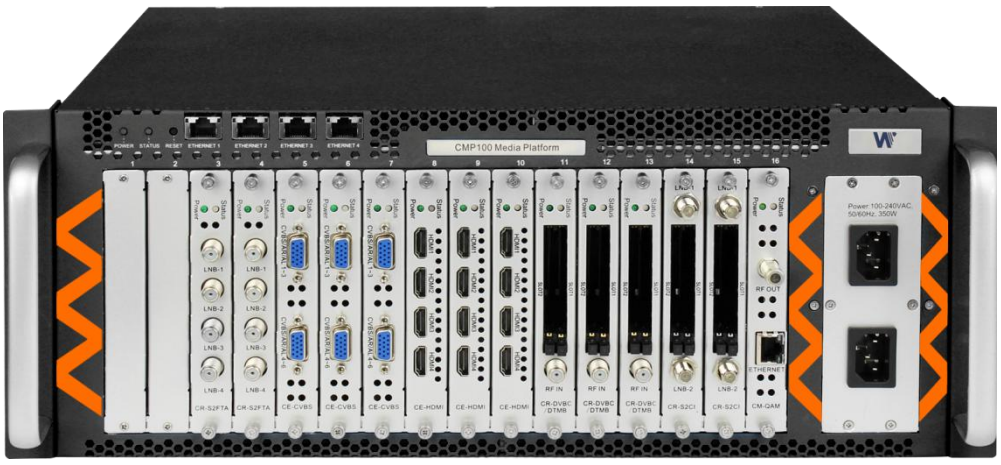
CMP100

Common Media Platform

User Guide



V1.2-W

Revision History

Date	Version	Description	Author
24/8/2017	1.0	First Version	ZM
06/06/2018	1.1	Add new modules, new features and adjust management page	ZM
15/11/2018	1.2	Modify the product picture	DA

This guide contains some symbols to call your attention.

 DANGER	The DANGER symbol calls your attention to a situation that, if ignored, may cause physical harm to the user.
 CAUTION	The CAUTION symbol calls your attention to a situation that, if ignored, may cause damage to Our product.
 NOTE	The NOTE symbol calls your attention to important information.
 TIP	The TIP symbol calls your attention to additional information that, if followed, can make procedures more efficient.
 Red Arrow	The Red Arrow symbols point to import details mention the context above or below an image.
 Blue Arrow	The Blue Arrow symbol indicates the motion path of an item in an operation step.
 Thick Arrow	The thick Arrow symbol calls your attention to a serial of operation steps mentioned in the context.

This guide also contains the following text conventions.

Bold Italic	The bold Italic text indicates a button to click, an item in the drop-down menu to select, or a certain item in the UI.

Safety Instructions

- Read these instructions
- Keep these instructions
- Follow all instructions
- Heed all warnings
- Do not use this unit near water.
- Only use a damp cloth to clean chassis
- Do not install near any heat sources such as radiators, heat registers, stoves, or other apparatus (including amplifiers) that produce heat
- Do not block any ventilation openings. Install in accordance with the manufacturer's instructions
- This unit is grounded through the power cord grounding conductor. To avoid electrocution,do not remove the power cord before the outlet is switched off or unplugged. If the plug does not fit into your outlet, consult an electrician for replacement of the outlet.
- Route power cords and other cables so that they are not likely to be damaged.
- Only use attachments/accessories specified by the manufacturer.
- Do not wear hand jewelry or watch when troubleshooting high current circuits.
- Do not work on the system during periods of lightning.
- Refer all servicing to qualified service personnel. Servicing is required when this unit has been damaged in any way.
- **Damage Requiring Service**: Unplug this product from the wall outlet and refer servicing to qualified service personnel under the following conditions:
    - When the power-supply cord or plug is damaged.
    - If liquid has been spilled, or objects have fallen into the product.
    - If the product has been exposed to rain or water.
    - If the product does not operate normally by following the operating instructions. Adjust only those controls that are covered by the operating instructions as an improper adjustment of the controls may result in damage and will often require extensive work by a qualified technician to restore the product to its normal operation.
    - If the product has been damaged in any way.
- **Replacement Parts**: When replacement parts are required, be sure the service technician uses replacement parts specified bythe manufacturer. Unauthorized part substitutions made may result in fire, electric shock or other hazards.

SAFETY PRECAUTIONS

There is always a danger present when using electronic equipment.

Unexpected high voltages can be present at unusual locations in defective equipment and signal distribution systems. Become familiar with the equipment that you are working with and observe the following safety precautions.

- Every precaution has been taken in the design of the products to ensure that it is as safe as possible. However, safe operation depends on you the operator.
- Always be sure your equipment is in good working order. Ensure that all points of connection are secure to the chassis and that protective covers are in place and secured.
- Never work alone when working in hazardous conditions. Always have another person close by in case of an accident.
- Always refer to the manual for safe operation. If you have a question about the application or operation contact the manufacturer for assistance.

Electrostatic Discharge (ESD) Caution:

- Always wear an ESD-preventive wrist or ankle strap when handling electronic components.
- Handle cards by the faceplates and edges only. Avoid touching the printed circuit board and connector pins.
- Avoid touching any electronic components while holding any module in hands.

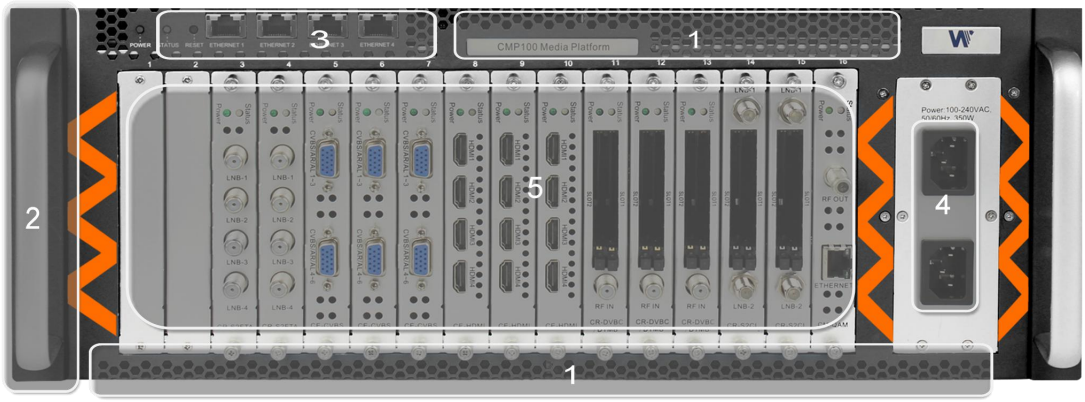
 Danger of explosion if battery is incorrectly replaced.

Contents

Part 1 Chassis Overview

1.1 Panel

CMP is a brand new Common Media Platform dedicated to commercial market, using the latest commercial product design concept, with high density, high performance and high flexibility. By carrying different types of function module, CMP100 can support almost any commercial application with any combination of receiving, descrambling, encoding, multiplexing, and modulation in one device.



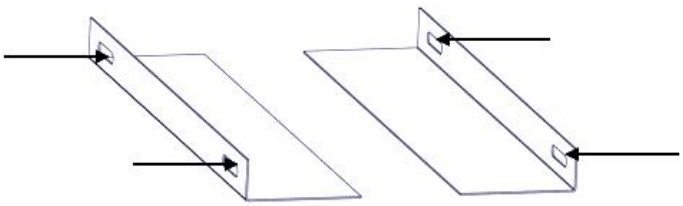
1. Cooling Air Intake
2. 4RU high density chassis
3. Remote network management
4. Dual power supply
5. 16 hot-swappable modules

Part 2 Installation

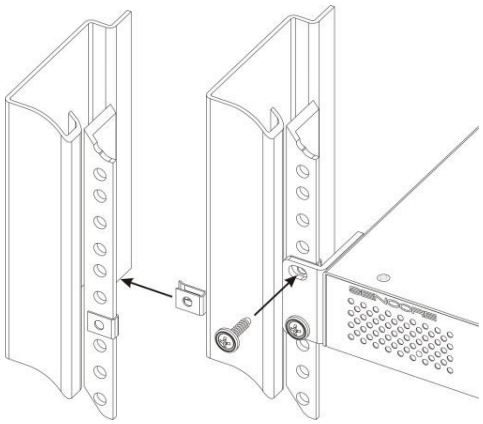
2.1 Rack Installation

The CMP100 is designed to be mounted in a standard 19” rack. It takes 4RU of rack space. To install it into a rack, please use the following steps:

1. Determine the desired position in the rack for the CMP100. Make sure that the air intake on the top of the unit and the exhausts on the back of the unit will not be blocked.
2. Install the brackets at desired position if there’s no supporting plate in the rack.



3. Insert the rack mount clips into place over the mounting holes in the rack.
4. Slide the CMP100 into the position in the rack.
5. Secure the chassis to the rack by installing the four supplied screws through the front mounting holes and tightening.



2.2 AC Power Connection

Please only use the supplied 3-prong power connector or one with equal specifications. NEVER tamper with or remove the grounding pin. This could cause damage to CMP100, personnel, or property. Make sure the power outlet is switched off before plug or unplug the power cable from the panel of CMP100.

Dual Redundant Power Supply Specification:

AC INPUT 90~240VAC, 50/60Hz, 350W

 When you take the equipment from a cold condition into a much warmer and humid condition, the equipment should be acclimated to the warm and humidity condition for at least 30 minutes. Powering up a non-acclimated unit may lead to shortcut or other damage to electronic components.

 A professional UPS system is recommended for better performance of your content distribution system.

Part3 Web GUI

3.1 Web GUI Overview

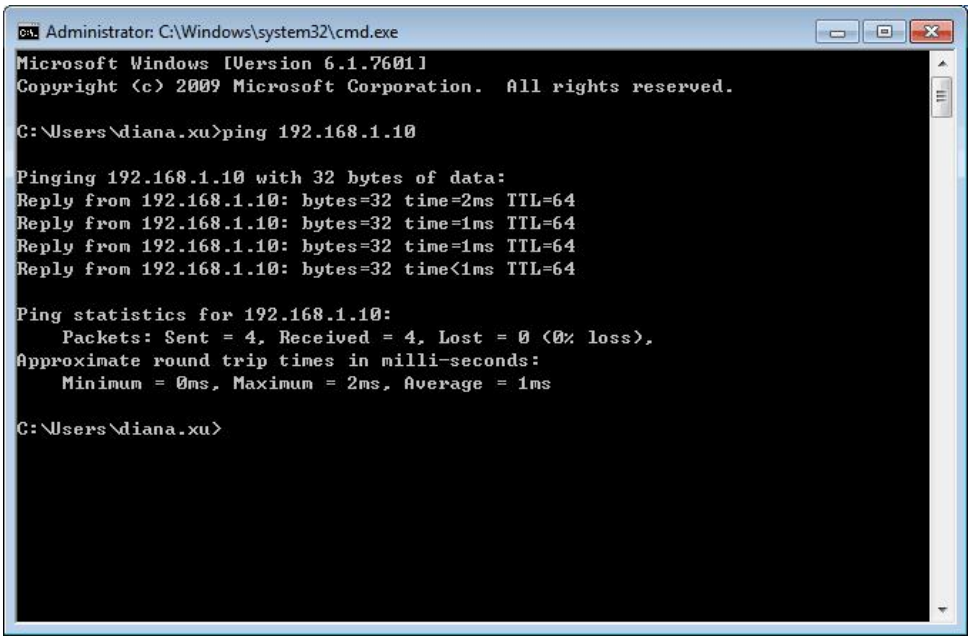
3.1.1 Connecting to the Management Port

Factory network settings of the Management Port:

- IP address 192.168.1.10
- Subnet Mask 255.255.255.0
- Gateway 192.168.1.254

Use the following step to access the Web GUI in a browser.

- Connect PC to CMP100 network port directly.
- Connect other devices (IP signal Receiver or Sender) to CMP100 network port directly.
- Set the IP address of the laptop/computer in the same network segment with the CMP100 Baseboard IP address. CMP100 will occupy up to 17 IP addresses. ***Please avoid setting IP address of the connected PC or other devices same as the CMP100 occupied IP address section.***
- Check the physical connection by ping command.



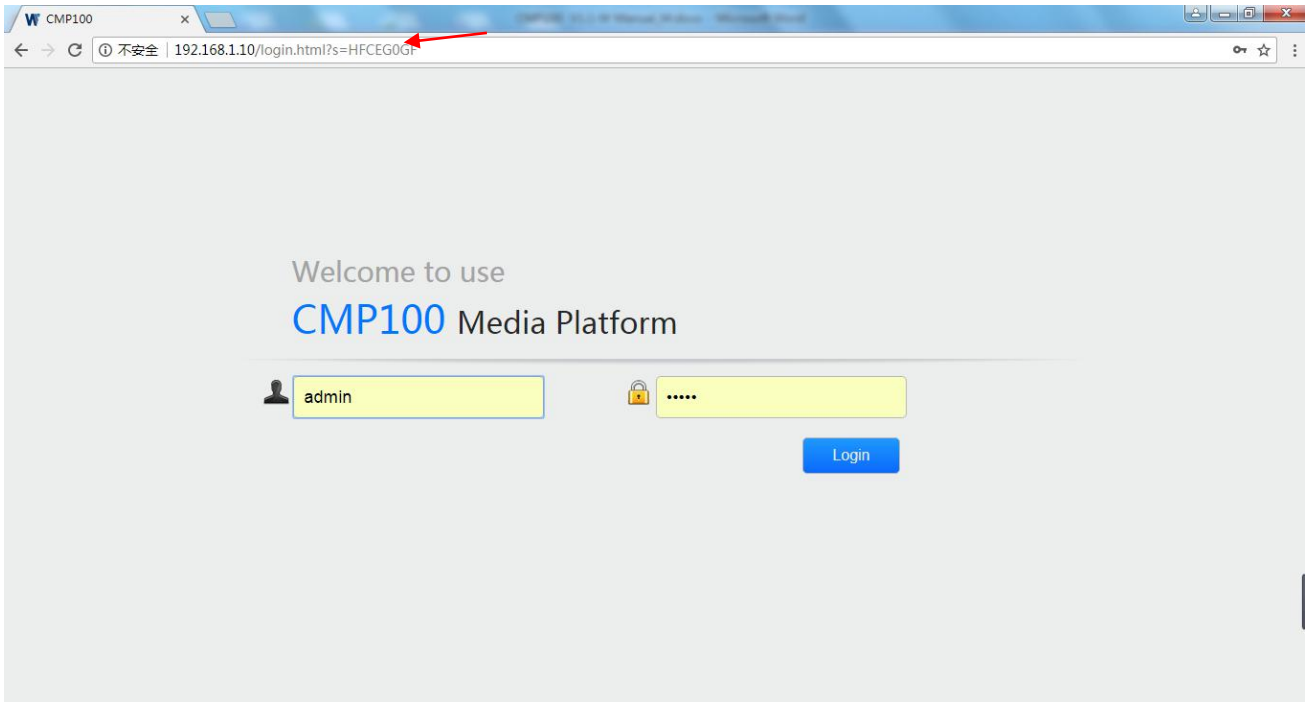
CMP100 possesses an embedded gigabit switch inside the chassis, you can use it as a switch with other devices together. The four network ports are used for both managing and streaming at the

same time. A good method of checking multicast output is to check the output via VLC on your control PC directly.

