SMP180 Integrated Digital Receiver

Quick Installation Guide

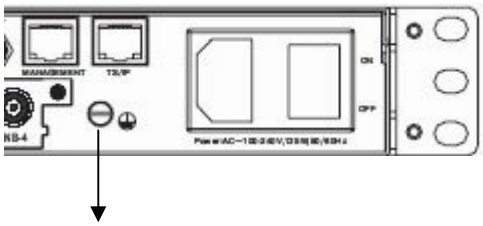
1. Installation Instruction

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.**



PIC-1.1-1 Grounding Jackscrew (must be connected to the rack housing)

To mount the SMP180 unit to a 19”/42U rack, please perform the following steps:

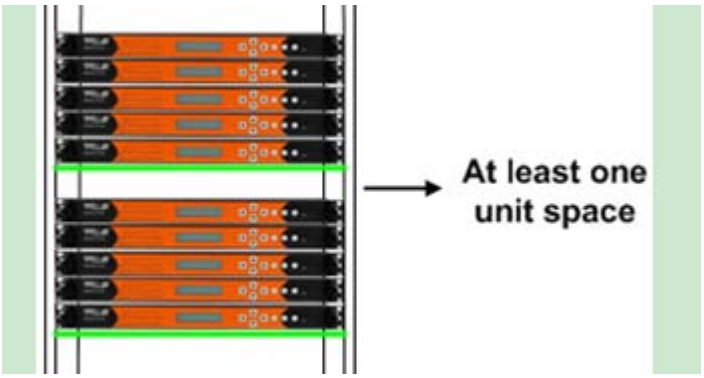
1. Make sure the mounted rack surface is stable and can support the size and weight of this equipment.

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.

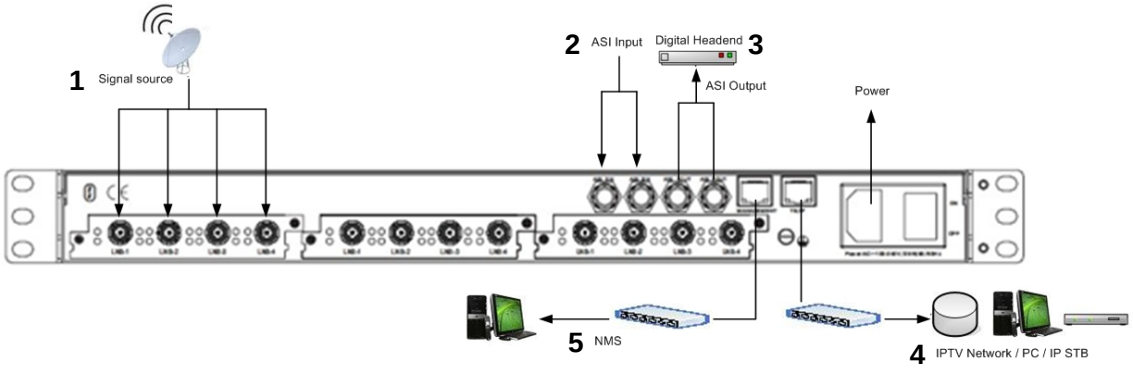


PIC-1.1-2

1.2 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.

Follow the below connection diagram to set up cable connection:



PIC-1.2-1

- Set up cable connection for input signal: either the LNB input (area 1), ASI input (area 2) or TS/IP input (area 4)
- Set up cable connection for output signal: either through ASI (area 3) or TS/IP (area 4)
- Set up connection for network management control: shown in area 5.

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.

The TS/IP port can work for input and output simultaneously. User only needs to connect one RJ45 cable to the TS/IP port of the device.

1.3 Power Connection

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.

2. Operation Instructions

2.1 Powering Up & Initializations

REMARKS **Before powering-up the device, make sure that all cabling is correctly connected (refer to chapter 1.2). The device is correctly connected to the power inlet and grounded.**

Switch on the equipment through the back power switch, the unit is powered up and start the initialization.

The LCD screen is lighted up, and display information as following:

PIC-2.1-1

The initialization takes about 30 seconds to complete.

TIPS **If the unit fails to initialize and hangs at the "booting" screen, 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.**

TIPS **The input/output indicator LEDs turn red after successful initialization because of signal unlocking. After configuration on the device, corresponding LEDs shall show correct status.**

2.2 Network Connection Setup

2.2.1 Navigation Keys Operation Instruction

TIPS **Use the 6 navigation keys on front panel: Up / Down / Left / Right / Menu / Ok to**

enter the configuration menu.

- **Enter "Menu":**
  - Press "***MENU***" button to enter main menu.

