Digital Media Platform

Quick Installation Guide

1. Installation Instruction

1.1 Mounting unit to a 19” rack

ATTENTION When selecting the installation site, try to comply with the following:

- **Protective Ground** - The protective ground lead of the building's electrical installation should comply with national and local requirements.
- **Environmental Condition** - The installation site should be dry, clean, and ventilated. Do not use this equipment where it could be at risk of contact with water.

WARNING **To avoid electric shock, make sure the rack has been correctly grounded before switching on the device.**

To mount the DMP 900 unit to a 19”/42U rack, please perform the following steps:

1. Make sure the mounted rack surface is stable and can support the size and weight of this equipment.

2. For single unit mounting, use an “L” shape slide (not included in the package) to support holding the unit if necessary, and fastened with appropriate screws to each side of the chassis’ rails.

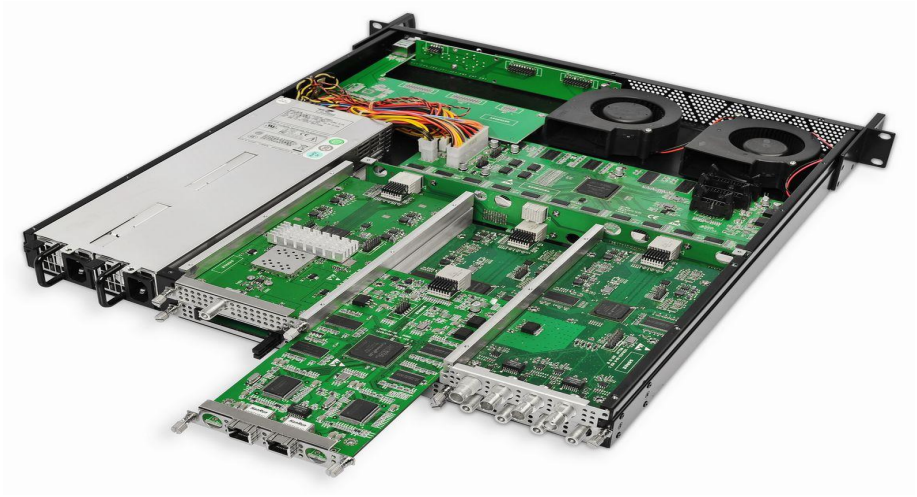
L-shape slide

3. For group pile up (no space between each unit), the unit should be placed on a flat holding bracket. No more than 5 units for each group, and leave at least one unit space between each group to ensure good air ventilation.

5.2 Wiring Connection

ATTENTION Before setting up the connection, please turn off the equipment and all other connected external devices. The equipment and all connected external devices are required grounded. Turn on the devices only after the wiring connection is completed. Otherwise the device may be damaged.

You can look below picture as reference (PIC-1.2-1) to insert the boards in the six slots, there are no special insertion limitations, and each slot accepts all types of the sub modules.



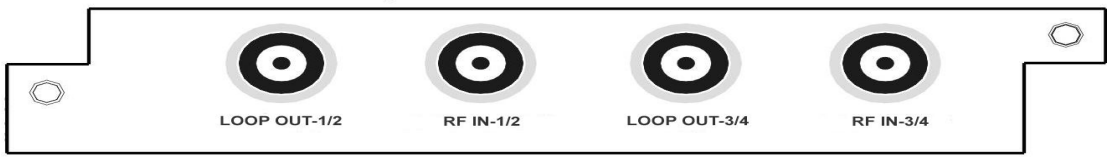
PIC-1.2-1

NOTE:When you need to pull in/out the moulde, please make sure there is 3 seconds above interval for the pull in/out operation. Otherwise the submodule might not be able to load successfully.

After you have inserted all the sub-modules into the DMP900 platform, you can start to wire it.

1. **DVB-S/S2 module:** there are four RF ports on the module, each can be connected to one transponder to receive a TS delivered from it. You can use four RF cables to connect the RF ports to the antenna.

1. **DVB-C module:** there are four RF ports on the module, within them, port 2 & 4 (marked with **RF-IN 1/2 and RF-IN 3/4**) are signal input ports, and port 1 & 3 are loop out ports. You can use two RF cable to connect the module with cable source at the two signal input ports. And if necessary, you can loop out the signal for other usage.

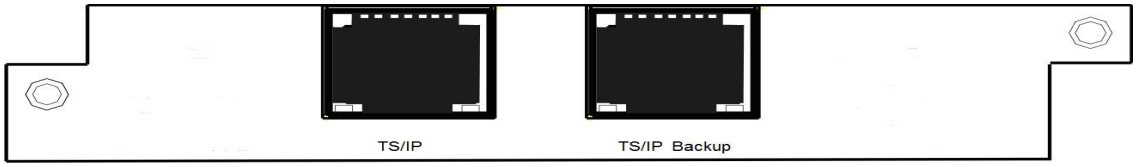


2. **DVB-T/ISDB-T module:** The DVB-T / ISDB-T module supports receiving programs compliant with DVB-T / ISDB-T standard from 4 different frequencies simultaneously. Similar to DVB-S/S2, four ports on the module. Four cables can be used to connect the four RF ports with the signal source.

3. **ASI Module:** The ASI module is equipped with four BNC-type ASI connectors, supporting four ASI inputs/outputs. The default setting of the module is: Ports 1 & 2 is for input, and Ports 3 & 4 is for output. User can specify the port to be input or output at any

time through the NMS. According to your application, connect the four ports to the corresponding devices (receive or send) with ASI cable.

5. GbE IP I/O Module: The IP module is equipped with two RJ45 connectors. Left one is for the IP stream input/output; the other is for stream output only, it's as the backup output when you set 'TS/IP' port as output mode. Connect the TS/IP port with the IP stream receiving or sending devices according to your application. If you need to use the IP board for both receiving and transmitting data, you can connect the TS/IP port to a signal source, and TS/IP Backup to a IP stream receiving device.

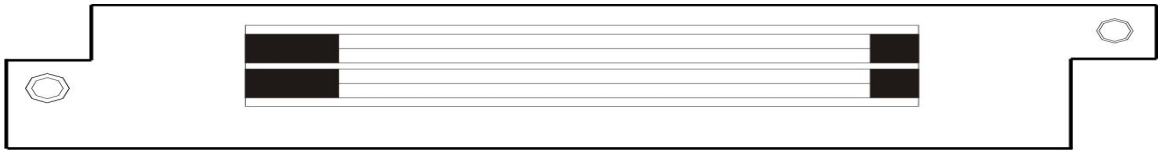


6. QAM/COFDM Module: The QAM/COFDM module can output up to 8 separate RF QAM frequencies signals with one physical output interface, and extra monitor port is used for local monitoring. With adopting corresponding license key, the module can turn to be a 4-COFDM module without changing the hardware. Connect the module with a RF cable to the HFC.

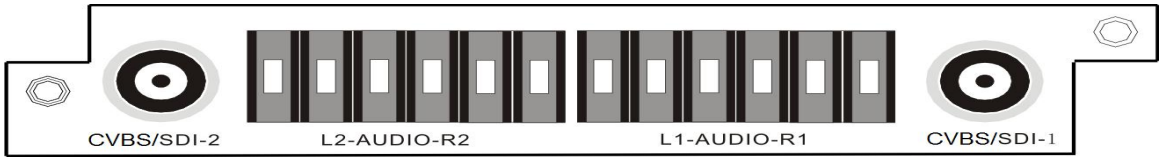
7. CI Descrambling Module: The CI descrambling module is for descrambling the input scrambled stream via CAM module. The module supports 2 CAMs working

simultaneously. Insert appropriate CAM card with smart card to descramble program.

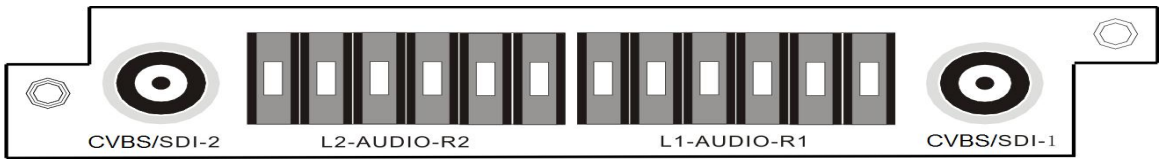
Note: different CAM card support different CAS algorithm. Before you insert the card, you need to figure out what kind of the algorithm the program is scrambled, you can inquire the information from the content provider.