If you want to connect a switch between CMP100 and PC or other devices, this switch should support IGMP V2 and IGMP snooping function. If the switch you used is not the correct configuration, it could cause some network issue.

3.1.2 Logging into the Web GUI

Type the CMP100 Baseboard IP address into the URL field of any recommended browser (IE8 or above, Firefox, and Google Chrome) to access the logon page. By default, the admin user account is admin with password admin. Click ***Login*** or strike Enter on the keyboard to login to the GUI.

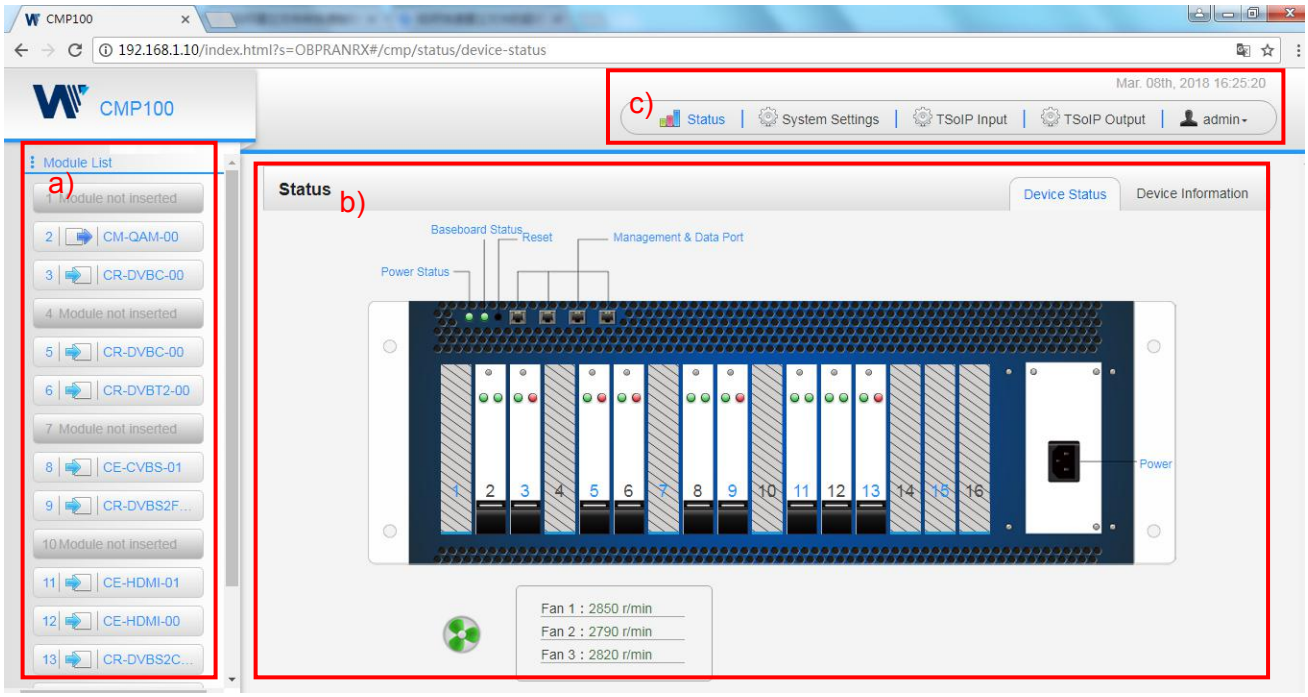


3.2 Status

Status>Device status

After a successful login, you will always enter the status overview page, where you can check the device status of:

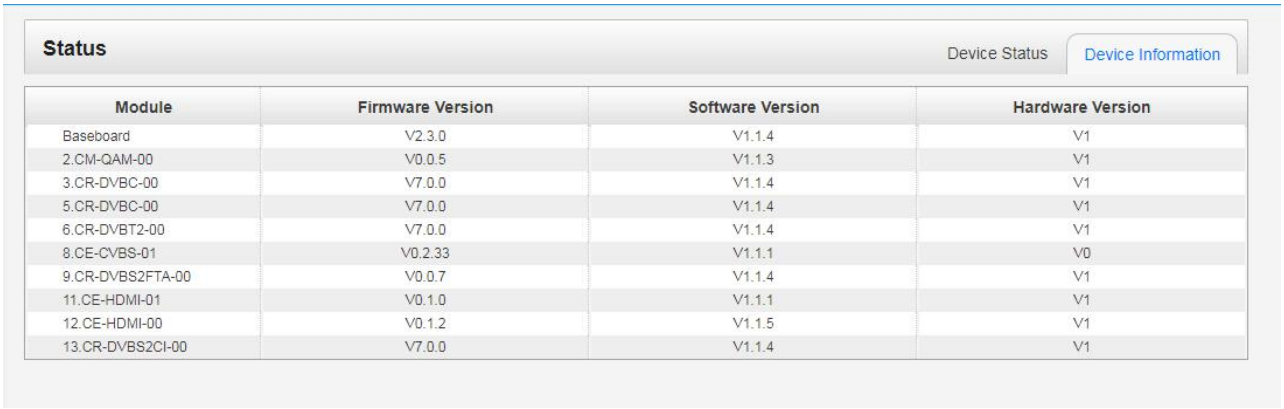
a) Module List: shows the module(s) inserted
b) Device and module status figure, fan running status and notes of ports, lights and buttons
c) Menu Bar and time display



We use only IE, Firefox and Chrome for testing procedures. If you use other browsers, like Microsoft Edge, you may encounter incomplete UI layouts, and configure setting in these browsers may lead to errors.

Status>Device Information

Device Information page shows the firmware version, software version, and hardware version of baseboard and each inserted module.



Status

Device Status | Device Information

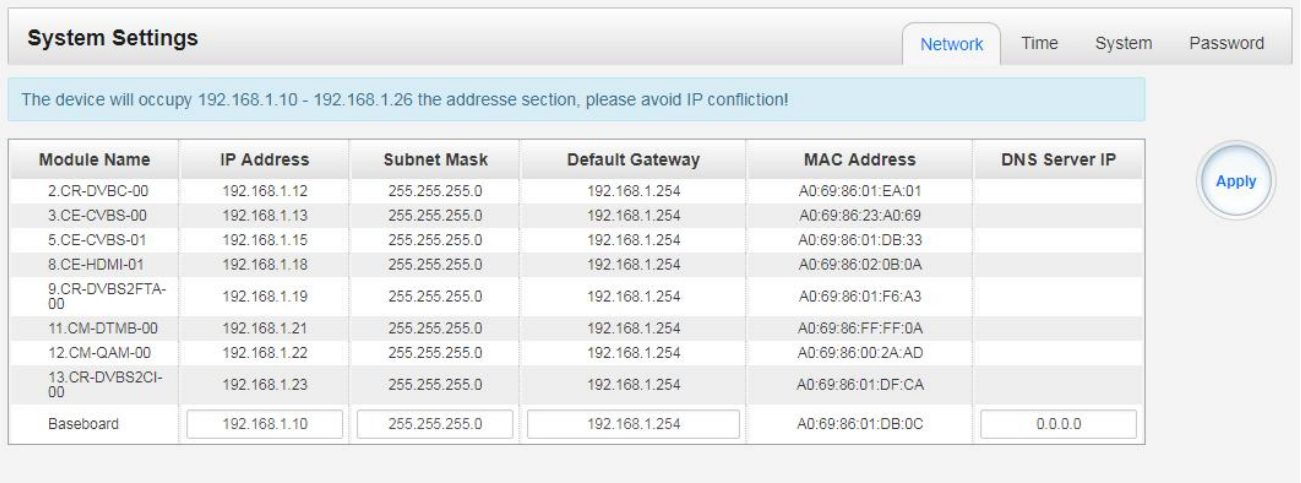
Module	Firmware Version	Software Version	Hardware Version
Baseboard	V2.3.0	V1.1.4	V1
2.CM-QAM-00	V0.0.5	V1.1.3	V1
3.CR-DVBC-00	V7.0.0	V1.1.4	V1
5.CR-DVBC-00	V7.0.0	V1.1.4	V1
6.CR-DVBT2-00	V7.0.0	V1.1.4	V1
8.CE-CVBS-01	V0.2.33	V1.1.1	V0
9.CR-DVBS2FTA-00	V0.0.7	V1.1.4	V1
11.CE-HDMI-01	V0.1.0	V1.1.1	V1
12.CE-HDMI-00	V0.1.2	V1.1.5	V1
13.CR-DVBS2CI-00	V7.0.0	V1.1.4	V1

3.3 System Setting

Click the ***System Setting*** on the top right corner into system setting page where you can find ***Network, Time, System*** and ***Password***.

System Setting> Network

In ***Network*** page you can assign a static IP address to CMP100's baseboard. Click the ***Apply*** button in the right side to make the change take effect.

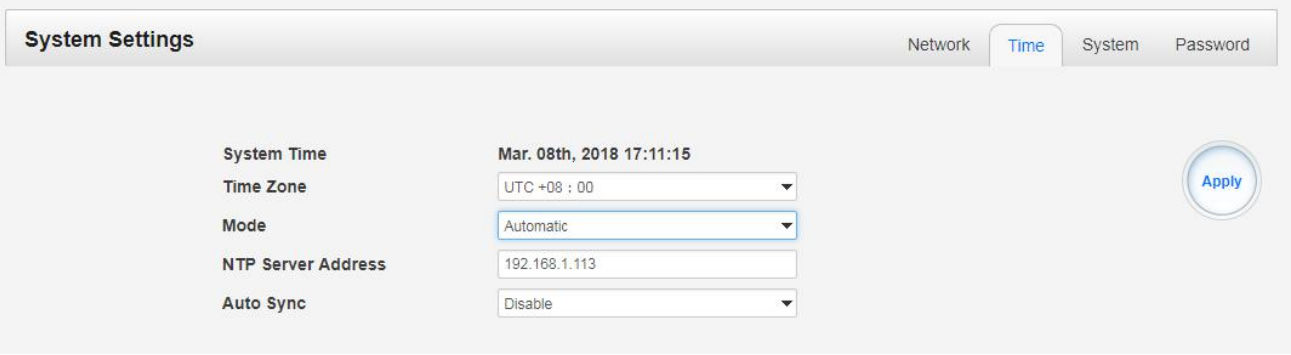


Note to avoid IP confliction when you set baseboard IP address, the occupied IP section will be displayed in this page on the top blue area.

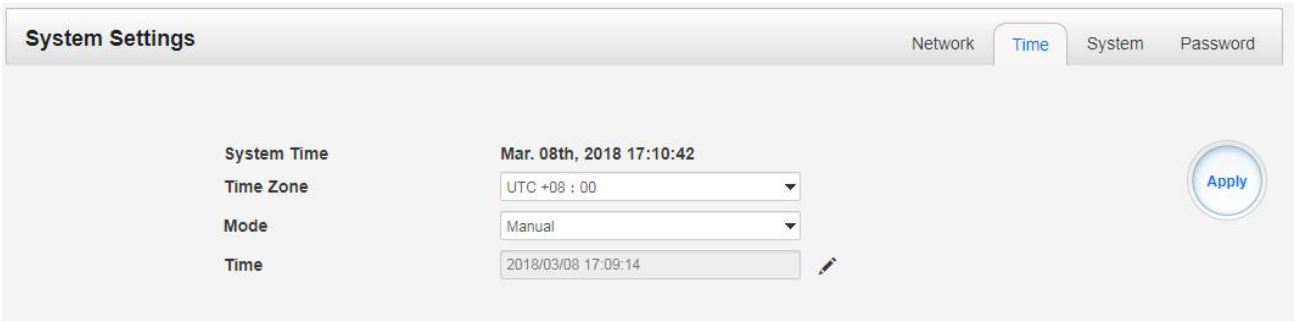
System Setting> Time

In ***Time*** page you can see current system time, change ***Time Zone***, select system time ***Mode*** (Manual or Automatic), enable/disable ***Auto Sync*** and modify ***NTP Server Address*** in Automatic mode, change current system ***Time*** in Manual mode. Click the ***Apply*** button in the right side to make the change take effect.

- ***Automatic*** mode

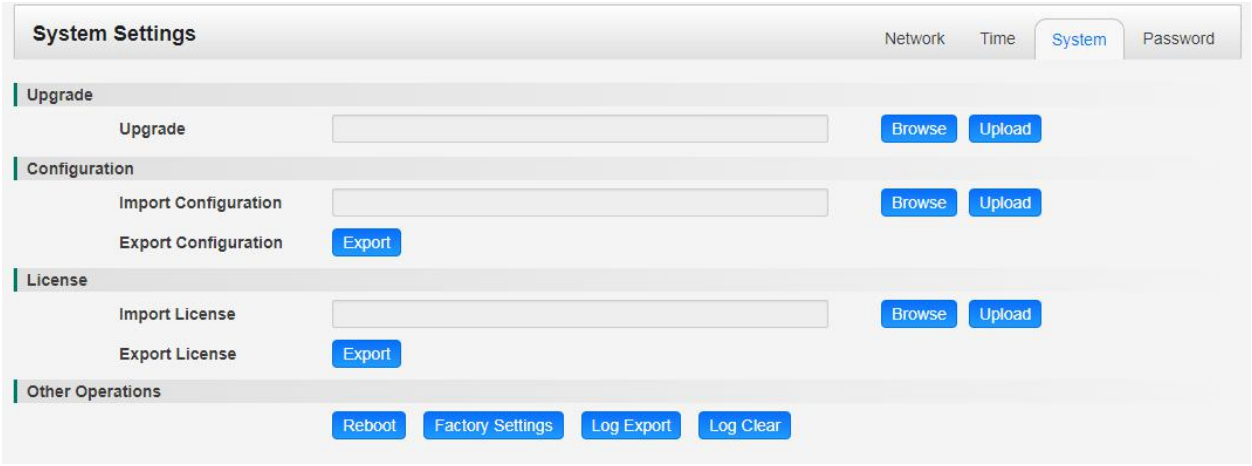


- ***Manual*** mode



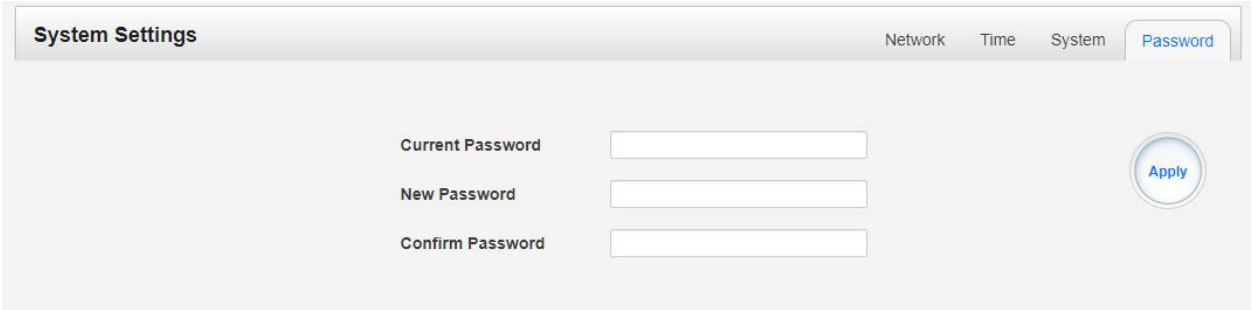
System Setting> System

In ***System*** page you can do upgrade, import or export configuration, import or export license (only baseboard), reboot the whole unit, restore to factory setting (only baseboard), export log and clear log (only baseboard).