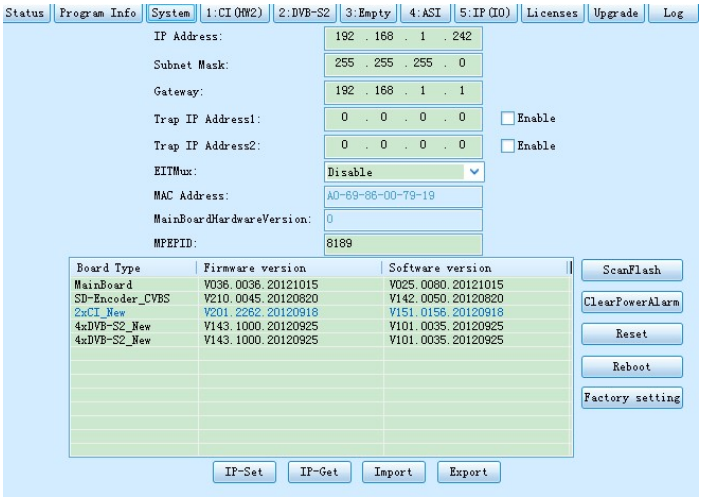
- **Exit Menu/Back to parent Menu**
  - Upon completion of configuration settings, press "***MENU***" button until you go back to the Parent Menu.
  - You can also go back to Parent Menu directly by pressing "***ESC***" button once.

- **Enter Sub-Menu**
  - Press ***MENU*** button to enter main menu.
  - Select a sub-menu by pressing arrow ***UP*** and arrow ***DOWN*** button.
  - Press ***OK*** button on the selected sub-menu.

- **To change parameter**
  - Step 1: Enter main menu by pressing ***MENU*** button.
  - Step 2: Scroll sub-menu by pressing arrow ***UP*** and arrow ***DOWN*** button, and press ***OK*** button to change the selected sub-menu.
  - Step 3: To change parameter settings, press arrow ***RIGHT*** and arrow ***LEFT*** button to move the cursor in which change must be made.
  - Press arrow ***UP*** button and arrow ***DOWN*** to input / select an appropriate setting, then press ***OK*** button to save.

2.2.2 Check Out and Change the Default IP Address

- **Step 1:** check out the IP.
- **Step 2:** change the IP, gateway and subnet mask on the front panel by navigation keys under '**System**' sub-menu to make it in the same network section as the management PC. You can also change it in the '**System**' tab through Network Management System (as **PIC-2.2-1**).
- **Step 3:** the equipment will reboot automatically and apply with the new IP address.
- **Step 4:** ping the new IP on PC to check the connectivity.
- **Step 5:** After IP changes and successful connection setup between the device and management PC, the IP address modification can be done on WEB UI afterwards.



PIC-2.2-1

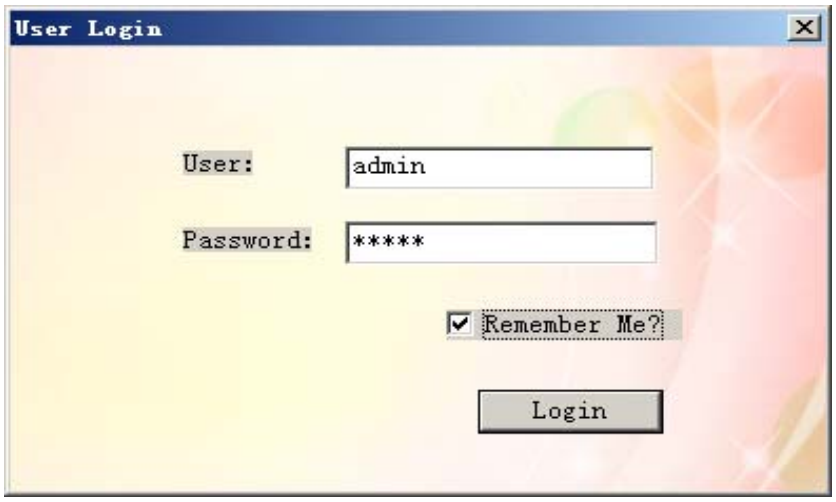
2.2.3 Configuration through NMS

REMARKS **Accessing the equipment through NMS can be very convenient for remote configuration of the equipment. Relative to the front panel settings, NMS operation can provide a more user-friendly man-machine interface, and less limits in space. For quick installation, NMS operation is highly recommended. In this installation guide, operation instruction is based on NMS style. For front panel operation instruction, please refer to product user manual.**

- Install the NMS Tool
  - Unpack the accessory CD, and put it on a PC CD/DVD driver;
  - Copy the NMS program on the CD to any folder of the management PC;
  - Use mouse to double click the NMS icon and run the NMS program.

