

# CLEAR VIEW

## SD4260

### 4 x S-Video/CVBS/YPbPr to DVB-T Encoder Modulator



***SW Version: 1.20***

***HW version: 0.8***

***Web Version: 1.06***

# About This Manual

## **Intended Audience**

This user manual has been written to help people who have to use, to integrate and to install the product. Some chapters require some prerequisite knowledge in electronics and especially in broadcast technologies and standards.

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# Chapter 1 Introduction

## 1.1 Product Overview

SD4260 series products are ClearView's all-in-one devices which integrate encoding, multiplexing and modulation to convert V/A signals into digital RF output. SD4260 is also equipped with 1 ASI input for re-mux, and output with 2 ASI ports and 1 IP port.

The signals source could be from satellite receivers, closed-circuit television cameras, Blue-ray players, and antenna etc. Its output signals are to be received by TVs, STB and etc with corresponding standard.

With its various inputs available, our SD4260 series products are widely used in public places such as metro, market hall, theatre, hotels, resorts, and etc for advertising, monitoring, training and educating in company, schools, campuses, hospital... It's a good choice to offer additional info channels..

## 1.2 Key Features

- **4x S-Video/YPbPr/CVBS inputs; 1x ASI input for re-mux; 1x RF input for mix**
- **MPEG2 video encoding**
- **MPEG1 Layer II, LC-AAC, and HE-AAC audio encoding**
- **1 x DVB-T RF output; 1 IP (UDP/RTP) output; 2 ASI mirrored output**
- **LCN support (Logical Channel Number)**
- **Excellent modulation quality: MER $\geq$ 42dB**
- **LCD display, Remote control and Firmware, web NMS management**
- **Updates via web**

## 1.3 Specifications

### Input

4xS-Video/YPbPr/CVBS (RCA)
1xASI input for re-mux, BNC interface
1xRF input for RF mixer, for combiner

### Encoding Section

#### Video

Encoding	MPEG-2
Interface	S-Video/YPbPr/CVBS *4 (RCA) Resolution
	720*480_60i, 720*576_50i

#### Audio

Encoding	MPEG1 Layer II; LC-AAC; HE-AAC (4*Stereo or 8*mono)
Sample rate	48KHz
Bit rate	64kbps, 96kbps, 128kbps, 192kbps, 256kbps, 320kbps

### DVB-T Modulator Section

Standard	EN300744
FFT mode	2K, 8K
Bandwidth	6M, 7M, 8M
Constellation	QPSK, 16QAM, 64QAM
Guard Interval	1/4, 1/8, 1/16, 1/32
FEC	1/2, 2/3, 3/4, 5/6, 7/8
MER	≥40dB
RF frequency	30~960MHz, 1KHz step
RF Out	2*DVB-T (2 carriers combined output)
RF output level	-30~ -10dbm (77~97 dbμV), 0.1db step

### TS Output

2 * ASI mirrored outputs, BNC interface
2*MPTS or 4*SPTS over UDP or RTP, Ethernet interface (unicast / multicast)

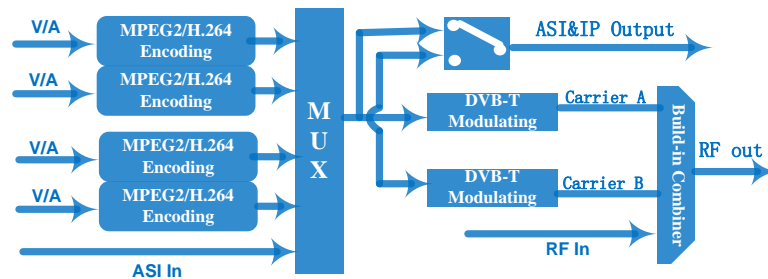
### Interface

Local interface	LCD + control buttons
Remote management	Web NMS Management
Language	English

### General

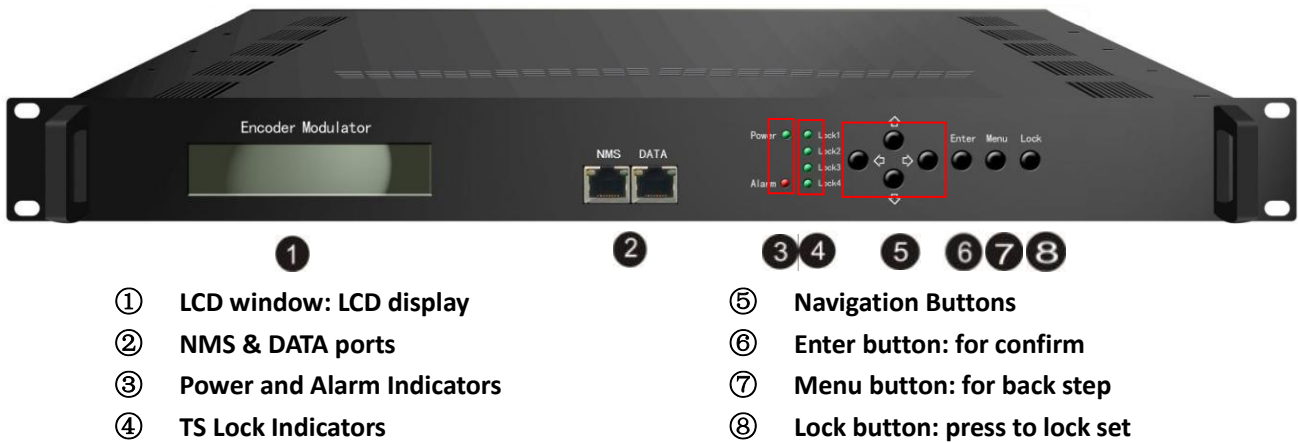
Power supply	AC 100V~240V
Dimensions	482*300*44.5mm
Weight	3 kgs
Operation temperature	0~45℃