System Setting> Password

In ***Password*** page you can reset login password.

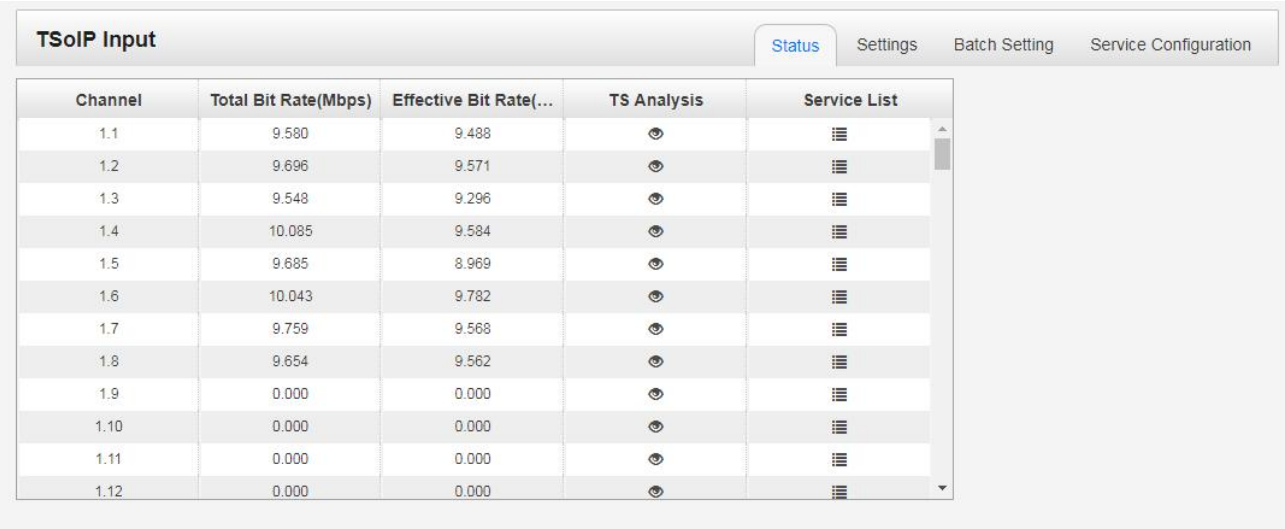


3.4 TSoIP Input

Click the ***TSoIP Input*** on the top line to go into IP input page where you can see ***Status, Setting, Batch Setting*** and ***Service Configuration***.

TSoIP Input >Status

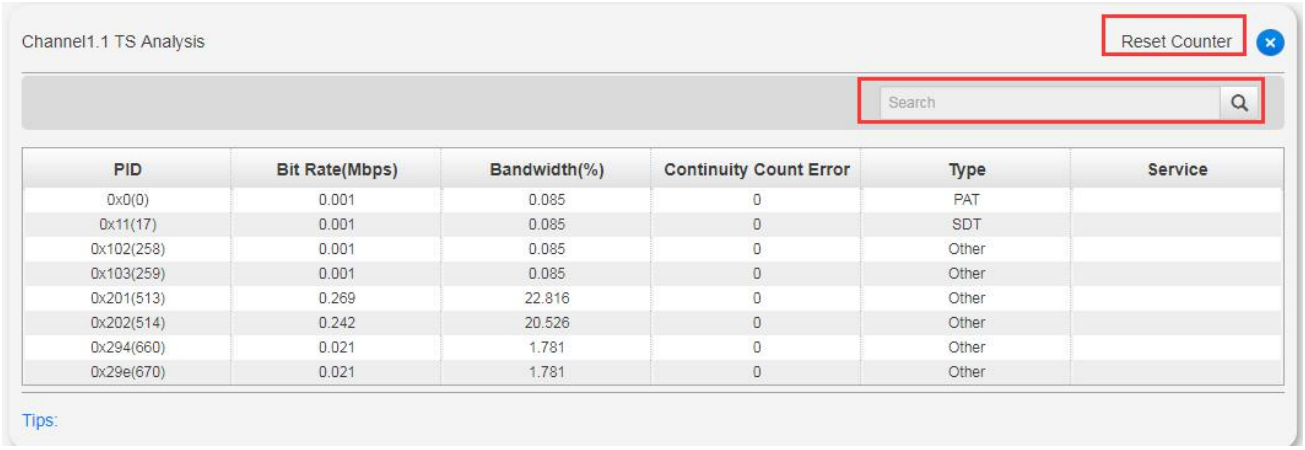
In this page, you can check each channel Total Bit Rate, Effect Bit Rate, TS Analysis and Service List.



Click the icon ( ) below the ***TS Analysis*** to see the TS analyzing result of this channel. Click the icon ( ) below the ***Service List*** to see the Services of this channel.

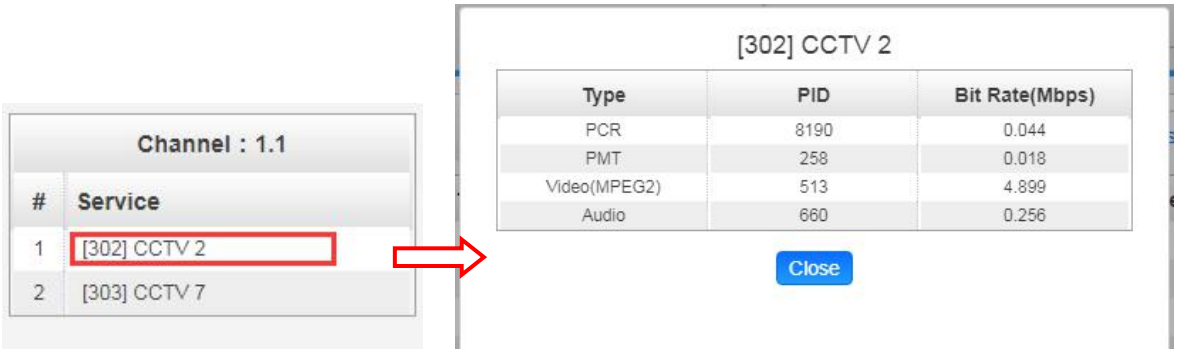
- TS Analysis

Click Reset Counter button to clear continuity count error and restart counting. Fill the key words of PID, Bit rate, bandwidth, table type or service name in the search bar to check the info you want to find.



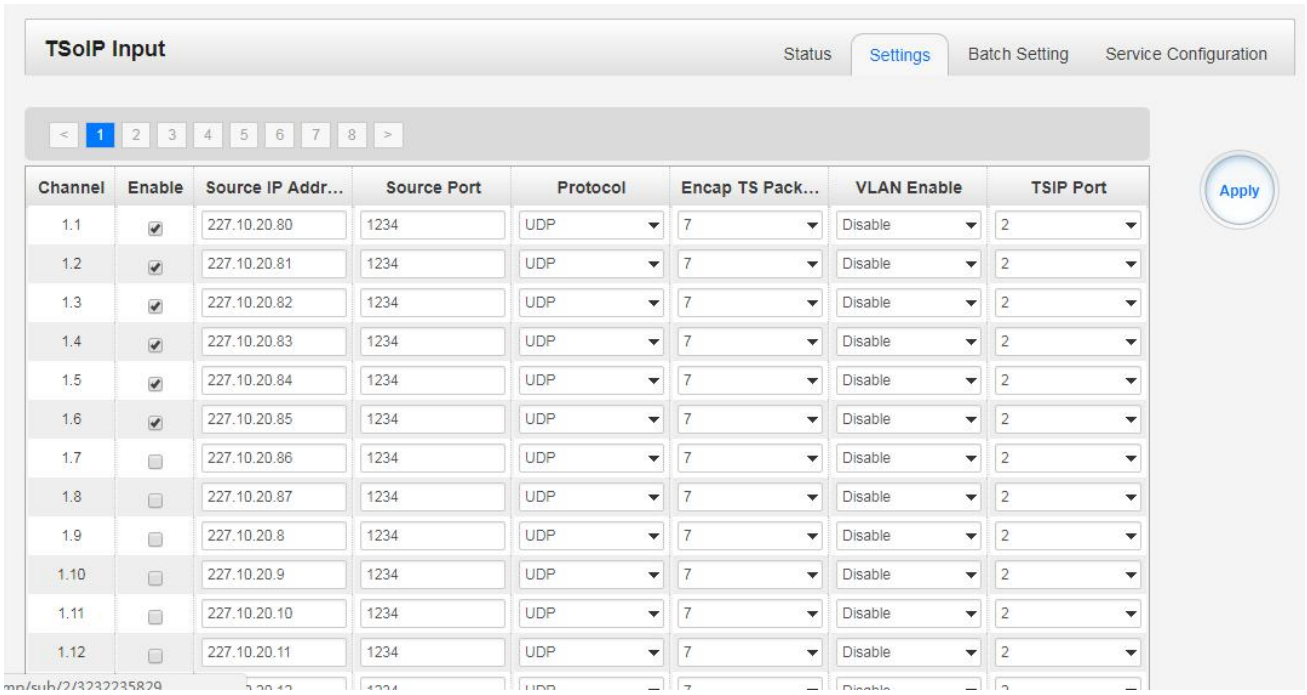
- Service List

Click the service name you can check the detail info of this service.



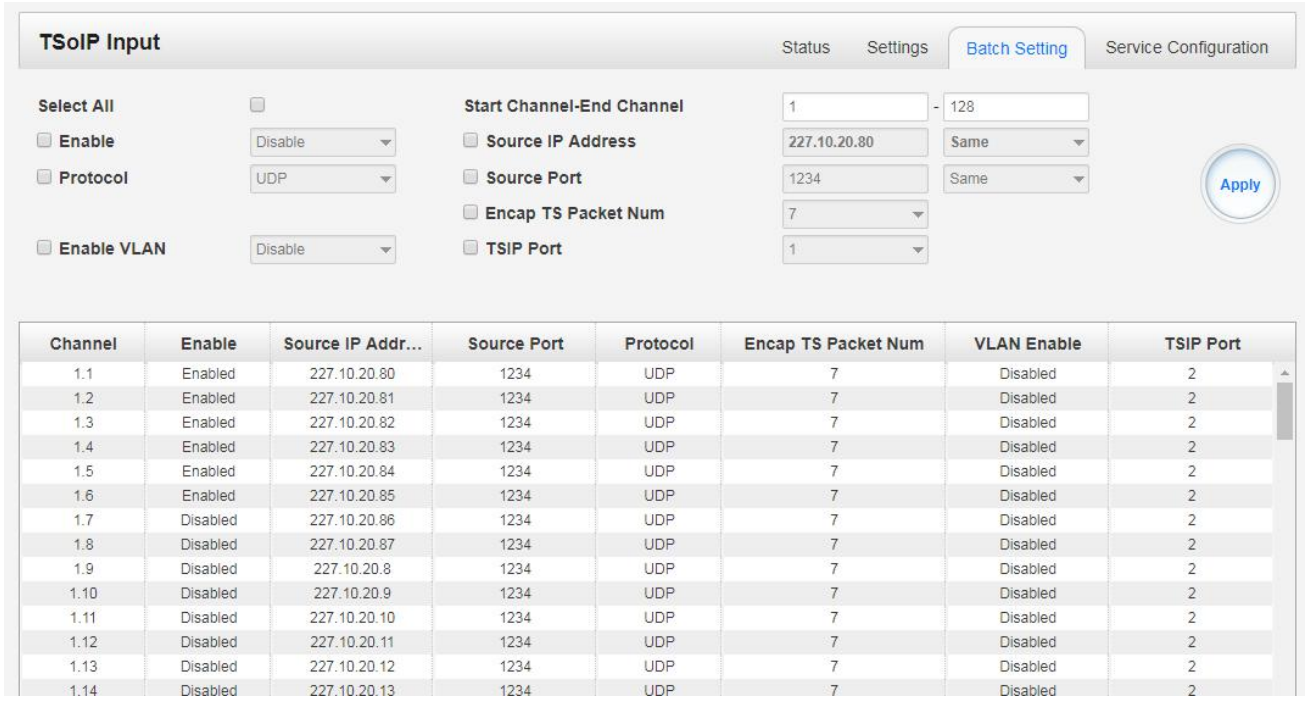
TSoIP Input >Settings

To make the configuration of IP input parameters, you can set the source IP address and port, protocol (UDP/RTP), the encap TS package, VLAN enable/disable, and TSIP Port. Click ***Apply*** to make the setting take effect.



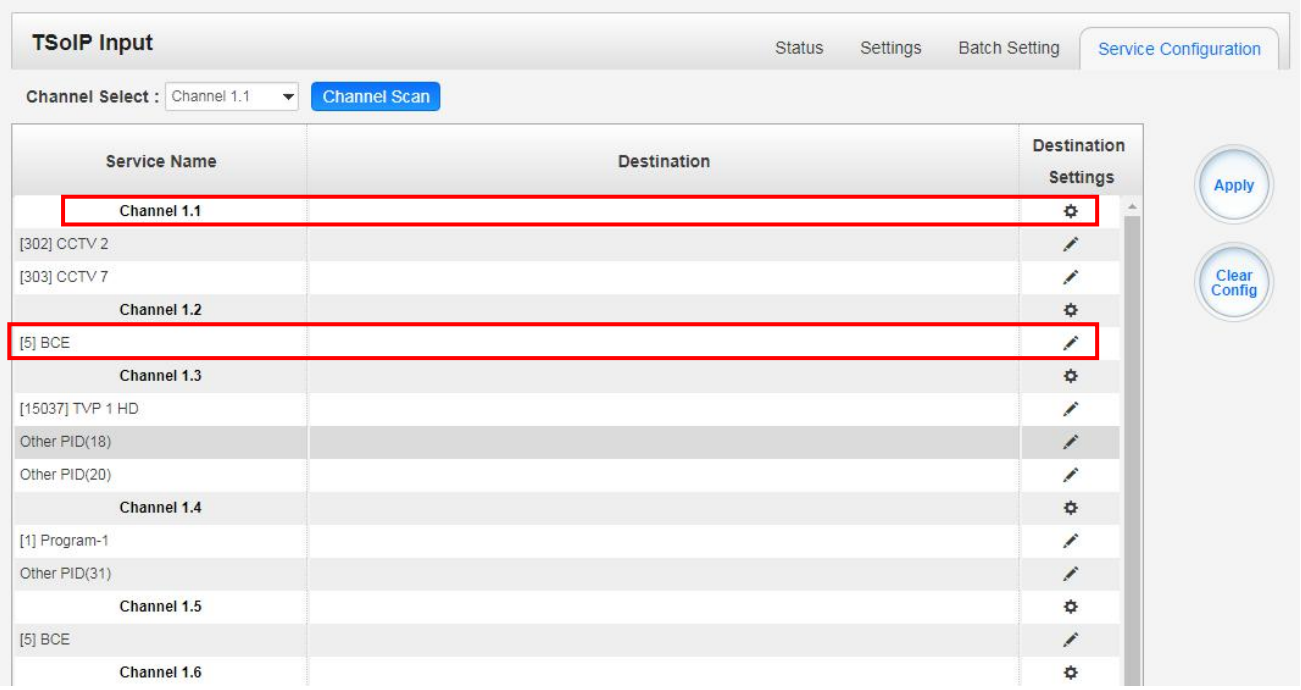
TSoIP Input >Batch Setting

To batch set the IP input parameters, you can check the parameter box to make the modification. Click ***Apply*** to make the setting take effect.