PIC-2.2-2

- First Time Log On
  - For first time log on, User Name and Password are required. Default User Name and Password are “**admin**”.



PIC-2.2-3

TIPS **User can change the password after log on the device. Please refer to chapter 2.3.1 of this document for the details.**

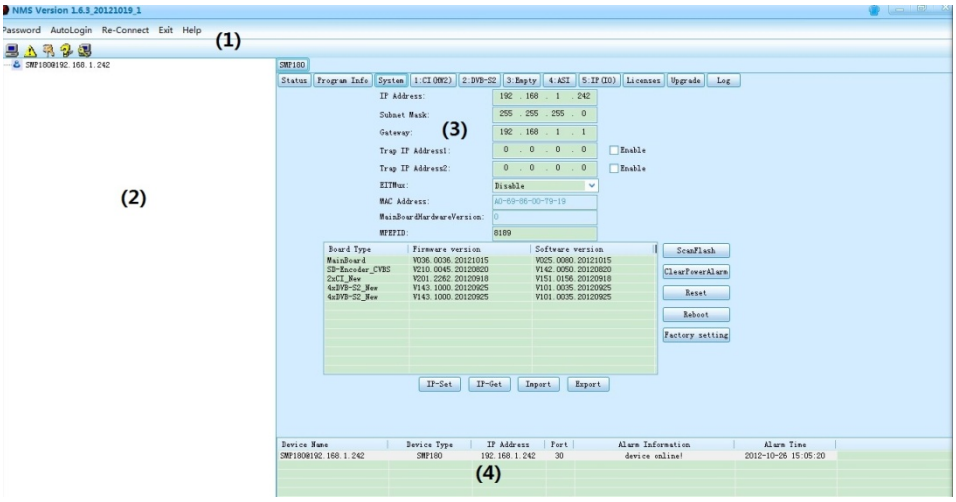
- Choose “Remember Me” if user wants to directly log on the NMS without inputting the user name and password.
- Select “Login” to log on the device.

TIPS **Possible reasons for unsuccessful log on:**

- IP address/network mask/gateway doesn’t match with the management PC.
- User name/password is wrong.
- The device is connected in the wrong interface.

- Main Interface Introduction

After successful log on, the following screen will display:



PIC-2.2-4

The NMS main interface can be divided into four areas according to its functionality.

(1) **Toolbar:** It includes shortcut to change password and save settings etc.

(2) **Equipment list:** If more than one piece of equipment is connected to the NMS, the equipment will be listed in this area by its IP address.

(3) **Parameter setting and configuration area:** The parameters of the equipment are shown and configured here by selecting different tabs. This is the main operation area of the NMS. It shares same 6 tabs including '**Status**', '**Program Info**', '**System**', '**License**', '**Upgrade**' and '**Log**'. Specific to each model, the detailed module configuration tab will be different.

(4) **Event information window.**

2.3 Quick Configuration on Key Parameters

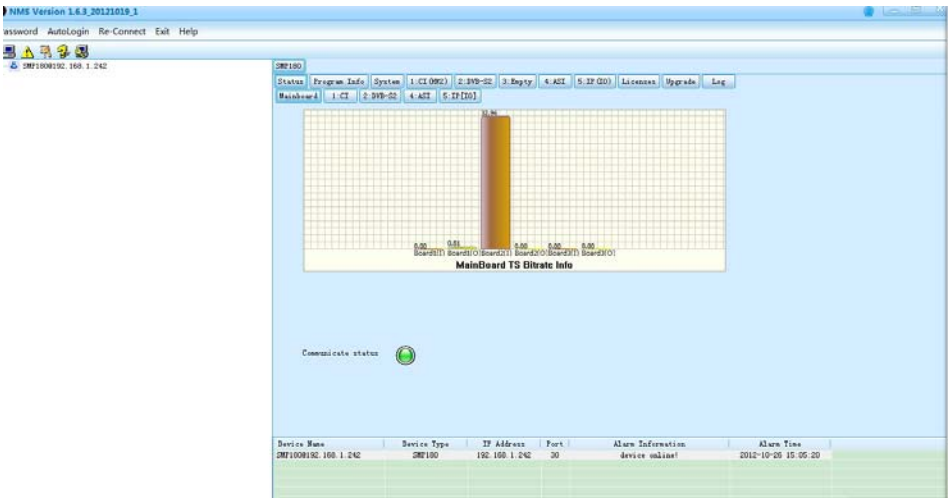
2.3.1 Change the password

In the '**Toolbar**' tab, click '**Password**', you can change the password as below:

