

CMP203

Media Platform

User Guide



Revision History

Date	Version	Description	Author
25/12/2018	1.0	First Draft	SW
25/4/2019	1.1	Add new modules and new features	DA
5/6/2019	1.2	Add new modules and modify the baseboard description	CJ
9/7/2019	1.3	Add new modules and new features	SW
14/11/2019	1.4	Add module CP2-CAM-00	MC
28/12/2019	1.5	Add EAS parts for relevant encoding modules	CJ
31/8/2020	1.6	Modify the pictures and content according to V1.4.0. Add Module CR2-DVBS2FTA-01, CE2-HDMI-06, CM2-MOD-02, CP2-EIT-00	JP
11/6/2021	1.7	Add Module CP2-ASI-00, CP2-IP-00	RS
12/8/2022	1.8	Add module CE2-HDMI-06B,CP-IP-02	AIV
31/3/2023	1.9	Add CMP Chassis and daughter boards power consumption.	FR
29/4/2023	1.10	Update the manual as a whole.	RF
27/9/2023	1.11	Add Module CD2-SDI-00	LJ
30/1/2024	1.13	Update Safety Instructions	RF
20/3/2024	1.14	Fix some editing errors and format errors	JS
23/3/2024	1.15	Update the information of Appendix A-Power Consumption	SW

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 series 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 by the manufacturer. Unauthorized part substitutions made may result in fire, electric shock or other hazards.
- While user is upgrading the module/chassis, the devices could not be power off. Meanwhile, user's PC should have stable network connect to CMP while upgrading until it finishes. If the module could not finish the upgrade due to incidental interruption, there is a risk that the devices would be damaged and probably would be needed to send back to us for repairing.

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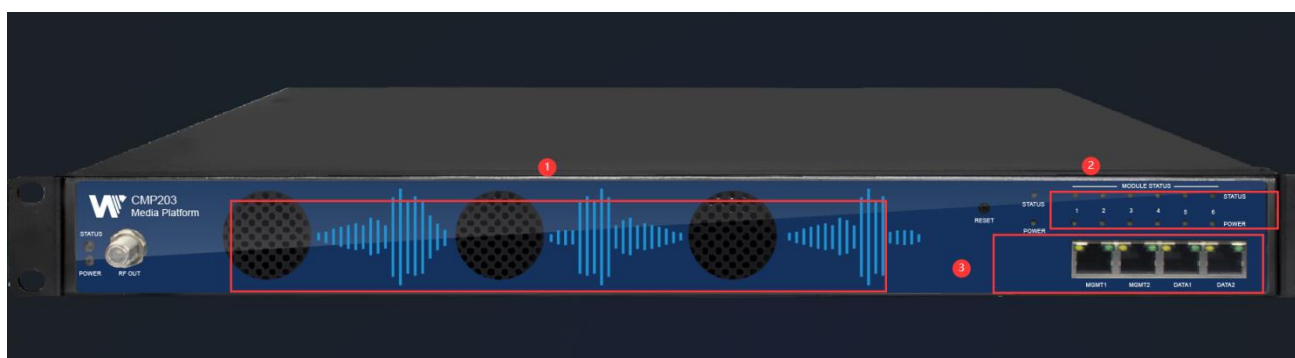
1 Chassis Overview

1.1 Front Panel

CMP203 is a new generation of compact media platform which focuses on cost-effective commercial TV market and traditional DTV market.

With powerful embedded Gigabit switch, optional commercial/broadcast level encoder modules and multi-mode receiver and modulator modules, it has been preconfigured to meet all the major video delivery requirements of signal receiving, descrambling, encoding, multiplexing, modulation and IP processing depending on a variety of models.

Due to its compact design, powerful functions, super practical price and low operational cost, it's a perfect choice for commercial video delivery applications for hotel, campus, hospital, MDU and more kinds of cable TV and IPTV systems, where massive programs are required to be processed, saving you more space and expense.



1. Cooling air intake
2. Status and Power Indicators and Reset button
3. RJ45 ports for remote network management

1.2 Back Panel

CMP203



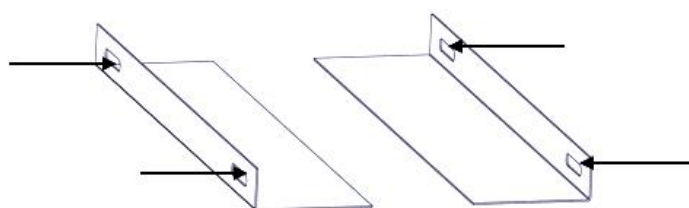
- I. 6 hot-swappable modules
- II. Single Power Supply
- III. Ground

2 Installation

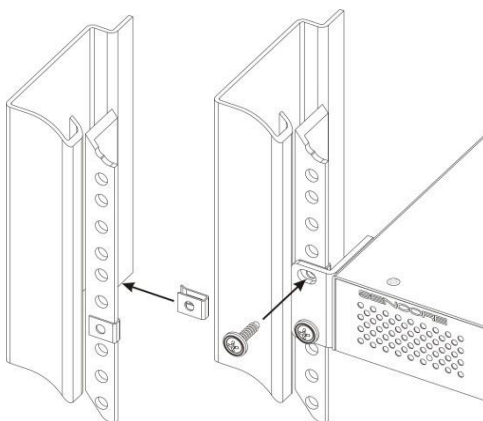
2.1 Rack Installation

The CMP203 is designed to be mounted in a standard 19" rack. It takes 1RU of rack space. To install it into a rack, please use the following steps:

1. Determine the desired position in the rack for the CMP203. 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 CMP203 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 CMP203, personnel, or property. Make sure the power outlet is switched off before plug or unplug the power cable from the panel of CMP203.



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.

3 Module Overview

3.1 CMP203 Baseboard

CMP203	Basic Function
Baseboard	120 inputs & 120 outputs IP channel

3.2 Receiver Modules

Module	Description
CR2-DVBC-00	<ul style="list-style-type: none"> 4-channel DVBC Annex A/C receiving and descrambling module with 1 RF female connector and 2 CI slots
CR2-DVBC-01	<ul style="list-style-type: none"> 4-channel DVB-C Annex B or ISDBT receiver descrambling board (one signal input interface, support signal internal loop connection, two CAM slots)
CR2-DVBS2CI-01	<ul style="list-style-type: none"> 4-channel DVB-S2 receiving descrambling board (two DVB-S2 signal input interfaces, two CAM slots)
CR2-DVBS2FTA-01/01A	<ul style="list-style-type: none"> 4-channel DVB-S/S2/S2XFTA receiving module with 4 RF connectors
CR2-8VSB-00	<ul style="list-style-type: none"> 4-channel 8VSB receiving module with 4 RF connectors
CR2-DVBT2CI-00	<ul style="list-style-type: none"> 4-channel DVB-T/T2 receiving and descrambling module with 1 RF connectors and 2 CI slots

3.3 Encoder Modules

Module	Description
CE2-HDMI-00	<ul style="list-style-type: none"> 4-channel HDMI HD encoder (broadcast level), supports H.264 HD/SD, MPEG-2 SD, MPEG1L2, AAC, AC3

CE2-HDMI-02	<ul style="list-style-type: none">• 2-channel HDMI HD encoder, supports H.264/MPEG-2 HD/SD, MPEG1L2, AAC (optional), AC3 (optional), supports CC subtitles
CE2-HDMI-02C	<ul style="list-style-type: none">• 2-channel HDMI or component HD encoder, supports H.264 / MPEG-2 HD/SD, MPEG1L2, AAC (optional), AC3 (optional), support CC subtitle and analog audio input
CE2-HDMI-06B	<ul style="list-style-type: none">• 4ch HDMI HD encoding board (broadcast grade), support H.264 HD/SD, support B frame, MPEG1L2 (support), AAC (optional), AC3 (optional)
CE2-CVBS-00/R01/R01A	<ul style="list-style-type: none">• 6/8/16-channel CVBS encoder with 2/2/4 DB15 connectors each for 3/4/4 channels. It supports H.264/MPEG-2 SD encoding and MPEG1-L2, AAC (optional) and AC3 (optional) audio.
CE2-HDMI-R05	<p>4-channel HDMI encoder</p> <ul style="list-style-type: none">• Supports H.264/H.265 HD/SD encoding (up to 1080p60), supports MPEG1-L2, AAC (optional) and AC3 (optional) audio encoding. Also supports QR code, logo, subtitles insertion
CE2-HDMI-05A	<p>8-channel HDMI encoder</p> <ul style="list-style-type: none">• Supports H.264/H.265 HD/SD encoding (up to 1080p60), supports MPEG1-L2, AAC (optional) and AC3 (optional) audio encoding. Also supports QR code, logo, subtitles insertion
CE2-SDI-01	<ul style="list-style-type: none">• 2-channel SDI HD encoding board, support H.264/MPEG-2 HD/SD, MPEG1L2 (support), AAC (support), AC3 (support), support CC subtitles

CE2-HDMI-06

- 4-channel HDMI encoder (broadcast level), supports H.264/H.265 HD/SD encoding (up to 1080p60), B frame and de-interlacing. Supports MPEG1-L2, AAC (optional) and AC3 (optional) audio encoding. Also supports QR code, logo, subtitles insertion

3.4 Modulator Modules

Module	Description
CM2-QAMA-R00	<ul style="list-style-type: none"> • Supports up to 16 non-adjacent or channels with 1 RF female port for modulating output and 1 RJ45 network port is reserved for future use.
CM2-QAMB-R00	<ul style="list-style-type: none"> • supports up to 16non-adjacent frequencies modulating with 1 RF female connector for output
CM2-DTMB-03	<ul style="list-style-type: none"> • 8 channels of adjacent frequency DTMB modulating board
CM2-QAMA-03	<ul style="list-style-type: none"> • 8 channels of adjacent frequency QAM-A/C modulating board
CM2-QAMB-03	<ul style="list-style-type: none"> • 8 channels of adjacent frequency QAM-B modulating board
CM2-OFDM-03	<ul style="list-style-type: none"> • 8 channels of adjacent frequency OFDM modulating board
CM2-ISDBT-03	<ul style="list-style-type: none"> • 8 channels of adjacent frequency ISDBT-T modulating board
CM2-8VSB-03	<ul style="list-style-type: none"> • 8 channels of adjacent frequency 8VSB(ATSC) modulating board

CM-QAMA/B-02

- Max32-channel QAM-A/B modulation module, 2 gigabit IP input electrical ports, each input port supports 512 input channels; 1 CAS interface (RJ45), support scrambling function; 1 RF output interface, support 32-channel QAM non-advanced frequency Modulation output, independent constellation mode configuration

3.5 Function Modules

Module	Description
CP2-EAS-00	<ul style="list-style-type: none"> • supports EAS triggering by analogue EAS input and digital EAS input
CP2-CAM-00	<ul style="list-style-type: none"> • Scrambling & descrambling module with 2 CI slots. It supports almost all kinds of CAM card descrambling and the number of descrambled services is defined by the CAM card. It supports descrambling services which are multiplexed from different IP/RF channels or modules.
CP2-EIT-00	<ul style="list-style-type: none"> • EIT multiplex module. Supports up to 32 TS inputs and up to 16 TS outputs. It also supports EIT multiplexing enable control at module level, TS level and program level. Multiple EIT multiplexing modules can run simultaneously in a single chassis
CP2-ASI-00	<ul style="list-style-type: none"> • CP2-ASI-00 module is an ASI module that has 5 bidirectional ASI ports. Each port can be defined as either ASI input port or ASI output port. It supports different TS stream formats of 188/204 bytes packet length and Byte/Packet stream mode with up to 150Mbps TS stream bitrate.
CP2-IP-00	<ul style="list-style-type: none"> • CP2-IP-00 is an IP module that supports multiple network protocols such as UDP/RTP/HLS/RTSP/SRT/Zixi/RIST. The module has 1 internal GbE port, 3 external GbE ports, 1 USB port and 1 Mini-HDMI port. The GbE ports will

	<p>be used for IP stream input and output while USB ports and Mini-HDMI port will be used for OS installation. With CP2-IP-00 module, you are able to output any program streams via different network protocols or receive any network streams further transmission.</p>
CP-IP-02	<ul style="list-style-type: none">• CP2-IP-02 is an IP module that supports UDP/RTP via Unicast/Multicast. It has 2 Data port, port1 support 128 input & output, port2 support 120 input & output.

3.5 Decode Module

Module	Description
CD2-SDI-00	<ul style="list-style-type: none">• 4-channel HD/SD SDI decoding and output board

4 Web GUI

4.1 Web GUI Overview

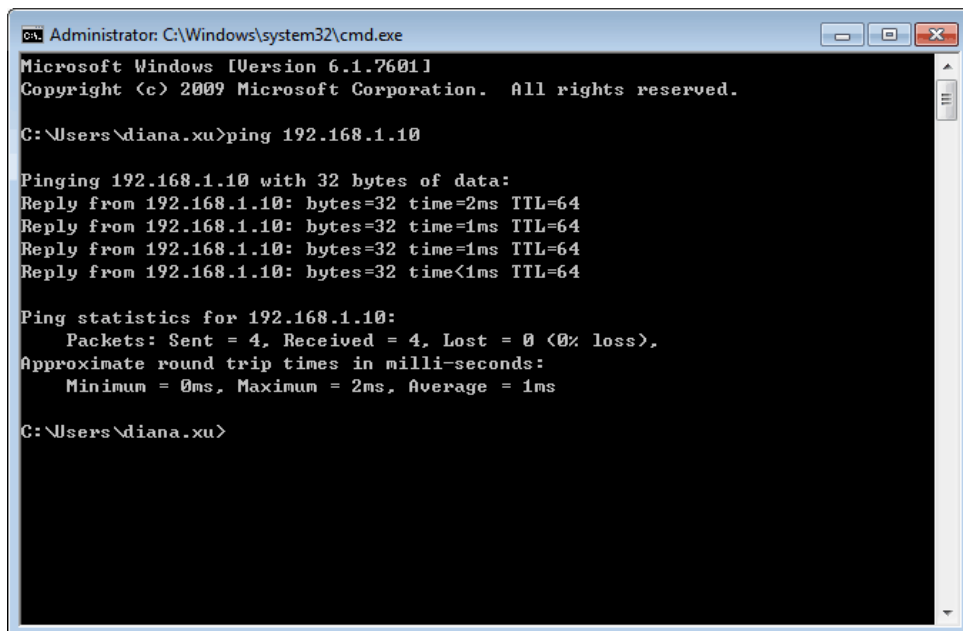
4.1.1 Connect the Management Port

Factory network settings of the Management Port:

- IP address 192.168.1.10
- Subnet Mask 255.255.255.0
- Gateway 192.168.1.254

Take the following steps to access the Web GUI in a browser.

- Connect laptop/computer to CMP203 management port directly.
- Set the IP address of the laptop/computer in the same network segment with the CMP203Baseboard. CMP203 will occupy up to 7 IP addresses if it's fully loaded as each module has its own IP address including the baseboard. **Please avoid possible IP address conflict between management PC and CMP203 unit.**
- Check the physical connection by ping command.



```
Administrator: C:\Windows\system32\cmd.exe
Microsoft Windows [Version 6.1.7601]
Copyright (c) 2009 Microsoft Corporation. All rights reserved.

C:\Users\diana.xu>ping 192.168.1.10

Pinging 192.168.1.10 with 32 bytes of data:
Reply from 192.168.1.10: bytes=32 time=2ms TTL=64
Reply from 192.168.1.10: bytes=32 time=1ms TTL=64
Reply from 192.168.1.10: bytes=32 time=1ms TTL=64
Reply from 192.168.1.10: bytes=32 time<1ms TTL=64

Ping statistics for 192.168.1.10:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 0ms, Maximum = 2ms, Average = 1ms

C:\Users\diana.xu>
```



CMP203 has an embedded gigabit switch inside the chassis. You can use it as a switch with other devices together. The four network ports are respectively used for managing and streaming.

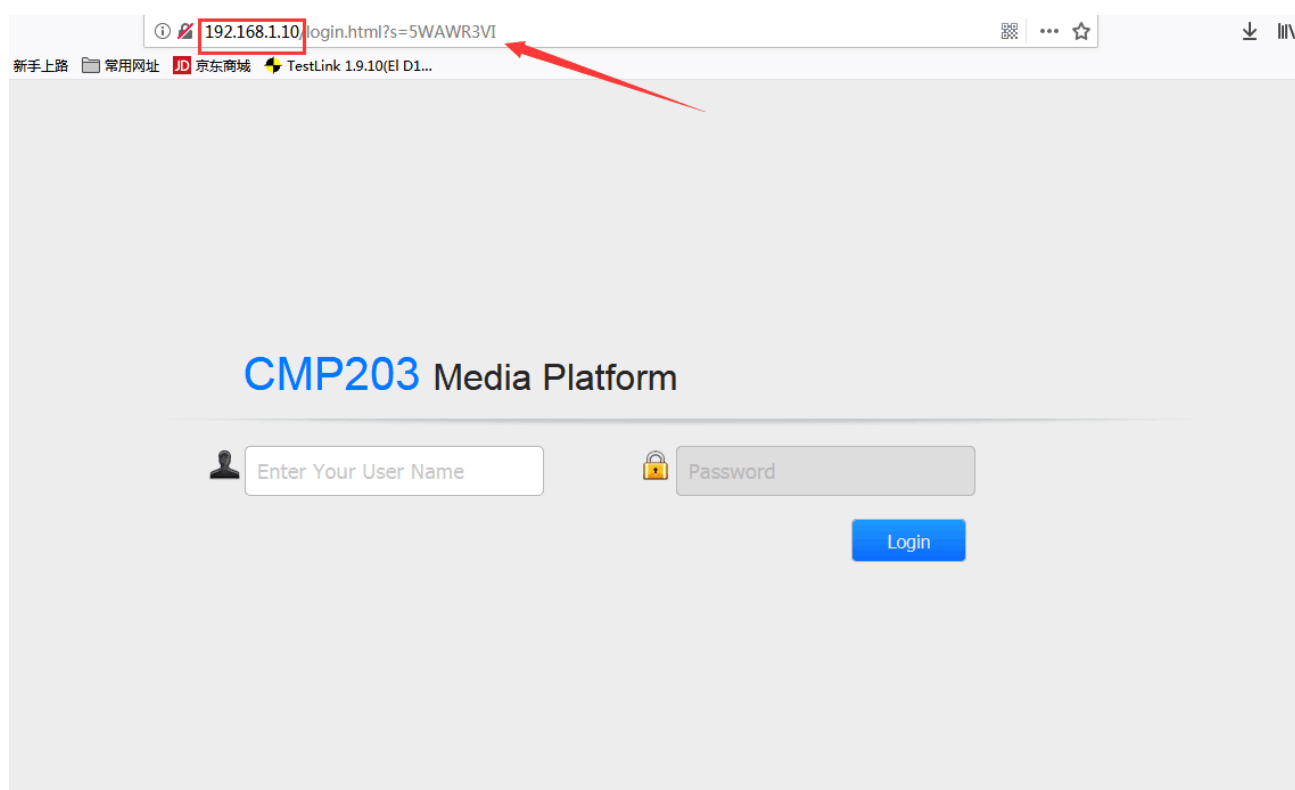
From left to right, port 1 and port 2 are used for management, port 3 and port 4 are used for data transmission. A good method of checking IP output is to play the IP streams using VLC player directly.



If you want to connect a switch between CMP203 and PC or other devices, this switch should support IGMP V2 and IGMP snooping function. If the switch you used is not configured properly, it could cause some network issue.

4.1.2 Logging into the Web GUI

Enter the CMP203 Baseboard IP address into the URL field of any recommended Web browsers (IE8 or above, Firefox, and Google Chrome) to access the login page. The default user name and password are both admin. Click **Login** to log into the GUI.

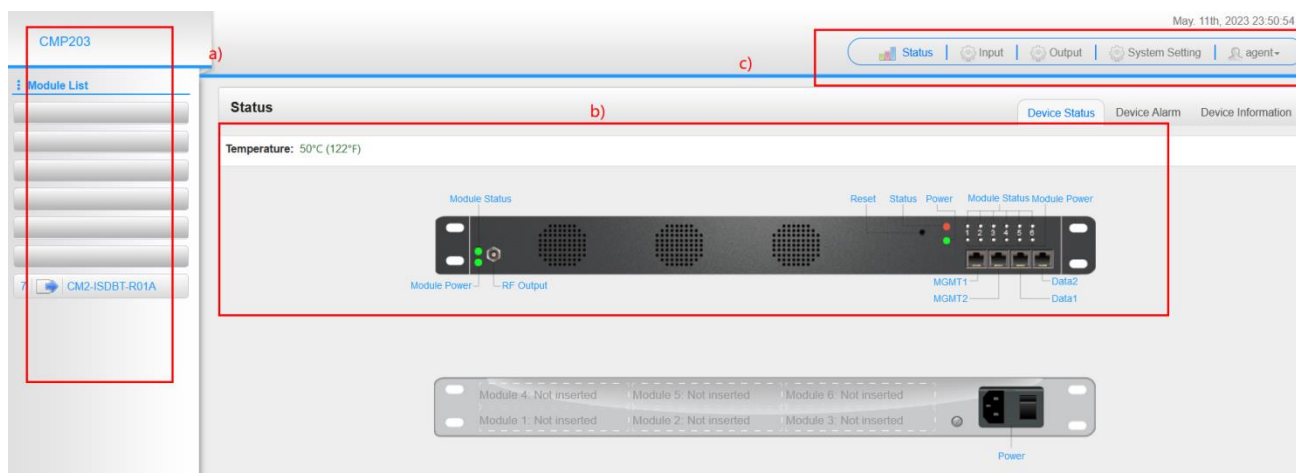


4.2 Status

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: it shows the module(s) inserted
- b) Device host operating status, running status of fans and other status display options
- 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.

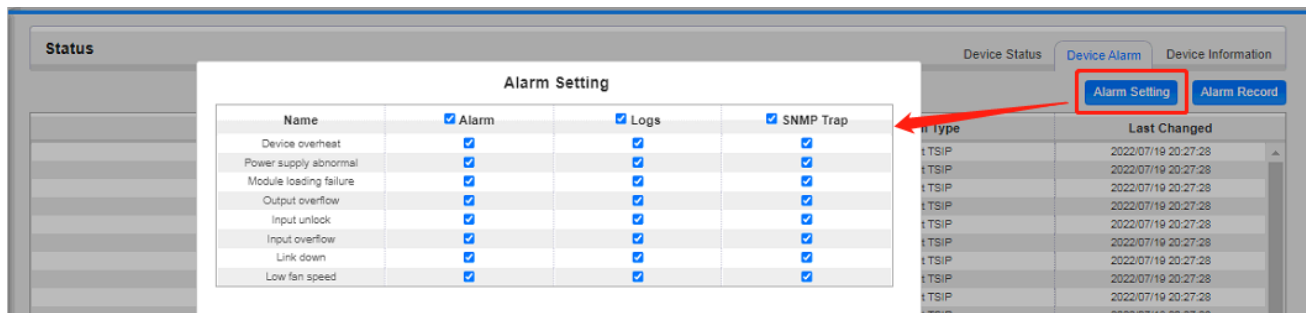
Status>Device Alarm

Device Alarm page shows the alarm settings and alarm record.

Status				Device Status	Device Alarm	Device Information
						Alarm Setting Alarm Record
Name	Location	Alarm Type	Last Changed			
Input unlock	Backboard Channel: 45	Input TSIP	2022/07/19 20:27:28			
Input unlock	Backboard Channel: 44	Input TSIP	2022/07/19 20:27:28			
Input unlock	Backboard Channel: 43	Input TSIP	2022/07/19 20:27:28			
Input unlock	Backboard Channel: 42	Input TSIP	2022/07/19 20:27:28			
Input unlock	Backboard Channel: 41	Input TSIP	2022/07/19 20:27:28			
Input unlock	Backboard Channel: 40	Input TSIP	2022/07/19 20:27:28			
Input unlock	Backboard Channel: 39	Input TSIP	2022/07/19 20:27:28			
Input unlock	Backboard Channel: 38	Input TSIP	2022/07/19 20:27:28			
Input unlock	Backboard Channel: 37	Input TSIP	2022/07/19 20:27:28			
Input unlock	Backboard Channel: 36	Input TSIP	2022/07/19 20:27:28			
Input unlock	Backboard Channel: 35	Input TSIP	2022/07/19 20:27:27			
Input unlock	Backboard Channel: 34	Input TSIP	2022/07/19 20:27:27			
Input unlock	Backboard Channel: 33	Input TSIP	2022/07/19 20:27:27			
Input unlock	Backboard Channel: 31	Input TSIP	2022/07/19 20:27:27			
Input unlock	Backboard Channel: 30	Input TSIP	2022/07/19 20:27:27			
Input unlock	Backboard Channel: 29	Input TSIP	2022/07/19 20:27:27			
Input unlock	Backboard Channel: 28	Input TSIP	2022/07/19 20:27:27			
Input unlock	Backboard Channel: 27	Input TSIP	2022/07/19 20:27:27			
Input unlock	Backboard Channel: 26	Input TSIP	2022/07/19 20:27:27			
Input unlock	Backboard Channel: 25	Input TSIP	2022/07/19 20:27:27			
Input unlock	Backboard Channel: 24	Input TSIP	2022/07/19 20:27:27			
Input unlock	Backboard Channel: 23	Input TSIP	2022/07/19 20:27:27			
Input unlock	Backboard Channel: 22	Input TSIP	2022/07/19 20:27:27			
Input unlock	Backboard Channel: 21	Input TSIP	2022/07/19 20:27:27			

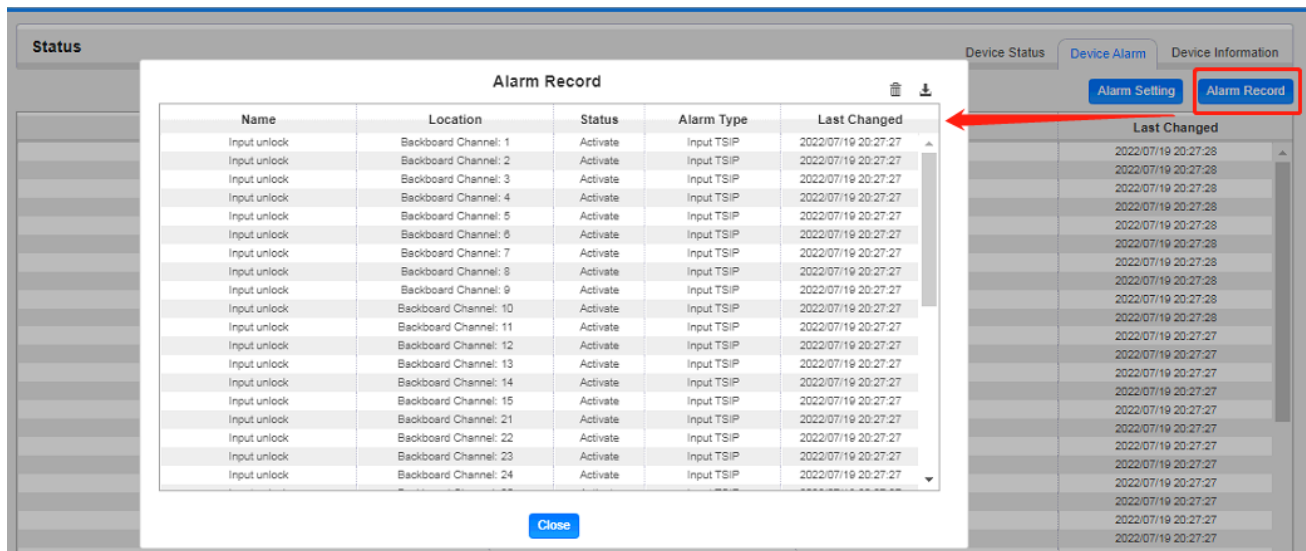
Status>Device alarm>Alarm Settings

Alarm setting lets the user set the alarms, logs, SNMP Trap, and different alarm parameters the user wants to see.



Status>Device alarm>Alarm Record

Alarm Record lets the user see the name of the alarm, the location, if it is still active, and the last time it was changed.



Status>Device Information

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

Status				
		Device Status	Device Alarm	Device Information
Module	Firmware Version	Software Version	Build Version	Hardware Version
Baseboard	V0.2.1039	V1.5.40	V1.5.40	V0.0.0.1
3.CM2-ISDBT-R01A	V73.3.258	V1.5.4	V1.5.4	V0.0.0.1
5.CP2-ASI-00	V0.2.740	V1.5.0	V1.0.21	V0.0.0.0
6.CM2-QAMA-R01A	V76.3.258	V1.5.1	V1.5.1	V0.0.0.1.1

4.3 System Setting

Click the **System Setting** on the top right corner to enter the system setting page where you can find **Network, Time Setting, System Manage, Password, NMS Register, Advanced Setting, and SNMP**

System Setting> Network

In **Network** page you can assign a static IP address to CMP201AD's baseboard. Click the **Apply** button on the right side to make the change take effect.

Module Name	IP Address	Subnet Mask	Default Gateway	DNS Server IP	MAC Address
NMS	192.168.1.10	255.255.255.0	192.168.1.254	0.0.0.0	A0:69:86:07:26:E6
DATA	192.168.2.140	255.255.255.0	192.168.2.1	0.0.0.0	A0:69:86:07:26:E5

Tips

1. When the subnet of the internal Baseboard IP address is changed, the IP addresses of all the modules will follow the subnet change automatically.
2. The IP addresses of all the modules will be automatically set to follow-on immediately after the Baseboard address.
3. IMPORTANT: To avoid IP address conflicts, ensure that all the IP addresses assigned within the chassis (Baseboard and Modules) are not used elsewhere in the network.



Note to avoid IP conflict when you set the 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 the current system time, change **Time Zone**, choose system time **Mode** (Manual or Automatic), enable/disable **Auto Sync** and modify **NTP Server Address** in Automatic mode or change the current system **Time** in Manual mode. Click the **Apply** button on the right side to make the change take effect.

➤ Automatic mode

System Setting

NetworkSystemTimeUserSNMPAdvanced Setting

System Time

May. 03rd, 2023 04:18:33

Time Zone

UTC +0: 00

Mode

Manual

Time

2023/05/03 04:17:57

Apply

➤ **Manual** mode

System Setting

NetworkSystemTimeUserSNMPAdvanced Setting

System Time

May. 03rd, 2023 04:19:16

Time Zone

UTC +0: 00

Mode

Manual

Time

Apply

System Setting>System

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

System Setting

NetworkSystemTimeUserSNMPAdvanced Setting

Upgrade

Select Module

Automatic Detection

Upgrade

Browse

Upload

Configuration

Import Configuration

Browse

Upload

Export Configuration

Export

License

Product ID

Import License

Browse

Upload

Export License

Export

Standard

Select Standard

DVB

+

OK

Select LCN Standard

International

OK

SNMP MIB

Export MIB

Export

System Setting> User

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

The screenshot shows the 'System Setting' page with the 'User' tab selected. A modal dialog box titled 'Password' is open in the center. The dialog contains three input fields: 'Current Password', 'New Password', and 'Confirm Password'. At the bottom of the dialog are 'OK' and 'Cancel' buttons. In the background, a table lists users with columns for 'Account', 'Role', 'Status', and 'Operator'. The 'admin' user is listed with the role 'Administrator' and status 'Enable'. A 'Password' button is visible in the 'Operator' column for the 'admin' user.

System Setting> SNMP

In **SNMP Setting** page you can set SNMP traps addresses.

The screenshot shows the 'System Setting' page with the 'SNMP' tab selected. The page contains several configuration fields for SNMP traps. On the left, there are labels for 'SNMP:', 'Trap IP Address1 (IPv4):', 'Trap IP Address1 (IPv6):', 'Trap IP Address2 (IPv4):', 'Trap IP Address2 (IPv6):', 'Read-Only Community:', and 'Read-Write Community:'. To the right of these labels are input fields. The 'SNMP:' field is a dropdown menu set to 'Enable'. The 'Trap IP Address1 (IPv4):' field contains '0.0.0.0'. The 'Trap IP Address1 (IPv6):' field contains '2001::c0a8:1af'. The 'Trap IP Address2 (IPv4):' field contains '0.0.0.0'. The 'Trap IP Address2 (IPv6):' field contains '2001::c0a8:1ae'. The 'Read-Only Community:' field contains 'public'. The 'Read-Write Community:' field contains 'private'. To the right of each trap IP address field is an 'Enable:' checkbox, all of which are currently unchecked. An 'Apply' button is located on the right side of the page.

System Setting> Advanced Setting

In **Advanced Setting** page you can do some changes about standard, priority, Language, Authorized Use Time, Destination Module Number, Reverse Proxy, CA Descriptor, PAT Sync Update, PAT Version,, reboot the Switch Module.

System Setting
Network
System
Time
User
SNMP
Advanced Setting

Standard	DVB	?
Priority Encoding	Auto	?
Language	English	?
Authorized Use Time	Stay With First Level Authorized Time	Never expires ?
Destination Module Number	4	?
Reverse Proxy Enable	Enable	?
CA Descriptor Filter	Disable	?
PAT Sync Update	Disable	?
PAT Version	Disable 0	?
VLAN Enable	Enable	?
ARP VLAN Tag	2	?
SSH/Telnet	Enable	?
Reboot Switch Module	Reboot Switch Module	

Apply

4.4 Input

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

Input >Status

In this page, you can check Total bitrate, each channel Total Bit Rate, IP Address and Port, Effective Bit Rate, TS Analysis and Service List.

Total Bitrate : 0.000 Mbps

Channel	IP Address : Port	Effective Bitrate(Mbps)	Total Bitrate(Mbps)	TS Analysis	Service List
1.1	239.33.33.1 : 10000	0.000	0.000		
1.2	239.33.33.2 : 10000	0.000	0.000		
1.3	239.33.33.3 : 10000	0.000	0.000		
1.4	239.33.33.4 : 10000	0.000	0.000		
1.5	239.33.33.5 : 10000	0.000	0.000		
1.6	239.33.33.6 : 10000	0.000	0.000		
1.7	239.33.33.7 : 10000	0.000	0.000		
1.8	239.33.33.8 : 10000	0.000	0.000		
1.9	239.33.33.9 : 10000	0.000	0.000		
1.10	239.33.33.10 : 10000	0.000	0.000		
1.11	239.33.33.11 : 10000	0.000	0.000		

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

➤ TS Analysis

Click **Reset Counter** button to clear continuity count errors and restart counting. Fill in the search bar with the key words of PID / Bit rate / bandwidth / table type / service name in the search bar to get the info you want.

Channel1.1 TS Analysis

Reset Counter

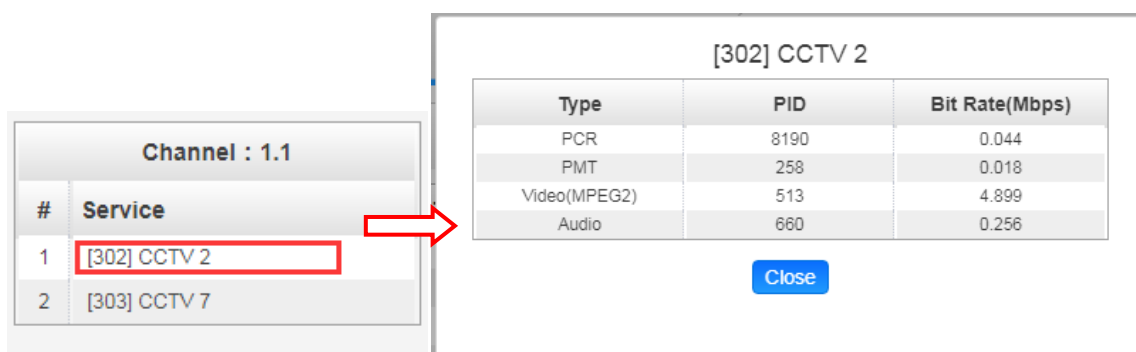
Search

PID	Bit Rate(Mbps)	Bandwidth(%)	Continuity Count Error	Type	Service
0x0(0)	0.001	0.085	0	PAT	
0x11(17)	0.001	0.085	0	SDT	
0x102(258)	0.001	0.085	0	Other	
0x103(259)	0.001	0.085	0	Other	
0x201(513)	0.269	22.816	0	Other	
0x202(514)	0.242	20.526	0	Other	
0x294(660)	0.021	1.781	0	Other	
0x29e(670)	0.021	1.781	0	Other	

Tips:

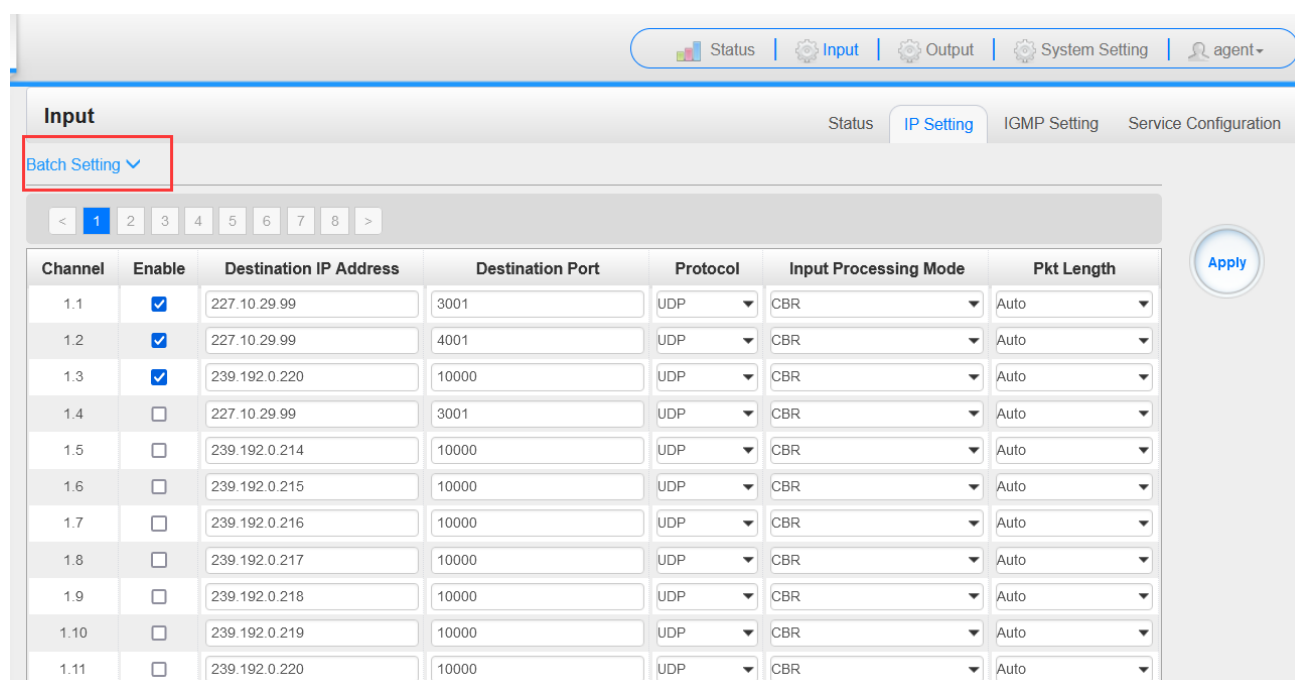
➤ Service List

Click a service name to check the detailed info of this service.



Input > IP Settings

Here you can configure IP input parameters: **Destination IP Address**, **Destination Port**, **Protocol** (UDP/RTP), and **TS Packets Per IP Packet**. Click **Apply** to make the setting take effect.



If you want to configure a batch of channels, please click “**Batch Setting**”.

To set the IP input parameters in batch, you can check the boxes before parameters you need then choose/modify the values. Click **Apply** to make the setting take effect.

Input Status **IP Setting** IGMP Setting Service Configuration

[Batch Setting](#)

Select All ☐ Start Channel-End Channel 1 - 120

☐ Enable Disable ☐ Destination IP Address 227.10.20.80 Same

☐ Protocol UDP ☐ Destination Port 1234 Same

☐ Input Processing Mode CBR ☐ Pkt Length Auto

[Batch Setting](#)

[Apply](#)

Channel	Enable	Destination IP Address	Destination Port	Protocol	Input Processing Mode	Pkt Length
1.1	<input checked="" type="checkbox"/>	227.10.29.99	3001	UDP	CBR	Auto
1.2	<input checked="" type="checkbox"/>	227.10.29.99	4001	UDP	CBR	Auto
1.3	<input checked="" type="checkbox"/>	239.192.0.220	10000	UDP	CBR	Auto

Input >IGMP Settings

User can set IGMP version, IGMP Automatic report, and IGMP Report Cycles in this page.

Input Status IP Setting **IGMP Setting** Service Configuration

IGMP Version: V2

IGMP Automatic Report: Enable

IGMP Report Cycle(s): 15

[Apply](#)

Input >Service Configuration

To stream an input source, you can configure the destination in this page.

Channel Select: Channel 1.1 Scanning Time(ms): 1000 PSI Search Time(ms): 5000

Program Scan

Service Name	Destination	Destination Setting
Channel 1.1 +		⚙️
[1] Program0	3.CM2-ISDBT-R01A[1.1, 1.2, 1.3, 1.4, 1.5, 1.6, 1.7, 1.8]	✎
[2] Program1	3.CM2-ISDBT-R01A[1.1, 1.2, 1.3, 1.4, 1.5, 1.6, 1.7, 1.8]	✎
[22] Program2	3.CM2-ISDBT-R01A[1.1, 1.2, 1.3, 1.4, 1.5, 1.6, 1.7, 1.8]	✎
[32] Program3	3.CM2-ISDBT-R01A[1.1, 1.2, 1.3, 1.4, 1.5, 1.6, 1.7, 1.8]	✎
[35] Program4		✎
[33] Program5	5.CP2-ASI-00[1.1, 1.2]	✎
PID 17 (SDT, BAT)		✎
PID 18 (EIT)		✎
PID 20 (TOT, TDT)		✎
PID 21 (Other PID)		✎
Channel 1.3 +		⚙️
[1] Program0		✎

Apply


Clear Config

- Multiplex or Bypass stream: Click the setting icon (⚙️), check the output module, 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.

Channel	Multiplex	Bypass
Channel1	<input type="checkbox"/>	<input type="checkbox"/>
Channel2	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Channel3	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Channel4	<input type="checkbox"/>	<input type="checkbox"/>
Channel5	<input type="checkbox"/>	<input type="checkbox"/>
Channel6	<input type="checkbox"/>	<input type="checkbox"/>
Channel7	<input type="checkbox"/>	<input type="checkbox"/>
Channel8	<input type="checkbox"/>	<input type="checkbox"/>
Channel9	<input type="checkbox"/>	<input type="checkbox"/>
Channel10	<input type="checkbox"/>	<input type="checkbox"/>
Channel11	<input type="checkbox"/>	<input type="checkbox"/>
Channel12	<input type="checkbox"/>	<input type="checkbox"/>
Channel13	<input type="checkbox"/>	<input type="checkbox"/>

After setting output destination, 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 the configuration.



There is a channel scan button () on top. Normally the input service list of each channel will load itself on this page, but when you change the input source, the list could not refresh immediately. You can refresh the changed channels manually by selecting the channel and clicking the channel scan button.

4.5 Output

Output >Status

The IP Output status information you can check on this page is similar as that of IP input. The TS analysis and service list function are also available.

IP Output						
				Status	Basic Setting	Service Configuration PSIP
Total Bitrate : 15.000 Mbps						
Chan...	IP Address : Port	Effective Bitrate...	Total Bitrate(Mbps)	Bitrate	TS Analysis	Service List
1.1	228.10.20.31 : 1234	0.045	15.000	Normal		
1.2	227.10.20.2 : 1234	0.000	0.000	Normal		
1.3	0.0.0.0 : 0	0.000	0.000	Normal		
1.4	0.0.0.0 : 0	0.000	0.000	Normal		
1.5	0.0.0.0 : 0	0.000	0.000	Normal		
1.6	0.0.0.0 : 0	0.000	0.000	Normal		
1.7	0.0.0.0 : 0	0.000	0.000	Normal		
1.8	0.0.0.0 : 0	0.000	0.000	Normal		
1.9	0.0.0.0 : 0	0.000	0.000	Normal		
1.10	0.0.0.0 : 0	0.000	0.000	Normal		
1.11	0.0.0.0 : 0	0.000	0.000	Normal		
1.12	0.0.0.0 : 0	0.000	0.000	Normal		
1.13	0.0.0.0 : 0	0.000	0.000	Normal		
1.14	0.0.0.0 : 0	0.000	0.000	Normal		

Output > IP Settings

Setting IP output channels is also similar to Setting IP input with addition of PSIP.

Output

StatusIP SettingService ConfigurationPSIP

Batch Setting

TX Interval: 100

(ms)

Null Packet Filter: Disable

<

1

2

3

4

5

6

7

8

>

Channel

Enable

Source Port

Destination IP Addr...

Destination Port

Protocol

Pkt Length

Bitrate(M...

Enable Destination MAC

Destination MAC

1.1

☒

1000

227.10.20.1

1234

UDP

7

10

Disable

01:00:5E:0A:14:01

1.2

☒

1000

227.10.20.2

1234

UDP

7

10

Disable

01:00:5E:0A:14:02

1.3

☒

1000

227.10.20.3

1234

UDP

7

10

Disable

01:00:5E:0A:14:03

1.4

☒

1000

227.10.20.4

1234

UDP

7

10

Disable

01:00:5E:0A:14:04

1.5

☒

1000

227.10.20.5

1234

UDP

7

10

Disable

01:00:5E:0A:14:05

1.6

☒

1000

227.10.20.6

1234

UDP

7

10

Disable

01:00:5E:0A:14:06

1.7

☒

1000

227.10.20.7

1234

UDP

7

10

Disable

01:00:5E:0A:14:07

1.8

☒

1000

227.10.20.8

1234

UDP

7

10

Disable

01:00:5E:0A:14:08

1.9

☒

1000

227.10.20.9

1234

UDP

7

10

Disable

01:00:5E:0A:14:09

1.10

☒

1000

227.10.20.10

1234

UDP

7

10

Disable

01:00:5E:0A:14:0A

1.11

☐

1000

227.10.20.11

1234

UDP

7

10

Disable

01:00:5E:0A:14:0B

1.12

☒

1000

227.10.20.12

1234

UDP

7

10

Disable

01:00:5E:0A:14:0C

1.13

☐

1000

227.10.20.13

1234

UDP

7

10

Disable

01:00:5E:0A:14:0D

1.14

☐

1000

227.10.20.14

1234

UDP

7

10

Disable

01:00:5E:0A:14:0E

Apply

- Multicast output setting: You should fill the fit multicast IP addresses as output in the **Destination IP Address** box. **Please avoid IP conflict among baseboard, encoder modules (see encoder modules page) and other devices when you set the 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 where the unicast stream cannot be received due to unknown reasons, you can enable Destination MAC and fill in 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 Bitrates** in the corresponding output channel/TS/port, since the **Effective Bitrates** might fluctuate a little bit. If you set the **Constant Rate** much higher than the **Effective Bitrates**, there will be lots of null packets in the output transport stream.

If you want to configure a batch of channels, please click “**Batch Setting**”.

Batch Setting of IP output channels is also similar to that of setting IP input.

Output

Status IP Setting Service Configuration PSIP

Batch Setting ^

Select All

☐

Disable

Start Channel-End Channel

1

-

120

☐ Enable

Disable

☐ Source Port

1000

☐ Protocol

UDP

☐ Bitrate

25

(Mbps)

☐ Destination IP Address

227.10.20.80

Same

☐ Destination Port

1234

Same

☐ Pkt Length

7

☐ Enable Destination MAC

Disable

AA:BB:CC:DD:EE:FF

Batch Setting

Apply

TX Interval: 100 (ms)

Null Packet Filter: Disable

< 1 2 3 4 5 6 7 8 >

Channel	Enable	Source Port	Destination IP ...	Destination...	Protocol	Pkt Length	Bitrate...	Enable Destination MAC	Destination M...
1.1	<input checked="" type="checkbox"/>	1000	227.10.20.1	1234	UDP	7	10	Disable	01:00:5E:0A:14:01
1.2	<input checked="" type="checkbox"/>	1000	227.10.20.2	1234	UDP	7	10	Disable	01:00:5E:0A:14:02
1.3	<input checked="" type="checkbox"/>	1000	227.10.20.3	1234	UDP	7	10	Disable	01:00:5E:0A:14:03
1.4	<input checked="" type="checkbox"/>	1000	227.10.20.4	1234	UDP	7	10	Disable	01:00:5E:0A:14:04

Output >Service Configuration

You can make configuration for output services and TS.

The screenshot shows the 'Service Configuration' tab for the selected TS [1.1] TS >> Program4. The interface includes a top navigation bar with 'Status', 'Input', 'Output', 'System Setting', and 'agent'. Below the navigation bar, there are tabs for 'Status', 'IP Setting', 'Service Configuration', and 'PSIP'. A yellow banner at the top of the main area states: 'Click "Apply" after modifying your parameters to save the configuration.' On the left, a list shows '1. Program4' under the '[1.1] TS' header. The main configuration area contains the following fields:

Service ID	35
Service Name	Program4
Service Provider	Program4
Service Type	2
PCR PID	3502
PMT PID	3501
Video(H264)	3502
Audio	3503
Private Data	3507
Private Data/AC3	3506

At the bottom of the configuration area are 'OK' and 'Cancel' buttons. On the right side, there are 'Apply' and 'Clear Config' buttons.

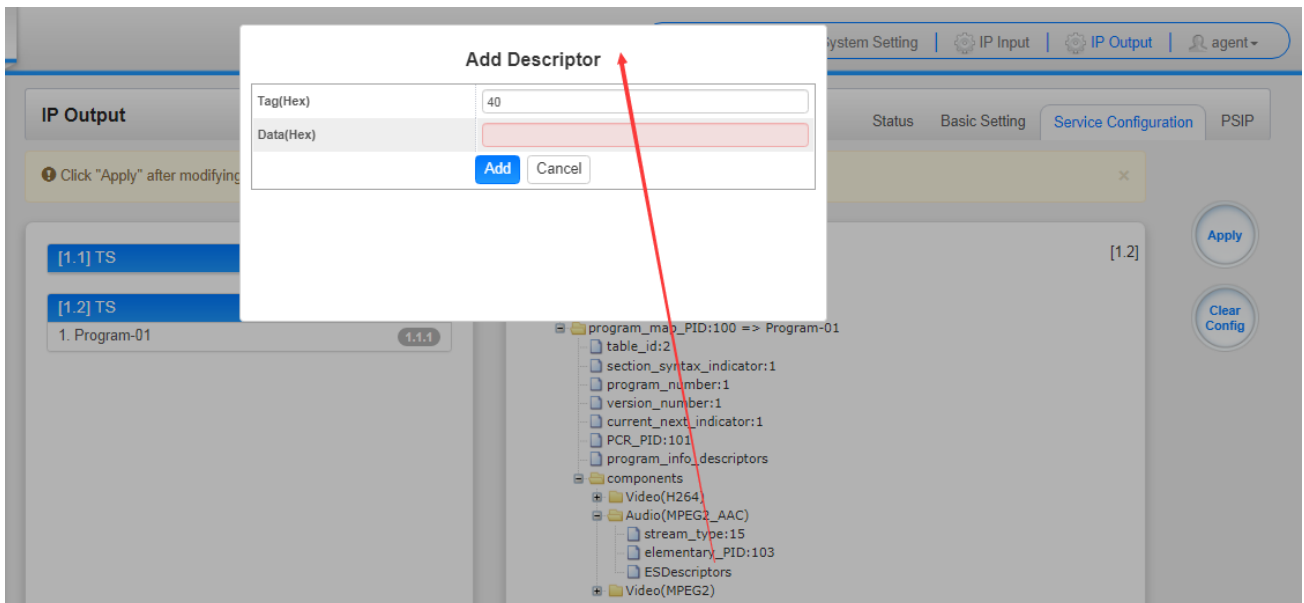
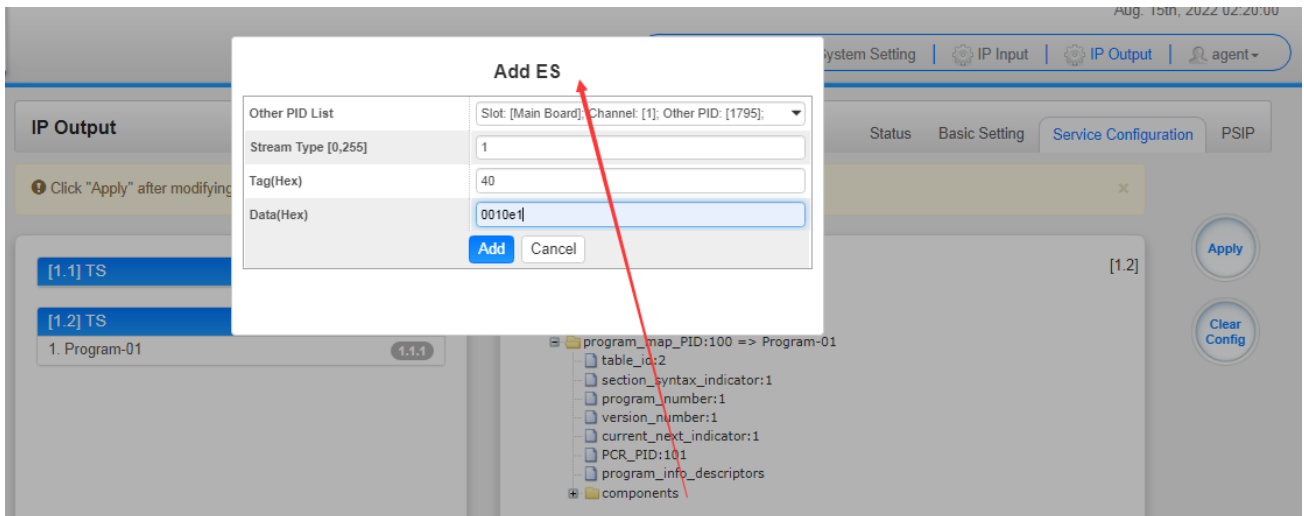
- TS setting: Click TS line (the blue area) to configure Original Network ID, TS ID and each Service ID, Service Name, and Service Provider.
- NIT setting: Please refer to CM-QAM-00 module.
- TOT setting: Configuration parameters about TOT.

The screenshot shows the 'TOT Configuration' tab for the selected TS [1.1] TS >> Program4. The interface is similar to the previous one, but the 'TOT' tab is selected. The main configuration area contains the following fields:

Country Code	CHN
Country Region Id	8
Local Time Offset Polarity	UTC -
Time Of Change	2022/01/01 00:00:00
Local Time Offset	00:00
Next Time Offset	00:00

At the bottom of the configuration area is an 'OK' button. On the right side, there are 'Apply' and 'Clear Config' buttons.

➤ PMT setting: Adding ES and Descriptors



➤ **Output >PSIP**

PSIP page lets you out different tables such as PAT, PMT, SDT and the likes.

The screenshot displays the 'Output' configuration window. On the left, the 'Output Channel List' shows a table with 12 channels (1.1 to 1.12) and a 'Select All' checkbox. On the right, the 'Output Channel [1.1] >> PSIP' settings are shown, including checkboxes for PAT Insert, PMT Insert, SDT Insert, NIT Insert, CAT Insert, TDT Insert, and TOT Insert. An 'OK' button is visible below the settings.

Output Channel	Select All
1.1	<input type="checkbox"/>
1.2	<input type="checkbox"/>
1.3	<input type="checkbox"/>
1.4	<input type="checkbox"/>
1.5	<input type="checkbox"/>
1.6	<input type="checkbox"/>
1.7	<input type="checkbox"/>
1.8	<input type="checkbox"/>
1.9	<input type="checkbox"/>
1.10	<input type="checkbox"/>
1.11	<input type="checkbox"/>
1.12	<input type="checkbox"/>

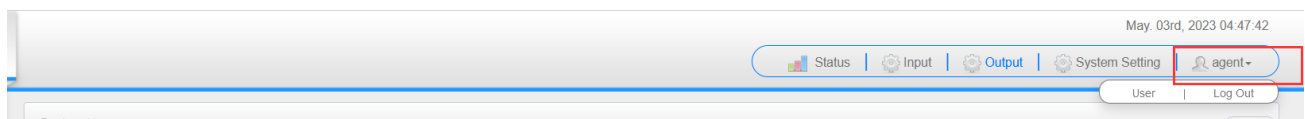
Output Channel [1.1] >> PSIP

- ☒ PAT Insert
- ☒ PMT Insert
- ☒ SDT Insert
- ☐ NIT Insert
- ☒ CAT Insert
- ☒ TDT Insert
- ☐ TOT Insert

OK

4.6 Admin

Click **Agent** and you can choose to set the password or to log out.