## 1.4 Principle Chart

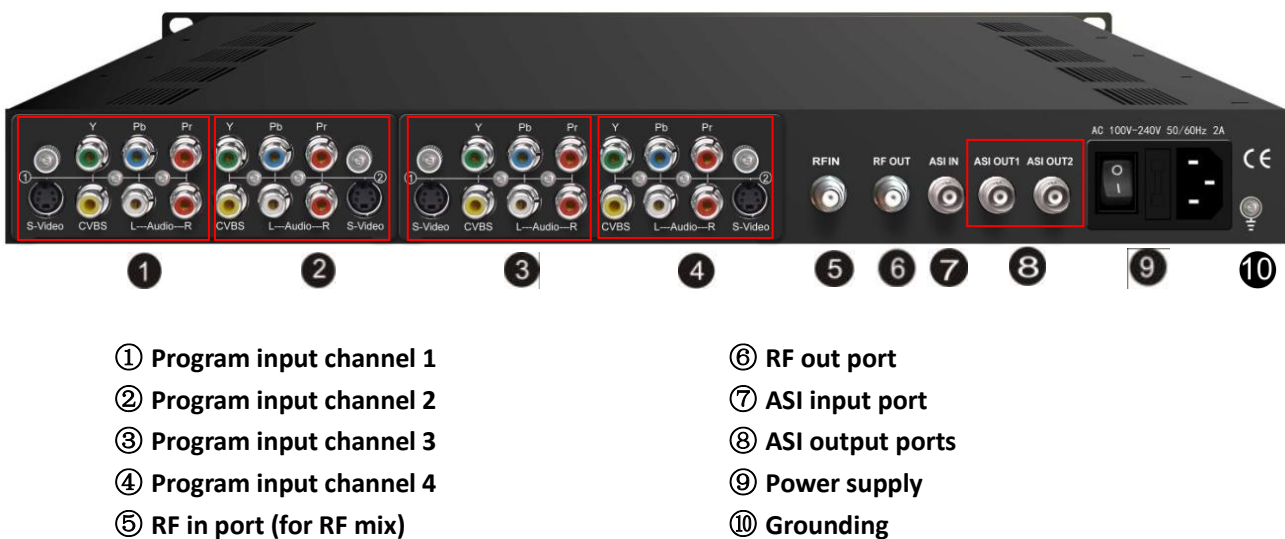


## 1.5 Appearance and Description

### Front Panel Illustration



### Rear Panel Illustration



## Chapter 2 Installation Guide

This section is to explain the cautions the users must know in some case that possible injure may bring to users when it's used or installed. For this reason, please read all details here and make in mind before installing or using the product.

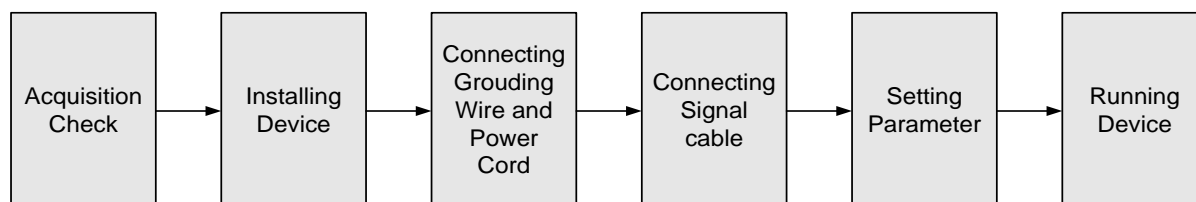
### 2.1 General Precautions

- ✓ Must be operated and maintained free of dust or dirty.
- ✓ The cover should be securely fastened, do not open the cover of the products when the power is on.
- ✓ After use, securely stow away all loose cables, external antenna, and others.

### 2.2 Power precautions

- ✓ When you connect the power source, make sure if it may cause overload.
- ✓ Avoid operating on a wet floor in the open. Make sure the extension cable is in good condition
- ✓ Make sure the power switch is off before you start to install the device

### 2.3 Device's Installation Flow Chart Illustrated as following



### 2.4 Environment Requirement

Item		Requirement
Machine	Hall	When user installs machine frame array in one machine hall,

Space	the distance between 2 rows of machine frames should be 1.2~1.5m and the distance against wall should be no less than 0.8m.
Machine Hall Floor	Electric Isolation, Dust Free Volume resistivity of ground anti-static material: $1 \times 10^7 \sim 1 \times 10^{10} \Omega$ , Grounding current limiting resistance: $1 M\Omega$ (Floor bearing should be greater than $450 \text{ Kg/m}^2$ )
Environment Temperature	$5 \sim 40^\circ\text{C}$ (sustainable), $0 \sim 45^\circ\text{C}$ (short time), installing air-conditioning is recommended
Relative Humidity	20%~80% sustainable 10%~90% short time
Pressure	86~105KPa
Door & Window	Installing rubber strip for sealing door-gaps and dual level glasses for window
Wall	It can be covered with wallpaper, or brightness less paint.
Fire Protection	Fire alarm system and extinguisher
Power	Requiring device power, air-conditioning power and lighting power are independent to each other. Device power requires AC $110\text{V} \pm 10\%$ , 50/60Hz or AC $220\text{V} \pm 10\%$ , 50/60Hz. Please carefully check before running.