PIC-2.3-1

2.3.2 Check ‘Status’ tab

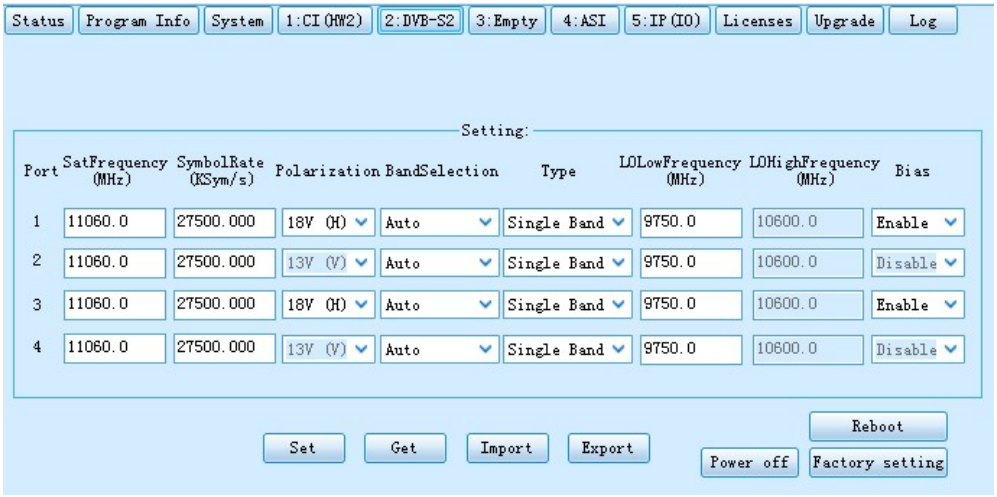
By selecting this item the NMS displays the current system operation data status of the equipment. User can swtich between tab under the “Status” to check the current working status of the equipment.



PIC-2.3-2

2.3.3 Configure parameters of signal input modules

- **Tuner**
  - DVB-S/S2 Receiver



PIC-2.3-3

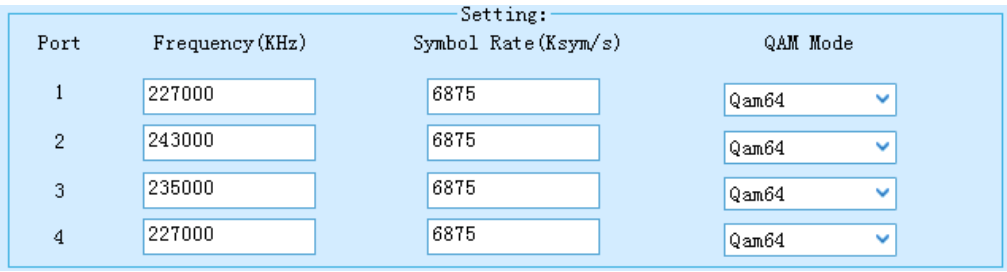
In order to receive the input signal successfully, it's important to set the correct parameters in the setting menu.

Key Parameters	**Description**
Sat Frequency	Input the frequency of transponder which you want to receive programs from. 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).
LOLow frequency	The low frequency of LNB. The unit is MHz.

Note: Only LNB 1 & 3 inputs support polarization setting. LNB 2 & 4 can't provide power (13V or 18V) to the LNB.

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

- DVB-C Receiver



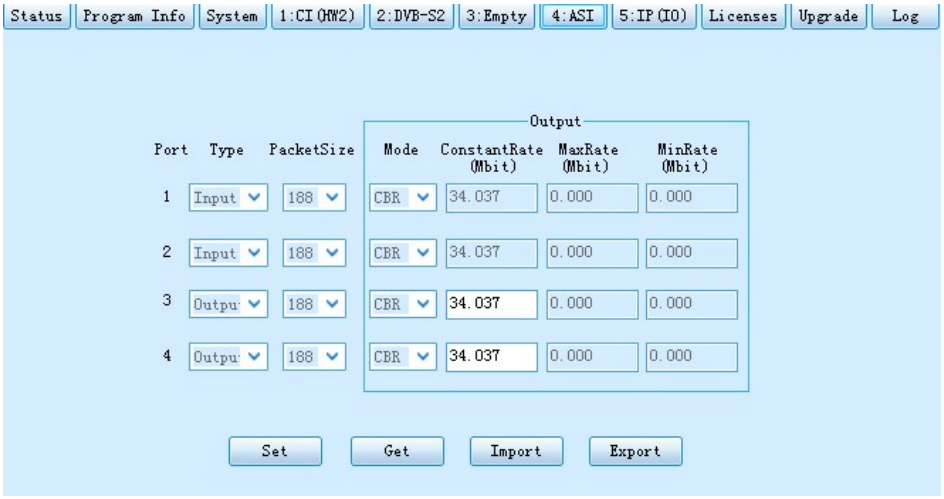
PIC-2.3-4

Parameters	**Description**
Frequency	Frequency on which the channel is transmitted. The unit is in