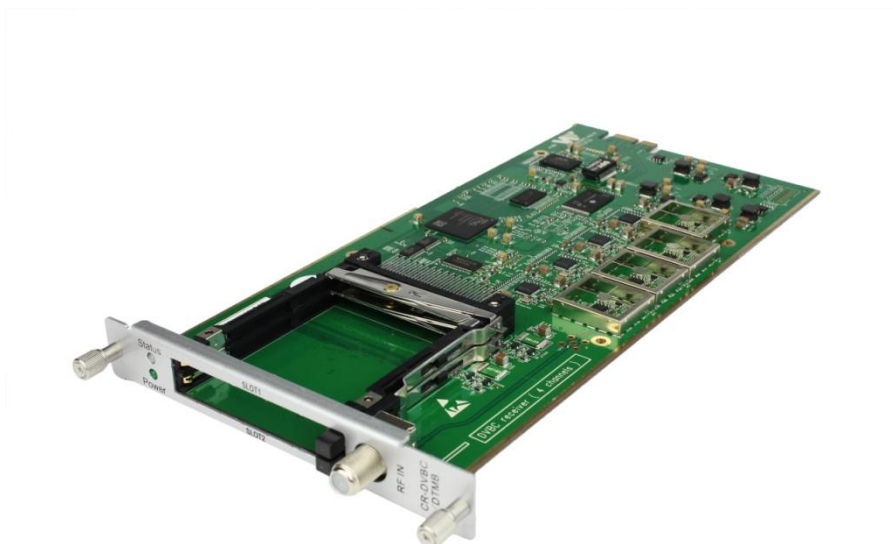


5 Module Configuration

5.1 Receiver Modules

5.1.1 CR2-DVBC-00

CR2-DVBC-00 is a 4-channel DVB- C /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.

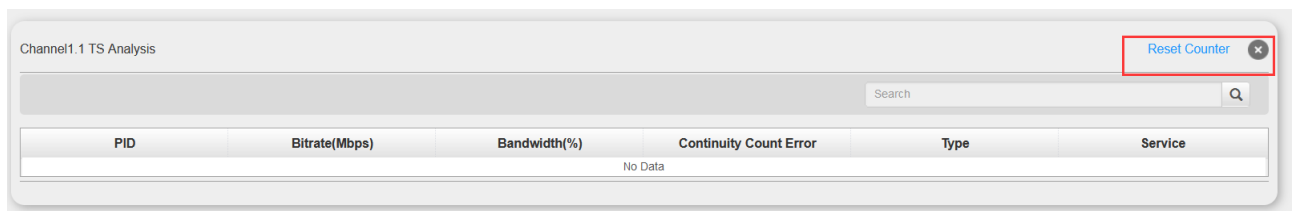


Click **CR2-DVBC-00** in the Module List then go to CR2-DVBC-00 module page.

CR2-DVBC -00 >Status

CR2-DVBC-00							
<div> Status CI Basic Setting Service Configuration System </div>							
Channel	Locked Status	Total Bitrate(Mbps)	Effective Bitrate(Mbps)	PER	RF Level	TS Analysis	Service List
1.1	Unlocked	0.000	0.000	0.000000000	-	👁	📋
1.2	Unlocked	0.000	0.000	0.000000000	-	👁	
1.3	Unlocked	0.000	0.000	0.000000000	-	👁	
1.4	Unlocked	0.000	0.000	0.000000000	-	👁	

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



Click the icon  to check service information of all the inputs.



You can check program details by clicking the program item.

[1]

Type	PID	Bitrate(Mb...
PCR	4130(0x1022)	4.995
PMT	4128(0x1020)	0.051
StreamType:27-Video(H264)	4130(0x1022)	4.995
StreamType:4-Audio	4131(0x1023)	0.272

Close

CR2-DVBC-00 >CI

For the encrypted services received on CR2-DVBC-00 module receiver, CI slot is needed to decrypt and re-broadcast the services. The CR2-DVBC-00 has 2 CAM slots and can decrypt services depending on the capability of the CAM module and Smart Card. You can select the CAM Max Bit

Rate from 48Mbps to 108Mbps in pull-down list depending on the total effective bitrate of services you want to decrypt at.

The screenshot shows the 'CR2-DVBC-00' configuration window. At the top, there are tabs: 'Status', 'CI', 'Basic Setting', 'Service Configuration', and 'System'. Below the tabs, there are three dropdown menus: 'CAM Max Bitrate' (set to 72 Mbps), 'CAM1 Auto Reset' (set to Disable), and 'CAM2 Auto Reset' (set to Disable). To the right of these is a blue 'MMI Setting' button. Below the dropdowns are two rectangular boxes labeled 'CAM1 (Not inserted)' and 'CAM2 (Not inserted)'. On the far right, there is a circular 'Apply' button.

Click the **Apply** button on the right side to make the change takes effect.

CR2-DVBC -00 >Basic Setting

The screenshot shows the 'CR2-DVBC-00' configuration window with the 'Basic Setting' tab selected. It features a table with four columns: 'Channel', 'Frequency(KHz)', and 'SymbolRate(KBaud)'. The table has four rows, numbered 1.1 to 1.4. Each row has input fields for Frequency and Symbol Rate. The values shown are 208000 for Frequency and 6875 for Symbol Rate. To the right of the table is a circular 'Apply' button.

Channel	Frequency(KHz)	SymbolRate(KBaud)
1.1	208000	6875
1.2	208000	6875
1.3	208000	6875
1.4	208000	6875

Name	Range
Frequency (KHz)	47000~862000
Symbol Rate(KSym/s)	3600~6950

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

CR2-DVBC-00 >Service Configuration

CR2-DVBC-00 Status CI Basic Setting **Service Configuration** System

Channel Select: Channel 1.1 Scanning Time(ms): 1000 SI Search Time(ms): 5000 Program Scan

Service Name	Descrambling	Destination	Destination Setting
Channel 1.1			
[1] HDMI	No Descrambling		
[2] SDI	No Descrambling		
PID 20 (TOT, TDT)	No Descrambling		

Apply Clear Config

Service Configuration page is where you can manage the received services and output them to their designated interface. The configuration of all modules in CMP201 is mostly the same.

First, you need to scan the port on each LOCKED TS. Each port might be scanned automatically or needed to be scanned manually when its source is changed.

After scanning each channel, you can start to configure the services. You need to click **Apply** button after you configure service to CAM for descrambling, otherwise the descrambling configuration will not be saved. Then you can choose the services to be routed, you can output each service by clicking the icon and below “Destination Settings”. You can route a whole stream or a service(s) from the input channel toward the available output channels (IP or RF). Two types of routing are possible.

1. **Bypass mode.** In this mode, you can route a whole input transport stream towards an IP or RF output which will be occupied only by this stream. Any attempt of routing other stream/service towards this channel will be an error. This mode can only be set by clicking the icon on the TS.
2. **Multiplex mode** is the counter part of the bypass mode. This mode allows the administrator to perform the following operations:
 - a. Route a single service towards an output channel to create SPTS.
 - b. Route services towards a single output channel to create MPTS.
 - c. Route service/s AND stream/s from multiple channels towards a single output channel to create MPTS.

In **Descrambling Settings** there are CAM1, CAM2, No Descrambling to choose. Click **Apply** or **Clear Configuration** button on the right side to make the change take effect or clear all configurations.

CR2-DVBC-00 >System

CR2-DVBC-00

Status CI Basic Setting Service Configuration **System**

Change Modulate Type: DVBC Apply

Program Auto Scan

Enable ☐ Set

License

Product ID EB13144680041

Import License Browse Upload

Export License Export

SNMP MIB

Export MIB Export

Logs

Open

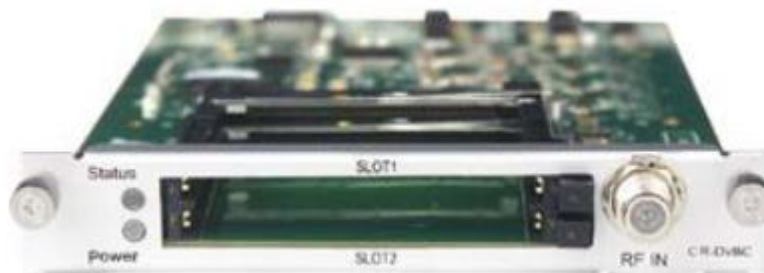
Others

Reboot Reset to Defaults

On **System** page you can choose the modulation type as DVBC or DTMB Mode. Besides you can also perform **Import/Export License**, **Reboot** the module, **Restore the unit to factory defaults** and **Log Export & Clear**.

5.1.2 CR2-DVBC-01

4-channel DVB-C Annex A/C or ISDBT receiver descrambling board (one signal input interface, support signal internal loop connection, two CAM slots)



The configuration and parameters are almost the same as DVBC-00.

5.1.3 CR2-DVBS2CI-01

CR2-DVBS2CI-01 is a 4-channel DVB-S/S2 receiving descrambling board (two DVB-S2 signal input interfaces, two CAM slots).



Service configuration is similar to CR2-DVBC-00. **Status**, **CI Status** and **System** operation refer to CR2-DVBC -00 module section.

CR2-DVBS2CI-01 >Basic Setting

CR2-DVBC-01		Status	CI	Basic Setting	Service Configuration	System
Channel	Frequency(KHz)					
1.1	474000					
1.2	384000					
1.3	474000					
1.4	474000					

[Apply](#)

Name	Range
Frequency (KHz)	47000~862000
Symbol Rate(KSym/s)	3600~6950

5.1.4 CR2-DVBS2FTA-01/01A

CR2-DVBS2FTA-01 is a 4-channel DVB-S/S2/S2XFTA receiving module with 4 RF connectors, and 4 LNBs that are independently powered. S2 supports up to 32APSK, S2X supports up to 64APSK.



CR2-DVS2FTA-01 > Status

1: CR2-DVS2FTA-01											
Status Biss Settings Service Configuration IP Output System Operation											
Channel	Locked	Status	Total Bitrate(Mbps)	Effective Bitrate(Mbps)	PER	RF Level	CNR(dB)	Link Margin(...)	FEC Code Rate	Modulation	TS Analy...
1.1	Locked		130.159	7.500	0.000000000	-34dBm (74dBuV)	24.000	5	11/15	64APSK	
2.1	Unlocked		0.000	0.000	0.000000000	-	0.000	0	1/2		
3.1	Unlocked		0.000	0.000	0.000000000	-	0.000	0	1/2		
4.1	Unlocked		0.000	0.000	0.000000000	-	0.000	0	1/2		

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, such as PIDs, Type or service, for a quickly search.

Channel 1.1 TS Analysis					
Reset Counter					
Search					
PID	Bitrate(Mbps)	Bandwidth(%)	Continuity Count Error	Type	Service
0x0(0)	0.007	0.025	0	PAT	
0x1e0(480)	0.007	0.025	0	PMT	
0x1001(4097)	7.213	26.091	0	PCR, Video	
0x1002(4098)	0.270	0.977	0	Audio	

Click the icon to check service information of all the inputs.

Channel : 1.1		Channel : 2.1		Channel : 3.1		Channel : 4.1	
#	Service	#	Service	#	Service	#	Service
1	[100]	1	[302] CCTV 2	1	[302] CCTV 2	1	[302] CCTV 2
		2	[307] CCTV 15	2	[307] CCTV 15	2	[307] CCTV 15
		3	[402] HNSTVHD	3	[402] HNSTVHD	3	[402] HNSTVHD
		4	[412] HNTVAVS+	4	[412] HNTVAVS+	4	[412] HNTVAVS+
		5	[2] Encryption	5	[2] Encryption	5	[2] Encryption
		6	[500] Jiajiakatong	6	[500] Jiajiakatong	6	[500] Jiajiakatong

You can check program details by clicking the program item.

CR2-DVS2FTA-01 > Parameter Setting

Channel	Satellite Frequency(MHz)	SymbolRate(KBaud)	LNB Frequency(MHz)	LNB Power	LNB 22KHz	DiSEqC Level	DiSEqC Port	DiSEqC Bytes(Hex)
1.1	3840	27500	5150	off	off	Disable	1	FFFFFFFFFFFF
2.1	3840	27500	5150	off	off	Disable	1	FFFFFFFFFFFF
3.1	3840	27500	5150	off	off	Disable	1	FFFFFFFFFFFF
4.1	3840	27500	5150	off	off	Disable	1	FFFFFFFFFFFF
5.1	3840	27500	5150	off	off	Disable	1	FFFFFFFFFFFF
6.1	3840	27500	5150	off	off	Disable	1	FFFFFFFFFFFF
7.1	3840	27500	5150	off	off	Disable	1	FFFFFFFFFFFF
8.1	3840	27500	5150	off	off	Disable	1	FFFFFFFFFFFF

Channel 1.1, 1.2, 1.3 and 1.4, 4 LNBs are powered independently.

Name	Range
Satellite Frequency (MHz)	950~14500
Symbol Rate(KBaud)	1000~45000
LNB Frequency(MHz)	0~13550
LNB Power	Off/13v/18v
LNB 22KHz	Off/22KHz
DiSEqC Level	1.0, 1.1, 1.1+1.0, Manually Defined, Disable
DiSEqC Port	1,2,3,4
DiSEqC Bytes	In HEX

The absolute value of the difference between the Satellite Frequency and the LNB Frequency must be in the range [950, 2150].

Click the **Apply** button on the right side to make the changes made take effect.

CR2-DVS2FTA-01 > Biss

Here you can create **Biss ID**, including **Mode**, **Key** and **Injected ID**. And you can check the Service Information in the **Service List**, then select **Biss ID/Biss-Off** for the services.

Biss ID	Mode	Key	Injected ID
1	Biss-1	111223232114	
2	Biss-E	3214343546546	32425543534646

Service Information	Biss ID
[1.1][302] CCTV 2	1
[1.1][307] CCTV 15	2
[1.1][402] HNSTVHD	Biss-Off
[1.1][412] HNTV/AVS+	Biss-Off
[1.1][2] Encryption	Biss-Off
[1.1][500] Jiajiakatong	Biss-Off
[2.1][302] CCTV 2	Biss-Off
[2.1][307] CCTV 15	Biss-Off
[2.1][402] HNSTVHD	Biss-Off
[2.1][412] HNTV/AVS+	Biss-Off
[2.1][2] Encryption	Biss-Off
[2.1][500] Jiajiakatong	Biss-Off
[3.1][302] CCTV 2	Biss-Off

Click the **Apply** button on the right side to make the changes made take effect.

CR2-DVS2FTA-01 > Service Configuration

1: CR2-DVBS2FTA-01

Status Biss Basic Setting **Service Configuration** IP Output System

⚠ There are unapplied settings, please click the apply button to apply your settings!

Channel Select : Channel 1.1 Scanning Time(ms) : 1000 Channel Scan

Service Name	Destination	Destination Settings
Channel 1.1 +		
[302] CCTV 2	17.Baseboard[1.9]	
[307] CCTV 15	7.CM2-ISDBT-R01A[1.1]	
[402] HNSTVHD		
[412] HNTVAVS+		
[2] Encryption		
[500] Jiajiakatong		
PID 1 (Other PID)		
PID 33 (Emm PID)		
Channel 2.1 +		

Apply Clear Config

[302]CCTV 2

1.CR2-DVBS2FTA-01 2.CM2-MOD-02 7.CM2-ISDBT-R01A 17.Baseboard

Channel	Multiplex
Channel1	<input checked="" type="checkbox"/>
Channel2	<input checked="" type="checkbox"/>
Channel3	<input type="checkbox"/>
Channel4	<input type="checkbox"/>
Channel5	<input type="checkbox"/>
Channel6	<input type="checkbox"/>
Channel7	<input type="checkbox"/>
Channel8	<input type="checkbox"/>

PID	Type	Enable
8190(0x1ffe)	PCR	<input checked="" type="checkbox"/>
513(0x201)	StreamType:2-Video(MPEG2)	<input checked="" type="checkbox"/>
660(0x294)	StreamType:4-Audio	<input checked="" type="checkbox"/>

OK Cancel

Click **Apply** or **Clear Configuration** button on the right side to make the changes made take effect or clear all configuration.

- **Scanning Time (ms)**1000~12000. Please try to increase this value if service name is not present, while it will slow down scanning process.

Channel Select : Channel 5.1 Scanning Time(ms) : 1000 SI Search Time(ms) : 5000 Program Scan

Please try to increase this value if service name is not present, while it will slow down scanning process.

- **SI Search Time (ms)**5000~12000. Please try to increase this value if SI is not present, while it will slow down scanning process.

Channel Select : Channel 5.1 Scanning Time(ms) : 1000 **SI Search Time(ms) : 5000** **Program Scan**

Please try to increase this value if service name is not present, while it will slow down scanning process.

CR2-DVS2FTA-01 > IP Output

This feature enables you to output S2 services directly without involving baseboard processing. No baseboard resources will be consumed in this way.

IP Output > Status This page shows detailed status of each channel. The TS Analysis and Service List here have the same function to those on the Status page. See the image below for reference.

1: CR2-DVBS2FTA-01 Status Biss Settings Service Configuration **IP Output** System Operation

Status Settings Service Configuration

Channel	Total Bitrate(Mbps)	Effective Bitrate(Mbps)	Bitrate	IP Address : Port	TS Analysis	Service List
1.1	25.004	0.042	Normal	227.10.30.1 : 1234	👁	📋
1.2	25.004	0.042	Normal	227.10.30.2 : 1234	👁	📋
1.3	0.000	0.000	Normal	227.10.30.3 : 1234	👁	📋
1.4	0.000	0.000	Normal	227.10.30.4 : 1234	👁	📋
1.5	0.000	0.000	Normal	227.10.30.5 : 1234	👁	📋
1.6	0.000	0.000	Normal	0.0.0.0 : 0	👁	📋
1.7	0.000	0.000	Normal	0.0.0.0 : 0	👁	📋
1.8	0.000	0.000	Normal	0.0.0.0 : 0	👁	📋
1.9	0.000	0.000	Normal	0.0.0.0 : 0	👁	📋
1.10	0.000	0.000	Normal	0.0.0.0 : 0	👁	📋
1.11	0.000	0.000	Normal	0.0.0.0 : 0	👁	📋
1.12	0.000	0.000	Normal	0.0.0.0 : 0	👁	📋
1.13	0.000	0.000	Normal	0.0.0.0 : 0	👁	📋

Channel : 1.1

#	Service
1	[302] CCTV 2

Channel 1.1 TS Analysis Reset Counter

PID	Bitrate(Mbps)	Bandwidth(%)	Continuity Count Error	Type	Service
0x0(0)	0.015	0.060	0	PAT	
0x11(17)	0.013	0.052	0	SDT	
0x102(258)	0.013	0.052	0	PMT	CCTV 2
0x201(513)	0.000	0.000	0	Video	CCTV 2

1: CR2-DVBS2FTA-01 Status Biss Settings Service Configuration **IP Output** System Operation

Status Settings Service Configuration

Channel	Total Bitrate(Mbps)	Effective Bitrate(Mbps)	Bitrate	IP Address : Port	TS Analysis	Service List
1.52	0.000	0.000	Normal	0.0.0.0 : 0	👁	📋
1.53	0.000	0.000	Normal	0.0.0.0 : 0	👁	📋
1.54	0.000	0.000	Normal	0.0.0.0 : 0	👁	📋
1.55	0.000	0.000	Normal	0.0.0.0 : 0	👁	📋
1.56	0.000	0.000	Normal	0.0.0.0 : 0	👁	📋
1.57	0.000	0.000	Normal	0.0.0.0 : 0	👁	📋
1.58	0.000	0.000	Normal	0.0.0.0 : 0	👁	📋
1.59	0.000	0.000	Normal	0.0.0.0 : 0	👁	📋
1.60	0.000	0.000	Normal	0.0.0.0 : 0	👁	📋
1.61	0.000	0.000	Normal	0.0.0.0 : 0	👁	📋
1.62	0.000	0.000	Normal	0.0.0.0 : 0	👁	📋
1.63	0.000	0.000	Normal	0.0.0.0 : 0	👁	📋
1.64	0.000	0.000	Normal	0.0.0.0 : 0	👁	📋

IP Output > Settings ➤ On this page, there are three tabs where you can modify the multicast IP, ports and parameters of IP Output. There is also Batch Setting. The destination IP address can be multicast IP address or unicast IP address.

There are 64 IP output channels. Mark the Enable checkbox in front of each channel. Input the correct Multicast/Unicast IP address, port and appropriate output bitrate, and select a correct output protocol. Click **Apply** to make the changes take effect.

Batch Setting is where you can input the IP output parameters in batch. See the image below for reference.



If you want to use IP output channels in the receiver module and baseboard IP output channel at the same time, you should avoid multicast IP addresses conflicts. If there are two identical IP addresses enabled concurrently, both the multicast transport streams will be affected.

IP Output > Service Configuration ➤ Users can make configuration for output services.

- 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, etc.

1: CR2-DVBS2FTA-01

Status Biss Settings Service Configuration **IP Output** System Operation

Status Settings **Service Configuration**

Please click "Apply" after modifying parameters. Otherwise, new configuration can not be saved.

[1.1] TS 1. CCTV 2 1.1.1

[1.2] TS 1. CCTV 2 1.1.1

[1.1] TS

Original Network ID 1

TS ID 1

NO.	Service ID	Service Name	Service Provider
1	302	CCTV 2	CCTV

OK Cancel

Apply Clear Config

Please click "Apply" after modifying parameters. Otherwise, new configuration can not be saved.

[1.1] TS 1. CCTV 2 1.1.1

[1.2] TS 1. CCTV 2 1.1.1

[1.1] TS >> CCTV 2

Service ID 302

Service Name CCTV 2

Service Provider CCTV


PCR PID 8190

PMT PID 258

Video(MPEG2) 513

Audio 660

OK Cancel

- TS setting: Click TS line (the blue area) to configure Original Network ID, TS ID and each Service ID, Service Name, and Service Provider, etc.
- NIT setting: Click the icon  to modify NIT Network and NIT Stream.

Please click "Apply" after modifying parameters. Otherwise, new configuration can not be saved.

[1.1] TS 1. Program0 17.1.1

2. Program1 17.1.1

3. Program2 17.1.1

[1.2] TS[Bypass] 1. Program0 17.1.1

2. Program1 17.1.1

3. Program2 17.1.1

NIT [1.1]

NIT Network **NIT Stream**

Original Network ID 0

TS ID 0

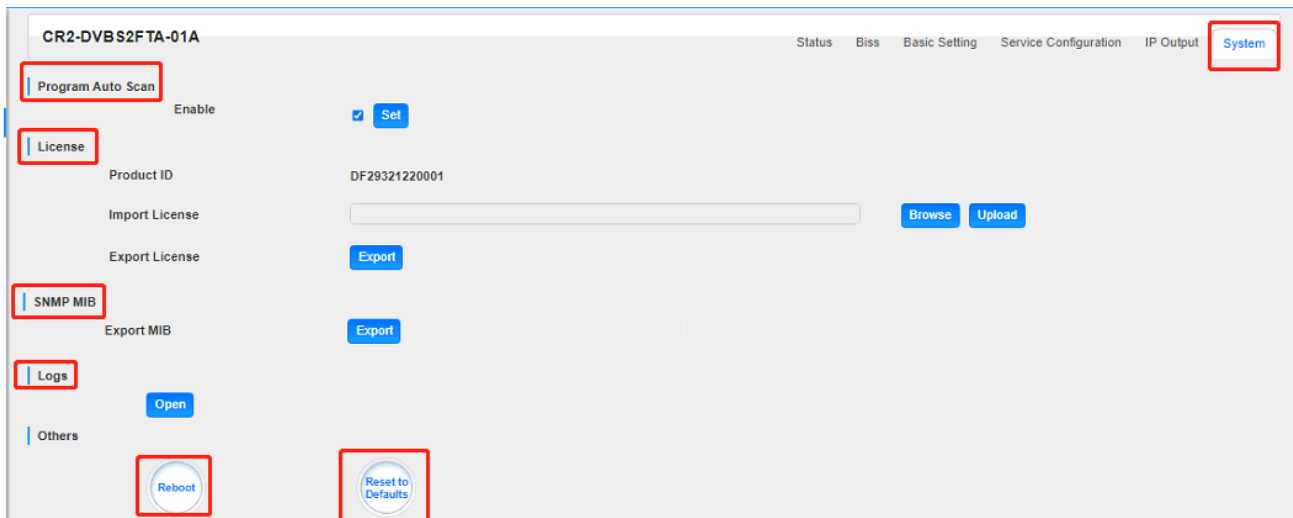
Add

Original N...	TS ID	Descriptor	Operation
		No Data	

Apply Clear Config

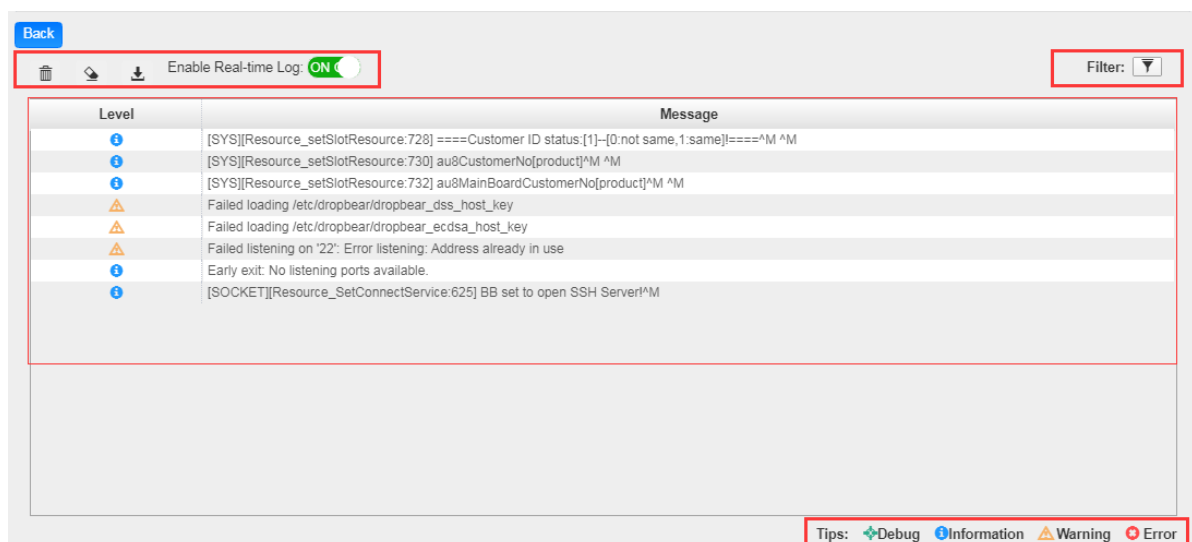
CR2-DVS2FTA-01 > System



On **System** page you can Enable/Disable Program Auto Scan, import/export **License**, export SNMP MIB files, **Reboot** module, restore **factory default settings** and manage **logs**.





Log Manage>This page shows the logs of the module. If there are issues encountered on this module, exporting the logs will help R&D team to analyze and fix them.

Turn on **Enable Real-time Log** switch, see the real time log messages and the security level of each message below.



- Click  to clear all log messages on the screen.
- Click  to delete all log information.

- Click  to export log information.
- Click  to filter desired log messages.

Clicking the filter icon, you can simply select what logs to be included.

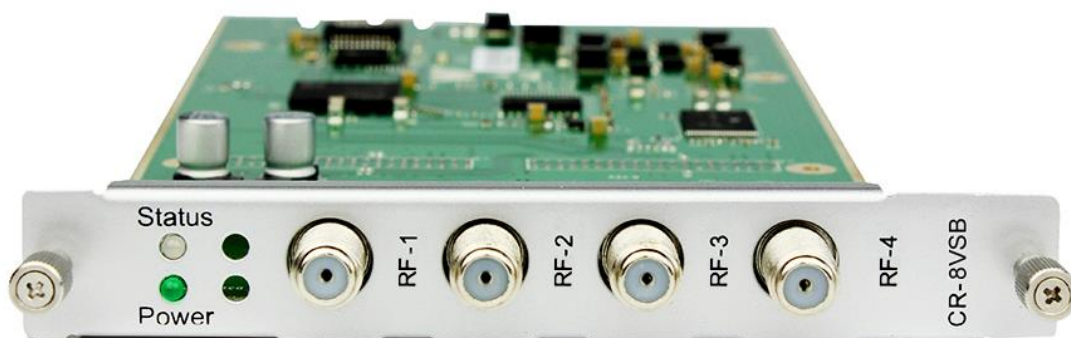
Filter

Level	
Level	Operation
Error	<input checked="" type="checkbox"/>
Warning	<input checked="" type="checkbox"/>
Information	<input checked="" type="checkbox"/>
Debug	<input type="checkbox"/>

Module List	
Module Name	Operation
SYS	<input checked="" type="checkbox"/>
INIT	<input checked="" type="checkbox"/>
FPGA	<input checked="" type="checkbox"/>
GPIO	<input checked="" type="checkbox"/>
CI	<input checked="" type="checkbox"/>
TEMP	<input checked="" type="checkbox"/>
W/CB	<input type="checkbox"/>

5.1.5 CR2-8VSB-00

CR2-8VSB-00 is a 4-channel 8VSB receiving module with 4 RF connectors. 8VSB receiver is mainly adopted on ATSC standard.



CR2-8VSB-00 >Status

CR2-8VSB-00						
				Status	Basic Setting	Service Configuration
Channel	Locked Status	Total Bitrate(Mbps)	Effective Bitrate(Mbps)	RF Level	TS Analysis	Service List
1.1	Unlocked	0.000	0.000	-		
2.1	Unlocked	0.000	0.000	-		
3.1	Unlocked	0.000	0.000	-		
4.1	Unlocked	0.000	0.000	-		

CR2-8VSB-00>Basic Setting

4 -channels receiving is supported with 4 connectors. All the CHs at specific frequency points are displayed when you select the fixed Channel Standard.

Don't forget to click **Apply** to finish configuration.

CR2-8VSB-00		
Channel Standard: Off-Air		
Channel	CH	Reboot Tuner
1.1	CH2-57MHz	<button>Reboot</button>
2.1	CH2-57MHz	<button>Reboot</button>
3.1	CH2-57MHz	<button>Reboot</button>
4.1	CH2-57MHz	<button>Reboot</button>

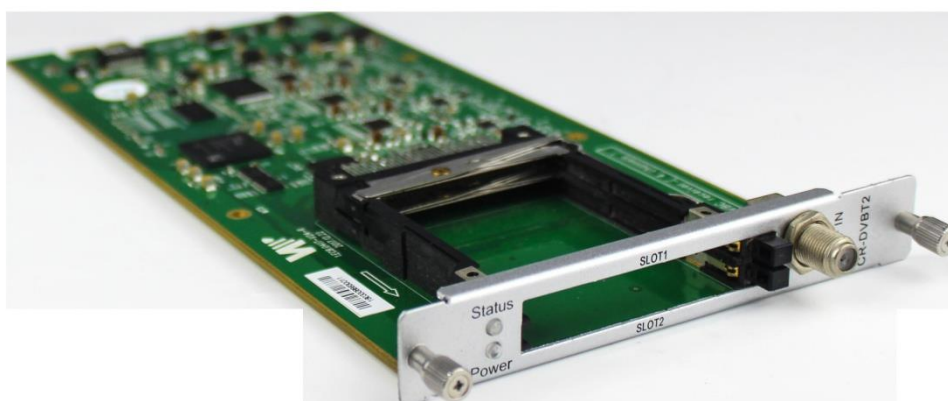
Apply

Channel standard	CH
Off-Air	CH2-57MHz, CH3-63MHz, CH4-69MHz~ CH67-791MHz, CH68-797MHz, CH69-803MHz
STD	CH2-57MHz, CH3-63MHz, CH4-69MHz~ CH133-849MHz, CH134-855MHz, CH135-861MHz
IRC	CH2-57MHz, CH3-63MHz, CH4-69MHz~ CH133-849MHz, CH134-855MHz, CH135-861MHz
HRC	CH2-55.75MHz, CH3-61.75MHz, CH4-67.75MHz~ CH133-847.75MHz, CH134-853.75MHz, CH135-859.75MHz

Status, **Service Configuration** and **System** is similar to CR2-DVBC-00.

5.1.6 CR2-DVBT2CI-00

CR2-DVBT2CI-00 is a 4-channel DVB-T/T2 receiving and descrambling module with 1 RF connectors and 2 CI slots.



Module configuration is similar to CR2-DVBC-00.

CR2-DVBT2CI-00 >Basic Setting

CR2-DVBT2CI-00

Status

Basic Setting

Service Configuration

System

T2 MI: ☐

Channel	Frequency(KHz)	Bandwidth(MHz)	PLP ID	Reboot Tuner
1.1	<input type="text" value="474000"/>	<input type="text" value="8"/>	<input type="text" value="0"/>	<input type="button" value="Reboot"/>
1.2	<input type="text" value="474000"/>	<input type="text" value="8"/>	<input type="text" value="0"/>	<input type="button" value="Reboot"/>
1.3	<input type="text" value="474000"/>	<input type="text" value="8"/>	<input type="text" value="0"/>	<input type="button" value="Reboot"/>
1.4	<input type="text" value="474000"/>	<input type="text" value="8"/>	<input type="text" value="0"/>	<input type="button" value="Reboot"/>

Name	Range
Frequency (KHz)	47000~862000
Bandwidth (Mbps)	6 / 7 / 8 M

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

Status, **CI**, **Service Configuration** and **System** please refer to CR2-DVBC-00.

5.2 Encoder Modules

5.2.1 CE2-HDMI-00/R01

CE2-HDMI-00 is a 4-channel HDMI input encoder which supports H.264 HD/SD or MPEG-2 SD encoding. The module supports MPEG1-L2, AAC and AC3 audio encoding.



CE2-HDMI-00/R01 >Status

CE2-HDMI-R01								
<div>Status</div> <div>Basic Setting</div> <div>Insertion</div> <div>Output</div> <div>System</div>								
HDCP turned on.								
Program	Signal	HDCP Encryption	Input Video Resolution	Output Video Resolution	Total Bitrate(Mbps)	Effective Bitrate(Mbps)	TS Analysis	Program Name
1	✖	Unencrypted	No_Video	No_Video	0.000	0.000	👁	Program-01 ⓘ
2	✖	Unencrypted	No_Video	No_Video	0.000	0.000	👁	Program-02 ⓘ
3	✖	Unencrypted	No_Video	No_Video	0.000	0.000	👁	Program-03 ⓘ
4	✖	Unencrypted	No_Video	No_Video	0.000	0.000	👁	Program-04 ⓘ

CE2-HDMI-00/R01 >Basic Setting

CE2-HDMI-R01 Status Basic Setting Insertion Output System

Advanced Setting

Program	Video Encoding Format	Video Resolution	Video Bitrate(Kbps)	GOP Size	Profile	Video Aspect Ratio	Audio Encoding Format	Audio Bitrate(Kbps)	Volume
1	H.264	Auto	8000	25	Main	Automatic	MPEG1_Layer2	128	0
2	H.264	Auto	8000	25	Main	Automatic	MPEG1_Layer2	128	0
3	H.264	Auto	8000	25	Main	Automatic	MPEG1_Layer2	128	0
4	H.264	Auto	8000	25	Main	Automatic	MPEG1_Layer2	128	0

HDCP Test Mode: ON HDCP test mode is for test purposes only. Please make sure you have the right to use the content!

Apply

Click **Advanced Setting** to see all parameters you can modify and check what specific parameters you want to set and see. Click the **Apply** button on the right side to make the change take effect.

Video Parameter

☒ Video Encoding Format ☒ Video Resolution ☒ Video Bitrate ☒ GOP Size

☒ Profile ☒ Video Aspect Ratio

Audio Parameter

☒ Audio Encoding Format ☒ Delay ☒ Audio Bitrate ☒ Volume

Service Parameter

☒ Program Name ☒ Video PID ☒ Audio PID ☒ PCR PID ☒ PMT PID

☒ Provider Name

Shelter Parameter

☒ K ☒ Y ☒ Width ☒ Height ☒ Color

☒ Shelter

Apply

Setting range:

Video Encode Settings	Range	Video Encode Settings	Range
Video Type	H264 , MPEG2	GOP Close	Disable, Enable
Video Bitrate (Kbps)	600~20000	PCR2 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 ,	VLC Mode	CABAC CAVLC

	1080x720_60p, 1080x720_50p, 720x480_60i , 720x576_50i		
Video Frame Bitrate	Auto	Profile	HIGH
	59.94/29.97		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 Encode Settings	Range	Audio Encode Settings	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

CE2-HDMI-R01 >Basic Setting

CE2-HDMI-00 is similar to CE2-HDMI-R01, there are a few differences on Advanced Setting range.

Advanced Setting

Video Parameter

☒ Video Encoding Format
☐ Video Resolution
☒ Video Bitrate
☐ GOP Size
☐ Profile
☐ Video Aspect Ratio

Audio Parameter

☐ Audio Encoding Format
☐ Delay
☐ Audio Bitrate
☐ Volume

Service Parameter

☐ Program Name
☐ Video PID
☐ Audio PID
☐ PCR PID
☐ PMT PID
☐ Provider Name

Shelter Parameter

☐ X
☐ Y
☐ Width
☐ Height
☐ Color
☐ Shelter

Apply

Video Encode Settings	Range	Video Encode Settings	Range
Video Type	H264	PCR2 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 Encode Settings	Range	Audio Encode Settings	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

CE2-HDMI-00/R01 >Output

CE2-HDMI-00

Status Basic Setting **Output** System

Direct IP Output Multiplexing

Program	Enable	Destination IP Address	Destination Port	Enable Destination MAC	Destination MAC
1	<input checked="" type="checkbox"/>	227.10.20.90	1234	Disable	01:00:5E:0A:14:5A
2	<input type="checkbox"/>	227.10.20.90	1235	Disable	00:00:00:00:00:00
3	<input type="checkbox"/>	227.10.20.90	1236	Disable	00:00:00:00:00:00
4	<input type="checkbox"/>	227.10.20.90	1237	Disable	00:00:00:00:00:00

Advanced Setting ☐

Apply

CE2-HDMI-R01

Status Basic Setting Insertion **Output** System

Direct IP Output Multiplexing RTMP Output

Program	Enable	Destination IP Address	Destination Port	Enable Destination MAC	Destination MAC
1	<input checked="" type="checkbox"/>	227.10.20.90	1234	Disable	01:00:5E:0A:14:5A
2	<input checked="" type="checkbox"/>	227.10.20.90	1235	Disable	01:00:5E:0A:14:5A
3	<input checked="" type="checkbox"/>	227.10.20.90	1236	Disable	01:00:5E:0A:14:5A
4	<input checked="" type="checkbox"/>	227.10.20.90	1237	Disable	01:00:5E:0A:14:5A

Apply

For the Output, both models have direct IP output and multiplexing, but only CE2-HDMI-R01 has RTMP output settings.

This feature is specifically for single program encoding and IP output directly. Outputting in this way will not occupied baseboard multicast bandwidth.



If you want to use IP output channel in the encoder module and the baseboard IP module at the same time, you should avoid a multicast IP address conflict. If there are two same IP addresses enabled meantime, all the multicast videos 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 cases where the unicast stream cannot be received with unicast IP addresses. You can enable destination MAC and streaming out by setting Destination MAC.
- **Advance Setting (only available in CE2-HDMI-00)**:

Advance Settings ☒

Enable the second eth: ☒

IP Address	Subnet Mask	Default Gateway	MAC Address
192.168.131.45	255.255.255.0	192.168.131.254	A0:69:86:02:39:CE

The second eth is reserved for you to output IP streams in another different VLAN. You can output unicast streams to the another VLAN by enabling the second eth and setting **IP Address**, **Subnet Mask**, **Default Gateway** in the same segment of the unicast IP (the another different VLAN).

CE2-HDMI-R01 Status Basic Setting Insertion **Output** System

Direct IP Output **Multiplexing** RTMP Output

Program	Program Name	Destination	Destination Setting
1	Program-01		
2	Program-02		
3	Program-03		
4	Program-04		

Apply **Clear Config**

To use **Multiplexing mode on service level**

1. Click on the pencil icon . There will always be a Base Board selection for the IP output and other Output options depending on the modules inserted.
2. Select the correct Output and Channel you want to output the Service to.
3. Check Multiplex for the Channel you want to output through. You can output multiple services in the same channel or output the same service in multiple channels.

To use RTMP output to configure streaming to any website capable of receiving RTMP, it is necessary to create a new stream instance on the intended receiving platform and enter the corresponding URL and port.

CE2-HDMI-R01 Status Basic Setting Insertion **Output** System

Direct IP Output Multiplexing **RTMP Output**

Program	Enable	FMS URL	Stream Na...	Port	Encrypt	User Name	Password	Status
1	<input type="checkbox"/>	rtmp://172.16.1.254/live	live_stream0	1935	Disable	admin	admin	Connection Failed!
2	<input type="checkbox"/>	rtmp://172.16.1.254/live	live_stream1	1935	Disable	admin	admin	Connection Failed!
3	<input type="checkbox"/>	rtmp://172.16.1.254/live	live_stream2	1935	Disable	admin	admin	Connection Failed!
4	<input type="checkbox"/>	rtmp://172.16.1.254/live	live_stream3	1935	Disable	admin	admin	Connection Failed!

Apply

CE2-HDMI-R01 >Insertion (only available in the CE2-HDMI-R01 module)

You should choose a program first before you set Insertion.

CE2-HDMI-R01 Status Basic Setting **Insertion**

Program1 2 3 4

- **LOGO setting:** you can upload several pictures at the same time, and pick one to show on the screen. The field of the selected picture will turn green.

Program1 2 3 4

LOGO QR Code OSD

Switch: ☐ Enable

Position: X 0 Y 0

Size: Width 100 Height 100

Empty the uploaded pictures **Selected: Pic1**

Pic1 **Pic2** **Pic3** **Pic4** **Pic5**

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)

➤ **OSD setting:**

Subtitle Parameter	Range	LOGO Parameter	Range
Position	Bottom/Top/Middle	Position Offset	-200~200
Horizontal Pixel	10~1920	Scrolling Speed	1~20
Front Color	White/Black/Blue/Green/ Red/Yellow	Front Size	0~100
Display Interval	0~100		

➤ **QR Code setting:** QR Code picture picking method is same as 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)

CE2-HDMI-00/R01 >System

Please refer to CR2-DVBC module.

5.2.2 CE2-HDMI-02

CE2-HDMI-02 is a 2-channel HDMI encoder which supports H.264 HD/SD or MPEG-2 HD/SD encoding with 2-channel RCA for CC input. The module supports MPEG1-L2, AAC and AC3 audio encoding.



CE2-HDMI-02 >Status

CE2-HDMI-02									
HDCP turned on.									
Program	Signal	HDCP Encryption	Input Video Resolution	Output Video Resolution	Video Bitrate(Mbps)	Audio Bitrate(Mbps)	Total Bitrate(Mbps)	Effective Bitrate(Mbps)	TS An
1	✖	Unencrypted	No_Video	No_Video	0.000	0.000	0.000	0.000	◀
2	✖	Unencrypted	No_Video	No_Video	0.000	0.000	0.000	0.000	◀

CE2-HDMI-02 >Basic Setting

CE2-HDMI-02										Status	Basic Setting	Output	System	
<div>Basic Parameters Advanced Parameters</div> <div> ⚙️ Advanced Setting > </div>														<div>Apply</div>
Program	Input Source Type	Video Resolution	Video Encoding Format	Video Bitrate(Kbps)	Video Aspect Ratio	GOP Size	Profile	Audio Encoding Format						
1	HDMI	Auto	H264	10000	Auto	18	High	AC3	192					
2	HDMI	Auto	H264	10000	Auto	18	High	AC3	192					
HDCP Test Mode: ON										ⓘ HDCP test mode is for test purposes only. Please make sure you have the right to use the content!				

Click **Basic Parameters** then click **Advanced Setting** to see **Video Parameters & Audio Parameters & Service Parameters** that you can modify and check what specific parameters you want to see and set. Click the **Apply** button on the right side to make the change take effect.

CE2-HDMI-02
Status
Basic Setting
Output
System

Basic Parameters
Advanced Parameters

⚙️ Advanced Setting

Video Parameter

☒ Video Encoding Format
☒ Video Resolution
☒ Video Bitrate
☐ Video Mode

☐ GOP Structure
☒ GOP Size
☐ Closed Caption
☒ Profile

☐ Level
☒ Video Aspect Ratio

Audio Parameter

☐ Audio Source
☒ Audio Encoding Format
☐ AAC Format
☒ Audio Bitrate

☒ Volume

Service Parameter

☒ Video PID
☒ Audio PID
☒ PCR PID
☒ PMT PID

☒ Program Name
☒ Provider Name

Apply

Setting Range:

Video Encode Settings	Range	Video Encode Settings	Range
Video Type	H264 , MPEG2	GOP Size	18~48
Video Bitrate (Kbps)	2000~18000	PCR2 PID	32~8190
Video Mode	CBR	PMT PID	32~8190
Video Max Bitrate (Kbps)	18000	Service Name	Length is 1~16
Video Min Bitrate (Kbps)	2000	Service Provider Name	Length is 1~16
CC	Enable	Video PID	32~8190
	Disable		
Video PID	32~8190	Video Aspect Ratio	Auto
			16x9
			4x3
GOP Structure	IBBP, IPPP, IBP	P Frame	IBBP

P Frame: 5~15 IPPP

P Frame: 18~47

IBP

P Frame: 8~23

Audio Encode Settings	Range	Audio Encode Settings	Range
Audio Type	AC3	Volume	0~8
	AC3_Passthrough	AAC Format	ADTS
	MPEG1_Layer2		LATM
	MPEG2_AAC		
	MPEG4_AAC		
	AAC_HE_V2		
Audio Bitrate(Kbps)	128~384 (AC3)	Audio PID	32~8190
	64~384(MPEG1_Layer2/ MPEG2_AAC/ MPEG4_AAC/ AC3 Passthrough)		
	32~384(AAC_HE_V2)		

Click **Advance Parameters** to set **Encoding Parameters & Stream Output Parameters & MPEG-2 Output Parameters & MPEG4/MPEG4_AVC Output Parameters & Other Parameters** for CH1.1/CH2.1 separately.

CE2-HDMI-02 module supports up to two channels of audio and video input. Each channel includes 1 HDMI port and 1 RCA port. It supports dual audio encoding per channel which means one audio track from HDMI input can be encoded into two different formats for output.

CE2-HDMI-02 >Output

Program	Enable	Destination IP Address	Destination Port	Enable Destination MAC	Destination MAC
1	<input checked="" type="checkbox"/>	227.10.20.90	1234	Disable	01:00:5E:0A:14:5A
2	<input checked="" type="checkbox"/>	227.10.20.90	1235	Disable	01:00:5E:0A:14:5A


This feature is specifically for single program encoding and IP output directly. Outputting in this way will not occupy baseboard multicast bandwidth.



If you want to use IP output channels in the encoder module and the baseboard IP module at same time, you should avoid the multicast IP address conflict. If there are two same IP addresses enabled meantime, all the multicast videos 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 cases where the unicast stream cannot be received with unicast IP addresses. You can enable destination MAC and streaming out by setting Destination MAC.

To use **Multiplexing mode at service level**

1. Click on pencil icon . There will always be a Base Board selection for the IP output and other Output options depending on the module inserted.
2. Select the correct Output and Channel you want to output the service to.
3. Check Multiplex on the channel you want to output to. You can output multiple services to one channel or output one service to multiple channels.

CE2-HDMI-02 > System

Please refer to CR2-DVBC/DTMB module.

5.2.3 CE2-HDMI-02C

CE2-HDMI-02C is a 2-channel HDMI or component HD encoder. It supports H.264 / MPEG-2 HD/SD, MPEG1L2, AAC (optional), AC3 (optional) audio, CC subtitle and analog audio input.



CE2-HDMI-02C>Status

CE2-HDMI-02C										
HDCP turned on										
Progr...	Signal	HDCP Encry...	Input Video Resolution	Output Video Resolu...	Video Bitrate(Mb...	Audio Bitrate(Mb...	Total Bitrate(Mbps)	Effective Bitrate(Mb...	TS Anal...	Program Na...
1	✖	Unencrypted	No_Video	No_Video	0.000	0.000	0.000	0.000	👁	Program-1 ⓘ
2	✖	Unencrypted	No_Video	No_Video	0.000	0.000	0.000	0.000	👁	Program-2 ⓘ

CE2-HDMI-02C>Basic Setting

CE2-HDMI-02C Status Basic Setting Output System

Basic Parameters Advanced Parameters

⚙️ Advanced Setting >

Program	Input Source Type	Video Resolution	Video Encoding Format	Video Bitrate(Kbps)	Video Aspect Ratio	GOP Size	Proc
1	HDMI	Auto	MPEG2	10000	Auto	18	High
2	HDMI	Auto	MPEG2	10000	Auto	18	High

HDCP Test Mode: ☐ OFF

Apply

Click **Basic Settings** then click **Advance Settings** to see **Video Parameters & Audio Parameters & Service Parameters** where you can modify and check what specific parameters you want to see and set. Click the **Apply** button on the right side to make the change take effect.

Video Parameter ☐

<input checked="" type="checkbox"/> Video Encoding Format	<input checked="" type="checkbox"/> Video Resolution	<input checked="" type="checkbox"/> Video Bitrate	<input type="checkbox"/> Video Mode
<input type="checkbox"/> GOP Structure	<input checked="" type="checkbox"/> GOP Size	<input type="checkbox"/> Closed GOP	<input type="checkbox"/> Closed Caption
<input checked="" type="checkbox"/> Profile	<input type="checkbox"/> Level	<input checked="" type="checkbox"/> Video Aspect Ratio	

Audio Parameter ☐

<input type="checkbox"/> Audio Source	<input checked="" type="checkbox"/> Audio Encoding Format	<input type="checkbox"/> AAC Format	<input checked="" type="checkbox"/> Audio Bitrate
<input checked="" type="checkbox"/> Volume			

Service Parameter ☒

<input checked="" type="checkbox"/> Video PID	<input checked="" type="checkbox"/> Audio PID	<input checked="" type="checkbox"/> PCR PID	<input checked="" type="checkbox"/> PMT PID
<input checked="" type="checkbox"/> Program Name	<input checked="" type="checkbox"/> Provider Name		

Apply

Setting Range:

Video Encode Settings	Range	Video Encode Settings	Range
Video Type	H264 , H265	GOP Size	18~48
Input Source Type	HDMI, Component	Level	3.0, 3.1, 3.2,4.0,4.1,4.2
Video Bitrate (Kbps)	2000~18000	PCR PID	32~8190
Video Mode	CBR	PMT PID	32~8190
Video Max Bitrate (Kbps)	18000	Service Name	Length is 1~16
Video Min Bitrate (Kbps)	2000	Service Provider Name	Length is 1~16

Closed Caption	Enable	Video PID	32~8190
	Disable		
Video PID	32~8190	Video Aspect Ratio	Auto
			16x9
			4x3
GOP Structure	IBBP, IPPP, IBP	Profile	High, Main, Baseline

Audio Encode Settings	Range	Audio Encode Settings	Range
Audio Type	AC3	Volume	0~8
	MPEG1_Layer2	AAC Format	ADTS
	MPEG2_AAC		LATM
	MPEG4_AAC		
Audio Source 1	HDMI	Audio Source 2	HDMI
	Analog		Analog
Audio Bitrate(Kbps)	128~384 (AC3)	Audio PID	32~8190
	64~384(MPEG1_Layer2/ MPEG2_AAC/ MPEG4_AAC/ AC3 Passthrough)		
	32~384(AAC_HE_V2)		
Volume	-20~20		

CE2-HDMI-02C> Output

CE2-HDMI-02C Status Basic Setting **Output** System

Direct IP Output Multiplexing

Program	Enable	Destination IP Address	Destination Port	Enable Destination MAC	Destination MAC
1	<input checked="" type="checkbox"/>	227.100.200.90	1234	Disable	01:00:5E:64:C8:5A
2	<input type="checkbox"/>	227.10.20.90	1235	Disable	00:00:00:00:00:00

Apply

This feature is specifically for single program encoding and IP output directly. Outputting in this way will not occupy baseboard multicast bandwidth.



If you want to use IP output channels in the encoder module and baseboard TSoIP module at same time, you should avoid a multicast IP address conflict. If there are two same IP addresses enabled 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 cases where the unicast stream cannot be received with unicast IP addresses, you can enable destination MAC and streaming out by setting Destination MAC.

CE2-HDMI-02C Status Basic Setting **Output** System

Direct IP Output Multiplexing

Program	Program Name	Destination	Destination Setting
1	Program-1		
2	Program-2		

Apply

Clear Config

To use **Multiplexing mode at service level**:

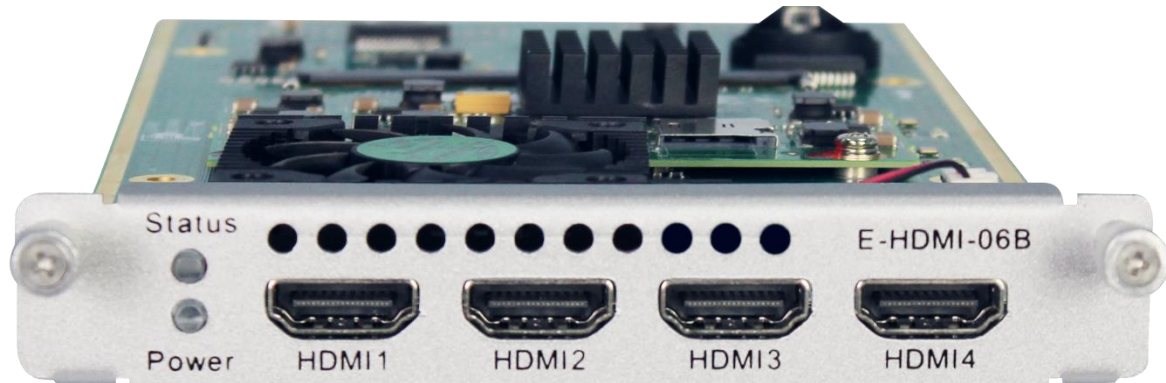
1. Click on the pencil icon . There will always be a Base Board selection for the IP output and other Output options depending on the module inserted.
2. Select the correct Output and Channel you want to output the service to.
3. Check Multiplex on the channel you want to output to. You can output multiple services to one channel or output one service to multiple channels.

CE2-HDMI-02C> System

Please refer to CR2-DVBC/DTMB module.

5.2.4 CE2-HDMI-06B

4CH HDMI HD encoding board (broadcast grade), support H.264 HD/SD, support B frame, MPEG1L2 (support), AAC (optional), AC3 (optional).



CE2-HDMI-06B>Status

Status page for CE2-HDMI-06B shows the following parameters: **Program, Signal, HDCP Encryption, Input Video Resolution, Output Video Resolution, Total Bitrate, Effective Bitrate, TS analysis** and **Program Name**. The following parameters will display values once a good HDMI source is connected.

CE2-HDMI-06B								
HDCP turned on.								
Program	Signal	HDCP Encryption	Input Video Resolution	Output Video Resolution	Total Bitrate(Mbps)	Effective Bitrate(Mbps)	TS Analysis	Program Name
1	✖	Unencrypted	No_Video	No_Video	0.000	0.000	👁	Program-01 ⓘ
2	✖	Unencrypted	No_Video	No_Video	0.000	0.000	👁	Program-02 ⓘ
3	✖	Unencrypted	No_Video	No_Video	0.000	0.000	👁	Program-03 ⓘ
4	✖	Unencrypted	No_Video	No_Video	0.000	0.000	👁	Program-04 ⓘ

CE2-HDMI-06B>Basic Setting

CE2-HDMI-06B										
<div> <div>Status</div> <div>Basic Setting</div> <div>Output</div> <div>System</div> </div>										
<div> <div>Advanced Setting</div> </div>										
Program	Video Encoding Format	Video Bitrate(Kbps)	Audio Encoding Format	Audio Bitrate(Kbps)	Audio Sampling...	Volume(dB)	Delay(ms)	Audio PID	S	
1	H.264	3000	MPEG1_Layer2	128	48	0	0	103	Disat	
2	H.264	8000	MPEG1_Layer2	128	48	0	0	203	Disat	
3	H.264	8000	MPEG1_Layer2	128	48	0	0	303	Disat	
4	H.264	8000	MPEG1_Layer2	128	48	0	0	403	Disat	
<div> <div>HDCP Test Mode: ON</div> <div>HDCP test mode is for test purposes only. Please make sure you have the right to use the content!</div> <div>Associated Mode: OFF</div> </div>										

Click **Basic Settings** then click **Advance Settings** to see **Video Parameters & Audio Parameters & Service Parameters** where you can modify and check what specific parameters you want to see and set. Click the **Apply** button on the right side to make the change take effect.

CE2-HDMI-06B

Status Basic Setting Output System

Advanced Setting

Video Parameter ☐

☒ Video Encoding Format ☒ Video Bitrate ☐ Video Mode ☐ GOP Structure ☐ Smooth Output

Audio Parameter ☒

☒ Audio Encoding Format ☒ Delay ☒ Audio Bitrate ☒ Audio Sampling Rate ☒ Volume

Service Parameter ☒

☒ Program Name ☒ Video PID ☒ Audio PID ☒ PCR PID ☒ PMT PID

☒ Provider Name

Apply

Program	Video Encoding Format	Video Bitrate(Kbps)	Audio Encoding Format	Audio Bitrate(Kbps)	Audio Sampling...	Volume(dB)	Delay(ms)	Audio PID	S
1	H.264	3000	MPEG1_Layer2	128	48	0	0	103	Disat
2	H.264	8000	MPEG1_Layer2	128	48	0	0	203	Disat
3	H.264	8000	MPEG1_Layer2	128	48	0	0	303	Disat
4	H.264	8000	MPEG1_Layer2	128	48	0	0	403	Disat

HDCP Test Mode: ☒ ON ☐ OFF

Associated Mode: ☐ ON ☒ OFF

HDCP test mode is for test purposes only. Please make sure you have the right to use the content!