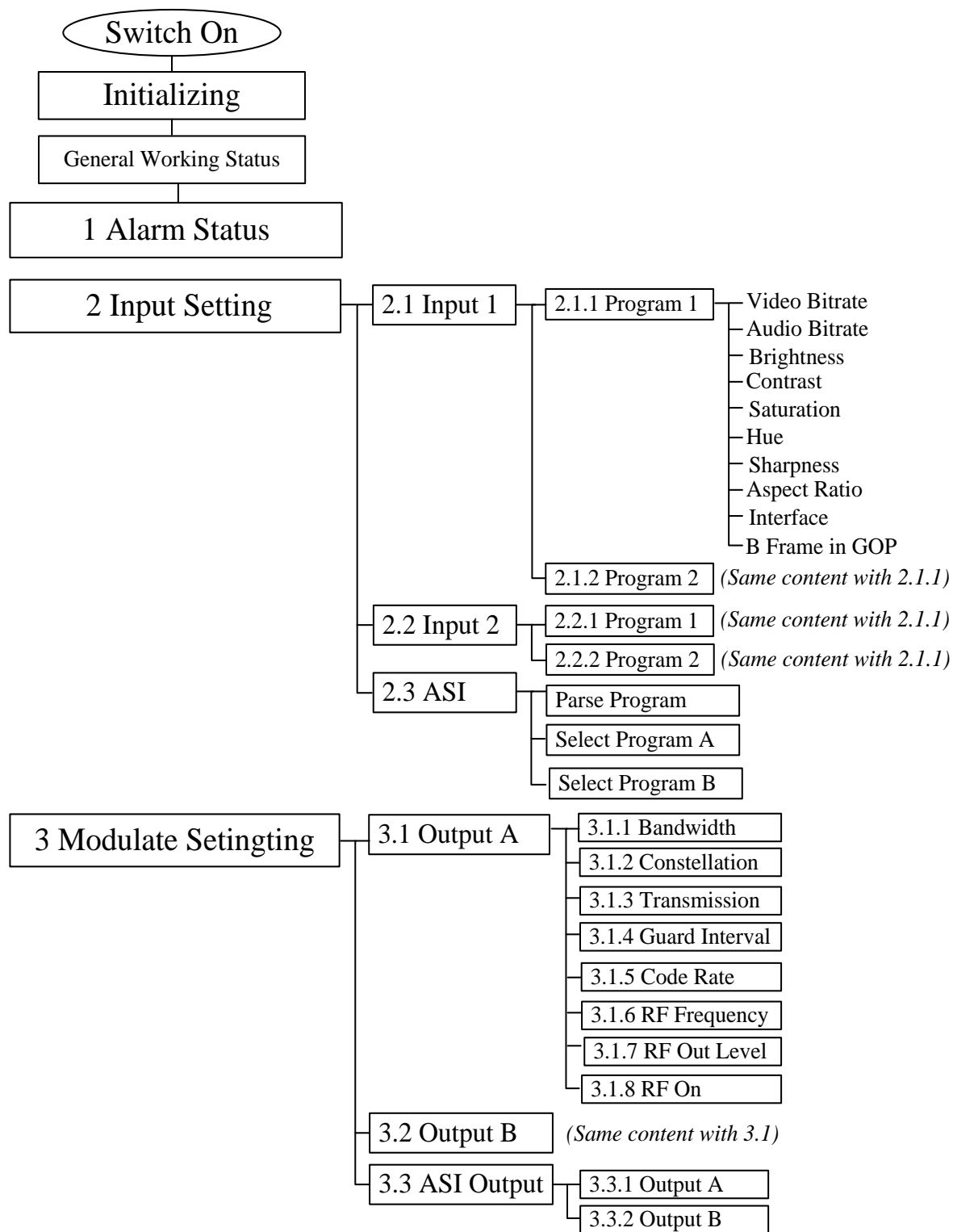
## 2.5 Grounding Requirement

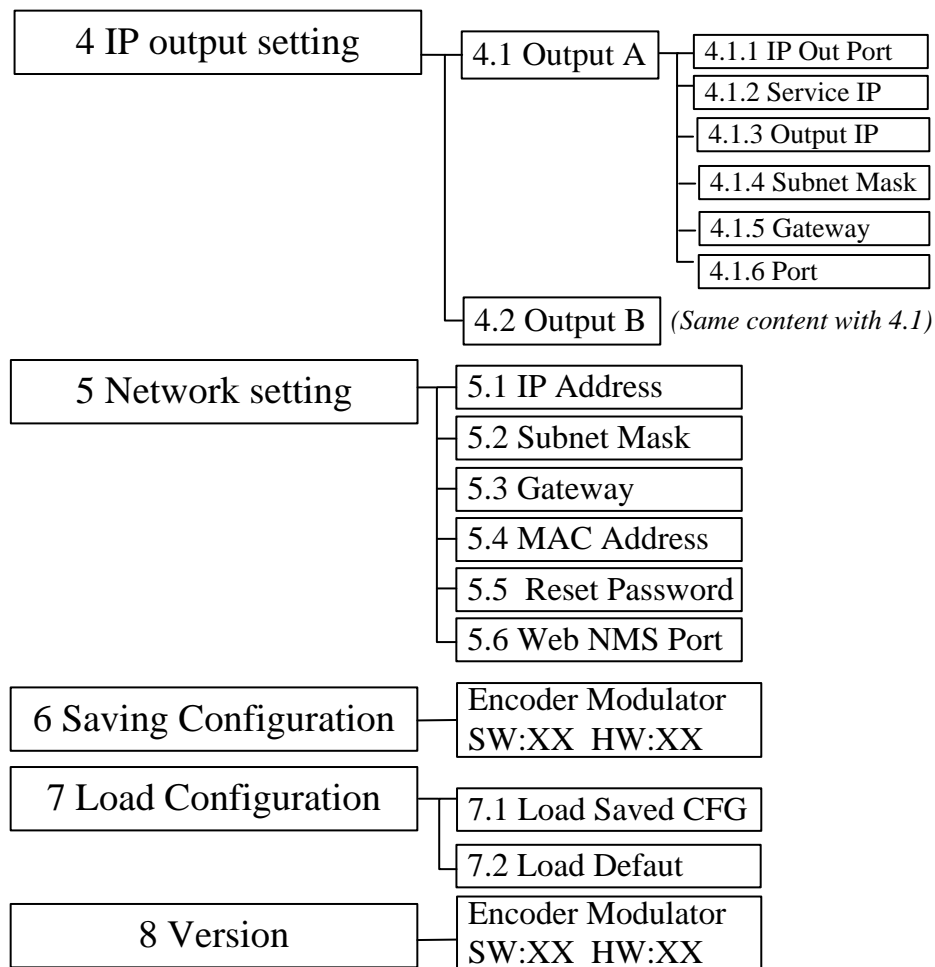
- ✓ All function modules' good grounding is the basis of reliability and stability of devices. Also, they are the most important guarantee of lightning arresting and interference rejection. Therefore, the system must follow this rule.
- ✓ Grounding conductor must adopt copper conductor in order to reduce high frequency impedance, and the grounding wire must be as thick and short as possible.
- ✓ Users should make sure the 2 ends of grounding wire well electric conducted and be antirust.
- ✓ It is prohibited to use any other device as part of grounding electric circuit
- ✓ The area of the conduction between grounding wire and device's frame should be no less than  $25 \text{ mm}^2$ .