	KHz.
Symbol Rate	Symbol rate of the input channel. The unit is in KS/s.
QAM Mode	Select the actual QAM mode of the input channel.

- **ASI IN**

There are four ASI port in the equipment, the port 1&2 are for input. (The port 3&4 are for output.)



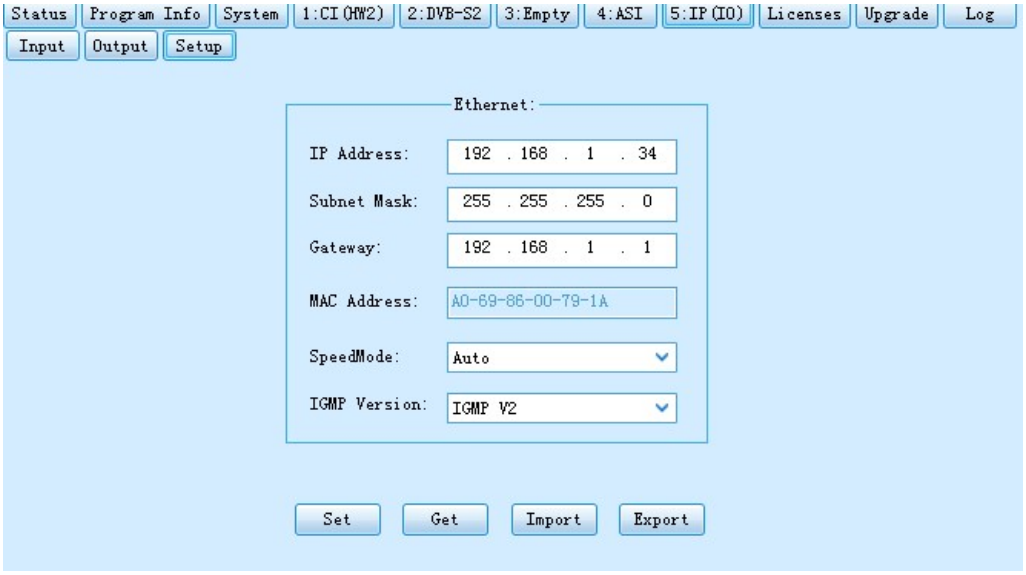
PIC-2.3-5

Key Parameters	**Description**
Type	The status of each ASI port is Input or Output. (not editable)
Constant Rate(Mbit)	Set constant bit rate for ASI output.

Note: For the input parameters, it is all automatically obtained by the NMS when connected with the input signal. It is in not editable status.

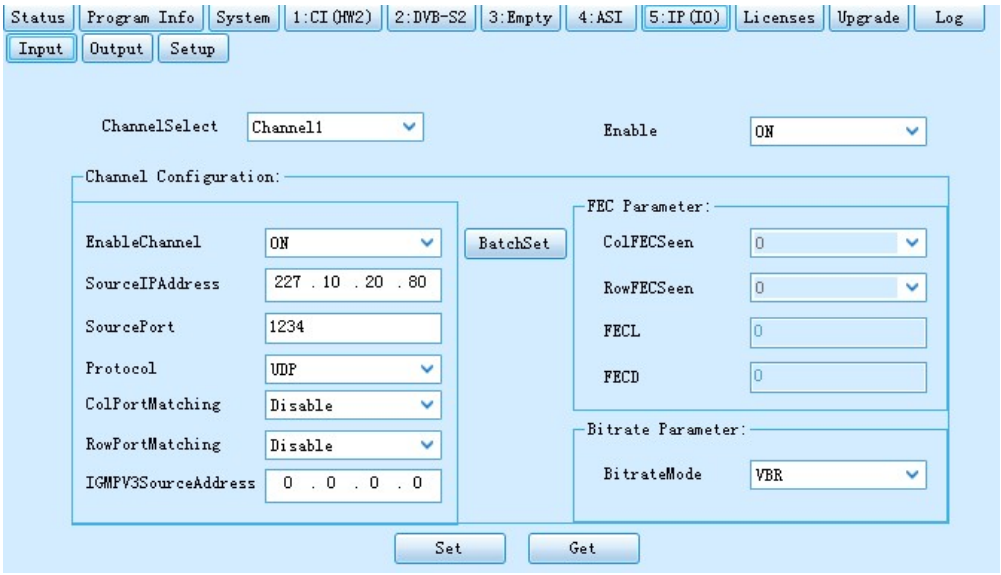
- **TS/IP IN**

In the ‘Setup’ setting menu, user need to set correct parameters for the IP module such as the IP address, subnet Mask, Gateway, etc. so that the module can work normally in the network.