Setting Range:

Video Encode Settings	Range	Name	Range
Input TS Source	HDMI		
Video Type	H264 , H.264	Smooth output	Enable/Disable
Video Bitrate (Kbps)	2000~18000	PCR PID	32~8190
Video Mode	CBR	PMT PID	32~8190
Video Max Bitrate (Kbps)	18000	Service Name	Length is 1~16
Video Min Bitrate (Kbps)	2000	Service Provider Name	Length is 1~16
Video PID	32~8190		
GOP Structure	IBBP, IPPP		

Audio Encode Settings	Range	Audio Encode Settings	Range
Input Source Type	HDMI	Audio Bit Rate(Kbps)	128~384 (AC3) 64~384(MPEG1_Lay er2/MPEG2_AAC/ AC3_Passthrough/ MPEG4_AAC)
Audio Type	AC3 MPEG1_Layer2 AAC		
Audio Sampling Rate	48 Auto	Delay (ms)	32~384(AAC_HE_V2) -2000~2000
Volume	-20~20	Audio PID	32~8190

CE2-HDMI-06B> Output

CE2-HDMI-06B

Status Basic Setting **Output** System

Direct IP Output

Multiplexing

Program	Enable	Destination IP Address	Destination Port	Enable Destination MAC	Destination MAC
1	<input checked="" type="checkbox"/>	227.10.20.80	1111	Disable	01:00:5E:0A:14:50
2	<input type="checkbox"/>	227.10.20.90	1235	Disable	01:00:5E:0A:14:5A
3	<input type="checkbox"/>	227.10.20.90	1236	Disable	01:00:5E:0A:14:5A
4	<input type="checkbox"/>	227.10.20.90	1237	Disable	01:00:5E:0A:14:5A

Apply

This feature is specifically for single program encoding and IP output directly. Outputting in this way will not occupy baseboard multicast bandwidth.



If you want to use IP output channels in the encoder module and baseboard TS IP module at same time, you should avoid a multicast IP address conflict. If there are two same IP addresses enabled 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 cases where the unicast stream cannot be received with unicast IP addresses, you can enable destination MAC and streaming out by setting Destination MAC.

CE2-HDMI-06B

Status Basic Setting **Output** System

Direct IP Output
Multiplexing

Program	Program Name	Destination	Destination Setting
1	Program-01	17.Baseboard[1.1]	
2	Program-02		
3	Program-03		
4	Program-04		

Apply

Clear Config

To use **Multiplexing mode at service level**:

- Click on the pencil icon . There will always be a Base Board selection for the IP output and other Output options depending on the module inserted.
- Select the correct Output and Channel you want to output the service to.
- Check Multiplex on the channel you want to output to. You can output multiple services to one channel or output one service to multiple channels.

CE2-HDMI-06B> System

Please refer to CR2-DVBC/DTMB module.

5.2.5 CE2-SDI-01

CE2-SDI-01 module supports 2-channel SDI HD encoding board, support H.264/MPEG-2 HD/SD, MPEG1L2 (support), AAC (support), AC3 (support), support CC subtitles



CE2-SDI-01>Status

Status page for CE2-SDI-00 shows the following parameters: **Program, Signal, Input Video Resolution, Output Video Resolution, Video Bitrate, Audio Bitrate, Total Bitrate, Effective Bitrate, TS analysis** and **Program Name**. The following parameters will display values once a good SDI source is connected.

CE2-SDI-01							
				Status	Basic Setting	Output	System
Program	Signal	Input Video Resolution	Output Video Resolution	Video Bitrate(Mbps)	Audio Bitrate(Mbps)	Total Bitrate(Mbps)	Effective Bitrate(Mbps)
1	✓	1920x1080_50i	1920x1080_50i	9.597	0.248	9.771	9.845
2	✗	No_Video	No_Video	0.000	0.000	0.000	0.000

CE2-SDI-01 >Basic Setting

CE2-SDI-01			Status	Basic Setting	Output	System
<div>Basic Parameters</div> <div>Advanced Parameters</div>						
<div>⚙️ Advanced Setting ></div>						
Program	Video Encoding Format		Video Bitrate(Kbps)			
1	MPEG2		10000			
2	MPEG2		10000			

Apply

Click **Basic Parameters** then click **Advanced Setting** to see **Video Parameters& Audio Parameters & Service Parameters** where you can modify and check what specific parameters you want to see and set. Click the **Apply** button on the right side to make the change take effect.

CE2-SDI-01 Status Basic Setting Output System

Basic Parameters Advanced Parameters

Advanced Setting ▼

Video Parameter □

☒ Video Encoding Format ☐ Video Resolution ☒ Video Bitrate ☐ Video Mode

☐ GOP Structure ☐ GOP Size ☐ Closed GOP ☐ Closed Caption

☐ Profile ☐ Level ☐ Video Aspect Ratio ☐ Smooth Output

Audio Parameter □

☐ Audio Source ☐ Audio Encoding Format ☐ AAC Format ☐ Audio Bitrate

☐ Volume

Service Parameter □

☐ Video PID ☐ Audio PID ☐ PCR PID ☐ PMT PID

☐ Program Name ☐ Provider Name

Program	Video Encoding Format	Video Bitrate(Kbps)
1	MPEG2	10000
2	MPEG2	10000

Apply

Setting Range

Video Encode Settings	Range	Video Encode Settings	Range
Input Source Type	CVBS, SDI	GOP Size	18~48
Video Type	H264 , MPEG2	PCR2 PID	32~8190
Video Bit Rate (Kbps)	2000~18000	PMT PID	32~8190
Video Mode	CBR	Program Name	Length is 1~31
CC	Disable, Enable	Provider Name	Length is 0~31
Video PID	32~8190	Video Aspect Ratio	Auto
			16x9
			4x3
GOP Structure	IPPB, IPPP, IBP	P Frame	IBBP
			P Frame: 5~15
			IPPP
			P Frame: 18~47
			IBP

Audio Encode Settings	Range	Audio Encode Settings	Range
Input Source Type	SDI	Audio Bit Rate(Kbps)	128~384 (AC3)
	CVBS		64~384(MPEG1_Lay
Audio Source	SDI1(2/3/4)		er2/MPEG2_AAC/
	Analog		AC3_Passthrough)
Audio Type	AC3	Audio AAC Format	16~384(MPEG4_AA
	AC3_Passthrough		C)
	MPEG1_Layer2		ADTS
	MPEG2_AAC		LATM
	MPEG4_AAC		
Volume	-20~20	Audio PID	32~8190



Click **Advance Parameters** to set **Encoding Parameters & Stream Output Parameters & MPEG-2 Output Parameters & MPEG4/MPEG4_AVC Output Parameters & Other Parameters** for CH1.1/CH2.1 separately.

CE2-SDI-01>Output

Program	Enable	Destination IP Address	Destination Port	Enable Destination MAC	Destination MAC
1	<input checked="" type="checkbox"/>	227.10.20.90	1234	Disable	01:00:5E:0A:14:5A
2	<input type="checkbox"/>	227.10.20.90	1235	Disable	00:00:00:00:00:00

This feature is specifically for single program encoding and IP output directly. Outputting in this way 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 a multicast IP address conflict. If there are two same IP addresses enabled meantime, all the multicast videos will be affected.

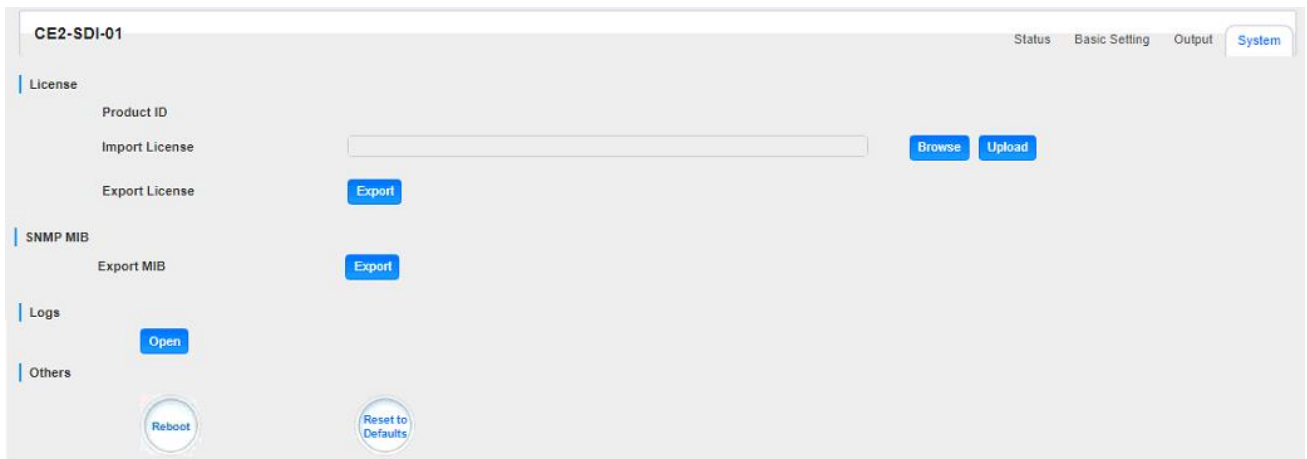
- **Destination IP Address** and **Destination Port**: Using for multicast IP addresses or unicast IP addresses and ports.
- **Enable Destination MAC**: Generally, you do not need to enable this option. This is reserved for exceptional case when the unicast stream cannot be received by using unicast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

To use **Multiplexing mode at service level**:

1. Click on the pencil icon . There will always be a Base Board selection for the IP output and other Output options depending on the module inserted.
2. Select the correct Output and Channel you want to output the service to.
3. Check Multiplex on the channel you want to output to. You can output multiple services to one channel or output one service to multiple channels.

The second eth is reserved to output IP streams in another different VLAN. Enabling 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 the Unicast stream to the another VLAN.

CE-SDI-01 >System



5.2.6 CE2-CVBS-00

CE2-CVBS-00 is a 6-channel CVBS encoder with 2 DB15 connectors each for 3 channels. It supports H.264/MPEG-2 SD encoding and MPEG1-L2, AAC (optional) and AC3(optional) audio.



CE2-CVBS-00

Configuration is similar to CE2-HDMI module. Please refer to that module section.

CE2-CVBS-00 >Settings

CE2-CVBS-00							
				Status	Basic Setting	Output	System
Program	Video Resolution	Video Bitrate(Mbps)	Audio Bitrate(Mbps)	Total Bitrate(Mbps)	Effective Bitrate(Mbps)	TS Analysis	Program Name
1	No_Video	0.000	0.000	0.000	0.000		Program-1
2	No_Video	0.000	0.000	0.000	0.000		Program-2
3	No_Video	0.000	0.000	0.000	0.000		Program-3
4	No_Video	0.000	0.000	0.000	0.000		Program-4
5	No_Video	0.000	0.000	0.000	0.000		Program-5
6	No_Video	0.000	0.000	0.000	0.000		Program-6

Click **Advanced Setting** to see all parameters you can modify and check what specific parameters you want to see and set. Click the **Apply** button on the right side to make the change take effect.

CE2-CVBS-00			
<div> <div>Status</div> <div>Basic Setting</div> <div>Output</div> <div>System</div> </div>			
<div> <div>⚙️ Advanced Setting ></div> </div>			
Program	Video Encoding Format	Video Bitrate	
1	H264	5000	<div>Apply</div>
2	H264	2000	
3	H264	2000	
4	H264	5000	
5	H264	5000	
6	H264	5000	

Setting range:

Video Encode Settings	Range	Video Encode Settings	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
PCR2 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

CE2-CVBS-00 > Output/ Insertion

Output and ***Insertion*** please refer to CE2-HDMI-R01 module.

CE2-CVBS-00 > System

Please refer to CR2-DVBC module.

5.2.7 CE2-HDMI-R05/R05A

CE2-HDMI-R05/R05A is a 4/8-channel HDMI high-definition encoding board (commercial level), supports H.264/H.265 HD/SD (supports up to 1080p60 input for R05 and 1080p30 for 05), MPEG1L2 (support), AC3 (optional), AAC (optional), supports superimposed OSD subtitles, Logo, QR code.



CE2-HDMI-R05>Status

CE2-HDMI-R05
Status
Basic Setting
Insertion
Output
System

HDCP turned off.

Program	Signal	HDCP Encryption	Input Video Resolution	Output Video Resolution	Total Bitrate(Mbps)	Effective Bitrate(Mbps)	TS Analysis	Program Name
1	✓	Unencrypted	1920x1080_50i	1920x1080_25p	8.938	8.938	👁	Program-01 ⓘ
2	✗	Unencrypted	No_Video	No_Video	0.000	0.000	👁	Program-02 ⓘ
3	✗	Unencrypted	No_Video	No_Video	0.000	0.000	👁	Program-03 ⓘ
4	✗	Unencrypted	No_Video	No_Video	0.000	0.000	👁	Program-04 ⓘ

CE2-HDMI-R05 >Basic Setting

CE2-HDMI-R05
Status
Basic Setting
Insertion
Output
System

⚙️ Advanced Setting >

Program	Video Encoding Format	Video Bitrate(Kbps)	Video Resolution	GOP Size	Profile	Video Aspect Ratio	Audio Encoding Format
1	H.264	8000	Auto	25	Main	Automatic	MPEG1_Layer2
2	H.264	8000	Auto	25	Main	Automatic	MPEG1_Layer2
3	H.264	8000	Auto	25	Main	Automatic	MPEG1_Layer2
4	H.264	8000	Auto	25	Main	Automatic	MPEG1_Layer2

HDCP Test Mode : ☐ off

Apply

This page allows you to modify the Video, Audio and Service Parameters. Click **Advanced Setting** to see all parameters you can modify and check what specific parameters you want to set and see. Click the **Apply** button on the right side to make the change take effect.

CE2-HDMI-R05
Status
Basic Setting
Insertion
Output
System

Advanced Setting

Video Parameter

☒ Video Encoding Format
☒ Video Bitrate
☒ GOP Size
☒ Profile
☒ Video Resolution
☒ Video Aspect Ratio

Audio Parameter

☒ Audio Encoding Format
☒ Delay
☒ Audio Bitrate
☒ Audio Sampling Rate
☒ Volume

Service Parameter

☒ Program Name
☒ Video PID
☒ Audio PID
☒ PCR PID
☒ PMT PID
☒ Provider Name

Shelter Parameter

☐ X
☐ Y
☐ Width
☐ Height
☐ Color
☐ Shelter

Apply

Name	Range	Name	Range
Video Type	H.264 , H.265	Video PID	32~8190
Video Bitrate (Kbps)	600~12000	PCR2 PID	32~8190
GOP Size	1~60	PMT PID	32~8190
Video Resolution	Auto , Manual (Horizontal Pixels: 160~1920, Vertical Pixels: 120~1080, Framerate: 24~60, Scan Type: Progressive)	Program Name	Length is 1~31
Video Aspect Ratio	Automatic , 16x9 (SD) , 4x3 (SD)	Provider Name	Length is 0~31
Profile	MAIN HIGH		

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

Audio Encoder Details	Range	Audio Encoder Details	Range
-----------------------	-------	-----------------------	-------

Audio Enable	Enable/Disable	Delay(ms)	-2000~2000
Audio Type	MPEG1_Layer2 AAC AC3	Audio Bitrate(Kbps)	32~192(MPEG1_Layer2) 32~192(AAC) 96~192 (AC3)
Volume(dB)	-20~20	Audio PID	32~8190

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

CE2-HDMI-R05 >Output

Program	Enable	Destination IP Address	Destination Port	Enable Destination MAC	Destination MAC
1	<input type="checkbox"/>	227.10.20.90	1234	Disable	00:00:00:00:00:00
2	<input type="checkbox"/>	227.10.20.90	1235	Disable	00:00:00:00:00:00
3	<input type="checkbox"/>	227.10.20.90	1236	Disable	00:00:00:00:00:00
4	<input type="checkbox"/>	227.10.20.90	1237	Disable	00:00:00:00:00:00

This feature is specifically for single program encoding and IP output directly. Outputting in this way will not occupy baseboard multicast bandwidth.

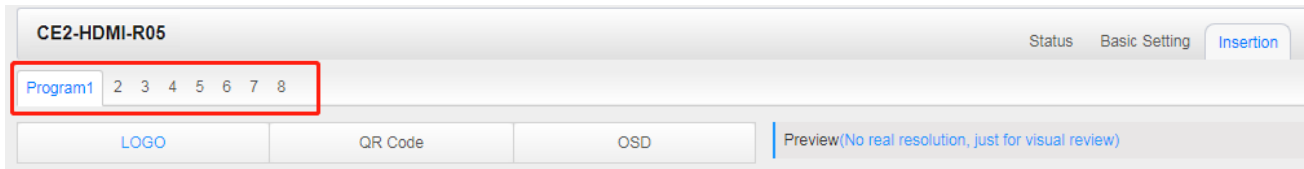


If you want to use IP output channel in the encoder module and baseboard IP Output module at same time, you should avoid the multicast IP address conflict. If there are two same IP addresses enabled meantime, all the multicast videos will be affected.

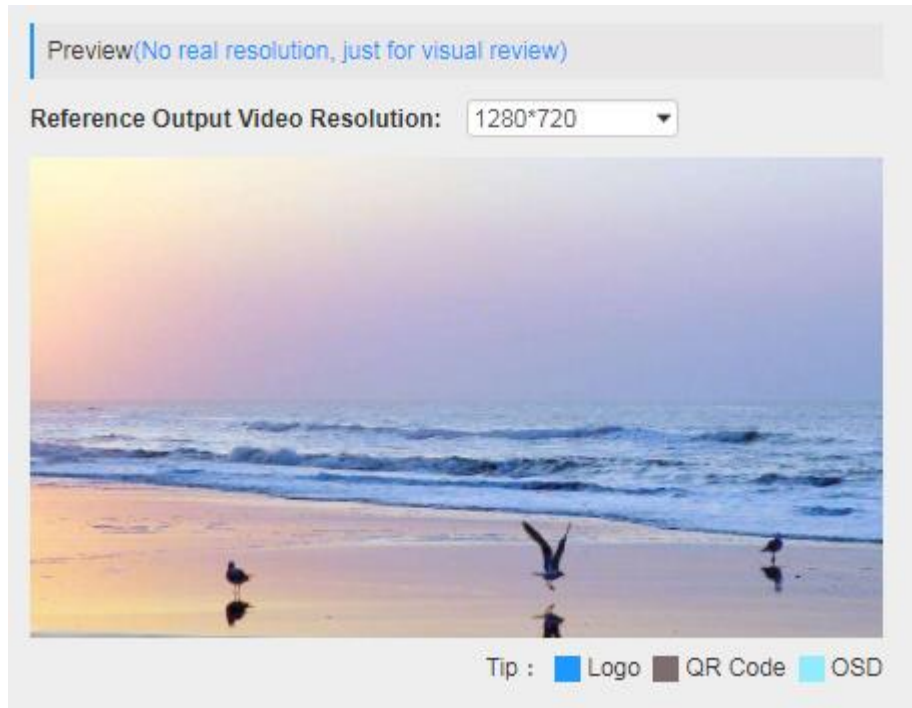
- **Destination IP Address** and **Destination Port**: Using for multicast IP addresses or unicast IP addresses and ports.
- **Enable Destination MAC**: Generally, you do not need to enable this option. This is reserved for exceptional cases where the unicast stream cannot be received with unicast IP addresses You can enable destination MAC and streaming out by setting Destination MAC.

CE2-HDMI-R05 > Insertion

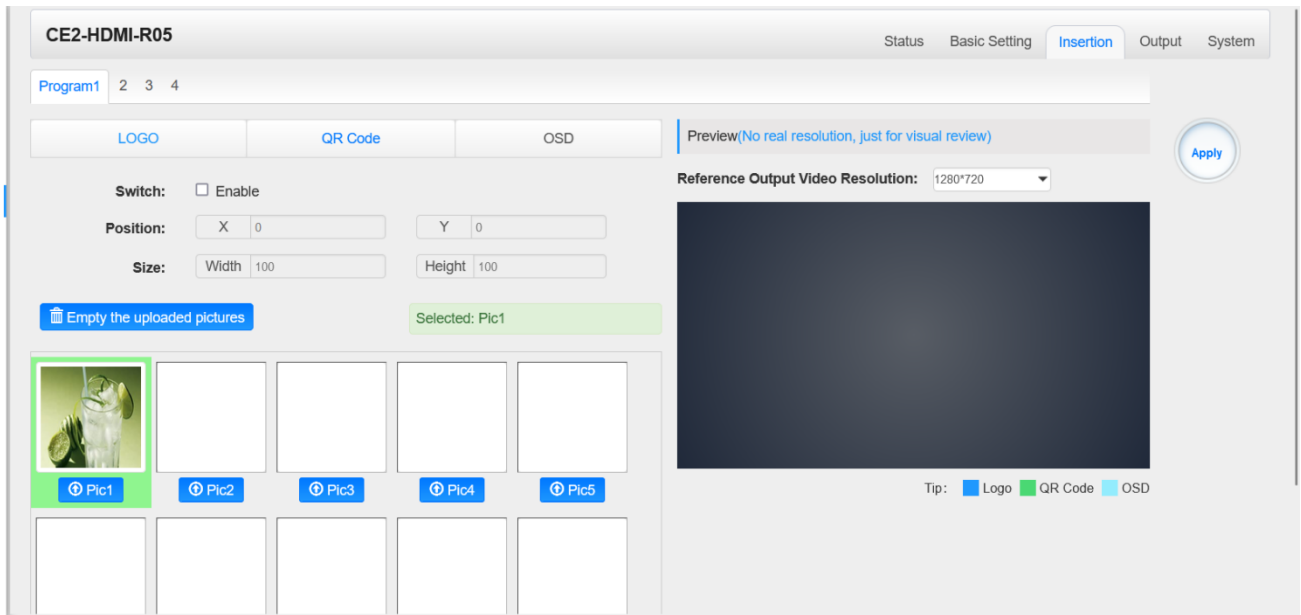
You should choose a program first before you set Insertion.



You can preview the effect or make adjustment after you set Insertion.



- **LOGO setting:** you can upload several pictures at the same time, and pick one to show on the screen. The field of the selected picture will turn green.



LOGO Parameter	Range	LOGO Parameter	Range
Position X	0~1920 (Dual)	Position Y	0~1080 (Dual)
Size width	2~1920 (Dual)	Size Height	2~1080 (Dual)

➤ **OSD setting:**

CE2-HDMI-R05

Program1
2
3
4

LOGO

QR Code

OSD

Switch:

☐ Enable

Position:

Bottom

Position Offset:

0

[-200~200]

Horizontal Pixel:

1920

Scrolling Speed:

1

Font Color:

White

Font Size:

20

Background Color:

Black

Background Transparency:

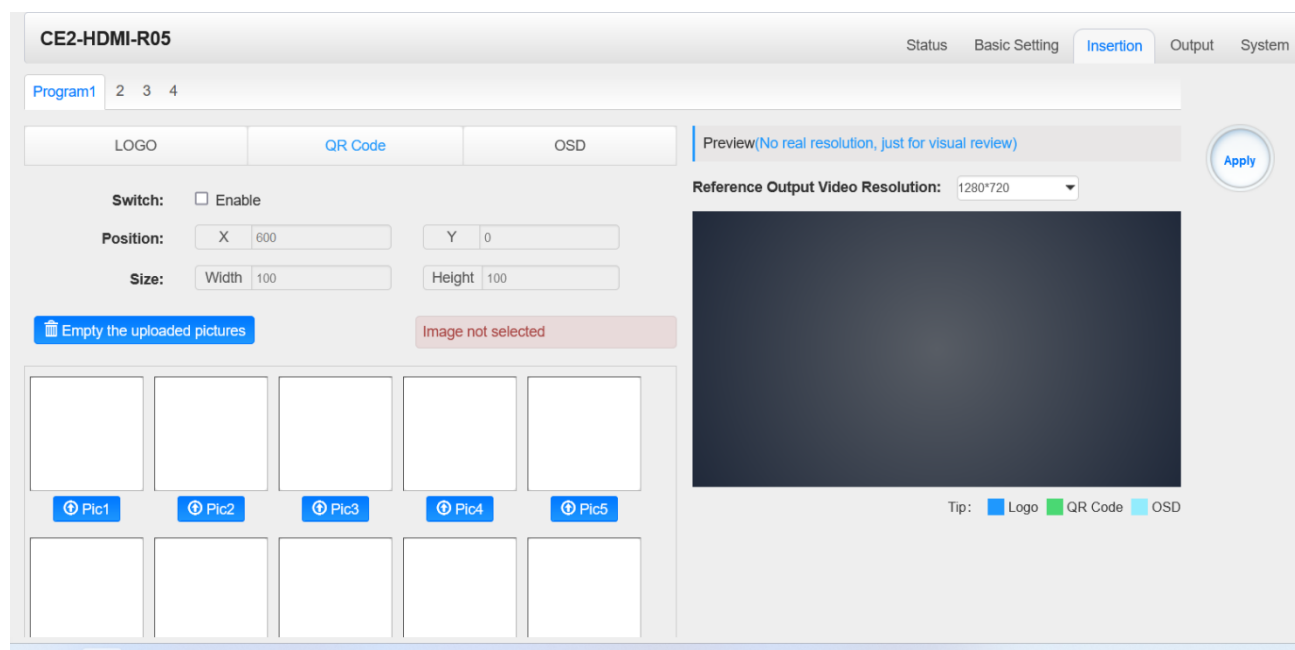
0

OSD:

Welcome!

Subtitle Parameter	Range	LOGO Parameter	Range
Position	Bottom/Top/Middle	Position Offset	-200~200
Horizontal Pixel	10~1920	Scrolling Speed	1~20
Front Color	White/Black/Blue/Green/ Red/Yellow	Front Size	0~100

- **QR Code setting:** QR Code picture picking method is same as LOGO setting.

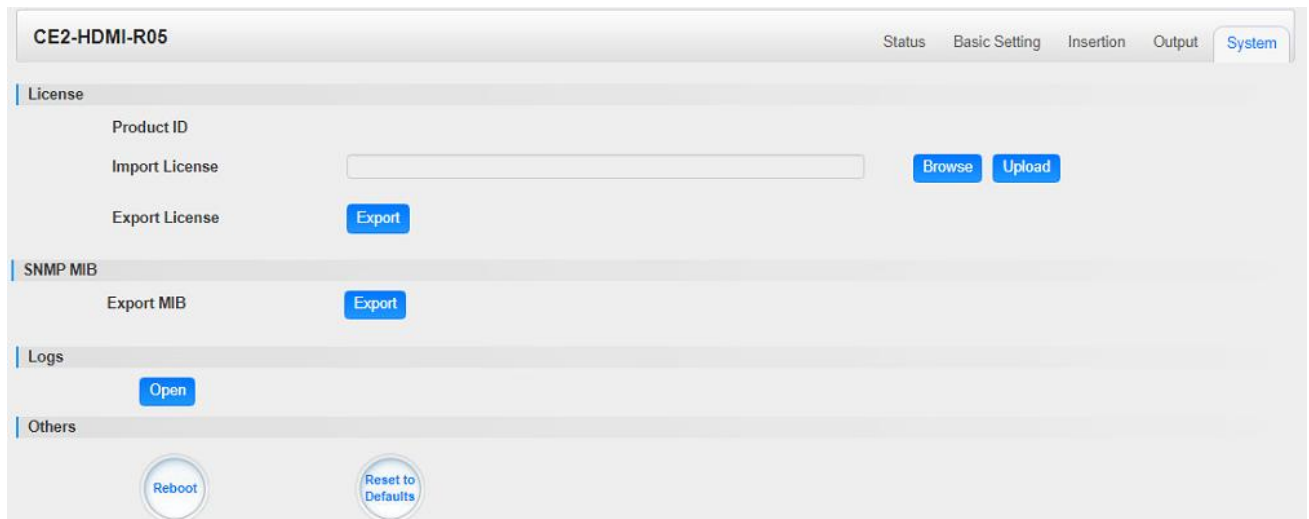


QR Code Parameter	Range	QR Code Parameter	Range
Position X	0~1920 (Dual)	Position Y	0~1080 (Dual)
Size width	0~1920 (Dual)	Size Height	0~1080 (Dual)

CE2-HDMI-R05A >Output

Output configuration please refer to CR2-DVBC module.

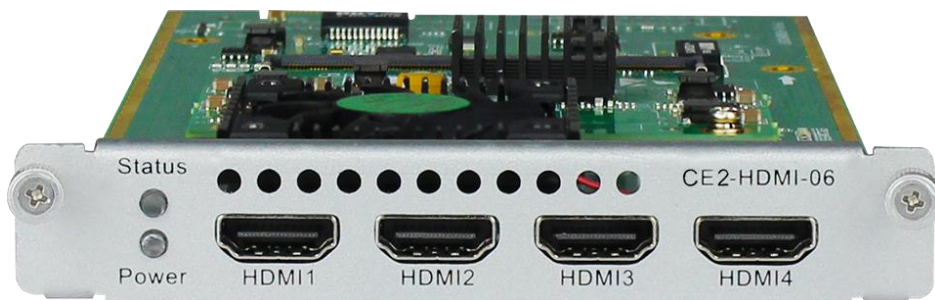
CE2-HDMI-R05A > System



On **System** page you can **Import/Export License**, **Reboot** module, **Reset to Defaults** and Manage **Logs**.

5.2.8 CE2-HDMI-06

CE2-HDMI-06 is a 4-channel HDMI high-definition encoding board (broadcast level), support H.264/H.265 HD/SD, support B frame, MPEG1L2 (support), AAC (optional), AC3 (optional), support superimposed OSD subtitles, logo, two-dimensional Code.



CE2-HDMI-06>Status

CE2-HDMI-06								
					Status	Basic Setting	Insertion	Output
HDCP turned on								
Program	Signal	HDCP Encryption	Input Video Resolution	Output Video Resolution	Total Bitrate(Mbps)	Effective Bitrate(Mbps)	TS Analysis	Program Name
1	✖	Unencrypted	No_Video	No_Video	0.000	0.000	👁	Program-01 ⓘ
2	✖	Unencrypted	No_Video	No_Video	0.000	0.000	👁	Program-02 ⓘ
3	✖	Unencrypted	No_Video	No_Video	0.000	0.000	👁	Program-03 ⓘ
4	✖	Unencrypted	No_Video	No_Video	0.000	0.000	👁	Program-04 ⓘ

CE2-HDMI-06>Basic Setting

CE2-HDMI-06			Status	Basic Setting	Insertion	Output	System															
<div>⚙️ Advanced Setting ></div> <table border="1"> <thead> <tr> <th>Program</th><th>Video Encoding Format</th><th>Video Bitrate(Kbps)</th></tr> </thead> <tbody> <tr> <td>1</td><td>H.264</td><td>12000</td></tr> <tr> <td>2</td><td>H.264 H.265</td><td>12000</td></tr> <tr> <td>3</td><td>H.264</td><td>12000</td></tr> <tr> <td>4</td><td>H.264</td><td>12000</td></tr> </tbody> </table> <div> <div>HDCP Test Mode : ON</div> <div>HDCP test mode is for test purposes only. Please make sure you have the right to use the content!</div> </div> <div>Apply</div>								Program	Video Encoding Format	Video Bitrate(Kbps)	1	H.264	12000	2	H.264 H.265	12000	3	H.264	12000	4	H.264	12000
Program	Video Encoding Format	Video Bitrate(Kbps)																				
1	H.264	12000																				
2	H.264 H.265	12000																				
3	H.264	12000																				
4	H.264	12000																				

This page allows you to modify the Video, Audio and Service Parameters. Click **Advanced Setting** to see all parameters you can modify and check what specific parameters you want to see and set. Click the **Apply** button on the right side to make the change take effect.

CE2-HDMI-06			Status	Basic Setting	Insertion	Output	System
<div>⚙️ Advanced Setting ▾</div> <div> <div>Video Parameter <input type="checkbox"/></div> <div> <input checked="" type="checkbox"/> Video Encoding Format <input checked="" type="checkbox"/> Video Bitrate <input type="checkbox"/> Video Mode <input type="checkbox"/> GOP Structure <input type="checkbox"/> Smooth Output </div> </div> <div> <div>Audio Parameter <input checked="" type="checkbox"/></div> <div> <input checked="" type="checkbox"/> Audio Encoding Format <input checked="" type="checkbox"/> Delay <input checked="" type="checkbox"/> Audio Bitrate <input checked="" type="checkbox"/> Audio Sampling Rate <input checked="" type="checkbox"/> Volume </div> </div> <div> <div>Service Parameter <input checked="" type="checkbox"/></div> <div> <input checked="" type="checkbox"/> Program Name <input checked="" type="checkbox"/> Video PID <input checked="" type="checkbox"/> Audio PID <input checked="" type="checkbox"/> PCR PID <input checked="" type="checkbox"/> PMT PID </div> </div> <div> <div>Shelter Parameter <input checked="" type="checkbox"/></div> <div> <input checked="" type="checkbox"/> X <input checked="" type="checkbox"/> Y <input checked="" type="checkbox"/> Width <input checked="" type="checkbox"/> Height <input checked="" type="checkbox"/> Color </div> </div> <div>Apply</div>							

Name	Range	Name	Range
Video Type	H.264 , H.265	Video PID	32~8190
Video Bitrate (Kbps)	600~12000	PCR2 PID	32~8190
GOP Size	1~60	PMT PID	32~8190
Video Resolution	Auto , Manual (Horizontal Pixels: 160~1920, Vertical Pixels: 120~1080, Framerate: 24~60, Scan Type: Progressive)	Program Name	Length is 1~31
Video Aspect Ratio	Automatic , 16x9 (SD) , 4x3 (SD)	Provider Name	Length is 0~31
Profile	MAIN HIGH	Smooth Output	Enable, Disable

Audio Encoder Details	Range	Audio Encoder Details	Range
Audio Enable	Enable/Disable	Delay(ms)	-2000~2000
Audio Type	MPEG1_Layer2 AAC AC3	Audio Bitrate(Kbps)	32~192(MPEG1_Layer2) 32~192(AAC) 96~192 (AC3)
Volume(dB)	-20~20	Audio PID	32~8190

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

CE2-HDMI-06>Output

Program	Enable	Destination IP Address	Destination Port	Enable Destination MAC	Destination MAC
1	<input checked="" type="checkbox"/>	227.10.20.94	1234	Enable	01:00:5E:0A:14:5E
2	<input type="checkbox"/>	227.10.20.94	1235	Enable	01:00:5E:0A:14:5E
3	<input type="checkbox"/>	227.10.20.94	1236	Disable	01:00:5E:0A:14:5E
4	<input type="checkbox"/>	227.10.20.94	1237	Disable	01:00:5E:0A:14:5E

This feature is specifically for single program encoding and IP output directly. Outputting this way will not occupy baseboard multicast bandwidth.



If you want to use IP output channels in the encoder module and baseboard IP Output module at same time, you should avoid a multicast IP address conflict. If there are two same IP addresses enabled meantime, all the multicast videos 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 cases where the unicast stream cannot be received with unicast IP addresses you can enable destination MAC and streaming out by setting Destination MAC.

Program	Program Name	Destination	Destination Setting
1	Program-01	15.[1,1]	
2	Program-02		
3	Program-03		
4	Program-04		

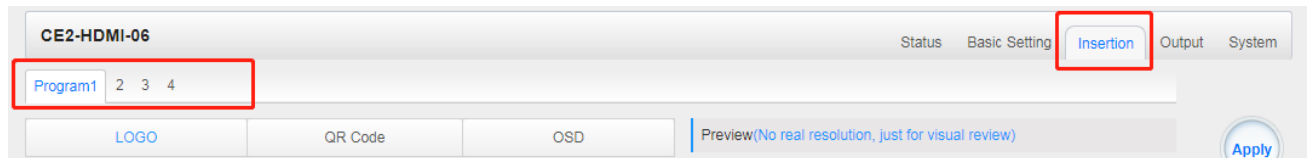
To use **Multiplexing mode at service level**:

1. Click on (pencil) icon. There will always be a Base Board selection for the IP output and other Output options depending on the module inserted.
2. Select the correct Output and Channel you want to output the service to.

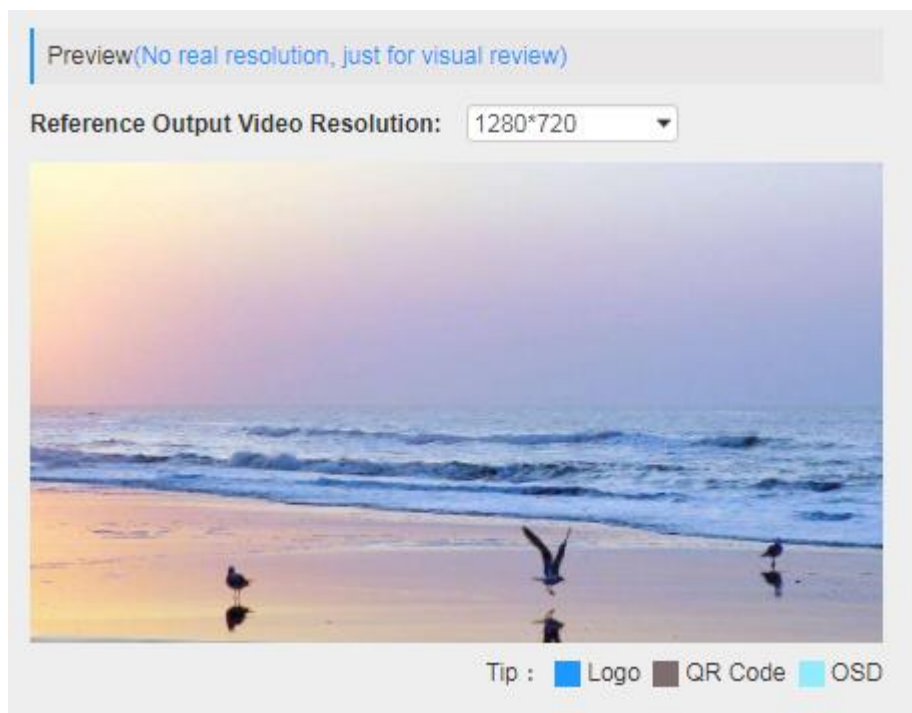
Check Multiplex on the channel you want to output to. You can output multiple services to one channel or output one service to multiple channels.

CE2-HDMI-06>Insertion

You should choose program first before you set Insertion.



You can preview the effect or make adjustment after you set Insertion.



- **LOGO setting:** you can upload several pictures at the same time, and pick one to show on the screen. Click the box in the picture to choose it.

CE2-HDMI-06

Program1
2
3
4

LOGO

QR Code

OSD

Enable:
☐ Yes
☒ No

Position:

X
0

Y
0

Size:

Width
100


Height
100

Logo Selection:
Image not selected

Upload

Delete Selected Pictures

Delete All Pictures



Pic1

LOGO Parameter	Range	LOGO Parameter	Range
Position X	0~1920 (Dual)	Position Y	0~1080 (Dual)
Size width	2~1920 (Dual)	Size Height	2~1080 (Dual)

➤ **OSD setting:**

CE2-HDMI-06

Program1 2 3 4

LOGO

QR Code

OSD

Enable: ☒ Yes ☐ No

Position: X Y

Horizontal Pixel: [0~960]

Font Color:

Font Size:

Subtitle:

[0~1024]

Subtitle Parameter	Range	LOGO Parameter	Range
Horizontal Pixel	10~1920	Scrolling Speed	1~20
Front Color	White/Black/Blue/Green/ Red/Yellow	Front Size	0~100

- **QR Code setting:** QR Code picture picking method is same as LOGO setting.

CE2-HDMI-06

Program1 2 3 4

LOGO

QR Code

OSD


Enable: ☒ Yes ☐ No

Position: X 600 Y 0

Size: Width 100 Height 100

QR Code Selection: Image not selected

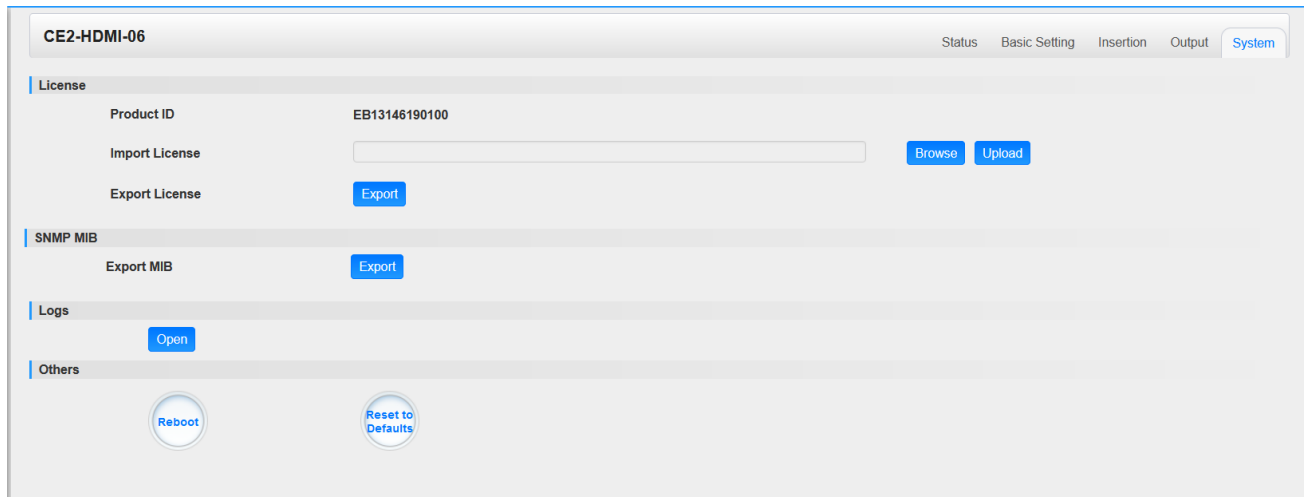
Upload Delete Selected Pictures Delete All Pictures



Pic1

QR Code Parameter	Range	QR Code Parameter	Range
Position X	0~1920 (Dual)	Position Y	0~1080 (Dual)
Size width	0~1920 (Dual)	Size Height	0~1080 (Dual)

CE2-HDMI-06> System



On the **System** page you can **Import/Export License**, **Reboot** module, **Reset to Defaults** and **Manage Logs**.

5.3 Modulation Output modules

5.3.1 CM2-QAMA-R00

➤ CM2-QAMA-R00

CM2-QAMA-R00 module supports modulating 16 non-adjacent or channels with 1 RF female port for modulating output and 1 RJ45 network port is reserved for future use. QAMA and B share the same Hardware but Different Software. If you need to change the Module from A to B, please contact your local support for assistance.



Module configuration is similar to IP Setting.

CM2-QAMA-00 >Basic Setting

This page is where you can modify or set the frequency for the RF modulation. CM2-QAMA-00 has 16 non-adjacent channels while CM2-QAMA-R01 has 4 adjacent channels both at single port.

Channel	Enable	QAM Mode	Frequency(KHz)	Bandwidth(MHz)	Constellation	SymbolRate(KBaud)
1.1	<input type="checkbox"/>	ANNEX A	200000	8	QAM64	6875
1.2	<input type="checkbox"/>	ANNEX A	208000	8	QAM64	6875
1.3	<input type="checkbox"/>	ANNEX A	216000	8	QAM64	6875
1.4	<input type="checkbox"/>	ANNEX A	224000	8	QAM64	6875
1.5	<input type="checkbox"/>	ANNEX A	232000	8	QAM64	6875
1.6	<input type="checkbox"/>	ANNEX A	240000	8	QAM64	6875
1.7	<input type="checkbox"/>	ANNEX A	248000	8	QAM64	6875
1.8	<input type="checkbox"/>	ANNEX A	256000	8	QAM64	6875
1.9	<input type="checkbox"/>	ANNEX A	264000	8	QAM64	6875
1.10	<input type="checkbox"/>	ANNEX A	272000	8	QAM64	6875
1.11	<input type="checkbox"/>	ANNEX A	280000	8	QAM64	6875
1.12	<input type="checkbox"/>	ANNEX A	288000	8	QAM64	6875
1.13	<input type="checkbox"/>	ANNEX A	296000	8	QAM64	6875
1.14	<input type="checkbox"/>	ANNEX A	304000	8	QAM64	6875
1.15	<input type="checkbox"/>	ANNEX A	312000	8	QAM64	6875
1.16	<input type="checkbox"/>	ANNEX A	320000	8	QAM64	6875

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

Name	Range	Name	Range
Bandwidth	6M, 7M, 8M	RF level	0~63 (dB μ V) 60~123 (dBmV)
Symbol Rate (KBaud)	4400~6956	Frequency (KHz)	48000~858000
		Constellation	QAM16/32/64/128/256

CM2-QAMA-00 >Output

QAM Output will be different from the Receiver and Encoder module. Since the QAM module is an output module like IP output, all services configured in receiver, encoder and IP input will be seen here.

- TS setting: Please refer to IP output service configuration.
- LCN setting: You need to add NIT streams of all frequencies in the base TS (frequency), which is used for your STB to automatically search and identify all the TS (frequencies) LCN information.
 - Check or reset Original Network ID and TS ID of each TS (frequency). Each TS should have different IDs.
 - 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 for this TS (frequency).

- Click **+Descriptor** then LCN Descriptor to check all the programs which are contained in this frequency. Then set programs LCN.

NIT

TOT

[1.1]

Apply

Clear Config

NIT Network

Import

Export

Tag: 0x

Network Name:

Add

Tag	Data	Length	Operation
0x40	0	1	✕

NIT Stream

Original Network ID:

TS ID:

Add

ONID	TS ID	Descriptor	Operation
0	0		✕ +Descriptor

NIT Actual

Logical Channel Number					
TS	Service ID	Service Name	LCN [0, 1023]	Visible Service Flag	<input type="checkbox"/>
1.1	32	Program3	<input type="text" value="1"/>	Visible	<input type="checkbox"/>
1.2	32	Program3	<input type="text" value="2"/>	Visible	<input type="checkbox"/>

Service List Add

TS	Service ID	Service Name	Service Type	
1.1	32	Program3	Digital Radio Sound Ser x	<input type="checkbox"/>
1.2	32	Program3	Digital Radio Sound Ser x	<input type="checkbox"/>

Satellite Delivery System

Frequency(MHz)

[48000,858000]

Symbol Rate(Ksymbol/s)

[0,999000]

Polarization

[Advanced Parameters](#) ▼

Terrestrial Delivery System

Centre Frequency

[1, 4294967295](10Hz)

Bandwidth

[Advanced Parameters](#) ▼

- Click **+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).Then click **OK**. (this operation should be set on Modulator module only).

Cable Delivery System

Frequency(KHz)

[48000,858000]

Symbol Rate(Ksymbol/s)

[0,999000]

Modulation

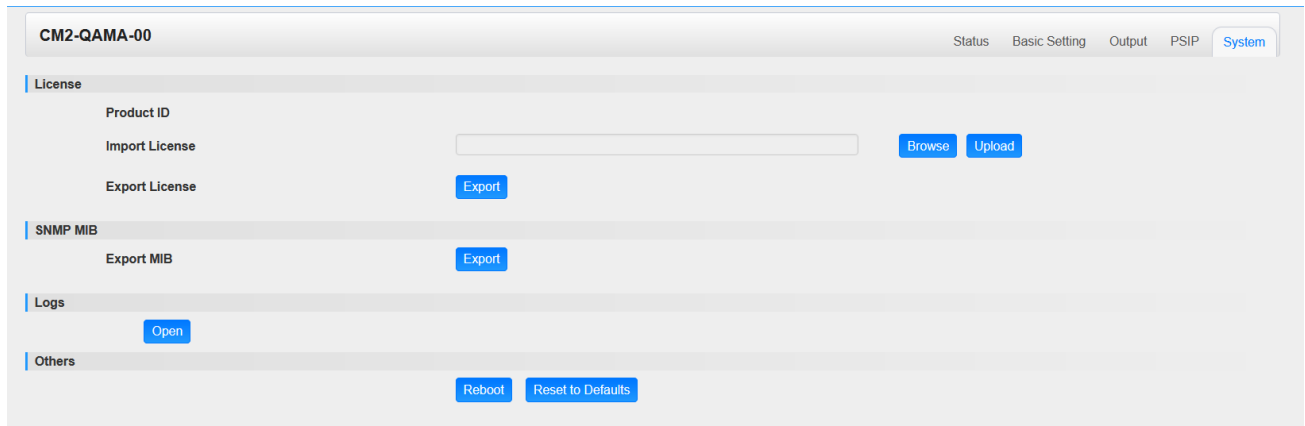
FEC Outer

FEC Inner

OK
Close

- 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.

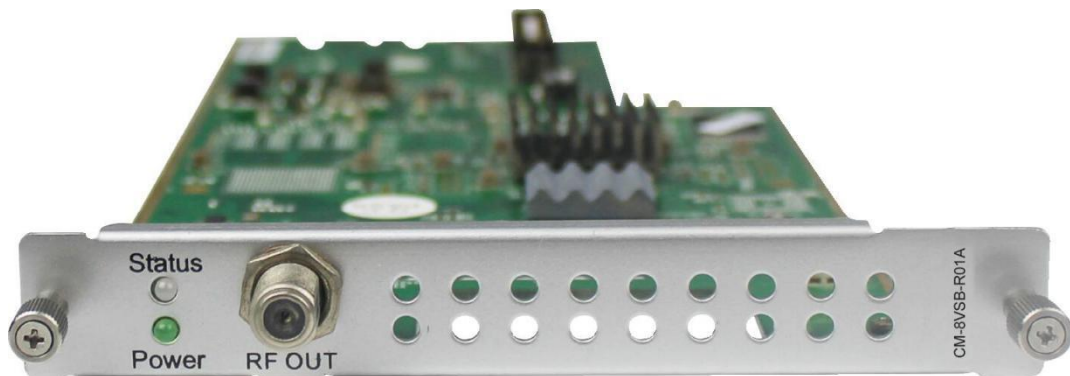
CM2-QAMA-R00> System



On the **System** page you can **Import/Export License**, **Reboot** module, **Reset to Defaults** and **Manage Logs**.

5.3.2 CM2-8VSB-03

CM2-8VSB-03 module supports up to 8 8VSB adjacent frequencies modulating with 1 RF connector for output.



Module configuration is similar to IP Setting.

CM2-8VSB-03>Basic Setting

CM2-8VSB-R01 Status Basic Setting Output System

RF Level: 40 (dBmV dBuV) PSI/SI Interval(ms): 100 Channel Standard: OFF-AIR

Channel	Enable	Frequency
1.1	<input type="checkbox"/>	CH2-57MHz
1.2	<input type="checkbox"/>	CH2-57MHz
1.3	<input type="checkbox"/>	CH2-57MHz
1.4	<input type="checkbox"/>	CH2-57MHz

[Apply](#)

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

Name	Range	Name	Range
RF level (1=0.5dB)	15~48	PSI/SI Interval (ms)	50~10000
Channel Standard	OFF-AIR	Frequency (KHz)	CH2-57MHz
	STD		~
	IRC		CH69-802MHz
	SRC		

CM2-8VSB-03 >Output

- TS setting: Please refer to IP output service configuration.
- To use this board, you need to change the **Standard** to ATSC in **System Settings**.
- Don't forget to click **APPLY** when you finish configuration.

System Settings Network Time System Password NMS Register Advance Settings SNMP

Standard: ATSC

Language: English

Authorized Use Time: Stay With First Level Authorized Time

Destination Module Number: 4

CA Descriptor Filter: Disable

PAT Sync Update: Disable

VLAN Enable: Disable

[Apply](#)

5.3.3 CM2-QAMB-R00

➤ CM2-QAMB-R00

CM2-QAMB-00 module supports up to 16 channels of non-adjacent frequency QAM-B modulating board.



Module configuration is similar to IP Setting.

CM2-QAMB-00 >Basic Setting

CM2-QAMB-00

Status Basic Setting Output PSIP System

RF Level: 45 (dBmV ☒ dBuV ☐)
PSI/SI Interval(ms): 100
Channel Standard: STD

Channel	Enable	QAM Mode	Channel No.	Bandwidth(MHz)	Constellation	SymbolRate(KBaud)
1.1	<input checked="" type="checkbox"/>	ANNEX B	CH23-219MHz	6	QAM256	5361
1.2	<input checked="" type="checkbox"/>	ANNEX B	CH24-225MHz	6	QAM256	5361
1.3	<input checked="" type="checkbox"/>	ANNEX B	CH25-231MHz	6	QAM256	5361
1.4	<input type="checkbox"/>	ANNEX B	CH5-79MHz	6	QAM256	5361
1.5	<input type="checkbox"/>	ANNEX B	CH6-85MHz	6	QAM256	5361
1.6	<input type="checkbox"/>	ANNEX B	CH7-177MHz	6	QAM256	5361
1.7	<input type="checkbox"/>	ANNEX B	CH8-183MHz	6	QAM256	5361
1.8	<input type="checkbox"/>	ANNEX B	CH9-189MHz	6	QAM256	5361
1.9	<input type="checkbox"/>	ANNEX B	CH10-195MHz	6	QAM256	5361
1.10	<input type="checkbox"/>	ANNEX B	CH11-201MHz	6	QAM256	5361
1.11	<input type="checkbox"/>	ANNEX B	CH12-207MHz	6	QAM256	5361
1.12	<input type="checkbox"/>	ANNEX B	CH13-213MHz	6	QAM256	5361
1.13	<input type="checkbox"/>	ANNEX B	CH14-123MHz	6	QAM256	5361
1.14	<input type="checkbox"/>	ANNEX B	CH15-129MHz	6	QAM256	5361
1.15	<input type="checkbox"/>	ANNEX B	CH16-135MHz	6	QAM256	5361
1.16	<input type="checkbox"/>	ANNEX B	CH17-141MHz	6	QAM256	5361

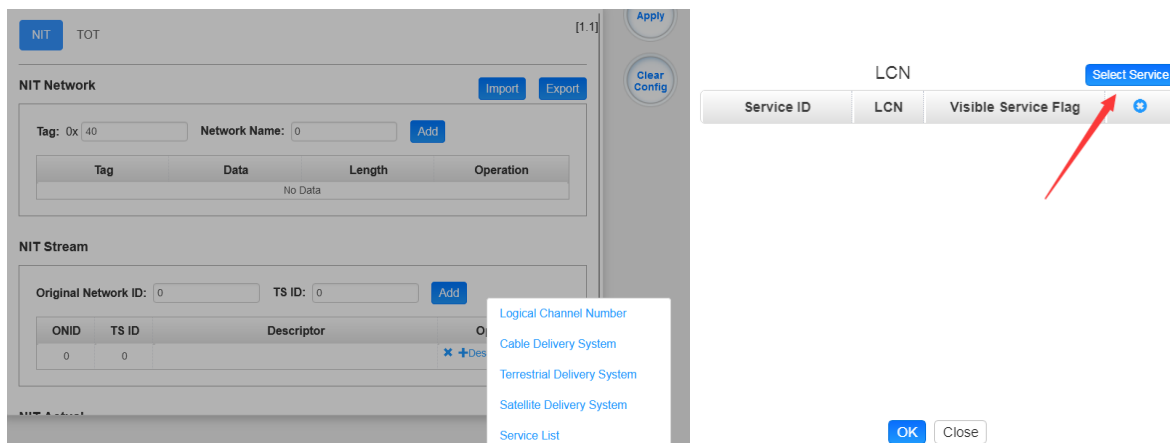
Apply

Name	Range	Name	Range
Channel Standard	STD, IRC, HRC, Customized	RF level (dBuV)	85~105
Bandwidth (MHz)	6	Constellation	QAM64/QAM256
Symbol Rate	5057(QAM64) 5361(QAM256)		

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

CM2-QAMB-00>Service Configuration

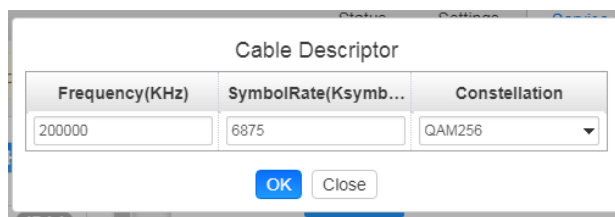
- TS setting: Please refer to IP output service configuration.
- LCN setting: You need to add NIT streams of all frequencies to the base TS (frequency), which is for your STB to automatically search and identify all the TS (frequencies) LCN information.
 - Check or reset Original Network ID and TS ID of each TS (frequency)., Each TS should have different IDs.
 - 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 for this TS (frequency).
 - Click **+Descriptor** then **LCN Descriptor** to check all the programs which are contained in this frequency. Then set programs LCN.



TS	Service ID	Service Name	
1.1	1	Program-01	<input checked="" type="checkbox"/>
1.1	2	Program-02	<input checked="" type="checkbox"/>
1.1	3	Program-03	<input checked="" type="checkbox"/>

Service ID	LCN	Visible Service Flag	
1	1	Visible	<input checked="" type="checkbox"/>
2	2	Visible	<input checked="" type="checkbox"/>
3	3	Visible	<input checked="" type="checkbox"/>

- Click **+Descriptor** and **the Cable Descriptor**. Then fill in the correct frequency and symbol rate and choose the correct constellation of the TS (frequency).Then click **OK**. (This operation should be set on Modulator module only).
- You can also add **Cable Delivery System, Terrestrial Delivery System, Satellite Delivery system, and Service List**.



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

5.3.4 CM2-DTMB-03

➤ CM2-DTMB-03

CM2-DTMB-03 module supports up to 8 channels of adjacent frequency DTMB modulating board



Module configuration is similar to IP Setting.