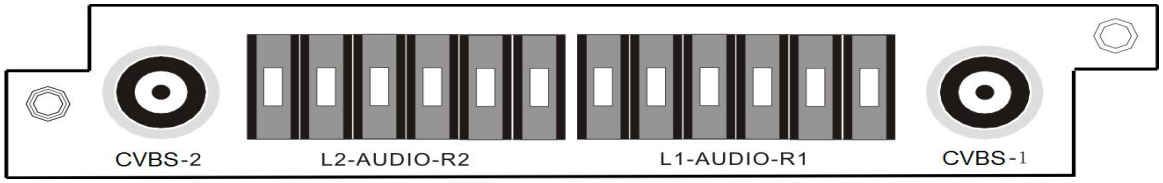
8. SD&HD H.264 SDI/AV Encoder Module: The 2-SD&HD H.264 SDI/AV Encoder Module supports encoding 2 SDI channels or 2 AV channels simultaneously. To encode a program from AV source, a specified AV cable, which is packed in your package, is needed to connect the source to the CVBS/SDI port and the L-Audio-R port next to it. To encode a program from SDI source, one common SDI cable is needed to connected the source to the CVBS/SDI interface.



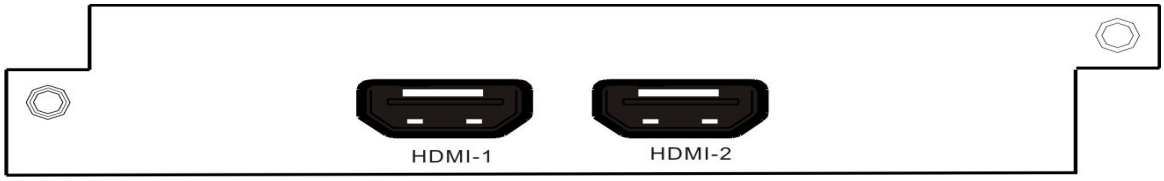
9. SD MPEG2 SDI/AV Encoder Module: The 2 SD MPEG2 SDI/AV Encoder Module supports encoding 2 SDI channels or 2 AV channels simultaneously. To encode a program from AV source, a specified AV cable, which is packed in your package, is needed to connect the source to the CVBS/SDI port and the L-Audio-R port next to it. To encode a program from SDI source, one common SDI cable is needed to connected the source to the CVBS/SDI interface.



10. SD MPEG2 AV Encoder Module: The 2-SD MPEG2 AV Encoder Module supports encoding 2 AV channels simultaneously. To encode a program from AV source, a specified AV cable, which is packed in your package, is needed to connect the source to the CVBS/SDI port and the L-Audio-R port next to it.



11. HD H.264 HDMI Encoder Module: The HD H.264 HDMI Encoder Module supports encoding 2 HDMI channels simultaneously. You can use a HDMI cable to connect the HDMI source to the HDMI port of the module.



12. DVB Scrambler Module: Connect the RJ45 port with crossover Ethernet cable to the CAS server. (You may need a switch to setup the connection.)

13. MPEG2 to MPEG4 Transcoder / MPEG4 to MPEG2 Transcoder Module: Physical connection is not necessary for this module.

14. **Power:** There are two UPS power supply units (one for redundant), you can connect them with two different power supply sources.

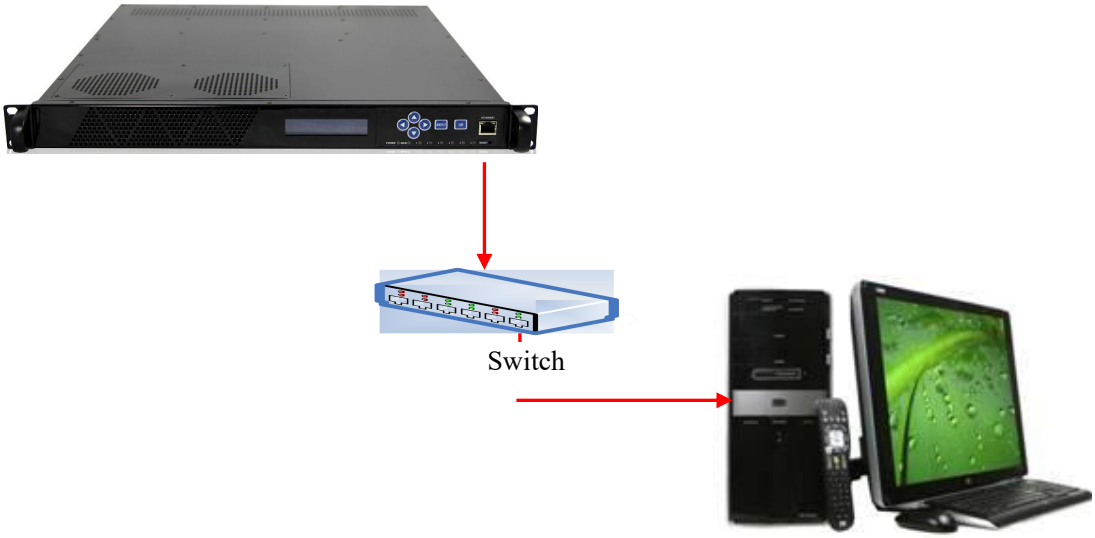
Connect this equipment only to the power sources that are identified on the equipment-rating label normally located close to the power inlet connector(s). Always pull on the plug or the connector to disconnect a cable. Never pull on the cable itself.

To protect your valuable interests and services, equipping a UPS (Uninterrupted Power Supply) and an AVR (Automated Voltage Regulator) to the system is highly recommended.

15. **Management Port Connection:** Connect the Management Port on the front Panel to a switch, and then connect the switch to a Monitor computer with crossover Ethernet Cable. (PIC-1.2-2)

Note: The equipment can be connected directly to a monitor PC using a crossover Ethernet cable.

In order to ensure a smooth communication between the management PC and the equipment, please separate the connection of management port and TS/IP output port to different switch. The switch with management port connected should be without large data processing.



PIC-1.2-2

16. **Ground Protective:** Connect the Ground Port to the Rack with a lead wire.

2. Operation Instructions

2.1 Powering Up & Initializations

Before powering-up the device, make sure that all cabling is correctly connected. The device is correctly connected to the power inlet and grounded.

When you have finished the wiring, power up the device, you can see the booting information through the LCD screen on the front panel, the initialization will take about one or two minutes.

PIC-6.1-1

After the initialization is finished, the Device Name and its IP address will appear on the LCD screen (PIC-2.1-1).

If the unit fails to initialize and hangs at the "booting" stage, swtiching off the device and then powering up again may help. If the device still fails to initialize, please contact your service representative for help.

2.2 Enter the NMS interface

DMP 900 provides a user-friendly UI interface for you to easily configure the device and constantly monitor the device status. Before you can configure the DMP 900 through the NMS, you need to set up a stable connection between the device and the monitor server. Below steps will help:

1. **Setup a connection between the DMP 900 and monitor PC.**

Note: Step 1 to Step 2 is operated from the front panel. There are six buttons on the front panel: Up / Down / Left / Right / Menu / OK for you to manually configure the basic parameters of the device.

- **Step 1:** Check out the DMP IP

  Press ***MENU*** button to enter main menu.

  Press ***UP*** button and ***DOWN*** to navigate to the sub menu **Ethernet**.

  Press ***OK*** to Enter the Sub menu **Ethernet**, within it, press ***UP*** button and ***DOWN*** button, you can check out the **IP**, **Gateway**, **Subnet Mask**, etc.

- **Step 2:** Change the **IP**, **Gateway** and **Subnet Mask** to make it in the same network section as the management PC:

  Example:

	Media Platform	Management PC
IP Address	192.168.1.16	192.168.1.28
Gateway	192.168.1.1	192.168.1.1
Sub Mask	255.255.255.0	255.255.255.0

Note: to Change a parameter, you can first press *OK* button, Then the parameter will be selected with a blinking short line under its first character (or number), then you can use *UP* and *DOWN* button to change the parameter's value as you desired, press OK button to take effect.

- **Step 3:** After you have setup the above parameters, press ***MENU*** button to exit the configuration, the device will reboot automatically.
- **Step 4:** Ping the new IP of the DMP 900 through the management PC to check the connectivity.

2. **Enter the Web interface**

- **Step 1:** Enter IP address of the device (192.168.1.16) in the browser address bar to connect with the unit

- **Step 2:** Input default user name “**admin**” and default password “**admin**” to login the unit.