PIC-2.3-6

The ‘Input’ setting menu is to set the IP input function for receiving multicast/unicast IP stream.



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Key Parameters	**Description**
ChannelSelect	In this ‘ChannelSelect’, user can select a channel to configure its parameters.
Enable	On: enable the IP receiving function. Off: disable the IP receiving function. **Note: this parameter setting applies to all channels.**
Channel configuration	

EnableChannel	Enable or disable corresponding input channel
SourceIPAddress	Set the IP address of the multicast/unicast that are going to receive
SourcePort	Set port of multicast/unicast
Protocol	Select UDP/RTP for multicast/unicast
ColPortMatching	If the output IP stream quality looks not as good as the input stream, user can select to 'Enable' these two options then to enable the FEC function.
RowPortMatching	
FEC Parameter	The bigger values it is, the stronger capabilities it has to correct the data mistakes. But the FECL and FECD should be less than 100.

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

2.3.4 Configure parameters of signal output modules

- **CI**

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

PIC-2.3-8

In the CI module NMS 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	**Description**

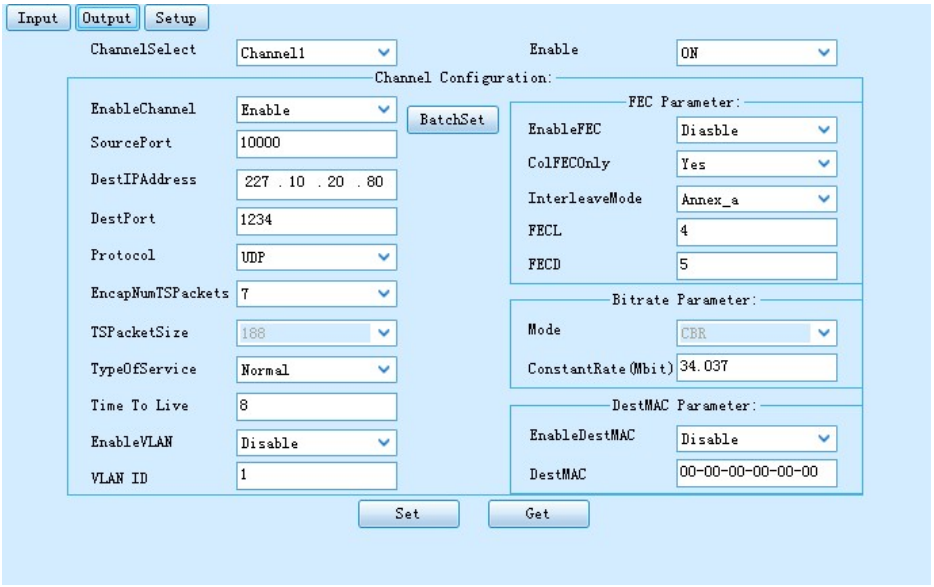
Enable/Disable switch	**Enable**--turn on the CI module and enable the input stream to pass through the CI module and get descrambled. **Disable**--Disable any input stream to pass through the CI module and thus the CI module will not be functional. ！**Please select Disable if no CAM is inserted in the CI module.**
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. The correct TSClock need to be selected according the inserted CAM processing capability. Usually a standard CAM can support Max. 72Mbit data processing unless it has instruction for higher bitrate support. **9MHz is a default and recommended option for most of the CAMs.** **! Selecting a wrong TSClock will cause video mosaic issue because the processing data exceeds the CAM Max. data capability.**
ConstantRate (Mbit)	To set a fixed output bitrate for the CI module. ！**Please set a bigger bitrate value than the input TS rate and reserve a bit buffer.**

- **ASI OUT**

Please refer to **chapter 2.3.3** (**ASI IN**).