CM2-DTMB-03 >Basic Setting

CM2-DTMB-03
Status
Basic Setting
Output
System

Batch Setting ▾

RF Level(dBuV): 45 (dBmV ☒ dBuV ☐)
 PSI/SI Interval(ms): 100
Apply

Channel	Enable	Frequency(KHz)	Constellation Mode	Frame Head Mode	Carrier Mode	RF Level Gain (dB)
1.1	<input checked="" type="checkbox"/>	474000	4QAM LDPC 0.4	420 Variable	Single-Carrier	0
1.2	<input type="checkbox"/>	482000	4QAM LDPC 0.4	420 Variable	Single-Carrier	0
1.3	<input type="checkbox"/>	490000	4QAM LDPC 0.4	420 Variable	Single-Carrier	0
1.4	<input type="checkbox"/>	498000	4QAM LDPC 0.4	420 Variable	Single-Carrier	0
1.5	<input type="checkbox"/>	578000	4QAM LDPC 0.4	420 Variable	Single-Carrier	0
1.6	<input type="checkbox"/>	586000	4QAM LDPC 0.4	420 Variable	Single-Carrier	0
1.7	<input type="checkbox"/>	594000	4QAM LDPC 0.4	420 Variable	Single-Carrier	0
1.8	<input type="checkbox"/>	602000	4QAM LDPC 0.4	420 Variable	Single-Carrier	0

Name	Range	Name	Range
Frequency	48000~862000	RF level Gain(dB)	-10~0
Constellation Mode	4QAM LDPC0.4/0.6/0.8 16QAM LDPC 0.4/0.6/0.8 32QAm LDPC 0.8 64QAM LDPC 0.4/0.6/0.8	Carrier Mode	Single Carrier
Frame Head Mode	420 Variable 595 Fixed	RF Level (dBuV)	25~60
		PSI/SI Interval	50~10000

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

CM2-DTMB-03>Service Configuration

- TS setting: Please refer to IP output service configuration.
- LCN setting: You need to add NIT streams of all frequencies to the base TS (frequency), which is for your STB to automatically search and identify all the TS (frequencies) LCN information.
 - Check or reset Original Network ID and TS ID of each TS (frequency)., Each TS should have different IDs.
 - 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 for this TS (frequency).
 - Click **+Descriptor** then **LCN Descriptor** to check all the programs which are contained in this frequency. Then set programs LCN.

NIT [1.1]

NIT Network: **NIT Stream** NIT Actual

Original Network ID: 0

TS ID: 0

Add

Original ...	TS ID	Descriptor	Operation
0	0		+Descriptor

Logical Channel Number
Terrestrial Delivery System

Apply
Clear Config

Logical Channel Number ☒ V1 ☐ V2 Add

TS	Service ID	Service Name	LCN [0, 1023]	Visible Service Flag	
1.1	2010	SUPERTV	1	Visible	<input type="checkbox"/>

Service List

TS	Service ID	Service Name	
1.1	1	Program-01	<input checked="" type="checkbox"/>
1.1	2	Program-02	<input checked="" type="checkbox"/>
1.1	3	Program-03	<input checked="" type="checkbox"/>

LCN

Service ID	LCN	Visible Service Flag	
1	1	Visible	<input checked="" type="checkbox"/>
2	2	Visible	<input checked="" type="checkbox"/>
3	3	Visible	<input checked="" type="checkbox"/>

- Click **+Descriptor** and **the Cable Descriptor**. Then fill in the correct frequency and symbol rate and choose the correct constellation of the TS (frequency). Then click **OK**. (This operation should be set on Modulator module only).
- You can also add **Terrestrial Delivery System**

Terrestrial Delivery System

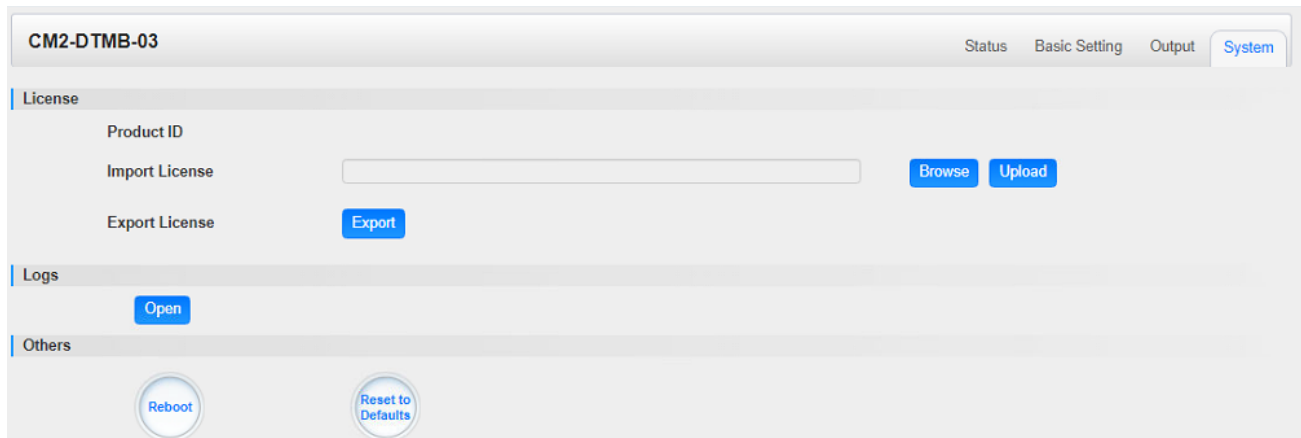
Centre Frequency: 1 [1, 4294967295](10Hz)

Bandwidth: 8MHz

Advanced Parameters ☒

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

CM2-DTMB-03> System



On the **System** page you can **Import/Export License**, **Reboot** module, **Reset to Defaults** and **Manage Logs**.

5.3.5 CM2-QAMA-03

CM2-QAMA-03 module supports up to 8 channels of adjacent frequency QAM-A/C modulating board.



Module configuration is similar to IP Setting.

CM2-QAMA-03>Basic Setting

CM2-QAMA-03 Status Basic Setting Output System

Batch Setting ▾

RF Level(dBuV): 105 PSI/SI Interval(ms): 100

Channel	Enable	Frequency(KHz)	QAM Mode	SymbolRate(KBaud)	RF Level Gain (dBuV)
1.1	<input checked="" type="checkbox"/>	200000	QAM64	6875	0
1.2	<input checked="" type="checkbox"/>	208000	QAM64	6875	0
1.3	<input type="checkbox"/>	216000	QAM64	6875	0
1.4	<input type="checkbox"/>	224000	QAM64	6875	0
1.5	<input type="checkbox"/>	232000	QAM64	6875	0
1.6	<input type="checkbox"/>	240000	QAM64	6875	0
1.7	<input checked="" type="checkbox"/>	248000	QAM64	6875	0
1.8	<input checked="" type="checkbox"/>	256000	QAM64	6875	0

Apply

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

Name	Range	Name	Range
Symbol Rate	3600~3956	RF level gain	-10`~0 (multiples of 0.5)
Frequency (KHz)	48000~862000	QAM Mode	QAM16/QAM32/QAM64/QAM128/QAM256

CM2-QAMA-03>Output

- TS setting: Please refer to IP output 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 Original Network ID and TS ID of each TS (frequency). Each TS should have different IDs.
 - 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 for this TS (frequency).
 - Click **+Descriptor** and **Cable Descriptor**. 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).

Cable Descriptor

Frequency(KHz)	SymbolRate(Ksymb...	Constellation
200000	6875	QAM256

OK Close

- Click **+Descriptor** and add the **LCN Descriptor** to check all the programs which are contained in this frequency. Then set programs LCN.

LCN

Service ID	LCN	Visible Service Flag
		Visible

OK Close

Service List

TS	Service ID	Service Name	
1.1	1	2.5M-CCTV1	<input checked="" type="checkbox"/>
1.2	1	Program0	<input type="checkbox"/>
1.3	1	LipSync_1080i	<input type="checkbox"/>
1.3	2	td HD Phx Chinese Cha...	<input type="checkbox"/>

LCN

Service ID	LCN	Visible Service Flag
1	66	Visible

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

5.3.6 CM2-OFDM-03

CM2-OFDM-03 module supports up to 8 channels of adjacent frequency OFDM modulating board.



Module configuration is similar to IP Setting.

CM2-OFDM-03>Basic Setting

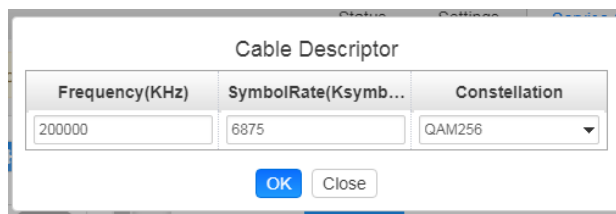
Channel	Enable	Frequency(KHz)	Bandwidth(MHz)	FFT Mode	GI Mode	QAM Mode	Convolutional Coding	RF Level Gain (dBuv)
1.1	<input checked="" type="checkbox"/>	200000	6	2K	1/4	64QAM	1/2	0
1.2	<input checked="" type="checkbox"/>	208000	6	2K	1/4	64QAM	1/2	0
1.3	<input type="checkbox"/>	216000	6	2K	1/4	64QAM	1/2	0
1.4	<input type="checkbox"/>	224000	6	2K	1/4	64QAM	1/2	0
1.5	<input type="checkbox"/>	232000	6	2K	1/4	64QAM	1/2	0
1.6	<input type="checkbox"/>	240000	6	2K	1/4	64QAM	1/2	0
1.7	<input checked="" type="checkbox"/>	248000	6	2K	1/4	64QAM	1/2	0
1.8	<input checked="" type="checkbox"/>	256000	6	2K	1/4	64QAM	1/2	0

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

Name	Range	Name	Range
Bandwidth	6M, 7M, 8M	RF level (dbuV)	85~120
Frequency (KHz)	48000~862000	FFT Mode	2k
GI Mode	1/4, 1/8, 1/16, 1/32	QAM Mode	QPSK/16QAM/64QAM
Convolutional Coding	1/2, 2/3, 3/4, 5/6, 7/8		

CM2-OFDM-03>Output

- TS setting: Please refer to IP output 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 Original Network ID and TS ID of each TS (frequency). Each TS should have different IDs.
 - 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 for this TS (frequency).
 - Click **+Descriptor** and **Cable Descriptor**. 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).

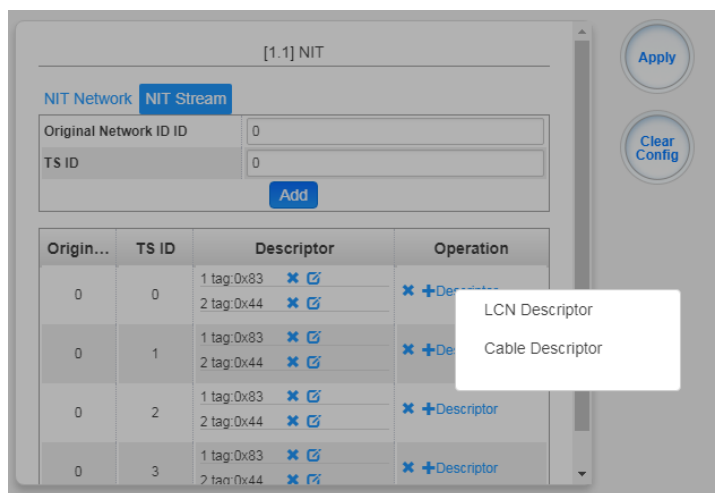


Cable Descriptor

Frequency(KHz)	SymbolRate(Ksymb...	Constellation
200000	6875	QAM256

OK Close

- Click **+Descriptor** and add the **LCN Descriptor** to check all the programs which are contained in this frequency. Then set programs LCN.



[1.1] NIT

NIT Network NIT Stream

Original Network ID ID 0

TS ID 0

Add

Origin...	TS ID	Descriptor	Operation
0	0	1 tag:0x83 2 tag:0x44	+Descriptor
0	1	1 tag:0x83 2 tag:0x44	+Descriptor
0	2	1 tag:0x83 2 tag:0x44	+Descriptor
0	3	1 tag:0x83 2 tag:0x44	+Descriptor

LCN Descriptor
Cable Descriptor

Apply
Clear Config

LCN

Service ID	LCN	Visible Service Flag
		Select Service

OK Close

Service List

TS	Service ID	Service Name	
1.1	1	2.5M-CCTV1	<input checked="" type="checkbox"/>
1.2	1	Program0	<input type="checkbox"/>
1.3	1	LipSync_1080i	<input type="checkbox"/>
1.3	2	td HD Phx Chinese Cha...	<input type="checkbox"/>

Logical Channel Number ☒ V1 ☐ V2 Add

TS	Service ID	Service Name	LCN [0, 1023]	Visible Service Flag	
1.1	36	GOLDEN	1	Visible	<input type="checkbox"/>
1.1	37	D PELICULA	2	Visible	<input type="checkbox"/>
1.1	38	TLNOVELAS	3	Visible	<input type="checkbox"/>
1.2	39	UNIVISION	4	Visible	<input type="checkbox"/>

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

5.3.7 CM2-ISDBT-03

CM2-ISDBT-03 module supports up to 8 channels of adjacent frequency ISDBT-T modulating board



CM2-ISDBT-03>Basic Setting

CM2-ISDBT-03

Status
Basic Setting
Output
System

Temperature: 33°C (91.4°F)

Tip: The module will automatically power off when the temperature reaches or exceeds 74 degrees Celsius(165.2 degrees Fahrenheit)

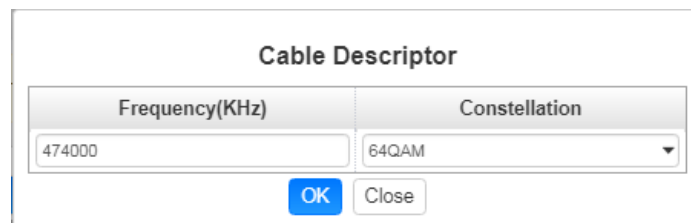
Channel	Effective Bitrate(Mbps)	Total Bitrate(Mbps)	Bitrate	TS Analysis	Service List
1.1	0.000	0.000	Normal	👁	☰
1.2	0.000	0.000	Normal	👁	☰
1.3	0.000	0.000	Normal	👁	☰
1.4	0.000	0.000	Normal	👁	☰
1.5	0.000	0.000	Normal	👁	☰
1.6	0.000	0.000	Normal	👁	☰
1.7	0.000	0.000	Normal	👁	☰
1.8	0.000	0.000	Normal	👁	☰

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

Name	Range	Name	Range
Bandwidth(MHZ)	6M	RF level	25~45dBmV/85~105dB μ V
Frequency (KHz)	48000~862000	FFT Mode	2K
GI Mode	1/4, 1/8, 1/16, 1/32	RF Level Gain(dB)	45~55
QAM Mode	QPSK	Convolutional	1/2, 2/3, 3/4, 5/6, 7/8
	16QAM	Coding	
	64QAM		

CM2-ISDBT-03>Output

- TS setting: Please refer to IP output service configuration.
- LCN setting: You need to add NIT streams of all frequencies to the base TS (frequency) which is for your STB to automatically search and identify all the TS (frequencies) LCN information.
 - Check or reset Original Network ID and TS ID of each TS (frequency). Each TS should have different IDs.
 - 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 for this TS (frequency).
 - Click **+Descriptor** and **Cable Descriptor**. 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).

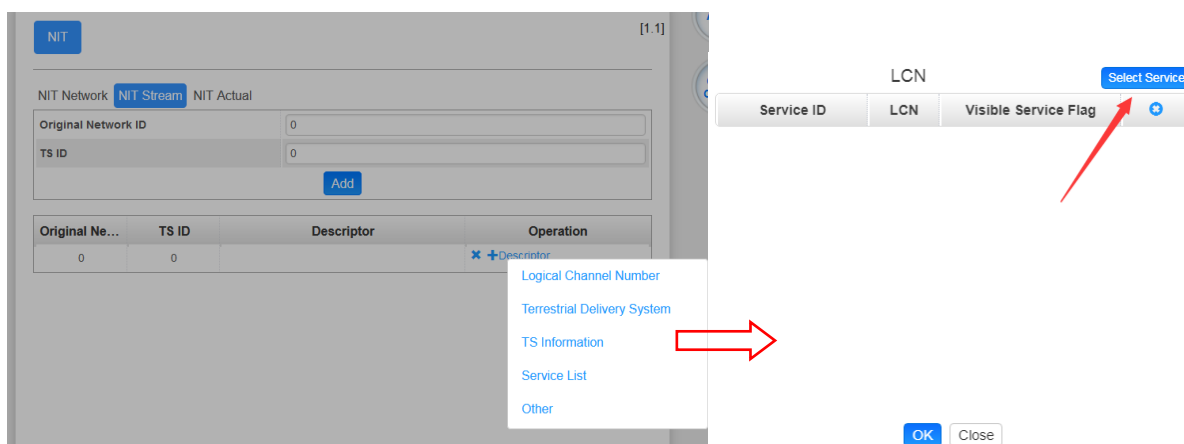


Cable Descriptor

Frequency(KHz)	Constellation
474000	64QAM

OK Close

- Click **+Descriptor** and **LCN Descriptor** to check all the programs which are contained in this frequency. Then set programs LCN.



NIT [1.1]

NIT Network **NIT Stream** NIT Actual

Original Network ID: 0
TS ID: 0
Add

Original Ne...	TS ID	Descriptor	Operation
0	0		+Descriptor

Logical Channel Number
Terrestrial Delivery System
TS Information
Service List
Other

LCN **Select Service**

Service ID	LCN	Visible Service Flag
		+

OK Close

Service List			
TS	Service ID	Service Name	
1.1	1	Program-01	<input checked="" type="checkbox"/>
1.1	2	Program-02	<input checked="" type="checkbox"/>
1.1	3	Program-03	<input checked="" type="checkbox"/>

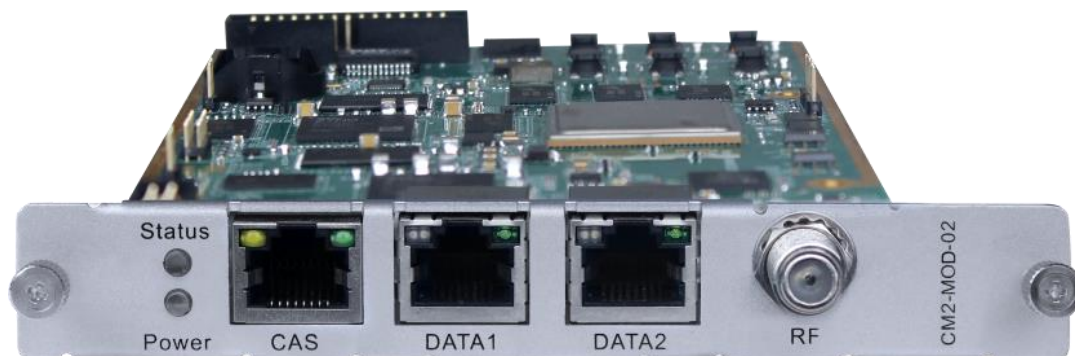
LCN			
Service ID	LCN	Visible Service Flag	
	66	Visible	<input checked="" type="checkbox"/>

Red arrows indicate the flow from the Service List table to the LCN table, specifically from the 'Program-03' row to the 'Service ID' field in the LCN table.

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

5.3.8 CM2-QAMB-02

CM2-QAMB-02 is a 16/32-channel QAM-B modulation output module with 2 gigabit IP input ports (single port supports 256-channel input), 1 CAS interface (RJ45) supporting scrambling (It is not enabled by default and requires additional authorization) and 1 RF output interface supporting up to 32 QAM-B non-adjacent frequencies modulating with independent constellation mode configuration.




CM2-QAMB-02 > Status

The Status page contains status information of IP Input, Modulation Output and IP Output.

IP Input > CM2-MOD-02 has 1024 IP input channels. Those channels are divided into two RJ45 ports, each port has 512 IP input channels. Click Port 1 tab, users can obtain the 256 channels status information such as input source IP address and port number, total bitrate (Mbps) and effective bitrate (Mbps). The TS analysis and Service List button on each channel allow users to check the detailed information in each TS. See the image below for reference.

Channel	IP Address: Port	Status	Effective Bitrate(Mbps)	Total Bitrate(Mbps)	TS Analysis	Service List
1.1	0.0.0.0 : 0	●	0.000	0.000	👁	☰
1.2	0.0.0.0 : 0	●	0.000	0.000	👁	☰
1.3	0.0.0.0 : 0	●	0.000	0.000	👁	☰
1.4	0.0.0.0 : 0	●	0.000	0.000	👁	☰
1.5	0.0.0.0 : 0	●	0.000	0.000	👁	☰
1.6	0.0.0.0 : 0	●	0.000	0.000	👁	☰
1.7	0.0.0.0 : 0	●	0.000	0.000	👁	☰
1.8	0.0.0.0 : 0	●	0.000	0.000	👁	☰
1.9	0.0.0.0 : 0	●	0.000	0.000	👁	☰
1.10	0.0.0.0 : 0	●	0.000	0.000	👁	☰
1.11	0.0.0.0 : 0	●	0.000	0.000	👁	☰

Channel	IP Address: Port	Status	Effective Bitrate(Mbps)	Total Bitrate(Mbps)	TS Analysis	Service List
1.1	0.0.0.0 : 0	●	0.000	0.000	👁	☰
1.2	0.0.0.0 : 0	●	0.000	0.000	👁	☰
1.3	0.0.0.0 : 0	●	0.000	0.000	👁	☰
1.4	0.0.0.0 : 0	●	0.000	0.000	👁	☰
1.5	0.0.0.0 : 0	●	0.000	0.000	👁	☰
1.6	0.0.0.0 : 0	●	0.000	0.000	👁	☰
1.7	0.0.0.0 : 0	●	0.000	0.000	👁	☰
1.8	0.0.0.0 : 0	●	0.000	0.000	👁	☰
1.9	0.0.0.0 : 0	●	0.000	0.000	👁	☰
1.10	0.0.0.0 : 0	●	0.000	0.000	👁	☰
1.11	0.0.0.0 : 0	●	0.000	0.000	👁	☰

Click the eye icon , users can know all the PIDs such as PAT, CAT, PCR2, Video Audio, PCR2 PID etc in this TS. See the image below for reference.

Input Status IP Setting IGMP Setting Service Configuration

Total Bitrate: 0.000 Mbps

Channel	IP Address : Port	Status	Effective Bitrate(Mbps)	Total Bitrate(Mbps)	TS Analysis	Service List
1.1	0.0.0.0 : 0	●	0.000	0.000	👁	☰
1.2	0.0.0.0 : 0	●	0.000	0.000	👁	☰
1.3	0.0.0.0 : 0	●	0.000	0.000	👁	☰
1.4	0.0.0.0 : 0	●	0.000	0.000	👁	☰
1.5	0.0.0.0 : 0	●	0.000	0.000	👁	☰
1.6	0.0.0.0 : 0	●	0.000	0.000	👁	☰
1.7	0.0.0.0 : 0	●	0.000	0.000	👁	☰
1.8	0.0.0.0 : 0	●	0.000	0.000	👁	☰
1.9	0.0.0.0 : 0	●	0.000	0.000	👁	☰
1.10	0.0.0.0 : 0	●	0.000	0.000	👁	☰
1.11	0.0.0.0 : 0	●	0.000	0.000	👁	☰

Channel 1.1 TS Analysis Reset Counter ✕

Search

PID	Bitrate(Mbps)	Bandwidth(%)	Continuity Count Error	Type	Service
No Data					

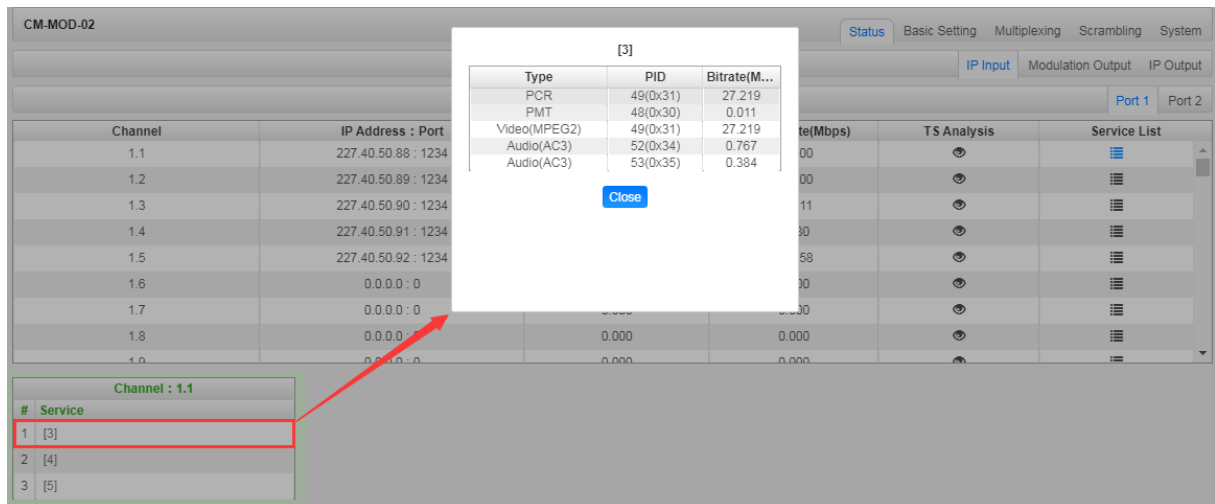
If the input stream has multiple programs, users can click the icon below “Service List” to see all the services in this stream. See the image below for reference.

Channel	IP Address : Port	Effective Bitrate(Mbps)	Total Bitrate(Mbps)	TS Analysis	Service List
1.1	227.40.50.88 : 1234	18.455	19.764	👁	☰
1.2	227.40.50.89 : 1234	18.446	19.750	👁	☰
1.3	227.40.50.90 : 1234	18.446	19.750	👁	☰
1.4	227.40.50.91 : 1234	9.521	10.064	👁	☰
1.5	227.40.50.92 : 1234	19.179	20.129	👁	☰
1.6	0.0.0.0 : 0	0.000	0.000	👁	☰
1.7	0.0.0.0 : 0	0.000	0.000	👁	☰
1.8	0.0.0.0 : 0	0.000	0.000	👁	☰
1.9	0.0.0.0 : 0	0.000	0.000	👁	☰

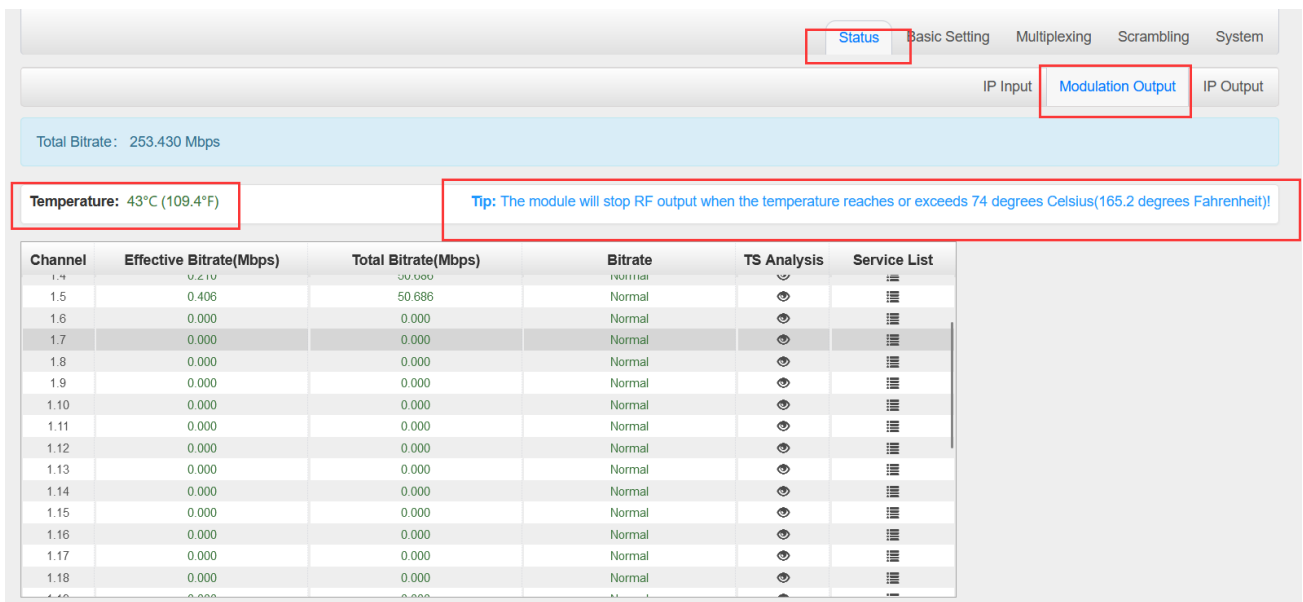
Channel : 1.1

#	Service
1	[3]
2	[4]
3	[5]

You can also check the details of a service by clicking the Service Name.



Modulation Output CM2-QAMB-02 status shows the Modulation output. Just like the IP Input, this shows the total bitrate and effective bitrate of the 32 channels respectively. The TS Analysis and Service List have the same function as in the IP input. The Status also shows the current temperature of the unit on the upper left corner. See image below for reference.



Channel 1.1 TS Analysis

PID	Bitrate(Mbps)	Bandwidth(%)	Continuity Count Error	Type	Service
0x0(0)	0.015	0.039	84	PAT	
0x11(17)	0.015	0.039	37	SDT, BAT	
0x30(48)	0.015	0.039	99	PMT	
0x31(49)	0.000	0.000	127	PCR, Video	
0x34(52)	0.000	0.000	127	Audio	
0x35(53)	0.000	0.000	57	Audio	

Channel : 1.1 Service List

#	Service
1	[3]
2	[4]
3	[5]

IP Output→CM2-QAM-02 status also shows the IP output. Just like the IP Input, this shows the total bitrate and effective bitrate of the 16 channels respectively. The TS Analysis and Service List have the same function as in the IP input. See image below for reference.

Status Basic Setting Multiplexing Scrambling System

IP Input Modulation Output **IP Output**

Port 1 Port 2

Total Bitrate: 304.172 Mbps

Channel	IP Address: Port	Effective Bitrate(Mb...	Total Bitrate(Mb...	Bitrate	TS Analysis	Service List
1.1	224.20.20.1 : 1234	0.135	50.692	Normal		
1.2	224.20.20.2 : 1234	0.180	50.702	Normal		
1.3	224.20.20.3 : 1234	0.123	50.692	Normal		
1.4	224.20.20.4 : 1234	0.213	50.692	Normal		
1.5	224.20.20.5 : 1234	0.406	50.702	Normal		
1.6	224.20.20.6 : 1234	0.000	50.692	Normal		
1.7	0.0.0.0 : 0	0.000	0.000	Normal		
1.8	0.0.0.0 : 0	0.000	0.000	Normal		
1.9	0.0.0.0 : 0	0.000	0.000	Normal		
1.10	0.0.0.0 : 0	0.000	0.000	Normal		
1.11	0.0.0.0 : 0	0.000	0.000	Normal		
1.12	0.0.0.0 : 0	0.000	0.000	Normal		
1.13	0.0.0.0 : 0	0.000	0.000	Normal		
1.14	0.0.0.0 : 0	0.000	0.000	Normal		
1.15	0.0.0.0 : 0	0.000	0.000	Normal		

<div> <div>Status</div> <div>Basic Setting</div> <div>Multiplexing</div> <div>Scrambling</div> <div>System</div> </div>						
<div> <div>IP Input</div> <div>Modulation Output</div> <div>IP Output</div> </div>						
<div> <div>Port 1</div> <div>Port 2</div> </div>						
Total Bitrate: 304.178 Mbps						
Channel	IP Address: Port	Effective Bitrate(Mb...	Total Bitrate(Mb...	Bitrate	TS Analysis	Service List
1.1	224.20.20.1 : 1234	0.135	50.692	Normal	👁	⋮
1.2	224.20.20.2 : 1234	0.180	50.702	Normal	👁	⋮
1.3	224.20.20.3 : 1234	0.120	50.698	Normal	👁	⋮
1.4	224.20.20.4 : 1234	0.210	50.692	Normal	👁	⋮
1.5	224.20.20.5 : 1234	0.406	50.702	Normal	👁	⋮
1.6	224.20.20.6 : 1234	0.000	50.692	Normal	👁	⋮
1.7	0.0.0.0 : 0	0.000	0.000	Normal	👁	⋮
1.8	0.0.0.0 : 0	0.000	0.000	Normal	👁	⋮
1.9	0.0.0.0 : 0	0.000	0.000	Normal	👁	⋮
1.10	0.0.0.0 : 0	0.000	0.000	Normal	👁	⋮
1.11	0.0.0.0 : 0	0.000	0.000	Normal	👁	⋮
1.12	0.0.0.0 : 0	0.000	0.000	Normal	👁	⋮
1.13	0.0.0.0 : 0	0.000	0.000	Normal	👁	⋮
1.14	0.0.0.0 : 0	0.000	0.000	Normal	👁	⋮
1.15	0.0.0.0 : 0	0.000	0.000	Normal	👁	⋮

CM2-QAMB-02 > Basic Setting

CM2-QAMB-02 Basic Setting is where users input the parameters for IP Input, Modulation Output and IP Output.

IP Input-Parameter Setting > On this page, there are three tabs where you can modify the multicast IP, port and parameter of IP Input. There are **Port 1**, **Port 2**, and **Batch Setting**. The input can accept Multicast or Unicast and support MPTS and SPTS.

Port 1 and Port 2 have same interface. It shows the 512 channels. Check the box under **Enable** to enable a channel. Input the correct Multicast/Unicast IP address and IP port, and select the correct Protocol for the source IP. Once done, click **Apply** for the changes to take effect. See the image below for reference.

Basic Setting Multiplexing Scrambling System

IP Input Modulation Output IP Output

Port 1 Port 2

Batch Setting ▾

< 1 >

Channel	Enable	Source Port	Destination IP Address	Destination Port	Protocol	Pkt Length	Enable Destination MAC	Destination MAC
1.1	<input checked="" type="checkbox"/>	1000	224.20.20.1	1234	UDP	7	Disable	01:00:5E:14:14:01
1.2	<input checked="" type="checkbox"/>	1000	224.20.20.2	1234	UDP	7	Disable	01:00:5E:14:14:02
1.3	<input checked="" type="checkbox"/>	1000	224.20.20.3	1234	UDP	7	Disable	01:00:5E:14:14:03
1.4	<input checked="" type="checkbox"/>	1000	224.20.20.4	1234	UDP	7	Disable	01:00:5E:14:14:04
1.5	<input checked="" type="checkbox"/>	1000	224.20.20.5	1234	UDP	7	Disable	01:00:5E:14:14:05
1.6	<input checked="" type="checkbox"/>	1000	224.20.20.6	1234	UDP	7	Disable	01:00:5E:14:14:06
1.7	<input type="checkbox"/>	1000	224.20.20.7	1234	UDP	7	Disable	00:00:00:00:00:00
1.8	<input type="checkbox"/>	1000	224.20.20.8	1234	UDP	7	Disable	00:00:00:00:00:00
1.9	<input type="checkbox"/>	1000	224.20.20.9	1234	UDP	7	Disable	00:00:00:00:00:00
1.10	<input type="checkbox"/>	1000	224.20.20.10	1234	UDP	7	Disable	00:00:00:00:00:00

Apply

Basic Setting is where users can input the IP input parameters in batch. See the image below for reference.

IP Input Modulation Output IP Output

Port 1 Port 2

Batch Setting ▲

Select All ☐

☐ Enable

☐ Protocol

☐ Enable VLAN

Start Channel-End Channel -

☐ Destination IP Address

☐ Destination Port

☐ VLAN ID

☐ TS Packets Per IP Packet

Batch Setting

< 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 >

Channel	Enable	Destination IP Add...	Destination Port	Protocol	TS Packets Per IP ...	VLAN Enable	VLAN ID
1.1	<input checked="" type="checkbox"/>	227.40.50.88	1234	UDP	7	Disable	1
1.2	<input checked="" type="checkbox"/>	227.40.50.89	1234	UDP	7	Disable	1
1.3	<input checked="" type="checkbox"/>	227.40.50.90	1234	UDP	7	Disable	1
1.4	<input checked="" type="checkbox"/>	227.40.50.91	1234	UDP	7	Disable	1
1.5	<input checked="" type="checkbox"/>	227.40.50.92	1234	UDP	7	Disable	1
1.6	<input type="checkbox"/>	227.10.20.6	1234	UDP	7	Disable	1
1.7	<input type="checkbox"/>	227.10.20.7	1234	UDP	7	Disable	1

Apply

Modulation Output-Parameter Setting On this page, you can enable channels as you need and input the Frequency (KHz), QAM Mode, Symbol Rate (KBaud) and RF Level Gain (dBmV) to have an output.

Status **Basic Setting** Multiplexing Scrambling System

IP Input Modulation Output IP Output

Batch Setting

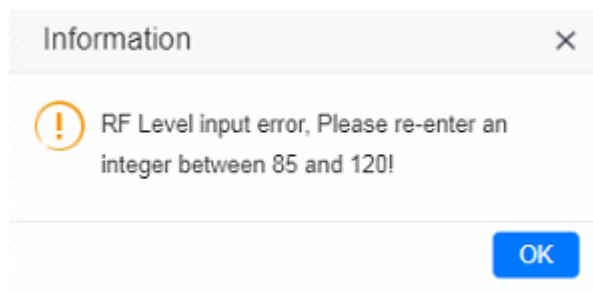
RF Level: 45 (dBmV ☒ dBuV ☐) PSI/SI Interval(ms): 100

Channel	Enable	Frequency(KHz)	QAM Mode	SymbolRate(KBaud)	RF Level Gain (dB)
1.1	<input checked="" type="checkbox"/>	200000	QAM256	6875	0
1.2	<input checked="" type="checkbox"/>	208000	QAM256	6875	0
1.3	<input checked="" type="checkbox"/>	216000	QAM256	6875	0
1.4	<input checked="" type="checkbox"/>	224000	QAM256	6875	0
1.5	<input checked="" type="checkbox"/>	232000	QAM256	6875	0
1.6	<input checked="" type="checkbox"/>	240000	QAM256	6875	0
1.7	<input type="checkbox"/>	248000	QAM64	6875	0
1.8	<input type="checkbox"/>	256000	QAM64	6875	0
1.9	<input type="checkbox"/>	264000	QAM64	6875	0
1.10	<input type="checkbox"/>	272000	QAM64	6875	0
1.11	<input type="checkbox"/>	280000	QAM64	6875	0

Here is the range parameter of the above info.

Name	Range
Channel Standard	STD, IRC, HRC, Customized
Bandwidth (MHz)	6
Symbol Rate	5057(QAM64) 5361(QAM256)

You can also set the RF level in a range of 85 to 120 as shown in the image below.



Batch Setting is where you can input the modulation parameters in batch. See the image below for reference.

IP Input **Modulation Output** IP Output

Batch Setting ^

Select All ☐

☐ Enable

☐ Bandwidth

☐ SymbolRate

Start Channel-End Channel -

☐ Start Frequency

☐ QAM Mode

Batch Setting

Apply

RF Level(dBmV): PSI/SI Interval(ms):

Channel	Enable	Frequency(KHz)	QAM Mode	SymbolRate(KBaud)	RF Level Gain (dBmV)
1.1	<input checked="" type="checkbox"/>	<input type="text" value="474000"/>	<input type="text" value="QAM64"/>	<input type="text" value="6875"/>	<input type="text" value="0"/>
1.2	<input checked="" type="checkbox"/>	<input type="text" value="208000"/>	<input type="text" value="QAM64"/>	<input type="text" value="6875"/>	<input type="text" value="0"/>
1.3	<input checked="" type="checkbox"/>	<input type="text" value="216000"/>	<input type="text" value="QAM64"/>	<input type="text" value="6875"/>	<input type="text" value="0"/>
1.4	<input checked="" type="checkbox"/>	<input type="text" value="224000"/>	<input type="text" value="QAM64"/>	<input type="text" value="6875"/>	<input type="text" value="0"/>
1.5	<input checked="" type="checkbox"/>	<input type="text" value="490000"/>	<input type="text" value="QAM64"/>	<input type="text" value="6875"/>	<input type="text" value="0"/>
1.6	<input checked="" type="checkbox"/>	<input type="text" value="240000"/>	<input type="text" value="QAM64"/>	<input type="text" value="6875"/>	<input type="text" value="0"/>
1.7	<input type="checkbox"/>	<input type="text" value="248000"/>	<input type="text" value="QAM64"/>	<input type="text" value="6875"/>	<input type="text" value="0"/>

IP Output-IP Setting> On this page, there are three tabs where you can modify the multicast IP, port and parameter of IP Output. There are **Port 1**, **Port 2** and **Batch Setting**. The output can accept Multicast or Unicast and support MPTS and SPTS.

Port 1 shows the 16 channels. Check the box under Enable to enable a channel. Input the correct Multicast/Unicast IP address, IP port and appropriate output bitrate, and select the correct Protocol for the output IP. Once done, click **Apply** for the changes to take effect. See the image below for reference.

Output Status ASI Setting **IP Setting** Service Configuration PSIP

[Batch Setting](#)

TX Interval: 100 (ms) Null Packet Filter: Disable

< 1 2 3 4 5 6 7 8 >

Channel	Enable	Source Port	Destination IP A...	Destination P...	Protocol	Pkt Length	Bitrate(...)	Enable Destination MAC	Destination MAC
1.1	<input type="checkbox"/>	1000	227.10.20.2	1234	UDP	7	15	Disable	00:00:00:00:00:00
1.2	<input type="checkbox"/>	1000	227.10.20.3	1234	UDP	7	15	Disable	00:00:00:00:00:00
1.3	<input type="checkbox"/>	1000	227.10.20.4	1234	UDP	7	15	Disable	00:00:00:00:00:00
1.4	<input type="checkbox"/>	1000	227.10.20.5	1234	UDP	7	15	Disable	00:00:00:00:00:00
1.5	<input type="checkbox"/>	1000	227.10.20.6	1234	UDP	7	15	Disable	00:00:00:00:00:00
1.6	<input type="checkbox"/>	1000	227.10.20.7	1234	UDP	7	15	Disable	00:00:00:00:00:00
1.7	<input type="checkbox"/>	1000	227.10.20.8	1234	UDP	7	15	Disable	00:00:00:00:00:00
1.8	<input type="checkbox"/>	1000	227.10.20.9	1234	UDP	7	15	Disable	00:00:00:00:00:00
1.9	<input type="checkbox"/>	1000	227.10.20.10	1234	UDP	7	15	Disable	00:00:00:00:00:00
1.10	<input type="checkbox"/>	1000	227.10.20.11	1234	UDP	7	15	Disable	00:00:00:00:00:00
1.11	<input type="checkbox"/>	1000	227.10.20.12	1234	UDP	7	15	Disable	00:00:00:00:00:00
1.12	<input type="checkbox"/>	1000	227.10.20.13	1234	UDP	7	15	Disable	00:00:00:00:00:00

Batch Setting is where you can input the IP output parameters in batch. See the image below for reference.

IP Input Modulation Output **IP Output**

Port 1

[Batch Setting](#)

Select All ☐

☐ Enable Disable

☐ Source Port 1000

☐ Protocol UDP

☐ Bitrate 25

Start Channel-End Channel 1 - 16

☐ Destination IP Address 227.10.20.80 Same

☐ Destination Port 1234 Same

☐ TS Packets Per IP Packet 7

☐ Enable Destination MAC Disable AA:BB:CC:DD:EE:

Channel	Enable	Source Port	Destination IP Address	Destination Port	Protocol	TS Packets Per IP Packet	Enable Destination MAC
1.1	<input checked="" type="checkbox"/>	1000	224.20.20.1	1234	UDP	7	Disable
1.2	<input checked="" type="checkbox"/>	1000	224.20.20.2	1234	UDP	7	Disable
1.3	<input checked="" type="checkbox"/>	1000	224.20.20.3	1234	UDP	7	Disable
1.4	<input checked="" type="checkbox"/>	1000	224.20.20.4	1234	UDP	7	Disable
1.5	<input checked="" type="checkbox"/>	1000	224.20.20.5	1234	UDP	7	Disable

CM2-QAMB-02 > Multiplexing

Multiplexing has four tabs: **Source**, **Service Configuration**, **SI Table Setting** and **PID**

Transmission. Here you can set to output services from IP Input to Modulation Output. Click

Multiplexing to see 32 modulation output channels. Select a channel you want to configure and you will see **Source** setting of this channel.

Output Channel

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32

Source Service Configuration PSIP PID Transmission

Port 1 Port 2

1 - 32	33 - 64	65 - 96	97 - 128	129 - 160	161 - 192	193 - 224	225 - 256
257 - 288	289 - 320	321 - 352	353 - 384	385 - 416	417 - 448	449 - 480	481 - 512

Please tick the input channel to get the source of the program ☐ Select All

☒ 1.1 ☐ 1.2 ☐ 1.3 ☐ 1.4 ☐ 1.5 ☐ 1.6 ☐ 1.7 ☐ 1.8 ☐ 1.9 ☐ 1.10 ☐ 1.11 ☐ 1.12 ☐ 1.13 ☐ 1.14 ☐ 1.15 ☐ 1.16

☐ 1.17 ☐ 1.18 ☐ 1.19 ☐ 1.20 ☐ 1.21 ☐ 1.22 ☐ 1.23 ☐ 1.24 ☐ 1.25 ☐ 1.26 ☐ 1.27 ☐ 1.28 ☐ 1.29 ☐ 1.30 ☐ 1.31 ☐ 1.32

Scanning Time(ms): 7000 SI Search Time(ms): 5000

Source ☐ ECM/EMM Filter ☐ Bypass

[1.1] 239.192.0.200:10000

- ☒ [257] STAR SPORTS FIRST
- ☒ [258] STAR SPORTS 2
- ☒ [259] NEWS 18 INDIA
- ☒ [260] SAB TV

RF Output[1] 200000KHz 6875KBaud [0.135/50.686M]

Source	Service Name
1	[257] STAR SPORTS FIRST
2	[258] STAR SPORTS 2
3	[259] NEWS 18 INDIA
4	[260] SAB TV

Multiplexing-Source> Source is where you select a source for output. You can chose **Port 1** **2** for the source. Each port is divided into 16 groups to complete 512 channels. Select a Port and you can see service lists of Group and Channel as shown below.

Output Channel

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32

Source Service Configuration PSIP PID Transmission

Port 1 Port 2

1 - 32	33 - 64	65 - 96	97 - 128	129 - 160	161 - 192	193 - 224	225 - 256
257 - 288	289 - 320	321 - 352	353 - 384	385 - 416	417 - 448	449 - 480	481 - 512

Please tick the input channel to get the source of the program ☐ Select All

☒ 1.1 ☐ 1.2 ☐ 1.3 ☐ 1.4 ☐ 1.5 ☐ 1.6 ☐ 1.7 ☐ 1.8 ☐ 1.9 ☐ 1.10 ☐ 1.11 ☐ 1.12 ☐ 1.13 ☐ 1.14 ☐ 1.15 ☐ 1.16

☐ 1.17 ☐ 1.18 ☐ 1.19 ☐ 1.20 ☐ 1.21 ☐ 1.22 ☐ 1.23 ☐ 1.24 ☐ 1.25 ☐ 1.26 ☐ 1.27 ☐ 1.28 ☐ 1.29 ☐ 1.30 ☐ 1.31 ☐ 1.32

Scanning Time(ms): 7000 SI Search Time(ms): 5000

Source ☐ ECM/EMM Filter ☐ Bypass

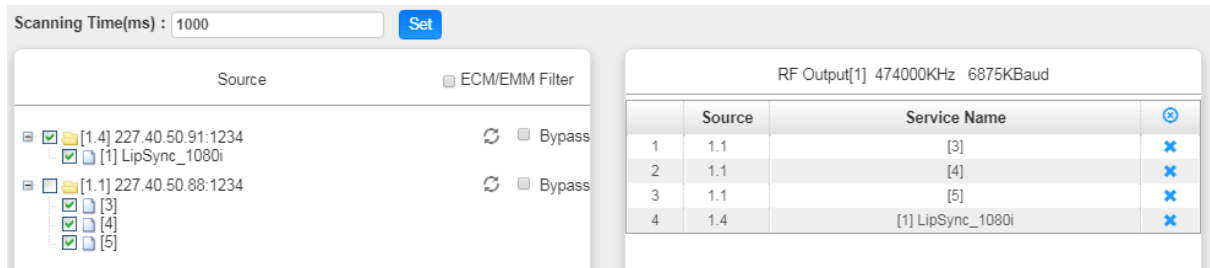
[1.1] 239.192.0.200:10000

- ☒ [257] STAR SPORTS FIRST
- ☒ [258] STAR SPORTS 2
- ☒ [259] NEWS 18 INDIA

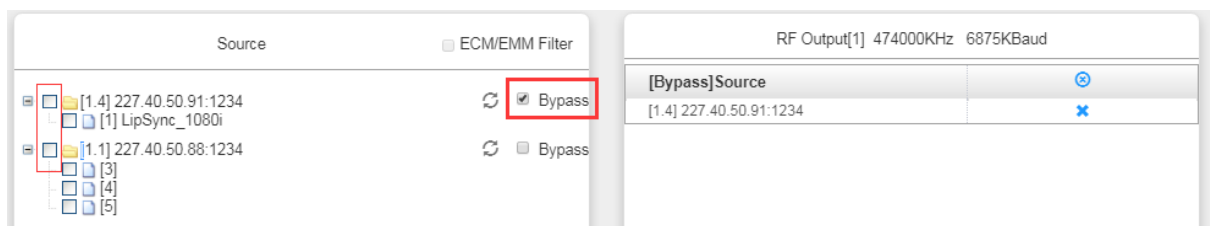
RF Output[1] 200000KHz 6875KBaud [0.135/50.686M]

Source	Service Name
1	[257] STAR SPORTS FIRST
2	[258] STAR SPORTS 2
3	[259] NEWS 18 INDIA

To output the service on the Modulation Output, you can simply put a tick in the box beside the service you want to output. You can output multiple Service from different Source channels or bypass the TS to Modulation output.



To Output the TS by Bypass mode, you can simply check the **Bypass** box of the TS. You can only bypass 1 TS and cannot output other services from different channel sources. Bypass mode allows you to keep the input signal automatically be redirected to Modulation output without re-scanning the input or transferring it to output.



Multiplexing-Service Configuration> After output the services from IP input to Modulation output, you can now edit the Service ID and other PID on the output. Click on the Service Configuration to see this page, it shows the output service on this channel only.

Status Basic Setting **Multiplexing** Scrambling System

Output Channel

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32

Source **Service Configuration** PSIP PID Transmission

Click "Apply" after modifying your parameters to save the configuration.

Apply Clear Config

Output EditTS NIT BAT

	Source	Service Name
1	1.1	[257]STAR SPORTS FIRST
2	1.1	[258]STAR SPORTS 2
3	1.1	[259]NEWS 18 INDIA
4	1.1	[260]SAB TV
5	1.1	[261]SET MAX
6	1.1	[262]STAR SPORTS 3

You can click the Name of the service and it will show a table where you can modify some information of the service like Service ID, Service Name, Service Provider, PCR2 PMT AUDIO and Video PID. Click OK & Apply for the changes to take effect.

Output EditTS NIT BAT

	Source	Service Name
1	1.1	[3]
2	1.1	[4]
3	1.1	[5]
4	1.4	[11]LipSync_1080i

[1.1] TS >> LipSync_1080i

	Original Value	Value
Service ID	1	1
Service Name		LipSync_1080i
Service Provider		Harmonic
PCR PID	512	512
PMT PID	256	256
Video(H264)	513	513
Audio	4112	4112
Private Data/AC3	4114	4114

OK Cancel

Here you can also edit the Original Network ID and TS ID of the Modulation Output.

Please click "Apply" after modifying parameters. Otherwise, new configuration can not be saved.

Output
EditTS
NIT
BAT

	Source	Service Name
1	1.1	[3]Program-1
2	1.1	[4]Program-2
3	1.1	[5]bbPBR
4	1.4	[1]LipSync_1080i

[1.1] TS

Original Network ID: 1
TS ID: 1

NO.	Service ID	Service Name	Service Provider
1	3	Program-1	
2	4	Program-2	
3	5	bbPBR	
4	1	LipSync_1080i	Harmonic

OK
Cancel

Here you can also edit NIT and create NIT Network for the OTA upgrade.

Output
EditTS
NIT
BAT

	Source	Service Name
1	1.1	[3]Program-1
2	1.1	[4]Program-2
3	1.1	[5]bbPBR
4	1.4	[1]LipSync_1080i

NIT Network
NIT Stream
NIT Other

Tag(Hex): 40
Data(Hex):
Add

Tag(Hex)	Data(Hex)	Length	Operation
40	123	3	X

Still in NIT, you can also create NIT Streams and generate LCN for channel list and Cable Descriptor for frequency auto search.

Please click "Apply" after modifying parameters. Otherwise, new configuration can not be saved.

Output
EditTS
NIT
BAT

	Source	Service Name
1	1.1	[3]Program-1
2	1.1	[4]Program-2
3	1.1	[5]bbPBR
4	1.4	[1]LipSync_1080i

NIT Network
NIT Stream
NIT Other

Original Network ID: 2
TS ID: 2
Add

Original...	TS ID	Descriptor	Operation
1	1	1 tag:0x44 X	X +Descriptor
		2 tag:0x83 X	
2	2		X +Descriptor

LCN Descriptor
Cable Descriptor

For the LCN Descriptor: input the Service ID and the LCN for the channel line-up of the services.

For the Cable Descriptor: input the correct frequency and Symbol Rate for the corresponding TS output. Cable descriptor depends on the setup you use. Mostly, Cable descriptor is created for 1 TS only. Some configuration need to be created in each TS.

Still in NIT, you can also create NIT Other.

Please click "Apply" after modifying parameters. Otherwise, new configuration can not be saved.

Output [EditTS](#) [NIT](#) [BAT](#)

	Source	Service Name
1	1.1	[3]Program-1
2	1.1	[4]Program-2
3	1.1	[5]bbPBR
4	1.4	[1]LipSync_1080i

NIT Network NIT Stream **NIT Other**

Network ID

Version Number

[OK](#)

Here you can also create BAT.

Please click "Apply" after modifying parameters. Otherwise, new configuration can not be saved.

Output [EditTS](#) [NIT](#) [BAT](#)

	Source	Service Name
1	1.1	[3]Program-1
2	1.1	[4]Program-2
3	1.1	[5]bbPBR
4	1.4	[1]LipSync_1080i

[1.1] BAT

Bouquet Id

Bouquet Name

[Add](#)

Bouquet Id	Bouquet Name	Operation
No Data		

Multiplexing-SI Table Setting> This page is to choose whether to insert/generate the SI tables or Copy the SI tables from the input streams.

The screenshot shows the 'Output Channel' configuration window with the 'SI Table Setting' tab selected. The window has a grid of 32 output channels (1-32) at the top. Below the grid are four tabs: 'Source', 'Service Configuration', 'SI Table Setting' (highlighted with a red box), and 'PID Transmission'. The 'SI Table Setting' tab displays a table for 'Output [1.1]' with columns for 'Insert' and 'Shared' settings for various video signals. The 'Source' dropdown is set to '[1.1]:227.40.50.88 : 1234'. An 'OK' button is at the bottom.

Output Channel																															
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16																
17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32																

Output [1.1]			
<input checked="" type="checkbox"/> PAT Insert	<input type="checkbox"/> EIT Shared		
<input checked="" type="checkbox"/> CAT Insert	<input type="checkbox"/> CAT Shared		
<input checked="" type="checkbox"/> SDT Insert	<input type="checkbox"/> SDT Shared		
<input checked="" type="checkbox"/> TDT Insert	<input type="checkbox"/> TDT Shared		
<input type="checkbox"/> TOT Insert	<input type="checkbox"/> TOT Shared		
<input type="checkbox"/> BAT Insert	<input type="checkbox"/> BAT Shared		
<input type="checkbox"/> NIT Insert	<input type="checkbox"/> NIT Shared		
<input checked="" type="checkbox"/> PMT Insert			
Source: [1.1]:227.40.50.88 : 1234			

OK

Multiplexing-PID Transmission> This page is to transmit the input PID to Output on the PID required by the system.

The screenshot shows the 'Output Channel' configuration window with the 'PID Transmission' tab selected. The window has a grid of 32 output channels (1-32) at the top. Below the grid are four tabs: 'Source', 'Service Configuration', 'SI Table Setting', and 'PID Transmission' (highlighted with a red box). The 'PID Transmission' tab displays a table with columns 'Input', 'Input PID', 'Output PID', and 'Delete'. The table is currently empty, showing 'No Data'. To the right of the table are input fields for 'Input' (1.1), 'Input PID' (32), and 'Output PID' (32), along with 'Add' and 'Delete All' buttons. On the far right are 'Apply' and 'Clear Config' buttons.

Output Channel																															
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16																
17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32																

PID Transmission			
Input	Input PID	Output PID	Delete
No Data			

Input: 1.1
Input PID: 32
Output PID: 32
Add Delete All

Apply Clear Config

CM2-QAMB-02 > System

CM2-QAMB-02 System is composed of two sub menus namely Network and License.

Network> Here you can modify the IP Address, Subnet Mask and Gateway for each port of the module, except for the address of the module itself. This also shows the MAC Address of each port of the module. See the image below for reference.

CM-QAMB-02 Status Basic Setting Multiplexing **System**

Network Setting

Port	IP Address	Subnet Mask	Gateway	MAC Address	Link Speed	Link Status
NMS	192.168.1.11	255.255.255.0	192.168.1.254	A0:69:86:06:38:2F		
CAS	192.168.2.10	255.255.255.0	192.168.2.254	A0:69:86:06:38:30	auto	link down
DATA1	192.168.3.10	255.255.255.0	192.168.3.254	A0:69:86:06:38:31	auto	link down
DATA2	192.168.4.10	255.255.255.0	192.168.4.254	A0:69:86:06:38:32	auto	link down

Apply

License>Here you can import/export *license*, reboot module, *restore factory default settings* and *manage logs*.