2.3 Quick Configuration on key parameters

2.3.1 Basic Program Setting

2.3.1.1 Scan TS

Scan TS is a basic operation of the program setting with receiver or encoder module. These modules include: DVB-S/S2, DVB-C, DVB-T/ISDB-T, ASI (If part of the ports are set as input), IP I/O (If part of the ports are set as input) and Encoder module.

Take TSIP module for example:

Once there is a TSIP module inserted in the DMP 900 platform, and the corresponding parameters are configured correctly, the TSIP module will display in the “Status window”:

Click Menu **"Service Configuration",** the program configuration page will display, in the "Input Program Info", Select the "**Board#[TSIP]**", click + beside it to expand the port list, there are four ports under the TSIP module, representing the ports.

Under each port there's a **TS1** sub tree. Right click it, in the new menu, click "**Scan TS**", all the programs delivered from the source will display. (PIC-2.3-3) Repeat above steps to scan the programs from the other ports.

PIC-2.3-3

2.3.1.2. Transfer a program (or TS)

This operation is frequently used when you plan to transfer a program (or TS) from one module to another for transmitting or further processing.

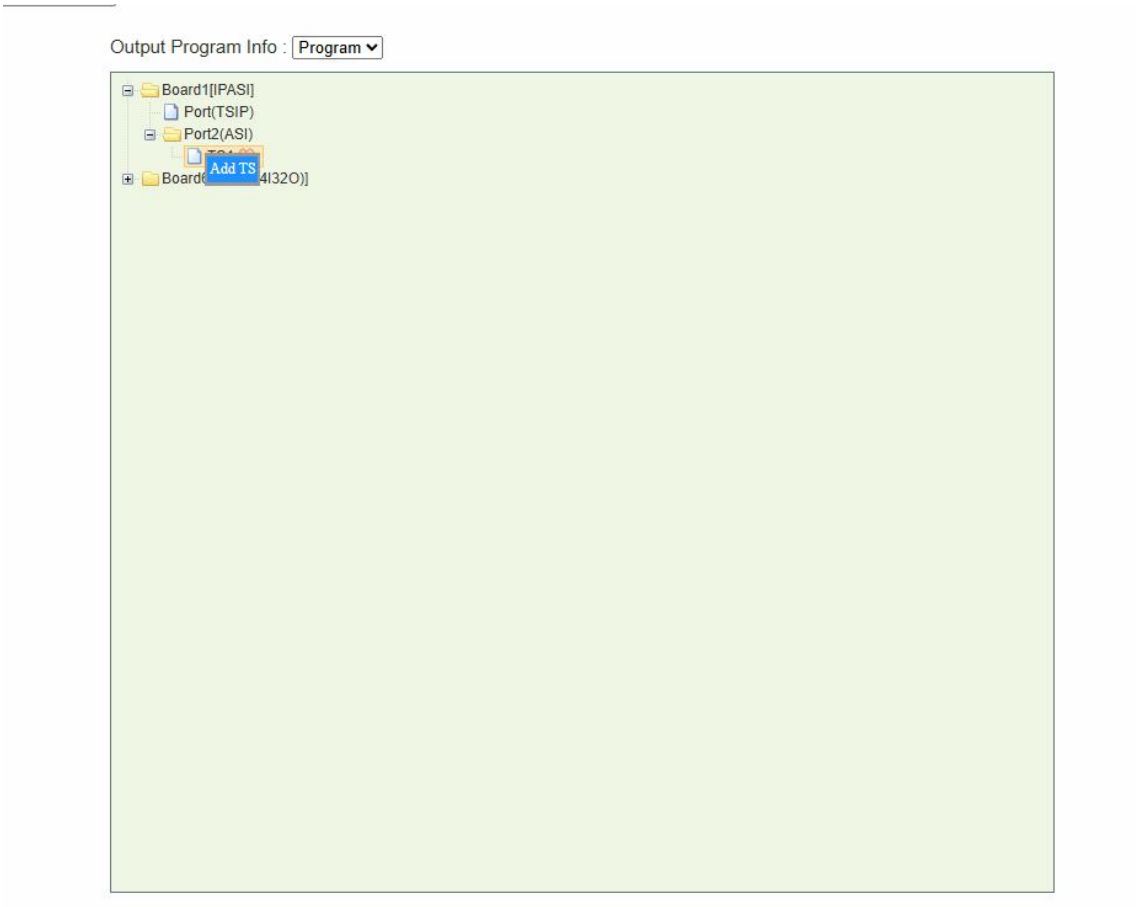
Take ASI module for example:

If there is a ASI module inserted in the DMP 900 platform, and some ports of it is configured as output type, the ASI module will appear in the "Service Configuration" and is ready to receive program (or TS).

- **Step 1:** Add TS

Add TS is to set up a TS path for receiving program or TS.

Find the ASI module by mark “**Board#[ASI]**” in the “Output Program Info window”, click + to expand the port list. Under the port, there is a TS1 sub tree, right click it, select “Add TS” from the menu. (PIC-2.3-4) A sub tree “Programs” will appear under TS1, it indicate the port is ready to receive program or TS.



PIC-2.3-4

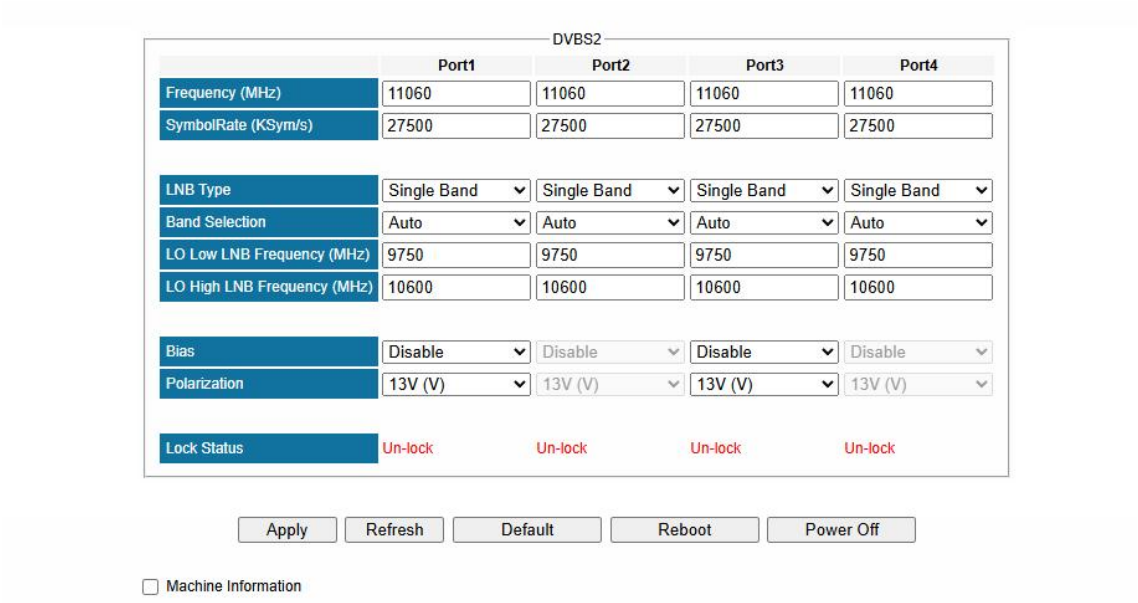
2.3.2 Configuration parameters of sub modules

Module parameters should be set correctly to ensure it will work according to your application. After setting the parameters of each module, you should click “Apply” button on the parameter setting page of each module to make the setting take effect.

In this document, only key parameters are introduced for you to quickly install and

configure the devices, follow the steps and keep the default value of the other parameters, you can setup the device for basic function, if you need to know the specified parameter beyond this document, please refer to the User Manual.

2.3.2.1 DVB-S/S2 Receiving Module



Key Parameters:

Parameters	Description
Port	Indicates which input port the channels comes from
Sat Frequency	Input the frequency of transponder which you want to receive programs. The unit is MHz
Symbol Rate	Input the symbol rate of the transponder. The unit is KS/s
Polarization	Select the voltage provided to LNB (13V for vertical or 18V for Horizontal).
Lock Status	To indicate the input is locked or not.
Bias	Available in Port2 and Port4

Please contact your program provider for the parameters details of the channel if you are not clear about.

After setting all parameters, you should press the 'Apply' button to save the settings.