- **TS/IP OUT**

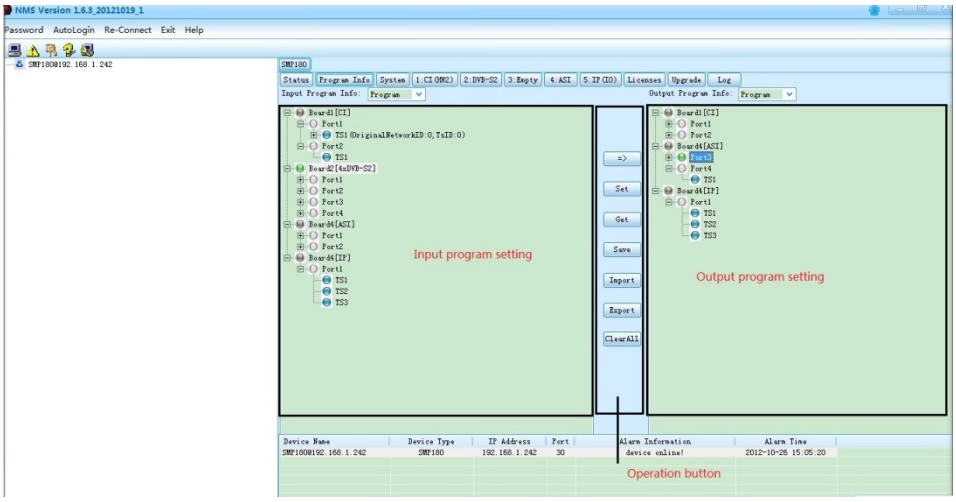
The “Output” setting menu is to set the IP output function for transmitting multicast/unicast IP stream.



PIC-2.3-9

Key Parameters	**Description**
ChannelSelect	In this ‘ChannelSelect’, user can select a channel to configure its transmitting parameters.
Enable	On: enable the IP transmission function. Off: disable the IP transmission function. **Note: this parameter setting applies to all channels.**
Channel configuration	
EnableChannel	Enable or disable corresponding output channel
SourcePort	Set port of multicast/unicast
DestIPAddress	Set IP address of the multicast/unicast.
Protocol	Select UDP/RTP for multicast/unicast
Bitrate Parameter	
ConstantRate(Mbit)	Set constant bitrate for output

2.3.5 Program IN/OUT configuration in ‘Program Info’ tab



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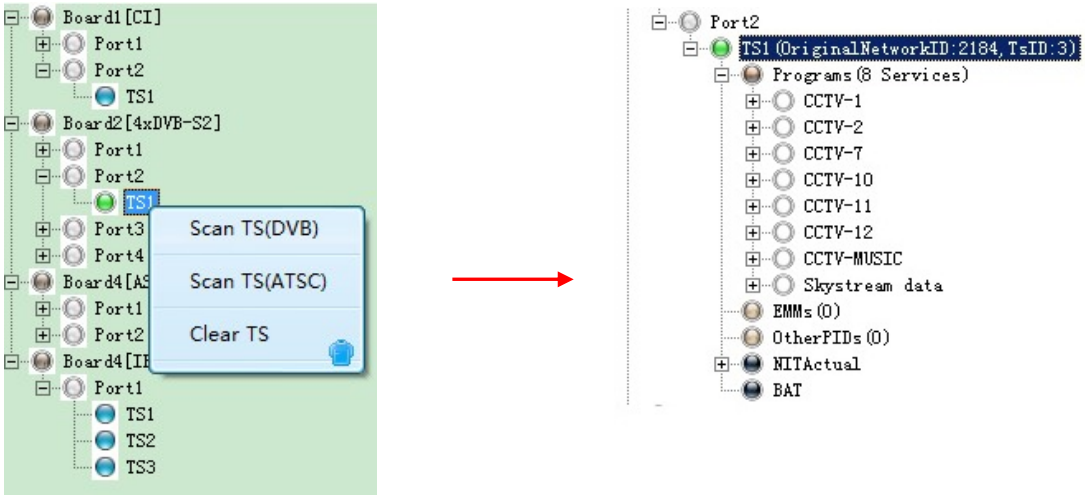
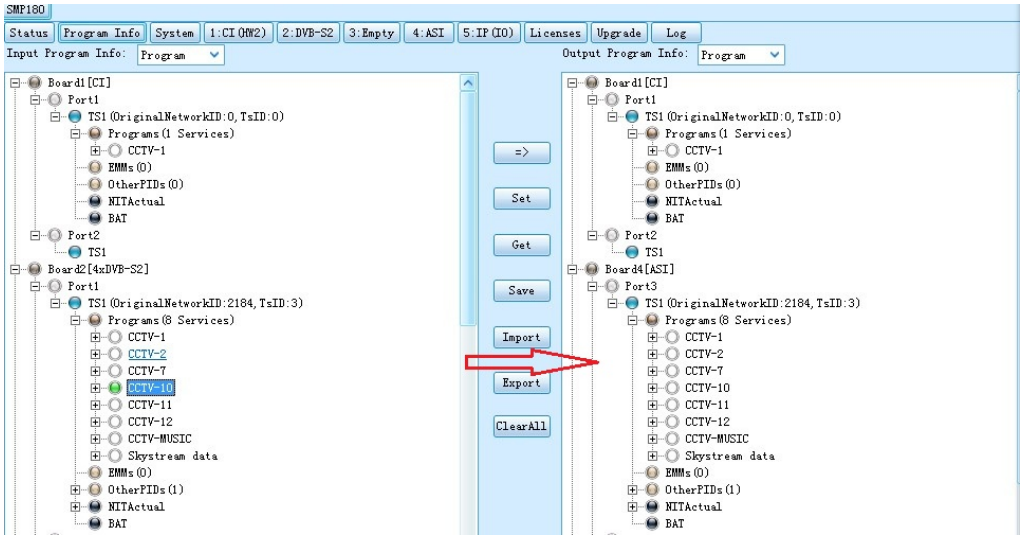
The ‘**Input Program Configuration**’ is on the left side of the ‘**Program Info**’ window. It displays all the modules information and the received input streams. After the parameters of the module are properly configured, select one port which is connected with input stream, and then click the mouse right button and select “Scan TS” menu. All the input stream of that port will be scanned and displayed.