## Chapter 3 Operation

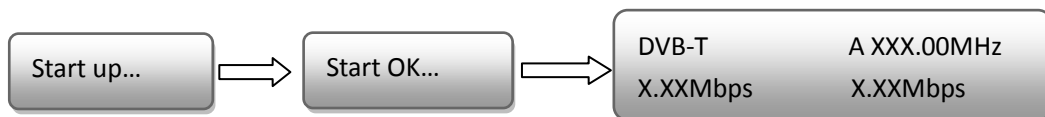
### 3.1 LCD Menu Structure





### 3.2 Initial Status

Switch on the device and after a few seconds' initialization, it presents start-up pictures as below:



- **DVB-T**: indicate the modulation standard of this device.
- **A/B**: to indicate the 4 carrier outputs
- **XXX.XX MHz** indicates the current output frequency (Range: 30~999MHz) of its corresponding carrier output.
- **X.XX Mbps**: indicate the encoding bit rate of each encoding board respectively.

### 3.3 General Settings for Main Menu

Press “Lock” key on the front panel to enter the main menu. The LCD will display the following pages where user can configure the parameters for the device:



User can press UP/DOWN buttons to specify menu item, and then press ENTER to enter the submenus as below:

#### 1) Alarm Status

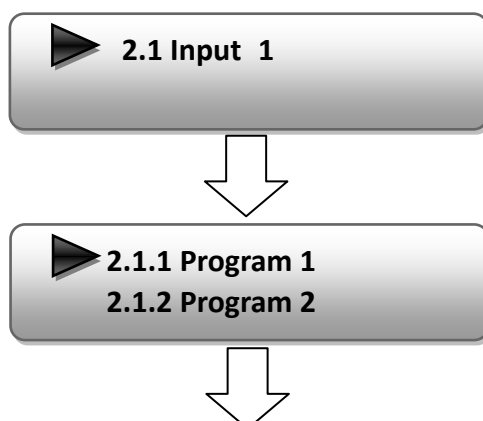
The alarm indicator will turn on if there is no A/V signals inputting or outputting bit rate overflows. User then can enter this menu to check the error type.

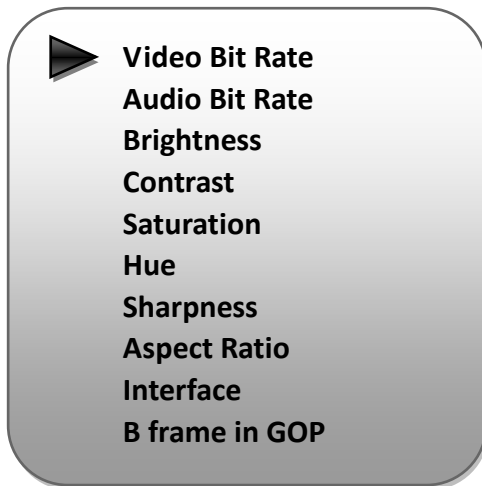
#### 2) Encode Setting

Under this submenu, the LCD will show “2.1 Input 1”, “2.2 Input 2” and “2.3 ASI”.



“2.1 Input 1” and “2.2 Input 2” respectively represent the two encoding boards and there are two programs under each input. User could enter each program to select one interface as the signal source and set the related video & audio parameters.



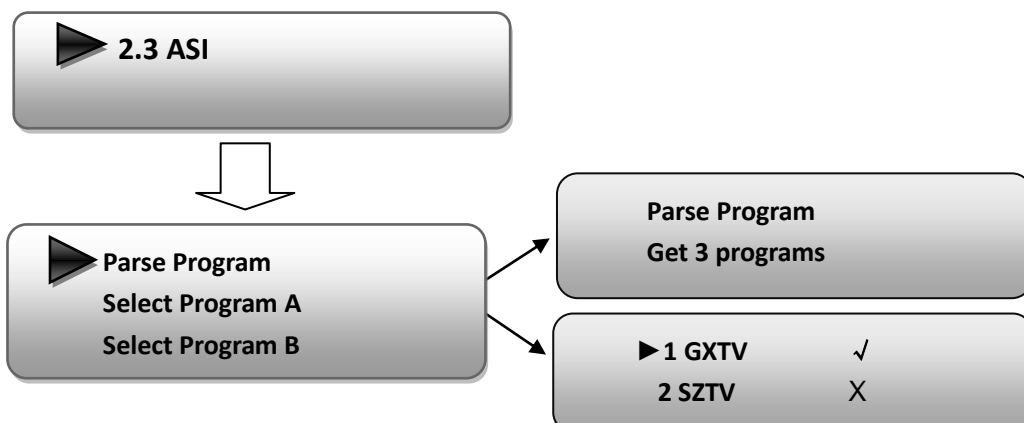


“Video Bit Rate”: Move the underline with LEFT/RIGHT keys and modify the value of frequency with UP/DOWN keys, and press ENTER key to save the settings

“Audio Bit Rate” is to select audio encoding bit rate (64-320Kbps) from the options provided.