CM-QAMB-02 Status Basic Setting Multiplexing **System**

Network **Setting**

Program Auto Scan
 Enable ☐ Set

Clear all channel configuration
Clear

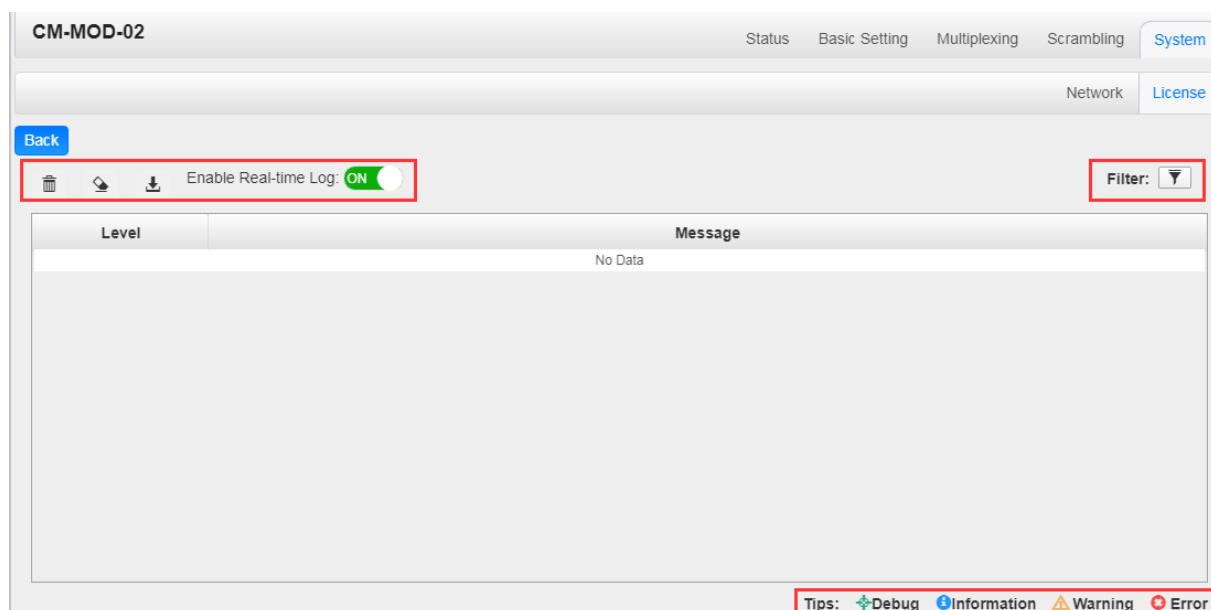
Configuration
 Import Configuration Browse Upload
 Export Configuration Export





License
 Product ID DF30999990036
 Import License Browse Upload
 Export License Export

Logs
Open

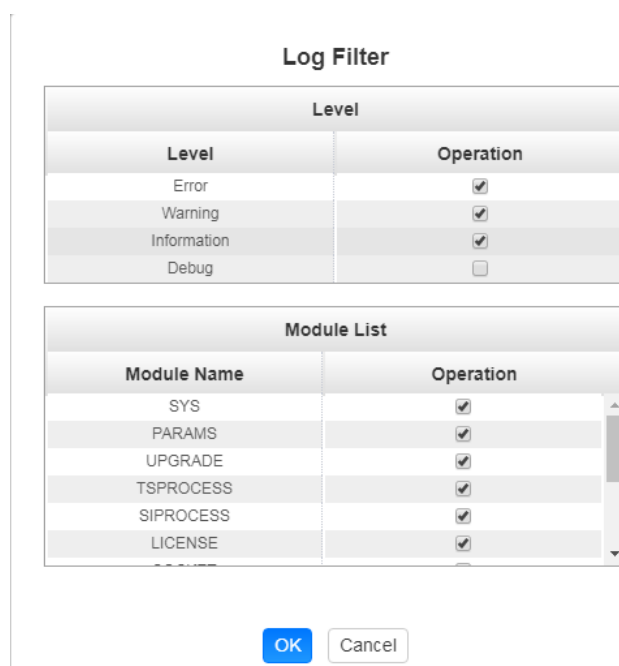
Log Manage>This page shows the logs of the module. If there are issues encountered on this module, exporting the logs will help R&D team to analyze and fix them.

Turn on **Enable Real-time Log** switch to see the real time log messages and the severity level of each message below.



- Click  to clear all log messages on the screen.
- Click  to delete all log information.
- Click  to export log information.
- Click  to filter desired log messages.

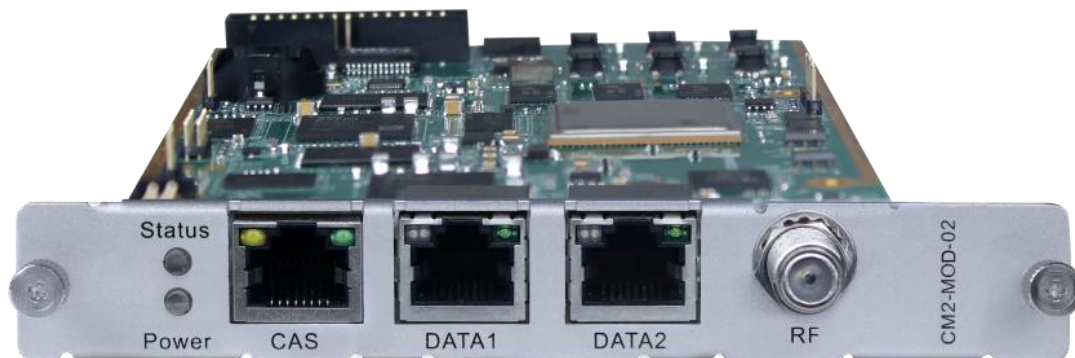
Clicking the filter icon, can simply select what logs to be included.



- CM2-QAMA-02 is as same as CM2-QAMB-02, In addition to supporting the scrambling function, it is not a default authorization and requires additional authorization

5.3.9 CM2-QAMA-R02

CM2-QAMA-R02 is a 16/32-channel QAM-A modulation output module with 2 gigabit IP input ports (single port supports 256-channel input), 1 CAS interface (RJ45) supporting scrambling and 1 RF output interface supporting up to 32 QAM-A non-adjacent frequencies modulating with independent constellation mode configuration.



CM2-QAMA-R02 > Status

The Status page contains status information of IP Input, Modulation Output and IP Output.

IP Input > CM2-QAMA-R02 has 1024 IP input channels. Those channels are divided into two RJ45 ports, each port has 512 IP input channels. Click Port 1 tab, users can obtain the 256 channels status information such as ASI input source IP address and port number, total bitrate (Mbps) and effective bitrate (Mbps). The TS analysis and Service List button on each channel allow users to check the detailed information in each TS. See the image below for reference.

512 channels in port 1

CM-QAMA-R02

Status Basic Setting Multiplexing System

IP Input Modulation Output IP Output

Port 1 Port 2

Network Port Bitrate : 0.000 Mbps Total TS Bitrate : 0.000 Mbps

Channel	IP Address : Port	Effective Bitrate(Mbps)	Total Bitrate(Mbps)	TS Analysis	Service List
1.1	239.192.10.200 : 10000	0.000	0.000		
1.2	239.192.10.201 : 10000	0.000	0.000		
1.3	239.192.10.202 : 10000	0.000	0.000		
1.4	239.192.0.205 : 10000	0.000	0.000		
1.5	0.0.0.0 : 0	0.000	0.000		
1.6	0.0.0.0 : 0	0.000	0.000		
1.7	0.0.0.0 : 0	0.000	0.000		
1.8	0.0.0.0 : 0	0.000	0.000		
1.9	0.0.0.0 : 0	0.000	0.000		
1.10	0.0.0.0 : 0	0.000	0.000		

CM-QAMA-R02


Status Basic Setting Multiplexing System



















IP Input Modulation Output IP Output

Port 1 Port 2

Network Port Bitrate : 0.000 Mbps Total TS Bitrate : 0.000 Mbps

Channel	IP Address : Port	Effective Bitrate(Mbps)	Total Bitrate(Mbps)	TS Analysis	Service List
1.1	239.192.10.200 : 10000	0.000	0.000		
1.2	239.192.10.201 : 10000	0.000	0.000		
1.3	239.192.10.202 : 10000	0.000	0.000		
1.4	239.192.0.205 : 10000	0.000	0.000		
1.5	0.0.0.0 : 0	0.000	0.000		
1.6	0.0.0.0 : 0	0.000	0.000		
1.7	0.0.0.0 : 0	0.000	0.000		
1.8	0.0.0.0 : 0	0.000	0.000		
1.9	0.0.0.0 : 0	0.000	0.000		
1.10	0.0.0.0 : 0	0.000	0.000		

Click the eye icon , users can know all the PIDs such as PAT, CAT, PCR2, Video Audio, PCR2 PID etc in this TS. See the image below for reference.

Channel	IP Address : Port	Effective Bitrate(Mbps)	Total Bitrate(Mbps)	TS Analysis	Service List
1.1	227.40.50.88 : 1234	22.960	24.603		
1.2	227.40.50.89 : 1234	26.267	28.141		
1.3	227.40.50.90 : 1234	26.256	28.130		
1.4	227.40.50.91 : 1234	9.520	10.085		
1.5	227.40.50.92 : 1234	26.094	27.383		
1.6	0.0.0.0 : 0	0.000	0.000		
1.7	0.0.0.0 : 0	0.000	0.000		
1.8	0.0.0.0 : 0	0.000	0.000		
1.9	0.0.0.0 : 0	0.000	0.000		



















Channel 1.1 TS Analysis

Search

PID	Bitrate(Mbps)	Bandwidth(%)	Continuity Count Error	Type	Service
0x0(0)	0.022	0.113	0	PAT	
0x31(49)	13.098	67.180	0	PCR, Video	
0x34(52)	0.397	2.036	0	Audio	
0x35(53)	0.198	1.016	0	Audio	
0x41(65)	1.852	9.499	0	PCR, Video	
0x44(68)	0.198	1.016	0	Audio	
0x51(81)	2.143	10.991	0	PCR, Video	

Reset Counter

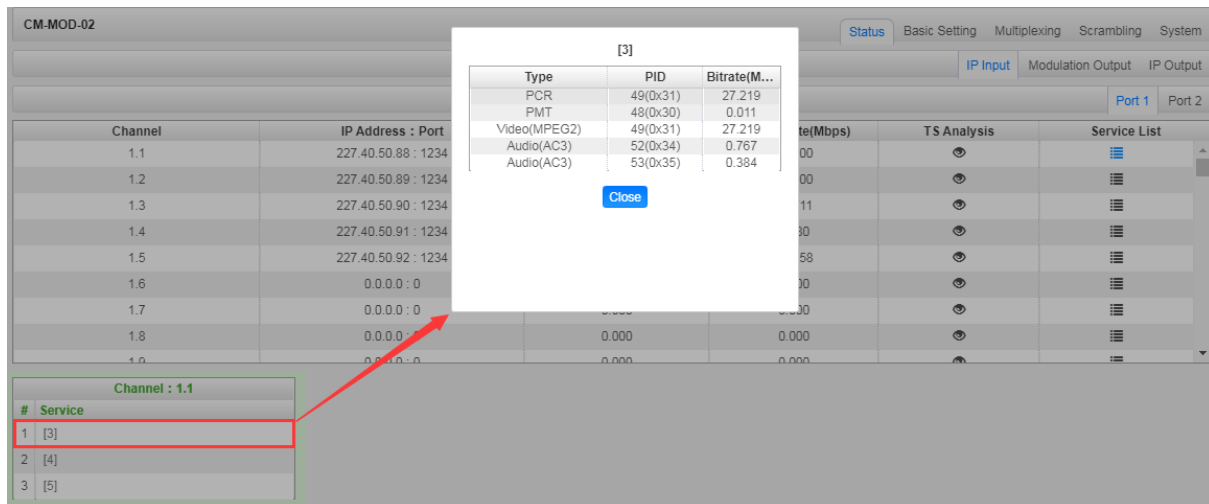
If the input stream has multiple programs, users can click the icon below “Service List” to see all the services in this stream. See the image below for reference.

Channel	IP Address : Port	Effective Bitrate(Mbps)	Total Bitrate(Mbps)	TS Analysis	Service List
1.1	227.40.50.88 : 1234	18.455	19.764		
1.2	227.40.50.89 : 1234	18.446	19.750		
1.3	227.40.50.90 : 1234	18.446	19.750		
1.4	227.40.50.91 : 1234	9.521	10.064		
1.5	227.40.50.92 : 1234	19.179	20.129		
1.6	0.0.0.0 : 0	0.000	0.000		
1.7	0.0.0.0 : 0	0.000	0.000		
1.8	0.0.0.0 : 0	0.000	0.000		
1.9	0.0.0.0 : 0	0.000	0.000		

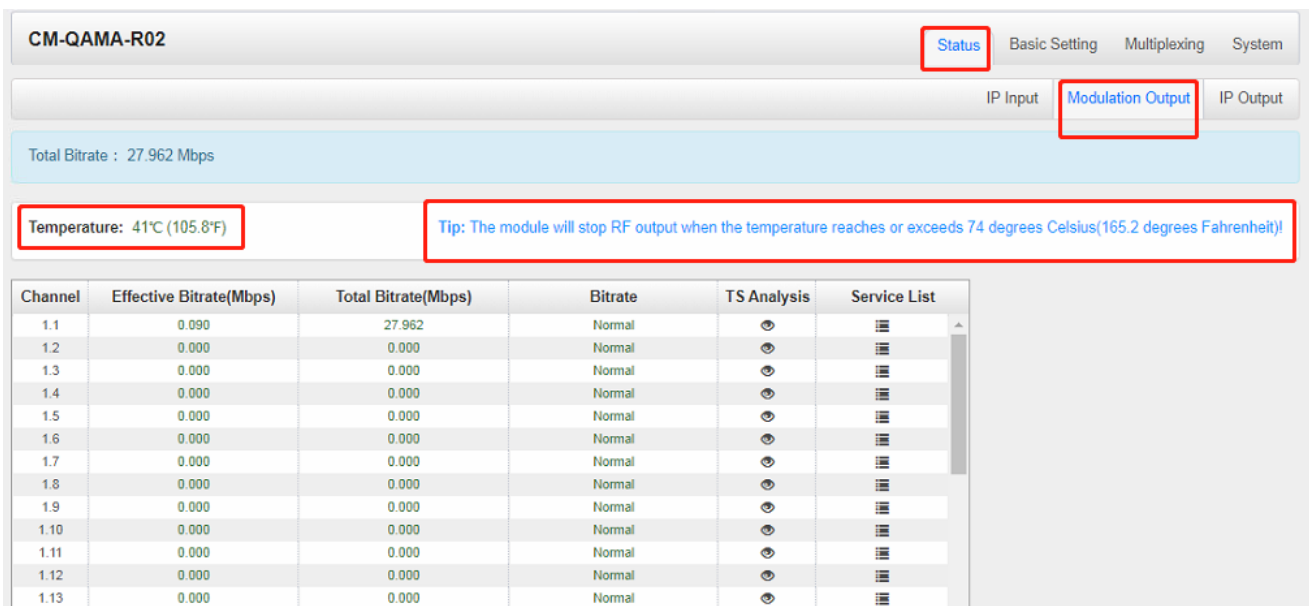
Channel : 1.1

#	Service
1	[3]
2	[4]
3	[5]

You can also check the details of a service by clicking the Service Name.



Modulation Output CM2-QAMA-R02 status shows the Modulation output. Just like the IP Input, this shows the total bitrate and effective bitrate of the 32 channels respectively. The TS Analysis and Service List have the same function as in the IP input. The Status also shows the current temperature of the unit on the upper left corner. See image below for reference.



Channel	Effective Bitrate(Mbps)	Total Bitrate(Mbps)	Bitrate	TS Analysis	Service List
1.19	0.000	0.000	Normal		
1.20	0.000	0.000	Normal		
1.21	0.000	0.000	Normal		
1.22	0.000	0.000	Normal		
1.23	0.000	0.000	Normal		
1.24	0.000	0.000	Normal		
1.25	0.000	0.000	Normal		
1.26	0.000	0.000	Normal		
1.27	0.000	0.000	Normal		
1.28	0.000	0.000	Normal		
1.29	0.000	0.000	Normal		
1.30	0.000	0.000	Normal		
1.31	0.000	0.000	Normal		
1.32	0.000	0.000	Normal		

Channel : 1.1

#	Service
1	[3]
2	[4]
3	[5]

Channel 1.1 TS Analysis

Reset Counter

Search

PID	Bitrate(Mbps)	Bandwidth(%)	Continuity Count Error	Type	Service
0x0(0)	0.015	0.039	84	PAT	
0x11(17)	0.015	0.039	37	SDT, BAT	
0x30(48)	0.015	0.039	99	PMT	
0x31(49)	0.000	0.000	127	PCR, Video	
0x34(52)	0.000	0.000	127	Audio	
0x35(53)	0.000	0.000	57	Audio	

IP Output>CM2-QAM-R02 status also shows the IP output. Just like the IP Input, this shows the total bitrate and effective bitrate of the 16 channels respectively. The TS Analysis and Service List have the same function as in the IP input. See image below for reference.

CM-QAMA-R02

Status

Basic Setting

Multiplexing

System

IP Input

Modulation Output

IP Output

Port 1

Port 2

Total Bitrate : 26.983 Mbps

Channel	IP Address : Port	Effective Bitrate(M...	Total Bitrate(Mb...	Bitrate	TS Analysis	Service List
1.1	224.20.20.1 : 1234	0.090	26.983	Normal		
1.2	0.0.0.0 : 0	0.000	0.000	Normal		
1.3	0.0.0.0 : 0	0.000	0.000	Normal		
1.4	0.0.0.0 : 0	0.000	0.000	Normal		
1.5	0.0.0.0 : 0	0.000	0.000	Normal		
1.6	0.0.0.0 : 0	0.000	0.000	Normal		
1.7	0.0.0.0 : 0	0.000	0.000	Normal		
1.8	0.0.0.0 : 0	0.000	0.000	Normal		
1.9	0.0.0.0 : 0	0.000	0.000	Normal		
1.10	0.0.0.0 : 0	0.000	0.000	Normal		
1.11	0.0.0.0 : 0	0.000	0.000	Normal		
1.12	0.0.0.0 : 0	0.000	0.000	Normal		
1.13	0.0.0.0 : 0	0.000	0.000	Normal		
1.14	0.0.0.0 : 0	0.000	0.000	Normal		
1.15	0.0.0.0 : 0	0.000	0.000	Normal		

IP Input Modulation Output IP Output						
Port 1						
Channel	IP Address : Port	Effective Bitrate(M...	Total Bitrate(Mb...	Bitrate	TS Analysis	Service List
1.3	224.20.20.3 : 1234	0.045	37.714	Normal	👁	⋮
1.4	224.20.20.4 : 1234	0.060	37.715	Normal	👁	⋮
1.5	224.20.20.5 : 1234	0.060	37.714	Normal	👁	⋮
1.6	224.20.20.6 : 1234	0.000	0.000	Normal	👁	⋮
1.7	224.20.20.7 : 1234	0.000	0.000	Normal	👁	⋮
1.8	224.20.20.8 : 1234	0.000	0.000	Normal	👁	⋮
1.9	0.0.0.0 : 0	0.000	0.000	Normal	👁	⋮
1.10	0.0.0.0 : 0	0.000	0.000	Normal	👁	⋮
1.11	0.0.0.0 : 0	0.000	0.000	Normal	👁	⋮
1.12	0.0.0.0 : 0	0.000	0.000	Normal	👁	⋮
1.13	0.0.0.0 : 0	0.000	0.000	Normal	👁	⋮
1.14	0.0.0.0 : 0	0.000	0.000	Normal	👁	⋮
1.15	0.0.0.0 : 0	0.000	0.000	Normal	👁	⋮
1.16	0.0.0.0 : 0	0.000	0.000	Normal	👁	⋮

CM2-QAMA-R02 > Basic Setting

CM2-QAMA-R02 Basic Setting is where users input the parameters for IP Input, Modulation Output and IP Output.

IP Input-Parameter Setting> On this page, there are three tabs where you can modify the multicast IP, port and parameter of IP Input. There are **Port 1**, **Port 2**, and **Batch Setting**. The input can accept Multicast or Unicast and support MPTS and SPTS.

Port 1 and Port 2 have same interface. It shows the 512 channels. Check the box under **Enable** to enable a channel. Input the correct Multicast/Unicast IP address and IP port, and select the correct Protocol for the source IP. Once done, click **Apply** for the changes to take effect. See the image below for reference.

CM-QAMA-R02

Status **Basic Setting** Multiplexing System

IP Input Modulation Output **IP Output**

Port 1 Port 2

Batch Setting ▾

< 1 >

Channel	Enable	Source Port	Destination IP Address	Destination Port	Protocol	Pkt Length	Enable Destination MAC	Destination MAC
1.1	<input checked="" type="checkbox"/>	1000	224.20.20.1	1234	UDP ▾	7 ▾	Disable ▾	01:00:5E:14:14:01
1.2	<input type="checkbox"/>	1000	224.20.20.2	1234	UDP ▾	7 ▾	Disable ▾	00:00:00:00:00:00
1.3	<input type="checkbox"/>	1000	224.20.20.3	1234	UDP ▾	7 ▾	Disable ▾	00:00:00:00:00:00
1.4	<input type="checkbox"/>	1000	224.20.20.4	1234	UDP ▾	7 ▾	Disable ▾	00:00:00:00:00:00
1.5	<input type="checkbox"/>	1000	224.20.20.5	1234	UDP ▾	7 ▾	Disable ▾	00:00:00:00:00:00
1.6	<input type="checkbox"/>	1000	224.20.20.6	1234	UDP ▾	7 ▾	Disable ▾	00:00:00:00:00:00
1.7	<input type="checkbox"/>	1000	224.20.20.7	1234	UDP ▾	7 ▾	Disable ▾	00:00:00:00:00:00
1.8	<input type="checkbox"/>	1000	224.20.20.8	1234	UDP ▾	7 ▾	Disable ▾	00:00:00:00:00:00
1.9	<input type="checkbox"/>	1000	224.20.20.9	1234	UDP ▾	7 ▾	Disable ▾	00:00:00:00:00:00
1.10	<input type="checkbox"/>	1000	224.20.20.10	1234	UDP ▾	7 ▾	Disable ▾	00:00:00:00:00:00

Apply

Batch Setting is where users can input the IP input parameters in batch. See the image below for reference.

Batch Setting ^

Select All ☐ Enable ☐ Protocol ☐ Enable VLAN

Start Channel-End Channel 1 - 256

Destination IP Address 227.10.20.80 Same

Destination Port 1234 Same

VIAN ID 1

TS Packets Per IP Packet 7

Batch Setting

Apply

Channel	Enable	Destination IP Add...	Destination Port	Protocol	TS Packets Per IP ...	VLAN Enable	VIAN ID
1.1	<input checked="" type="checkbox"/>	227.40.50.88	1234	UDP	7	Disable	1
1.2	<input checked="" type="checkbox"/>	227.40.50.89	1234	UDP	7	Disable	1
1.3	<input checked="" type="checkbox"/>	227.40.50.90	1234	UDP	7	Disable	1
1.4	<input checked="" type="checkbox"/>	227.40.50.91	1234	UDP	7	Disable	1
1.5	<input checked="" type="checkbox"/>	227.40.50.92	1234	UDP	7	Disable	1
1.6	<input type="checkbox"/>	227.10.20.6	1234	UDP	7	Disable	1
1.7	<input type="checkbox"/>	227.10.20.7	1234	UDP	7	Disable	1

Modulation Output-Parameter Setting On this page, you can enable channels as you need and input the Frequency (KHz), QAM Mode, Symbol Rate (KBaud) and RF Level Gain (dBmV) to have an output.

CM-QAMA-R02

Status Basic Setting Multiplexing System

IP Input Modulation Output IP Output

Batch Setting v

RF Level: 40 (dBmV ☒ dBuV ☐)

PSI/SI Interval(ms): 100

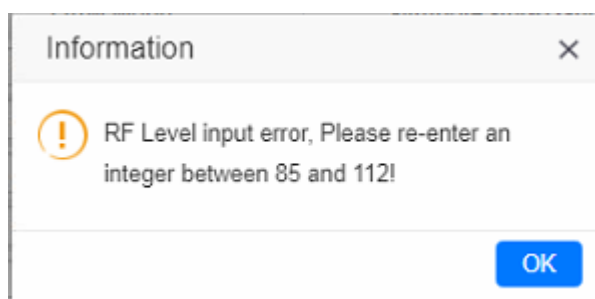
Apply

Channel	Enable	Frequency(KHz)	QAM Mode	SymbolRate(KBaud)	RF Level Gain (dB)
1.1	<input checked="" type="checkbox"/>	57000	QAM64	5057	0
1.2	<input checked="" type="checkbox"/>	63000	QAM64	5057	0
1.3	<input type="checkbox"/>	69000	QAM64	5057	0
1.4	<input type="checkbox"/>	79000	QAM64	5057	0
1.5	<input type="checkbox"/>	85000	QAM64	5057	0
1.6	<input type="checkbox"/>	177000	QAM64	5057	0
1.7	<input type="checkbox"/>	183000	QAM64	5057	0
1.8	<input type="checkbox"/>	189000	QAM64	5057	0
1.9	<input type="checkbox"/>	195000	QAM64	5057	0
1.10	<input type="checkbox"/>	201000	QAM64	5057	0
1.11	<input type="checkbox"/>	207000	QAM64	5057	0

Here is the range parameter of the above info.

Name	Range	Name	Range
Symbol Rate	3600~3956	RF level gain	-10`~0 (multiples of 0.5)
Frequency (KHz)	48000~862000	QAM Mode	QAM16/QAM32/QAM64/QAM128/QAM256

You can also set the RF level in a range of 85 to 112 as shown in the image below.



Batch Setting is where you can input the modulation parameters in batch. See the image below for reference.

Batch Setting ^

Select All ☐ Enable ☐ Bandwidth ☐ SymbolRate

Start Channel-End Channel -

☐ Start Frequency

☐ QAM Mode

RF Level(dBmV): PSI/SI Interval(ms):

Channel	Enable	Frequency(KHz)	QAM Mode	SymbolRate(KBaud)	RF Level Gain (dBmV)
1.1	<input checked="" type="checkbox"/>	474000	QAM64	6875	0
1.2	<input checked="" type="checkbox"/>	208000	QAM64	6875	0
1.3	<input checked="" type="checkbox"/>	216000	QAM64	6875	0
1.4	<input checked="" type="checkbox"/>	224000	QAM64	6875	0
1.5	<input checked="" type="checkbox"/>	490000	QAM64	6875	0
1.6	<input checked="" type="checkbox"/>	240000	QAM64	6875	0
1.7	<input type="checkbox"/>	248000	QAM64	6875	0

IP Output-Parameter Setting On this page, there are three tabs where you can modify the multicast IP, port and parameter of IP Output. There are **Port 1**, **Port 2** and **Batch Setting**. The output can accept Multicast or Unicast and support MPTS and SPTS.

Port 1 shows the 16 channels. Check the box under Enable to enable a channel. Input the correct Multicast/Unicast IP address, IP port and appropriate output bitrate, and select the correct Protocol for the output IP. Once done, click **Apply** for the changes to take effect. See the image below for reference.

CM-QAMA-R02

Status **Basic Setting** Multiplexing System

IP Input Modulation Output **IP Output**

Port 1 Port 2

Batch Setting ^

< 1 >

Channel	Enable	Source Port	Destination IP Address	Destination Port	Protocol	Pkt Length	Enable Destination MAC	Destination MAC
1.1	<input checked="" type="checkbox"/>	1000	224.20.20.1	1234	UDP	7	Disable	01:00:5E:14:14:01
1.2	<input type="checkbox"/>	1000	224.20.20.2	1234	UDP	7	Disable	00:00:00:00:00:00
1.3	<input type="checkbox"/>	1000	224.20.20.3	1234	UDP	7	Disable	00:00:00:00:00:00
1.4	<input type="checkbox"/>	1000	224.20.20.4	1234	UDP	7	Disable	00:00:00:00:00:00
1.5	<input type="checkbox"/>	1000	224.20.20.5	1234	UDP	7	Disable	00:00:00:00:00:00
1.6	<input type="checkbox"/>	1000	224.20.20.6	1234	UDP	7	Disable	00:00:00:00:00:00
1.7	<input type="checkbox"/>	1000	224.20.20.7	1234	UDP	7	Disable	00:00:00:00:00:00
1.8	<input type="checkbox"/>	1000	224.20.20.8	1234	UDP	7	Disable	00:00:00:00:00:00
1.9	<input type="checkbox"/>	1000	224.20.20.9	1234	UDP	7	Disable	00:00:00:00:00:00

Batch Setting is where you can input the IP output parameters in batch. See the image below for reference.

The screenshot shows the 'Batch Setting' interface. At the top, there are tabs for 'IP Input', 'Modulation Output', and 'IP Output'. Below these is a 'Port 1' tab. The 'Batch Setting' section is highlighted with a red box. It contains the following fields:

- Select All:** A checkbox labeled 'Select All' and a dropdown menu with 'Disable' selected.
- Enable:** A checkbox labeled 'Enable' and a dropdown menu with 'Disable' selected.
- Source Port:** A text input field with '1000'.
- Protocol:** A dropdown menu with 'UDP' selected.
- Bitrate:** A text input field with '25'.
- Start Channel-End Channel:** Two text input fields with '1' and '16' respectively.
- Destination IP Address:** A text input field with '227.10.20.80' and a dropdown menu with 'Same' selected.
- Destination Port:** A text input field with '1234' and a dropdown menu with 'Same' selected.
- TS Packets Per IP Packet:** A text input field with '7'.
- Enable Destination MAC:** A checkbox labeled 'Enable Destination MAC' and a dropdown menu with 'Disable' selected.
- MAC Address:** A text input field with 'AA:BB:CC:DD:EE'.

Below the 'Batch Setting' section is a table with 8 columns: Channel, Enable, Source Port, Destination IP Address, Destination Port, Protocol, TS Packets Per IP Packet, and Enable Destination MAC. The table shows 5 rows of data, all with 'Enable' checked and 'Destination MAC' set to 'Disable'.

Channel	Enable	Source Port	Destination IP Address	Destination Port	Protocol	TS Packets Per IP Packet	Enable Destination MAC
1.1	<input checked="" type="checkbox"/>	1000	224.20.20.1	1234	UDP	7	Disable
1.2	<input checked="" type="checkbox"/>	1000	224.20.20.2	1234	UDP	7	Disable
1.3	<input checked="" type="checkbox"/>	1000	224.20.20.3	1234	UDP	7	Disable
1.4	<input checked="" type="checkbox"/>	1000	224.20.20.4	1234	UDP	7	Disable
1.5	<input checked="" type="checkbox"/>	1000	224.20.20.5	1234	UDP	7	Disable

CM2-QAMA-R02 > Multiplexing

Multiplexing has four tabs: **Source**, **Service Configuration**, **SI Table Setting** and **PID**

Transmission. Here you can set to output services from IP Input to Modulation Output. Click **Multiplexing** to see 32 modulation output channels. Select a channel you want to configure and you will see **Source** setting of this channel.

CM-QAMA-R02 Status Basic Setting **Multiplexing** System

Output Channel

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32

Source Service Configuration PSIP PID Transmission

Port 1 Port 2

1 - 32	33 - 64	65 - 96	97 - 128	129 - 160	161 - 192	193 - 224	225 - 256
257 - 288	289 - 320	321 - 352	353 - 384	385 - 416	417 - 448	449 - 480	481 - 512

Please tick the input channel to get the source of the program ☐ Select All

<input checked="" type="checkbox"/> 1.1	<input checked="" type="checkbox"/> 1.2	<input checked="" type="checkbox"/> 1.3	<input checked="" type="checkbox"/> 1.4	<input type="checkbox"/> 1.5	<input type="checkbox"/> 1.6	<input type="checkbox"/> 1.7	<input type="checkbox"/> 1.8	<input type="checkbox"/> 1.9	<input type="checkbox"/> 1.10	<input type="checkbox"/> 1.11	<input type="checkbox"/> 1.12	<input type="checkbox"/> 1.13	<input type="checkbox"/> 1.14	<input type="checkbox"/> 1.15	<input type="checkbox"/> 1.16
<input type="checkbox"/> 1.17	<input type="checkbox"/> 1.18	<input type="checkbox"/> 1.19	<input type="checkbox"/> 1.20	<input type="checkbox"/> 1.21	<input type="checkbox"/> 1.22	<input type="checkbox"/> 1.23	<input type="checkbox"/> 1.24	<input type="checkbox"/> 1.25	<input type="checkbox"/> 1.26	<input type="checkbox"/> 1.27	<input type="checkbox"/> 1.28	<input type="checkbox"/> 1.29	<input type="checkbox"/> 1.30	<input type="checkbox"/> 1.31	<input type="checkbox"/> 1.32

Scanning Time(ms) : 1000 Set

Source ☐ ECM/EMM Filter

- ☒ [1.3] 239.192.10.202:10000
- ☒ [166] KC CHANNEL HD
- ☒ [1.4] 239.192.0.205:10000
- ☒ [1] LipSync_1080i

☐ Bypass

RF Output[1] 57000KHz 5057KBaud [0.090/27.962M]

	Source	Service Name	
1	1.2	[149] DA VINCI KIDS HD	<input checked="" type="checkbox"/>
2	1.1	[183] HBO HD	<input checked="" type="checkbox"/>
3	1.4	[1] LipSync_1080i	<input checked="" type="checkbox"/>
4	1.3	[166] KC CHANNEL HD	<input checked="" type="checkbox"/>

Apply
Clear Config

Multiplexing-Source> Source is where you select a source for output. You can chose **Port 1** **2** for the source. Each port is divided into 16 groups to complete 512 channels. Select a Port and you can see service lists of Group and Channel as shown below.

CM-QAMA-R02 Status Basic Setting **Multiplexing** System

Output Channel

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32

Source Service Configuration PSIP PID Transmission

Port 1 **Port 2**

1 - 32	33 - 64	65 - 96	97 - 128	129 - 160	161 - 192	193 - 224	225 - 256
257 - 288	289 - 320	321 - 352	353 - 384	385 - 416	417 - 448	449 - 480	481 - 512

Please tick the input channel to get the source of the program ☐ Select All

<input checked="" type="checkbox"/> 1.1	<input checked="" type="checkbox"/> 1.2	<input checked="" type="checkbox"/> 1.3	<input checked="" type="checkbox"/> 1.4	<input type="checkbox"/> 1.5	<input type="checkbox"/> 1.6	<input type="checkbox"/> 1.7	<input type="checkbox"/> 1.8	<input type="checkbox"/> 1.9	<input type="checkbox"/> 1.10	<input type="checkbox"/> 1.11	<input type="checkbox"/> 1.12	<input type="checkbox"/> 1.13	<input type="checkbox"/> 1.14	<input type="checkbox"/> 1.15	<input type="checkbox"/> 1.16
<input type="checkbox"/> 1.17	<input type="checkbox"/> 1.18	<input type="checkbox"/> 1.19	<input type="checkbox"/> 1.20	<input type="checkbox"/> 1.21	<input type="checkbox"/> 1.22	<input type="checkbox"/> 1.23	<input type="checkbox"/> 1.24	<input type="checkbox"/> 1.25	<input type="checkbox"/> 1.26	<input type="checkbox"/> 1.27	<input type="checkbox"/> 1.28	<input type="checkbox"/> 1.29	<input type="checkbox"/> 1.30	<input type="checkbox"/> 1.31	<input type="checkbox"/> 1.32

Scanning Time(ms) : 1000 Set

Source ☐ ECM/EMM Filter

RF Output[1] 57000KHz 5057KBaud [0.090/27.962M]

Apply
Clear Config

To output the service on the Modulation Output, you can simply put a tick in the box beside the service you want to output. You can output multiple Service from different Source bypass the TS to Modulation output.

Scanning Time(ms) : 1000 Set

Source ☐ ECM/EMM Filter

- ☒ [1.4] 227.40.50.91:1234 ☐ Bypass
- ☒ [1] LipSync_1080i ☐ Bypass
- ☒ [1.1] 227.40.50.88:1234 ☐ Bypass
- ☒ [3]
- ☒ [4]
- ☒ [5]

RF Output[1] 474000KHz 6875KBaud

	Source	Service Name	
1	1.1	[3]	✖
2	1.1	[4]	✖
3	1.1	[5]	✖
4	1.4	[1] LipSync_1080i	✖

To Output the TS by Bypass mode, you can simply check the **Bypass** box of the TS. You can only bypass 1 TS and cannot output other services from different channel sources. Bypass mode allows you to keep the input signal automatically be redirected to Modulation output without re-scanning the input or transferring it to output.

Source ☐ ECM/EMM Filter

- ☐ [1.4] 227.40.50.91:1234 ☒ Bypass
- ☐ [1] LipSync_1080i ☐ Bypass
- ☐ [1.1] 227.40.50.88:1234 ☐ Bypass
- ☐ [3]
- ☐ [4]
- ☐ [5]

RF Output[1] 474000KHz 6875KBaud

	Source	Service Name	
	[Bypass]Source		⊕
	[1.4] 227.40.50.91:1234		✖

Multiplexing-Service Configuration> After output the services from IP input to Modulation output, you can now edit the Service ID and other PID on the output. Click on the Service Configuration to see this page, it shows the output service on this channel only.

CM-MOD-02 Status Basic Setting Multiplexing Scrambling System

Output Channel

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32

Source Service Configuration SI Table Setting PID Transmission

Apply
Clear Config

Please click "Apply" after modifying parameters. Otherwise, new configuration can not be saved.

Output EditTS NIT BAT

	Source	Service Name
1	1.1	✎ [3]
2	1.1	✎ [4]
3	1.1	✎ [5]
4	1.4	✎ [1]LipSync_1080i

You can click the Name of the service and it will show a table where you can modify some information of the service like Service ID, Service Name, Service Provider, PCR2 PMT AUDIO and Video PID. Click OK & Apply for the changes to take effect.

Output EditTS NIT BAT

	Source	Service Name
1	1.1	[3]
2	1.1	[4]
3	1.1	[5]
4	1.4	[1]LipSync_1080i

[1.1] TS >> LipSync_1080i

	Original Value	Value
Service ID	1	1
Service Name		LipSync_1080i
Service Provider		Harmonic
PCR PID	512	512
PMT PID	256	256
Video(H264)	513	513
Audio	4112	4112
Private Data/AC3	4114	4114

OK Cancel

Here you can also edit the Original Network ID and TS ID of the Modulation Output.

Please click "Apply" after modifying parameters. Otherwise, new configuration can not be saved.

Output EditTS NIT BAT

	Source	Service Name
1	1.1	[3]Program-1
2	1.1	[4]Program-2
3	1.1	[5]bbPBR
4	1.4	[1]LipSync_1080i

[1.1] TS

Original Network ID	1
TS ID	1

NO.	Service ID	Service Name	Service Provider
1	3	Program-1	
2	4	Program-2	
3	5	bbPBR	
4	1	LipSync_1080i	Harmonic

OK Cancel

Here you can also edit NIT and create NIT Network for the OTA upgrade.

Output EditTS NIT BAT

	Source	Service Name
1	1.1	[3]Program-1
2	1.1	[4]Program-2
3	1.1	[5]bbPBR
4	1.4	[1]LipSync_1080i

NIT Network

NIT Stream NIT Other

Tag(Hex) 40

Data(Hex)

Add

Tag(Hex)	Data(Hex)	Length	Operation
40	123	3	X

Still in NIT, you can also create NIT Streams and generate LCN for channel list and Cable Descriptor for frequency auto search.

Please click "Apply" after modifying parameters. Otherwise, new configuration can not be saved.

Output EditTS **NIT** BAT

	Source	Service Name
1	1.1	[3]Program-1
2	1.1	[4]Program-2
3	1.1	[5]bbPBR
4	1.4	[1]LipSync_1080i

NIT Network **NIT Stream** NIT Other

Original Network ID: 2

TS ID: 2

Add

Original...	TS ID	Descriptor	Operation
1	1	1 tag:0x44	✕ ✕
		2 tag:0x83	✕ ✕
2	2		✕ ✕

LCN Descriptor

Cable Descriptor

Apply

Clear Config

For the LCN Descriptor: input the Service ID and the LCN for the channel line-up of the services.

For the Cable Descriptor: input the correct frequency and Symbol Rate for the corresponding TS output. Cable descriptor depends on the setup you use. Mostly, Cable descriptor is created for 1 TS only. Some configuration need to be created in each TS.

Still in NIT, you can also create NIT Other.

Please click "Apply" after modifying parameters. Otherwise, new configuration can not be saved.

Output EditTS NIT **BAT**

	Source	Service Name
1	1.1	[3]Program-1
2	1.1	[4]Program-2
3	1.1	[5]bbPBR
4	1.4	[1]LipSync_1080i

NIT Network NIT Stream **NIT Other**

Network ID: 1234

Version Number: 0

OK

Here you can also create BAT.

Please click "Apply" after modifying parameters. Otherwise, new configuration can not be saved.

Output EditTS NIT **BAT**

	Source	Service Name
1	1.1	[3]Program-1
2	1.1	[4]Program-2
3	1.1	[5]bbPBR
4	1.4	[1]LipSync_1080i

[1.1] BAT

Bouquet Id:

Bouquet Name:

Add

Bouquet Id	Bouquet Name	Operation
No Data		

Multiplexing-SI Table Setting> This page is to choose whether to insert/generate the SI tables or Copy the SI tables from the input streams.

Multiplexing-PID Transmission> This page is to transmit the input PID to Output on the PID required by the system.

CM2-QAMA-R02 > Scrambling

CM2-QAMA-R02 Scramble is where you can encrypt a service on the Modulation Output. Scrambler can be connected 6 different CAS simultaneously. There are seven tabs on this page namely Service Scrambling and CAS1 to CAS6. 6 CAS tabs have the same interface.

Input the correct CA parameters on this page and make sure the ECMG and EMMG are connected GREEN. Some CA will provide a Super CAS ID with 8 digits. This is a combination of the 4-digit CAS System ID and 4-digit of ECMG Sub System ID.

CM-QAMA-R02

Status Basic Setting Multiplexing **Scrambling** System

Service Scrambling CAS 1 CAS 2 CAS 3 CAS 4 CAS 5 CAS 6

Enable: Enable

Status: **ECMG** **EMMG**

Count: 0 0

Crypton Period(s): 30

Current Period: 0

ECMG

CAS System ID: Dec: 5218 Hex: 1402

ECMG Sub System ID: Dec: 0 Hex: 0

ECMG IP Address: 192.168.1.199

ECMG Port: 5500

ECMG Channel ID: 1

EMMG

EMMG TCP Port: 6000

EMMG UDP Port: 7000

EMM Send Type: TCP+UDP

EMM PID: 4097

EMM Bandwidth: 500

ECM Stream ID: 12 ECM ID: 12 ECM PID: 4011

AC Data(Hex): 0001000100014010

Export Browse Import

Stream ID	ID	PID	AC Data(Hex)
1	1	4000	0001000100014000
2	2	4001	0001000100014001
3	3	4002	0001000100014002
4	4	4003	0001000100014003
5	5	4004	0001000100014004
6	6	4005	0001000100014005
7	7	4006	0001000100014006
8	8	4007	0001000100014007
9	9	4008	0001000100014008
10	10	4009	0001000100014009
11	11	4010	0001000100014010

Service Scrambling On this page, you can encrypt a service in the Modulation Output. Select a channel for output and you will see a service list. The module supports up to 6 different CA, select one of them for encryption as you need, then select the CA ID of the service. Click **Apply** to finish setting.

CAS 1 CAS 2 CAS 3 CAS 4 **Service Scrambling**

Output Channel: 1 2 3 4 5

Scrambled service: 0

Apply

Service Scrambling Setting Batch Setting

NO.	CAS1	CAS2	CAS3	CAS4
1	None	None	None	None
2	None	None	None	None
3	None	None	None	None
4	None	None	None	None
5	None	None	None	None
6	None	None	None	None
7	None	None	None	None
8	None	None	None	None
9	None	None	None	None
10	None	None	None	None
11	None	None	None	None
12	None	None	None	None

The Modulation Output Channel will only list the enabled channels but not all 32 channels. If the channels and CA ID to be used are arranged in a chronological order, you can use **Batch Setting** for

faster encryption. This is advisable if you have 10 or more services in a single channel for output. See the image below for reference.

The screenshot shows the 'Output Channel' configuration window. At the top, there are tabs for channels 1 through 5, with channel 1 selected. Below the tabs is the 'Service Scrambling Setting' section. A yellow warning box states: 'When the number of programs exceeds the number of CASs that can be allocated, the CAS setting will repeat.' To the right of this section is an 'Apply' button. The 'Service Scrambling Setting' section includes a 'Select Batch Setting Parameter' table with checkboxes for 'Service', 'CAS1', 'CAS2', 'CAS3', and 'CAS4'. Each CAS has a dropdown menu currently set to 'None'. There is also an 'Auto Assign' checkbox. To the right of this is a 'Start Service Number ~ End Service Number' field with input boxes for '1' and '5', and an 'OK' button. Below this is a table with columns: NO., SERVICE(12), CAS1, CAS2, CAS3, and CAS4. The table contains four rows of data for different services.

NO.	SERVICE(12)	CAS1	CAS2	CAS3	CAS4
1	[CH:1] > [3]	1	None	None	None
2	[CH:1] > [4]	2	None	None	None
3	[CH:1] > [5]	3	None	None	None
4	[CH:1] > [1]LipSync_1080i	4	None	None	None

CM2-QAMA-R02 > System

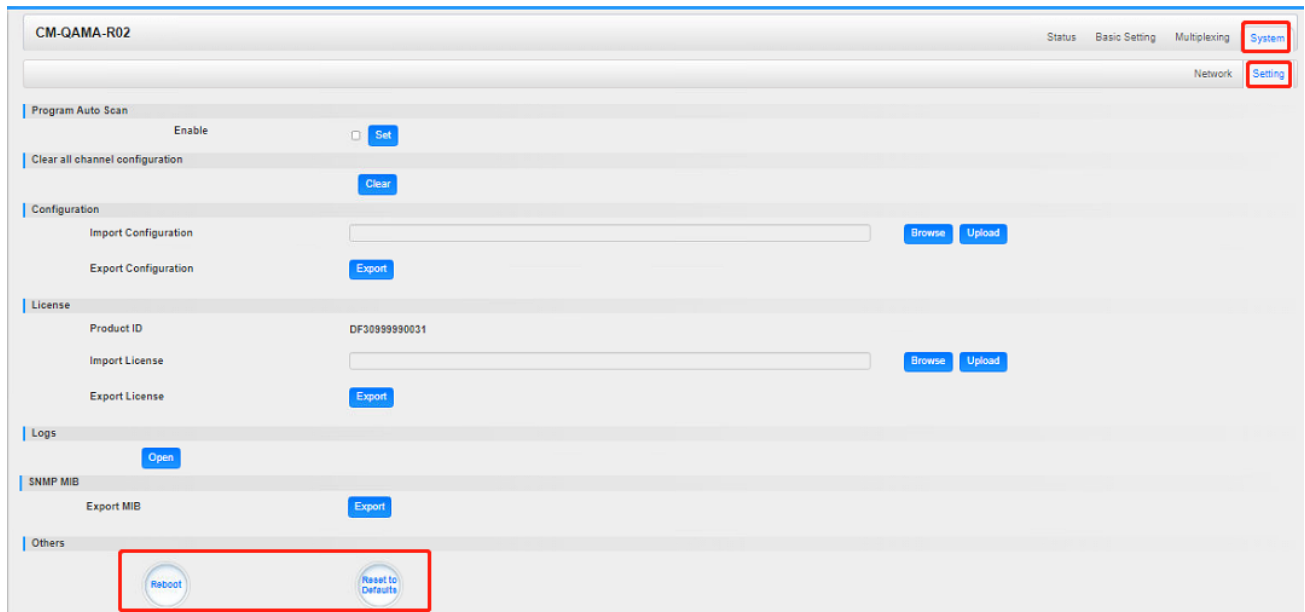
CM2-QAMA-R02 System is composed of two sub menus namely Network and License.

Network> Here you can modify the IP Address, Subnet Mask and Gateway for each port of the module, except for the address of the module itself. This also shows the MAC Address of each port of the module. See the image below for reference.

The screenshot shows the 'CM-QAMA-R02' configuration window. At the top, there are tabs for 'Status', 'Basic Setting', 'Multiplexing', and 'System'. The 'System' tab is selected. Below the tabs, there are sub-tabs for 'Network' and 'Setting'. The 'Network' sub-tab is selected. Below the sub-tabs is a table with columns: Port, IP Address, Subnet Mask, Gateway, MAC Address, Link Speed, and Link Status. The table contains four rows of data for different ports. To the right of the table is an 'Apply' button.

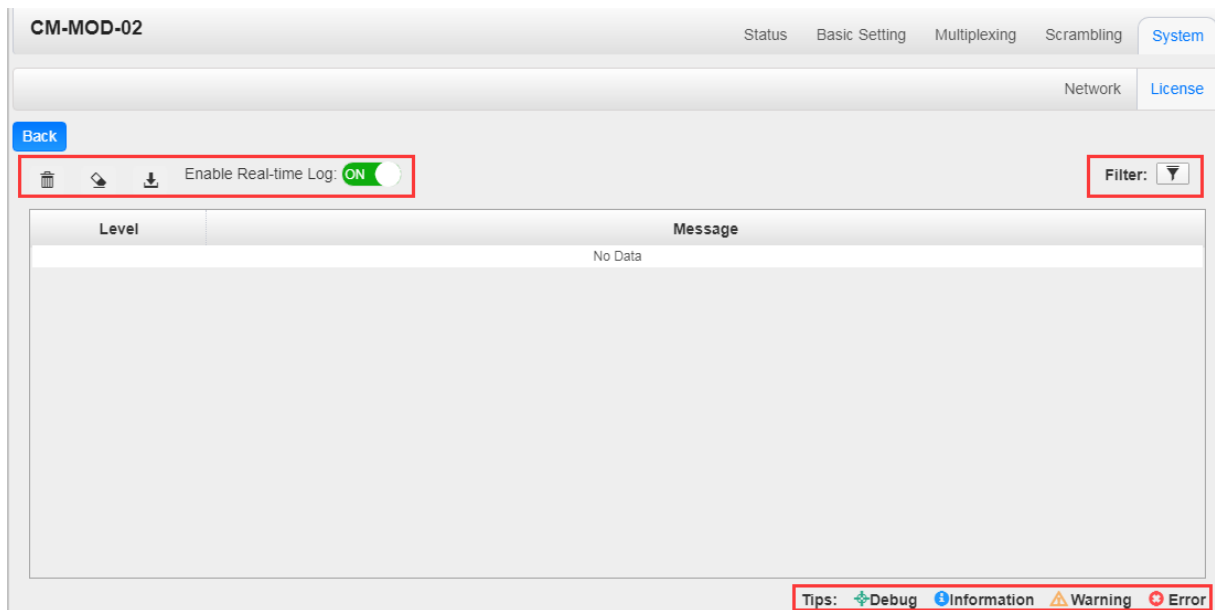
Port	IP Address	Subnet Mask	Gateway	MAC Address	Link Speed	Link Status
NMS	192.168.1.24	255.255.255.0	192.168.1.254	A0:69:86:06:38:06		link down
CAS	192.168.2.10	255.255.255.0	192.168.2.254	A0:69:86:06:38:07	auto	link down
DATA1	192.168.3.10	255.255.255.0	192.168.3.254	A0:69:86:06:38:08	auto	link down
DATA2	192.168.4.10	255.255.255.0	192.168.4.254	A0:69:86:06:38:09	auto	link down




License> Here you can import/export **license**, reboot module, **restore factory default settings** and **manage logs**.




Log Manage>This page shows the logs of the module. If there are issues encountered on this module, exporting the logs will help R&D team to analyze and fix them.

Turn on **Enable Real-time Log** switch to see the real time log messages and the severity level of each message below.



- Click  to clear all log messages on the screen.
- Click  to delete all log information.
- Click  to export log information.

- Click  to filter desired log messages.

Clicking the filter icon, you can simply select what logs to be included.

Log Filter

Level	
Level	Operation
Error	<input checked="" type="checkbox"/>
Warning	<input checked="" type="checkbox"/>
Information	<input checked="" type="checkbox"/>
Debug	<input type="checkbox"/>

Module List	
Module Name	Operation
SYS	<input checked="" type="checkbox"/>
PARAMS	<input checked="" type="checkbox"/>
UPGRADE	<input checked="" type="checkbox"/>
TSPROCESS	<input checked="" type="checkbox"/>
SIPROCESS	<input checked="" type="checkbox"/>
LICENSE	<input checked="" type="checkbox"/>

5.3.10 CM2-QAMA-R01/R01A

CM2-QAMA-R01 / R01A module supports modulating 4/8 adjacent channels with 1 RF female port for modulating output.



CM2-QAMA-R01>Basic Setting

CM2-QAMA-R01 Status Basic Setting Output System

RF Level: 25 (dBmV ☒ dBuV ☐) PSI/SI Interval(ms): 50

Channel	Enable	Frequency(KHz)	QAM Mode	SymbolRate(KBaud)	Bandwidth(MHz)
1.1	<input type="checkbox"/>	474000	QAM64	5185	6
1.2	<input type="checkbox"/>	482000	QAM64	5185	6
1.3	<input type="checkbox"/>	490000	QAM64	5185	6
1.4	<input type="checkbox"/>	498000	QAM64	5185	6

Apply

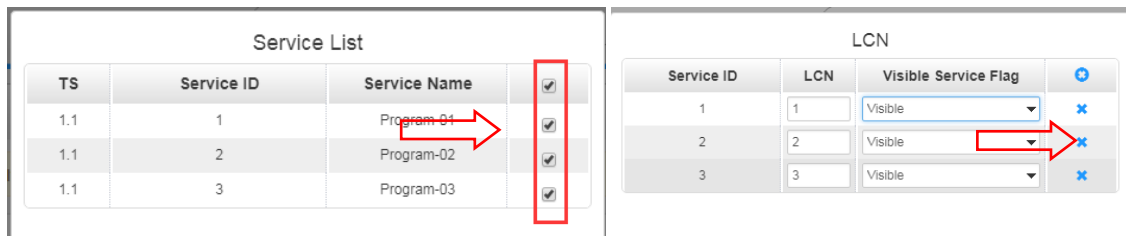
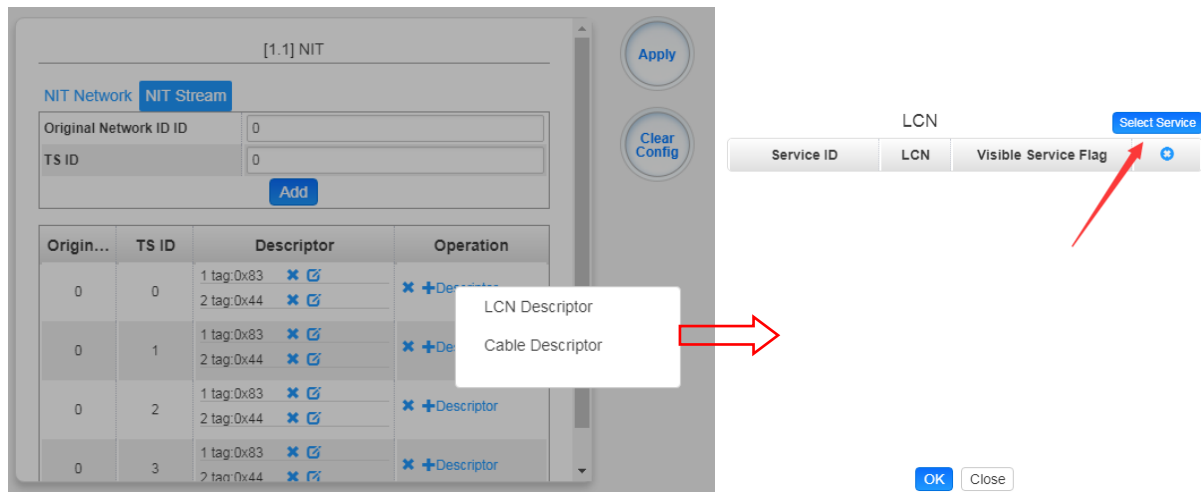
Click the **Apply** button on the right side to make the change take effect.

Name	Range	Name	Range
Symbol Rate (KBaud)	3780~6956	PSI/SI Interval (ms)	50~10000
RF level	25~45dBmV/85~105dB μ V	Frequency (KHz)	47000~862000
QAM Mode	QAM16/32/64/128/256		

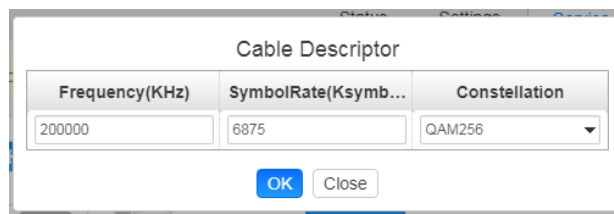
CM2-QAMA- R01/R01A>Output

QAM Output will be different from the Receiver and Encoder module. Since the QAM module is an output module like IP output, all service configured in receiver, encoder and IP input will be seen here.