PIC-2.3-11

Please select the port which you want to transmit the output stream. Then choose the stream or program in ‘**Input Program Configuration**’ and move it into the output stream by clicking => button. Please remember to click Set button to apply the changes after making sure the settings. Please click Save button to avoid losing data after the NMS is closed or the device is power off.



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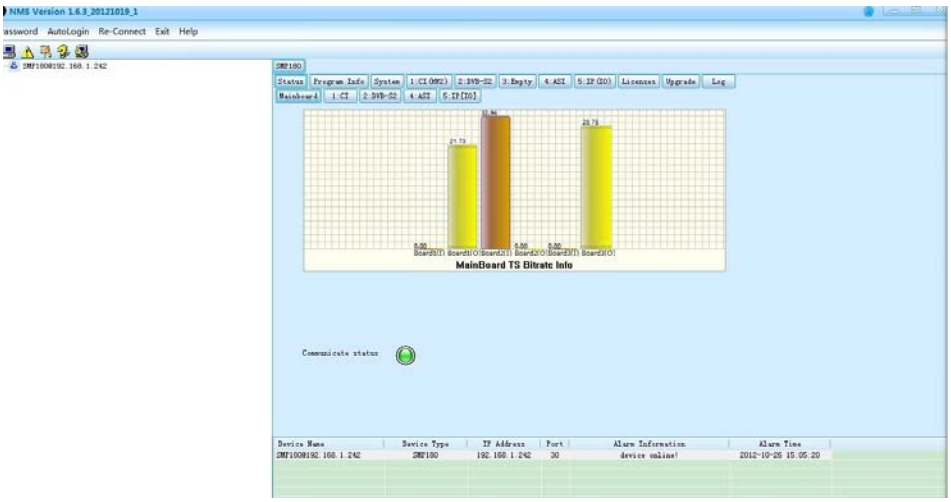
2.3.6 Check ‘Status’ again



PIC-2.3-13

Turn to ‘**Status**’ tab to check again to make sure the configuration is done. From the mainboard item, user can find the current system operation data status of the equipment. User can swtich between tab under the ‘Status’ to check the current working status of the sub-module.

- Different colors of histogram indicate different meaning:

Orange: the total input bit rate;

Blue: the effective input bit rate;

Yellow: the total output bit rate;

Green: the effective output bit rate;

Red: alarm indicator, it means the actual output bit rate (it's proportional to the amount of the programs you transfer from input port to output port in '**Program Info**') is more than the output bit rate of some channel you set in sub-module.

- Communicate Status indicates the communication status between NMS and the equipment.

Green: the communication is normal. All the parameters in NMS are updated according to the equipment synchronously.

Red: the communication is abnormal. The parameters in NMS may be not updated in time. You need check the network connection and restart the NMS.

After completing the configuration and making sure it's done from checking the status of mainboard and sub-module, user can use device or software which can receive and play ASI or IP stream to test the output stream. For example, if the output stream is IP format, user can send the IP output stream into a PC and test it by VLC software. User should set the IP receiving address in VLC the same as the multicast address of SMP180 IP output, the program content will display if the signal transmission is working.

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.