User can also adjust values of rest items (Brightness & Contrast & Saturation: 0-255; Hue: -127 - +127)

“Interface”: Connect the signal source to the corresponding input channel and select the interface from the options (CVBS, S-Video, YPbPr) provided in the submenu. Press Enter key to confirm and the system will automatically search the signal source.



“Parse Program” is for checking the quantity of input programs from the corresponding Tuner input.

“Select Program” is for selecting programs from the ASI IN to output from carrier A/B.

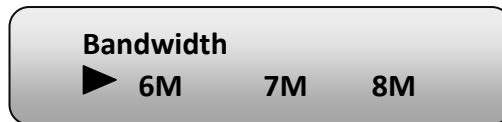
Move the triangle mark to specify the program and press RIGHT/LEFT keys to shift the mark between “√” and “X”. (“√”: to output the corresponding program; “X”: not to output the corresponding program)

### 3) Modulator Setting

When entering “Modulator” submenu, user can configure the modulating parameters for the 1 carrier output separately:

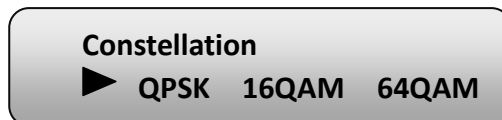
#### ➤ Bandwidth

There are three possible options provided for selecting bandwidth: 6M, 7M, and 8M. When the display shows them, user just need swift LEFT and RIGHT key to choose and repressing ENTER to confirm.



### ➤ Constellation

Four different constellations QPSK, 16QAM and 64QAM will be shown on the LCD window. User can set constellation type with the same method mentioned above.



### ➤ Transmission Mode

When user enters Transmission Mode, the LCD would show the current working mode. User can move LEFT/RIGHT keys to select and press ENTER key to confirm. 2K and 8K are the options:

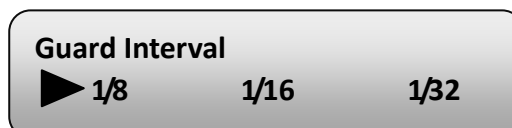


2K: When the device works as current mode, the number of current carrier is 2048

8K: When the device works as current mode, the number of current carrier is 8192

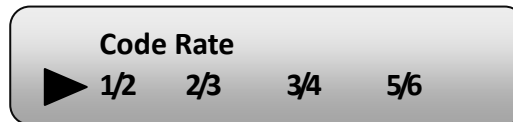
### ➤ Guard Interval

In communications, guard intervals are used to ensure that distant transmissions do not interfere with each other. These transmissions may belong to different users (as in TDMA) or same user (as in OFDM). The purpose of the guard interval is to introduce immunity to propagation delays, echoes and reflections, to which digital data is normally very sensitive. There are four possible options provided to be selected. They are 1/4, 1/8, 1/16, 1/32. User can shift the LEFT/RIGHT keys to select and press ENTER to confirm.



### ➤ Code Rate

The code rate includes 1/2, 2/3, 3/4, 5/6, and 7/8. After entering this submenu, the LCD display would show them, users just need press LEFT and RIGHT buttons to choose and press ENTER button to confirm.



#### ➤ RF Frequency

The RF output frequency range is from 30 to 999MHz with 1K stepping. After entering the RF frequency setting submenu, users the can press LEFT, RIGHT, UP, and DOWN buttons to adjust the frequency and confirm by press ENTER button.



#### ➤ RF Out Level

The RF attenuation range is from -30~-10dbm (77~97dbμV) with 0.1db step. After entering this setting submenu, user can shift UP/DOWN/LEFT/RIGHT key to set the output level and press ENTER to confirm.



#### ➤ RF On

This interface is to decide whether to enable the RF (carrier A) output or not.

**OFF:** to disable programs to output through carrier A.

**ON:** to enable programs to output through carrier A.



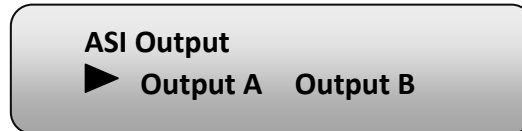
#### ASI Output:

SD4260 encoder & modulator (DVB-T Modulating) is with two carrier output A,

B.