Note:

1. **Paramenters of "FECCodeRate" can be automatically recognized by the NMS.**
2. **Only LNB 1 & 3 inputs support polarization setting. LNB 2 & 4 cannot provide power (13V or 18V) to the LNB.**
3. **Satellite parameters may changed, please coordinate with the content provider or browse www.lyngsat.com for the updated parameters.**
4. **Symbol rate usually if:**
   - **b) Ku-Band: 11,300 KS/s.**
   - **c) C-Band: 5150 KS/s**

- **Program Setting**

DVB-S/S2 is a receiver module. If the parameters of the module are correctly configured, it is ready to receive programs (or TS) from transponders. Please refer to chapter **2.3.1.1 Scan TS**.

- **Status Monitor**

Slot 2: DVBS2

Slot 2:DVBS2 Status				
TS Bitrate Overview				
	Port1	Port2	Port3	Port4
Lock Status	Un-lock	Un-lock	Un-lock	Un-lock
Total Bitrate(Mbps)	0.00	0.00	0.00	0.00
Effective Bitrate(Mbps)	0.00	0.00	0.00	0.00
RF Level(dBm)	0	0	0	0
C/N(dB)	0.0	0.0	0.0	0.0
BER	0.000xE-0	0.000xE-0	0.000xE-0	0.000xE-0
Frequency Offset(KHz)	0	0	0	0
Symbolrate Offset(baud)	0	0	0	0
SNR(db)	0.0	0.0	0.0	0.0
EB/NO(db)	0	0	0	0
Link margin(db)	0	0	0	0
FEC Code Rate	1/4	1/4	1/4	1/4
Mode	DVB S	DVB S	DVB S	DVB S
Constellation	QPSK	QPSK	QPSK	QPSK
Spectrum Inversion	Normal	Normal	Normal	Normal
SRAM Status	Normal			

Once the signal turns GREEN, it means that it is LOCK. As a result, a data will appear on the status monitoring. Otherwise, the signal will turn to RED which means No Signal.

Note:

If there's no signal received, please do as follows:

- **Check the Parameters and Setting configuration if it's correct.**
- **Check the Cable.**
- **You can double check at the back of the equipment if there's already a signal coming in. The DVB-S2 module has a LED display as well, showing that the signal is LOCK on the ports on which the signal was connected.**

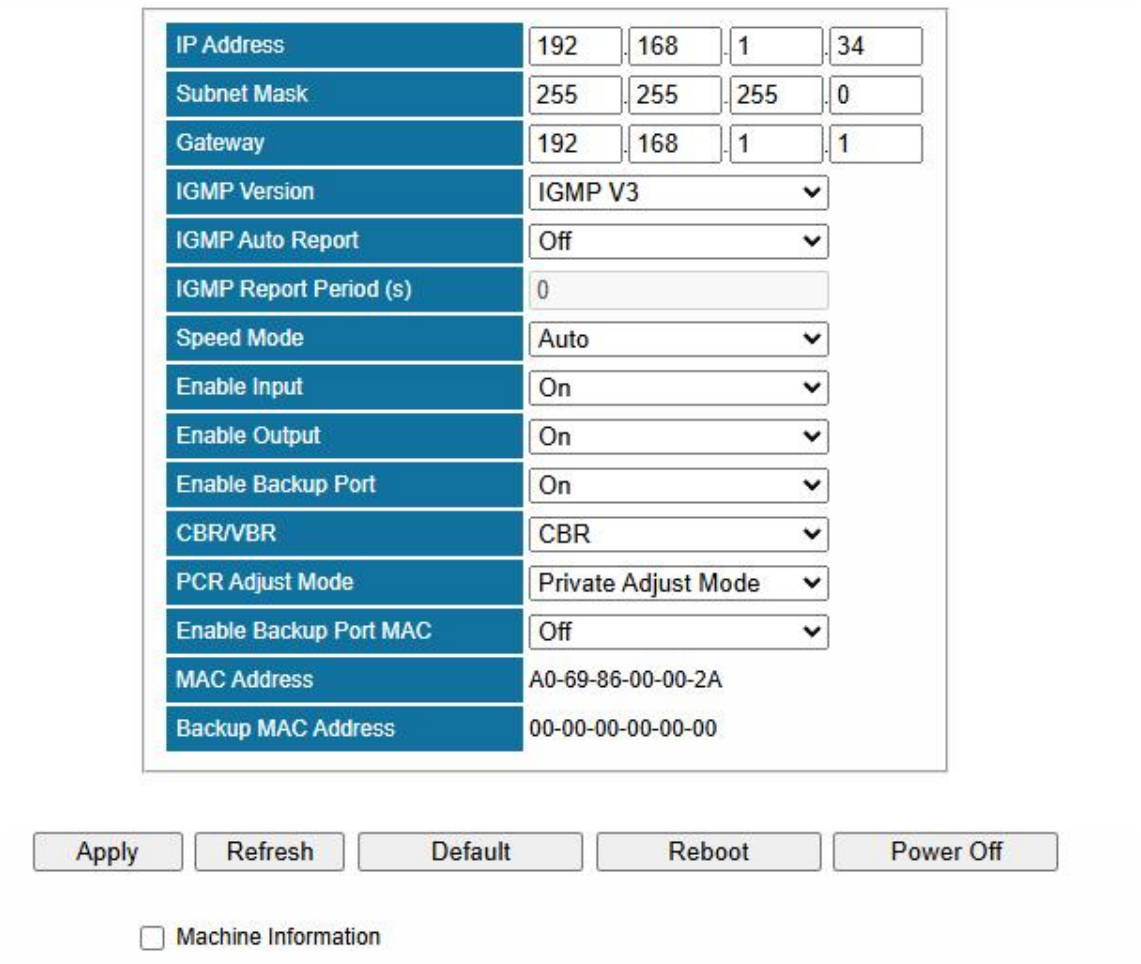
2.3.2.2 TSIP I/O Module

- **IP Module Setting Interface**

By selecting the 'IP' tab on the NMS operation interface, the IP module setting interface will be displayed.

The settings on the IP module include the settings on the '**Input'**, '**Output**' and '**Setup**'.

- **'Setup' Setting of the I/O Module**



Key Parameters:

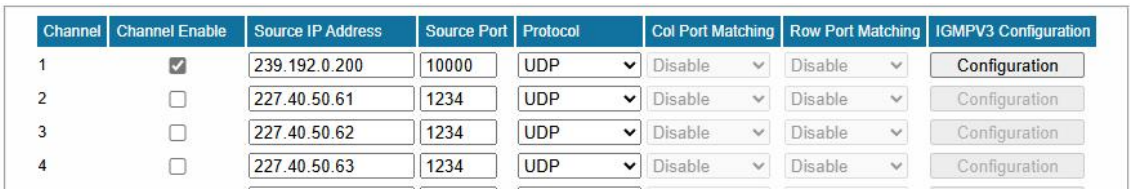
Parameters	Description
IP Address	Set IP address of IP module. The IP address of IP module is used for communication with CAS server that should be in the same IP section

	with IP address of the equipment
Subnet Mask	Set Subnet Mark of the IP module
Gateway	Set Gateway of the IP module
MAC Address	MAC address of the IP module

After setting all the parameters, you should press 'Apply' button to save the settings.

- **'Input' Setting of the IP I/O Module**

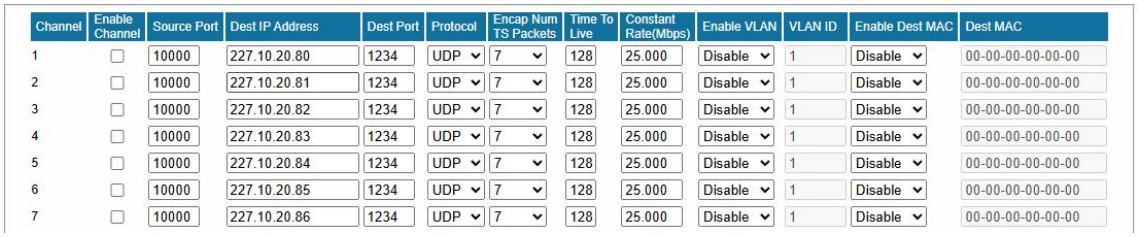
The 'Receiver' setting menu is to set the IP address for receiving multicast or unicast IP stream.



Channel	Channel Enable	Source IP Address	Source Port	Protocol	Col Port Matching	Row Port Matching	IGMPV3 Configuration
1	☑	239.192.0.200	10000	UDP	Disable	Disable	Configuration
2	☐	227.40.50.61	1234	UDP	Disable	Disable	Configuration
3	☐	227.40.50.62	1234	UDP	Disable	Disable	Configuration
4	☐	227.40.50.63	1234	UDP	Disable	Disable	Configuration

- **'Output' Setting of the TSIP I/O Module**

The 'Input' setting menu is to set the IP output function for transmitting multicast/unicast IP stream to other devices.