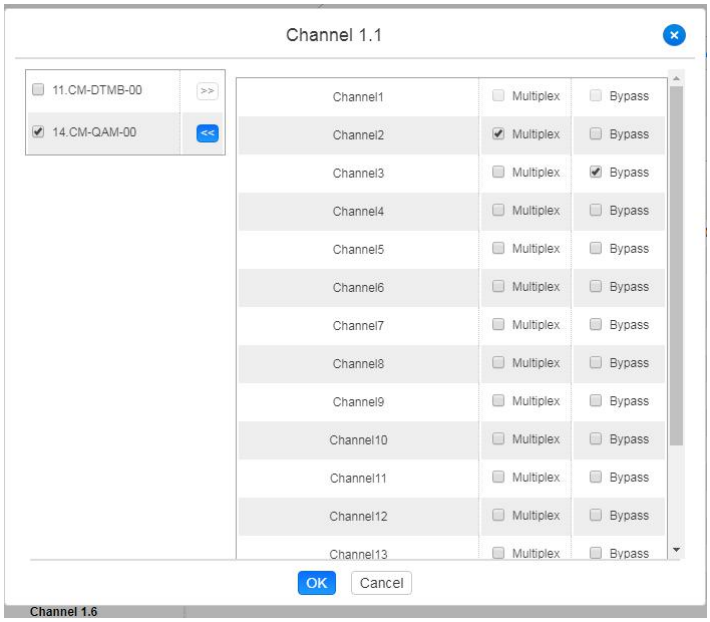
TSoIP Input >Service Configuration

To set input source streaming out, you can make the configuration of the destination in this page.



- Multiplex or Bypass stream: You should click the channel line setting icon to make the whole stream multiplex or bypass out. Click the setting icon ( ), and then you will see the output module, check the module box, and then you can set the output channel of this stream. After you select bypass mode, this output channel will be occupied only by this stream and when you set other stream output channels, this channel will not be available in this time.

- Multiplex services: You should click the service line setting icon ( ) to make the certain service output from certain channel combining with other services. The operation you can refer to multiplex stream output.



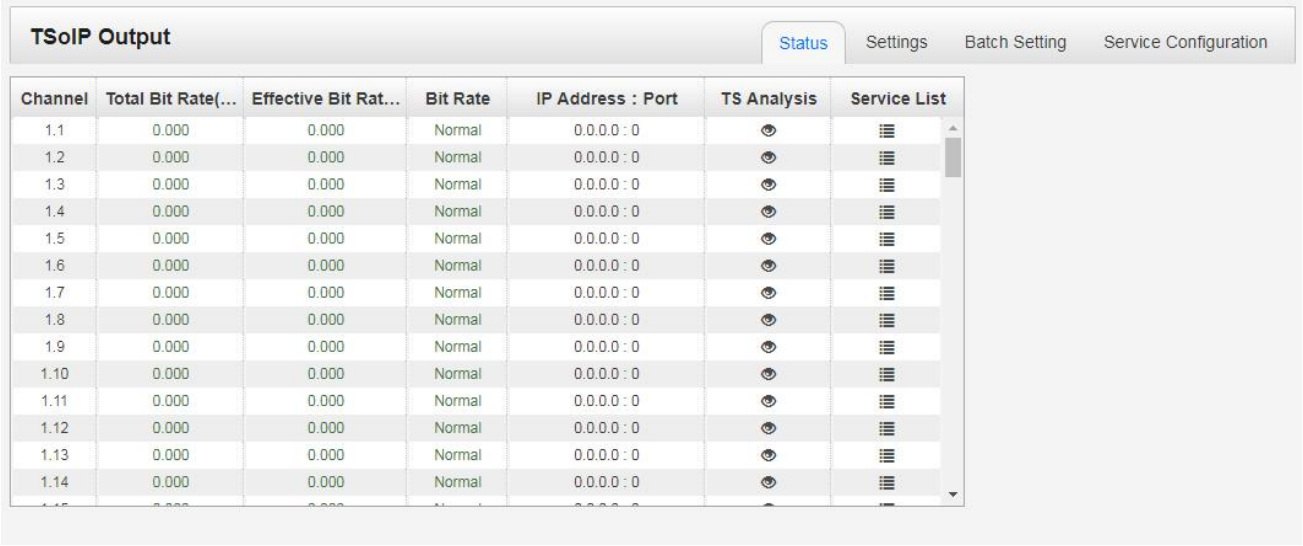
After making output destination configuration, click ***Apply*** to make it take effect. The destination channel will be displayed in the channel/service line. And you can also click ***Clear Config*** to clear all of configuration.

There is a channel scan button (Channel Scan) on top, normally the input service list of each channel will load itself in this page, but when you change the input source, the list could not refresh immediately, at this time, you should refresh the changed channels manually through the operation of selecting channel and clicking channel scan button.

3.5 TSoIP output

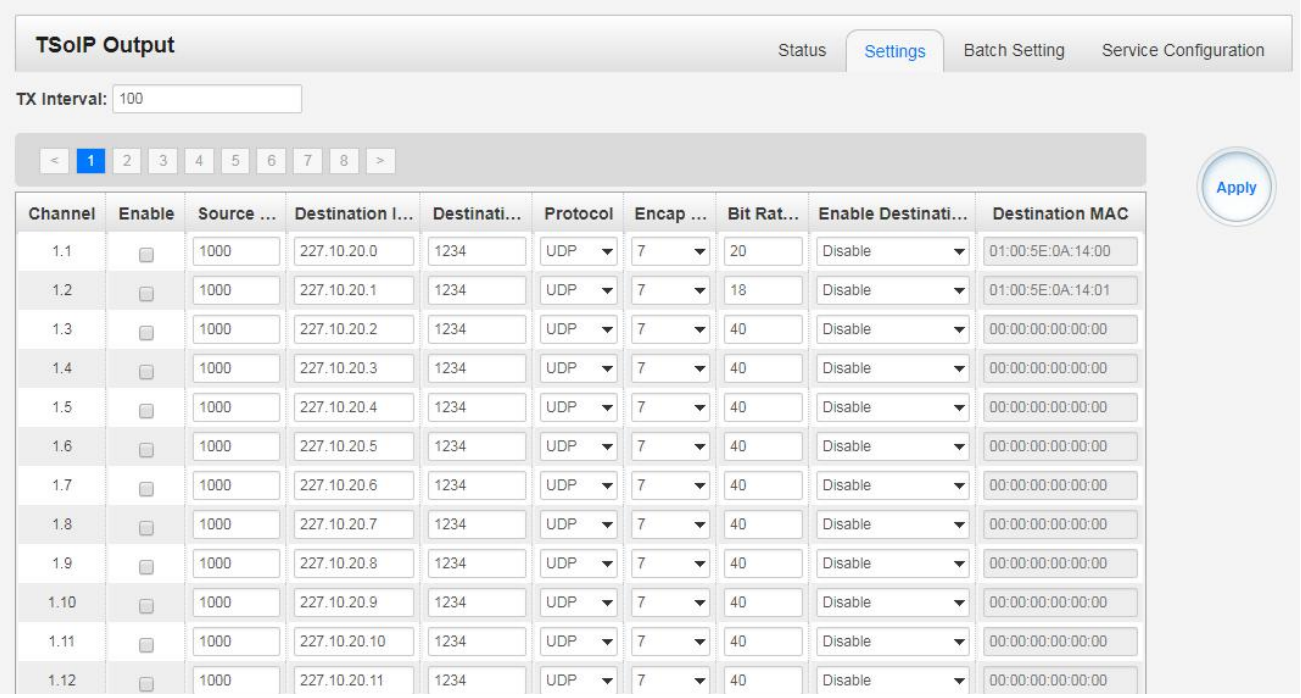
TSoIP Output >Status

The IP output status information in this page you can check is similar as IP input. The TS analysis and service list function are also available.



TSoIP Output >Settings

Setting IP output channels is also similar as setting IP input.

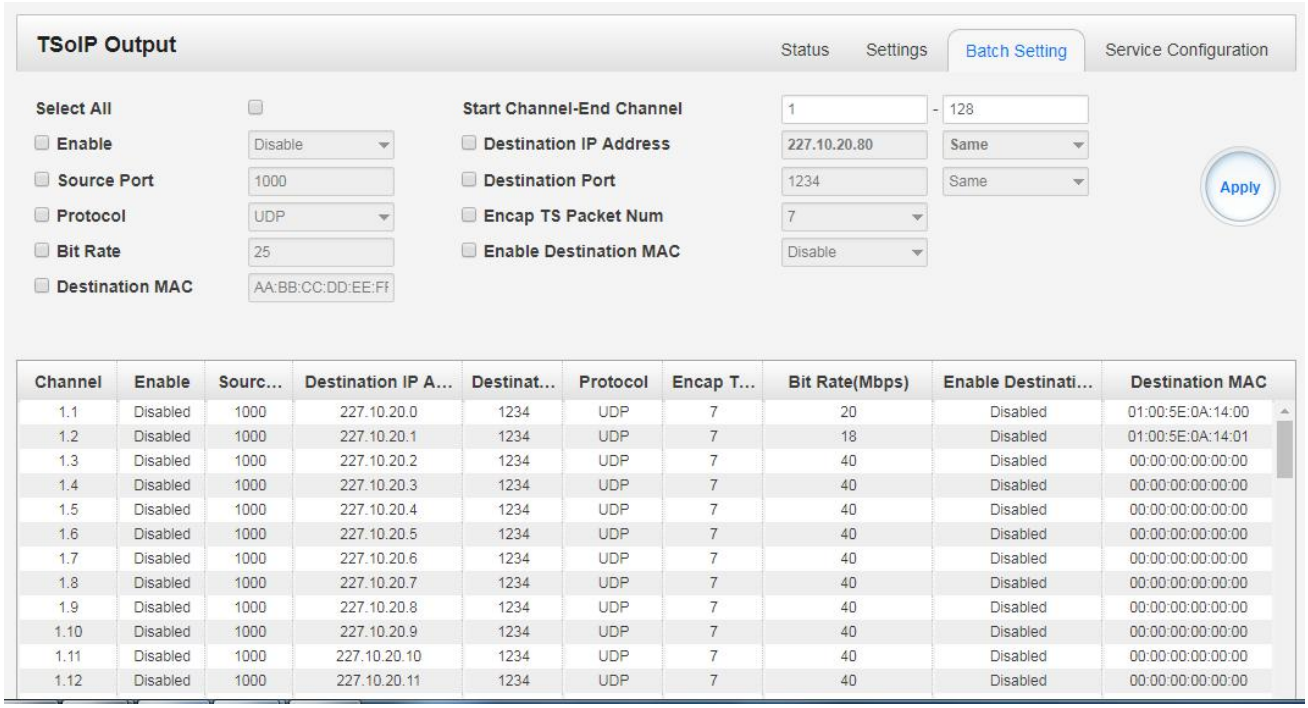


- Multicast output setting: You should fill the fit multicast IP addresses as output in the ***Destination IP Address*** box, ***please avoid IP confliction among baseboard, encoder modules (see encoder modules page) and other devices when you set multicast output.***
- Unicast output setting: You should fill the unicast receiving end's IP addresses in the ***Destination IP Address*** box.
- Destination MAC: Normally, you do not need to enable the Destination MAC switch, only in some specific case, when the unicast stream cannot be received due to unknown reason, you should enable Destination MAC and fill the correct receiver MAC in instead of using unicast IP addresses.

Constant Rate of any output channel/TS/port ought to be set manually about 2 Mbps higher than the ***Effective Bit rate*** in the corresponding output channel/TS/port, since the ***Effective Bit rate*** might fluctuates a little bit. If you set the ***Constant Rate*** much higher that the ***Effective Bit rate***, there will be lots of null packets in the output transport stream.

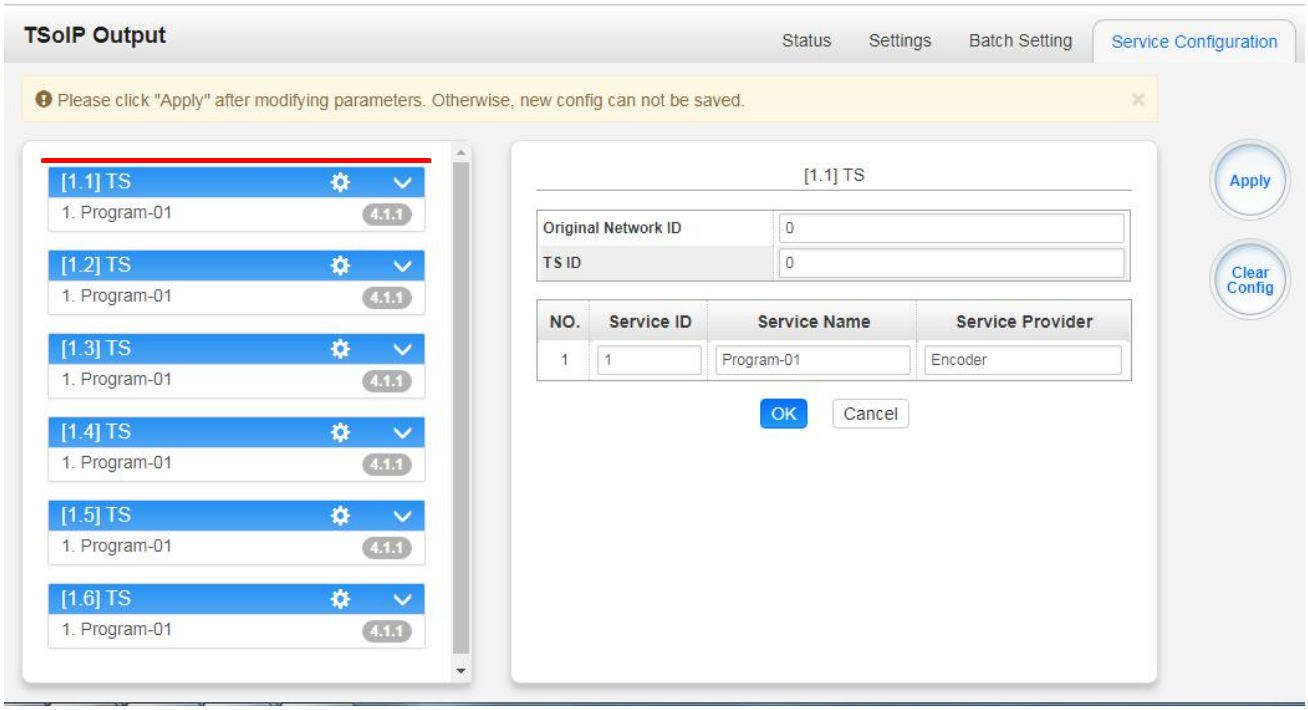
TSoIP Output >Batch Setting

Batch Setting IP output channels is also similar as setting IP input.