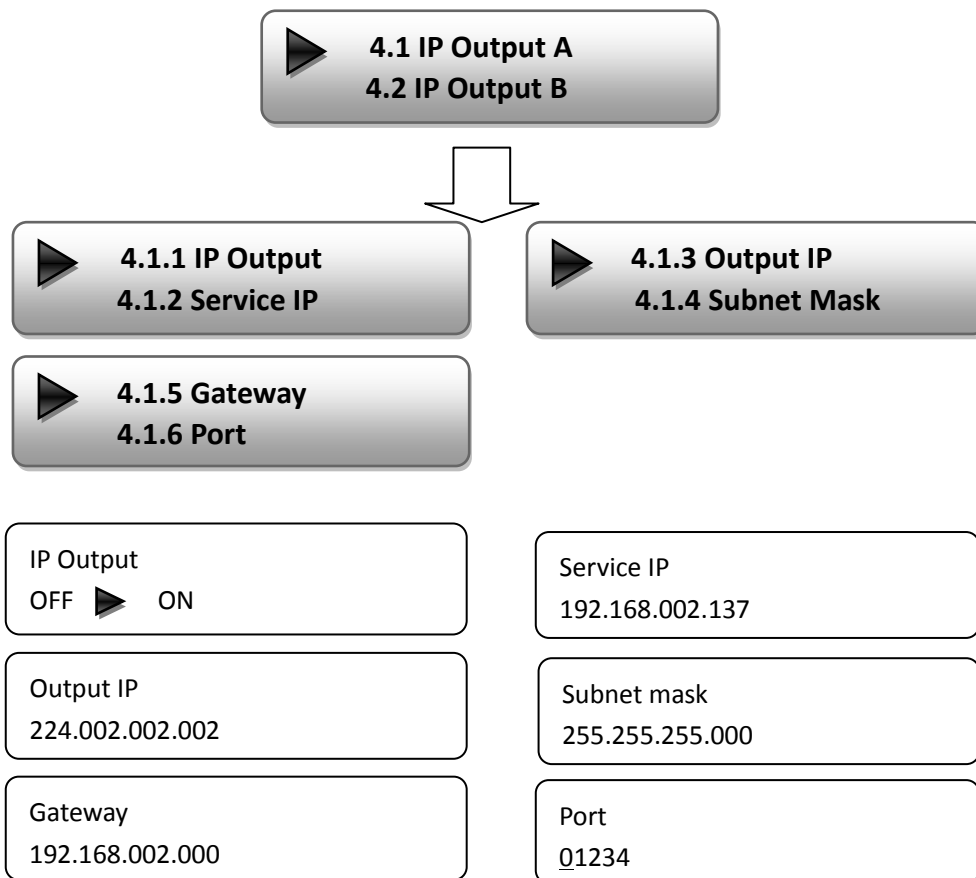
**Output A:** the ASI output programs are same as carrier output A.

**Output B:** the ASI output programs are same as carrier output B.



#### 4) IP Output Setting

The encoder & modulator in use is with two MPTS (or 4 SPTS), 4.1 and 4.2 are for the settings of the two MPTS output respectively.



#### 5) Network setting

After enter Network Setting, there are three submenus shows as the following LCD displays.





User can press “UP/DOWN” to choose this item and “ENTER” & “LEFT/RIGHT” to set the parameters.

<b>IP Address</b> <u>192.168.000.136</u>	<b>Subnet Mask</b> <u>255.255.255.000</u>
<b>Gateway</b> <u>192.168.000.001</u>	<b>MAC Address</b> <u>ffffffffffffffffffff</u>
<b>Reset Password?</b> Yes <input type="radio"/> NO <input checked="" type="radio"/>	<b>Web Manage Port</b> <u>00080</u>

**NOTE:** The MAC address is according to the factory setting, and it is unique.

#### 6) Saving Configuration

Users can enter Saving Configuration submenu for saving settings. Choose yes and press ENTER to confirm.

<b>Save Configuration?</b> Yes <input checked="" type="radio"/> No <input type="radio"/>	→	<b>Saving Config...</b>
---	---	-------------------------

#### 7) Loading Configuration

At this menu, user can press UP/DWON key to select and repress ENTER to confirm. User can restore the device into the last saved configuration by choosing “7.1” and restore the device into factory configuration by choosing “7.2” the display will show as below:

<b>▶ 7.1 Load Saved CFG</b> <b>7.2 Load Default</b>		
↓		
<b>Load Saved CFG?</b> Yes <input checked="" type="radio"/> No <input type="radio"/>	→	<b>Loading Config...</b>

#### 8) Version

User can check the software version and hardware version of this equipment under this submenu.

**Encoder Modulator**

**SW X.XX**

**HW X.X**

## Chapter 4 WEB NMS Operation

User not only can use front buttons to set configuration, but also can control and set the configuration in computer by connecting the device to web NMS Port. User should ensure that the computer's IP address is different from the SD4260's IP address; otherwise, it would cause IP conflict.

### 4.1 login

The default IP address of this device is **192.168.0.136**. (We can modify the IP through the front panel.)

Connect the PC (Personal Computer) and the device with net cable, and use ping command to confirm they are on the same network segment.

I.G. the PC IP address is 192.168.99.252, we then change the device IP to 192.168.99.xxx (xxx can be 0 to 255 except 252 to avoid IP conflict).

Use web browser to connect the device with PC by inputting the Encoder & Modulator's IP address in the browser's address bar and press Enter.

It will display the Login interface as Figure-1. Input the Username and Password (Both the default Username and Password are "admin".) and then click "LOGIN" to start the device setting.

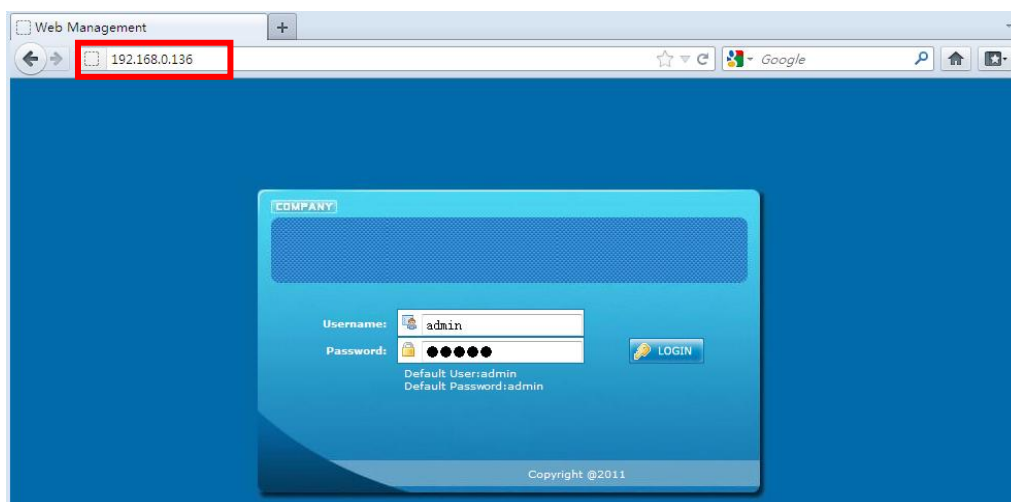


Figure-1

## 4.2 Operation

### Welcome

When we confirm the login, it displays the WELCOME interface as Figure-2.