- TS setting: Please refer to IP output service configuration.
- LCN setting: You need to add NIT streams of all frequencies in the base TS (frequency), which is used for your STB to automatically search and identify all the TS (frequencies) LCN information.
 - Check or reset Original Network ID and TS ID of each TS (frequency). Each TS should have different IDs.
 - 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 for this TS (frequency).
 - Click **+Descriptor** then LCN Descriptor to check all the programs which are contained in this frequency. Then set programs LCN.



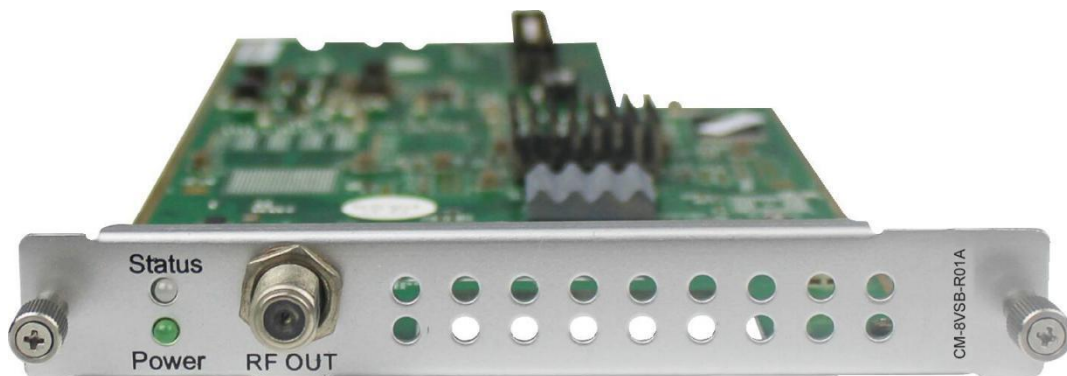
- Click **+Descriptor** and **Cable Descriptor**. Then fill in the correct frequency and symbol rate and choose the correct constellation of the TS (frequency). Then click **OK** (this operation should be set on Modulator module only).



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

5.3.11 CM2-8VSB-R01/R01A

CM2-8VSB-R01 / R01A module supports up to 4/8 8VSB adjacent frequencies modulating with 1 RF connector for output.



Module configuration is similar to IP Setting.

CM2-8VSB-R01>Basic Setting

Channel	Enable	Frequency
1.1	<input type="checkbox"/>	CH2-57MHz
1.2	<input type="checkbox"/>	CH2-57MHz
1.3	<input type="checkbox"/>	CH2-57MHz
1.4	<input type="checkbox"/>	CH2-57MHz

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

Name	Range	Name	Range
RF level (1=0.5dB)	15~48	PSI/SI Interval (ms)	50~10000
Channel Standard	OFF-AIR	Frequency (KHz)	CH2-57MHz
	STD		~
	IRC		CH69-802MHz
	SRC		

CM2-8VSB-R01/R01A >Output

- TS setting: Please refer to IP output service configuration.
- To use this board, you need to change the **Standard** to ATSC in **Advance Settings-System Settings**.
- Don't forget to click **APPLY** when you finish configuration.

The screenshot displays the 'System Settings' web interface. The top navigation bar includes 'Status', 'System Settings', 'IP Input', 'IP Output', and 'agent'. Below this, the 'System Settings' section is active, with sub-tabs for 'Network', 'Time', 'System', 'Password', 'NMS Register', 'Advance Settings', and 'SNMP'. The 'Advance Settings' tab is selected, showing a list of configuration options:

- Standard:** ATSC (dropdown menu)
- Language:** English (dropdown menu)
- Authorized Use Time:** Stay With First Level Authorized Time (dropdown menu) and Never expires (text input)
- Destination Module Number:** 4 (dropdown menu)
- CA Descriptor Filter:** Disable (dropdown menu)
- PAT Sync Update:** Disable (dropdown menu)
- VLAN Enable:** Disable (dropdown menu)

An 'Apply' button is located on the right side of the configuration area.

5.3.12 CM2-QAMB-R01/R01A

CM2-QAMB-R01 / R01A module supports up to 4/8 adjacent frequencies modulating with 1 RF female connector for output.

Module configuration is similar to IP Setting.

CM2-QAMB-R01/R01A>Basic Setting

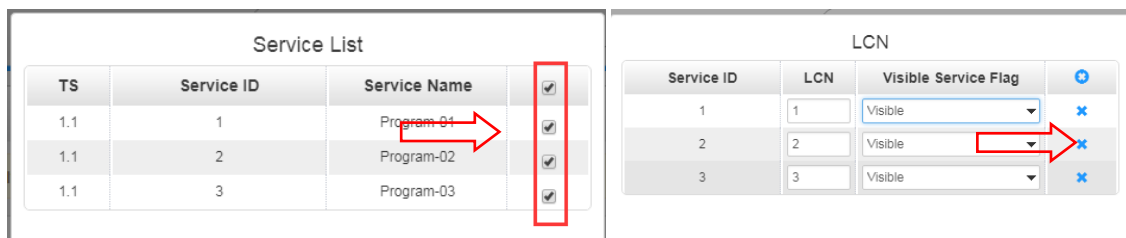
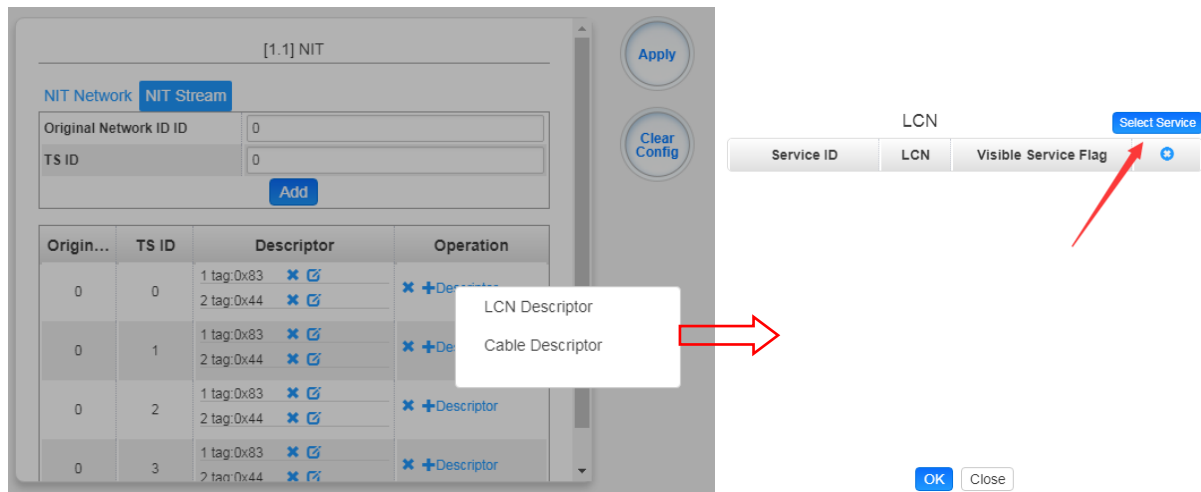
Channel	Enable	Frequency	QAM Mode	SymbolRate(KBaud)
1.1	<input type="checkbox"/>	CH2-57MHz	QAM256	5361
1.2	<input type="checkbox"/>	CH2-57MHz	QAM256	5361
1.3	<input type="checkbox"/>	CH2-57MHz	QAM256	5361
1.4	<input type="checkbox"/>	CH2-57MHz	QAM256	5361

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

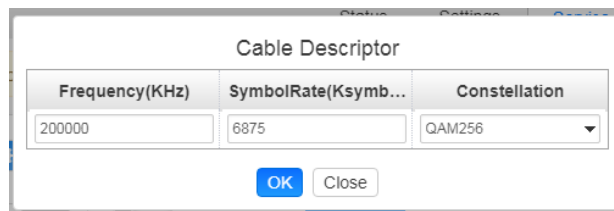
Name	Range	Name	Range
Symbol Rate (KBaud)	5057 (QAM64) 5361 (QAM256)	PSI/SI Interval (ms)	50~10000
RF level	25~45dBmV/85~105dB μ V	Frequency (KHz)	48000~862000
QAM Mode	QAM64/256		

CM2-QAMB-R01>Service Configuration

- TS setting: Please refer to IP output service configuration.
- LCN setting: You need to add NIT streams of all frequencies to the base TS (frequency), which is for your STB to automatically search and identify all the TS (frequencies) LCN information.
 - Check or reset Original Network ID and TS ID of each TS (frequency)., Each TS should have different IDs.
 - 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 for this TS (frequency).
 - Click **+Descriptor** then **LCN Descriptor** to check all the programs which are contained in this frequency. Then set programs LCN.



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



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

5.3.13 CM2-OFDM-R01/R01A

CM2-OFDM-R01 / R01A module supports up to 4/8 adjacent frequencies modulating with 1 RF female connector for output.



Module configuration is similar to IP Setting.

CM2-OFDM-R01>Basic Setting

CM2-OFDM-R01
Status **Basic Setting** Output System

RF Level: (dBmV ☒ dBuV ☐)

Channel	Enable	Frequency(KHz)	Bandwidth(MHz)	FFT Mode	GI Mode	QAM Mode	Convolutional Coding
1.1	<input type="checkbox"/>	474000	6	2K	1/32	64QAM	7/8
1.2	<input type="checkbox"/>	482000	6	2K	1/32	64QAM	7/8
1.3	<input type="checkbox"/>	490000	6	2K	1/32	64QAM	7/8
1.4	<input type="checkbox"/>	498000	6	2K	1/32	64QAM	7/8

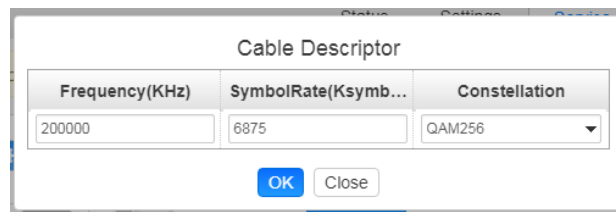
Click the **Apply** button on the right side to make the change take effect.

Name	Range	Name	Range
Bandwidth	6M, 7M, 8M	RF level	0-31.5dBmV/60-91.5dB μ V
Frequency (KHz)	48000~862000		

CM2-OFDM-R01A>Output

- TS setting: Please refer to IP output 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 Original Network ID and TS ID of each TS (frequency). Each TS should have different IDs.
- 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 for this TS (frequency).
- Click **+Descriptor** and **Cable Descriptor**. 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).

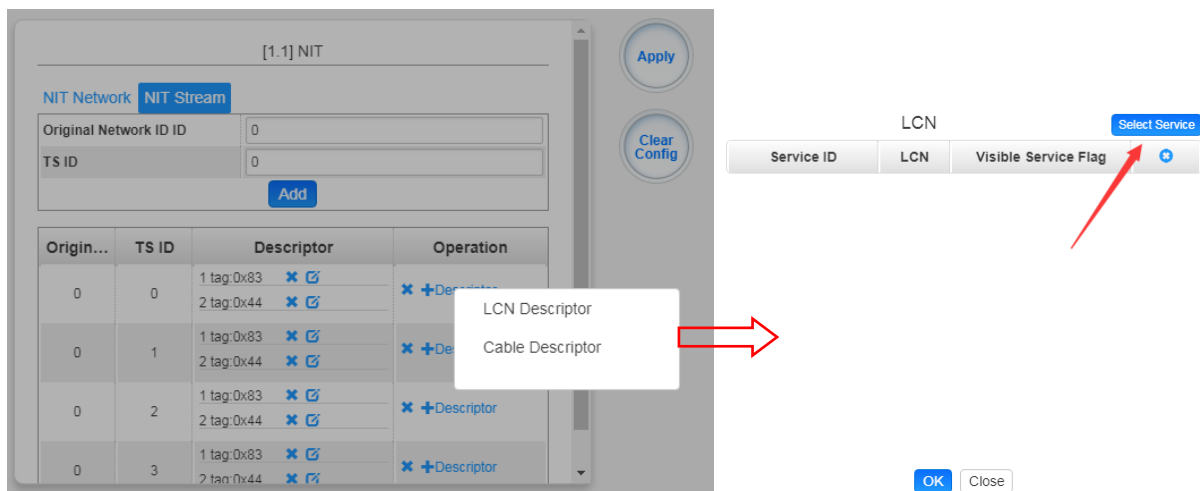


Cable Descriptor

Frequency(KHz)	SymbolRate(Ksymb...	Constellation
200000	6875	QAM256

OK Close

- Click **+Descriptor** and add the **LCN Descriptor** to check all the programs which are contained in this frequency. Then set programs LCN.



The screenshot shows the NIT Stream configuration window with a table of descriptors. A red arrow points from the '+Descriptor' button in the table to the LCN dialog box. The LCN dialog box has a 'Select Service' button and a table with columns: Service ID, LCN, and Visible Service Flag.

Origin...	TS ID	Descriptor	Operation
0	0	1 tag:0x83 2 tag:0x44	+Descriptor
0	1	1 tag:0x83 2 tag:0x44	+Descriptor
0	2	1 tag:0x83 2 tag:0x44	+Descriptor
0	3	1 tag:0x83 2 tag:0x44	+Descriptor

Service ID	LCN	Visible Service Flag

OK Close



The screenshot shows the Service List window and the LCN dialog box. A red arrow points from the 'td HD Phx Chinese Cha...' entry in the Service List to the LCN dialog box. The LCN dialog box has a 'Select Service' button and a table with columns: Service ID, LCN, and Visible Service Flag.

TS	Service ID	Service Name	
1.1	1	2.5M-CCTV1	<input checked="" type="checkbox"/>
1.2	1	Program0	<input type="checkbox"/>
1.3	1	LipSync_1080i	<input type="checkbox"/>
1.3	2	td HD Phx Chinese Cha...	<input type="checkbox"/>

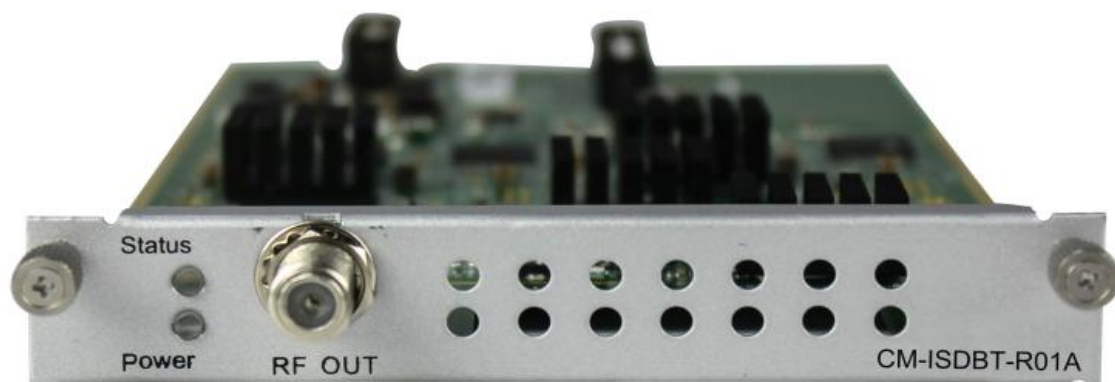
Service ID	LCN	Visible Service Flag
1	66	Visible

OK Close

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

5.3.14 CM2-ISDBT-R01/R01A

CM2-ISDBT-R01/R01A module supports up to 4/8 adjacent frequencies modulating with 1 RF female connector for output.



CM2-ISDBT-R01>Basic Setting

CM2-ISDBT-R01
Status
Basic Setting
Output
System

RF Level: 40 (dBmV * dBuV)

Chan...	Enable	Frequency(KHz)	Bandwidth(MHz)	FFT Mode	GI Mode	QAM Mode	Convolutional Codi...	Segment Mode
1.1	<input type="checkbox"/>	474000	6	2K	1/4	64QAM	7/8	Full Seg
1.2	<input type="checkbox"/>	482000	6	2K	1/4	64QAM	7/8	Full Seg
1.3	<input type="checkbox"/>	490000	6	2K	1/4	64QAM	7/8	Full Seg
1.4	<input type="checkbox"/>	498000	6	2K	1/4	64QAM	7/8	Full Seg

Apply

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

Name	Range	Name	Range
Bandwidth(MHZ)	6M	RF level	25~45dBmV/85~105dB μ V
Frequency (KHz)	48000~862000	FFT Mode	2K
GI Mode	1/4, 1/8, 1/16, 1/32	RF Level Gain(dB)	45~55
QAM Mode	QPSK	Convolutional	1/2, 2/3, 3/4, 5/6, 7/8
	16QAM	Coding	
	64QAM		

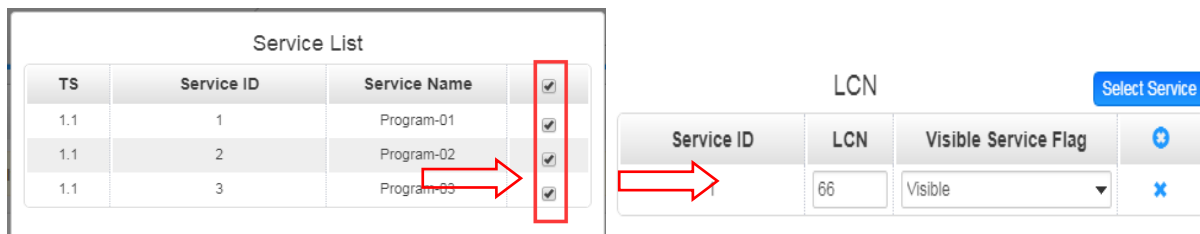
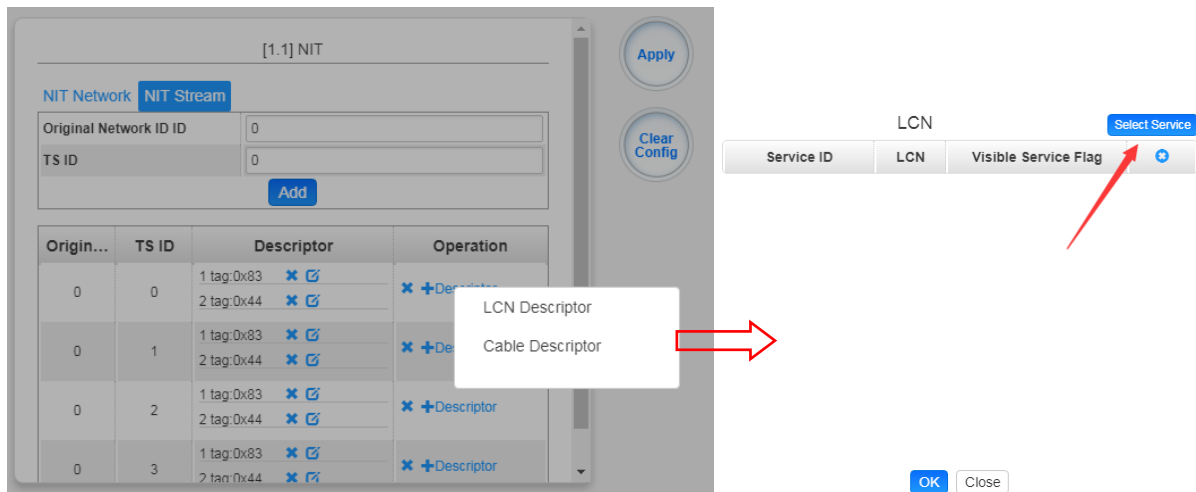
CM2-ISDBT-R01/R01A>Output

- TS setting: Please refer to IP output service configuration.
- LCN setting: You need to add NIT streams of all frequencies to the base TS (frequency) which is for your STB to automatically search and identify all the TS (frequencies) LCN information.
 - Check or reset Original Network ID and TS ID of each TS (frequency). Each TS should have different IDs.
 - 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 for this TS (frequency).
 - Click **+Descriptor** and **Cable Descriptor**. 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).

Cable Descriptor

Frequency(KHz)	Constellation
474000	64QAM

- Click **+Descriptor** and **LCN Descriptor** to check all the programs which are contained in this frequency. Then set programs LCN.



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

5.4 Function modules

5.4.1 CP2-EAS-00

CP2-EAS-00 module provides the ability to interrupt Encoder playback and switch to an external transport stream. This feature is for the US market and requires the CMP201AD chassis to be set for ATSC standard. A common application of Emergency Alert Systems is for Broadcast and Audio Muting.

The trigger switched video content on the Encoders can be sensed using a DC contact closure or the SCTE-18 EAS standard over ASI/IP when the EAS is “Paved” or actively replacing the encoder outputs.



CP2-EAS-00>Basic Setting

EAS Source Setting	
EAS Signal Input:	Analogue(Relay)
EAS Program Input:	ASI
Trigger Mode:	Normally Open

Command Input Setting	
PID:	1
IP Address:	192.1.1.100
IP Port :	5050

Encoder Setting	
Video Type:	Mpeg-2
Audio Type:	Mpeg4-AAC
Video Bitrate (Kbps):	5000
Audio Bitrate (Kbps):	320
Volume:	10

IP Output Setting
▼

! Note: Don't take up the UDP multicast address, avoid the IP conflict. If you want to modify them, you need to modify other subboards synchronously.

Editable:

Enable ▼

IP Address:

227.10.50.60

Command Port:

1235

Data Port:

1234

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

Name	Range	Name	Range
Command Input Setting			
EAS Signal Input	Digital(IP)	EAS Program Input	ASI
	Analogue(Dry Contact)		AV
	Analogue(Relay)		
Trigger Mode	Normally Open		
	Normally Closed		
Encoder Setting			
Video Type	H.264, MPEG-2	Audio Type	AC3, Mpeg-1 Layer 2 Mpeg2-AAC, Mpeg4-AAC
Video Bit rate(Kbps)	1500~20000	Audio Bit rate(Kbps)	128, 192, 256, 384
Volume	-10~10		

When you set the IP output of the EAS module, you should set the same parameters for other modules that the service(s) will be paved by EAS input (ASI or AV signal). Then the EAS module will be detected automatically by other modules to complete more configuration. When it is triggered by external IP or analogue (Dry Contact) signals, the configured services(s) on other modules will be switched to the AV or ASI services from EAS module.

CP2-EAS-00>Status

EAS Status	
EAS Status:	Unlocked
AV Input	
Video Resolution:	No Video
Encoder Status	
Total Bitrate:	0.000 Mbps
Effective Bitrate:	0.000 Mbps
Video Resolution:	No Video
ASI Input	
Signal Lock:	Unlocked
Total Bitrate:	0.000 Mbps
Effective Bitrate:	0.000 Mbps
Program Scan Status:	Abnormal
IP Output	
Total Bitrate:	0.000 Mbps
Video Bitrate:	0.000 Mbps
Audio Bitrate:	0.000 Mbps
Effective Bitrate:	0.000 Mbps
Version Info	
Firmware Version:	V0.3.0
Software Version:	V1.4.3
Hardware Version:	V0.0.0

5.4.2 CP2-CAM-00

CP2-CAM-00 is a scrambling & descrambling module with 2 CI slots. It supports almost all kinds of CAM card descrambling and the number of descrambled services is defined by the CAM card. It supports descrambling services which are multiplexed from different IP/RF channels or modules. The scrambling function is designed for specific users. Currently the module only supports Xcrypt CAMCAS scrambling.



CP2-CAM-00 >Status

Status shows the total bitrate and effective bitrate of each channel. It also supports TS analysis and service list.

CP2-CAM-00				
<div> Status CI Service Configuration System </div>				
Channel	Total Bitrate(Mbps)	Effective Bitrate(Mbps)	TS Analysis	Service List
1.1	0.000	0.000		
1.2	0.045	0.045		

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** to clear continuity count error and restart counting. Fill the key words of PID, bitrate, bandwidth, table type or service name in the search bar to check the info you wanted.

Channel 1.1 TS Analysis

[Reset Counter](#)

Search

PID	Bitrate(Mbps)	Bandwidth(%)	Continuity Count Error	Type	Service
0x0(0)	0.058	0.150	0	PAT	
0x10(16)	0.000	0.000	0	Other	
0x11(17)	0.003	0.008	0	SDT	
0x12(18)	0.379	0.978	0	Other	
0x14(20)	0.000	0.000	0	Other	
0x424(1060)	3.793	9.788	0	PCR, Video	Russia Today
0x425(1061)	0.198	0.511	0	Audio	Russia Today

Tips:

- **Service List**

Click the service name to check the detail info of this service.

CP2-CAM-00

Channel	Total Bitrate(Mbps)
1.1	0.000
1.2	0.045

Channel : 1.1

#	Service
1	[6] Russia Today
2	[9] Al Jazeera Inte...
3	[12] TV5
4	[30] DW (Asien)
5	[37] DW09
6	[40] RFI Francais
7	[41] RFI Divers 4

Chan

#	Service
1	[1] Program-1

[6] Russia Today

Type	PID	Bitrate(M...
PCR	1060(0x424)	0.000
PMT	5006(0x138e)	0.000
StreamType:2-Video(MPEG2)	1060(0x424)	0.000
StreamType:4-Audio	1061(0x425)	0.000
ECM	5006(0x138e)	0.000

Close

CP2-CAM-00 >CI

CI page not only shows the CAM card name and CA system ID, but also shows the service PID, service information and scrambling/descrambling status.

CAM Max Bitrate is from 48Mbps to 108Mbps, which you can choose in the pull-down list.

CP2-CAM-00 Status **CI** Service Configuration System

CAM Max Bitrate: **72Mbps** CAM1 Auto Reset: **Disable** CAM2 Auto Reset: **Disable** **MMI Setting**

CAM1 (Not inserted) CAM2 (Not inserted) **Apply**

CAM Max Bitrate: **72Mbps**

CAM1 (Initialize Success) **Reset**

CAM Card Name: CAMCAS Cam C-Kur TV-C-KUR TV
CA System ID: 19153

PID	Service Information	Descrambling Status
1060 (Video)	1.1 [6] Russia Today	Descrambling Failed
1090 (Video)	1.1 [9] Al Jazeera International	Descrambling Failed
1120 (Video)	1.1 [12] TV5	Descrambling Failed
1300 (Video)	1.1 [30] DW (Asian)	Descrambling Failed
1371 (Audio)	1.1 [37] DW09	Descrambling Failed
1401 (Audio)	1.1 [40] RFI Francais	Descrambling Failed
1411 (Audio)	1.1 [41] RFI Divers 4	Descrambling Failed
1421 (Audio)	1.1 [42] RFI Cambodge	Descrambling Failed
2020 (Video)	1.1 [202] DW	Descrambling Failed

CAM2 (Not inserted) **Apply**

Click **Reset** to reboot the CAM card. Click **Apply** on the right side to make the change take effect.

CP2-CAM-00 >Service Configuration

When this module is licensed to scramble, on this page, you can set the output destination of all services.

Channel Select : Channel 1.1 **Channel Scan**

Service Name	Destination	Destination Settings
Channel 1.1 +		⚙
[6] Russia Today		✍
[9] Al Jazeera International		✍
[12] TV5		✍
[30] DW (Asian)		✍
[37] DW09		✍
[40] RFI Francais		✍
[41] RFI Divers 4		✍
[42] RFI Cambodge		✍
[202] DW		✍

Apply
Clear Config

When this module is licensed to descramble, on this page, you can select the descrambled services and set the output destination of all services.

Service Name	Descrambling	Destination
Channel 1.1		17.Baseboard[1.1]
[6] Russia Today	No Descramble	
[9] Al Jazeera International	No Descramble	
[12] TV5	No Descramble	
[30] DW (Asien)	No Descramble	
[37] DW09	No Descramble	
[40] RFI Francais	No Descramble	
[41] RFI Divers 4	No Descramble	
[42] RFI Cambodge	No Descramble	
[202] DW	No Descramble	
Channel 1.2		
[11] Program-1	No Descramble	

Click **Apply** on the right side to make the change take effect. Click **Clear Configuration** to clear all configurations.

CP2-CAM-00 >System

When this module is licensed to scramble, it has the functions of scrambling and descrambling. Change the **CAM Mode** through pull-down list. Click **Apply** to save the change.

Change CAM Mode : **Scrambling** **Apply**

License

Import License **Browse** **Upload**

Export License **Export**

Logs

Open

Others

Reboot **Reset to Defaults**

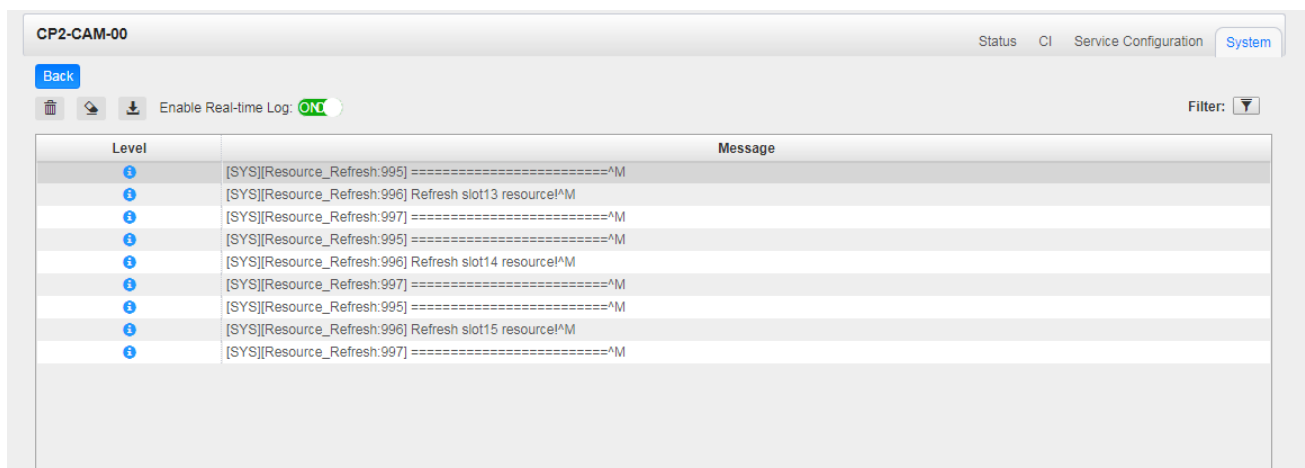
When this module is licensed to descramble, it only can be served as descrambling.







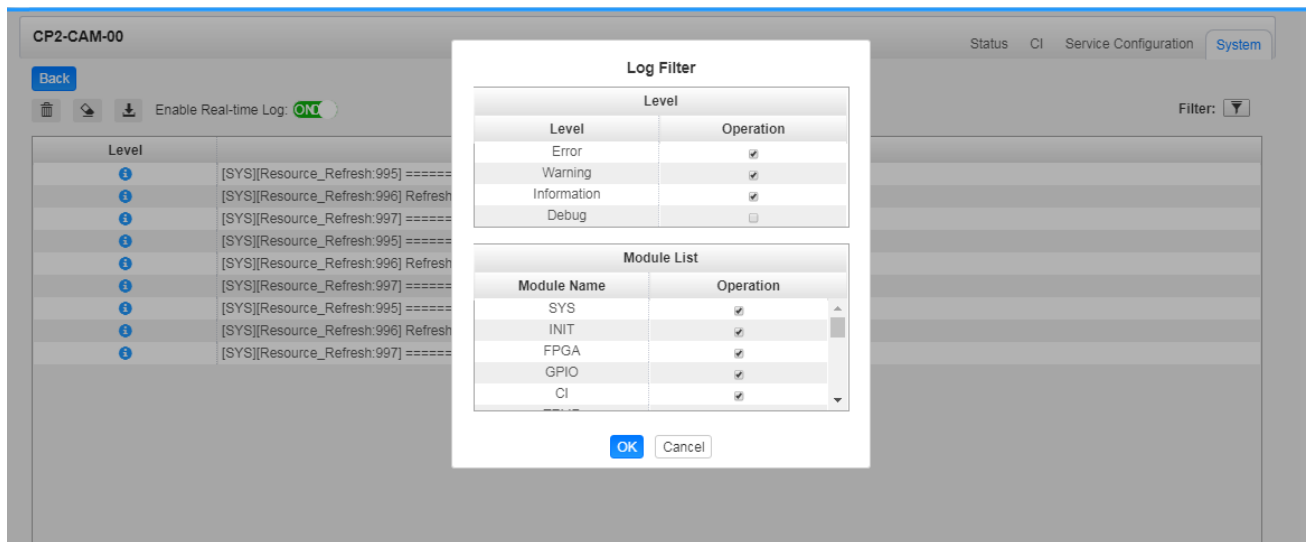
On **System Operation** page you can **Import/Export** License, **Reboot** module, **Factory Reset** and **Manage logs**.

● Log Manage

Turn on **Enable Real-time Log** switch to see the real time log message and level below.

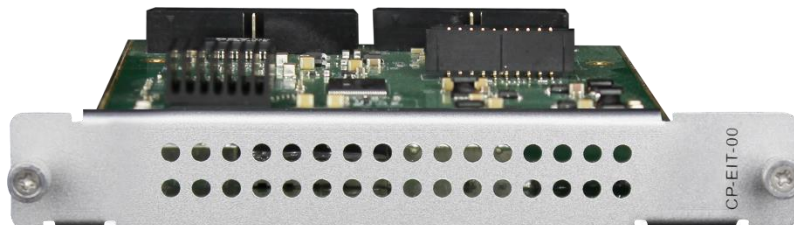


- Click  to clear all log messages on the screen.
- Click  to delete all log information.
- Click  to export log information.
- Click  to filter desired log message.



5.4.3 CP2-EIT-00

CP2-EIT-00 is an EIT multiplex module. It supports up to 32 TS inputs and up to 16 TS outputs. It also supports EIT multiplexing enable control at module level, TS level and program level. Multiple EIT multiplexing modules can run simultaneously in a single chassis.



The GUI of EIT module includes three pages: **Status**, **Module Setting** and **System**.

CP2-EIT-00 >Status

The Status Page displays modules and services with EIT enabled. The indicator in front of each service shows its working status.

Green: EIT is enabled and normal.

Red: EIT is enabled but abnormal. No EIT content from the source or no EIT output.

Gray: EIT is disabled.

CP-EIT-00				
		Status Module Setting System		
EIT Enabled Module		Channel	Service Name	Service ID
4 CM-QAMA-01		CH1	● CNN	32→302
5 CM-QAMB-01		CH2	● Bloomberg ● BBC World	56→303 1→55
		CH3	● Animal Planet	123→309
		CH4	● EuroSports ● CNN ● American idol	12→19 672→77 65→68
				Slot 6: CR-DVBS2CI-00

CP2-EIT-00 >Settings

CP-EIT-00

CP2-EIT-00

[Status](#)
[Module Setting](#)
[System](#)

EIT Enabled Module

Baseboard

3.CM2-ISDBT-R01A

6.CM2-QAMA-R01A

☐ EIT Enable/Disable Control

CH1

Tips

- EIT function is enabled by default on modulator module and disabled on all IP output channels of baseboard.
- EIT Enable/Disable Control is only used when certain service has wrong EIT information or the total output TS with EIT enabled exceed the maximum limit of 16 for each EIT module or an IP output channel requires an EIT output.
- Click checkbox to enable or disable EIT function of relative TS stream or service.

Apply

Here you can select all modules or click checkbox of the module option which you need to make EIT enabled configuration. EIT function is enabled by default on modulator module and disabled on all IP output channels of baseboard. You can check the detailed information in the Tips tab.

- Supports parsing of EIT table with DVB-S/S2/S2X/C/T/T2, ISDB-T, IP input.
- Supports QAM-A/OFDM/IP output EIT table.

Click **Apply** button on the right side to make the changes made take effect.

When there is a CP2-EIT-00 module, you should still start the configuration from receiving modules and output the required services to modulation module or IP output of baseboard, since the EIT module will utilize the created service list to generate a new EIT table accordingly. Here is an example of CR2-DVBS2CI-00 DVB-S/S2 receiver module and CM2-QAMA-R01A modulation module as an example.

Select the corresponding modulation module and a channel for each service. The service will be multiplexed automatically on the modulation module.

[13]NU

☒ 2.CM-QAMA-R01A
 ☐ 3.CM-ISDBT-R01
 ☐ 17.Baseboard

Channel	Multiplex
Channel1	<input checked="" type="checkbox"/> Multiplex
Channel2	<input type="checkbox"/> Multiplex
Channel3	<input type="checkbox"/> Multiplex
Channel4	<input type="checkbox"/> Multiplex
Channel5	<input type="checkbox"/> Multiplex
Channel6	<input type="checkbox"/> Multiplex
Channel7	<input type="checkbox"/> Multiplex
Channel8	<input type="checkbox"/> Multiplex

PID	Type	Enable
448	PCR	<input checked="" type="checkbox"/>
448	StreamType:27-Video(H264)	<input checked="" type="checkbox"/>
449	StreamType:4-Audio	<input checked="" type="checkbox"/>
450	StreamType:4-Audio	<input checked="" type="checkbox"/>
1555	ECM	<input checked="" type="checkbox"/>

After finish the service configuration, you can go to the EIT module to enable or disable the EIT multiplexing for specific services and check the EIT multiplexing status. EIT function is enabled on modulation module and disabled on IP output of baseboard by default.

CP-EIT-00

Status
Module Setting
System

EIT Enabled Module

Baseboard

4.CM-QAMA-01

5.CM-QAMB-01

EIT Enable/Disable Control

- ☒ [CH1]
 - ☒ CNN[123][NetworkID_121][TSID_235]
 - ☒ Fox[123][NetworkID_121][TSID_235]
- ☒ [CH2]
- ☒ [CH3]
- ☒ [CH4]
 - ☒ EuroSports[123][NetworkID_121][TSID_235]
 - ☒ CNN[123][NetworkID_121][TSID_235]
 - ☒ American Idol[51][NetworkID_21][TSID_23]
- ☒ [CH5]
- ☒ [CH6]
- ☒ [CH7]
- ☒ [CH8]

Tips

- EIT function is enabled by default on modulator module and disabled on all IP output channels of baseboard.
- EIT Enable/Disable Control is only used when certain service has wrong EIT information or the total output TS with EIT enabled exceed the maximum limit of 16 for each EIT module or an IP output channel requires an EIT output.
- Click checkbox to enable or disable EIT function of relative TS stream or service.

Apply

All service lists will be obtained automatically from related modulation modules or IP output channels

CP2-EIT-00 >System

On **System** page you can import/export **license**, reboot module, **restore factory default settings** and **manage logs** for trouble-shooting.

CP-EIT-00

CP2-EIT-00 Status Module Setting System

License

Product ID

Import License Browse Upload

Export License Export

SNMP MIB

Export MIB Export

Logs

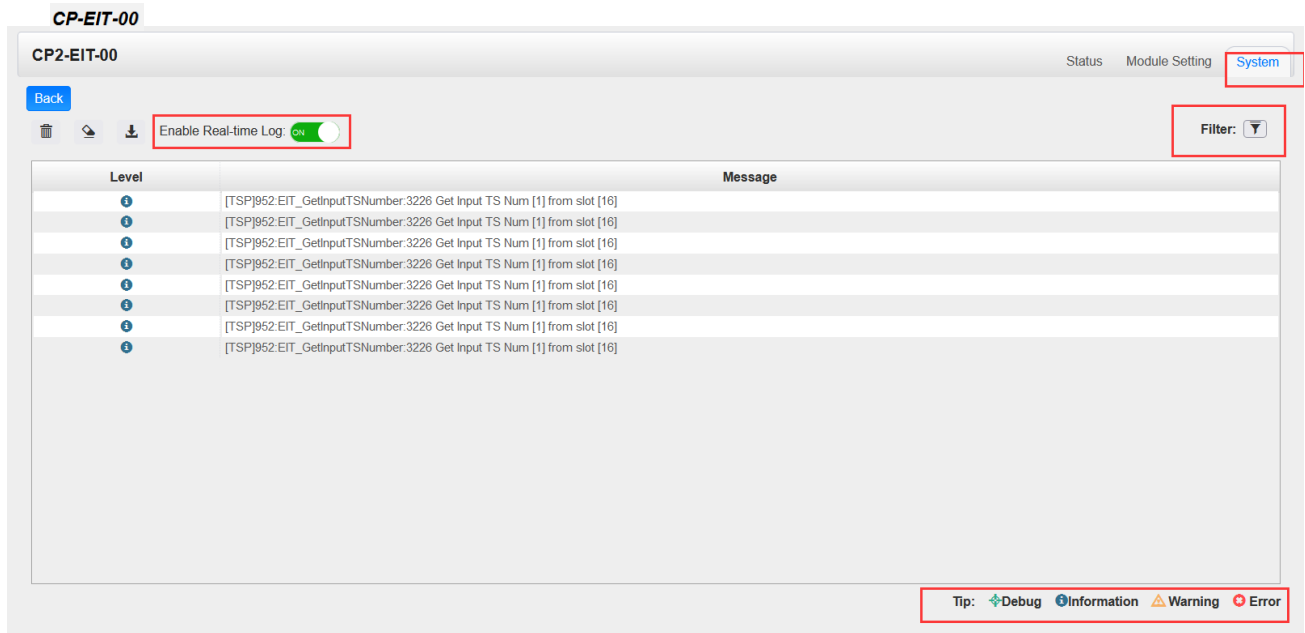
Open





Others

Reboot Reset to Defaults

Log Manage>This page shows the logs of the module. If there are issues encountered on this module, exporting the logs will help R&D team to analyze and fix them.

Turn on **Enable Real-time Log** switch to see the real time log messages and the severity level of each message below.



- Click  to clear all log messages on the screen.
- Click  to delete all log information.
- Click  to export log information.
- Click  to filter desired log messages.

Clicking the filter icon, you can simply select what logs to be included.

Log Filter

Level	
Level	Operation
Error	<input checked="" type="checkbox"/>
Warning	<input checked="" type="checkbox"/>
Information	<input checked="" type="checkbox"/>
Debug	<input type="checkbox"/>

Module List	
Module Name	Operation
SYS	<input checked="" type="checkbox"/>
INIT	<input checked="" type="checkbox"/>
FPGA	<input checked="" type="checkbox"/>
GPIO	<input checked="" type="checkbox"/>
CI	<input checked="" type="checkbox"/>
TEMP	<input checked="" type="checkbox"/>
WDR	<input checked="" type="checkbox"/>

5.4.4 CP2-ASI-00

CP2-ASI-00 module is an ASI module that has 5 bidirectional ASI ports. Each port can be defined as either ASI input port or ASI output port. It supports different TS stream formats of 188/204 bytes packet length and Byte/Packet stream mode with up to 150Mbps TS stream bitrate.



Click **CP2-ASI-00** in the Module List to reach CP2-ASI-00 module page.

CP2-ASI-00 >Status

CP2-ASI-00							
				Status	Basic Setting	ASI Input	ASI Output
				PSIP	System		
Channel	Input/Output	Locked Status	Effective Bitrate(Mbps)	Total Bitrate(Mbps)	Bitrate	TS Analysis	Service List
1.1	Output	--	3.548	36.000	Normal	👁	⌵
1.2	Output	--	0.000	36.000	Normal	👁	⌵
1.3	Output	--	0.000	36.000	Normal	👁	⌵
1.4	Input	Unlocked	0.000	0.000	--	👁	⌵
1.5	Input	Unlocked	0.000	0.000	--	👁	⌵

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

Channel1.1 TS Analysis Reset Counter

Search

PID	Bitrate(Mbps)	Bandwidth(%)	Continuity Count Error	Type	Service
0x0(0)	0.015	0.100	0	PAT	
0x1(1)	0.015	0.100	0	Other	
0x10(16)	0.000	0.000	0	Other	
0x11(17)	0.001	0.007	0	SDT	
0x12(18)	0.001	0.007	0	Other	
0x14(20)	0.000	0.000	0	Other	
0x101(257)	0.015	0.100	0	PMT	LVJ Main
0x102(258)	0.330	2.200	0	Audio	LVJ Main
0x200(512)	13.832	92.213	0	PCR, Video	LVJ Main

Click the icon  to check service information of all the inputs.

Channel : 1.1		Channel : 1.2	
#	Service	#	Service
1	[1] LVJ Main		No Data

You can check program details by clicking the program item.

[1] LVJ Main

Type	PID	Bitrate(Mbps)
PCR	512(0x200)	13.841
PMT	257(0x101)	0.015
StreamType:36-Video(H265)	512(0x200)	13.841
StreamType:15-Audio(MPEG2_AAC)	258(0x102)	0.329

Close

CP2-ASI-00 Status Basic Setting ASI Input ASI Output PSIP System

Channel	Input/Output	Packet Length	Total Bitrate(Mbps)
1.1	Output	188	36
1.2	Output	188	36
1.3	Output	188	36
1.4	Input	--	--
1.5	Input	--	--

Apply

Name	Range
Total Bitrate (Mbps)	0.25 - 180
Packet Length	188/204

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

CP2-ASI-00 >ASI Input

CP2-ASI-00 Status Basic Setting ASI Input ASI Output PSIP System

Channel Select: Channel 1.4 Scanning Time(ms): 1000 Program Scan

Service Name	Destination	Destination Setting
No Data		


Apply

Clear Config

You can route a whole stream or a service(s) from the input channel toward the available output channels (IP or RF). Two types of routing are available.

To use **Bypass mode**

In this mode, you can route a whole input transport stream towards an IP or RF output which will be occupied only by this stream. Any attempt of routing other stream/service towards this channel will be

an error. This mode can only be set by clicking the icon  on the TS.

To use **Multiplex mode**

This mode allows the administrator to perform the following operations:

1. Route a single service towards an output channel to create SPTS.
2. Route services towards a single output channel to create MPTS.

3. Route service(s) AND stream/s from multiple channels towards a single output channel to create MPTS.

CP2-ASI-00 >ASI Output

CP2-ASI-00

Status Basic Setting ASI Input **ASI Output** PSIP System

Click "Apply" after modifying your parameters to save the configuration.

[1.1] TS

1. Program4 17.1.1

[1.1] TS

Original Network ID 0

TS ID 0

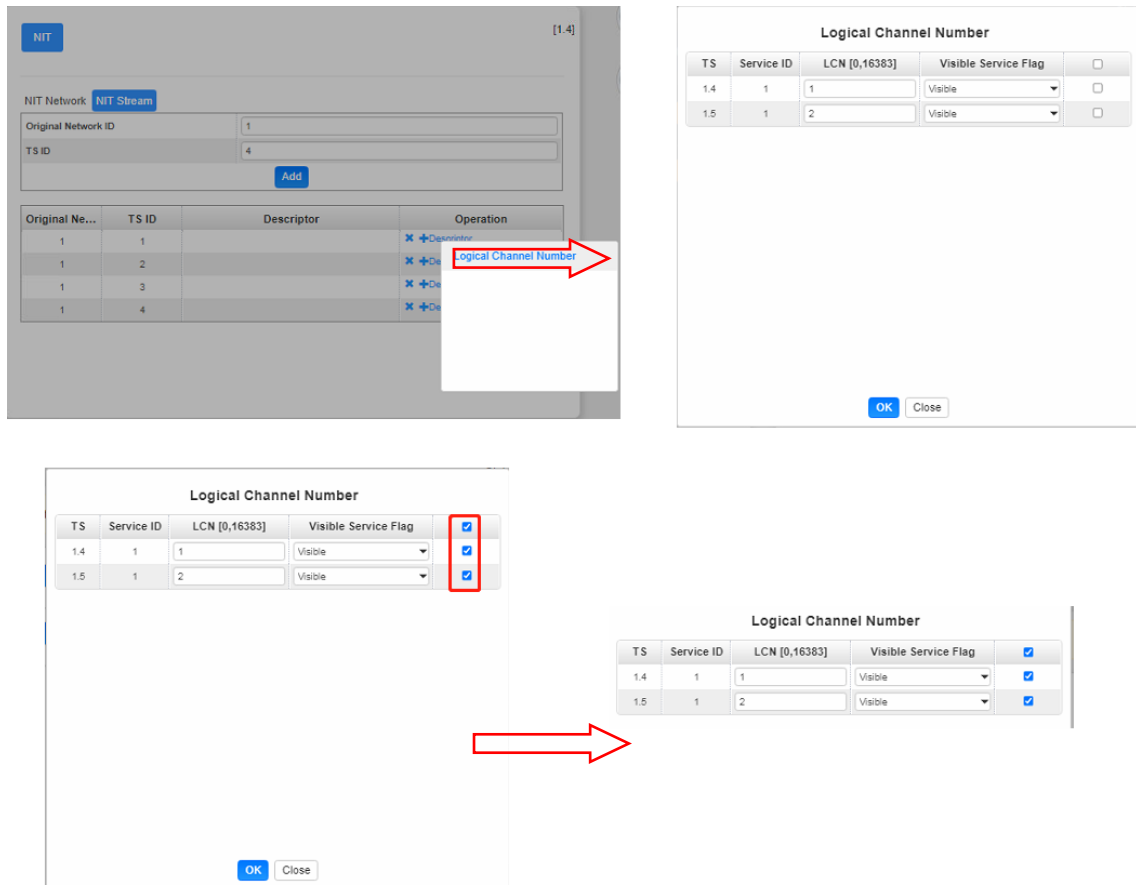
NO.	Service ID	Service Name	Service Provider
1	35	Program4	Program4

OK Cancel

Apply

Clear Config

- TS setting: Please refer to IP Output service configuration on baseboard IP output.
- LCN setting: You need to add NIT streams of all frequencies to the base TS (frequency), which is for your STB to automatically search and identify all the TS (frequencies) LCN information.
 - Check or reset Original Network ID and TS ID of each TS (frequency). Each TS should have different IDs.
 - 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 for this TS (frequency).
 - Click **+Descriptor** then **LCN Descriptor** to check all the programs which are contained in this frequency. Then set programs LCN.



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

CP2-ASI-00>PSIP

Here in PSIP tab, the user can insert different tables like PAT, PMT, SDT, NIT, and CAT.

CP2-ASI-00

Status Basic Setting ASI Input ASI Output **PSIP** System

Output Channel List

Output Channel	<input type="checkbox"/> Select All
1.1	<input type="checkbox"/>
1.2	<input type="checkbox"/>
1.3	<input type="checkbox"/>

Output Channel [1.1] >> PSIP

☒ PAT Insert
☒ PMT Insert
☒ SDT Insert
☐ NIT Insert
☒ CAT Insert

OK

CP2-ASI-00>System

CP2-ASI-00

Status Basic Setting ASI Input ASI Output PSIP **System**

Program Auto Scan

Enable ☐ Set

License

Product ID DK21145490056

Import License Browse Upload

Export License Export

SNMP MIB

Export MIB Export

Logs

Open

Others

Reboot Reset to Defaults

On **System** page you can choose to:

Import/Export license

Export SNMP/MIB

Manage logs

Reboot the unit

Restore the unit to factory defaults

5.4.5 CP2-IP-00

CP-IP-00 is an IP module that supports multiple network protocols such as UDP/RTP/HLS/RTSP/SRT/Zixi/RIST. The module has 1 internal GbE port, 3 external GbE ports, 1 USB port and 1 Mini-HDMI port. The GbE ports will be used for IP stream input and output while USB ports and Mini-HDMI port will be used for OS installation. With CP2-IP-00 module, you are able to output any program streams via different network protocols or receive any network streams and convert to RF signal for further transmission.



CP2-IP-00 >Status



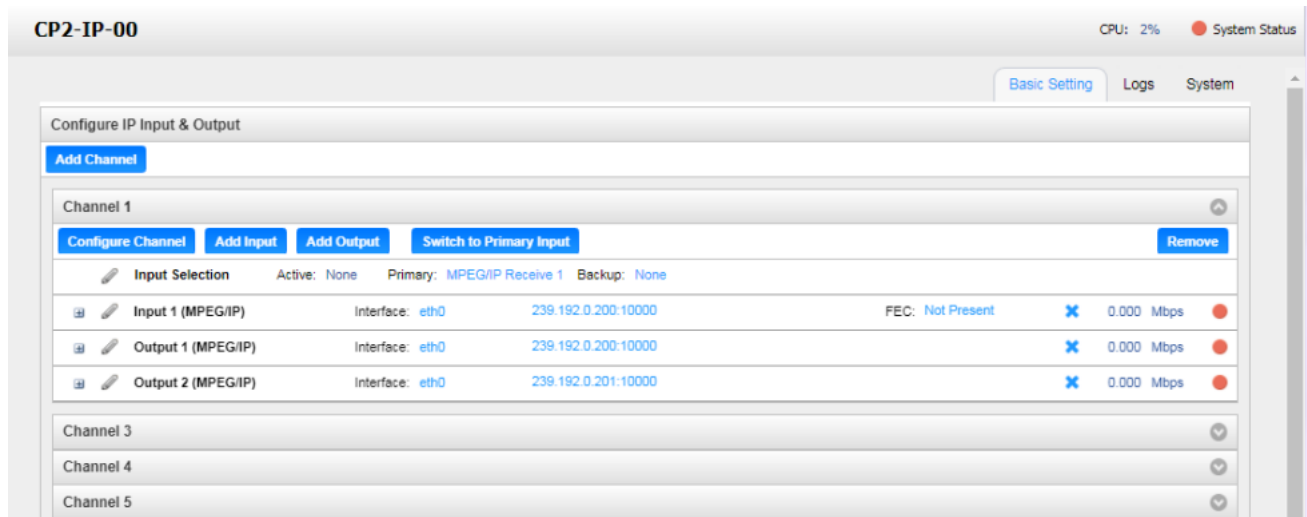
The CPU status (**CPU: 1%**) is shown as a percentage. It reflects the amount of processing capacity that is currently being used.

The System Status (**System Status**) which reports the current status of the system. Green indicates the system operation is good while Red indicates there is some detail about the system that is currently in Alarm condition. A Red condition prompts the user to seek further information about the Alarm condition by viewing the Logs tab.

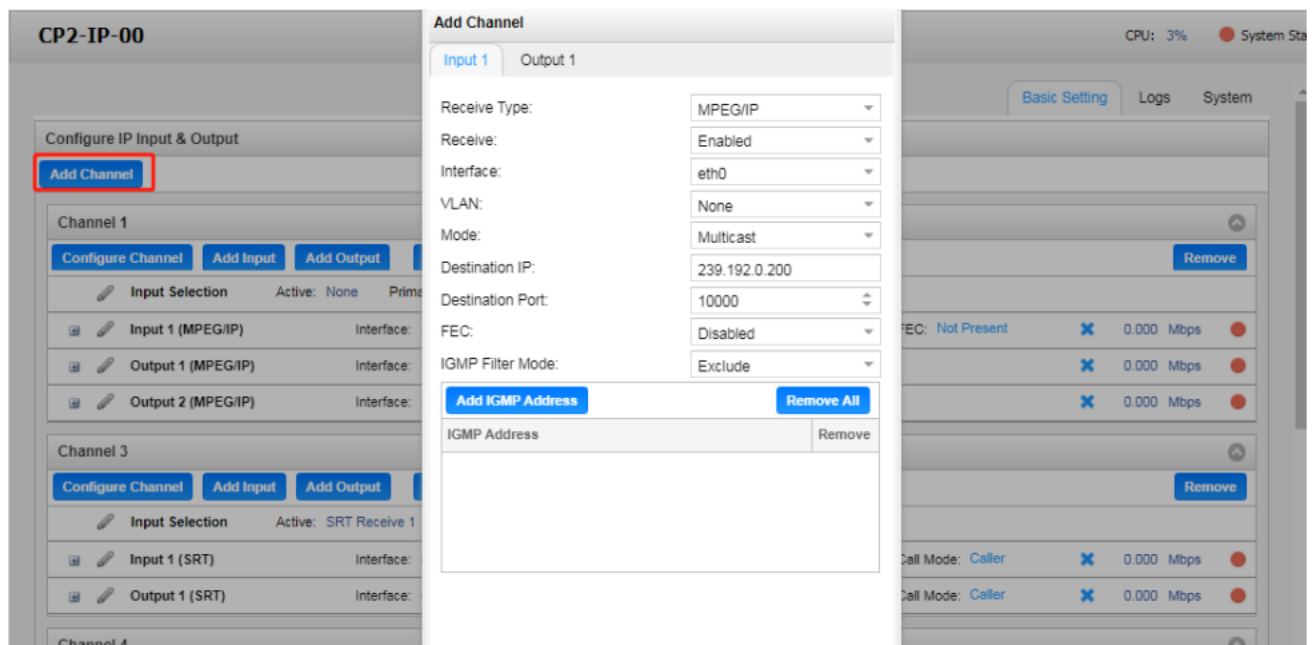
CP2-IP-00 >Basic Settings


The Basic Settings Tab is used to configure the video processing details. This will include signal direction (transmit, receive or both), addresses to be received or delivered to and labeling of the gateways to help the user distinguish gateways from one another.

The number of available gateways will depend upon the license key that is applied.



Adding a Channel



Click on the  button in the upper left area of the page to create a new or additional gateway. This will open a configuration window and allow the user to define the 'Alias' or label for the gateway; the receive and/or transmit addresses

The configuration window that opens will provide the user with two tabs: Input and Output.

The Input tab(s) is where the user will define the details for the stream to be received and any IGMP filtering. The Output tab(s) will define the details for the stream(s) to be sent out of this gateway.

Input Settings

This menu is used to configure IP receive settings for MPEG/IP, SRT, Zixi, HLS, Seamless RTP (SMPTE 2022-7 for Hitless Switching) and RIST inputs. Based upon the type of protocol the user selects, the available configuration settings will adapt to provide the best fit.

Three settings that are common to all protocols are "Receive", which can be set to Enabled or Disabled, "Interface", which can be set to eth0, eth1, eth2 or Internal (options may change depending on the number of interfaces and user defined interface name) and "VLAN", which will filter incoming streams for VLAN tags.