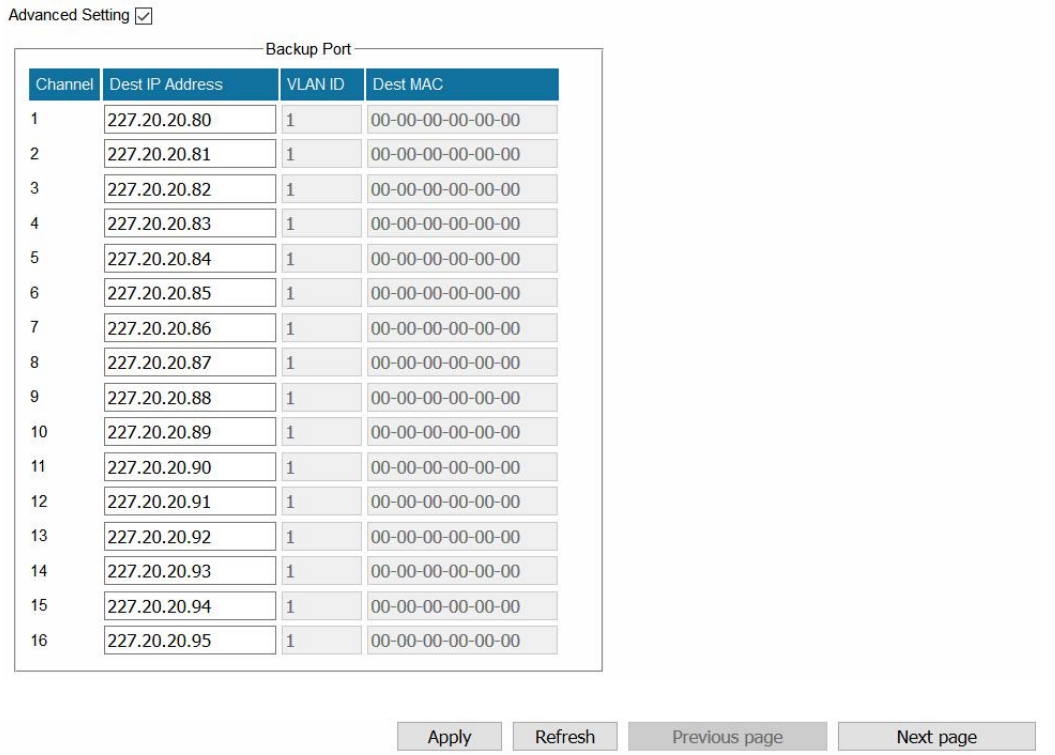
Channel	Enable Channel	Source Port	Dest IP Address	Dest Port	Protocol	Encap Num TS Packets	Time To Live	Constant Rate(Mbps)	Enable VLAN	VLAN ID	Enable Dest MAC	Dest MAC
1	☐	10000	227.10.20.80	1234	UDP	7	128	25.000	Disable	1	Disable	00-00-00-00-00-00
2	☐	10000	227.10.20.81	1234	UDP	7	128	25.000	Disable	1	Disable	00-00-00-00-00-00
3	☐	10000	227.10.20.82	1234	UDP	7	128	25.000	Disable	1	Disable	00-00-00-00-00-00
4	☐	10000	227.10.20.83	1234	UDP	7	128	25.000	Disable	1	Disable	00-00-00-00-00-00
5	☐	10000	227.10.20.84	1234	UDP	7	128	25.000	Disable	1	Disable	00-00-00-00-00-00
6	☐	10000	227.10.20.85	1234	UDP	7	128	25.000	Disable	1	Disable	00-00-00-00-00-00
7	☐	10000	227.10.20.86	1234	UDP	7	128	25.000	Disable	1	Disable	00-00-00-00-00-00

After setting all parameters, you should press 'Set' button to save the settings.

The Constant Rate should be about 2 Mbps higher than the Effective Bitrate listed in the Status > TSIP (64I32O) menu. In that case, the bitrate of inserted null packets will be around 2 Mbps. Better not enable unemployed channels, since the enabled channels without services still output null packets at Constant Bitrate.

Select **Advanced Setting** to configure backup port. The backup feature is available only when the main channels are transferring services.

The backup port duplicates the output streams in the main port respectively. If you set the backup Dest IP Address the same with the main port, do not connect main port and backup port to the same VLAN to avoid conflicts.

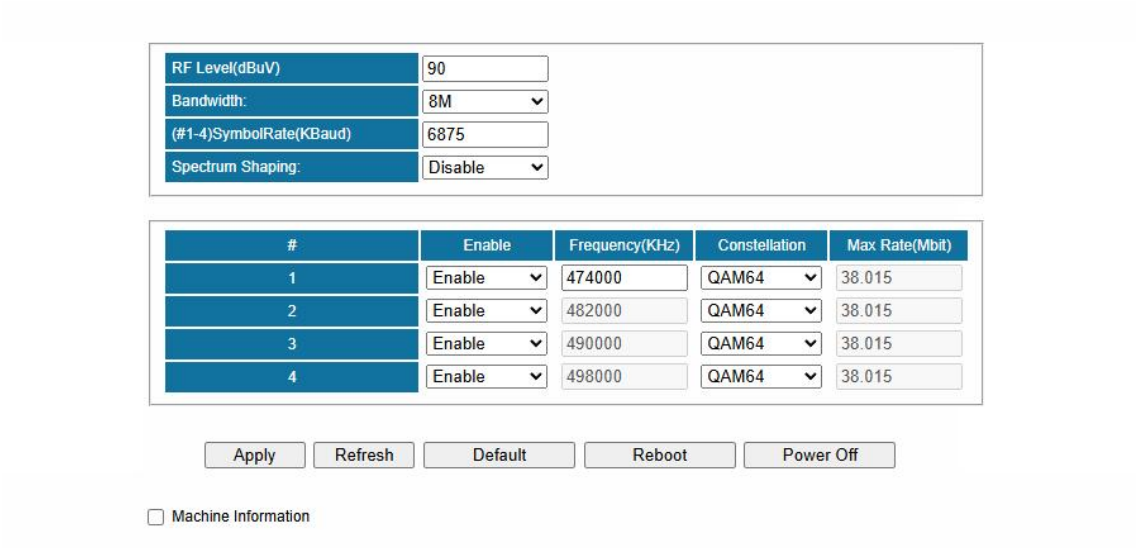


After setting all parameters, you should press ‘Set’ button to save the settings.

NOTE:

- **Once the IP module is properly configured, a status data will automatically appear.**
- **If no data status shown on the TSIP Input:**
  - **Check the configuration is the Multicast Address and port is correct based from the source input.**
  - **Check the TSIP out of the source (via VLC) it is really transmitting.**

2.3.2.3 IQAM Module



Key Parameters:

Parameters	Description
Bandwidth	Select the bandwidth of output RF, 6M/7M/8M are available.
SymbolRate (Channel 1~4)	Set symbol rate for the first four transmission frequencies
RF level	Set the RF level,90~106 is available.
Enable	Switch 'Enable' or 'Disable' for the selected channel output
RF Frequency (KHz)	Set the carrier frequency for the first modulation frequency. Note: for the RF frequencies of port 2~8, they will be set automatically by the NMS base on the frequency of port 1 and the 'Bandwidth' setting.
Mode	Set modulation type of each modulators port. The modulation mode can be QAM16, QAM32, QAM64, QAM128, QAM256.

After setting all parameters, you should press 'Apply' button to save the settings.