**Web Management**

- Welcome
- Parameter
  - Input 1
  - Input 2
  - ASI Input
  - NIT
  - IP Output
  - Modulator
  - Save/Restore
- System
  - Reboot
  - Firmware
  - Network
  - Password
  - Backup/Load

**DVB-T Encoder Modulator** → Device standard and name

**Version Information**

Software Version:	1.20 Build 133 Oct 24 2013
Hardware Version:	0.8
Web Version:	1.06

**Status Information**

	Input 1	Input 2
Interface:	CVBS/CVBS	CVBS/CVBS
Bitrate:	4.467 Mbps	0.000 Mbps

It displays the signal source interface as per you set in "Input 1/2" interface and displays real-time encoding bit rate of corresponding input channel.

**Output**

	Output A	Output B
Maxout Bitrate:	31.668 Mbps	31.668 Mbps
Current Bitrate:	4.491 Mbps	0.024 Mbps
TS Overflow:	●	●
RF Frequency:	650.000 MHz	658.000 MHz
RF Outlevel:	-10.0 dBm	

User can click any item here to enter the corresponding interface to check information or set the parameters.

Figure-2

### Input 1

From the menu on left side of the webpage, clicking "Input 1", it displays the information of the programs from the 1<sup>st</sup> encoding board as Figure-3.



The 1<sup>st</sup> encoding board: Program 1 & 2

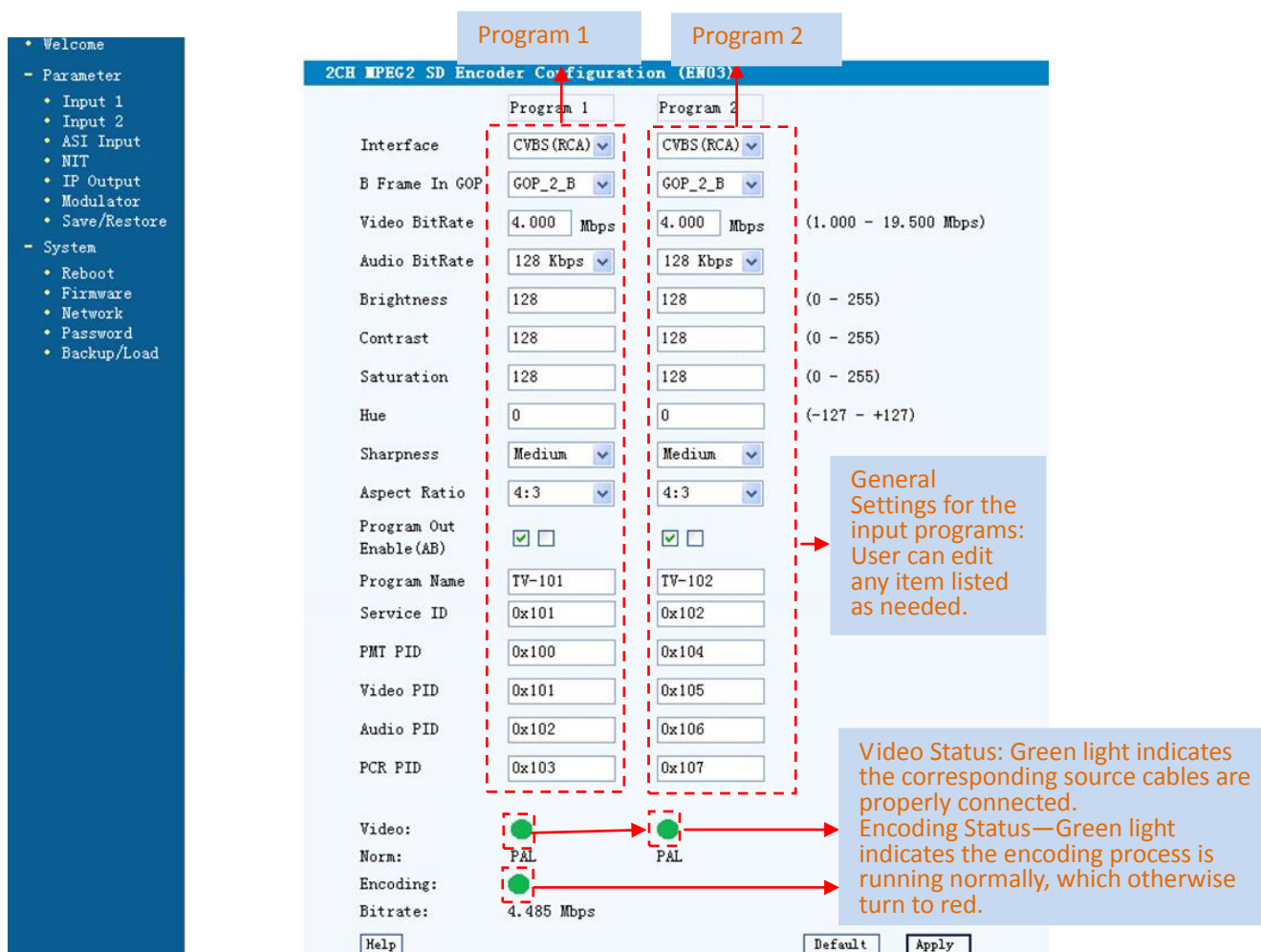
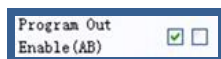
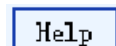


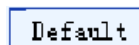
Figure-3



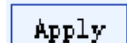
User can choose to output program via 2 carriers(A, B).