TSoIP Output >Service Configuration

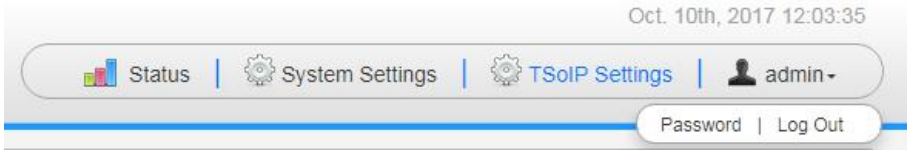
You can make a configuration for output services and TS.



- TS setting: Click TS line (the blue area) to make the modification of Original Network ID, TS ID and each Service ID, Service Name, and Service Provider.
- NIT setting: Please refer to CM-QAM-00 module.

3.6 Admin

Click ***Admin*** you can choose to go into Password setting page or Log Out.



Part 4 Module Configuration

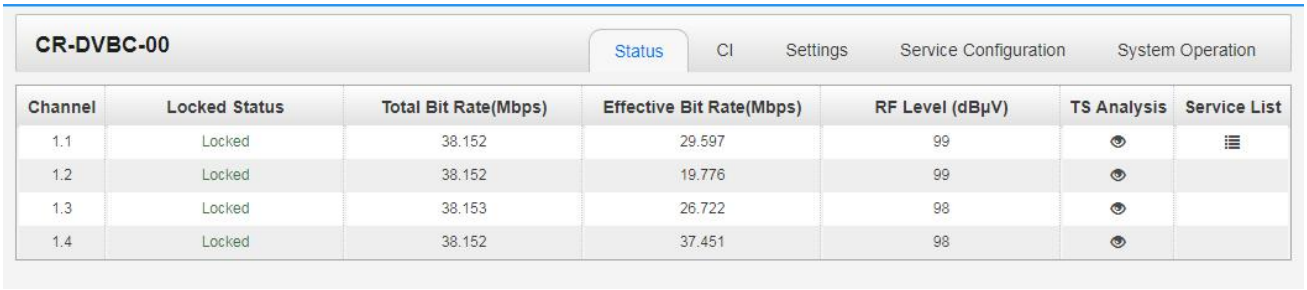
4.1 Receiver Descrambling Modules

4.1.1CR-DVBC/DTMB

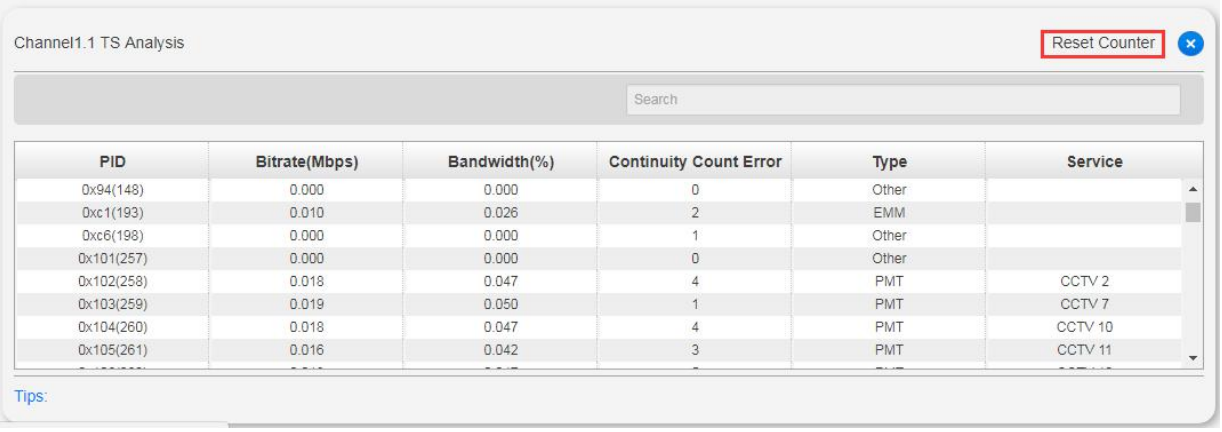
CR-DVBC/DTMB-00 is a 4-channel DVBC/DTMB receiving and descrambling module with 1 RF female connector and 2 CI slots. It can receive 4 RF channels signal simultaneously and support 2 CAM cards descrambling.

Click ***CR-DVBC/DTMB-00*** in the Module List then go to CR-DVBC/DTMB module page.

CR-DVBC/DTMB-00 >Status

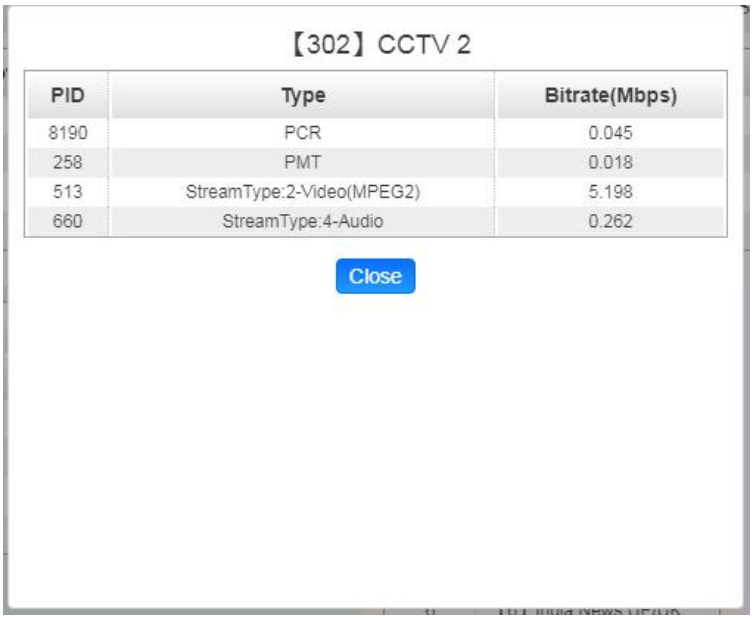


Click ***TS Analysis*** of each channel, you can see TS Bit rate Analysis. Click ***Reset Counter*** to reset the Continuity Count Error counter. In Search bar, you can input key words or numbers for a quickly finding such as PIDs, Type or Service.

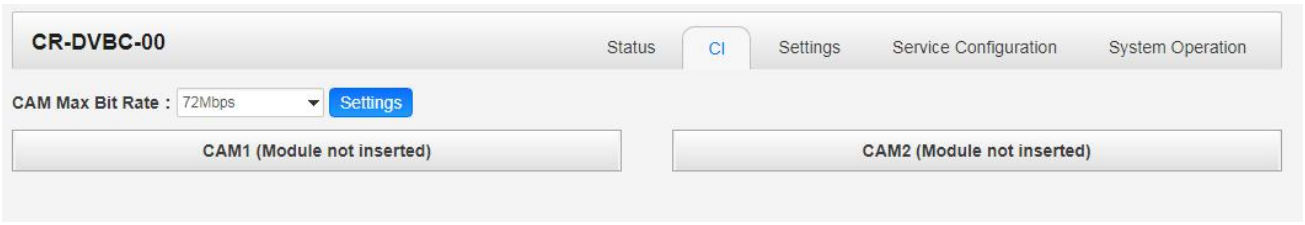


Click ***Service Info*** to check service information of all the inputs.

You can check program details by clicking the program item.



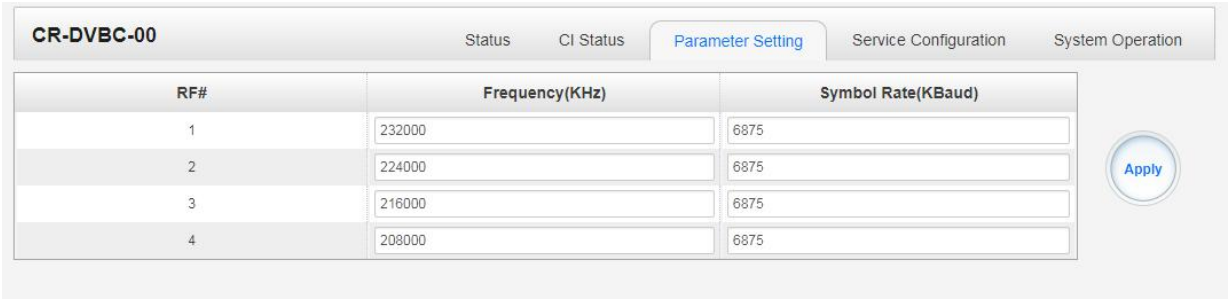
CR-DVBC/DTMB -00 >CI Status



CAM Max Bit Rate is from 48Mbps to 108Mbps which you can choose in pull-down list.

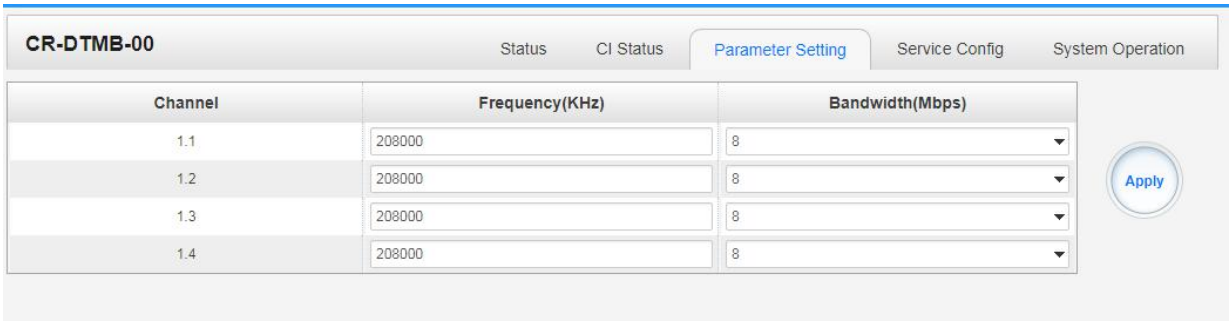
CR-DVBC/DTMB -00 >Parameter Setting

- Parameter Setting of DVBC mode



Name	Range
Frequency (KHz)	48000~862000
Symbol Rate(KBaud)	3000~7000

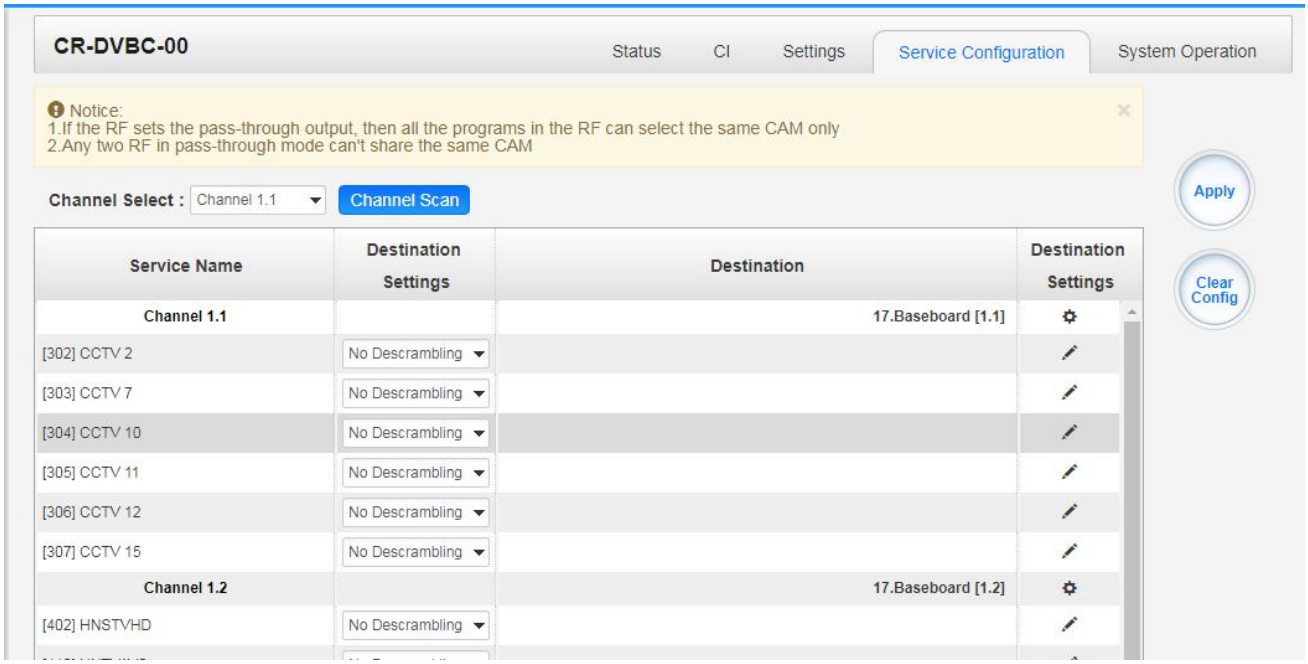
- Parameter Setting of DTMB mode



Name	Range
Frequency (KHz)	48000~862000
Bandwidth (Mbps)	6 / 7 / 8 M

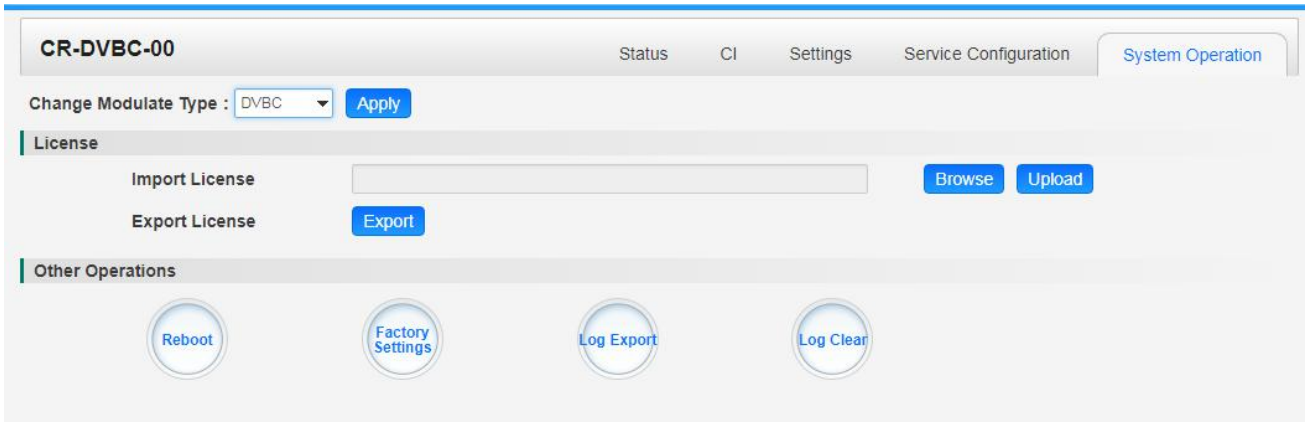
Click the ***Apply*** button in the right side to make the change take effect.

CR-DVBC/DTMB -00 >Service Configuration



In ***Descrambling Settings*** there are CAM1, CAM2, No Descrambling options. Click ***Apply*** or ***Clear Config*** button in the right side to make the change take effect or clear all configuration.