Add Channel

Input 1 Output 1

Receive Type:

MPEG/IP

Receive:

Enabled

Interface:

eth0

VLAN:

None

Mode:

Multicast

Destination IP:

239.192.0.200

Destination Port:

10000

FEC:

Disabled

IGMP Filter Mode:

Exclude

Add IGMP Address

Remove All

IGMP Address	Remove
--------------	--------

Apply

Cancel

Universal Input Settings

Note: when the “Receive” option is enabled for a given protocol (MPEG/IP, SRT, Zixi, HLS, Seamless RTP or RIST), the gateway will be capable of receiving incoming bitrate for that protocol. When using multiple receive instances on the same gateway, the “Receive” setting will not engage the newly

*configured receive instance as the active input by itself. To configure the additional receive as the active input, please review “**Configuring Active Inputs and Failover**”*

MPEG/IP Receive Settings

The figure below shows the options available when the “Receive Type” is set to “MPEG/IP”.

Add Channel

Input 1

Output 1

Receive Type:

MPEG/IP

Receive:

Enabled

Interface:

eth0

VLAN:

None

Mode:

Multicast

Destination IP:

239.192.0.200

Destination Port:

10000

FEC:

Disabled

IGMP Filter Mode:

Exclude

Add IGMP Address

Remove All

IGMP Address	Remove
--------------	--------



Apply

Cancel

MPEG/IP Receive Settings

Settings	Range	Description
----------	-------	-------------

Mode	Multicast	Multicast setting allows the unit to receive multicast streams. Multicast streams originate from the IP range 224.0.0.0 – 239.255.255.255. Unicast allows the unit to receive unicast streams. Unicast streams originate directly from a source device.
	Unicast	
Destination IP	224.0.0.0 – 239.255.255.255	This setting is only available when receiving a multicast stream. This is the address the unit will attempt to join.
Destination Port	0 - 65535	This is the UDP port the source device is sending to. This is the only setting required to receive a unicast stream but is also required for multicast.
FEC	Enabled	Sets the port to accept FEC on the incoming MPEG/IP stream
	Disabled	
IGMP Filter Mode	Exclude	Used on networks supporting IGMPv3. If this setting is set to Exclude, any streams originating from the user defined IP addresses will be included in the IGMP messages and the network will not forward these streams to the device. If this setting is set to Include, any streams originating from the user defined IP addresses will be included in the IGMP messages and the network will only forward these streams to the device.
	Include	

Click the  icon by the MPEG/IP input to view information about the incoming stream. Clicking the  icon will hide the IP statistics.

Input 1 (MPEG/IP)

Interface: eth0

239.192.0.200:10000

FEC: Not Present

0.000 Mbps

Status

Sync Status: Unlocked

Packets Per Frame: 0

Encapsulation: N/A

FEC Rows: 0

FEC Columns: 0

Statistics

Out Of Order Packets: 0

Duplicate Packets: 0

Rtp Lost Packets: 0

Discontinuity: 0

FEC Corrected Packets: 0

FEC Uncorrected Packets: 0

FEC Corrected Packets / Period: 0

Last Reset: 2012-01-05 06:19:56

Reset Counters

Configuration

VLAN: None

Mode: Multicast

FEC: Disabled

IGMP Mode: Exclude

IGMP Filter List

Unsolicted IGMP Report

MPEG/IP Receive Statistics

The **Reset Counters** button is used to reset all the statistics for incoming IP packets and establish a new point of reference.

SRT Receive Settings

The figure below shows the options available when the “Receive Type” is set to “SRT”.

Input 1

Output 1

Receive Type:

SRT

Receive:

Enabled

Interface:

eth0

VLAN:

None

Call Mode:

Caller

Remote Host:

1.0.0.1

Remote Port:

10000

Local Port Mode:

Auto

Local Port:

10000

Discovery Timeout (seconds):

3

Latency (ms):

20

Passphrase:



Apply

Cancel

SRT Receive Settings

Settings	Range	Description
Call Mode	Caller	Defines the 'handshake' mechanism to be used when establishing connection.
	Listener	
	Rendezvous	

Remote Host	xxx.xxx.xxx.xxx	Defines the IP address of the stream on the remote device
Remote Port	0-65535	Defines the port of the stream on the remote devices
Local Port Mode	Auto	In Auto mode, the local port number will be assigned automatically
	Manual	In Manual mode, the local port number will be defined by the user
Local Port	1-65535	Defines the local port number
Discovery Timeout (seconds)	1 – 100, use 0 for infinite	Defines the length of time to wait for the stream to be discovered
Latency (ms)	1-8000	Defines buffer size in milliseconds
Passphrase	10 – 79 characters	Defines the encryption passphrase

Click the  icon by the SRT input to view information about the incoming stream. Clicking the  icon will hide the SRT receive statistics.

Channel 2

Configure Channel
Add Input
Add Output
Switch to Backup Input
Remove

Input Selection
Active: SRT Receive 1
Primary: SRT Receive 1
Backup: None

Input 1 (SRT)
Interface: eth0
255.255.255.255:65535
Call Mode: Caller
0.000 Mbps

Status
Connection State: Invalid
Up Time: 00:00:00:00
Local Port: 0
Encryption Mode: Disabled
Decryption State: Unsecured
Round Trip Time (ms): 0
Buffer Size (ms): 0
Latency (ms): 0
Link Bandwidth: 0.000 Mbps
TS Packets Per SRT Packet: 0

Statistics
Reconnections: 0
Received Packets: 0
Received Bytes: 0 Bytes
Lost Packets: 0
Lost Bytes: 0 Bytes
Skipped Packets: 0
Skipped Bytes: 0 Bytes
Last Reset: 2021-04-26 01:23:54
Reset Counters

Configuration
Discovery Timeout (seconds): 3
VLAN: None

SRT Receive Statistics

The **Reset Counters** button is used to reset all the statistics for incoming SRT packets and establish a new point of reference.

Zixi Receive Settings

The figure below shows the options available when the “Receive Type” is set to “Zixi”.



The screenshot shows a configuration window titled "Input 1" and "Output 1". The "Input 1" tab is active. The settings are as follows:

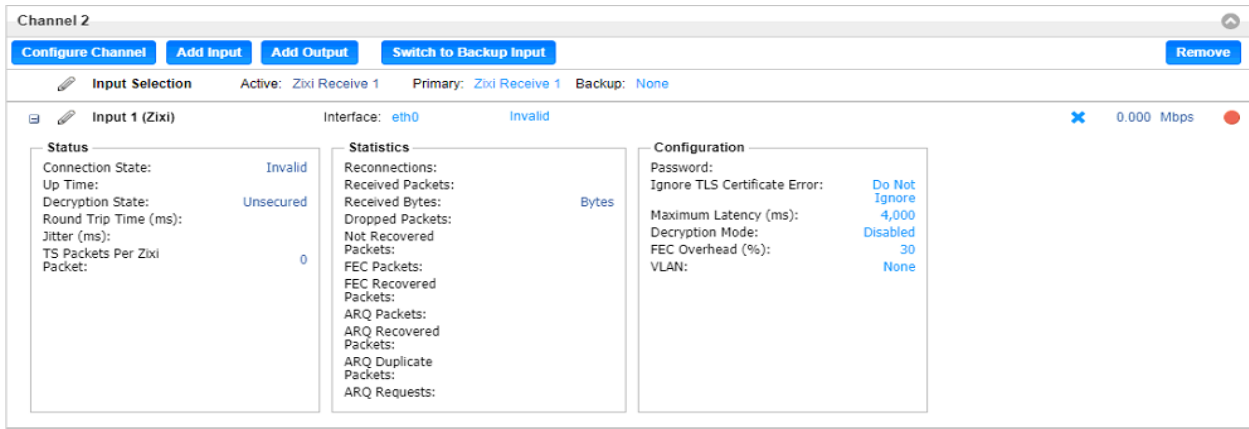
Setting	Value
Receive Type:	Zixi
Receive:	Enabled
Interface:	eth0
VLAN:	None
Remote Host:	
Alternate Remote Host:	
Remote Port:	2077
Stream ID:	
Remote ID:	
Password:	
Ignore TLS Certificate Error:	Do Not Ignore
Maximum Latency (ms):	4000
Decryption Mode:	Disabled
Decryption Key:	*****
FEC Overhead (%):	30

At the bottom right, there are two buttons: "Apply" and "Cancel".

Zixi Receive Settings

Settings	Range	Description
Remote Host	xxx.xxx.xxx.xxx Domain Name	Defines the host of the remote broadcast using IP address or domain name
Alternate Remote Host	xxx.xxx.xxx.xxx Domain Name	Defines the alternate host of the remote broadcast using IP address or domain name
Remote Port	0 – 65535	Defines the port of the stream on the remote device
Stream ID	User entry	Defines the Zixi stream ID to be received
Remote ID	User entry	Specify the Zixi Broadcaster or Feeder ID that will push the stream
Password	User entry	Provides the password to allow specific Stream ID entered to be received
Ignore TSL certificate Error	Do Not Ignore Ignore	Defines whether to cease or continue processing if TLS Certificate Error is signaled
Maximum Latency (ms)	30 – 10,000	Defines the maximum latency or buffer size (in milliseconds)
Decryption Mode	Disabled AES-128 AES-192 AES-256 Automatic	Defines if a decryption of the received signal is needed, which decryption standard to use, or if the CP2-IP-00 will automatically detect these
Decryption Key	User entry	Provides the key to allow signal processing if decryption is to be done
FEC Overhead (%)	0 – 50	Defines the amount of static overhead to be used to accommodate FEC


Click the  icon by the Zixi input to view information about the incoming stream. Clicking the  icon will hide the Zixi receive statistics.



The screenshot shows the 'Channel 2' configuration window. At the top, there are buttons for 'Configure Channel', 'Add Input', 'Add Output', 'Switch to Backup Input', and 'Remove'. Below these, the 'Input Selection' section shows 'Active: Zixi Receive 1', 'Primary: Zixi Receive 1', and 'Backup: None'. The main area is titled 'Input 1 (Zixi)' and shows the 'Interface: eth0' with a status of 'Invalid' and a speed of '0.000 Mbps'. The interface is divided into three panels: 'Status', 'Statistics', and 'Configuration'.

Status	Statistics	Configuration
Connection State: Invalid	Reconnections:	Password:
Up Time:	Received Packets:	Ignore TLS Certificate Error: Do Not Ignore
Decryption State: Unsecured	Received Bytes: Bytes	Maximum Latency (ms): 4,000
Round Trip Time (ms):	Dropped Packets:	Decryption Mode: Disabled
Jitter (ms):	Not Recovered Packets:	FEC Overhead (%): 30
TS Packets Per Zixi Packet: 0	FEC Packets:	VLAN: None
	FEC Recovered Packets:	
	ARQ Packets:	
	ARQ Recovered Packets:	
	ARQ Duplicate Packets:	
	ARQ Requests:	

Zixi Receive Statistics

The  button is used to reset all the statistics for incoming Zixi packets and establish a new point of reference.

HLS Receive Settings

The figure below shows the options available when the “Receive Type” is set to “HLS”

Configure

Input 1

Output 1

Receive Type:

HLS

Receive:

Enabled

Interface:

eth2

VLAN:

None

HLS Mode:

Pull

HLS Network Location:

http://playertest.longtailvideo

Apply and Refresh

Profile Name	Bandwidth

Decryption Mode:

Disabled

Decryption Key:

Discovery Timeout (seconds):

3

Apply

Cancel

HLS Receive Settings

Settings	Range	Description
HLS Mode	Push	Determines if the HLS receives through a local or network location
	Pull	

HLS Network Location	User Entry	Defines address of the HLS stream to be received
Profile / Bandwidth	User Selected	After entering an HLS network location and clicking “Apply and Refresh”, a list of available profiles will be displayed
Decryption Mode	Disabled AES 128	Defines if a decryption of the received signal is needed, AES 128 standard
Decryption Key	User Entry	Provides the key to allow signal processing if decryption is to be done
Discovery Timeout (seconds)	1 – 100, use 0 for infinite	Defines the length of time to wait for the stream to be discovered

Seamless RTP Receive Settings

The figure below shows the options available when the “Receive Type” is set to “Seamless RTP”.

Configure

Input 1

Output 1

Receive Type:

Seamless RTP

Receive:

Enabled

Path 1 Interface:

eth0

VLAN:

None

Path 1 Destination IP:

239.192.0.200

Path 1 Destination Port:

10000

Path 1 IGMP Filter Mode:

Exclude

Add IGMP Address

Remove All

IGMP Address

Remove

Path 2 Interface:

eth0

VLAN:

None

Path 2 Destination IP:

239.192.0.200

Path 2 Destination Port:

10000

Path 2 IGMP Filter Mode:

Exclude

Add IGMP Address

Remove All

IGMP Address

Remove


Apply

Cancel

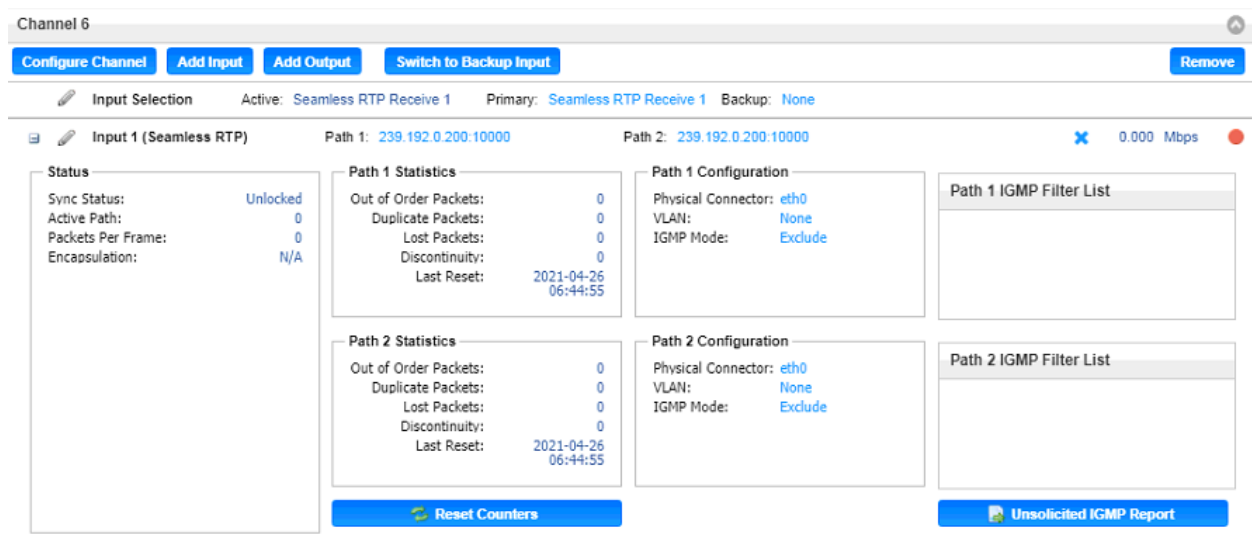
Seamless RTP Receive Settings

Settings	Range	Description
Path 1 or 2 Destination IP	xxx.xxx.xxx.xxx	Defines the address of the first or second path to be received

Path 1 or 2 Destination Port	1 - 65535	Defines the port of the first or second path to be received
Path 1 or 2 IGMP Filter Mode	Include, Exclude	Defines filter to include or exclude addresses contained in IGMP list box
Path 1 or 2 IGMP List Box	The list box for each path will comprise the addresses entered by the user, and define the sources input signals can be accepted from (Include), or sources that input signals are not to be accepted from (Exclude)	


Click the  icon by the Seamless RTSP input to view information about the incoming stream.

Clicking the  icon will hide the Seamless RTSP receive statistics.



The screenshot displays the 'Channel 6' configuration window. At the top, there are buttons for 'Configure Channel', 'Add Input', 'Add Output', 'Switch to Backup Input', and 'Remove'. Below these, the 'Input Selection' section shows 'Active: Seamless RTP Receive 1', 'Primary: Seamless RTP Receive 1', and 'Backup: None'. The main area is titled 'Input 1 (Seamless RTP)' and shows two paths: 'Path 1: 239.192.0.200:10000' and 'Path 2: 239.192.0.200:10000'. The status bar indicates '0.000 Mbps'. The interface is divided into several panels: 'Status' (Sync Status: Unlocked, Active Path: 0, Packets Per Frame: 0, Encapsulation: N/A), 'Path 1 Statistics' (Out of Order Packets: 0, Duplicate Packets: 0, Lost Packets: 0, Discontinuity: 0, Last Reset: 2021-04-26 06:44:55), 'Path 1 Configuration' (Physical Connector: eth0, VLAN: None, IGMP Mode: Exclude), 'Path 1 IGMP Filter List', 'Path 2 Statistics' (Out of Order Packets: 0, Duplicate Packets: 0, Lost Packets: 0, Discontinuity: 0, Last Reset: 2021-04-26 06:44:55), 'Path 2 Configuration' (Physical Connector: eth0, VLAN: None, IGMP Mode: Exclude), and 'Path 2 IGMP Filter List'. At the bottom, there are buttons for 'Reset Counters' and 'Unsolicited IGMP Report'.

Seamless RTSP Receive Statistics

The  button is used to reset all the statistics for incoming Seamless RTSP and establish a new point of reference.

RIST Receive Settings

The figure below shows the options available when the “Receive Type” is set to “RIST”.



The screenshot shows a configuration window titled "Configure" with two tabs: "Input 1" (selected) and "Output 1". The "Input 1" tab contains the following settings:

Setting	Value
Receive Type:	RIST
Receive:	Enabled
Interface:	eth0
VLAN:	None
Profile Mode:	Simple
Mode:	Unicast
Destination IP:	239.192.0.200
Destination Port:	10000
Latency (ms):	1000
FEC:	Disabled
Decryption Mode:	Disabled
Passphrase:	*****

At the bottom right of the window are two buttons: "Apply" and "Cancel".

RIST Receive Settings

Settings	Range	Description
Profile Mode	Simple Main	Specifies the RIST profile mode by which to receive the incoming stream
Mode	Unicast Multicast	Multicast setting allows the unit to receive multicast streams. Multicast streams originate from the IP range 224.0.0.0 – 239.255.255.255. Unicast allows the unit to receive unicast streams. Unicast streams originate directly from a source device
Destination IP	xxx.xxx.xxx.xxx	Defines the address of the stream to be received
Destination Port	1026 – 65534	Defines the port of the stream to be received. When using Simple Profile Mode, only even numbers are valid.
Latency (ms)	1 – 8000	Defines buffer size in milliseconds
Decryption Mode	Disabled DTLS PSK	Specifies if the incoming RIST stream needs to be decrypted. Can only be enabled when using Main Profile Mode. DTLS Decryption will require public and private keys as configured
Passphrase	User entry	Provides the key to allow signal processing if PSK decryption is to be done

Click the  icon by the RIST input to view information about the incoming stream. Clicking the  icon will hide the RIST receive statistics.

Channel 5

[Configure Channel](#)
[Add Input](#)
[Add Output](#)
[Switch to Backup Input](#)
[Remove](#)

Input Selection Active: RIST Receive 1 Primary: RIST Receive 1 Backup: None

Input 1 (RIST) Interface: eth0 255.255.255.255/65535 0.000 Mbps

Status	Statistics	Configuration
Connection State: Invalid	Reconnections: 0	VLAN: None
Up Time: 00:00:00:00	Received Packets: 0	Profile Mode: Simple
Decryption State: Unsecured	Received Bytes: 0 Bytes	Stream Mode: Unicast
Round Trip Time (ms): 0	Lost Packets: 0	Decryption Mode: Disabled
Buffer Size (ms): 0	FEC Uncorrected Packets: 0	FEC State: Disabled
Jitter (ms): 0	FEC Recovered Packets: 0	
Latency (ms): 0	RTCP NAKs: 0	
Link Bandwidth: 0.000 Mbps	RTCP Recovered Packets: 0	
FEC Cols: 0		
FEC Rows: 0		
TS Packets per RIST Packet: 0		
	Last Reset: 2021-04-26 01:24:56	

Reset Counters

RIST Receive Statistics

The [Reset Counters](#) button is used to reset all the statistics for incoming RIST packets and establish a new point of reference.

Output Settings

This menu is used to configure IP transmit settings for MPEG/IP, SRT, Zixi and RIST. The output available configuration options will change based on the protocol the user selects for the “Transmit Type” field.

There are three settings common to all protocols: “Transmit”, which can be set to Enabled or Disabled, “Interface”, which can be set to eth0 or eth1 (options may change depending on number of interfaces and user defined interface name) and “VLAN”, which will add VLAN tags to outbound streams.

Configure

Input 1

Output 1

Transmit Type:	MPEG/IP
Transmit:	Enabled
Interface:	eth0
VLAN:	None
Destination IP:	239.192.0.201
Destination Port:	10000
Source IP Mode:	Auto
Source IP:	0.0.0.0
Source Port:	3020
Source MAC Mode:	Auto
Source MAC:	00:00:00:00:00:00
TS Packets Mode:	Auto
TS Packets Per IP Packet:	7
Encapsulation:	UDP

Apply

Cancel

Universal Transmit Settings

MPEG/IP Output Settings

The figure shows the options available when the “Transmit Type” is set to “MPEG/IP”.

Setting	Value
Transmit Type:	MPEG/IP
Transmit:	Enabled
Interface:	eth0
VLAN:	None
Destination IP:	239.192.0.200
Destination Port:	10000
Source IP Mode:	Auto
Source IP:	0.0.0.0
Source Port:	3020
Source MAC Mode:	Auto
Source MAC:	00:00:00:00:00:00
TS Packets Mode:	Auto
TS Packets Per IP Packet:	7
Encapsulation:	UDP

MPEG/IP Output Settings

Settings	Range	Description
Destination IP	224.0.0.0 – 239.255.255.255	This setting is only available when receiving a multicast stream. This is the address the unit will attempt to join

Destination Port	0 – 65535	This is the UDP port the source device is sending to. This is the only setting required to receive a unicast stream but is also required for multicast
Source IP Mode	Auto Manual	When set to <i>Auto</i> , the source IP address on the output stream will match the corresponding local interface. When set to <i>Manual</i> , a user entered address can be assigned to the output stream
Source IP	xxx.xxx.xxx.xxx	Defines the Source IP address to be assigned to the output stream
Source Port	0 – 65535	Defines the source IP port to be assigned to the output stream
Source MAC Mode	Auto Manual	When set to <i>Auto</i> , the source MAC address of the output stream will match the corresponding local interface. When set to <i>Manual</i> , a user entered address can be assigned to the output stream
Source MAC	xx:xx:xx:xx:xx:xx	The user defined MAC for when using Manual MAC Mode
TS Packets Mode	Auto Manual	In <i>Auto</i> mode, the source will define the number of TS packets per IP packet. In <i>Manual</i> mode, the user will define the number of TS packets per IP packet
TS Packets per IP Packet	1-7	The number of TS packets that are contained with a single IP packet. Default is 7. Lowering this value below default increases network overhead
Encapsulation	UDP RTP	Sets the Encapsulation to UDP or RTP

SRT Output Settings



The figure below shows the options available when the “Transmit Type” is set to “SRT”.

Setting	Value
Transmit Type:	SRT
Transmit:	Enabled
Interface:	eth0
VLAN:	None
Call Mode:	Caller
Remote Host:	1.0.0.1
Remote Port:	10000
Local Port Mode:	Auto
Local Port:	10000
Discovery Timeout (seconds):	3
Latency (ms):	125
Bandwidth Overhead (%):	25
TS Packets Mode:	Auto
TS Packets Per SRT Packet:	7
Time To Live (hops):	64
Type Of Service:	0
Encryption Mode:	Disabled
Passphrase:	*****

SRT Output Settings

Settings	Range	Description
Call Mode	Caller	Defines the 'handshake' mechanism to be used when establishing connection.
	Listener	
	Rendezvous	
Remote Host	xxx.xxx.xxx.xxx	Defines the IP address of the stream on

		the remote device
Remote Port	0 – 65535	Defines the port of the stream on the remote devices
Local Port Mode	Auto Manual	In <i>Auto</i> mode, the local port number will be assigned automatically In <i>Manual</i> mode, the local port number will be defined by the user
Local Port	1 – 65535	Defines the local port number
Discovery Time (seconds)	1 – 100, use 0 for infinite	Defines the length of time to wait for the stream to be discovered
Latency (ms)	1 – 8000	Defines buffer size in milliseconds
Bandwidth Overhead (%)	0 – 50	Defines the amount of bandwidth overhead to allow for
TS Packets Mode	Auto Manual	In <i>Auto</i> mode, the source will define the number of TS packets per SRT packet. In <i>Manual</i> mode, the user will define the number of TS packets per SRT packet
TS Packets per SRT Packet	1 – 7	Defines the number of TS packets per SRT packet when mode is <i>Manual</i>
Time To Live (hops)	1 – 254	Defines the number of network devices the transmission is allowed to pass through
Type of Service	0 – 255	Specifies the desired Quality of Service (QoS). This value will be assigned to the Type of Service field of the IP Header for the outgoing stream.
Encryption Mode	Disabled AES-128 AES-256	Defines which encryption standard to use or if the CP2-IP-00 will automatically detect this.
Passphrase	10 – 79 characters	Defines the encryption passphrase

Click the  icon by the SRT input to view information about the incoming stream. Clicking the  icon will hide the SRT output statistics.

Channel 3

Configure Channel
Add Input
Add Output
Switch to Backup Input
Remove

Input Selection
Active: SRT Receive 1
Primary: SRT Receive 1
Backup: None


Input Selection	Interface	Address	Call Mode	Bandwidth	Status
Input 1 (SRT)	eth0	255.255.255.255:65535	Caller	0.000 Mbps	
Output 1 (SRT)	eth0	Connecting to 1.0.0.1:10000	Caller	0.000 Mbps	

Status
Connection State: Connecting
Up Time: 00:00:00:00
Local Port: 0
Encryption Mode: Disabled
Remote Decryption State: Unsecured
Round Trip Time (ms): 0
Buffer Size (ms): 0
Latency (ms): 0
Maximum Bandwidth: 0.000 Mbps
Path Maximum Bandwidth: 0.000 Mbps

Statistics
Reconnections: 9
Sent Packets: 0
Sent Bytes: 0 Bytes
Resent Packets: 0
Resent Bytes: 0 Bytes
Dropped Packets: 0
Dropped Bytes: 0 Bytes
Received ACKs: 0
Received NAKs: 0
Last Reset: 2021-04-26 01:24:12
Reset Counters

Configuration
Discovery Timeout (seconds): 3
Bandwidth Overhead (%): 25
TS Packets Mode: Auto
TS Packets: 7
Time To Live (hops): 64
Type Of Service: 0x0
Encryption Mode: Disabled
VLAN: None

SRT Output Statistics

The  button is used to reset all the statistics for incoming SRT packets and establish a new point of reference.

Zixi Output Settings

The figure below shows the options available when the “Transmit Type” is set to “Zixi”.

Input 1

Output 1

Transmit Type:

Zixi

Transmit:

Enabled

Interface:

eth0

VLAN:

None

Remote Host:

Alternate Remote Host:

Remote Port:

2088

Stream ID:

Password:

Ignore TLS Certificate Error:

Do Not Ignore

Maximum Latency (ms):

4000

Encryption Mode:

Disabled

Encryption Key:

Maximum Bitrate (Mbps):

8

FEC Overhead (%):

30

TS Packets Mode:

Auto

TS Packets Per Zixi Packet:

7

Bonding Mode:

Disabled

Interface ↑	Bandwidth Limit(Mbps)	Priority
Internal	8	Primary
eth0	8	Primary
eth1	8	Primary
eth2	8	Primary

Apply

Cancel

Zixi Output Settings

Settings	Range	Description
Remote Host	xxx.xxx.xxx.xxx Domain Name	Defines the host of the remote broadcast using an IP address or domain name
Alternate Remote Host	xxx.xxx.xxx.xxx Domain Name	Defines the alternate host of the remote broadcast using an IP address or domain name
Remote Port	0 – 65535	Defines the port of the stream on the remote device

Stream ID	User entry	Defines the Zixi stream ID to be transmitted
Password	User entry	Provides the password to allow specific Stream ID entered to be received
Ignore TLS Certificate Error	Do Not Ignore Ignore	Defines whether to cease or continue processing if TLS Certificate Error is signaled
Maximum Latency (ms)	30 – 10,000	Defines the maximum latency or buffer size (in milliseconds)
Encryption Mode	Disabled AES-128 AES-192 AES-256 Automatic	Defines which encryption standard to use or if the CP2-IP-00 will automatically detect this
Encryption Key	User entry	The key to be used by downstream decryption devices
FEC Overhead (%)	0 – 50	Defines the amount of static overhead to be used to accommodate FEC
TS Packets Mode	Auto Manual	In <i>Auto</i> mode, the source will define the number of TS packets per Zixi packet. In <i>Manual</i> mode, the user will define the number of TS packets per Zixi packet.
TS Packets per Zixi Packet	1 – 7	User defined value for when <i>Manual</i> mode is enabled.
Bonding Mode	Disabled All interfaces One Interface Any Interface	Specifies which interfaces, if any, are to be set to bonding mode.

Interface Bonding Box	Available for One Interface Mode	Allows user to define parameters and details about the port(s) when bonding
	Any Interface Mode	



Zixi transmissions can be configured to use multiple interfaces simultaneously (Port Bonding). By defining the maximum bitrate for that interface, the unit will only send up to that rate on that interface. A Primary and Backup interface may also be chosen if redundant links should be used.

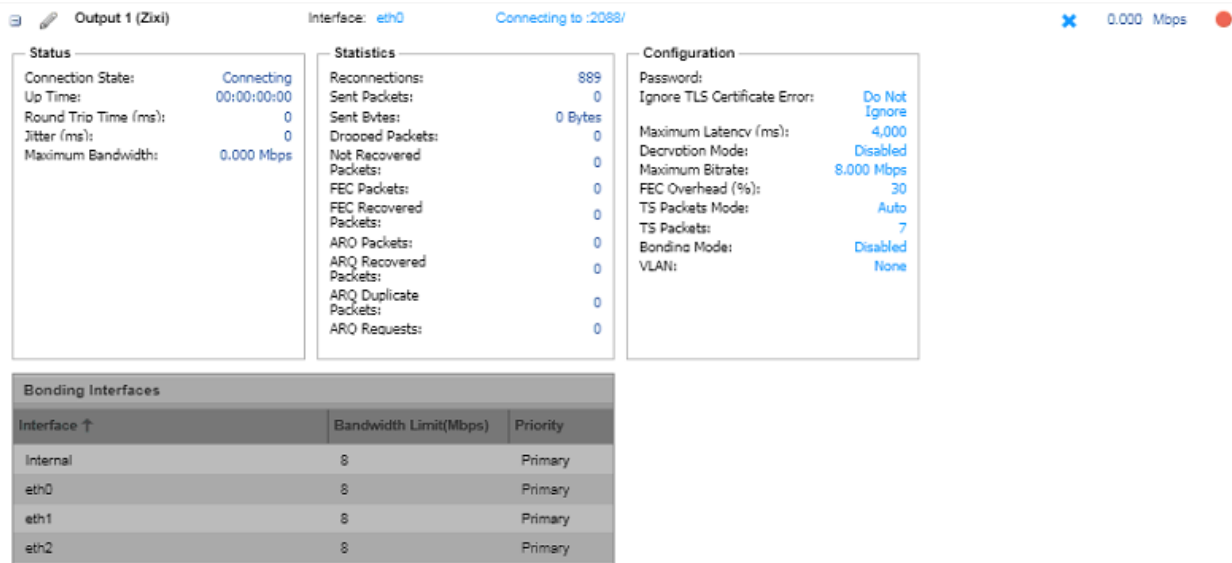
Interface ↑	Bandwidth Limit(Mbps)	Priority
Internal	8	Primary
eth0	8	Primary
eth1	8	Primary
eth2	8	Primary

Interface ↑	Bandwidth Limit(Mbps)	Priority
Internal	8	Primary
eth0	8	Primary
eth1	8	Primary
eth2	8	Primary

Interface ↑	Bandwidth Limit(Mbps)	Priority
Internal	8	Primary
eth0	8	Primary
eth1	8	Backup
eth2	8	Primary

Interface Bonding Boxes

Click the  icon by the Zixi input to view information about the incoming stream. Clicking the  icon will hide the Zixi Output statistics.



Zixi Output Statistics

The **Reset Counters** button is used to reset all the statistics for incoming Zixi packets and establish a new point of reference.

RIST Output Settings

The figure below shows the options available when the “Transmit Type” is set to “RIST”.

Input 1

Output 1

Transmit Type:

RIST

Transmit:

Enabled

Interface:

eth0

VLAN:

None

Profile Mode:

Simple

Tunneling Mode:

Full Datagram

Destination IP:

1.0.0.1

Destination Port:

10000

Source Port:

3020

Latency (ms):

1000

FEC Transmission:

Off

FEC Columns:

4

FEC Rows:

4

Encryption Mode:

Disabled

Passphrase:

Ignore TLS Certificate Error:

Do Not Ignore

Bonding Mode:

Disabled

Interface ↑	Bandwidth Limit(Mbps)	Priority
Internal	8	Primary
eth0	8	Primary
eth1	8	Primary
eth2	8	Primary

Apply

Cancel

RIST Output Settings

Settings	Range	Description
Profile Mode	Simple	Specifies the RIST profile mode for the transmit instance. The <i>Simple</i> profile mode will output with the same packet structure as an RTP packet. The <i>Main</i> profile mode will add more header information for use with the tunnel function
	Main	
Tunneling Mode	Full Datagram	When set to <i>Full Datagram</i> , the IP header

	Reduced Overhead	and UDP header will be re-added to each packet to help identify the channel. When set for <i>Reduced Overhead</i> , the source port and destination port will be added to the header to help identify the channel. Exclusive to Main Profile Mode.
Destination IP	xxx.xxx.xxx.xxx	Defines the address of the stream to be received
Destination Port	1026 – 65534	Defines the port of the stream to be received. When using <i>Simple</i> Profile Mode, only even numbers are valid.
Source Port	1026 – 65534	Specifies the transmit source port
Latency (ms)	1 – 8000 S	Specifies buffer size in milliseconds
Encryption Mode	Disabled DTLS PSK	Defines which encryption standard the RIST transmit instance will use. Exclusive to <i>Main</i> Profile Mode. DTLS encryption will require uploading public and private keys as configured in Enabling DTLS
Passphrase	User entry	The encryption passphrase. Exclusive to <i>PSK</i> Encryption Mode.
Ignore TLS Certificate Error	Do Not Ignore Ignore	Defines whether to cease or continue processing if TLS Certificate Error is signaled
Bonding Mode	Disabled All interfaces One Interface Any Interface	Specifies which interfaces, if any, are to be set to bonding mode. Bonding Mode settings cannot be chosen when Encryption Mode is set to DTLS.
Interface Bonding Box	Available for One	Allows user to define parameters and

Interface Mode details about the port(s) when bonding

Any Interface Mode



RIST transmissions can be configured to use multiple interfaces simultaneously (Port Bonding). By defining the maximum bitrate for that interface, the unit will only send up to that rate on that interface. A Primary and Backup interface may also be chosen if redundant links should be used.

Interface ↑	Bandwidth Limit(Mbps)	Priority
Internal	8	Primary
eth0	8	Primary
eth1	8	Primary
eth2	8	Primary

Interface ↑	Bandwidth Limit(Mbps)	Priority
Internal	8	Primary
eth0	8	Primary
eth1	8	Primary
eth2	8	Primary

Interface ↑	Bandwidth Limit(Mbps)	Priority
Internal	8	Primary
eth0	8	Primary
eth1	8	Backup
eth2	8	Primary

Interface Bonding Boxes

Click the  icon by the RIST input to view information about the incoming stream. Clicking the  icon will hide the RIST Output statistics.

Output 1 (RIST) Interface: eth0 255.255.255.255:65535 0.000 Mbps

Status
 Connection State: Invalid
 Up Time:
 Round Trip Time (ms):
 Buffer Size (ms):
 Jitter (ms):
 Latency (ms):
 Link Bandwidth: 0.000 Mbps

Statistics
 Reconnections:
 Sent Packets:
 Resent Packets:
 Resent Bytes:
 Lost Packets:
 RTCP NAKs:
 Last Reset: 2021-04-26 01:24:56
[Reset Counters](#)

Configuration
 VLAN: None
 Profile Mode: Simple
 Tunneling Mode: Full Datagram
 Source Port: 3020
 Encryption Mode: Disabled
 Bonding Mode: Disabled
 FEC Transmission: Off
 Ignore TLS: Do Not Ignore
 Certificate Error:

Bonding Interfaces		
Interface ↑	Bandwidth Limit(Mbps)	Priority
Internal	8	Primary
eth0	8	Primary
eth1	8	Primary
eth2	8	Primary

RIST Output Statistics

The [Reset Counters](#) button is used to reset all the statistics for incoming RIST packets and establish a new point of reference.

Additional Receive Instances

Each gateway can be configured for multiple input instances. To add an additional receive instance, click on the [Add Input](#) button in the top left corner of the gateway section. The gateway configuration window will open with a new “Input 2” tab, offering the same settings as the initial input tab.

Removing a channel from the configuration can be done by clicking on the [Remove](#) button located at the right side of the channel ribbon. Any configured input instance can also be removed by clicking on the [✕](#) button located within the input row. When either of the icons is clicked, the system will prompt the user with confirmation of intent to remove the item from the configuration

Only one additional input instance can be added, so the option becomes gray as shown below after the second path is added.

Channel 1					
<input type="button" value="Configure Channel"/> <input type="button" value="Add Input"/> <input type="button" value="Add Output"/> <input type="button" value="Switch to Backup Input"/> <input type="button" value="Remove"/>					
	Input Selection	Active: MPEG/IP Receive 1	Primary: MPEG/IP Receive 1	Backup: None	
	Input 1 (MPEG/IP)	Interface: eth0	239.192.0.200:10000	FEC: Not Present	0.000 Mbps
	Input 2 (MPEG/IP)	Interface: eth0	239.192.0.200:10000	FEC: Not Present	0.000 Mbps
	Output 4 (MPEG/IP)	Interface: Internal	239.192.0.208:10000		0.000 Mbps

Multiple Input Instances

Configuring Active Inputs and Failover

When two input instances are configured, only one of them can be assigned to the output instances. The Input Selection menu is used to determine which receive instance is the primary and backup.

Channel 1

Input Selection Active: MPEG/IP Receive 1 Primary: MPEG/IP Receive 1 Backup: None

Input 1 (MPEG/IP) Interface: eth0

Input 2 (MPEG/IP) Interface: eth0

Output 4 (MPEG/IP) Interface: Internal

Channel 3

Input Selection Active: SRT Receive 1 Primary: SRT Receive 1 Backup: None

Input 1 (SRT) Interface: eth0

Configure Input Selection

Input: MPEG/IP Receive 1

Backup Input: MPEG/IP Receive 2

Switch On: TS Sync Loss

Restore On: Primary Input TS Restore

Switchover (secs.): 5

Settings	Range	Description
Input	Input 1	Used for both normal operation and input failover settings. During normal operation, this input will be the active input
	Input 2	
Backup Input	Input 1	During failover operation this input will become the active input. The catalyst for the unit to switch to this input is configured in the following setting.
	Input 2	
Switch On	Manual Only	Choose the event that triggers the switch from the primary to the backup input
	TS Sync Loss	
Restore On	Manual Only	Choose the event that triggers a switch back to the primary input
	Primary Input TS	

	Restored	
	Backup Input TS	
	Sync Loss	
Switchover (secs)	1 – 20	The amount of time the gateway must remain in the “Switch On” or “Restore On” state before automatic failover or switchback occurs

Clicking the **Switch to Backup Input** option under the channel will prompt the user for confirmation of intent to change the input instance assigning the output instances to source from input instance 2.

Clicking **Switch to Primary Input** will assign the output instances to return to sourcing from input instance 1.

Channel 1

Configure Channel

Add Input

Add Output

Switch to Primary Input

Remove

Input Selection

Active: None

Primary: MPEG/IP Receive 1

Backup: None

Input 1 (MPEG/IP)

Interface: eth0

239.192.0.200:10000

FEC: Not Present

X

0.000 Mbps

Input 2 (MPEG/IP)

Interface: eth0

239.192.0.200:10000

FEC: Not Present

X

0.000 Mbps

Output 4 (MPEG/IP)

Interface: Internal

239.192.0.208:10000


X

0.000 Mbps

Active Backup Input

Additional Transmit Instance

The CP2-IP-00 will allow the user to configure a single channel for multiple output paths. To add an additional output path, click on the **Add Output** button in the top left corner of the Channel section. The channel configuration window will open with an additional “Output 2” tab. The new tab will offer the same settings as the initial output tab.

Removing a channel from the configuration can be done by clicking on the **Remove** button located at the right side of the Channel ribbon. Any configured output path can also be removed by clicking on the  button located within the output row that the user wishes to remove. When either of the icons

is clicked, the system will prompt the user with confirmation of intent to remove the item from the configuration.

Which input instance the output instances will source from is dependent on the settings.

Channel 1						
Configure Channel Add Input Add Output Switch to Primary Input Remove						
	Input Selection	Active: None	Primary: MPEG/IP Receive 1	Backup: None		
	Input 1 (MPEG/IP)	Interface: eth0	239.192.0.200:10000	FEC: Not Present		0.000 Mbps
	Output 1 (MPEG/IP)	Interface: eth0	239.192.0.200:10000			0.000 Mbps
	Output 2 (MPEG/IP)	Interface: eth0	239.192.0.201:10000			0.000 Mbps

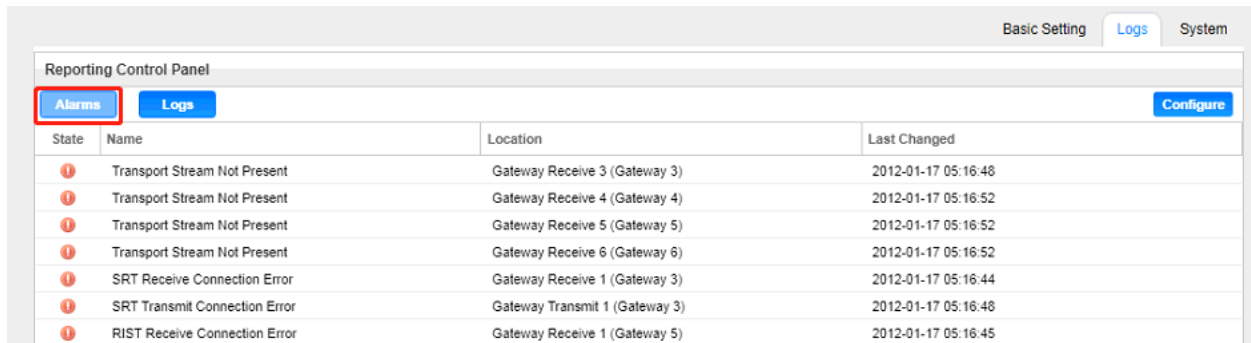
CP2-IP-00 > Logs

Clicking the Logs tab will redirect the user in the Reporting Control Panel. The Reporting control panel in the CP2-IP-00 module will provide the user with a list of active alarms, as well as a means to log the detected events. Active alarms are constantly updated to reflect the real-time state of the unit. Once an error is no longer detected, it will be cleared from the active alarms window. The log files can be used to view alarm and event history. Both the active alarm and event logs can be configured for specific behavior based upon the user's needs.



The screenshot displays the Reporting Control Panel interface. It has tabs for 'Basic Setting', 'Logs', and 'System'. The 'Logs' tab is active, showing a list of events. The interface includes buttons for 'Alarms', 'Logs', 'Configure', 'Refresh', 'Clear', and 'Download'.

Severity	Timestamp	Transition	Location	Message
	2021-05-07 07:55:...		Gateway Transmit 1 (Ga...	RIST Transmit Connection Error: Peer Create Failed.
	2021-05-07 07:55:...		Gateway Transmit 1 (Ga...	RIST Transmit Connection Error: None
	2021-05-07 07:55:...		Gateway Transmit 1 (Ga...	RIST Transmit Connection Error: Peer Create Failed.
	2021-05-07 07:55:...		Gateway Transmit 1 (Ga...	RIST Transmit Connection Error: None
	2021-05-07 07:55:...		Gateway Transmit 1 (Ga...	RIST Transmit Connection Error: Peer Create Failed.
	2021-05-07 07:55:...		Gateway Transmit 1 (Ga...	SRT Transmit Connection Error: The discovery timeout duration has elapsed.
	2021-05-07 07:54:...		Gateway Transmit 1 (Ga...	RIST Transmit Connection Error: None

Alarms



Clicking on the Alarms button displays the Active Alarms menu. This list displays all of the active alarms currently being reported by the unit. There are four columns in the log that display different types of information

Alarms	
Column Name	Description
State	<p>This area displays an icon that will signify the importance of the event</p> <p>The  icon means the message is Informational and no error has been detected.</p> <p>The  icon means the message is an Alarm and the unit status has been set to 'Error'</p>
Name	This column displays the description of the detected instance.
Location	This column displays the hardware or function that is experiencing the active error.
Last Changed	<p>This column displays the data and time the error was raised.</p> <p>Timestamps here are determined with the Date and Time settings configured in the Time tab under System Setting of the CMP baseboard</p>

Configuring the Alarms

The CP2-IP-00 module monitoring points are divided into Conditions and Events and are managed separately. Configuration of these is done by clicking on the configuration cog in either the Alarms or Logs window.

Reporting Control Panel

Alarms Logs **Configure**

State	Name	Location	Last Changed
-------	------	----------	--------------

Conditions

These instances are monitored within specific hardware and stream processing paths. How the CP2-IP-00 module responds to the detection of the instance can be configured. Three 'checkbox' columns allow the user to define the system response. The checkbox at the top of the column can be used to enable or disable all instances in that column.

Configure Conditions and Events

Conditions Events

Name ↑	Location ↑	Log <input checked="" type="checkbox"/>	Severity	Alarm <input checked="" type="checkbox"/>	SNMP Trap <input type="checkbox"/>
Dropped Packets Error	Internal(eth3)	<input checked="" type="checkbox"/>	Error	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Dropped Packets Error	eth0	<input checked="" type="checkbox"/>	Error	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Dropped Packets Error	eth1	<input checked="" type="checkbox"/>	Error	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Dropped Packets Error	eth2	<input checked="" type="checkbox"/>	Error	<input checked="" type="checkbox"/>	<input type="checkbox"/>
HLS Receive Connection Error	Gateway Receive 1 (Gateway 1)	<input checked="" type="checkbox"/>	Error	<input checked="" type="checkbox"/>	<input type="checkbox"/>
HLS Receive Connection Error	Gateway Receive 1 (Gateway 3)	<input checked="" type="checkbox"/>	Error	<input checked="" type="checkbox"/>	<input type="checkbox"/>
HLS Receive Connection Error	Gateway Receive 1 (Gateway 4)	<input checked="" type="checkbox"/>	Error	<input checked="" type="checkbox"/>	<input type="checkbox"/>
HLS Receive Connection Error	Gateway Receive 1 (Gateway 5)	<input checked="" type="checkbox"/>	Error	<input checked="" type="checkbox"/>	<input type="checkbox"/>
HLS Receive Connection Error	Gateway Receive 1 (Gateway 6)	<input checked="" type="checkbox"/>	Error	<input checked="" type="checkbox"/>	<input type="checkbox"/>
MPEG/IP Transmit Unicast Rec...	Gateway Transmit 1 (Gateway 1)	<input checked="" type="checkbox"/>	Error	<input checked="" type="checkbox"/>	<input type="checkbox"/>
MPEG/IP Transmit Unicast Rec...	Gateway Transmit 1 (Gateway 3)	<input checked="" type="checkbox"/>	Error	<input checked="" type="checkbox"/>	<input type="checkbox"/>
MPEG/IP Transmit Unicast Rec...	Gateway Transmit 1 (Gateway 4)	<input checked="" type="checkbox"/>	Error	<input checked="" type="checkbox"/>	<input type="checkbox"/>
MPEG/IP Transmit Unicast Rec...	Gateway Transmit 1 (Gateway 5)	<input checked="" type="checkbox"/>	Error	<input checked="" type="checkbox"/>	<input type="checkbox"/>
MPEG/IP Transmit Unicast Rec...	Gateway Transmit 1 (Gateway 6)	<input checked="" type="checkbox"/>	Error	<input checked="" type="checkbox"/>	<input type="checkbox"/>
MPEG/IP Transmit Unicast Rec...	Gateway Transmit 2 (Gateway 1)	<input checked="" type="checkbox"/>	Error	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Apply Cancel

Logs

Column Name

Description

Name

Defines the error message that will be provided if the instance is detected.

Location

This shows the user the specific hardware or stream processing path where the instance is detected.

Log

A checked box defines which instances will be recorded to the log file

Severity

A dropdown box within the row allows the user to define the instance as an Error or Information event.

Alarm

A checked box defines which instances will raise an Alarm condition on the unit. This will cause the Error LED on the front of the unit and

in the web client to illuminate.

SNMP Trap

A checked box defines which instances will trigger the CP2-IP-00 to send trap messages.

The APPLY button at the bottom of the window will commit the settings changes to the system, while the CANCEL button will ignore any settings changes and close the configuration window.

Events

These instances are global to the system because they will have an impact on all hardware and stream processing areas of the CP2-IP-00 module. These instances can only be configured to be recorded in the log file and/or to be sent as SNMP Trap messages.

Name ↑	Location ↑	Log <input checked="" type="checkbox"/>	SNMP Trap <input type="checkbox"/>
Date/Time Changed	Unit	<input checked="" type="checkbox"/>	<input type="checkbox"/>
NTP Updated	Unit	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Software Update Failed	Unit	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Software Update Succeeded	Unit	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Unit Booted	Unit	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Events

Column Name

Description

Name

Defines the error message that will be provided if the instance is detected.

Location

This will always be "Unit" since these instances are global

Log

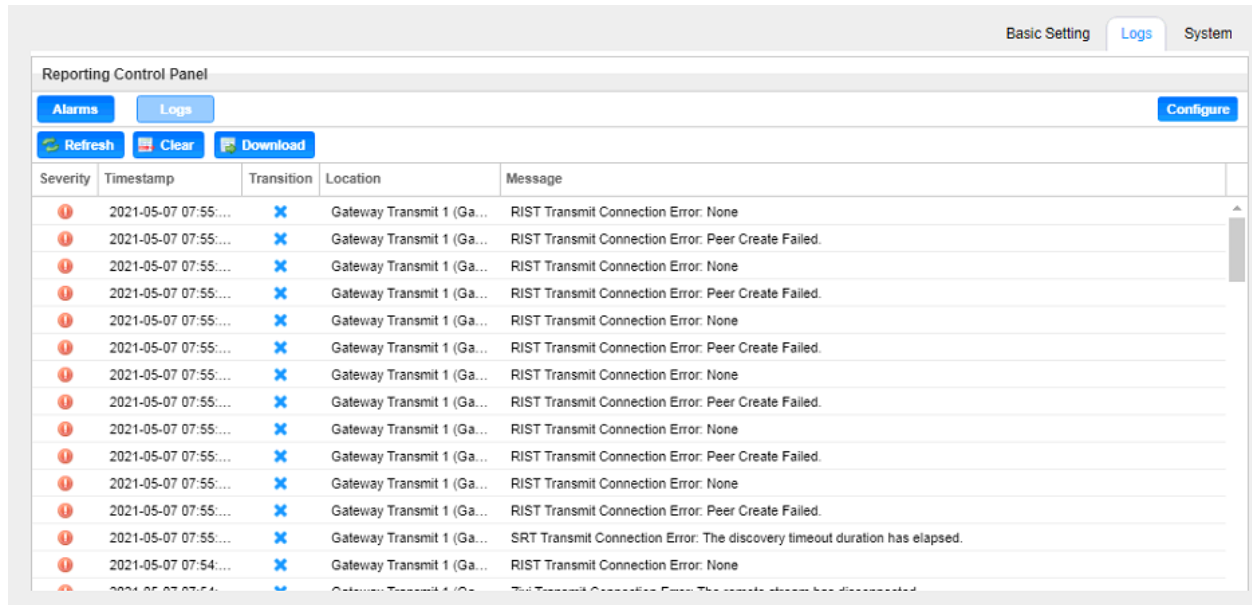
A checked box defines which instances will be recorded to the log file.

SNMP Trap

A checked box defines which instances will trigger the CP2-IP-00

module to send a trap message.

Event Logs



The Logs window provides the user a display of the log file and management tools to streamline the data returned. There are three buttons that will manage the log file.

Refresh



Prompts the CP2-IP-00 to update the displayed logs.

Clear








Clears the log file.

Download



Exports the log file as a “.csv” extension file to the pc.

The log file itself is made up of five columns that explain each event, when it occurred, and the area of the system where the event was detected.

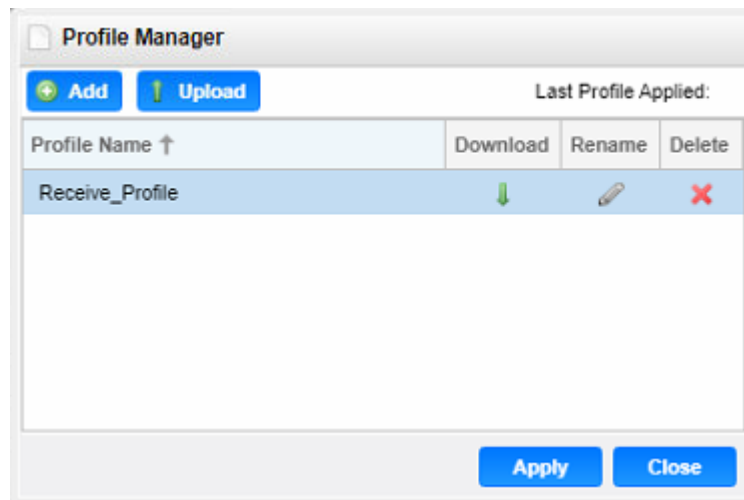
Column Name	Description
Severity	<p>The  Info icon means the message is Informational and no error has been detected.</p> <p>The  Error icon means the message is an Alarm and the unit status has been set to 'Error'.</p>
Timestamp	This is the CP2-IP-00 module associated date and time of the instance.
Transition	<p>The  Went Bad icon means the instance entered into an Error state.</p> <p>The  Went Good icon means the instance entered into a Clear state.</p> <p>The  Event icon means a single point instance (such as NTP Time was updated) took place.</p>
Location	Defines the hardware or function that experienced the alarm or event.
Message	This displays the description of the specific path that experienced the instance.

Configuring the Logs







Configuration of the logs will provide the user with the same configuration options as covered in **the Configuration of the Alarms**.

CP2-IP-00 > System





The CP2-IP-00 has the ability to save all configured settings to multiple profiles. Profiles can be saved locally, renamed and saved to external storage to be used on other CP2-IP-00 modules. Profiles can be used to quickly and easily change the configuration of the module to suit different inputs and decoding requirements.

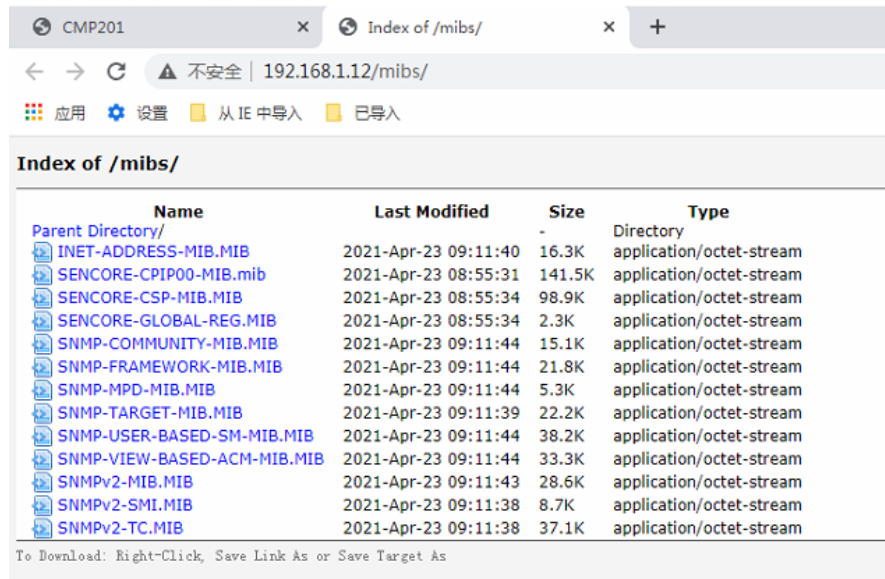
Add New Profile		Used to create or add a new profile to the profile list
Upload Profile		Used to upload a profile to the module from the user pc
Apply Profile		Used to apply a profile selected from profile list
Rename Profile		Used to edit the selected profile name
Delete Profile		Used to delete a profile from the profiles list
Download Profile		Used to download a profile selected from the list to the user pc

SNMP MIB files

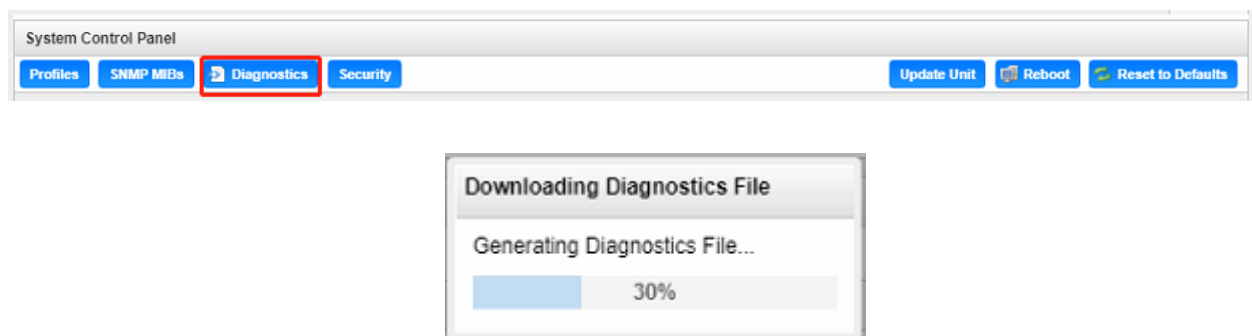


The SNMP MIB files for the CP2-IP-00 can be obtained by clicking on the SNMP MIBs button at the top of the page. This will open a new tab within the current web browser and give the user a list of all

available MIB files. Directions on how to save them to an external storage location are provided at the bottom of the list.



