Apply

Main Version:	2002
APP Version:	013b
FPGA Version:	4001
WEB Version:	0022
Serial Number :	1234567890ABC

Default Parameter





3.2.3. D02/03S2 (4 x DVB-S/S2 Demodulator Module, Support ISI)

It is similar as D01S2 in the status, configuration of tuner and BISS. There is only one additional function of tuner which is ISI code, as it shown in figure below. But this module does not support T2-MI.

Status	Tuner	BISS-1	BISS-2	BISS-3	BISS-4
	 Tuner-1	 Tuner-2	 Tuner-3	 Tuner-4	
Tuner Type:	DVB-S	DVB-S	DVB-S	DVB-S	
LNB LO Frequency (MHz):	5150	5150	5150	5150	
Satellite Frequency (MHz):	3760	4120	4200	3000	
Symbol Rate (KBaud):	28800	27500	20000	20000	
LNB Voltage:	OFF	OFF	OFF	OFF	
LNB 22KHz Tone:	Disable	Disable	Disable	Disable	
DiSEqC:	Disable	Disable	Disable	Disable	
ISI Control:	Disable	Disable	Disable	Disable	
ISI Code (Hexadecimal):	0	1f2370	1f2370	0	
	Apply	Apply	Apply	Apply	

3.2.4. 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	Config	System			
Temperature :	40.0 °C				
	 Tuner-1:DVB-C	 Tuner-2:DVB-C	 Tuner-3:DVB-C	 Tuner-4:DVB-C	
Total Bitrate (Mbps)	0.0	0.0	0.0	0.0	
Valid Bitrate (Mbps)	0.0	0.0	0.0	0.0	
Strength (dBm)	-0.0	-0.0	-0.0	-0.0	
C/N (dB)	0.0	0.0	0.0	0.0	
Eb_N0 (dB)	0.0	0.0	0.0	0.0	
BER	0.0	0.0	0.0	0.0	



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

Status

Config

System

	Tuner-1:DVB-C	Tuner-2:DVB-C	Tuner-3:DVB-C	Tuner-4:DVB-C
Signal Type	DVB-C ▼	DVB-T2 ▼	DVB-C ▼	DVB-C ▼
Frequency (KHz)	DVB-T DVB-T2 DVB-C	610000	618000	626000
Bandwidth(M)	8M	8M ▼	8M ▼	8M ▼
Multi PLP ID	--	No Exist ▼	--	--
	Apply	Apply	Apply	Apply

Status

Config

System

	Tuner-1:DVB-C	Tuner-2:DVB-C	Tuner-3:DVB-C	Tuner-4:DVB-C
Signal Type	DVB-T2 ▼	DVB-T2 ▼	DVB-C ▼	DVB-C ▼
Frequency (KHz)	602000	610000	618000	626000
Bandwidth(M)	8M ▼	8M ▼	8M ▼	8M ▼
Multi PLP ID	6M 7M 8M	No Exist ▼	--	--
	Apply	Apply	Apply	Apply

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)

3.2.5. 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.

Status

Config

CI-1

CI-2

CI-3

CI-4

System

Temperature

Temperature : 39.0 °C

Status

	CI-1		CI-2		CI-3		CI-4	
	TS IN	TS OUT	TS IN	TS OUT	TS IN	TS OUT	TS IN	TS OUT
Total Bitrate (Mbps)	20.460416	20.460416	38.639264	38.634752	38.639264	38.634752	38.639264	38.634752
Valid Bitrate (Mbps)	19.251200	19.254208	31.757008	31.821680	31.757008	31.842736	31.757008	31.821680
CAM Name	No CAM		No CAM		NOVEL-SUPERTV		No CAM	
CAM Reset	<button>Reset</button>		<button>Reset</button>		<button>Reset</button>		<button>Reset</button>	
Dynamic Pmt Count	0		0		0		0	
CI Reset Count	0		0		0		0	
	<button>Clear</button>		<button>Clear</button>		<button>Clear</button>		<button>Clear</button>	

Menu Name	Description
TS IN/TS OUT	Transport stream which input and output the CI slot
CAM Name	CAM name or No Module which mean CAM not installed or recognized
CAM Reset	Reset CAM button
Source	Transport stream used for CI slot, it will show which module and source are available
Dynamic PMT Count	PMT changed times
CI Reset Count	CI reset times
Clear	Clean the counts of PMT and CI

Below is an example for CI setup:

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

Module-6:CI

Status	Config	CI-1	CI-2	CI-3	CI-4	T2MI	System
Mode							
Watch Dog		CI-1	CI-2	CI-3	CI-4		
		OFF	OFF	OFF	OFF		
Descramble Mode		ALL PID	ALL PID	ALL PID	ALL PID		
Dynamic Pmt		ON	OFF	OFF	OFF		
		Apply	Apply	Apply	Apply		
Ts Clock							
		CI-1	CI-2	CI-3	CI-4		
		108MHz	108MHz	54MHz	108MHz		
		Apply	Apply	Apply	Apply		
Source							
		CI-1	CI-2	CI-3	CI-4		
		Module4	Module4	Module4	Module4		
		s2 tuner 1	s2 tuner 1	s2 tuner 1	s2 tuner 1		
		Apply	Apply	Apply	Apply		

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

Module-6:CI

Status	Config	CI-1	CI-2	CI-3	CI-4	T2MI	System
Mode							
Watch Dog		CI-1	CI-2	CI-3	CI-4		
		OFF	OFF	OFF	OFF		
Descramble Mode		ALL PID	ALL PID	ALL PID	ALL PID		
Dynamic Pmt		ON	OFF	OFF	OFF		
		Apply	Apply	Apply	Apply		
Ts Clock							
		CI-1	CI-2	CI-3	CI-4		
		108MHz	108MHz	54MHz	108MHz		
		Apply	Apply	Apply	Apply		
Source							
		CI-1	CI-2	CI-3	CI-4		
		Module4	Module4	Module4	Module4		
		s2 tuner 1	s2 tuner 1	s2 tuner 1	s2 tuner 1		
		Apply	Apply	Apply	Apply		









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

Status	Config	CI-1	CI-2	CI-3	CI-4	System
Program List-1						
Index	Service ID	Service Name	Status	Settings		
1	301	\$ CCTV-1	----	Descrambl		
2	302	\$ CCTV-2	----	Descrambl		
3	303	\$ CCTV-4	----	Descrambl		
4	304	\$ CCTV-10	----	Descrambl		
5	305	\$ CCTV-12	-----	Bypass		
6	306	\$ CCTV-13	-----	Bypass		
7	307	\$ CCTV-14	-----	Bypass		
8	308	\$ CCTV-15	-----	Bypass		
Apply						

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

The C01MOD is an 8 channels within 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 channel working status. The spot red means channel is off or not working, green means working fine.

Module-3: Modulator

Status	Source	Config	System	
Temperature				
Temperature :	62.0 °C			
Status				
	 Modulator-1	 Modulator-2	 Modulator-3	 Modulator-4
Total Bitrate (Mbps)	50.680000	50.680000	50.680000	50.680000
Valid Bitrate (Mbps)	0.0	0.0	0.0	0.0
TS	--	--	--	--
	 Modulator-5	 Modulator-6	 Modulator-7	 Modulator-8
Total Bitrate (Mbps)	50.680000	50.680000	50.680000	50.680000
Valid Bitrate (Mbps)	0.0	0.0	0.0	0.0
TS	--	--	--	--

Modulators Status

Module-3: Modulator				
Status	Source	Config	System	
Group-1				
	Modulator-1	Modulator-2	Modulator-3	Modulator-4
Group-1 Source	NONE	NONE	NONE	NONE
	Apply	Apply	Apply	Apply
Group-2				
	Modulator-5	Modulator-6	Modulator-7	Modulator-8
Group-2 Source	NONE	NONE	NONE	NONE
	Apply	Apply	Apply	Apply

Default source options

Below is the procedure for setup modulator:

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

Module-3: Modulator

Status Source Config System

Group-1

	Modulator-1	Modulator-2	Modulator-3	Modulator-4
Group-1 Source	NONE NONE Module1 Module2 Module5 M/B	NONE ▼ Apply	NONE ▼ Apply	NONE ▼ Apply

Group-2

	Modulator-6	Modulator-7	Modulator-8
Group-2 Source	NONE ▼ Apply	NONE ▼ Apply	NONE ▼ Apply

Step2: select the specific transport stream for modulator

Module-3: Modulator

Status Source Config System

Group-1

	Modulator-1	Modulator-2	Modulator-3	Modulator-4
Group-1 Source	Module2 t2 tuner 1 t2 tuner 2 t2 tuner 3 t2 tuner 4	NONE ▼ Apply	NONE ▼ Apply	NONE ▼ Apply

Group-2

	Modulator-6	Modulator-7	Modulator-8
Group-2 Source	NONE ▼ Apply	NONE ▼ Apply	NONE ▼ Apply

Step3: setup RF Level for output:

Module-3: Modulator

Status Source Config System

RF Level(88-118)(dBuV) 88
Apply

Group-1

	Modulator-1	Modulator-2	Modulator-3	Modulator-4
Modulator/RF Switch	ON ▼	ON ▼	ON ▼	ON ▼
Constellation	256QAM ▼	256QAM	256QAM	256QAM
I/Q Inversion	NO ▼	NO	NO	NO
Band Width	8M ▼	8M	8M	8M
Frequency (KHz)	474000	482000	490000	498000
Symbol Rate (KBaud)	6875	6875	6875	6875
NIT Filter	Disable ▼	--	--	--
NIT PID	16	--	--	--

Apply

Group-2

	Modulator-5	Modulator-6	Modulator-7	Modulator-8
Modulator/RF Switch	ON ▼	ON ▼	ON ▼	ON ▼
Constellation	256QAM ▼	256QAM	256QAM	256QAM
I/Q Inversion	NO ▼	NO	NO	NO
Band Width	8M ▼	8M	8M	8M
Frequency (KHz)	602000	610000	618000	626000
Symbol Rate (KBaud)	6875	6875	6875	6875
NIT Filter	Disable ▼	--	--	--
NIT PID	16	--	--	--

Step4: to setup modulation/RF switch as ON

Module-3: Modulator

Status Source **Config** System

RF Level(88-118)(dBuV) 88
Apply

Group-1

	Modulator-1	Modulator-2	Modulator-3	Modulator-4
Modulator/RF Switch	ON	ON	ON	ON
Constellation	OFF	256QAM	256QAM	256QAM
I/Q Inversion	NO	NO	NO	NO
Band \Width	8M	8M	8M	8M
Frequency (KHz)	474000	482000	490000	498000
Symbol Rate (KBaud)	6875	6875	6875	6875
NIT Filter	Disable	--	--	--
NIT PID	16	--	--	--

Apply

Group-2

	Modulator-5	Modulator-6	Modulator-7	Modulator-8
Modulator/RF Switch	ON	ON	ON	ON
Constellation	256QAM	256QAM	256QAM	256QAM
I/Q Inversion	NO	NO	NO	NO
Band \Width	8M	8M	8M	8M
Frequency (KHz)	602000	610000	618000	626000
Symbol Rate (KBaud)	6875	6875	6875	6875
NIT Filter	Disable	--	--	--
NIT PID	16	--	--	--

Step5: to setup constellation

Module-3: Modulator

Status Source **Config** System

Modulator-1 Modulator-2 Modulator-3 Modulator-4

Modulator/RF Switch	ON	ON	ON	ON
Constellation	256QAM	256QAM	256QAM	256QAM
I/Q Inversion	16QAM	NO	NO	NO
Band \Width	32QAM	8M	8M	8M
Frequency (KHz)	64QAM	482000	490000	498000
Symbol Rate (KBaud)	128QAM	6875	6875	6875
NIT Filter	Disable	--	--	--
NIT PID	16	--	--	--

Apply

Group-2

	Modulator-5	Modulator-6	Modulator-7	Modulator-8
Modulator/RF Switch	ON	ON	ON	ON
Constellation	256QAM	256QAM	256QAM	256QAM
I/Q Inversion	NO	NO	NO	NO
Band \Width	8M	8M	8M	8M
Frequency (KHz)	602000	610000	618000	626000
Symbol Rate (KBaud)	6875	6875	6875	6875
NIT Filter	Disable	--	--	--
NIT PID	16	--	--	--

Apply

Apply ALL

Step6: to setup I/Q Inversion

Module-3: Modulator

Status	Source	Config	System
		Modulator-1	Modulator-2
Modulator/RF Switch	ON	ON	ON
Constellation	256QAM	256QAM	256QAM
I/Q Inversion	NO	NO	NO
Band Width	NO	8M	8M
Frequency (KHz)	YES	482000	490000
Symbol Rate (KBaud)	6875	6875	6875
NIT Filter	Disable	--	--
NIT PID	16	--	--
<input type="button" value="Apply"/>			
		Modulator-3	Modulator-4
Modulator/RF Switch	ON	ON	ON
Constellation	256QAM	256QAM	256QAM
I/Q Inversion	NO	NO	NO
Band Width	NO	8M	8M
Frequency (KHz)	YES	482000	490000
Symbol Rate (KBaud)	6875	6875	6875
NIT Filter	Disable	--	--
NIT PID	16	--	--
<input type="button" value="Apply"/>			
Group-2			
		Modulator-5	Modulator-6
Modulator/RF Switch	ON	ON	ON
Constellation	256QAM	256QAM	256QAM
I/Q Inversion	NO	NO	NO
Band Width	8M	8M	8M
Frequency (KHz)	602000	610000	618000
Symbol Rate (KBaud)	6875	6875	6875
NIT Filter	Disable	--	--
NIT PID	16	--	--
<input type="button" value="Apply"/>			
<input type="button" value="Apply ALL"/>			

Step7: to setup band width:

Module-3: Modulator

Status	Source	Config	System
		Modulator-1	Modulator-2
Modulator/RF Switch	ON	ON	ON
Constellation	256QAM	256QAM	256QAM
I/Q Inversion	NO	NO	NO
Band Width	8M	8M	8M
Frequency (KHz)	8M	482000	490000
Symbol Rate (KBaud)	6875	6875	6875
NIT Filter	Disable	--	--
NIT PID	16	--	--
<input type="button" value="Apply"/>			
		Modulator-3	Modulator-4
Modulator/RF Switch	ON	ON	ON
Constellation	256QAM	256QAM	256QAM
I/Q Inversion	NO	NO	NO
Band Width	8M	8M	8M
Frequency (KHz)	602000	610000	618000
Symbol Rate (KBaud)	6875	6875	6875
NIT Filter	Disable	--	--
NIT PID	16	--	--
<input type="button" value="Apply"/>			
Group-2			
		Modulator-5	Modulator-6
Modulator/RF Switch	ON	ON	ON
Constellation	256QAM	256QAM	256QAM
I/Q Inversion	NO	NO	NO
Band Width	8M	8M	8M
Frequency (KHz)	602000	610000	618000
Symbol Rate (KBaud)	6875	6875	6875
NIT Filter	Disable	--	--
NIT PID	16	--	--
<input type="button" value="Apply"/>			
<input type="button" value="Apply ALL"/>			

Step8: to enter Frequency and Symbol rate, this just for Modulator-1 and Modulator-5, the reset will increased following up according to bandwidth.