CR-DVBC/DTMB -00 >System Operation



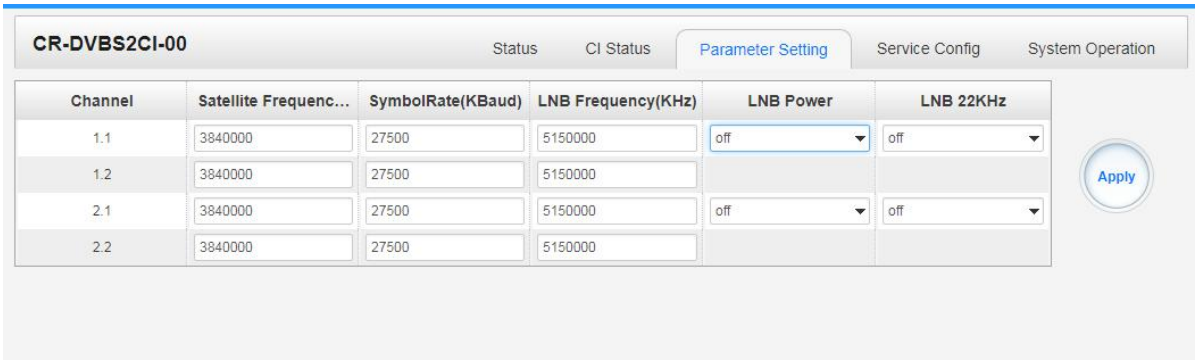
In ***System Operation*** page you can change into DVBC Mode or DTMB Mode, ***Restart*** module, ***Factory Reset***, and ***Log Export***.

4.1.2 CR-DVBS2CI

CR-S2CI is a 4-channel DVB-S/S2 receiving and descrambling module with 2 RF connectors and 2 CI slots, each RF connector with 2 transponders receiving.

Module configuration is similar to CR-DVBC/DTMB-00. Status and CI pages refer to CR-DVBC/DTMB-00 module section.

CR-DVBS2CI-00 >Parameter Setting



Channel 1.1 and 1.2 both via LNB-1 share power each other, channel 2.1 and 2.2 both via LNB-2 share power each other.

Name	Range
Satellite Frequency (KHz)	950000~21500000
Symbol Rate(KBaud)	1000~45000
LNB Frequency(KHz)	950000~21500000
LNB Power	Off/13v/18v
LNB 22KHz	Off/22KHz

4.1.3 CR-DVBS2FTA

CR-S2FTA is a 4/8-channel DVB-S/S2 receiving module with 4/8 RF connectors, it supports internal signal pass through from one tuner to the others.

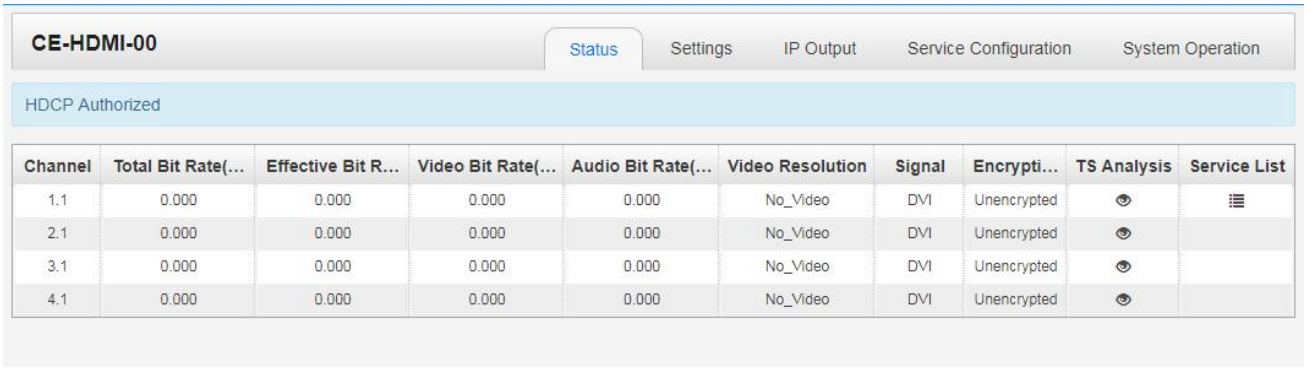
Module configuration is similar to CR-DVBS2CI-00. Please refer to CR-DVBC/DTMB-00 and CR-DVBS2CI-00 modules section.

4.2 Encoder Modules

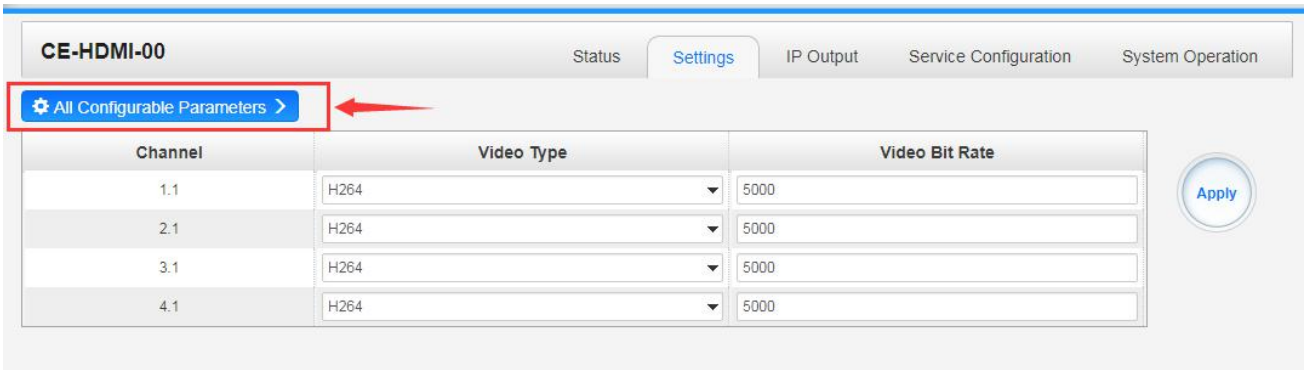
4.2.1 CE-HDMI

CE-HDMI is a 4-channel HDMI input encoder which support H.264 HD/SD or MPEG-2 SD encoding. The module supports MPEG1-L2, AAC and AC3 audio encoding.

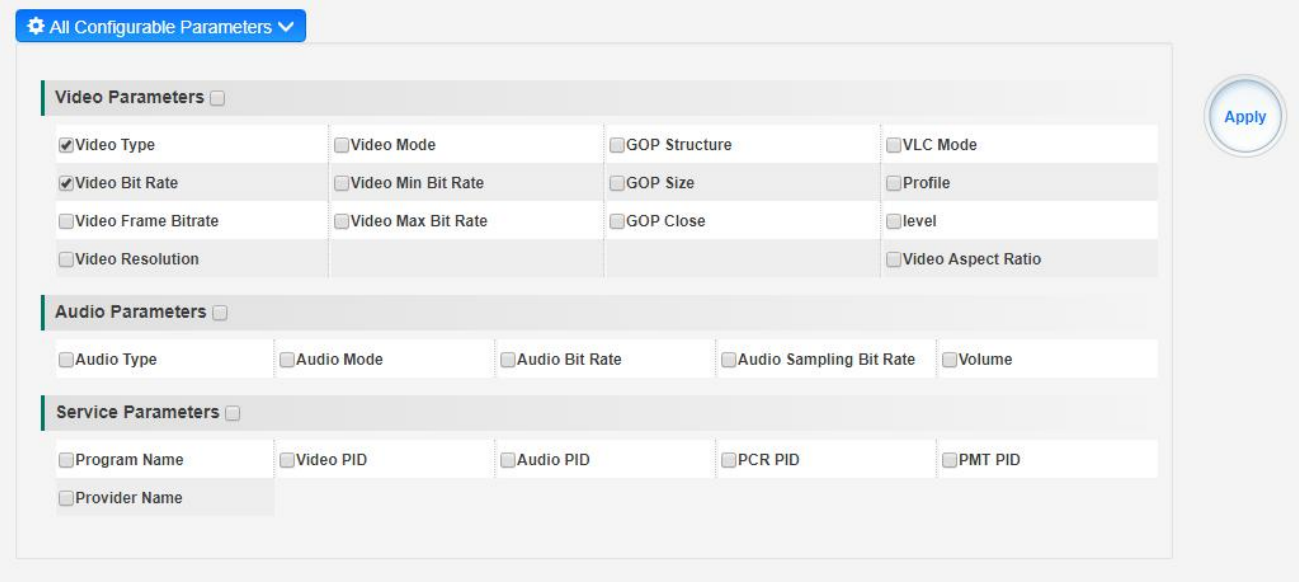
CE-HDMI-00/01 >Status



CE-HDMI-00/01 >Setting



Click ***All Configurable Parameters*** to see all parameters you can modify and check what specific parameters you want to set and see. Click the ***Apply*** button in the right side to make the change take effect.



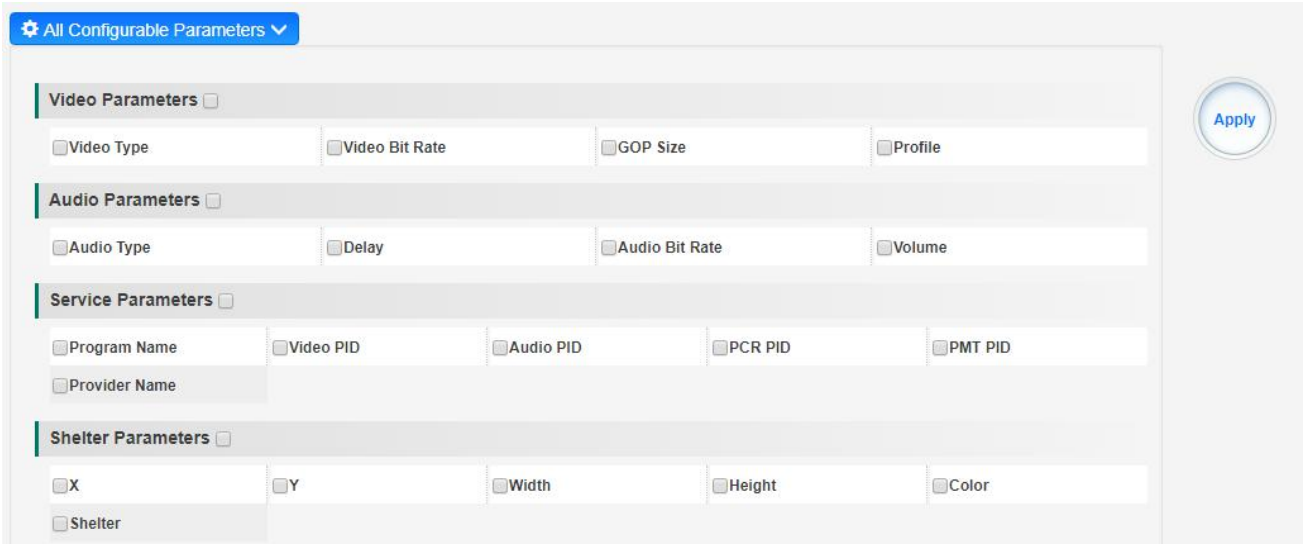
Click ***Service Info*** in the line of Audio Encoding to set audio encoding.

Name	Range	Name	Range
Video Type	H264 , MPEG2	**GOP Close**	Disable, Enable
Video Bitrate (Kbps)	600~20000	**PCR PID**	32~8190
Video Mode	CBR, VBR	**PMT PID**	32~8190
Video Max Bitrate (Kbps)	20000	**Service Name**	Length is 1~16
Video Min Bitrate (Kbps)	0	**Service Provider Name**	Length is 1~16
Video Resolution	Auto , 1920×1080_60i , 1920×1080_50i , 1920×1080_30p , 1920×1080_25p , 1080×720_60p , 1080×720_50p , 720×480_60i , 720×576_50i	**VLC Mode**	CABAC CAVLC
Video Frame Bitrate	Auto 59.94/29.97	**Profile**	HIGH MAIN
Video PID	32~8190	**Level**	3.0,3.1,3.2 4.0,4.1,4.2
GOP Structure	IPPB, IPPP, IBP	**Video Aspect Ratio**	Auto 16x9_LetterBox 16x9_CutOff 4x3_PillarBox

			4x3_CutOff
GOP Size	6~63		

Audio Encoder Details	Range	Audio Encoder Details	Range
Encoding Type	AC3 MPEG1_Layer2 MPEG2_AAC MPEG4_AAC	**Audio Sampling Bitrate(KHz)**	48
Audio Mode	Dual Channel Mono Stereo	**Audio PID**	32~8190
Encoding Bitrate(Kbps)	128~384 (AC3) 64~384(MPEG1_Layer2) 32~384(MPEG2_AAC/ MPEG4_AAC)	**Volume**	0~8

CE-HDMI-01 is similar to CE-HDMI-00, there are a few differences on parameter setting range.



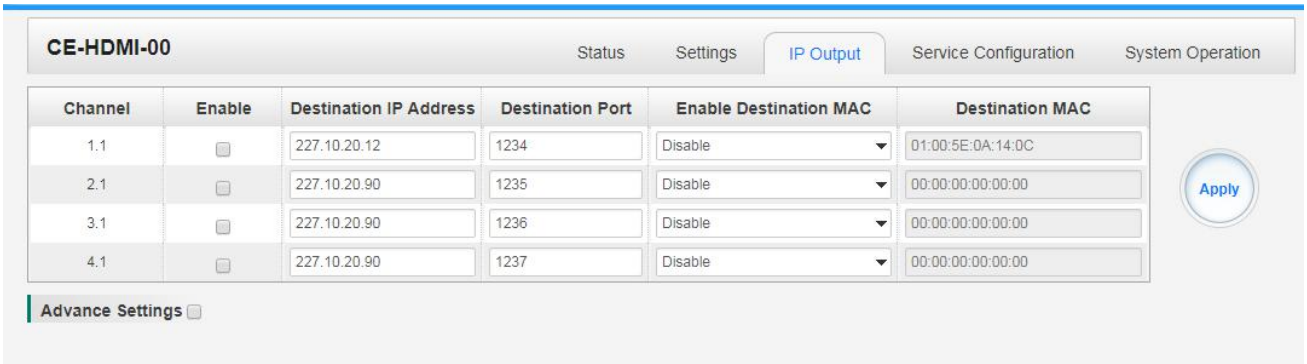
Name	Range	Name	Range
Video Type	H264	**PCR PID**	32~8190

GOP Size	1~99	**PMT PID**	32~8190
Video Resolution	Auto , 1920×1080_60i , 1920×1080_50i , 1920×1080_30p , 1920×1080_25p , 1080×720_60p , 1080×720_50p , 720×480_60i , 720×576_50i	**Program Name**	Length is 1~16
Profile	HIGH MAIN	**Provider Name**	Length is 1~16
Video PID	32~8190		

Audio Encoder Details	Range	Audio Encoder Details	Range
Audio Type	MPEG1_Layer2 AC3 AAC	**Audio PID**	32~8190
Audio Bit rate(Kbps)	32~192	**Volume(dB)**	-20~20
Delays(ms)	-2000~2000		

Shelter Parameters	Range	Shelter Parameters	Range
Shelter	Enable/Disable	**X**	0~1920 (Dual)
Y	0~1080 (Dual)	**Width**	2~1920 (Dual)
Height	2~1080 (Dual)	**Color**	White/Black/Blue/Green/Red

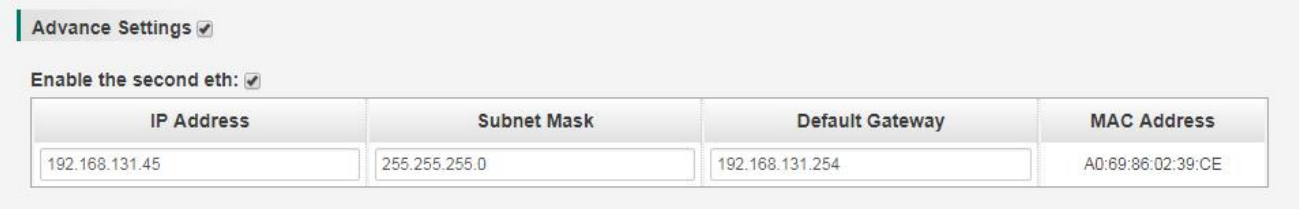
CE-HDMI-00/01 >IP Output



This feature is specifically for single program encoding and IP output directly. By using this way to output, it will not occupied baseboard multicast bandwidth.