- **Program setting**

QAM module is to receive the programs, then modulate them for transmitting, you can refer to chapter **2.3.1.2 Transfer a program.**

- **Status Monitor**

TS Bitrate Overview		
#	Total Bitrate(Mbps)	Effective Bitrate(Mbps)
1	36.72	0.00
2	36.72	0.00
3	36.72	0.00
4	36.72	0.00
RF Output		
RF Level Status		
No good		

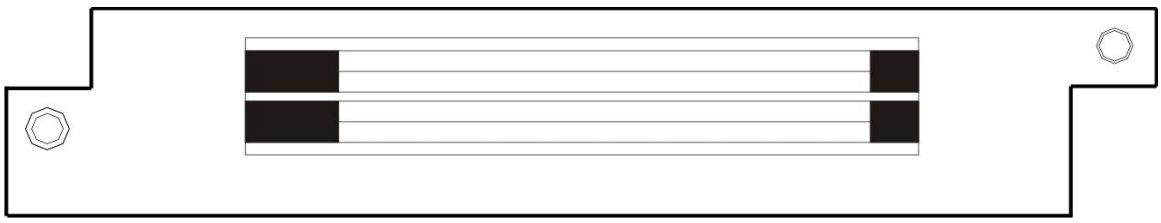
Key Parameters:

Parameters	Description
TS#(T)	Indicates the total bit rate of input signal, including the valid and null packet. The unit is Mbps
TS#(E)	Indicates the bit rate of valid packet (excluding the null packet). The unit is Mbps.
RF Level status	Indicates if the physical RF port works (green) or not (red)

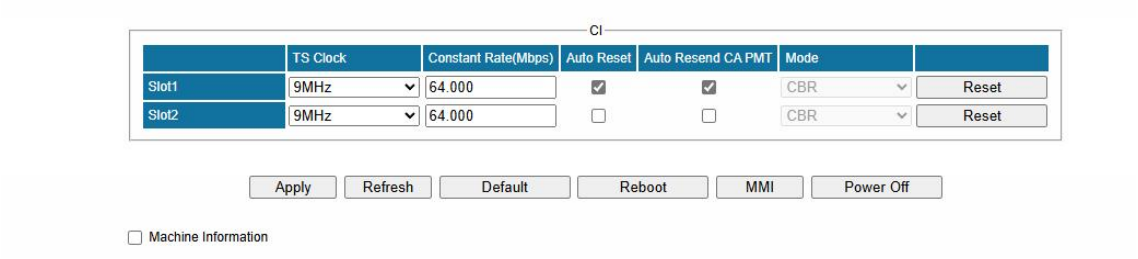
Note:

- **Total allowable Bit rate, will automatically appear based on the configuration that was set.**
- **Effective bit rate should not exceed total allowable bit rate. Otherwise, overflow will occur.**
- **It is advisable to save a space to prevent overflow.**

2.3.2.4 CI Descrambling Module Parameter Setting



The CI descrambling module is for descrambling the input scrambled stream via CAM module. The module supports 2 CAMs working simultaneously.



In the CI module configuration interface, there are four items for user to select/configure. Only after the parameters are correctly set can the CI module work normally.

Key Parameters:

Parameters	Description
TSClock	The TSClock is selected according to the CAM and actual bitrate of input TS. Five options in the TSClock can be selected: **9MHz**--support up to 72Mbit input TS. **9.5MHz**--support up to 76Mbit input TS. 10.5MHz--support up to 84Mbit input TS. 11.5MHz--support up to 92Mbit input TS. 13MHz--support up to 104Mbit input TS. ！**Please select default 9MHz for the TSClock if input TS is less than 72Mbit in total bitrate.**
Mode	**CBR**--the output descrambling TS bitrate is set at a bitrate which set in the ConstantRate. **VBR**--the output descrambling TS bitrate is changeable depending on the input TS.
ConstantRate (Mbit)	To set a fixed output bitrate for the CI module. It will take effect when user selects the CBR mode. ！**Please set a bigger bitrate value than the input TS rate and reserve a bit buffer.**

Note: for the descrambling operation on a program, please refer to "Descramble Operation", page-51 of this manual for the details.

After setting all the parameters, you should press '**Apply**' button to save the settings.

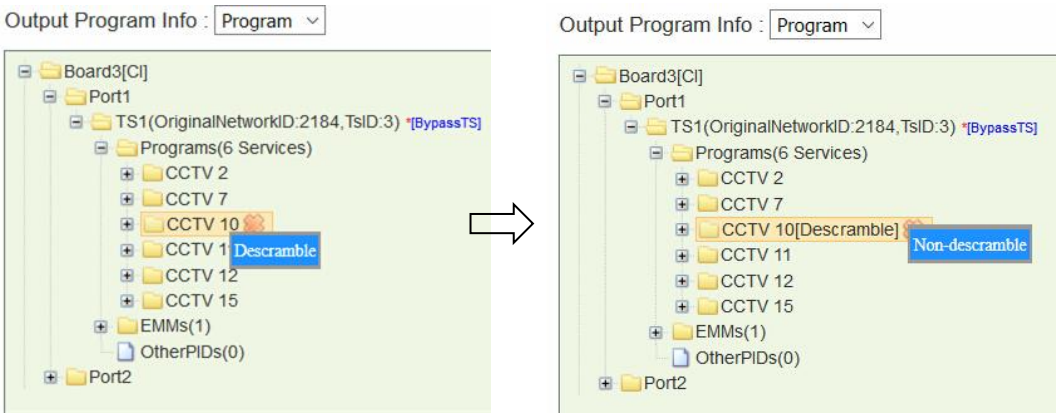
NOTE:

- **In decrypting the encrypted programs, you just need to pick a specific program and transfer it to the CI board at program information.**
- **CI has two clot, select which slot it should belong (from you the CAM Card is inserted).**
- **Suboard Status , will automatically display the data of the programs being decrypted.**

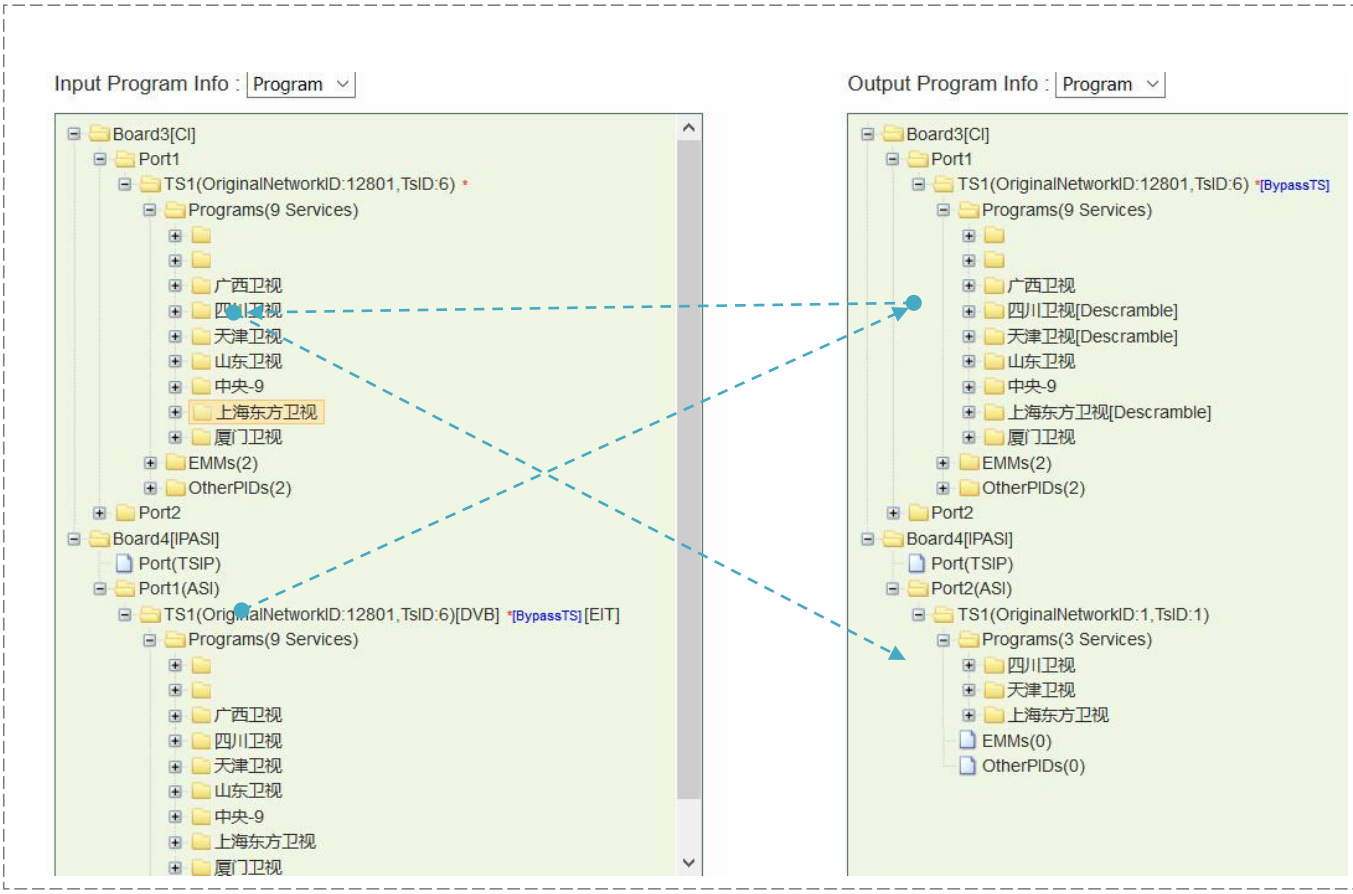
- **Program setting**

Go to **Service Configuration**. Bypass the input TS and drag it to output Board3 [CI] on the right side. Then on the left side in Board3 [CI] Port1 the processed TS is listed as an input again.