Module-3: Modulator

Status Source **Config** System

RF Level(88-118)(dBuV) 188

Apply

Group-1

	Modulator-1	Modulator-2	Modulator-3	Modulator-4
Modulator/RF Switch	ON	ON	ON	ON
Constellation	256QAM	256QAM	256QAM	256QAM
I/Q Inversion	NO	NO	NO	NO
Band Width	8M	8M	8M	8M
Frequency (KHz)	474000	482000	490000	498000
Symbol Rate (KBaud)	6875	6875	6875	6875
NIT Filter	Disable	--	--	--
NIT PID	16	--	--	--

Apply

Group-2

	Modulator-5	Modulator-6	Modulator-7	Modulator-8
Modulator/RF Switch	ON	ON	ON	ON
Constellation	256QAM	256QAM	256QAM	256QAM
I/Q Inversion	NO	NO	NO	NO
Band Width	8M	8M	8M	8M
Frequency (KHz)	602000	610000	618000	626000
Symbol Rate (KBaud)	6875	6875	6875	6875
NIT Filter	Disable	--	--	--
NIT PID	16	--	--	--

Step9: 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.

Module-3: Modulator

Status Source **Config** System

RF Level(88-118)(dBuV) 188

Apply

Group-1

	Modulator-1	Modulator-2	Modulator-3	Modulator-4
Modulator/RF Switch	ON	ON	ON	ON
Constellation	256QAM	256QAM	256QAM	256QAM
I/Q Inversion	NO	NO	NO	NO
Band Width	8M	8M	8M	8M
Frequency (KHz)	474000	482000	490000	498000
Symbol Rate (KBaud)	6875	6875	6875	6875
NIT Filter	Disable	--	--	--
NIT PID	Enable	--	--	--

Apply

Group-2

	Modulator-5	Modulator-6	Modulator-7	Modulator-8
Modulator/RF Switch	ON	ON	ON	ON
Constellation	256QAM	256QAM	256QAM	256QAM
I/Q Inversion	NO	NO	NO	NO
Band Width	8M	8M	8M	8M
Frequency (KHz)	602000	610000	618000	626000
Symbol Rate (KBaud)	6875	6875	6875	6875
NIT Filter	Disable	--	--	--
NIT PID	16	--	--	--

Apply

Apply ALL

Step10: after all setups, need to click Apply to save and enable all of them.





3.2.7. C01TM (4 x COFDM Modulator Module)

C01TM is a COFDM RF out modulator. There are 4 non-adjacent frequency with independent switches. The 4 RF will be combined and output within on RF interfaces. Output RF level will be 80 ~ 110dBuV.

Here is the status page for this module card. The LED button will show green when the RF works well, or it will become red. And it will show whether the input transport stream within the RF bandwidth or not.

Module-4: TM

Status	Source	Config	System	
Temperature				
Temperature :	56.0 °C			
Status				
	 TM-1	 TM-2	 TM-3	 TM-4
Total Bitrate (Mbps)	31.668449	30.160427	27.144385	26.346020
Valid Bitrate (Mbps)	12.004928	12.004928	12.004928	12.004928
TS	within Range	within Range	within Range	within Range

On the Source page, the 4 RF channels can be configured with different sources.

Module-4: TM

Status	Source	Config	System	
Group-1				
	TM-1	TM-2	TM-3	TM-4
Group-1 Source	M/B	M/B	M/B	M/B
	remux 1	remux 1	remux 1	remux 1
	Apply	Apply	Apply	Apply

On the config page, there are detailed options for modulation. Here is an example for configure the RF out.

Step1: Setup each channels source as mention above.

Step2: Enable the RF Level switch, or there will be no RF output.

Module-4: TB

Status Source **Config** System

IF Level Switch ON ▼
RF Level (80-110) (dBuV) OFF
Apply

Group 1

	TB-1	TB-2	TB-3	TB-4
Modulator Switch	ON ▼	ON ▼	ON ▼	ON ▼
Frequency (GHz)	100000	500000	516000	524000
Trans Mode	8K ▼	8K ▼	8K ▼	8K ▼
Constellation	64QAM ▼	64QAM ▼	64QAM ▼	64QAM ▼
Guard Interval	1/32 ▼	1/32 ▼	1/32 ▼	1/16 ▼
Band Width	8M ▼	8M ▼	8M ▼	8M ▼
Code Rate	7/8 ▼	5/6 ▼	3/4 ▼	3/4 ▼
	Apply	Apply	Apply	Apply

Step3: The RF Level is combined for 4 channels. Set the RF level.

Module-4: TB

Status Source **Config** System

IF Level Switch ON ▼
RF Level (80-110) (dBuV) 96
Apply

Group 1

	TB-1	TB-2	TB-3	TB-4
Modulator Switch	ON ▼	ON ▼	ON ▼	ON ▼
Frequency (GHz)	100000	500000	516000	524000
Trans Mode	8K ▼	8K ▼	8K ▼	8K ▼
Constellation	64QAM ▼	64QAM ▼	64QAM ▼	64QAM ▼
Guard Interval	1/32 ▼	1/32 ▼	1/32 ▼	1/16 ▼
Band Width	8M ▼	8M ▼	8M ▼	8M ▼
Code Rate	7/8 ▼	5/6 ▼	3/4 ▼	3/4 ▼
	Apply	Apply	Apply	Apply

Step4: To enable modulator function.



Module-4: TM

Status

Source

Config

System

RF Level Switch

ON

RF Level (80-110) (dBuV)

96

Apply

Group-1

	TM-1	TM-2	TM-3	TM-4
Modulator Switch	ON	ON	ON	ON
Frequency (KHz)	OFF	508000	516000	524000
Trans Mode	ON	8K	8K	8K
Constellation	64QAM	64QAM	64QAM	64QAM
Guard Interval	1/32	1/32	1/32	1/16
Band Width	8M	8M	8M	8M
Code Rate	7/8	5/6	3/4	3/4
	Apply	Apply	Apply	Apply

Step5: Set the mode, constellation, Guard Interval, Bandwidth, Code rate of modulation according to the requirement, or as default.

Module-4: TM

Status

Source

Config

System

RF Level Switch

ON

RF Level (80-110) (dBuV)

96

Apply

Group-1

	TM-1	TM-2	TM-3	TM-4
Modulator Switch	ON	ON	ON	ON
Frequency (KHz)	100000	508000	516000	524000
Trans Mode	8K	8K	8K	8K
Constellation	64QAM	64QAM	64QAM	64QAM
Guard Interval	1/32	1/32	1/32	1/16
Band Width	8M	8M	8M	8M
Code Rate	7/8	5/6	3/4	3/4
	Apply	Apply	Apply	Apply

Step6: Apply the settings to enable them.

3.2.8. 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.

Module-1: ASI

Status	Source	ASI	T2MI	System	
Temperature					
Temperature : 39.0 °C					
Status					
	 ASI-1 Out	 ASI-2 Out	 ASI-3 In	 ASI-4 Out	 ASI-5 输入
Total Bitrate (Mbps)	0.000000	0.000000	0.000000	0.000000	0.000000
Valid Bitrate (Mbps)	0.000000	0.000000	0.000000	0.000000	0.000000

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.

Module-1: ASI

Status	Source	ASI	System										
	<table><tr><th>ASI-1 In</th><th>ASI-2 In</th><th>ASI-3 In</th><th>ASI-4 In</th><th>ASI-5 Out</th></tr><tr><td>Source</td><td>--</td><td>--</td><td>--</td><td><div>NONE</div><div>NONE</div><div>Module1</div><div>Module2</div><div>Module5</div><div>M/B</div></td></tr></table>	ASI-1 In	ASI-2 In	ASI-3 In	ASI-4 In	ASI-5 Out	Source	--	--	--	<div>NONE</div> <div>NONE</div> <div>Module1</div> <div>Module2</div> <div>Module5</div> <div>M/B</div>		
ASI-1 In	ASI-2 In	ASI-3 In	ASI-4 In	ASI-5 Out									
Source	--	--	--	<div>NONE</div> <div>NONE</div> <div>Module1</div> <div>Module2</div> <div>Module5</div> <div>M/B</div>									

Module-1: ASI

Status	Source	ASI	System										
	<table><tr><th>ASI-1 In</th><th>ASI-2 In</th><th>ASI-3 In</th><th>ASI-4 In</th><th>ASI-5 Out</th></tr><tr><td>Source</td><td>--</td><td>--</td><td>--</td><td><div>M/B</div><div>IPIN 1</div><div>IPIN 1</div><div>IPIN 2</div><div>IPIN 3</div><div>IPIN 4</div><div>IPIN 5</div><div>IPIN 6</div><div>IPIN 7</div><div>IPIN 8</div><div>IPIN 9</div><div>IPIN 10</div><div>IPIN 11</div><div>IPIN 12</div><div>IPIN 13</div><div>IPIN 14</div><div>IPIN 15</div><div>IPIN 16</div><div>IPIN 17</div><div>IPIN 18</div><div>IPIN 19</div><div>IPIN 20</div></td></tr></table>	ASI-1 In	ASI-2 In	ASI-3 In	ASI-4 In	ASI-5 Out	Source	--	--	--	<div>M/B</div> <div>IPIN 1</div> <div>IPIN 1</div> <div>IPIN 2</div> <div>IPIN 3</div> <div>IPIN 4</div> <div>IPIN 5</div> <div>IPIN 6</div> <div>IPIN 7</div> <div>IPIN 8</div> <div>IPIN 9</div> <div>IPIN 10</div> <div>IPIN 11</div> <div>IPIN 12</div> <div>IPIN 13</div> <div>IPIN 14</div> <div>IPIN 15</div> <div>IPIN 16</div> <div>IPIN 17</div> <div>IPIN 18</div> <div>IPIN 19</div> <div>IPIN 20</div>		
ASI-1 In	ASI-2 In	ASI-3 In	ASI-4 In	ASI-5 Out									
Source	--	--	--	<div>M/B</div> <div>IPIN 1</div> <div>IPIN 1</div> <div>IPIN 2</div> <div>IPIN 3</div> <div>IPIN 4</div> <div>IPIN 5</div> <div>IPIN 6</div> <div>IPIN 7</div> <div>IPIN 8</div> <div>IPIN 9</div> <div>IPIN 10</div> <div>IPIN 11</div> <div>IPIN 12</div> <div>IPIN 13</div> <div>IPIN 14</div> <div>IPIN 15</div> <div>IPIN 16</div> <div>IPIN 17</div> <div>IPIN 18</div> <div>IPIN 19</div> <div>IPIN 20</div>									



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

Module-1: ASI

Status
Source
ASI
System

Mode

Mode:

ASI Mode
Apply

	ASI In	ASI In	ASI In	ASI In	ASI Out
Mode Switch	ASI In	ASI In	ASI In	ASI In	ASI Out
Asi Package Length	--	--	--	--	188
	Apply	Apply	Apply	Apply	Apply

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 be fixed as ASI input for T2MI function.

Module-1: ASI

Status
Source
ASI
System

Mode

Mode:

ASI Mode
ASI Mode
T2-MI Mode

	ASI In	ASI In	ASI In	ASI In	ASI Out
Mode Switch	ASI In	ASI In	ASI In	ASI In	ASI Out
Asi Package Length	--	--	--	--	188
	Apply	Apply	Apply	Apply	Apply

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.

Module-1: ASI

Status

Source

ASI

T2MI

System

PLPID Select

	ASI-5 In
Channel-1	No Exist ▾
Channel-2	No Exist ▾
Channel-3	No Exist ▾
Channel-4	No Exist ▾
	Apply

PLPID List

ASI-5

- Channel-1
- Channel-2
- Channel-3
- Channel-4

T2MI configure

3.2.9. D01PA (2 x Channels HDMI/CVBS 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.

Module-1: Decoder

Status

Source

Decoder

System

Temperature

Temperature : 43.0 °C

Status

AV Decoding Status	Video Decoding	No TS Input	No TS Input
	Audio Decoding	No TS Input	No TS Input
Service Information	Service Type	--	--
	Service Name	--	--
	Provider Name	--	--
	Service ID	--	--
	PMT PID	--	--
Video Information	PCR PID	--	--
	Video PID	--	--
	Stream Type	--	--
	Video Standard	--	--
Audio Information	Aspect Ratio	--	--
	Audio-1 PID	--	--
	Audio-1 Stream Type	--	--

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;

Module-1: Decoder

Status

Source

Decoder

System

Source

	Decoder-1	Decoder-2
Source	<div>NONE</div> <div>NONE</div> <div>Module2</div> <div>Module4</div> <div>Module6</div> <div>M/B</div>	<div>NONE</div> <div>NONE</div> <div>Apply Src</div>

Step2: select program. Video will output from HDMI or CVBS after this step. To check Status page if there is no output. The possible issue could be the service is encrypted.

Module-1: Decoder

Status Source **Decoder** System

program	Decoder-1	Decoder-2
Program	No program ▼	No program ▼
Mode Selection	Manual Sele ▼	Manual Sele ▼
	Apply	Apply

Video Settings	Decoder-1	Decoder-2
Video Resolution	Auto ▼	Auto ▼
Aspect Ratio	Auto ▼	Auto ▼
Failure Mode	Last Screen ▼	Last Screen ▼
CVBS PAL SUB	PAL-BDGH1 ▼	PAL-BDGH1 ▼
CVBS NTSC SUB	NTSCM_J ▼	NTSCM_J ▼
	Apply	Apply

Audio Settings	Decoder-1	Decoder-2
Audio Analog Level	0	0
Audio Mode	Auto ▼	Auto ▼
Audio-1 PID	No AudioPIC ▼	No AudioPIC ▼
Audio-2 PID	No AudioPIC ▼	No AudioPIC ▼
	Apply	Apply

Step3: video resolution can be adjust if user want to output the particular resolution.