If you want to use IP output channel in the encoder module and baseboard TSoIP module at same time, you should avoid the multicast IP addresses confliction. If there are two same IP addresses enable meantime, all the multicast video will be affected.

- ***Destination IP Address*** and ***Destination Port:*** Using for multicast IP addresses or unicast IP addresses and ports.
- ***Enable Destination MAC:*** Generally, you do not need to enable this option. This is reserved for exceptional case when the unicast stream cannot be received by using unicast IP addresses, you can enable destination MAC and streaming out by setting Destination MAC.
- ***Advance Setting (only available in CE-HDMI-00):***

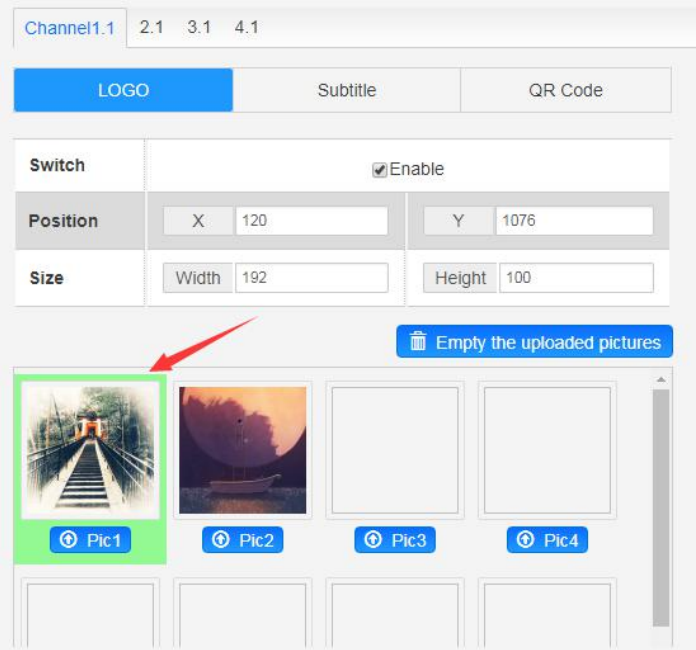


The second eth is reserved for you to output IP stream in an another different VLAN, enable the second eth and set ***IP Address***, ***Subnet Mask***, ***Default Gateway*** in the same segment of the Unicast IP (the another different VLAN), you can output Unicast stream to the another VLAN.

CE-HDMI-01 >OSD Setting (only available in the CE-HDMI-01 module)

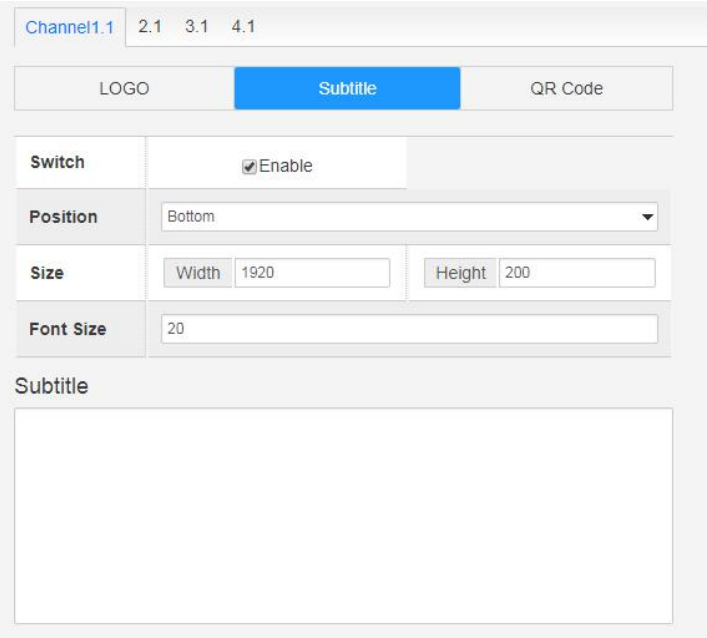
You should choose channel first before you set OSD.

- LOGO setting: you can upload several pictures at the same time, and pick one to show on the screen, when you click the one you want to show that picture field will turn to green.



LOGO Parameter	Range	LOGO Parameter	Range
Position X	0~1920 (Dual)	**Position Y**	0~1080 (Dual)
Size width	0~1920 (Dual)	**Size Height**	0~1080 (Dual)

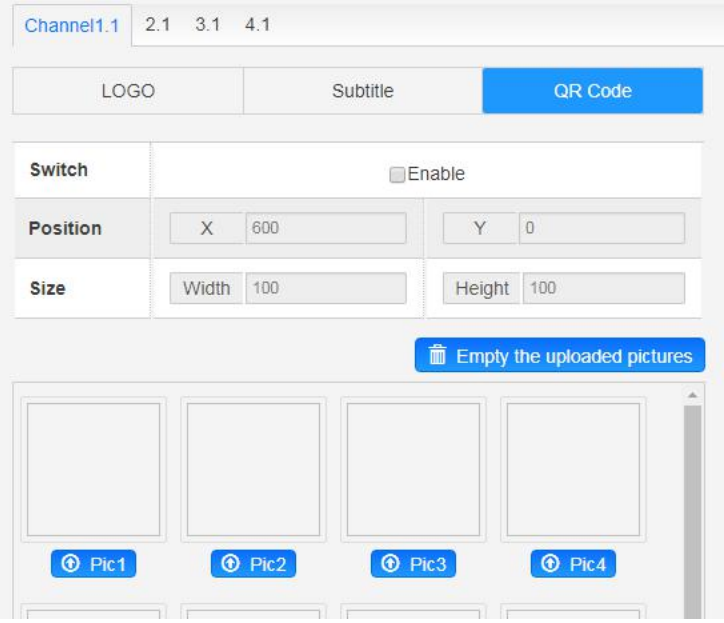
➢ Subtitle setting:



Subtitle Parameter	Range	LOGO Parameter	Range
Position	Bottom/Top/Middle	**Size width**	0~1920 (Dual)

Size Height	0~1080 (Dual)	**Front**	0~100

➢ QR Code setting: QR Code picture picking method is same to LOGO setting.



LOGO Parameter	Range	LOGO Parameter	Range
Position X	0~1920 (Dual)	**Position Y**	0~1080 (Dual)
Size width	0~1920 (Dual)	**Size Height**	0~1080 (Dual)

CE-HDMI-00/01 >Service Configuration/ System Operation

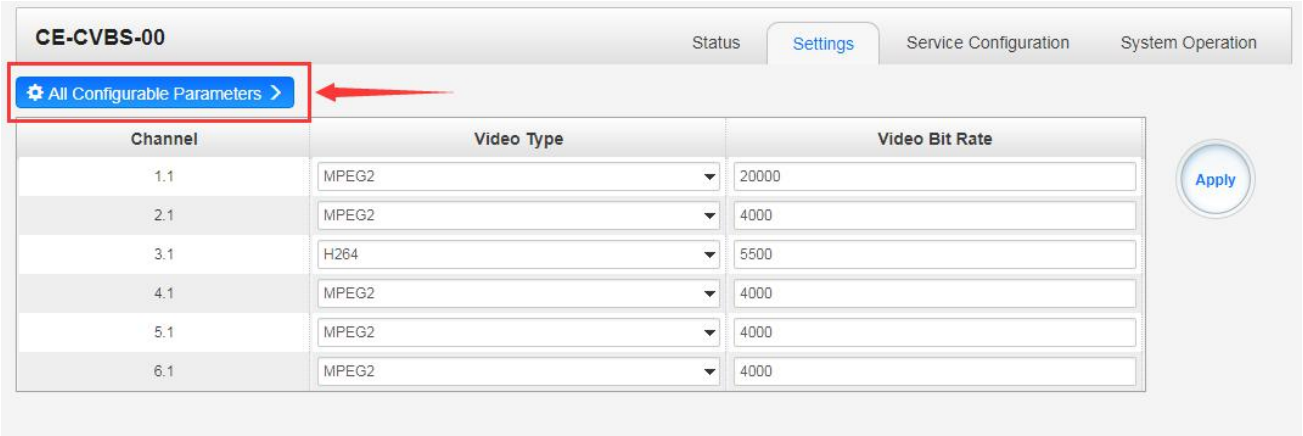
Service Configuration and System Operation please refer to CR-DVBC/DTMB module.

4.2.2 CE-CVBS

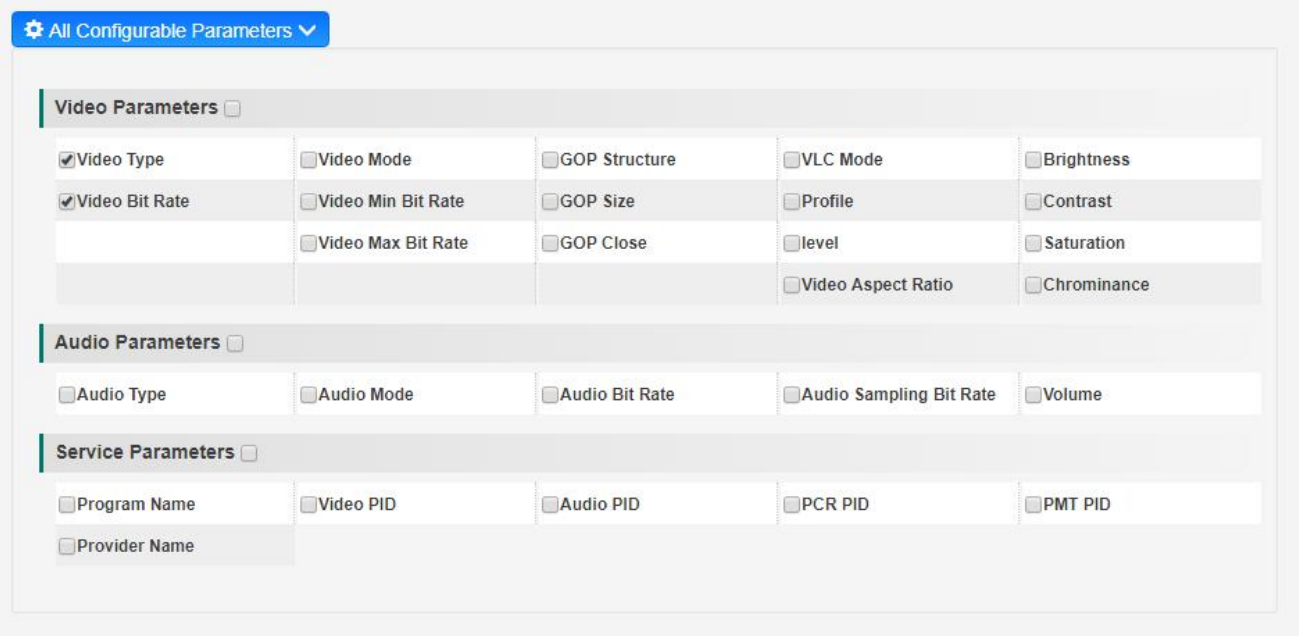
CE-CVBS is a 6/8/16-channel CVBS input encoder with 2/2/4 DB15 connectors each for 3/4/4 channels. It supports H.264 SD or MPEG-2 SD encoding and it supports MPEG1-L2 audio encoding.

Configuration is similar to CE-HDMI module. Please refer to that module section.

CE-CVBS-00 >Settings



Click ***All Configurable Parameters*** to see all parameters you can modify and check what specific parameters you want to set and see. Click the ***Apply*** button in the right side to make the change take effect.



Click ***Service Info*** in the line of Audio Coding to set audio encoding.

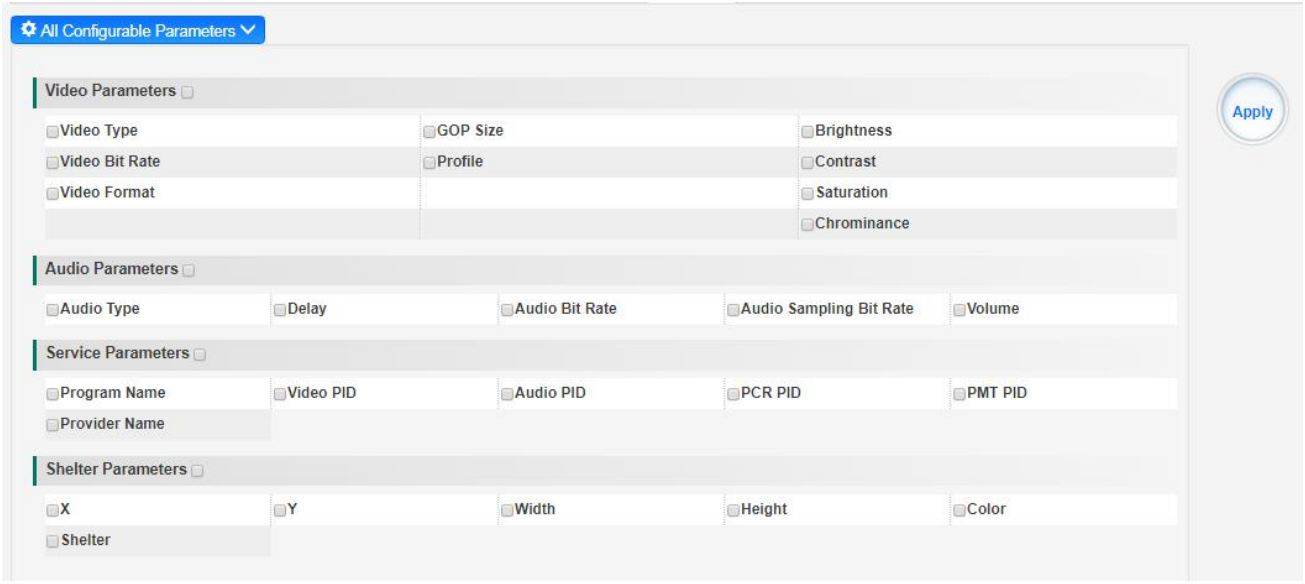
Name	Range	Name	Range
Video Type	H264 , MPEG2	**Service Name**	Length is 1~16
Video Bitrate (Kbps)	600~20000	**Service Provider Name**	Length is 1~16
Video Mode	CBR, VBR	**Brightness**	0~255
Video Max Bitrate (Kbps)	0	**Contrast**	0~255
Video Min Bitrate (Kbps)	20000	**Saturation**	0~255
Video PID	32~8190	**Hue**	-180~180
GOP Structure	IPPB, IPPP, IBP	**VLC Mode**	CABAC CAVLC
GOP Size	6~63	**Profile**	HIGH / MAIN (H.264) MAIN (MPEG-2)
GOP Close	Disable, Enable	**Level**	3.0,3.1,3.2
PCR PID	32~8190	**Video Aspect Ratio**	Auto 16x9_LetterBox 16x9_CutOff 4x3_PillarBox

			4x3_CutOff
PMT PID	32~8190		

Audio Encoder Details	Range	Audio Encoder Details	Range
Encoding Type	MPEG1_Layer2	**Audio Sampling Bitrate(KHz)**	48
Audio Mode (AC3)	Dual Channel/Mono/ Stereo	**Audio PID**	32~8190
Encoding Bitrate(Kbps)	64~384	**Volume Setting**	0.00~8.00

CE-CVBS-01 /01A>Settings

CE-CVBS-01 module has 8 channels with 2 DB15 connectors and CE-CVBS-01A module has 16 channels with 4 DB15 connectors. The configuring of them are similar to CE-CVBS-00, there are a few differences on parameter setting range.