Right-click a program in the output CI port to descramble this service by the CAM in Port 1. [Descramble] follows the service that is descrambled as a mark. To cancel the **descrambling** process for the service, right-click it and click **Non-descramble**. Click Apply.



Drag the service that has been descrambled from input Board3 [CI], Port1 to output port.



- **CI Status**

Slot 3:CI Status		
TS Bitrate Overview		
	Port1	**Port2**
Input Effective Bitrate(Mbps)	35.79	0.00
Output Effective Bitrate(Mbps)	35.41	0.00
Output Total Bitrate(Mbps)	63.85	0.00
CAM Insert Status	Inserted	Inserted
CAM Init Status	Succeeded	Failed
CAM Name	NOVEL SUPERTV-SMIT	EMPTY
CA System ID	18946	0
CC Error	In:0, Out:0	In:0, Out:0
Service Descramble Status	Service ID: 602, Video PID: 801, Succeed	
	Service ID: 604, Video PID: 803, Succeed	
	Service ID: 601, Video PID: 800, Succeed	

Refresh

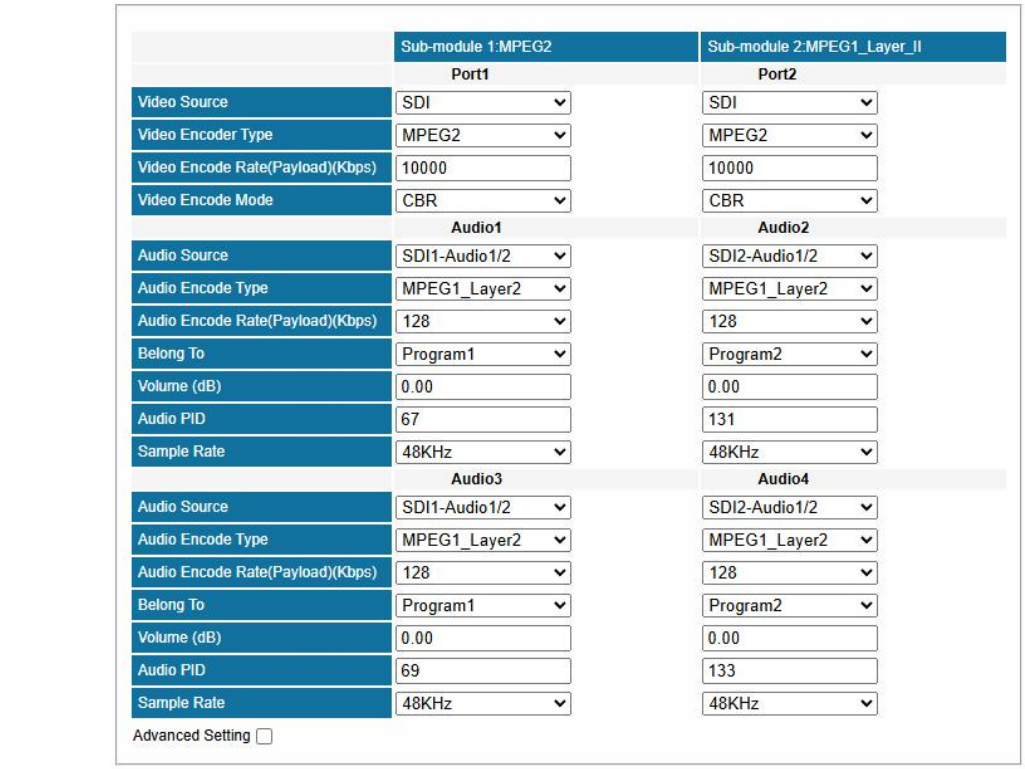
Key Parameters:

Parameters	Description
CAM Port	Indicates which CAM the user is operating.
CAM Insert Status	Indicates if the CAM module is detected (Inserted) or not (Null)
CAM Init Status	Indicates if the initialization of CAM module is successful (Good) or failed (No good)
CAM Name	Indicates the CAM module name.
CA System ID	Indicates the CAS system ID of the inserted CAM module.

NOTE:

- **In decrypting the encrypted programs, you just need to pick a specific program and transfer it to the CI board at program information.**
- **CI has two clot, select which slot it should belong (from you the CAM Card is inserted).**
- **Status monitoring, will automatically display the data of the programs being decrypted.**

2.3.2.5 EN2SDI-2H Encoder Module Parameter Setting



Parameters	Description
Channel	Indicates which input port the channel comes from.
Video Source	To select the correct video source for the input.
Audio Source	To select the correct audio source for the input.
Video Encode Rate (Payload)(Kbps)	600~20000
Audio Volume	0~8(range)
PCR PID	32~81900(range)

After setting all the parameters, you should press ‘Apply’ button to save the settings.

- **Program Setting**

After you have finished above parameter setting, the encoder module is ready to receive

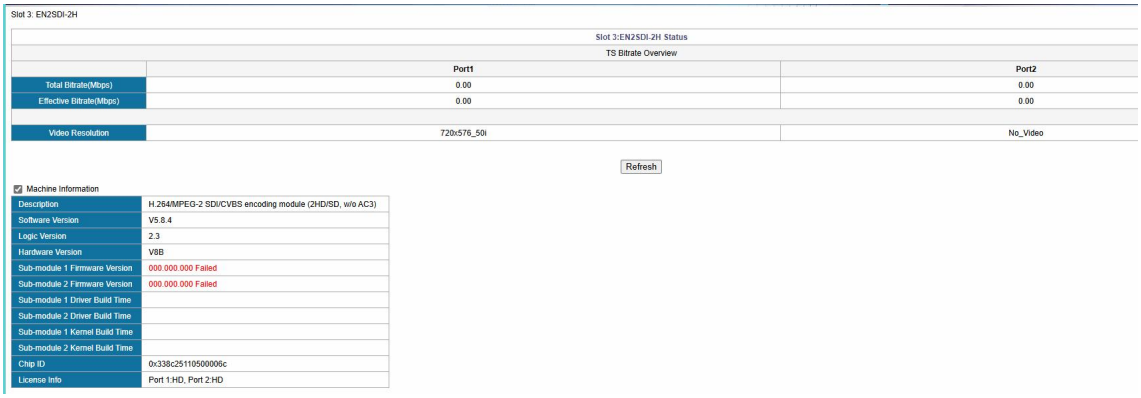
program source and encode it into the corresponding format (depending on the encoder module type). You can **Scan** the encoded program out from the two encoder ports in the Input Program List. The program name is as “Program_1”, it is editable for you to alter it as the required name. Please refer to chapter **2.3.1.1 Scan TS.**

Currently, we have 7 kinds of encoder modules, they are :

1. EN4SDIH+
2. EN4SDIS+
3. EN2SDI-2Hv3
4. EN2SDI-SD
5. EN2SDI-2Hv3
6. EN4SDIS+
7. EN4SDIH+

Program setting of above modules are the same.