Module-1: Decoder

Status Source **Decoder** System

program	Decoder-1	Decoder-2
Program	No program ▼	No program ▼
Mode Selection	Manual Sele ▼	Manual Sele ▼
	Apply	Apply

Video Settings	Decoder-1	Decoder-2
Video Resolution	Auto ▼	Auto ▼
Aspect Ratio	Auto ▼	Auto ▼
Failure Mode	Last Screen ▼	Last Screen ▼
CVBS PAL SUB	PAL-BDGH1 ▼	PAL-BDGH1 ▼
CVBS NTSC SUB	NTSCM_J ▼	NTSCM_J ▼
	Apply	Apply

Audio Settings	Decoder-1	Decoder-2
Audio Analog Level	0	0
Audio Mode	Auto ▼	Auto ▼
Audio-1 PID	No AudioPIC ▼	No AudioPIC ▼
Audio-2 PID	No AudioPIC ▼	No AudioPIC ▼
	Apply	Apply

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

Module-1: Decoder

Status Source **Decoder** System

program	Decoder-1	Decoder-2
Program	No program ▼	No program ▼
Mode Selection	Manual Sele ▼	Manual Sele ▼
	Apply	Apply

Video Settings	Decoder-1	Decoder-2
Video Resolution	Auto ▼	Auto ▼
Aspect Ratio	Auto ▼	Auto ▼
Failure Mode	Auto ▼	Last Screen ▼
CVBS PAL SUB	4:3 Full 4:3 Letterbox 16:9 Full 16:9 Pillarbox	PAL-BDGH1 ▼
CVBS NTSC SUB	NTSCM_J ▼	NTSCM_J ▼
	Apply	Apply

Audio Settings	Decoder-1	Decoder-2
Audio Analog Level	0	0
Audio Mode	Auto ▼	Auto ▼
Audio-1 PID	No AudioPIC ▼	No AudioPIC ▼
Audio-2 PID	No AudioPIC ▼	No AudioPIC ▼
	Apply	Apply

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

Module-1: Decoder

Status Source **Decoder** System

program	Decoder-1	Decoder-2
Program	No program ▼	No program ▼
Mode Selection	Manual Sele ▼	Manual Sele ▼
	Apply	Apply

Video Settings	Decoder-1	Decoder-2
Video Resolution	Auto ▼	Auto ▼
Aspect Ratio	Auto ▼	Auto ▼
Failure Mode	Last Screen ▼	Last Screen ▼
CVBS PAL SUB	PAL-BDGH1 ▼	PAL-BDGH1 ▼
CVBS NTSC SUB	PALN PALN_C SECAM	NTSCM_J ▼
	Apply	Apply

Audio Settings	Decoder-1	Decoder-2
Audio Analog Level	0	0
Audio Mode	Auto ▼	Auto ▼
Audio-1 PID	No AudioPIC ▼	No AudioPIC ▼
Audio-2 PID	No AudioPIC ▼	No AudioPIC ▼
	Apply	Apply

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

Module 1: Decoder

Status Source **Decoder** System

program

	Decoder-1	Decoder-2
Program	No program ▼	No program ▼
Mode Selection	Manual Sele ▼	Manual Sele ▼
	Apply	Apply

Video Settings

	Decoder-1	Decoder-2
Video Resolution	Auto ▼	Auto ▼
Aspect Ratio	Auto ▼	Auto ▼
Failure Mode	Last Screen ▼	Last Screen ▼
CVBS PAL SUB	PAL-BDGH1 ▼	PAL-BDGH1 ▼
CVBS NTSC SUB	NTSCM_J ▼	NTSCM_J ▼
	Apply	Apply

Audio Settings

	Decoder-1	Decoder-2
Audio Analog Level	0	0
Audio Mode	Auto ▼	Auto ▼
Audio-1 PID	No AudioPIC ▼	No AudioPIC ▼
Audio-2 PID	No AudioPIC ▼	No AudioPIC ▼
	Apply	Apply

3.2.10. D02PA (2 x Channels SDI/CVBS SD/HD Decoder Module)

This is another decoder cards with SDI interfaces. The most options are same as D01PA, but it has more options for SDI and GenLock interfaces. Each SDI can embedded two audio Pairs.

Module 4: Decoder

Status Source Decoder **SDI/Genlock** System

SDI

	Decoder-1	Decoder-2
Emb Aud Switch	Enable ▼	Enable ▼
Aud PTH Switch	Disable ▼	Disable ▼
AES 1-2	Audio 1 ▼	Audio 1 ▼
AES 1-2 Level	0	0
AES 3-4	Audio 2 ▼	Audio 2 ▼
AES 3-4 Level	1	1
	Apply	Apply

Genlock

	Decoder-1	Decoder-2
Fs Mode	Disable ▼	Disable ▼
Video H Phase	0	0
Video V Phase	0	0
	Apply	Apply

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

This is 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.

Module-4: Encoder

status

S/Mux

T/E-1

T/E-2

T/E-3

T/E-4

System

Temperature

Temperature : 36.0 °C

Output Status

	Encoder-1	Encoder-2	Encoder-3	Encoder-4	Encoder Mux
Total Bitrates:	0.000000Mbps	0.000000Mbps	0.000000Mbps	0.000000Mbps	28.000000Mbps
Valid Bitrates:	0.000000Mbps	0.000000Mbps	0.000000Mbps	0.000000Mbps	0.101520Mbps
Service Name:	HDTV Encoder1	HDTV Encoder2	HDTV Encoder3	HDTV Encoder4	---

Video Input Format

	Video-1	Video-2	Video-3	Video-4
Input Format:	---	---	---	---

Alarm

Encoder-1:	Input Missing	---
Encoder-2:	Input Missing	---
Encoder-3:	Input Missing	---
Encoder-4:	Input Missing	---
Encoder Mux:	---	---

Quick setup example:

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

Module-4: Encoder

status S/Mux **T/E-1** T/E-2 T/E-3 T/E-4 System

Operation Mode: H264 Encoder Bit Rate: 3801

Video Settings

Video Rate Ctl: CBR Input Video Format: 1920x1080i 25
 Video Bit Rate (kb/s): 3000 Aspect Ratio: 16:9
 Video Max Bit Rate (kb/s): 3300 Video Min Bit Rate (kb/s): 0
 GOP Size: 52 GOP Structure: IBBBP
 GOP Adaptive: ON Output Video Format: Auto Settings
 Output Horizontal: 720 Output Vertical: 576
 Frame Format: Progressive Input Format Adaptive: OFF
 Low Delay Mode: OFF

Audio Settings

Audio Channel Mode: Stereo Audio Format: MPEG-1 layer2
 Audio Bit Rate (kbps): 128 Audio Level: 0 dB

Advanced Settings

Output PMT PID: 1003 Output Video PID: 1001
 Output Audio PID: 1002 Output Service ID: 1000
 Output PCR PID: 8010 Output Service Name: HDTV Encoder1
 Null Packets Filter: OFF Service Provider Name: Service Provider
 Language Descriptor:
 Character Coding: None

Apply

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.

Module-4: Encoder

status S/Mux **T/E-1** T/E-2 T/E-3 T/E-4 System

Operation Mode: H264 Encoder Bit Rate: 3801

Video Settings

Video Rate Ctl: H264 Input Video Format: 1920x1080i 25
 Video Bit Rate (kb/s): MPEG2 Aspect Ratio: 16:9
 Video Max Bit Rate (kb/s): MPEG2 To H264 Video Min Bit Rate (kb/s): 0
 GOP Size: H264 To MPEG2 GOP Structure: IBBBP
 GOP Adaptive: ON Output Video Format: Auto Settings
 Output Horizontal: 720 Output Vertical: 576
 Frame Format: Progressive Input Format Adaptive: OFF
 Low Delay Mode: OFF

Audio Settings

Audio Channel Mode: Stereo Audio Format: MPEG-1 layer2
 Audio Bit Rate (kbps): 128 Audio Level: 0 dB

Advanced Settings

Output PMT PID: 1003 Output Video PID: 1001
 Output Audio PID: 1002 Output Service ID: 1000
 Output PCR PID: 8010 Output Service Name: HDTV Encoder1
 Null Packets Filter: OFF Service Provider Name: Service Provider
 Language Descriptor:
 Character Coding: None

Apply

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

Module-4: Encoder

status S/Mux **T/E-1** T/E-2 T/E-3 T/E-4 System

Operation Mode:	H264	Encoder Bit Rate:	3801
Video Settings			
Video Rate Ctl:	CBR	Input Video Format:	1920x1080i 25
Video Bit Rate (kb/s):	CBR	Aspect Ratio:	16:9
Video Max Bit Rate (kb/s):	VBR	Video Min Bit Rate (kb/s):	0
GOP Size:	52	GOP Structure:	IBBBP
GOP Adaptive:	ON	Output Video Format:	Auto Settings
Output Horizontal:	720	Output Vertical:	576
Frame Format:	Progressive	Input Format Adaptive:	OFF
Low Delay Mode:	OFF		
Audio Settings			
Audio Channel Mode:	Stereo	Audio Format:	MPEG-1 layer2
Audio Bit Rate (kbps):	128	Audio Level:	0 dB
Advanced Settings			
Output PMT PID:	1003	Output Video PID:	1001
Output Audio PID:	1002	Output Service ID:	1000
Output PCR PID:	8010	Output Service Name:	HDTV Encoder1
Null Packets Filter:	OFF	Service Provider Name:	Service Provider
Language Descriptor:			
Character Coding	None		
<input type="button" value="Apply"/>			

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.

Module-4: Encoder

status S/Mux **T/E-1** T/E-2 T/E-3 T/E-4 System

Operation Mode:	H264	Encoder Bit Rate:	3801
Video Settings			
Video Rate Ctl:	CBR	Input Video Format:	1920x1080i 25
Video Bit Rate (kb/s):	3000	Aspect Ratio:	16:9
Video Max Bit Rate (kb/s):	3300	Video Min Bit Rate (kb/s):	0
GOP Size:	52	GOP Structure:	IBBBP
GOP Adaptive:	ON	Output Video Format:	Auto Settings
Output Horizontal:	720	Output Vertical:	576
Frame Format:	Progressive	Input Format Adaptive:	OFF
Low Delay Mode:	OFF		
Audio Settings			
Audio Channel Mode:	Stereo	Audio Format:	MPEG-1 layer2
Audio Bit Rate (kbps):	128	Audio Level:	0 dB
Advanced Settings			
Output PMT PID:	1003	Output Video PID:	1001
Output Audio PID:	1002	Output Service ID:	1000
Output PCR PID:	8010	Output Service Name:	HDTV Encoder1
Null Packets Filter:	OFF	Service Provider Name:	Service Provider
Language Descriptor:			
Character Coding	None		
<input type="button" value="Apply"/>			

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

Module-4: Encoder

status	S/Mux	T/E-1	T/E-2	T/E-3	T/E-4	System
Operation Mode:		H264	Encoder Bit Rate:		3801	
Video Settings						
Video Rate Ctl:	CBR	Input Video Format:	1920x1080i 25			
Video Bit Rate (kb/s):	3000	Aspect Ratio:	16:9			
Video Max Bit Rate (kb/s):	3300	Video Min Bit Rate (kb/s):	0			
GOP Size:	52	GOP Structure:	IBBBP			
GOP Adaptive:	ON	Output Video Format:	Auto Settings			
Output Horizontal:	OFF	Output Vertical:	576			
Frame Format:	ON	Input Format Adaptive:	OFF			
Low Delay Mode:	OFF					
Audio Settings						
Audio Channel Mode:	Stereo	Audio Format:	MPEG-1 layer2			
Audio Bit Rate (kbps):	128	Audio Level:	0 dB			
Advanced Settings						
Output PMT PID:	1003	Output Video PID:	1001			
Output Audio PID:	1002	Output Service ID:	1000			
Output PCR PID:	8010	Output Service Name:	HDTV Encoder1			
Null Packets Filter:	OFF	Service Provider Name:	Service Provider			
Language Descriptor:						
Character Coding	None					
Apply						

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.

Module-4: Encoder

status	S/Mux	T/E-1	T/E-2	T/E-3	T/E-4	System
Operation Mode:		H264	Encoder Bit Rate:		3801	
Video Settings						
Video Rate Ctl:	CBR	Input Video Format:	1920x1080i 25			
Video Bit Rate (kb/s):	3000	Aspect Ratio:	16:9			
Video Max Bit Rate (kb/s):	3300	Video Min Bit Rate (kb/s):	0			
GOP Size:	52	GOP Structure:	IBBBP			
GOP Adaptive:	ON	Output Video Format:	Auto Settings			
Output Horizontal:	720	Output Vertical:	Auto Settings			
Frame Format:	Progressive	Input Format Adaptive:	Manual Settings			
Low Delay Mode:	OFF					
Audio Settings						
Audio Channel Mode:	Stereo	Audio Format:	MPEG-1 layer2			
Audio Bit Rate (kbps):	128	Audio Level:	0 dB			
Advanced Settings						
Output PMT PID:	1003	Output Video PID:	1001			
Output Audio PID:	1002	Output Service ID:	1000			
Output PCR PID:	8010	Output Service Name:	HDTV Encoder1			
Null Packets Filter:	OFF	Service Provider Name:	Service Provider			
Language Descriptor:						
Character Coding	None					
Apply						

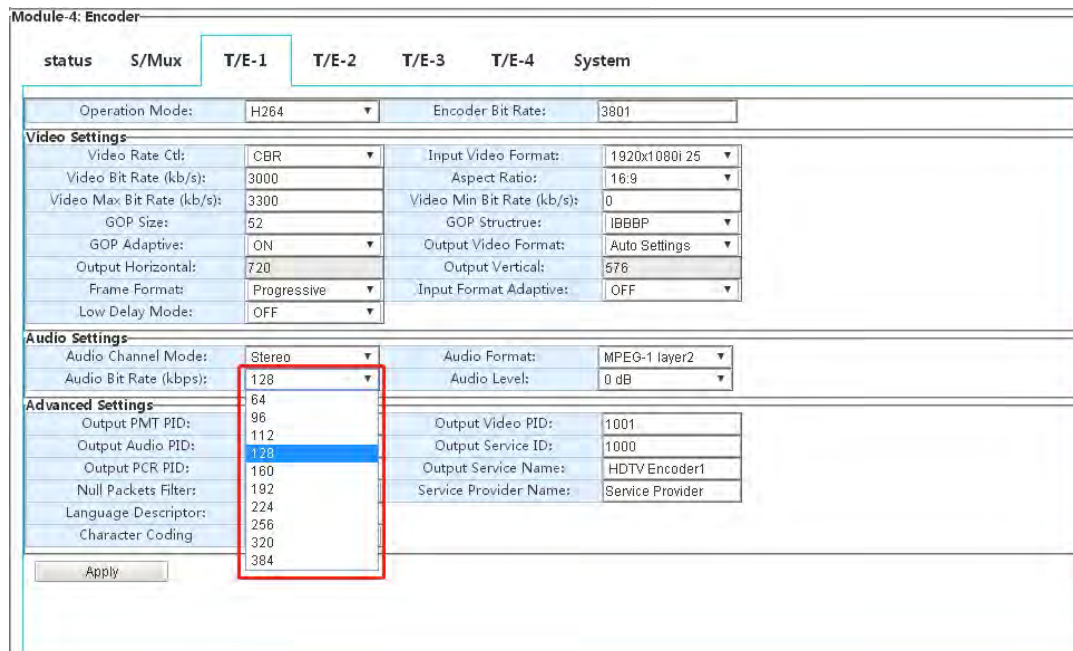
Step7: There are four options of Audio Settings.