Name	Range	Name	Range
Video Type	H.264	**Service Name**	Length is 1~16
Video Bitrate (Kbps)	600~6000	**Service Provider Name**	Length is 1~16
Video Mode	CBR	**Brightness**	0~255
GOP Size	1~99	**Contrast**	0~255
Profile	Main/High	**Saturation**	0~255
Video PID	32~8190	**Chrominance**	0~100

Video Format	AUTO/NTSC/PAL	**PMT PID**	32~8190

Audio Encoder Details	Range	Audio Encoder Details	Range
Encoding Type	MPEG1_Layer2/AAC/AC3	**Audio Sampling Bit rate(KHz)**	48
Audio Mode (AC3)	Stereo	**Audio PID**	32~8190
Encoding Bitrate(Kbps)	32~192	**Volume (dB)**	-20~20
Delay (ms)	-2000~2000		

CE-CVBS-01/01A > IP Output/ OSD Setting

IP output and OSD setting please refer to CE-HDMI module.

CE-HDMI-00/01 >Service Configuration/ System Operation

Service Configuration and System Operation please refer to CR-DVBC/DTMB module.

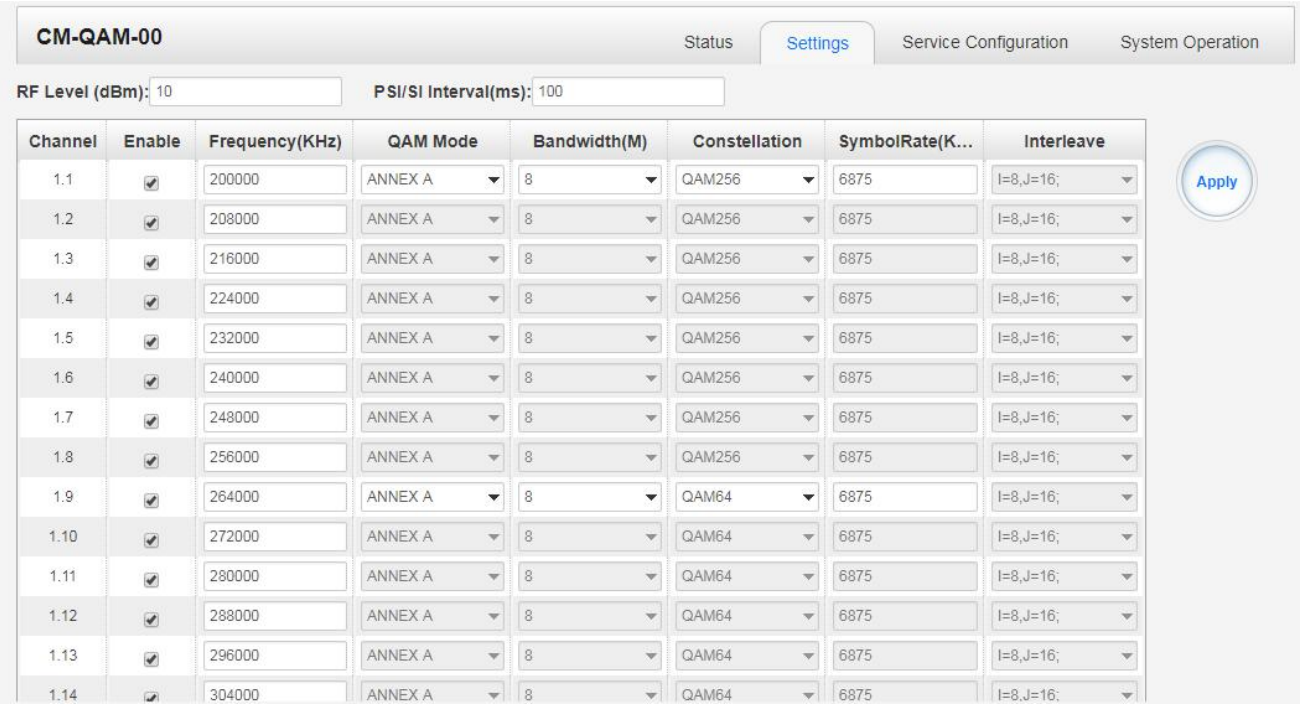
4.3 Modulation Output modules

4.3.1 CM-QAM

CM-QAM module supports modulating 16 non-adjacent or 4/8 adjacent channels with 1 RF female port for modulating output and 1 RJ45 network port is reserved for future use.

Module configuration is similar to IP Setting.

CM-QAM--00 >Setting



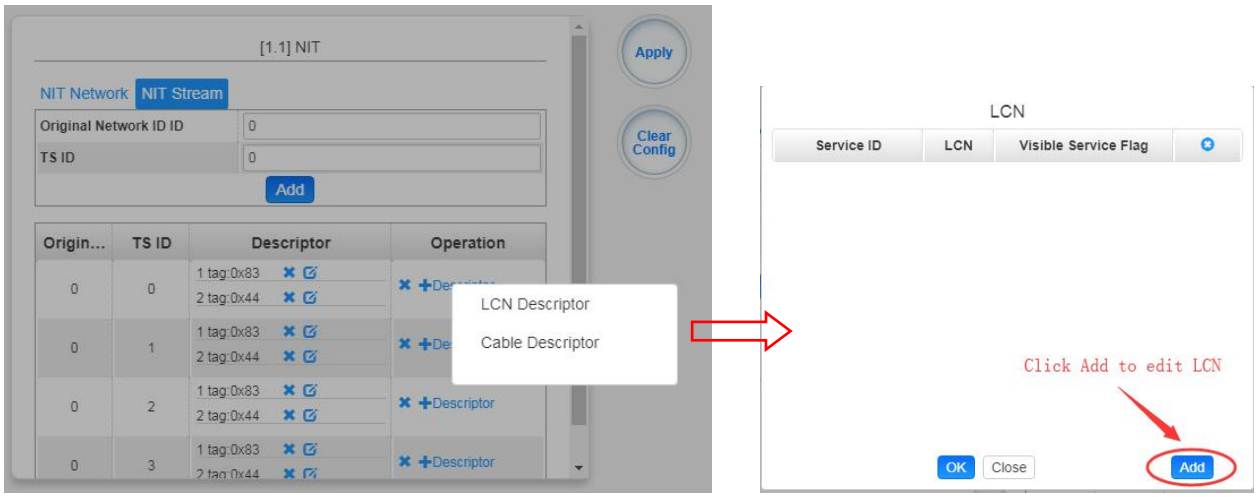
Channel	Enable	Frequency(KHz)	QAM Mode	Bandwidth(M)	Constellation	SymbolRate(K...	Interleave
1.1	☑	200000	ANNEX A	8	QAM256	6875	I=8,J=16;
1.2	☑	208000	ANNEX A	8	QAM256	6875	I=8,J=16;
1.3	☑	216000	ANNEX A	8	QAM256	6875	I=8,J=16;
1.4	☑	224000	ANNEX A	8	QAM256	6875	I=8,J=16;
1.5	☑	232000	ANNEX A	8	QAM256	6875	I=8,J=16;
1.6	☑	240000	ANNEX A	8	QAM256	6875	I=8,J=16;
1.7	☑	248000	ANNEX A	8	QAM256	6875	I=8,J=16;
1.8	☑	256000	ANNEX A	8	QAM256	6875	I=8,J=16;
1.9	☑	264000	ANNEX A	8	QAM64	6875	I=8,J=16;
1.10	☑	272000	ANNEX A	8	QAM64	6875	I=8,J=16;
1.11	☑	280000	ANNEX A	8	QAM64	6875	I=8,J=16;
1.12	☑	288000	ANNEX A	8	QAM64	6875	I=8,J=16;
1.13	☑	296000	ANNEX A	8	QAM64	6875	I=8,J=16;
1.14	☑	304000	ANNEX A	8	QAM64	6875	I=8,J=16;

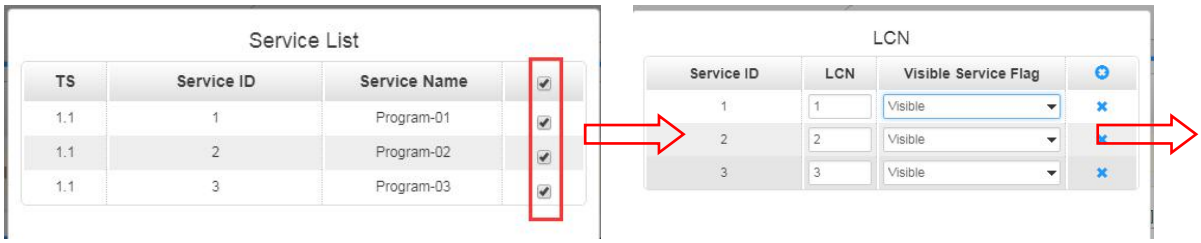
Click the ***Apply*** button in the right side to make the change take effect.

Name	Range	Name	Range
QAM Mode	ANNEX A/ ANNEX B	**RF level**	0~63
Bandwidth	6M, 7M, 8M	**Frequency (KHz)**	47000~862000
Symbol Rate (KBaud)	4400~6956	**Constellation**	QAM16/32/64/128/256
PSI/SI Interval (ms)	50~10000		

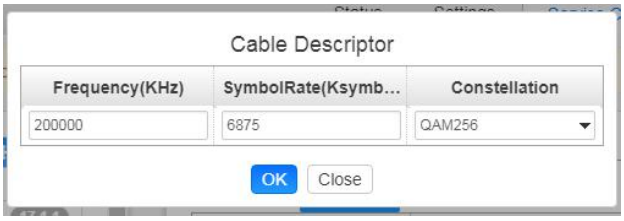
CM-QAM-00 >Service Configuration

- TS setting: Please refer to TSoIP output service configuration.
- LCN setting: You need to add NIT stream of all frequencies in the base TS (frequency) which is used for your STB auto search and identifies all the TS (frequencies) LCN information.
    - Check or reset each TS (frequency) Original Network ID and TS ID, which should be different of each TS.
    - Fill the Original Network ID and TS ID of each TS (frequency) in the field of the base TS (frequency) and then click add to create a NIT stream of this TS (frequency).
    - Click plus icon of Descriptor and add the LCN Descriptor in. Then check all the programs which are contained in this frequency. Then set programs LCN.





- Click plus icon of Descriptor and add the Cable Descriptor in. Then fill in the correct frequency and symbol rate and choose the correct constellation of the TS (frequency) and then click OK. (This operation should be set on Modulator module only)



- Do same operations to add next TS (frequency) until NIT streams of all the frequencies have been included. At last click Apply button to let all configuration take effect. Then searching programs in your STB, you will get all programs in order of LCN which you set.

4.3.2 CM-DTMB

CM-DTMB module supports up to 4/8 adjacent frequencies modulating with 1 RF female connector for output. Operations please refer to CM-QAM-00 pages.

4.3.3 CM-QAMB

CM-QAMB module supports up to 16 non-adjacent or 4/8 adjacent frequencies modulating with 1 RF female connector for output. Operations please refer to CM-QAM-00 pages.

4.3.4 CM-OFDM

CM-OFDM module supports up to 4/8 adjacent frequencies modulating with 1 RF female connector for output. Operations please refer to CM-QAM-00 pages.

Part 5 Appendices

Appendix A - Abbreviations

8VSB	Vestigial sideband modulation with 8 discrete amplitude levels
16VSB	Vestigial sideband modulation with 16 discrete amplitude levels
AAC	Advanced Audio Coding
AC-3	Also known as Dolby Digital
ASI	Asynchronous Serial Interface
ATSC	Advanced Television Systems Committee
AV	Audio Video
BAT	Bouquet Association Table
BER	Bit Error Ratio
Bit Rate	The rate at which the compressed bit stream is delivered
BNC	British Naval Connector
CAM	Conditional Access Module
CAT	Conditional Access Table
CAT6	Category 6 – Cable standard for gigabit Ethernet
CBR	Constant Bitrate
CI	Common Interface
CVBS	Composite Video Broadcast Signal
dB	Decibel
DVB	Digital Video Broadcasting
EIT	Event Information Table
EPG	Electronic Program Guide
FEC	Forward Error Correction
GOP	Group of Pictures
HD	High Definition
HDCP	High-bandwidth Digital Content Protection
HDMI	High Definition Multimedia Interface

I/O	Input/output
Kbps	1000 bit per second
LCN	Logical Channel Number
LNB	Low-Noise Block
LO	Local Oscillator
Mbps	1,000,000 bits per second
MER	Modulation Error Ratio
MIB	Management Information Base
MPTS	Multi-program Transport Stream
NIT	Network Information Table
OFDM	Orthogonal Frequency-Division Multiplexing
PAT	Program Association Table
PCR	Program Clock Reference
PID	Packet Identifier
PMT	Program Map Table
PSI	Program Specific Information
PSU	Power Supply Unit
QAM	Quadrature Amplitude Modulation
QPSK	Quadrature Phase-Shift Keying
SD	Standard Definition
SDI	Serial Digital Interface
SDT	Service Description Table
SI	Service Information
SNMP	Simple Network Management Protocol
SNR	Signal Noise Ration
SPTS	Single Program Transport Stream
TDT	Time and Date Table
TS	Transport Stream
VBR	Variable Bitrate

Appendix B- Warranty

We warrants this instrument against defects from any cause, except acts of God and abusive use, for a period of 1 (one) year from date of purchase. During this warranty period, we will correct any covered defects without charge.

Appendix C- After-Sales Support

Please contact our sales/regional representatives for any help, product information, and troubleshooting.

Returning Products for Service

The DMP00 is a delicate piece of equipment and needs to be serviced and repaired by the manufacturer. In order to expedite this process please carefully read the following items.

- Confirm the required component

Before any product can be returned for service, the client ought to contact our sales representatives and after-sales support department by means of email to confirm the need to return the product or part of the product.

- Collect the Serial Numbers to obtain RMA Number

Serial Number (SN) is printed on a label on the chassis and modules. To create a RMA number, SN must be submitted to support department. Once the RMA number has been issued to the client, the unit/component needs to be packaged and shipped back to the manufacturer. It’s best to use the original box and packaging for the product but if this not available, check with the service department for the proper packaging instructions. RMA Number should be specified in the delivery bill or written on the package.

 Do not return any power cables or accessories unless instructed to do so.