Diagnostics



The CP2-IP-00 provides the user the ability to take a snapshot of the ALL current unit settings, reported values, active alarms, and the alarm and log file history. This snapshot will be downloaded as an .XML format file that can be attached in an email or opened for viewing.

Click the 'Diagnostics' button and a window will open showing the diagnostic file creation progress.

This window is replaced with a download file window when file creation is complete. The user will be asked to 'Open' or 'Save' the file. Selecting the Save option will download the .XML file to the pc 'downloads' location.

Security










The Security is used to configure self-signed certificate information.


Additionally, using public and private keys, this menu is used to enable DTLS encryption and decryption on RIST receive and transmit instances.

 A screenshot of the 'Security Manager' dialog box. The title bar says 'Security Manager'. Inside, there is a section titled 'Certificate Signing Request' with several text input fields: 'Country Name' (filled with 'US'), 'State or Province Name' (filled with 'Delaware'), 'Locality Name' (filled with 'Wilmington'), 'Organization Name' (filled with 'Sencore Inc'), 'Organizational Unit Name' (empty), 'Common Name' (empty), and 'Email Address' (empty). Below these fields are four buttons: 'Generate' (for 'Generate New CSR File'), 'Download' (for 'Download Generate CSR File'), 'Delete' (for 'Delete Old CSR File'), and 'Delete' (for 'Delete Old Local Private Key File'). At the bottom of the dialog, there are three 'Upload' buttons for 'Local Certificate File', 'Local Private Key File', and 'Remote Certificate File'. A 'Close' button is located at the bottom right.

Security Manager Menu

Settings	Range	Description
Name	User entry	Country Name for generated CSR file
State or Province Name	User entry	State/Province Name for generated CSR file

Locality Name	User entry	Locality Name for generated CSR file
Organization Name	User entry	Organization Name for the generated CSR file
Organizational Unit Name	User entry	Organizational Unit Name for the generated CSR file
Common Name	User entry	Common Name for the generated CSR file
Email Address	User entry	Email Address for reference on the generated CSR file
Generate New CSR File		This icon will generate a new Certificate Signing Request file (CSR) using the configured IP from eth0 for the CSR file name. Additionally, the Security Manager will generate a local private key file to be used with the downstream
Download Generate CSR File		This icon will download the locally generated CSR file onto a remote machine
Delete Old CSR File		This icon will delete the locally generated CSR file
Delete Old Local Private Key File		This icon will delete the locally generated private key file
Local Certificate File		Use this icon to upload the local certificate file
Local Private Key File		Use this icon to upload the local private key file
Remote Certificate File		Use this file to upload the remote certificate file

Upon clicking  , the system will generate a new CSR file and local private key for use with the downstream receiver.

Certificate Signing Request File Name:	0.0.0.0.csr
Generate New CSR File:	<button>Generate</button>
Download Generate CSR File:	<button>Download</button>
Delete Old CSR File:	<button>Delete</button>
Delete Old Local Private Key File:	<button>Delete</button>

Local Certificate File:	<button>Upload</button>
Local Private Key File:	private_key.pem <button>Upload</button>
Remote Certificate File:	<button>Upload</button>

Generated Private Key and CSR Files

Enabling DTLS

In order to make a successful DTLS connection when enabling encryption and decryption on RIST receive and transmit instances, a “Local Certificate File”, “Local Private Key File” and “Remote Certificate File” must be uploaded to the Security Manager.

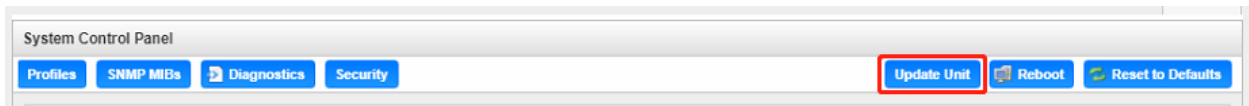
As shown in the figure, the same Certificate File may be uploaded to both the Local and Remote Certificate File fields.

Local Certificate File:	<button>Upload</button>
Local Private Key File:	private_key.pem <button>Upload</button>
Remote Certificate File:	<button>Upload</button>

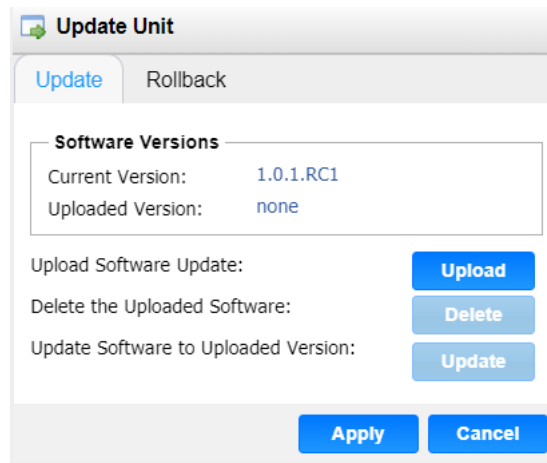
Uploaded Key and Certificate Files

When making a DTLS connection between a CP2-IP-00 that is transmitting RIST and a CP2-IP-00 that is receiving RIST, these same files must be uploaded to both units. Additionally, both the output and input instance on each unit must have Profile Mode configured for “Main” and Encryption Mode configured for “DTLS”.

Updating the System Software

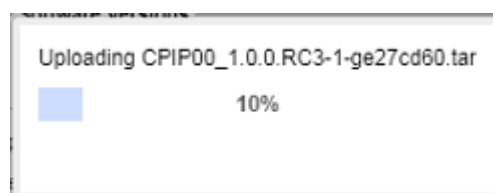





Updates to the CP2-IP-00 are performed through the web interface. A software update file is provided by Wellav and then uploaded to the unit. To request the latest software version or a copy of the release notes please contact our after-sales technical support team. The 'Update Unit' button is in the top right corner of the System Control Panel. When opened this feature will allow the user to advance the software version the CP2-IP-00 operates on, or rollback the software version that the module operates on.



Applying software updates

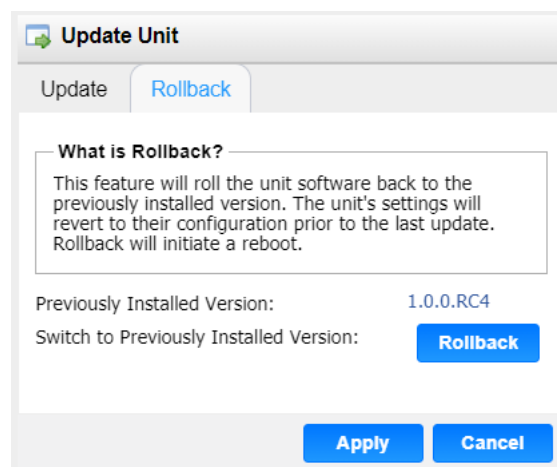
1. Click Upload button and browse to the appropriate software file
2. A progress bar will show uploading status
3. Once the file is uploaded click on Yes when prompted to update
4. The module will reboot after a software update is complete.



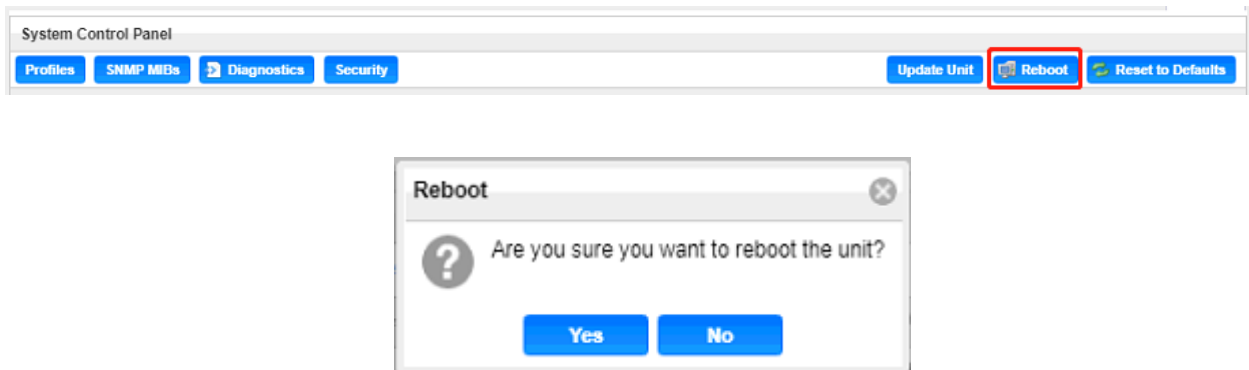
Upload Software Update		To upload software updates to CP2-IP-00 module, click this button. The user will be prompted to navigate to an update file. The file will then upload to the module. When completed, the module will prompt the user to either apply the update or cancel
Delete the Uploaded Software		Clicking this button prompts the user to confirm the deletion of the software update from the CP2-IP-00 module. This will also clear the Uploaded Version status of the Software Versions section.
Update Software to Uploaded Version		Clicking the button starts the software update process. The CP2-IP-00 module will prompt the user to confirm the update. Click Yes to continue or No to cancel.

Rollback Software Updates

The CP2-IP-00 module is capable of reverting back to a previous version of software using the Rollback feature. The CP2-IP-00 accomplishes this by maintaining two separate software images; one is the most current version of software with all current settings and the other is the previous version of software with all of the previous settings. To perform a rollback, click the Update Unit button and then click the Rollback tab. The module will reboot after the rollback process is complete.



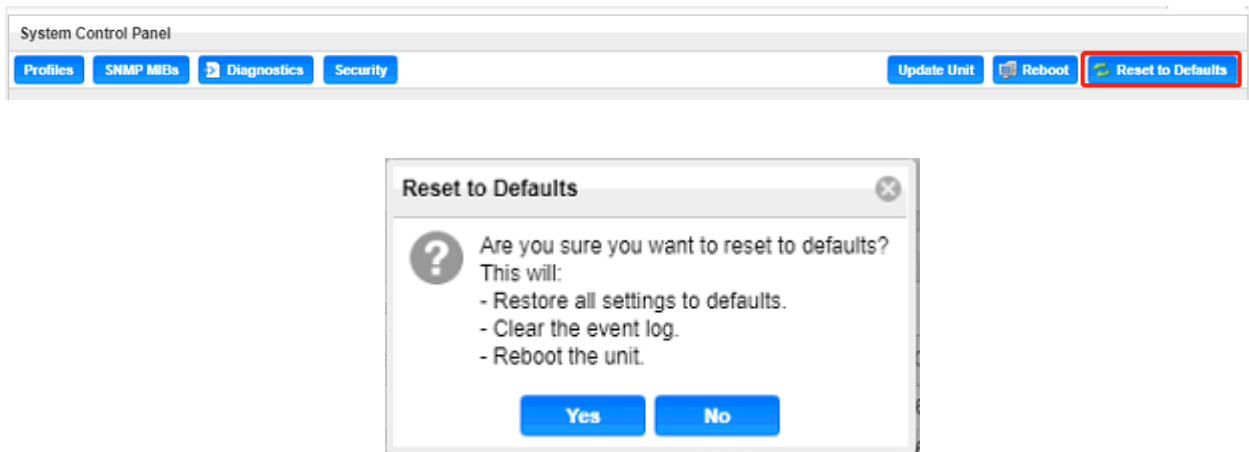
Reboot the Unit



The CP2-IP-00 module can be rebooted from the web interface System page. The 'Reboot' button is located in the top right corner of the System Control Panel.

To perform a reboot, click the reboot button. The system will prompt the user to confirm the reboot request. Once confirmed, a status window with a progress bar will open be visible until the reboot is complete and the login window displayed.

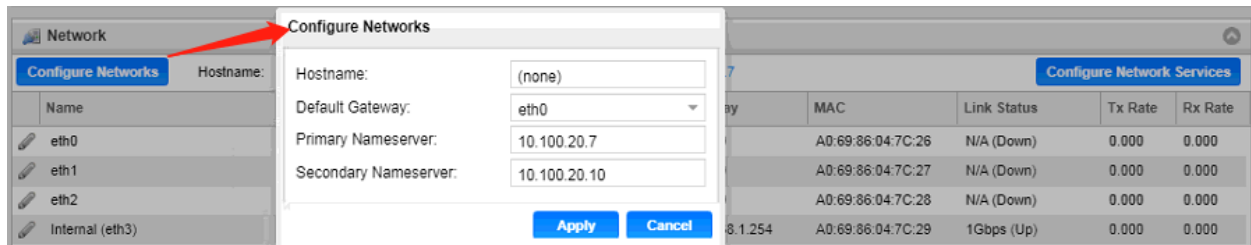
Reset to Defaults



The CP2-IP-00 module settings can be reset to factory defaults. All settings will be returned to the factory defaults **except** the network management ports TCP/IP settings. All event logs will be cleared. To reset all settings to default, click the Reset to Defaults button on the System page. The module will prompt the user to confirm the reset.

Configuring the Unit Networks and VLANs

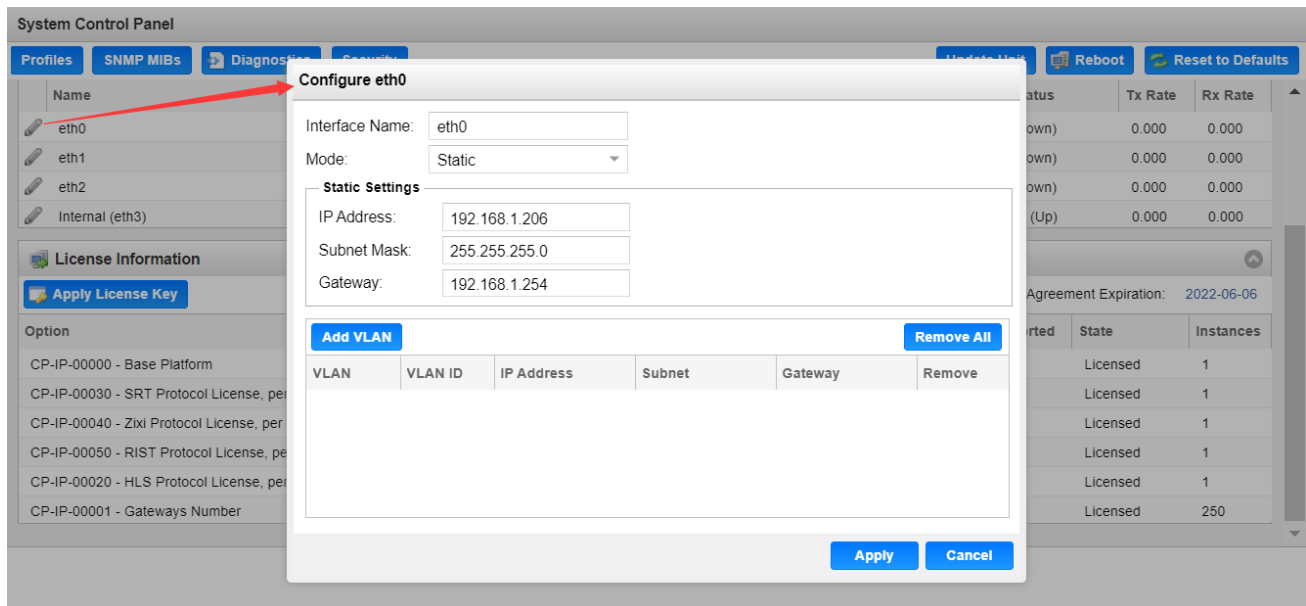
The CP2-IP-00 module can be assigned a Hostname and DNS servers. To access this menu, click on the Configure Networks gear icon. Within the window that opens, the user can assign a Hostname to the module, define which physical port (Eth0, Eth1, Eth2, Internal) the Default Gateway will use [The web-interface is accessible from the IP address of either Ethernet port; however, be sure to configure the two ports for separate subnets.], and provide addresses for Primary and Secondary Nameservers.




Setting	Available Selections	Descriptions
Hostname	Alphanumeric, no spaces allowed	Defines optional system name
Default Gateway	Eth0, Eth1, Eth2, Internal	Defines which physical port gateway address is to be used
Primary Nameserver	xxx.xxx.xxx.xxx	IP address of Primary (DNS) nameserver
Secondary Nameserver	xxx.xxx.xxx.xxx	IP address of Secondary (DNS) nameserver

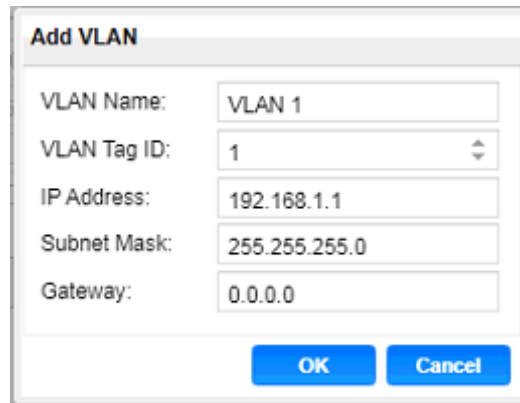
Management and Video/IP Ports

Each of the three physical NICs and one internal NIC are identical in every way; either one can be configured for the management or Video/IP networks. As shown below, clicking the gear icon will open the settings for each NIC, including the name of the port, IP address and VLAN options. After finishing changes, click the apply button.



Setting	Available Selections	Descriptions
Interface Name	User Entered (eth0/eth1/eth2/Internal)	User defined port names
Mode	DHCP, Static	DHCP allows network server to provide IP address Static requires the user to define the IP address to be used
IP Address	xxx.xxx.xxx.xxx	Static mode IP address entry
Subnet Mask	xxx.xxx.xxx.xxx	Static Mode subnet mask entry
Gateway	xxx.xxx.xxx.xxx	Static Mode gateway entry

To add a VLAN to the NIC, click the  icon to bring up the “Add VLAN” menu as shown on the next page.



Add VLAN

VLAN Name:


VLAN Tag ID:

IP Address:

Subnet Mask:

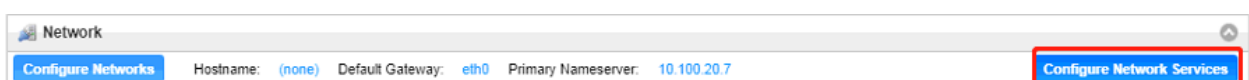
Gateway:

Setting	Available Selections	Descriptions
VLAN Name	User Entered	User defined VLAN names
VLAN Tag ID	1 - 4094	The VLAN tag to be assigned to outgoing streams and filtered for incoming streams
IP Address	xxx.xxx.xxx.xxx	Static mode IP address entry
Subnet Mask	xxx.xxx.xxx.xxx	Static Mode subnet mask entry
Gateway	xxx.xxx.xxx.xxx	Static Mode gateway entry

After clicking “OK” to finish configuring the newly created VLAN, it will appear on the VLAN list as seen in the figure below. To remove individual VLANs, click the blue  icon in the corresponding row. To remove all created VLANs, click the button.

Configuring Network Services

Both Physical NICs can have specific features enabled for functionality or disabled for security. To configure these settings, click on as indicated in the figure below.



The “Configure Network Services” menu will then be shown. These are the default settings that allow for web access, ICMP contact through pinging and general stream input and output traffic. To enable or disable further settings, click to check the leftmost box as well as the box corresponding to the physical NIC (eth0, eth1, eth2, eth3) in the row of the intended service.

<input type="checkbox"/>	Service ↑	Protocol	Port	eth0 <input type="checkbox"/>	eth1 <input type="checkbox"/>	eth2 <input type="checkbox"/>	eth3 <input type="checkbox"/>
<input checked="" type="checkbox"/>	HTTP	TCP	80	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
<input checked="" type="checkbox"/>	ICMP	ICMP	N/A	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
<input type="checkbox"/>	SNMP	UDP	161	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	SNMP Traps	UDP	162	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input checked="" type="checkbox"/>	SSH	TCP	22	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
<input checked="" type="checkbox"/>	Stream I/O	N/A	N/A	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
<input type="checkbox"/>	Syslog	UDP	514	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

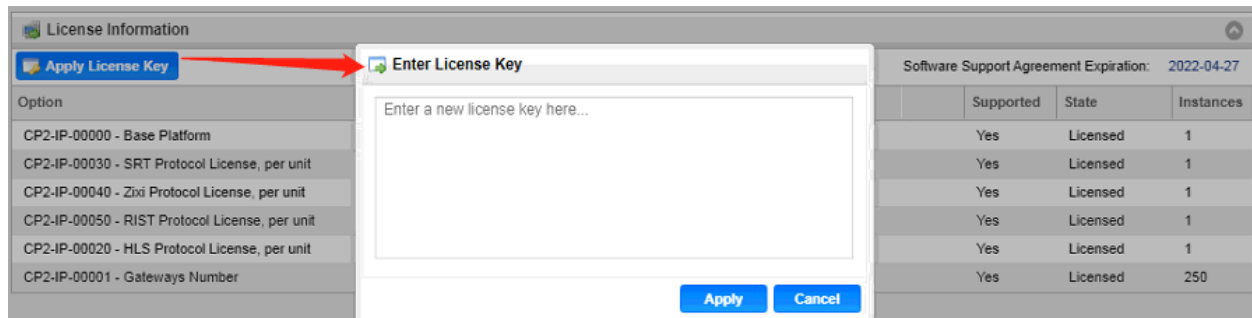
Service	Protocol	Port	Descriptions
HTTP	TCP	80	Allows access to the web interface via browser
ICMP	ICMP	N/A	Allows access to ICMP responses (such as pinging)
SNMP	UDP	161	Allows SNMP GET/SET commands
SNMP Traps	UDP	162	Enables SNMP traps to send upon system change
SSH	TCP	22	Allows for SSH access through port 22
Stream I/O	Unknown	N/A	Enables and disables all stream traffic for the physical interface (Zixi, MPEG/IP, SRT, HLS)
Syslog	UDP	514	Allows configuration of a syslog server for state triggered messages.

License Information

Certain features of the CP2-IP-00 require licenses in order to be functional. The interface displays all licenses available as well as the following status:

- License Locked or Unlocked
- License is Supported or Unsupported by the installed hardware

If licenses need to be applied to the module, click Apply License Key button. The menu below will appear where the user can copy and paste the provided license key from Wellav.



5.4.6 CP-IP-02

CP-IP-02 is a Gigabit IP multiplexing processing module, with 2 RJ45 Gigabit port, support UDP/RTP protocol, the single port maximum support 120 channels input and 120 channels output



Click the **IP Input** in the menu to go into IP input page where you can see **Status**, **Basic Setting**, **IGMP Setting** and **Service Configuration**.

CP-IP-02					
<div> <div>Input</div> <div>Output</div> <div>System Setting</div> </div>					
<div> <div>Status</div> <div>Basic Setting</div> <div>IGMP Setting</div> <div>Service Configuration</div> </div>					
<div> <div>Port 1</div> <div>Port 2</div> </div>					
Channel	IP Address : Port	Effective Bitrate(Mbps)	Total Bitrate(Mbps)	TS Analysis	Service List
1.1	227.30.30.1 : 10001	3.726	3.726		
1.2	227.30.30.2 : 10002	3.726	3.726		
1.3	227.30.30.3 : 10003	3.716	3.716		
1.4	227.30.30.4 : 10004	3.716	3.716		
1.5	227.30.30.5 : 10005	3.716	3.716		
1.6	227.30.30.6 : 10006	3.716	3.716		
1.7	227.30.30.7 : 10007	3.716	3.716		
1.8	227.30.30.8 : 10008	3.716	3.716		
1.9	227.30.30.9 : 10009	3.716	3.716		
1.10	227.30.30.10 : 10010	3.716	3.716		
1.11	227.30.30.11 : 10011	3.716	3.716		

IP Input >Status


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


CP-IP-02					
<div> <div>Input</div> <div>Output</div> <div>System Setting</div> </div>					
<div> <div>Status</div> <div>Basic Setting</div> <div>IGMP Setting</div> <div>Service Configuration</div> </div>					
<div> <div>Port 1</div> <div>Port 2</div> </div>					
Channel	IP Address : Port	Effective Bitrate(Mbps)	Total Bitrate(Mbps)	TS Analysis	Service List
1.1	227.30.30.1 : 10001	3.726	3.726		
1.2	227.30.30.2 : 10002	3.726	3.726		
1.3	227.30.30.3 : 10003	3.716	3.716		
1.4	227.30.30.4 : 10004	3.716	3.716		
1.5	227.30.30.5 : 10005	3.716	3.716		
1.6	227.30.30.6 : 10006	3.716	3.716		
1.7	227.30.30.7 : 10007	3.716	3.716		
1.8	227.30.30.8 : 10008	3.716	3.716		
1.9	227.30.30.9 : 10009	3.716	3.716		
1.10	227.30.30.10 : 10010	3.716	3.716		
1.11	227.30.30.11 : 10011	3.716	3.716		

Click the icon () in the **TS Analysis** list to see the TS analyzing result of each channel. Click the icon () in the **Service List** to see the Services of each channel.

● TS Analysis

Click **Reset Counter** to clear continuity count errors and restart counting. Fill in the search bar with key words of PID / Bit rate / bandwidth / table type / service name to get info you want.

Channel1.1 TS Analysis Reset Counter 

Search 

PID	Bit Rate(Mbps)	Bandwidth(%)	Continuity Count Error	Type	Service
0x0(0)	0.001	0.085	0	PAT	
0x11(17)	0.001	0.085	0	SDT	
0x102(258)	0.001	0.085	0	Other	
0x103(259)	0.001	0.085	0	Other	
0x201(513)	0.269	22.816	0	Other	
0x202(514)	0.242	20.526	0	Other	
0x294(660)	0.021	1.781	0	Other	
0x29e(670)	0.021	1.781	0	Other	

Tips:

- Service List

Click a service name to check its detailed info.

Channel : 1.1	
#	Service
1	[302] CCTV 2
2	[303] CCTV 7

[302] CCTV 2

Type	PID	Bit Rate(Mbps)
PCR	8190	0.044
PMT	258	0.018
Video(MPEG2)	513	4.899
Audio	660	0.256

Close

IP Input >Basic Settings

Here you can configure IP input parameters: **Destination IP Address**, **Destination Port**, **Protocol** (UDP/RTP), and **TS Packets Per IP Packet**. Click **Apply** to make the setting take effect.

CP-IP-02 Input Output System Setting

Status **Basic Setting** IGMP Setting Service Configuration

Port 1 Port 2

[Batch Setting ^](#)

Select All ☐

☐ Enable Disable

☐ Protocol UDP

Start Channel-End Channel 1 - 128

☐ Destination IP Address 227.10.20.80 Same

☐ Destination Port 1234 Same

☐ Pkt Length 7

Batch Setting

Apply

Channel	Enable	Destination IP Address	Destination Port	Protocol	Pkt Length
1.1	<input checked="" type="checkbox"/>	227.30.30.1	10001	UDP	Auto
1.2	<input checked="" type="checkbox"/>	227.30.30.2	10002	UDP	Auto
1.3	<input checked="" type="checkbox"/>	227.30.30.3	10003	UDP	Auto
1.4	<input checked="" type="checkbox"/>	227.30.30.4	10004	UDP	Auto
1.5	<input checked="" type="checkbox"/>	227.30.30.5	10005	UDP	Auto
1.6	<input checked="" type="checkbox"/>	227.30.30.6	10006	UDP	Auto
1.7	<input checked="" type="checkbox"/>	227.30.30.7	10007	UDP	Auto

If you want to configure a batch of channels, please click **Batch Setting**

To set the IP input parameters in batch, you can check the boxes before parameters you need then choose / modify the values.. Click **Apply** to make the setting take effect.

CP-IP-02 Input Output System Setting

Status **Basic Setting** IGMP Setting Service Configuration

Port 1 Port 2

[Batch Setting ^](#)

Select All ☐

☐ Enable Disable

☐ Protocol UDP

Start Channel-End Channel 1 - 128

☐ Destination IP Address 227.10.20.80 Same

☐ Destination Port 1234 Same

☐ Pkt Length 7

Batch Setting

Apply

Channel	Enable	Destination IP Address	Destination Port	Protocol	Pkt Length
1.1	<input checked="" type="checkbox"/>	227.30.30.1	10001	UDP	Auto
1.2	<input checked="" type="checkbox"/>	227.30.30.2	10002	UDP	Auto
1.3	<input checked="" type="checkbox"/>	227.30.30.3	10003	UDP	Auto
1.4	<input checked="" type="checkbox"/>	227.30.30.4	10004	UDP	Auto
1.5	<input checked="" type="checkbox"/>	227.30.30.5	10005	UDP	Auto
1.6	<input checked="" type="checkbox"/>	227.30.30.6	10006	UDP	Auto
1.7	<input checked="" type="checkbox"/>	227.30.30.7	10007	UDP	Auto

IP Input >IGMP Setting

In this tab, user can choose **IGMP version**, **IGMP Automatic Report**, and **IGMP Report Cycle(s)**.

CP-IP-02

Input Output System Setting

Status Basic Setting **IGMP Setting** Service Configuration

IGMP Version: V2

IGMP Automatic Report: Enable

IGMP Report Cycle(s): 15

Apply

IP Input >Service Configuration

To stream a source stream, you can configure the destination in this page.

CP-IP-02

Input Output System Setting

Status Basic Setting IGMP Setting **Service Configuration**

Port 1 Port 2

Channel Select : Channel 1.1 Scanning Time(ms) : 1000 Program Scan

Service Name	Destination	Destination Setting
Channel 1.1 +	3.CP-IP-02[1.1]	⚙️
[713] Bloomberg European TV		✏️
PID 1 (CAT)		✏️
Channel 1.2 +	3.CP-IP-02[1.2]	⚙️
[713] Bloomberg European TV		✏️
PID 1 (CAT)		✏️
Channel 1.3 +	3.CP-IP-02[1.3]	⚙️
[713] Bloomberg European TV		✏️
PID 1 (CAT)		✏️
Channel 1.4 +	3.CP-IP-02[1.4]	⚙️
[713] Bloomberg European TV		✏️
PID 1 (CAT)		✏️
Channel 1.5 +	3.CP-IP-02[1.5]	⚙️

Apply

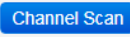
Clear Config

- Multiplex or Bypass stream: Click the setting icon (⚙️), check the output module, 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.
- 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.

Channel	Multiplex	Bypass
Channel1	<input type="checkbox"/>	<input type="checkbox"/>
Channel2	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Channel3	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Channel4	<input type="checkbox"/>	<input type="checkbox"/>
Channel5	<input type="checkbox"/>	<input type="checkbox"/>
Channel6	<input type="checkbox"/>	<input type="checkbox"/>
Channel7	<input type="checkbox"/>	<input type="checkbox"/>
Channel8	<input type="checkbox"/>	<input type="checkbox"/>
Channel9	<input type="checkbox"/>	<input type="checkbox"/>
Channel10	<input type="checkbox"/>	<input type="checkbox"/>
Channel11	<input type="checkbox"/>	<input type="checkbox"/>
Channel12	<input type="checkbox"/>	<input type="checkbox"/>
Channel13	<input type="checkbox"/>	<input type="checkbox"/>

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



There is a channel scan button () on top. Normally the input service list of each channel will load itself on this page, but when you change the input source, the list could not refresh immediately. You can refresh the changed channels manually by selecting the channel and clicking the channel scan button.

IP Output >Status

The IP output status information you can check on this page is similar to that of IP input. The TS analysis and service list function are also available.

CP-IP-02 Input **Output** System Setting

[Status](#) [Basic Setting](#) [Service Configuration](#)

[Port 1](#) [Port 2](#)

Channel	IP Address : Port	Effective Bitrate(Mb...	Total Bitrate(Mbps)	Bitrate	TS Analysis	Service List
1.1	227.20.1.1 : 1234	3.747	5.000	Normal	👁	📋
1.2	227.20.1.2 : 1234	3.747	5.000	Normal	👁	📋
1.3	227.20.1.3 : 1234	3.747	5.000	Normal	👁	📋
1.4	227.20.1.4 : 1234	3.737	5.000	Normal	👁	📋
1.5	227.20.1.5 : 1234	3.747	5.000	Normal	👁	📋
1.6	227.20.1.6 : 1234	3.747	5.000	Normal	👁	📋
1.7	227.20.1.7 : 1234	3.758	5.000	Normal	👁	📋
1.8	227.20.1.8 : 1234	3.758	5.000	Normal	👁	📋
1.9	227.20.1.9 : 1234	3.747	5.000	Normal	👁	📋
1.10	227.20.1.10 : 1234	3.737	5.000	Normal	👁	📋
1.11	227.20.1.11 : 1234	3.747	5.000	Normal	👁	📋
1.12	227.20.1.12 : 1234	3.737	5.000	Normal	👁	📋
1.13	227.20.1.13 : 1234	3.737	5.000	Normal	👁	📋
1.14	227.20.1.14 : 1234	3.758	5.000	Normal	👁	📋

IP Output > Basic Settings

Setting IP output channels is also similar to Setting IP input.

CP-IP-02 Input **Output** System Setting

[Status](#) [Basic Setting](#) [Service Configuration](#)

[Port 1](#) [Port 2](#)

[Batch Setting](#)

Select All ☐

☐ Enable Disable

☐ Source Port 1000

☐ Protocol UDP

☐ Bitrate(Mbps) 25

Start Channel-End Channel 1 - 128

☐ Destination IP Address 227.10.20.80 Same

☐ Destination Port 1234 Same

☐ Pkt Length 7

☐ Enable Destination MAC Disable AA:BB:CC:DD:EE:FF

[Batch Setting](#)

[Apply](#)

TX Interval: 100 (ms)

< **1** 2 3 4 5 6 7 8 >

Channel	Enable	Source Port	Destination IP Ad...	Destination Port	Protocol	Pkt Length	Bitrate(...)	Enable Destination MAC	Destination MAC
1.1	<input checked="" type="checkbox"/>	1000	227.20.1.1	1234	UDP	7	5	Disable	01:00:5E:14:01:01
1.2	<input checked="" type="checkbox"/>	1000	227.20.1.2	1234	UDP	7	5	Disable	01:00:5E:14:01:02
1.3	<input checked="" type="checkbox"/>	1000	227.20.1.3	1234	UDP	7	5	Disable	01:00:5E:14:01:03
1.4	<input checked="" type="checkbox"/>	1000	227.20.1.4	1234	UDP	7	5	Disable	01:00:5E:14:01:04

- 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 the 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 where the unicast stream cannot be received due to unknown reasons, you

should enable Destination MAC and fill in 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.

If you want to configure a batch of channels, please click [Batch Setting](#).

Batch Setting of IP output channels is also similar to that of IP input.

IP Output

Status Basic Setting Service Configuration PSIP

[Batch Setting ^](#)

☐ Select All
☐ Enable
☐ Source Port
☐ Protocol
☐ Bitrate

☐
 Disable
 1000
 UDP
 25 (Mbps)

Start Channel-End Channel
☐ Destination IP Address
☐ Destination Port
☐ Pkt Length
☐ Enable Destination MAC

1 - 120
 227.10.20.80 Same
 1234 Same
 7
 Disable AA:BB:CC:DD:EE:FF

Apply

Batch Setting

TX Interval: 100 (ms)

Channel	Enable	Source Port	Destination IP A...	Destination ...	Protocol	Pkt Length	Bitrate(...)	Enable Destination MAC	Destination MAC
1.1	<input checked="" type="checkbox"/>	1000	239.168.10.20	10000	UDP	7	15	Disable	01:00:5E:28:0A:14
1.2	<input checked="" type="checkbox"/>	1000	239.168.10.30	10000	UDP	7	15	Disable	01:00:5E:28:0A:1E
1.3	<input type="checkbox"/>	1000	227.10.20.3	1234	UDP	7	15	Disable	00:00:00:00:00:00
1.4	<input type="checkbox"/>	1000	227.10.20.4	1234	UDP	7	15	Disable	00:00:00:00:00:00
1.5	<input type="checkbox"/>	1000	227.10.20.5	1234	UDP	7	15	Disable	00:00:00:00:00:00

IP Output >Service Configuration

You can make configuration for output services and TS.

CP-IP-02 Input **Output** System Setting

Status Basic Setting **Service Configuration**

Port 1 Port 2

Click "Apply" after modifying your parameters to save the configuration.

[1.1] TS ⚙️ ↑

1. Bloomberg European TV 3.1.1

[1.2] TS ⚙️ ↑

1. Bloomberg European TV 3.1.2

[1.3] TS ⚙️ ↑

1. Bloomberg European TV 3.1.3

[1.4] TS ⚙️ ↑

1. Bloomberg European TV 3.1.4

[1.5] TS ⚙️ ↑

1. Bloomberg European TV 3.1.5

[1.6] TS ⚙️ ↑

1. Bloomberg European TV 3.1.6

[1.1] TS

Original Network ID

TS ID

NO.	Service ID	Service Name	Service Provider
1	713	Bloomberg European TV	Arqiva

Other PIDs

OK Cancel

Apply

Clear Config

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

5.5 Decode Module

5.5.1 CD2-SDI-00

CD2-SDI-00 is a 4-channel SDI decoding board with 4-channel HD/SD SDI decoding and output, supporting H.265/H.264/Mpeg-2/AVS2/AVS+ video and Mpeg-1 Layer II/AAC (optional)/AC-3 audio format decoding.



Click the **Status** in the menu to go into status page where you can see **IP input Status, Decode Status**.

CD-SDI-00						
<div> <div>Status</div> <div>Input</div> <div>Decode</div> <div>System Setting</div> </div>						
<div> <div>IP Input Status</div> <div>Decode Status</div> </div>						
Total Bitrate: 9.843 Mbps						
Channel	IP Address: Port	Status	Effective Bitrate(Mbps)	Total Bitrate(Mbps)	TS Analysis	Service List
1.1	227.10.20.31 : 10000	●	9.105	9.843		
1.2	0.0.0.0 : 0	●	0.000	0.000		
1.3	0.0.0.0 : 0	●	0.000	0.000		
1.4	0.0.0.0 : 0	●	0.000	0.000		

Status > IP input Status

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

CD-SDI-00						
<div> <div>Status</div> <div>Input</div> <div>Decode</div> <div>System Setting</div> </div>						
<div> <div>IP Input Status</div> <div>Decode Status</div> </div>						
Total Bitrate: 10.001 Mbps						
Channel	IP Address: Port	Status	Effective Bitrate(Mbps)	Total Bitrate(Mbps)	TS Analysis	Service List
1.1	227.10.20.31 : 10000	●	9.252	10.001		
1.2	0.0.0.0 : 0	●	0.000	0.000		
1.3	0.0.0.0 : 0	●	0.000	0.000		
1.4	0.0.0.0 : 0	●	0.000	0.000		

Click the icon () in the **TS Analysis** list to see the TS analyzing result of each channel. Click the icon () in the **Service List** to see the Services of each channel.

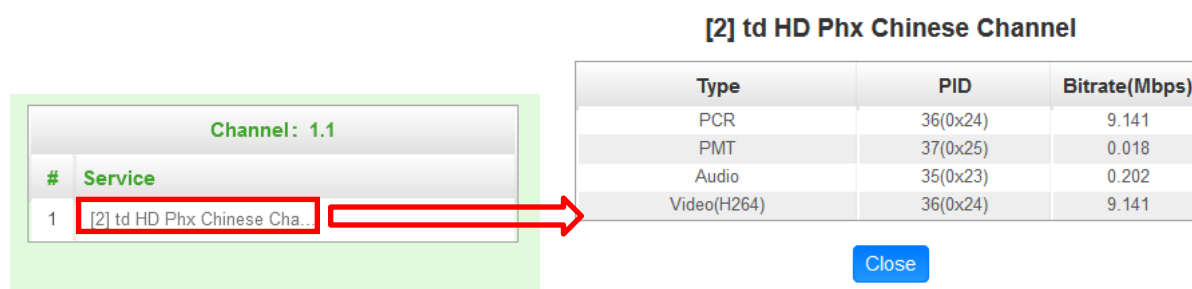
● TS Analysis

Click **Reset Counter** to clear continuity count errors and restart counting. Fill in the search bar with key words of PID / Bit rate / bandwidth / table type / service name to get info you want.

Channel 1.1 TS Analysis					
<div> <div>Reset Counter</div> <div>✕</div> </div>					
<div> <div>Search</div> <div>Q</div> </div>					
PID	Bitrate(Mbps)	Bandwidth(%)	Continuity Count Error	Type	Service
0x0(0)	0.019	0.192	127	PAT	
0x11(17)	0.019	0.192	127	SDT	
0x23(35)	0.195	1.969	0	Audio	td HD Phx Chinese Channel
0x24(36)	8.911	89.956	127	PCR, Video	td HD Phx Chinese Channel
0x25(37)	0.019	0.192	127	PMT	td HD Phx Chinese Channel

- Service List

Click a service name to check its detailed info.



[2] td HD Phx Chinese Channel

Type	PID	Bitrate(Mbps)
PCR	36(0x24)	9.141
PMT	37(0x25)	0.018
Audio	35(0x23)	0.202
Video(H264)	36(0x24)	9.141

Close

Status >Decode Status

In this page, you can check info of each channel: **Source,Service,Video Foramt,Video Info and Audio Info.**

CD-SDI-00				Status Input Decode System Setting			
				IP Input Status Decode Status			
Channel	Status	Source	Service	Video			Audio
				Native Format	Output Format	Video Info	Audio Info
1	●	17.1.2	1 (Service01)	400x300p 16x9 30.00fps	720x480i 1x1 29.97fps	PID:256 (H.264)	PID:257 (MPEG2 AAC --kbps --KHz)
2	●	None	None	--	--	--	--
3	●	None	None	--	--	--	--
4	●	None	None	--	--	--	--

IP Input >Basic Setting

Here you can configure IP input parameters: **Destination IP Address, Destination Port, Protocol** (UDP/RTP), **TS Packets Per IP Packet,Input Processing Mode**,Click **Apply** to make the setting take effect.

CD-SDI-00

Status **Input** Decode System Setting

Basic Setting Service Configuration

Batch Setting

Select All ☐ Enable ☐ Protocol ☐ Start Channel-End Channel ☐ Destination IP Address ☐ Destination Port ☐ Pkt Length

1 - 4
227.10.20.80 Same
1234 Same
7

Batch Setting

Apply

Channel	Enable	Destination IP Address	Destination Port	Protocol	Pkt Length	Input Processing Mode
1.1	<input checked="" type="checkbox"/>	227.10.20.100	10000	UDP	Auto	CBR
1.2	<input type="checkbox"/>	227.20.30.2	1234	UDP	Auto	CBR
1.3	<input type="checkbox"/>	227.20.30.3	1234	UDP	Auto	CBR
1.4	<input type="checkbox"/>	227.20.30.4	1234	UDP	Auto	CBR

There are two methods of IP input here:

- First, using the baseboard as an example (*Same as other receiver board without service configuration*): Setting the IP input on the baseboard, transmits IP input streams on the baseboard to the switch, CD2-SDI-00 receives streams from the switch.

➤ Baseboard Setup

Status **Input** Output System

Input **Status** IP Setting IGMP Setting

Total Bitrate: 12.348 Mbps

Channel	IP Address: Port	Status	Effective Bitrate(Mbps)	Total Bitrate(Mbps)	TS...	Servi...
1.1	227.10.20.31 : 10000	●	2.251	2.347	👁	⋮
1.2	239.192.10.224 : 10000	●	9.436	10.001	👁	⋮
1.3	227.110.110.11 : 10000	●	0.000	0.000	👁	⋮

➤ CD2-SDI-00 Setup

CD2-SDI-00 Status **Input** De

Basic Setting

Batch Setting ▾

< 1 >

Channel	Enable	Destination IP Address	Destination Port	Protocol	Pkt Length	Input Processing
1.1	<input checked="" type="checkbox"/>	227.10.20.31	10000	UDP	Auto	CBR
1.2	<input checked="" type="checkbox"/>	239.192.10.224	10000	UDP	Auto	CBR

➤ CD2-SDI-00 Status

CD-SDI-00 Status Input Decode System Setting

IP Input Status Decode Status

Total Bitrate: 10.001 Mbps

Channel	IP Address: Port	Status	Effective Bitrate(Mbps)	Total Bitrate(Mbps)	TS Analysis	Service List
1.1	227.10.20.31 - 10000	●	9.252	10.001		
1.2	0.0.0.0 : 0	●	0.000	0.000		
1.3	0.0.0.0 : 0	●	0.000	0.000		
1.4	0.0.0.0 : 0	●	0.000	0.000		

- Second, using the baseboard as an example (*Same as other receiver board have service configuration*): Configure the program on the baseboard to go to CD2-SDI-00.

➤ Baseboard Setup

Status **Input** Output System Setting agent

Input Status IP Setting IGMP Setting **Service Configuration**

Channel Select: Channel 1.1 Scanning Time(ms): 1000 PSI Search Time(ms): 5000 Program Scan

Program Clear

Service Name	Destination	Destination Setting
> Channel 1.1 +		
▼ Channel 1.2 +	2.CD2-SDI-00[1.1]	
[1] Program0		
PID 17 (Other PID)		
> Channel 1.3 +		

Apply Clear Config

- In CD2-SDI-00 Decode page can pick the service program

CD2-SDI-00 Status Input Decode System Setting

[Advanced Setting >](#)

Channel	Service Select		Processing				Clear Service
	Service	Audio	Format Mode	Manual Format	Audio State	Audio Volume	
1	[17.1.2] Program0 (Service ID: 1)	4112	Automatic	720x480i 16x9 29.97fps	Enable	100	✕
2	None	None	Automatic	720x480i 16x9 29.97fps	Enable	100	✕
3	[17.1.2] Program0 (Service ID: 1)	None	Automatic	720x480i 16x9 29.97fps	Enable	100	✕
4	None	None	Automatic	720x480i 16x9 29.97fps	Enable	100	✕

[Apply](#)

- Decode Status

CD-SDI-00 Status Input Decode System Setting

[IP Input Status](#) [Decode Status](#)

Channel	Status	Source	Service	Video			Audio
				Native Format	Output Format	Video Info	Audio Info
1	●	17.1.2	1 (Service01)	400x300p 16x9 30.00fps	720x480i 1x1 29.97fps	PID.256 (H.264)	PID.257 (MPEG2 AAC --kbps --KHz)
2	●	None	None	--	--	--	--
3	●	None	None	--	--	--	--
4	●	None	None	--	--	--	--

CD2-SDI-00 supports transport with the following protocols: UDP, RTP.

1. UDP

Settings	Range	Description
Destination address	Multicast: 224.0.0.0 ~239.255.255.255 Unicast: terminal IP address	
Destination port	1~65535	
Total Bitrate	0 – 30000Kbps	Need to be higher than the video bitrate

2. RTP

Settings	Range	Description
Destination address	Multicast: 224.0.0.0	

	~239.255.255 .255 Unicast: terminal IP address	
Destination port	1~65535	
Total Bitrate	0 – 30000Kbps	Need to be higher than the video bitrate

3.Other Setting

Settings	Range	Description
Pkt Length	Auto 1– 7	It represents the length or size of packets transmitted in network communication.
Input Processing Mode	CBR VBR Dejittering-CBR	CBR:Constant Bit Rate.The transmitted data stream is sent or encoded at a constant bit rate. VBR:Variable Bit Rate.The encoder automatically adjusts the bit rate according to the characteristics of the audio or video content to provide the best encoding quality for each time period. Dejittering-CBR:Using CBR to transmit or encode data, using jitter technology to reduce or eliminate the timing instability caused by jitter.

If you want to configure a batch of channels, please click [Batch Setting](#)

To set the IP input parameters in batch, you can check the boxes before parameters you need then choose / modify the values. Click **Apply** to make the setting take effect.

CD-SDI-00 Status Input Decode System Setting

Basic Setting Service Configuration

Batch Setting ^

☐ Select All
☐ Enable
☐ Protocol

Start Channel-End Channel: 1 ~ 4
☐ Destination IP Address: 227.10.20.80 Same
☐ Destination Port: 1234 Same
☐ Pkt Length: 7

[Batch Setting](#)

[Apply](#)

Channel	Enable	Destination IP Address	Destination Port	Protocol	Pkt Length	Input Processing Mode
1.1	<input checked="" type="checkbox"/>	227.10.20.100	10000	UDP	Auto	CBR
1.2	<input type="checkbox"/>	227.20.30.2	1234	UDP	Auto	CBR
1.3	<input type="checkbox"/>	227.20.30.3	1234	UDP	Auto	CBR
1.4	<input type="checkbox"/>	227.20.30.4	1234	UDP	Auto	CBR

IP Input >Service Configuration

To stream a source stream, you can configure the destination in this page. Can also configure to CD2-SDI-00 to give decoding



CD-SDI-00 Status Input Decode System Setting

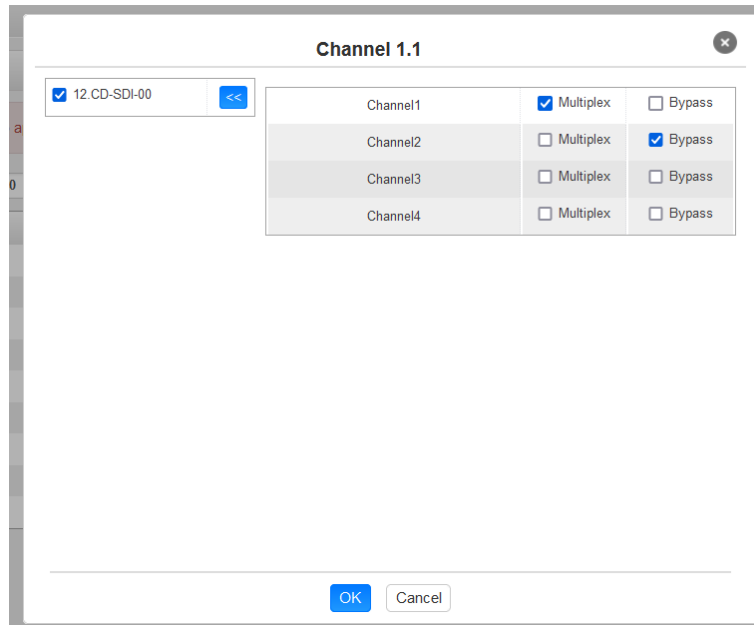
Basic Setting Service Configuration

Channel Select: Channel 1.4 Scanning Time(ms): 1000 SI Search Time(ms): 5000 [Program Scan](#) [Program Clear](#)

Service Name	Destination	Destination Setting
Channel 1.1	12.CD-SDI-00[1.1]	
[1] Wellav service		
Channel 1.2	12.CD-SDI-00[1.2]	
[1] Service01		
Channel 1.3	12.CD-SDI-00[1.3]	
[1] Thairath HD		
Channel 1.4	12.CD-SDI-00[1.4]	
[1] Program0		

[Apply](#)
[Clear Config](#)

- Multiplex or Bypass stream: Click the setting icon () , check the output module, 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.
- 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.



Channel 1.1

☒ 12.CD-SDI-00 <<

Channel	Multiplex	Bypass
Channel1	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Channel2	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Channel3	<input type="checkbox"/>	<input type="checkbox"/>
Channel4	<input type="checkbox"/>	<input type="checkbox"/>

OK Cancel

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

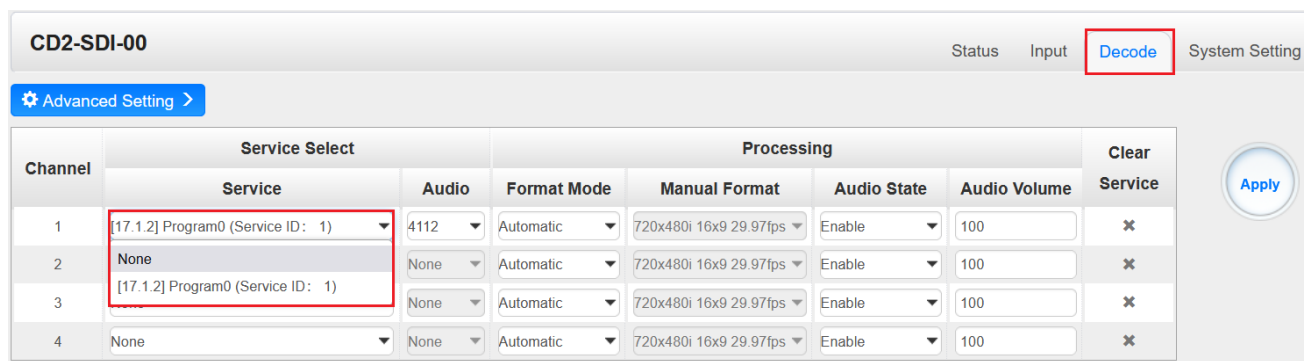


There is a channel scan button (**Channel Scan**) on top. Normally the input service list of each channel will load itself on this page, but when you change the input source, the list could not refresh immediately. You can refresh the changed channels manually by selecting the channel and clicking the channel scan button.

Decode

Here you can configure decode parameters: **Service, Audio, Format Mode, Audio State, Audio Volume**.

Decode the programs coming from the various boards.



CD2-SDI-00 Status Input **Decode** System Setting

Advanced Setting >

Channel	Service Select		Processing				Clear Service
	Service	Audio	Format Mode	Manual Format	Audio State	Audio Volume	
1	[17.1.2] Program0 (Service ID: 1)	4112	Automatic	720x480i 16x9 29.97fps	Enable	100	×
2	None	None	Automatic	720x480i 16x9 29.97fps	Enable	100	×
3	[17.1.2] Program0 (Service ID: 1)	None	Automatic	720x480i 16x9 29.97fps	Enable	100	×
4	None	None	Automatic	720x480i 16x9 29.97fps	Enable	100	×

Apply

Decode Setting

Settings	Range	Description
Audio	None digital	Audio format
Format Mode	Automatic Manual	Select resolution
Audio State	Enable Disable	
Audio Volume	0–100	

6 Appendices

Appendix A – Power Consumption

CMP100 Power supply	350W
CMP201AD/201A/203A Power supply	400W
CMP201/201D/203 Power supply	200W
CMP201 Chassis	Max.21W
CMP201AD Chassis	Max.45W
CMP201A Chassis	Max.44W
CMP201D Chassis	Max.23W
CMP203 Chassis	Max.37W
CMP203A Chassis	Max.59W
CMP100 Chassis	Max.72W
CR2-DVBC-00:DVBC-C AnnexA/C	Max.9W
CR2-DVBC-00:DTMB	Max.9W
CR2-DVBC-01:DVBC AnnexB	Max.9W
CR2-DVBC-01:ISDB-T	Max.9W
CR2-DVBS2FTA-01	Max.38W
CR2-DVBS2FTA-01A	Max.70W
CR2-DVBS2CI-01	Max.22W
CR2-DVBT2CI-00	Max.8W
CR2-8VSB-00	Max.9.5W
CM2-8VSB-R01/R01A	4CH: Max.12W; 8CH: Max.14W

CM2-DTMB-R01/R01A	4CH: Max.12W; 8CH: Max.14W
CM2-OFDM-R01/R01A	4CH: Max.12W; 8CH: Max.14W
CM2-QAMB-R01/R01A	4CH: Max.12W; 8CH: Max.14W
CM2-QAMA-R01/R01A	4CH: Max.12W; 8CH: Max.14W
CM2-ISDBT-R01/R01A	4CH: Max.12W; 8CH: Max.14W
CM2-QAMA-02/02A	Max. 41W
CM2-DTMB-03	Max.23W
CM2-QAMA-03	Max.24W
CM2-QAMB-03	Max.23W
CM2-OFDM-03	Max.23W
CM2-ISDBT-03	Max.23W
CM2-8VSB-03	Max.23W
CM2-QAMB-02A	Max.41W
CM2-QAMA/B-R00	Max.21W
CE2-HDMI-R01	Max.12W
CE2-HDMI-02C	Max.17W
CE2-HDMI-02	Max.17W
CE2-HDMI-05A	Max.21W
CE2-HDMI-R05	Max.19W
CE2-HDMI-06	Max.20W
CE2-SDI-01	Max.16W
CE2-CVBS-00	Max.17W
CE2-CVBS-R01	Max.18W
CP2-EAS-00	Max.5.5W

CP2-IP-00	Max.16W
CP2-IP-02	Max.9W
CP2-ASI-00	Max.8W
CP2-EIT-00	Max.5W
CP2-CAM-00	Max.6W
CX2-TXS-00	Max.49W
CD2-SDI-00	Max.25W

Comments: The chassis includes both the baseboard's and fan's

Appendix B – 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	CompositeVideoBroadcastSignal
CC	Closed Caption
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
	The terms HDMI, HDMI High-Definition Multimedia Interface, and the HDMI Logo are trademarks or registered trademarks of HDMI Licensing Administrator, Inc.
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 C- 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 D- After-Sales Support

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

Returning Products for Service

The CMP203 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 parts 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.