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.



status	S/Mux	T/E-1	T/E-2	T/E-3	T/E-4	System
Operation Mode:		H264	Encoder Bit Rate:		3801	
Video Settings						
Video Rate Ctl:		CBR	Input Video Format:		1920x1080i 25	
Video Bit Rate (kb/s):		3000	Aspect Ratio:		16:9	
Video Max Bit Rate (kb/s):		3300	Video Min Bit Rate (kb/s):		0	
GOP Size:		52	GOP Structure:		IBBBP	
GOP Adaptive:		ON	Output Video Format:		Auto Settings	
Output Horizontal:		720	Output Vertical:		576	
Frame Format:		Progressive	Input Format Adaptive:		OFF	
Low Delay Mode:		OFF				
Audio Settings						
Audio Channel Mode:		Stereo	Audio Format:		MPEG-1 layer2	
Audio Bit Rate (kbps):		128	Audio Level:		0 dB	
Advanced Settings						
Output PMT PID:		128	Output Video PID:		1001	
Output Audio PID:		112	Output Service ID:		1000	
Output PCR PID:		160	Output Service Name:		HDTV Encoder1	
Null Packets Filter:		192	Service Provider Name:		Service Provider	
Language Descriptor:		224				
Character Coding:		256				
		320				
		384				
Apply						

Step8: 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.

Module-4: Encoder

status S/Mux **T/E-1** T/E-2 T/E-3 T/E-4 System

Operation Mode: H264 Encoder Bit Rate: 3801

Video Settings

Video Rate Ctl:	CBR	Input Video Format:	1920x1080i 25
Video Bit Rate (kb/s):	3000	Aspect Ratio:	16:9
Video Max Bit Rate (kb/s):	3300	Video Min Bit Rate (kb/s):	0
GOP Size:	52	GOP Structure:	IBBBP
GOP Adaptive:	ON	Output Video Format:	Auto Settings
Output Horizontal:	720	Output Vertical:	576
Frame Format:	Progressive	Input Format Adaptive:	OFF
Low Delay Mode:	OFF		

Audio Settings

Audio Channel Mode:	Stereo	Audio Format:	MPEG-1 layer2
Audio Bit Rate (kbps):	128	Audio Level:	0 dB

Advanced Settings

Output PMT PID:	1003	Output Video PID:	1001
Output Audio PID:	1002	Output Service ID:	1000
Output PCR PID:	8010	Output Service Name:	HDTV Encoder1
Null Packets Filter:	ON	Service Provider Name:	Service Provider
Language Descriptor:	OFF		
Character Coding:	UTF-8		

Apply

Transcoding function setup is a little different with encoding. User needs to select streams for transcoding first on the page Source/Enc Mux.

Module-4: Encoder

status **S/Mux** T/E-1 T/E-2 T/E-3 T/E-4 System

Program Sources: Module2 Module6 M/B NONE

isi tuner 1 Apply s2 tuner 1 Apply IPIN 1 Apply

Encoder Mux Settings

Encoder Mux Bit Rate(Kbps): 28000 Apply

Encoder-1 ☒ HDTV Encoder1

Encoder-2 ☒ HDTV Encoder2

Encoder-3 ☒ HDTV Encoder3

Encoder-4 ☒ HDTV Encoder4

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.

Module-4: Encoder

status S/Mux **T/E-1** T/E-2 T/E-3 T/E-4 System

Operation Mode: MPEG2 To H264 Encoder Bit Rate: 3801

Video Settings

Video Rate Ctrl: CBR Input Video Format: 1920x1080i 25
 Video Bit Rate (kb/s): 3000 Aspect Ratio: 16:9
 Video Max Bit Rate (kb/s): 3300 Video Min Bit Rate (kb/s): 0
 GOP Size: 52 GOP Structure: IBBBP
 GOP Adaptive: ON Output Video Format: Auto Settings
 Output Horizontal: 720 Output Vertical: 576
 Frame Format: Progressive Input Format Adaptive: OFF

Audio Settings

Audio Channel Mode: Stereo Audio Format: MPEG-1 layer2
 Audio Bit Rate (kbps): 128 Audio Level: 0 dB

Advanced Settings

Output PMT PID: 1003 Output Video PID: 1001
 Output Audio PID: 1002 Output Service ID: 1000
 Output PCR PID: 8010 Output Service Name: HDTV Encoder1
 Null Packets Filter: OFF Service Provider Name: Service Provider
 Character Coding: None

Transcoder Program

Program Source: transcoder-1 Source
 Input Program List: Not Selected Transcoder Audio PID: No Audio
 transcoder-1 Source
 transcoder-2 Source
 transcoder-3 Source
 transcoder-4 Source

Apply

3.2.12. P02EC (4 x SDI MPEG-2/H.264 Transcoder/Encoder Module)

This is a SDI encoder card of GX-5000. It supports 4 channels SDI 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.

Module-4: Encoder

status S/Mux T/E-1 T/E-2 T/E-3 T/E-4 System

Temperature

Temperature : 35.0 °C

Output Status

	Encoder-1	Encoder-2	Encoder-3	Encoder-4	Encoder Mux
Total Bitrate:	0.000000Mbps	0.000000Mbps	0.000000Mbps	0.000000Mbps	18.000000Mbps
Valid Bitrate:	0.000000Mbps	0.000000Mbps	0.000000Mbps	0.000000Mbps	0.101520Mbps
Service Name:	HDTV Encoder1	HDTV Encoder2	HDTV Encoder3	HDTV Encoder4	---

Video Input Format

	Video-1	Video-2	Video-3	Video-4
Input Format:	---	---	---	---

Alarm

	Encoder-1	Encoder-2	Encoder-3	Encoder-4	Encoder Mux
Encoder-1:	Input Missing	---	---	---	---
Encoder-2:	Input Missing	---	---	---	---
Encoder-3:	Input Missing	---	---	---	---
Encoder-4:	Input Missing	---	---	---	---
Encoder Mux:	---	---	---	---	---

Quick setup example:

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

Module-4: Encoder

status	S/Mux	T/E-1	T/E-2	T/E-3	T/E-4	System
Operation Mode:		H264	Encoder Bit Rate:		3800	
Video Settings						
Video Rate Ctl:		CBR	Input Video Format:		1920x1080i 25	
Video Bit Rate (kb/s):		3000	Aspect Ratio:		16:9	
Video Max Bit Rate (kb/s):		3300	Video Min Bit Rate (kb/s):		0	
GOP Size:		52	GOP Structrue:		IBBBP	
GOP Adaptive:		ON	Output Video Format:		Auto Settings	
Output Horizontal:		720	Output Vertical:		576	
Frame Format:		Progressive	Input Format Adaptive:		OFF	
SDI Source:		SDI1	Low Delay Mode:		OFF	
Audio Settings						
Audio Channel Mode:		Stereo	Audio Format:		MPEG-1 layer2	
Audio Bit Rate (kbps):		128	Audio Level:		0 dB	
Audio SDI EMB:		EMB1	Audio Matching Encoder:		Encoder-1	
Advanced Settings						
Output PMT PID:		1003	Output Video PID:		1001	
Output Audio PID:		1002	Output Service ID:		1000	
Output PCR PID:		8010	Output Service Name:		HDTV Encoder1	
Null Packets Filter:		OFF	Service Provider Name:		Service Provider	
Language Descriptor:						
Character Coding		None				
<input type="button" value="Apply"/>						

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 Max + Audio + Null packets.

Module-4: Encoder

status	S/Mux	T/E-1	T/E-2	T/E-3	T/E-4	System
Operation Mode:		H264	Encoder Bit Rate:		3800	
Video Settings						
Video Rate Ctl:		MPEG2	Input Video Format:		1920x1080i 25	
Video Bit Rate (kb/s):		MPEG2 To H264	Aspect Ratio:		16:9	
Video Max Bit Rate (kb/s):		H264 To H264	Video Min Bit Rate (kb/s):		0	
GOP Size:		H264 To MPEG2	GOP Structrue:		IBBBP	
GOP Adaptive:		MPEG2 To MPEG2	Output Video Format:		Auto Settings	
Output Horizontal:		720	Output Vertical:		576	
Frame Format:		Progressive	Input Format Adaptive:		OFF	
SDI Source:		SDI1	Low Delay Mode:		OFF	
Audio Settings						
Audio Channel Mode:		Stereo	Audio Format:		MPEG-1 layer2	
Audio Bit Rate (kbps):		128	Audio Level:		0 dB	
Audio SDI EMB:		EMB1	Audio Matching Encoder:		Encoder-1	
Advanced Settings						
Output PMT PID:		1003	Output Video PID:		1001	
Output Audio PID:		1002	Output Service ID:		1000	
Output PCR PID:		8010	Output Service Name:		HDTV Encoder1	
Null Packets Filter:		OFF	Service Provider Name:		Service Provider	
Language Descriptor:						
Character Coding		None				
<input type="button" value="Apply"/>						

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

Module-4: Encoder

status	S/Mux	T/E-1	T/E-2	T/E-3	T/E-4	System
Operation Mode:		H264	Encoder Bit Rate:		3800	
Video Settings						
Video Rate Ctrl:		CBR	Input Video Format:		1920x1080i 25	
Video Bit Rate (kb/s):		CBR	Aspect Ratio:		16:9	
Video Max Bit Rate (kb/s):		VBR	Video Min Bit Rate (kb/s):		0	
GOP Size:		52	GOP Structure:		IBBBP	
GOP Adaptive:		ON	Output Video Format:		Auto Settings	
Output Horizontal:		720	Output Vertical:		576	
Frame Format:		Progressive	Input Format Adaptive:		OFF	
SDI Source:		SDI1	Low Delay Mode:		OFF	
Audio Settings						
Audio Channel Mode:		Stereo	Audio Format:		MPEG-1 layer2	
Audio Bit Rate (kbps):		128	Audio Level:		0 dB	
Audio SDI EMB:		EMB1	Audio Matching Encoder:		Encoder-1	
Advanced Settings						
Output PMT PID:		1003	Output Video PID:		1001	
Output Audio PID:		1002	Output Service ID:		1000	
Output PCR PID:		8010	Output Service Name:		HDTV Encoder1	
Null Packets Filter:		OFF	Service Provider Name:		Service Provider	
Language Descriptor:						
Character Coding		None				
Apply						

Step4: user can setup video bit rate and video max bit rate. The difference between bit rate and Max bit rate is the jitter range for video encoding or transcoding. The suggested value is 300kbps. The Aspect Ratio will be 16:9 or 4:3.

Module-4: Encoder

status	S/Mux	T/E-1	T/E-2	T/E-3	T/E-4	System
Operation Mode:		H264	Encoder Bit Rate:		3800	
Video Settings						
Video Rate Ctrl:		CBR	Input Video Format:		1920x1080i 25	
Video Bit Rate (kb/s):		3000	Aspect Ratio:		16:9	
Video Max Bit Rate (kb/s):		3300	Video Min Bit Rate (kb/s):		0	
GOP Size:		52	GOP Structure:		IBBBP	
GOP Adaptive:		ON	Output Video Format:		Auto Settings	
Output Horizontal:		720	Output Vertical:		576	
Frame Format:		Progressive	Input Format Adaptive:		OFF	
SDI Source:		SDI1	Low Delay Mode:		OFF	
Audio Settings						
Audio Channel Mode:		Stereo	Audio Format:		MPEG-1 layer2	
Audio Bit Rate (kbps):		128	Audio Level:		0 dB	
Audio SDI EMB:		EMB1	Audio Matching Encoder:		Encoder-1	
Advanced Settings						
Output PMT PID:		1003	Output Video PID:		1001	
Output Audio PID:		1002	Output Service ID:		1000	
Output PCR PID:		8010	Output Service Name:		HDTV Encoder1	
Null Packets Filter:		OFF	Service Provider Name:		Service Provider	
Language Descriptor:						
Character Coding		None				
Apply						

Step5: GOP size option will be enabled while the GOP Adaptive option is OFF. GOP Structure will IBBP,

IPPP, IBP and IBBBP four options.

Module-4: Encoder

status	S/Mux	T/E-1	T/E-2	T/E-3	T/E-4	System
Operation Mode:		H264	Encoder Bit Rate:		3800	
Video Settings						
Video Rate Ctl:		CBR	Input Video Format:		720x480i 29.97	
Video Bit Rate (kb/s):		3000	Aspect Ratio:		16:9	
Video Max Bit Rate (kb/s):		3300	Video Min Bit Rate (kb/s):		0	
GOP Size:		52	GOP Structure:		IBBBP	
GOP Adaptive:		ON	Output Video Format:		Auto Settings	
Output Horizontal:		OFF	Output Vertical:		576	
Frame Format:		ON	Input Format Adaptive:		OFF	
SDI Source:		SDI1	Low Delay Mode:		OFF	
Audio Settings						
Audio Channel Mode:		Stereo	Audio Format:		MPEG-1 layer2	
Audio Bit Rate (kbps):		128	Audio Level:		0 dB	
Audio SDI EMB:		EMB1	Audio Matching Encoder:		Encoder-1	
Advanced Settings						
Output PMT PID:		1003	Output Video PID:		1001	
Output Audio PID:		1002	Output Service ID:		1000	
Output PCR PID:		8010	Output Service Name:		HDTV Encoder1	
Null Packets Filter:		OFF	Service Provider Name:		Service Provider	
Language Descriptor:						
Character Coding		None				
Apply						

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 two more options if the module card Operation Mode is encoding(option: H264 or MPEG2). One is SDI source selection. The user can select the same SDI source for the different encoder. Another is Low delay mode. The delay could be less than 1s if it is on.

Module-4: Encoder

status	S/Mux	T/E-1	T/E-2	T/E-3	T/E-4	System
Operation Mode:		H264	Encoder Bit Rate:		3800	
Video Settings						
Video Rate Ctl:		CBR	Input Video Format:		720x480i 29.97	
Video Bit Rate (kb/s):		3000	Aspect Ratio:		16:9	
Video Max Bit Rate (kb/s):		3300	Video Min Bit Rate (kb/s):		0	
GOP Size:		52	GOP Structure:		IBBBP	
GOP Adaptive:		ON	Output Video Format:		Auto Settings	
Output Horizontal:		720	Output Vertical:		Auto Settings	
Frame Format:		Progressive	Input Format Adaptive:		Manual Settings	
SDI Source:		SDI1	Low Delay Mode:		OFF	
Audio Settings						
Audio Channel Mode:		Stereo	Audio Format:		MPEG-1 layer2	
Audio Bit Rate (kbps):		128	Audio Level:		0 dB	
Audio SDI EMB:		EMB1	Audio Matching Encoder:		Encoder-1	
Advanced Settings						
Output PMT PID:		1003	Output Video PID:		1001	
Output Audio PID:		1002	Output Service ID:		1000	
Output PCR PID:		8010	Output Service Name:		HDTV Encoder1	
Null Packets Filter:		OFF	Service Provider Name:		Service Provider	
Language Descriptor:						
Character Coding		None				
Apply						

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.