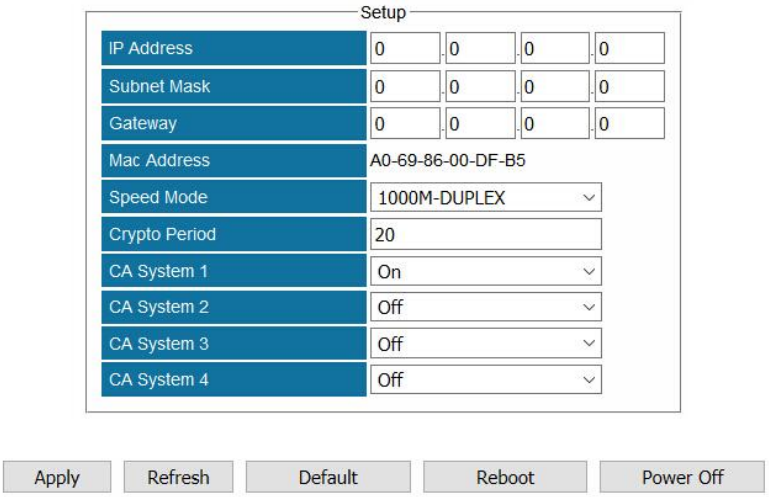
- **Status Monitor**



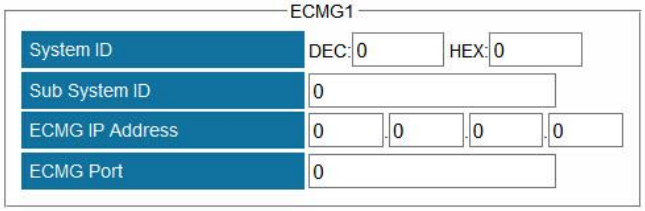
Parameters	Description
Port#(T)	Indicates the total bitrate of input signal, including the valid and null packet. The unit is Mbps
Port#(E)	Indicates the bit rate of valid packet (excluding the null packet). The unit is Mbps.
VideoResolution	the resolution of input video

2.3.2.6 Scrambler+ Module

Go to **Module Configuration >Setup**. Enter **the IP Address**, **Subnet Mask**, **Gateway**, and **Speed** Mode for this scrambler. The IP Address should be in the same network with that of the CAS server. The Speed mode should be the same with the Ethernet of CAS server. Turn on **CA System 1** and keep unused CA Systems Off. Use a cross-through RJ45 cable to connect scrambler to CAS server's Ethernet port. Check the connection by pinging scrambler's IP address in the Command Prompt of CAS server.



Configuring ECMG connection.



Enter System ID, Sub System ID (keep it 0 if not required), **ECMG IP Address, and ECMG Port. Click Apply.** Check **ECMG Communication Status in Status >Scrambler+.** When the connection is liable, the status is a green **Connected.** See in the following figure.

Communicate Status

CA System	ECMG	EMMG	ECM Count	EMM Count
1	Connected	Connected	0	1058360
2	Closed	Closed	0	0
3	Closed	Closed	0	0
4	Closed	Closed	0	0

PHY

Link	Speed	Duplex
Link Up	100 Mbps	Full-duplex

Configuring EMMG connection.

EMMG1

EMMG TCP Port	0
EMMG UDP Port	0
EMM Send Type	TCP
EMM PID	0
EMM Bandwidth	0

Enter EMMG TCP Port, EMMG UDP Port (keep it 0 if EMM Send Type is TCP)**, EMM Send Type, EMM PID, and EMM Bandwidth.** Click Apply. Check **EMMG Communication Status in Status >Scrambler+**. When the connection is stable, the status should be a green **Connected.**

Configuring ECM

ECM Stream ID	7
ECM ID	7
ECM PID	4006

AC Data(Hex) 0001000100060006 Add

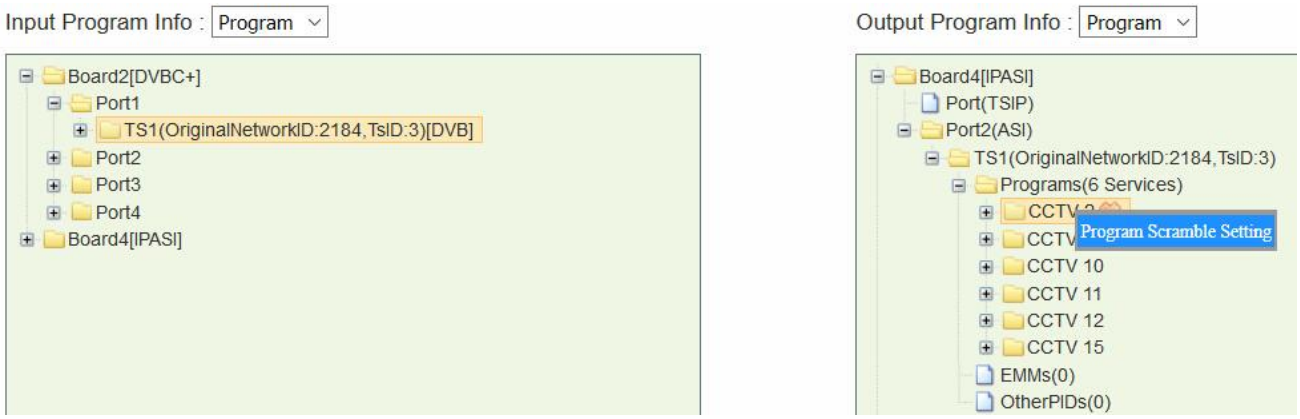
ECM1 List

ECM Stream ID	ECM ID	ECM PID	AC Data(Hex)	Delete
1	1	4000	0001000100010001	
2	2	4001	0001000100020002	
3	3	4002	0001000100030003	
4	4	4003	0001000100040004	
5	5	4004	0001000100050005	
6	6	4005	0001000100060006	

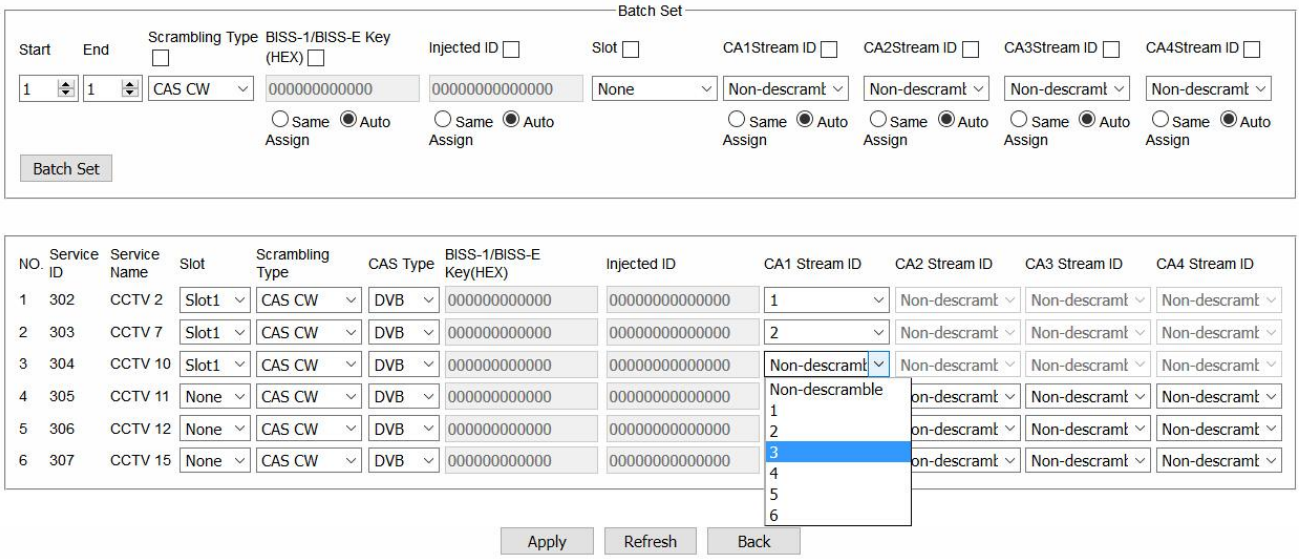
Add the AC Data that is created in CAS server into ECM List.

Scrambling Programs

Once the ECMG, EMMG connection is done and ECM is added, go to **Service Configuration** and right-click a program in output port to **Program Scramble** Setting.



Select **Slot** (the slot in which Scrambler+ is installed), CA Stream ID for each program and click Apply to scramble them. Go to **Status** > **Scrambler+** and check **ECM Count**. The count number should be the same with the number of scrambled programs.



To cancel the scrambling process for a scrambled program, go to **Program Scramble Setting** again, set **Slot** to **None** and apply **Non-scramble** for this program.

BISS-1/BISS-E Scrambling

BISS scrambling does not require a CAS server. Right-click an output program to **Program Scrambling Setting**. Select **BISS-1/BISS-E** in Scrambling Type and enter **BISS keys** to scramble the programs.

Note: This Quick Installation Guide only contains tutorials with simple instructions for device installation and configuration. For more information, please refer to the User Manual in the CD packaged with your product.

Trademark Acknowledgments

All trademarks shown in this manual are trademarks of their respective owners.

The terms HDMI, HDMI High-Definition Multimedia Interface, and the HDMI Logo are trademarks or registered trademarks of HDMI Licensing Administrator, Inc.