Module-4: Encoder

status	S/Mux	T/E-1	T/E-2	T/E-3	T/E-4	System
Operation Mode:		H264	Encoder Bit Rate:		3800	
Video Settings						
Video Rate Ctl:		CBR	Input Video Format:		720x480i 29.97	
Video Bit Rate (kb/s):		3000	Aspect Ratio:		16:9	
Video Max Bit Rate (kb/s):		3300	Video Min Bit Rate (kb/s):		0	
GOP Size:		52	GOP Structure:		IBBBP	
GOP Adaptive:		ON	Output Video Format:		Auto Settings	
Output Horizontal:		720	Output Vertical:		576	
Frame Format:		Progressive	Input Format Adaptive:		OFF	
SDI Source:		SDI1	Low Delay Mode:		OFF	
Audio Settings						
Audio Channel Mode:		Stereo	Audio Format:		MPEG-1 layer2	
Audio Bit Rate (kbps):		128	Audio Level:		0 dB	
Audio SDI EMB:		64	Audio Matching Encoder:		Encoder-1	
		96				
		112				
Advanced Settings						
Output PMT PID:		128	Output Video PID:		1001	
Output Audio PID:		160	Output Service ID:		1000	
Output PCR PID:		192	Output Service Name:		HDTV Encoder1	
Null Packets Filter:		224	Service Provider Name:		Service Provider	
Language Descriptor:		256				
Character Coding:		320				
		384				
Apply						

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.

***Attention:** User has to select the remux TS in other modules, if the SDT is needed to be used.

Module-4: Encoder

status S/Mux **T/E-1** T/E-2 T/E-3 T/E-4 System

Operation Mode:	H264	Encoder Bit Rate:	3800
-----------------	------	-------------------	------

Video Settings

Video Rate Ctl:	CBR	Input Video Format:	720x480i 29.97
Video Bit Rate (kb/s):	3000	Aspect Ratio:	16:9
Video Max Bit Rate (kb/s):	3300	Video Min Bit Rate (kb/s):	0
GOP Size:	52	GOP Structure:	IBBBP
GOP Adaptive:	ON	Output Video Format:	Auto Settings
Output Horizontal:	720	Output Vertical:	576
Frame Format:	Progressive	Input Format Adaptive:	OFF
SDI Source:	SDI1	Low Delay Mode:	OFF

Audio Settings

Audio Channel Mode:	Stereo	Audio Format:	MPEG-1 layer2
Audio Bit Rate (kbps):	128	Audio Level:	0 dB
Audio SDI EMB:	EMB1	Audio Matching Encoder:	Encoder-1

Advanced Settings

Output PMT PID:	1003	Output Video PID:	1001
Output Audio PID:	1002	Output Service ID:	1000
Output PCR PID:	8010	Output Service Name:	HDTV Encoder1
Null Packets Filter:	OFF	Service Provider Name:	Service Provider
Language Descriptor:	OFF		
Character Coding:	ON		

Apply

Transcoding function setup is a little different with encoding. User needs to select streams for transcoding first on the page Source/Enc Mux.

Module-4: Encoder

status S/Mux **T/E-1** T/E-2 T/E-3 T/E-4 System

Program Source

Program Source:	Transcoder-1	Transcoder-2	Transcoder-3	Transcoder-4
	Module2 isi tuner 1 Apply	Module6 s2 tuner 1 Apply s2 tuner 2 s2 tuner 3 s2 tuner 4	M/B IPIN 1 Apply	M/B IPIN 1 Apply

Encoder Mux Settings

Encoder Mux Bit Rate(Kbps): 18000 Apply

Encoder-1 ☒ HDTV Encoder1

Encoder-2 ☒ HDTV Encoder2

Encoder-3 ☒ HDTV Encoder3

Encoder-4 ☒ HDTV Encoder4

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.

Module-4: Encoder

status S/Mux **T/E-1** T/E-2 T/E-3 T/E-4 System

Operation Mode:	MPEG2 To H264	Encoder Bit Rate:	3800
Video Settings			
Video Rate Ctl:	CBR	Input Video Format:	720x480i 29.97
Video Bit Rate (kb/s):	3000	Aspect Ratio:	16:9
Video Max Bit Rate (kb/s):	3300	Video Min Bit Rate (kb/s):	0
GOP Size:	52	GOP Structure:	IBBBP
GOP Adaptive:	ON	Output Video Format:	Auto Settings
Output Horizontal:	720	Output Vertical:	576
Frame Format:	Progressive	Input Format Adaptive:	OFF
Audio Settings			
Audio Channel Mode:	Stereo	Audio Format:	MPEG-1 layer2
Audio Bit Rate (kbps):	128	Audio Level:	0 dB
Advanced Settings			
Output PMT PID:	1003	Output Video PID:	1001
Output Audio PID:	1002	Output Service ID:	1000
Output PCR PID:	8010	Output Service Name:	HDTV Encoder1
Null Packets Filter:	OFF	Service Provider Name:	Service Provider
Character Coding:	None		
Transcoder Program			
Program Source:	transcoder-1 Sou		
Input Program List:	Not Selected	Transcoder Audio PID:	No Audio
	transcoder-1 Source		
	transcoder-2 Source		
	transcoder-3 Source		
	transcoder-4 Source		

Apply

3.2.13. P01AT (4 x H.265/AVS+/MPEG-2/H.264 HD/SD Transcoder Module)

This is a H.265/AVS+/MPEG-2/H.264 HD/SD transcoder card of GX-5000. It supports 4 channels independent transcoder. 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. Specially, there is a simple remux core on the card, user can use the remux to manage the streams after transcoding.

Module-5: Encoder

status S/Mux T-1 T-2 T-3 T-4 System

Temperature

Temperature: 39.0 °C

Output Status

	Transcoder-1	Transcoder-2	Transcoder-3	Transcoder-4	Transcoder Mux
Total Bitrate:	7.999712Mbps	6.000128Mbps	6.000160Mbps	6.000400Mbps	36.000000Mbps
Valid Bitrate:	7.359008Mbps	7.407552Mbps	7.386528Mbps	7.377744Mbps	31.339400Mbps
Service Name:	HDTV Encoder1	HDTV Encoder2	HDTV Encoder3	HDTV Encoder4	---

Video Input Format

	Video-1	Video-2	Video-3	Video-4
Input Format:	1920x1080i 25	1920x1080i 25	1920x1080i 25	1920x1080i 25

Alarm

	Transcoder-1	Transcoder-2	Transcoder-3	Transcoder-4	Transcoder Mux
Transcoder-1:	---				
Transcoder-2:		---			
Transcoder-3:			---		
Transcoder-4:				---	
Transcoder Mux:					---

Transcoder Status

Quick setup example:

Step1: select the channel 1~4 source/Enc Mux on Encoder page.

Module-5: Encoder

status S/Mux T-1 T-2 T-3 T-4 System

Program Source

Transcoder-1	Transcoder-2	Transcoder-3	Transcoder-4
Module3	Module2	M/B	M/B
ci 1	s2 tuner 4	IPIN 1	IPIN 2

Encoder Mux Settings

Encoder Mux Bit Rate (Mbps): 38000 Apply

To select channel and Audio on transcoder page, and could select the audio source from Transcoder 1~4.

Module-5: Encoder

status S/Mux T-1 T-2 T-3 T-4 System

Video Settings

Video Rate Ctl: CBR	Input Video Format: 720x480i 29.97
Video Bit Rate (kb/s): 3000	Aspect Ratio: Auto
Video Max Bit Rate (kb/s): 3300	Video Min Bit Rate (kb/s): 0
GOP Size: 52	GOP Structure: IBBP
GOP Adaptive: ON	Output Video Format: Auto Settings
Output Horizontal: 720	Output Vertical: 576
Frame Format: Progressive	

Audio Settings

Audio Channel Mode: Stereo	Audio Format: MPEG-1 layer2
Audio Bit Rate (kbps): 128	Audio Level: 0 dB

Advanced Settings

Output PMT PID: 2003	Output Video PID: 2001
Output Audio PID: 2002	Output Service ID: 2000
Output PCR PID: 8020	Output Service Name: HDTV Encoder2
Null Packets Filter: ON	Service Provider Name: Service Provider
Language Descriptor:	
Character Coding: None	

Transcoder Program

Program Source: transcoder-2 Sou	Transcoder Audio PID: No Audio
Input Program List: Not Selected	AC3 Input Audio PID: No AC3 Audio
AC3 Pass Through: transcoder-1 Source	AC3 Delay Time: 1500
AC3 Output Audio PID: transcoder-2 Source	
transcoder-3 Source	
transcoder-4 Source	

Apply

Step2: configure the card operation mode, H.265/AVS+/MPEG-2/H.264 To H.264/MPEG-2 HD/SD transcoding. Encoder Bit Rate is for encoding output bit rate, Video Max + Audio + Null packets.

Module 5: Encoder

status S/Mux **T-1** T-2 T-3 T-4 System

Operation Mode:	H264	Encoder Bit Rate:	3800
Video Settings			
Video Rate Ctl:	MPEG2	Input Video Format:	720x480i 29.97
Video Bit Rate (kb/s):	3000	Aspect Ratio:	Auto
Video Max Bit Rate (kb/s):	3300	Video Min Bit Rate (kb/s):	0
GOP Size:	52	GOP Structure:	IBBP
GOP Adaptive:	ON	Output Video Format:	Auto Settings
Output Horizontal:	720	Output Vertical:	576
Frame Format:	Progressive		
Audio Settings			
Audio Channel Mode:	Stereo	Audio Format:	MPEG-1 layer2
Audio Bit Rate (kbps):	128	Audio Level:	0 dB
Advanced Settings			
Output PMT PID:	1003	Output Video PID:	1001
Output Audio PID:	1002	Output Service ID:	1000
Output PCR PID:	8010	Output Service Name:	HDTV Encoder1
Null Packets Filter:	OFF	Service Provider Name:	Service Provider
Language Descriptor:			
Character Coding:	None		
Transcoder Program			
Program Source:	transcoder-1 Sou		
Input Program List:	No Program	Transcoder Audio PID:	No Audio
AC3 Pass Through:	OFF	AC3 Input Audio PID:	No AC3 Audio
AC3 Output Audio PID:	1004	AC3 Delay Time:	1500

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

Module 5: Encoder

status S/Mux **T-1** T-2 T-3 T-4 System

Operation Mode:	H264	Encoder Bit Rate:	3800
Video Settings			
Video Rate Ctl:	CBR	Input Video Format:	720x480i 29.97
Video Bit Rate (kb/s):	CBR	Aspect Ratio:	Auto
Video Max Bit Rate (kb/s):	VBR	Video Min Bit Rate (kb/s):	0
GOP Size:	52	GOP Structure:	IBBP
GOP Adaptive:	ON	Output Video Format:	Auto Settings
Output Horizontal:	720	Output Vertical:	576
Frame Format:	Progressive		
Audio Settings			
Audio Channel Mode:	Stereo	Audio Format:	MPEG-1 layer2
Audio Bit Rate (kbps):	128	Audio Level:	0 dB
Advanced Settings			
Output PMT PID:	1003	Output Video PID:	1001
Output Audio PID:	1002	Output Service ID:	1000
Output PCR PID:	8010	Output Service Name:	HDTV Encoder1
Null Packets Filter:	OFF	Service Provider Name:	Service Provider
Language Descriptor:			
Character Coding:	None		
Transcoder Program			
Program Source:	transcoder-1 Sou		
Input Program List:	No Program	Transcoder Audio PID:	No Audio
AC3 Pass Through:	OFF	AC3 Input Audio PID:	No AC3 Audio
AC3 Output Audio PID:	1004	AC3 Delay Time:	1500

Step4: user can setup video bit rate and video max bit rate. The difference between bit rate and Max bit rate is the jitter range for video transcoding. The suggested value is 300kbps. The Aspect Ratio will be 16:9 or 4:3.

Module-5: Encoder

status S/Mux **T-1** T-2 T-3 T-4 System

Operation Mode: H264 Encoder Bit Rate: 3800

Video Settings

Video Rate Ctrl: CBR Input Video Format: 720x480i 29.97
 Video Bit Rate (kb/s): 3000 Aspect Ratio: 16:9 Pillarbox
 Video Max Bit Rate (kb/s): 3300 Video Min Bit Rate (kb/s): 0
 GOP Size: 52 GOP Structure: IBBP
 GOP Adaptive: ON Output Video Format: Auto Settings
 Output Horizontal: 720 Output Vertical: 576
 Frame Format: Progressive

Audio Settings

Audio Channel Mode: Stereo Audio Format: MPEG-1 layer2
 Audio Bit Rate (kbps): 128 Audio Level: 0 dB

Advanced Settings

Output PMT PID: 1003 Output Video PID: 1001
 Output Audio PID: 1002 Output Service ID: 1000
 Output PCR PID: 8010 Output Service Name: HDTV Encoder1
 Null Packets Filter: OFF Service Provider Name: Service Provider
 Language Descriptor:
 Character Coding: None

Transcoder Program

Program Source: transcoder-1 Sou
 Input Program List: No Program Transcoder Audio PID: No Audio
 AC3 Pass Through: OFF AC3 Input Audio PID: No AC3 Audio
 AC3 Output Audio PID: 1004 AC3 Delay Time: 1500

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

Module-5: Encoder

status S/Mux **T-1** T-2 T-3 T-4 System

Operation Mode: H264 Encoder Bit Rate: 3800

Video Settings

Video Rate Ctrl: CBR Input Video Format: 720x480i 29.97
 Video Bit Rate (kb/s): 3000 Aspect Ratio: 16:9 Pillarbox
 Video Max Bit Rate (kb/s): 3300 Video Min Bit Rate (kb/s): 0
 GOP Size: 52 GOP Structure: IBBP
 GOP Adaptive: ON Output Video Format: Auto Settings
 Output Horizontal: OFF Output Vertical: 576
 Frame Format: ON

Audio Settings

Audio Channel Mode: Stereo Audio Format: MPEG-1 layer2
 Audio Bit Rate (kbps): 128 Audio Level: 0 dB

Advanced Settings

Output PMT PID: 1003 Output Video PID: 1001
 Output Audio PID: 1002 Output Service ID: 1000
 Output PCR PID: 8010 Output Service Name: HDTV Encoder1
 Null Packets Filter: OFF Service Provider Name: Service Provider
 Language Descriptor:
 Character Coding: None

Transcoder Program

Program Source: transcoder-1 Sou
 Input Program List: No Program Transcoder Audio PID: No Audio
 AC3 Pass Through: OFF AC3 Input Audio PID: No AC3 Audio
 AC3 Output Audio PID: 1004 AC3 Delay Time: 1500

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.

Module-5: Encoder

status S/Mux **T-1** T-2 T-3 T-4 System

Operation Mode:	H264	Encoder Bit Rate:	3800
Video Settings			
Video Rate Ctrl:	CBR	Input Video Format:	720x480i 29.97
Video Bit Rate (kb/s):	3000	Aspect Ratio:	16:9 Pillarbox
Video Max Bit Rate (kb/s):	3300	Video Min Bit Rate (kb/s):	0
GOP Size:	52	GOP Structure:	IBBP
GOP Adaptive:	ON	Output Video Format:	Auto Settings
Output Horizontal:	720	Output Vertical:	Auto Settings
Frame Format:	Progressive		Manual Settings
Audio Settings			
Audio Channel Mode:	Stereo	Audio Format:	MPEG-1 layer2
Audio Bit Rate (kbps):	128	Audio Level:	0 dB
Advanced Settings			
Output PMT PID:	1003	Output Video PID:	1001
Output Audio PID:	1002	Output Service ID:	1000
Output PCR PID:	8010	Output Service Name:	HDTV Encoder1
Null Packets Filter:	OFF	Service Provider Name:	Service Provider
Language Descriptor:			
Character Coding:	None		
Transcoder Program			
Program Source:	transcoder-1 Sou		
Input Program List:	No Program	Transcoder Audio PID:	No Audio
AC3 Pass Through:	OFF	AC3 Input Audio PID:	No AC3 Audio
AC3 Output Audio PID:	1004	AC3 Delay Time:	1500

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.

Module-5: Encoder

status S/Mux T-1 T-2 T-3 T-4 System

Operation Mode: H264 Encoder Bit Rate: 3800

Video Settings

Video Rate Ctl: CBR Input Video Format: 720x480i 29.97

Video Bit Rate (kb/s): 3000 Aspect Ratio: Auto

Video Max Bit Rate (kb/s): 3300 Video Min Bit Rate (kb/s): 0

GOP Size: 52 GOP Structure: IBBP

GOP Adaptive: ON Output Video Format: Auto Settings

Output Horizontal: 720 Output Vertical: 576

Frame Format: Progressive

Audio Settings

Audio Channel Mode: Stereo Audio Format: MPEG-1 layer2

Audio Bit Rate (kbps): 128 Audio Level: 0 dB

Advanced Settings

Output PMT PID: 96 Output Video PID: 2001

Output Audio PID: 112 Output Service ID: 2000

Output PCR PID: 128 Output Service Name: HDTV Encoder2

Null Packets Filter: 160 Service Provider Name: Service Provider

Language Descriptor: 192

Character Coding: 224

320

384

Transcoder Program

Program Source: transcoder-2 Sou

Input Program List: No Program Transcoder Audio PID: No Audio

AC3 Pass Through: OFF AC3 Input Audio PID: No AC3 Audio

AC3 Output Audio PID: 2004 AC3 Delay Time: 1500

Step8: 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.

***Attention:** User has to select the remux TS in other modules, if the SDT is needed to be used.

Module-5: Encoder

status S/Mux T-1 T-2 T-3 T-4 System

Operation Mode: H264 Encoder Bit Rate: 3800

Video Settings

Video Rate Ctl: CBR Input Video Format: 720x480i 29.97

Video Bit Rate (kb/s): 3000 Aspect Ratio: Auto

Video Max Bit Rate (kb/s): 3300 Video Min Bit Rate (kb/s): 0

GOP Size: 52 GOP Structure: IBBP

GOP Adaptive: ON Output Video Format: Auto Settings

Output Horizontal: 720 Output Vertical: 576

Frame Format: Progressive

Audio Settings

Audio Channel Mode: Stereo Audio Format: MPEG-1 layer2

Audio Bit Rate (kbps): 128 Audio Level: 0 dB

Advanced Settings

Output PMT PID: 2003 Output Video PID: 2001

Output Audio PID: 2002 Output Service ID: 2000

Output PCR PID: 8020 Output Service Name: HDTV Encoder2

Null Packets Filter: ON Service Provider Name: Service Provider

Language Descriptor: OFF

Character Coding: ON

Transcoder Program

Program Source: transcoder-2 Sou

Input Program List: No Program Transcoder Audio PID: No Audio

AC3 Pass Through: OFF AC3 Input Audio PID: No AC3 Audio

AC3 Output Audio PID: 2004 AC3 Delay Time: 1500

Step9: When configured, click "Apply".

Module 5: Encoder

status S/Mux **T-1** T-2 T-3 T-4 System

Video Settings			
Video Rate Ctl:	CBR	Input Video Format:	720x480i 29.97
Video Bit Rate (kb/s):	3000	Aspect Ratio:	Auto
Video Max Bit Rate (kb/s):	3300	Video Min Bit Rate (kb/s):	0
GOP Size:	52	GOP Structure:	IBBP
GOP Adaptive:	ON	Output Video Format:	Auto Settings
Output Horizontal:	720	Output Vertical:	576
Frame Format:	Progressive		

Audio Settings			
Audio Channel Mode:	Stereo	Audio Format:	MPEG-1 layer2
Audio Bit Rate (kbps):	128	Audio Level:	0 dB

Advanced Settings			
Output PMT PID:	1003	Output Video PID:	1001
Output Audio PID:	1002	Output Service ID:	1000
Output PCR PID:	8010	Output Service Name:	HDTV Encoder1
Null Packets Filter:	OFF	Service Provider Name:	Service Provider
Language Descriptor:			
Character Coding:	None		

Transcoder Program			
Program Source:	transcoder-1 Sou		
Input Program List:	No Program	Transcoder Audio PID:	No Audio
AC3 Pass Through:	OFF	AC3 Input Audio PID:	No AC3 Audio
AC3 Output Audio PID:	1004	AC3 Delay Times:	1500

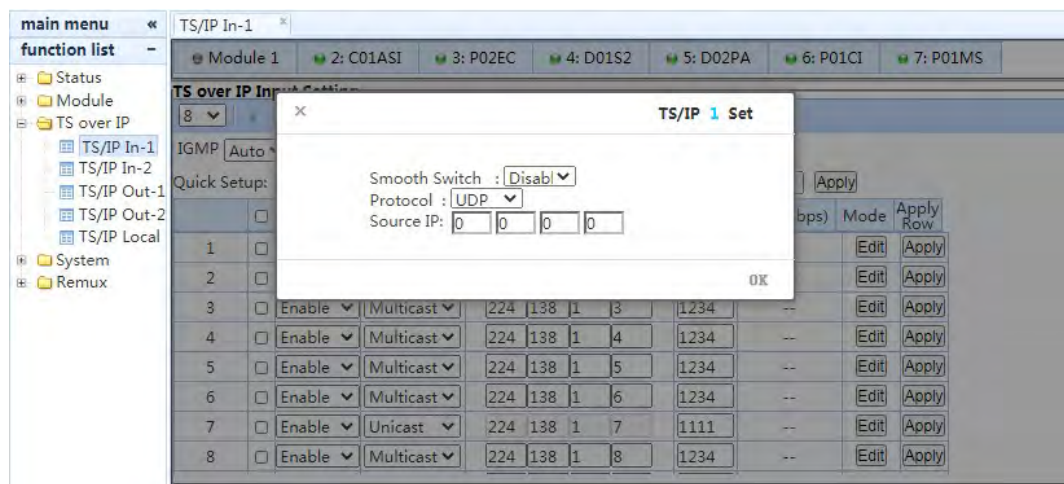
Apply

3.3. 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 the same time.

3.3.1. TS/IP In

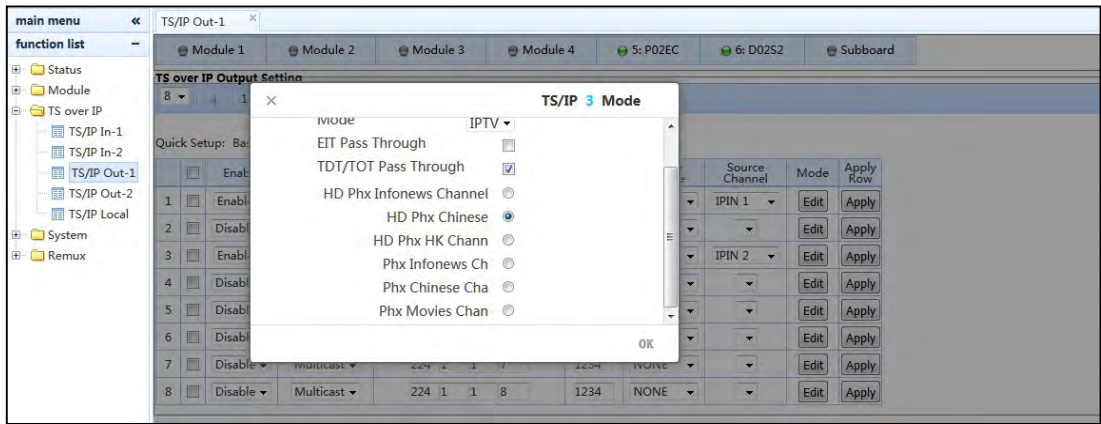
There are two pages include the same settings for two TS/IP ports. There are 128 input channels can be configured in each page. The input bit rate can up to 920Mbps.



Menu Name	Options
IGMP	IGMP option
Based on index	Quick setup value based on which 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 the target IP address
Target Port	Input the target port number
Edit	The input source protocol selection. Setup the source IP of input TS, if the user want to enable the source filter function, 0.0.0.0 means disable.
Apply Row	Apply row settings
Apply Checked	Enable selected channels
Apply All	Enable all channels

3.3.2. TS/IP Out

There are two pages include the same settings for two TS/IP ports. There are 256 output channels can be configured in each page. The output bit rate can up to 920Mbps.



Menu Name	Options
Apply Checked	Enable selected channels
Apply All	Enable all channels
Enable	Enable or disable single IP output stream
Uni/Multicast	IP output by Unicast or Multicast option
Target IP	Output the target IP address
Target Port	Output the target port number
Source Module	Source module selection
Source Channel	Source channel selection
Mode Edit	The output TS/IP protocol selection. The output TS/IP mode selection. DVB means MPTS via DVB protocol. IPTV means SPTS which only can be used in IPTV system.
Apply Row	Apply row settings

3.3.3. TS/IP Local

This menu is to setup TS over IP ports physical IP address, Network mask and Gateway IP address. The user also can check the input and output TS bit rate of two ports, but it only display the uni/multicast bit rate via the physical port, no means the actual bit rate for input or output TS of chassis.

3.3.4. TS/IP Backup

TS/IP IN Backup

TS/IP IN backup supports port backup and channel backup; For port backup, TS/IP IN-1 as main port, TS/IP In-2 as spare port; For channel backup, 1~64 channel IP input as main source, 65~128 channel IP input as spare source.

TS/IP IN Backup Mode Switch Menu as below:

Menu Name	Options
TS/IP IN Mode	Gigabit Input Mode
Bypass	Bypass
Port Backup	Port Backup
Channel Backup	Channel Backup
Backup Switch Time (*10ms)	Backup Switch Time

TS/IP OUT Backup

TS/IP Out backup only supports mirror mode, TS/IP Out-1 as main, TS/IP Out-2 as spare. Only need to

click “Mirroring” menu in the TS/IP Out-2 page for setting the TS/IP out backup, as shown below:

The screenshot shows the ANTIK Digital Headend System interface. On the left is a 'main menu' with a 'function list' including Status, Module, TS over IP, System, and Remux. The 'TS over IP' section is expanded, showing 'TS/IP In-1', 'TS/IP In-2', 'TS/IP Out-1', 'TS/IP Out-2', and 'TS/IP Local'. The 'TS/IP Out-2' page is active, displaying a 'TS over IP Output Setting' window. This window has a top bar with '1: P01EC', 'Module 2', '3: P01EC', '4: P01AT', '5: P02EC', '6: D01S2', and 'Subboard'. Below this is a 'Quick Setup' section with fields for 'Based on index' (0), 'Quantity' (0), 'Increase' (address), and an 'Apply' button. The main table lists output settings for modules 257 through 264. The 'Mirroring' button is highlighted in the top navigation bar.

	Enable	Uni/Multicast	Target IP	Target Port	Source Module	Source Channel	Mode	Apply Row
257	Disable	Multicast	224 2 2 1	1234	NONE		Edit	Apply
258	Disable	Multicast	224 2 2 2	1234	NONE		Edit	Apply
259	Disable	Multicast	224 2 2 3	1234	NONE		Edit	Apply
260	Disable	Multicast	224 2 2 4	1234	NONE		Edit	Apply
261	Disable	Multicast	224 2 2 5	1234	NONE		Edit	Apply
262	Disable	Multicast	224 2 2 6	1234	NONE		Edit	Apply
263	Disable	Multicast	224 2 2 7	1234	NONE		Edit	Apply
264	Disable	Multicast	224 2 2 8	1234	NONE		Edit	Apply

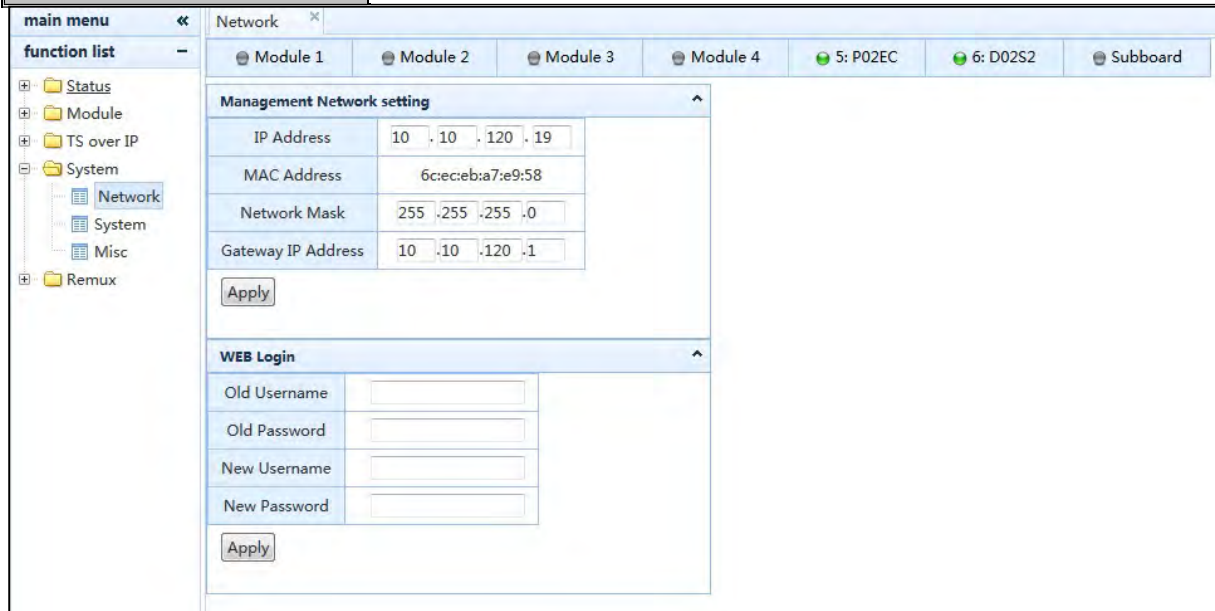
3.4. System

The System page is for configuring the Network, Device, Web login and Upgrade, etc.

3.4.1. Network

This page includes some network settings.

Menu Name	Options
IP Address	Management IP address
MAC Address	MAC address of Ethernet
Network Mask	Subnet mask of management
Gateway IP Address	Gateway of management
Old Username	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 Username	Web browser new login user name input
New Password	Web browser new password input



3.4.2. System

This page includes the version information and some system settings.

Menu Name	Options
Version	Main chassis firmware versions
Reboot Module	Sub-module reboot options, user can specific module to reboot independently
Default Parameter	The factory default settings option
Reboot	Soft reboot option
Upgrade	Main chassis upgrade option

main menu

function list

- Status
- Module
- TS over IP
 - TS/IP In-1
 - TS/IP In-2
 - TS/IP Out-1
 - TS/IP Out-2
 - TS/IP Local
- System
 - Network
 - System
 - Misc
- Remux

System

Module 1 2: C01ASI 3: P02EC 4: D01S2 5: D02PA 6: P01CI 7: P01MS

Version

Kernel Version: 0006 Main Version: 3214b

APP Version: 312c FPGA Version: 4036

Firm Version: 000a WEB Version: 302e

Serial Number SD2020PBI3001

Reboot Module

==Please select== Reboot Module

Module-1 Switch USB_RS232

Upgrade

0%

Please select a file: 选择文件 未选择任何文件 File Upload

Reboot/Default

Default Parameter

Reboot

Buzzer Switch: Disable Apply

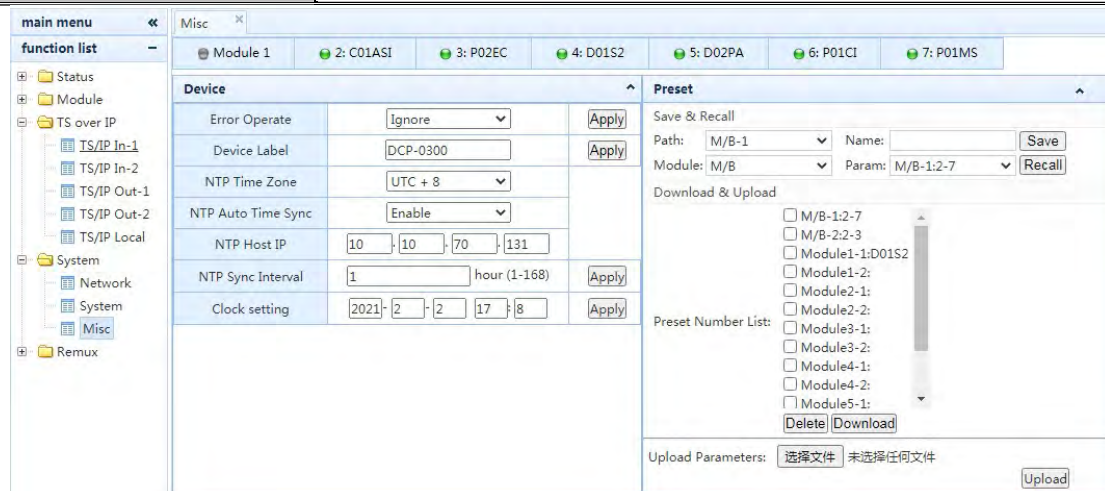
Trap IP Setup

Index	Trap IP Address	Trap Port	Trap Version	Trap Enable
Trap#1	0 . 0 . 0 . 0	162	snmpv1-trap	Disable apply

3.4.3. Misc

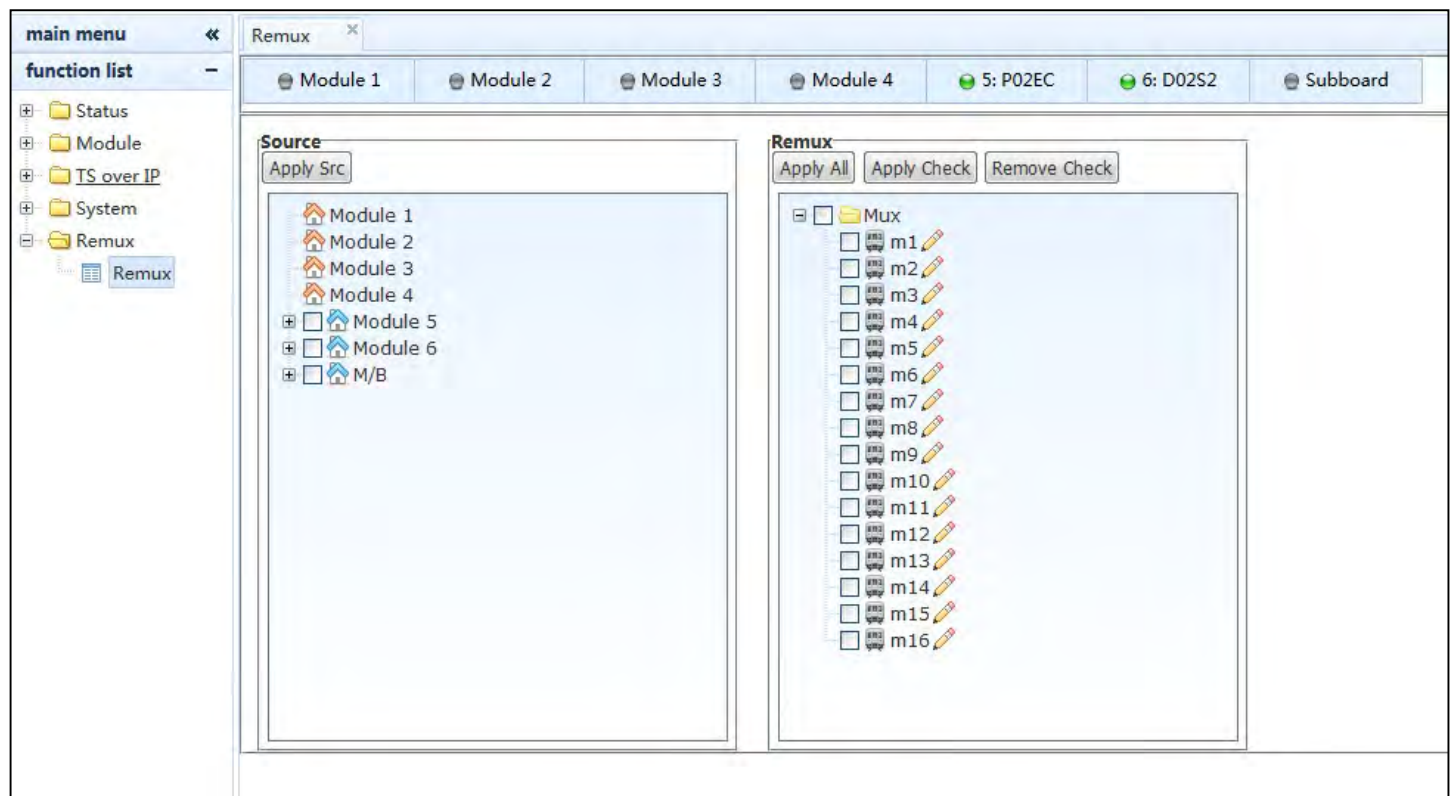
This page includes some different settings. Such as, Error Operate, NTP, Save/Load and Upgrade, etc.

Error Operate	Watchdog setup option
Device label	Device label setup option, the remark of the chassis
NTP Time Zone	The time zone of the chassis location selection
NTP Auto Time Sync	Disable or Enable the NTP sync
NTP Host IP	The IP address of NTP host
NTP Sync Interval	The sync interval between chassis and NTP host, 1 to 168 hours
Clock setting	The clock of chassis option
Preset	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



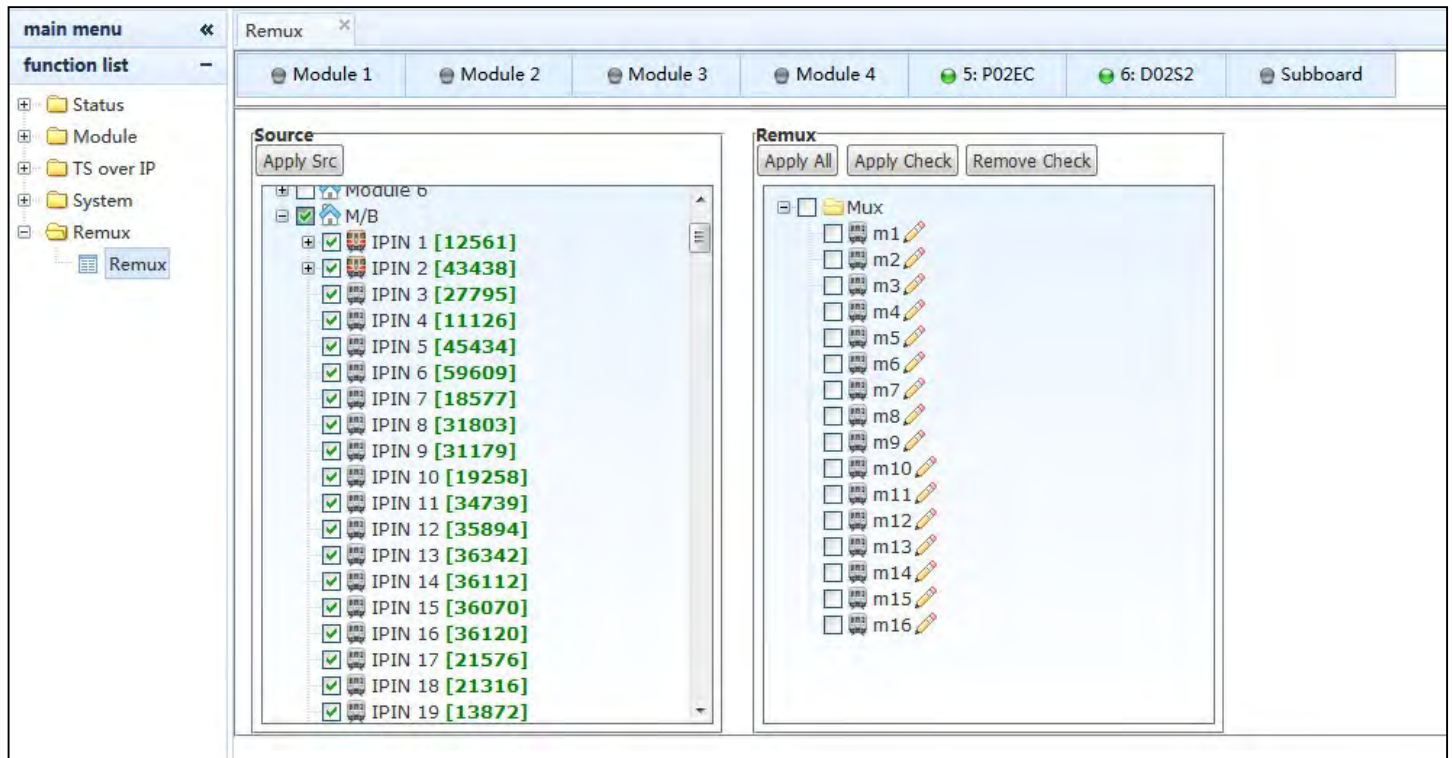
3.5. Remux

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 user to setup. These 16 channels can be used as TS over IP source and input source for CI, modulator, etc.

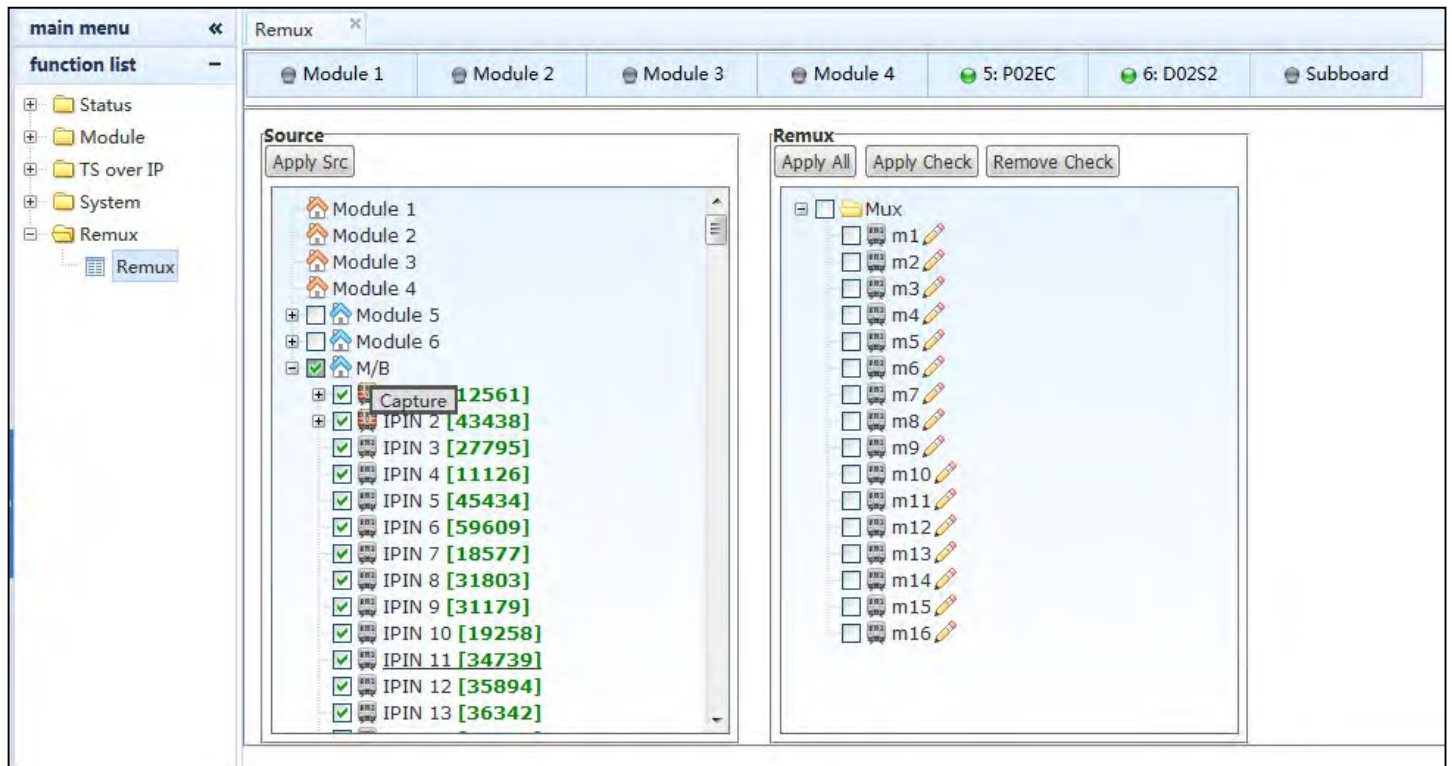


Quick setup example:

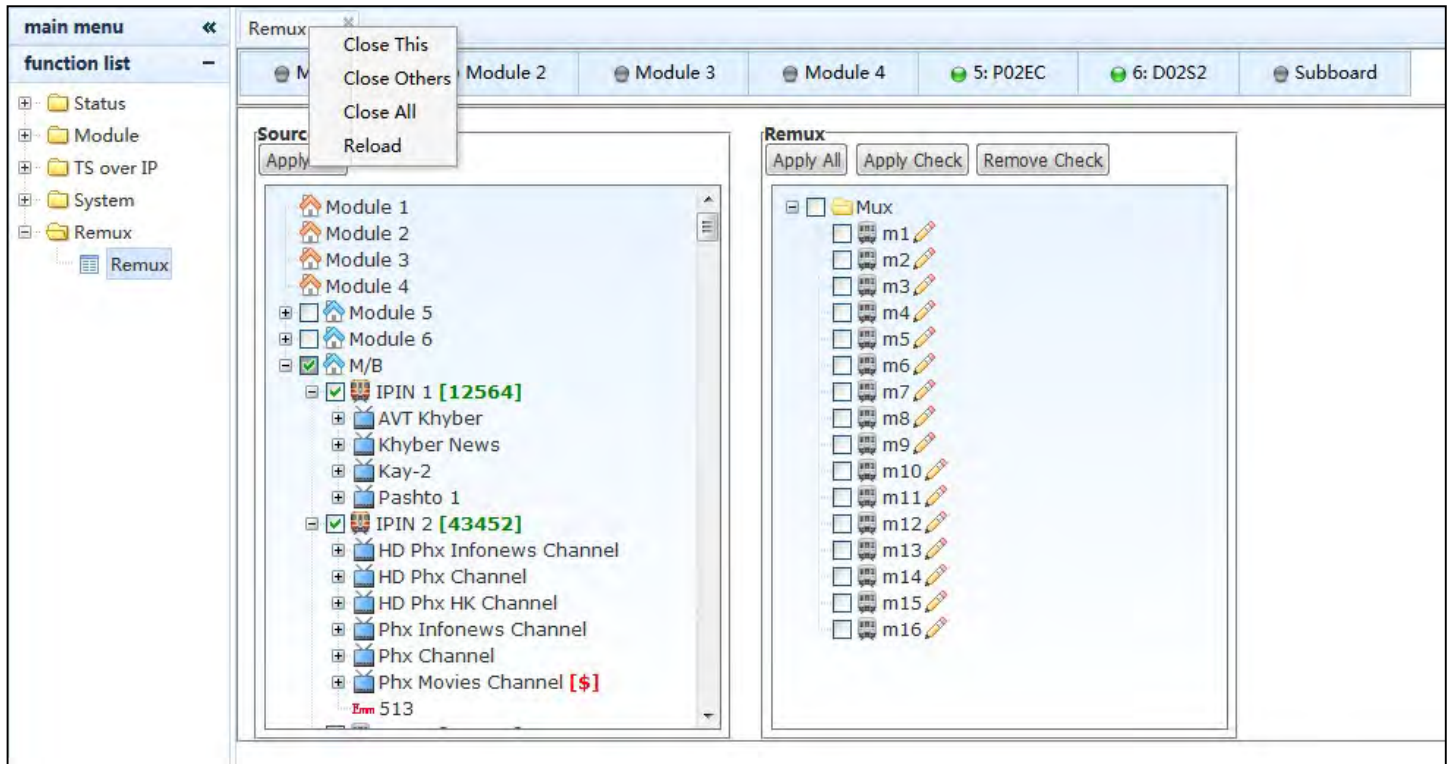
Step 1: select sources will be used as remux source, click Apply Src to sync sources before doing remux. The user can find the green bit rate(Kbps) of each source, if the source settings is successful, as it shown in figure below.



Step 2: move the mouse cursor to the modules and click right button of mouse, 'Capture' button will show up.

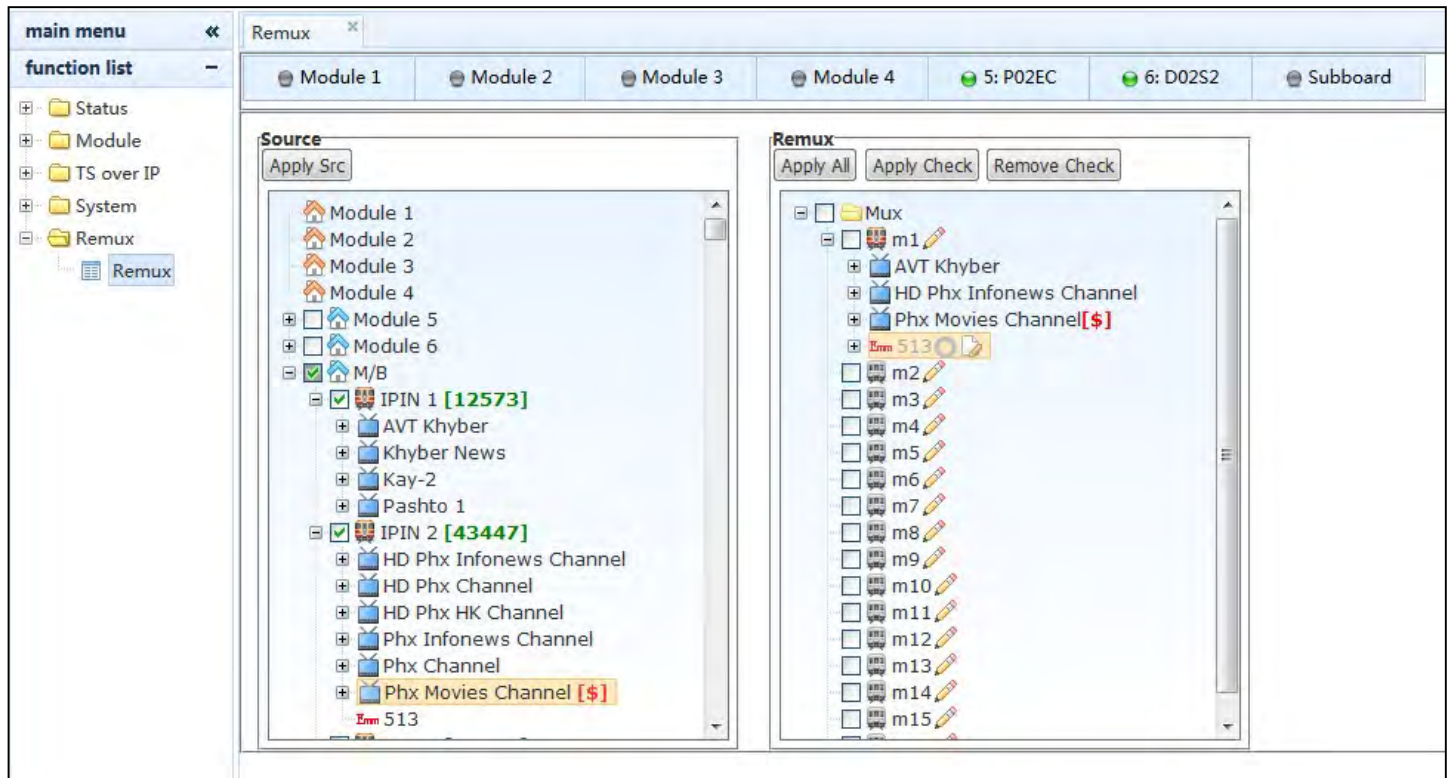


Step 3: click the Capture button and wait for the page refresh automatically. If there is no program list under the channel. The user have to reload the data of page. Move the mouse cursor to the sheet of 'Remux' and click the right button of mouse, 'Reload' button will show up, click it and wait, as it shown in figure below.

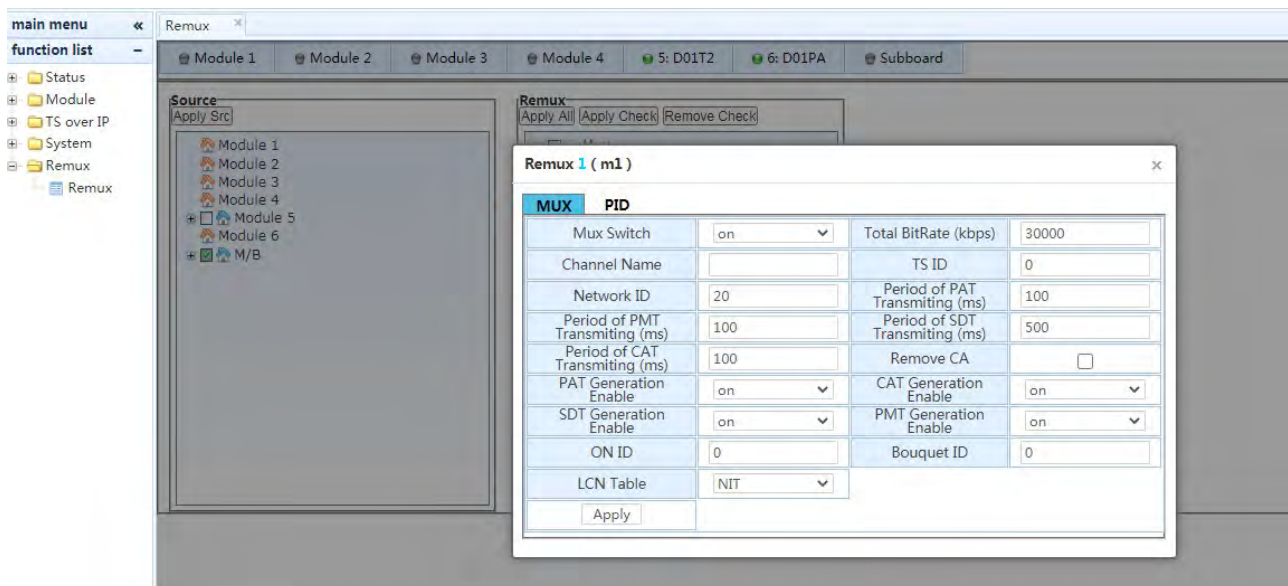


Step 4: move mouse to program which will be used for remux and drag it to one of the 16 remux channel, select the check box of remux channel, and then click the 'Apply Check', as it shown in figure below.

***Attention:** The EMM PID can be filtered when the user click the green cycle. Also, it can be modified.

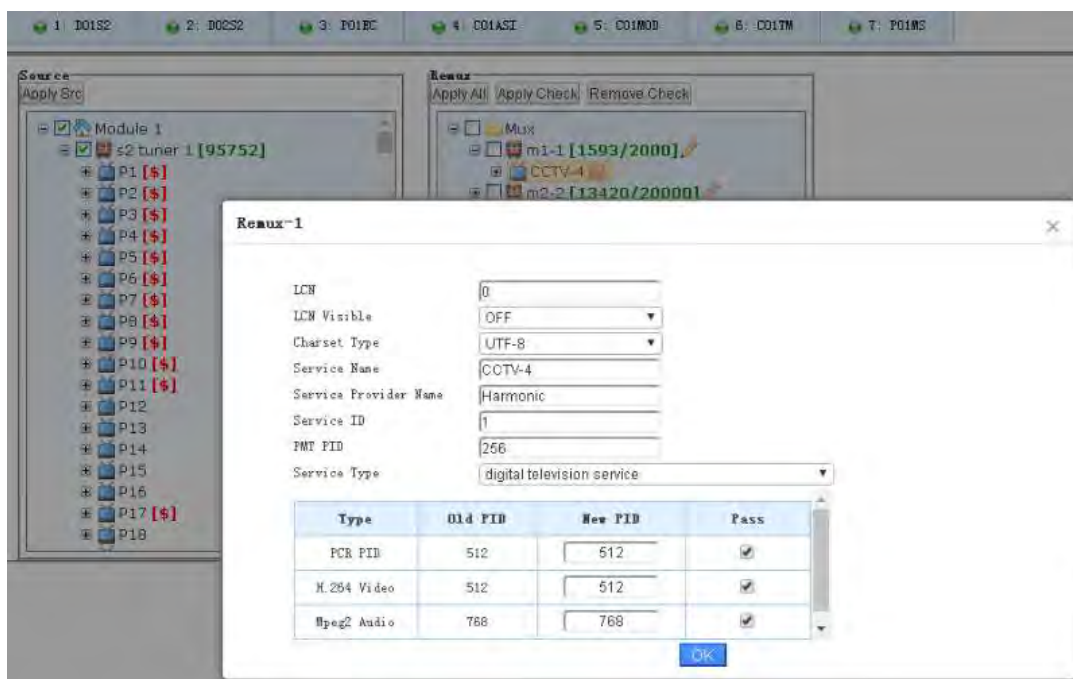


Step 5: click the 'pencil' icon of m1 to setup remux channel.



Menu Name	Options
Mux Switch	Switch of this remux channel
Remove CA	There will be no CAT, EMM and ECM in this remux output TS, if the check box is checked
Total Bitrate	The total bit rate of remux output TS
Channel Name	The name label of this remux channel, only display in the Web GUI
TS ID	TS ID of this remux output TS
Network ID	Network ID of this remux output TS which is belong to NIT

Step 6: move mouse to program of remux and click right button of mouse to edit program. Click the OK button after the settings.



Menu Name	Options
LCN	Local Channel Number of NIT
LCN Visible	LCN visible selection
Charset Type	The characters encode protocol selection of SDT
Service Name	Input the service name
Service Provider Name	Input the service provider name
Service ID	Input the service ID
PMT PID	Input the PMT PID

Service Type	Service Type selection
PID list	Display the PID Type Old PID, the original PID of input TS New PID, the PID of remux output TS Pass, the PID will be filtered, if the check box do not be checked

Step 7: the last step is to enable remux settings by click ‘Apply All’ or ‘Apply Check’ button.