For user to turn to refer detailed explanation of terms on this interface



Click this button to apply the default setting of Input 1



Click this button to apply the modified parameters.

## Input 2

Similarly, from the menu on left side of the webpage, clicking “Input 2”, it displays the information of the programs from the 2<sup>ed</sup> encoding board.



The 2<sup>ed</sup> encoding board: Program 1 & 2

## ASI Input

Click “ASI Input”, it will display ASI input program information as Figure-4. User can parse and multiplex ASI IN programs in this interface.

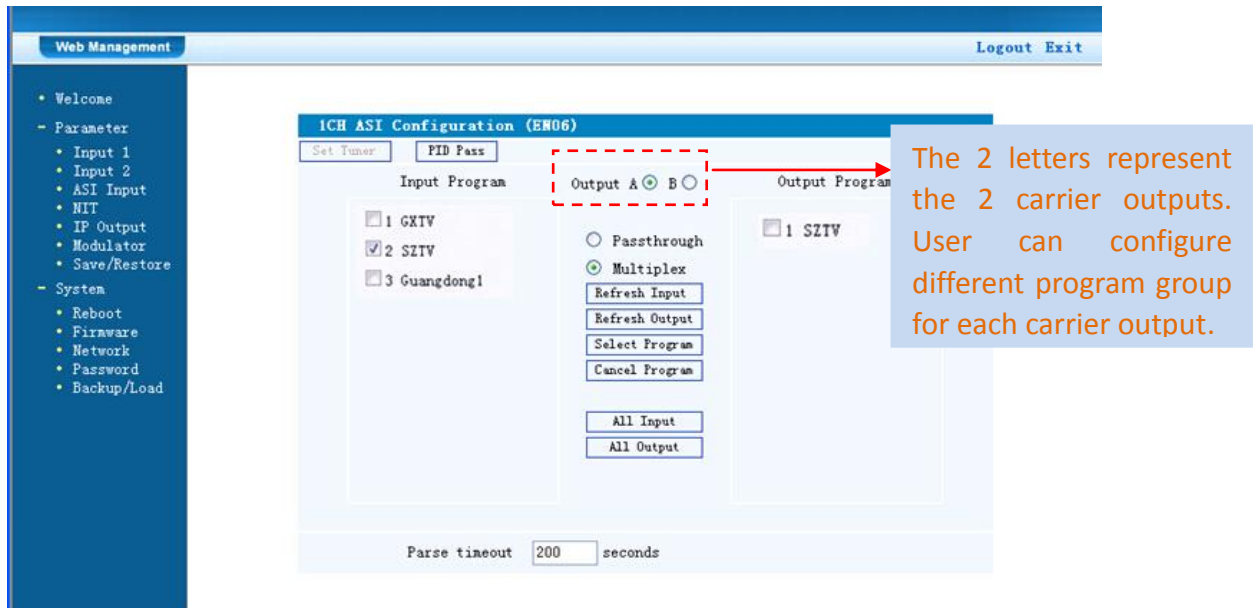


Figure-4

**Passthrough** If this item is selected, all the input programs will pass through without any elimination.

**Multiplex** Selecting this item to allow user select programs as required to output.

**Refresh Input** Click “Refresh Input” to refresh the input program list.

**Refresh Output** Click “Refresh Output” to refresh the output program list.

**Select Program** When user checks one input program with “√”, one can transfer the checked program to the right box to output.

Here user can select the programs which we want to output or we can output all the programs.

**Cancel Program** Similarly, user can cancel the multiplexed programs from the right box.

**All Input** & **All Output** to select all the input/output programs with one-time clicking.

**Parse timeout** 200 seconds Time limitation to parse the input programs

**PID Pass**

Click this button to trigger a dialog box as below, where to add the PIDs which need pass through.

In some occasions, there are some PIDs which won't belong to any program, such as EPG, NIT tables and so on which user just wants to pass them through the multiplexing module without changing anything. This is the main purpose of this function.



Click “Add” **Add** to add more boxes for filling the Input & Output PIDs, then click “Apply” to confirm.

## NIT Table setting

Click “NIT” from the menu to trigger the screen as Figure-5. Then click “Add” from this screen to add the program descriptor in NIT Table.

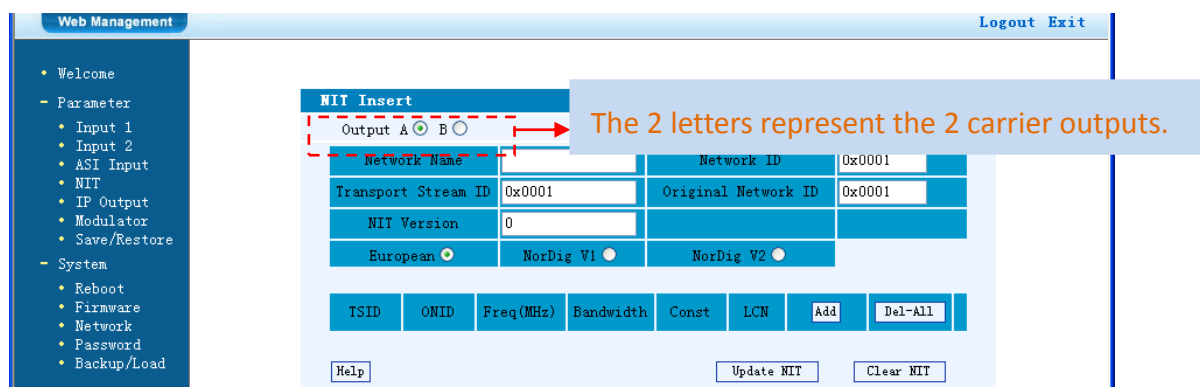
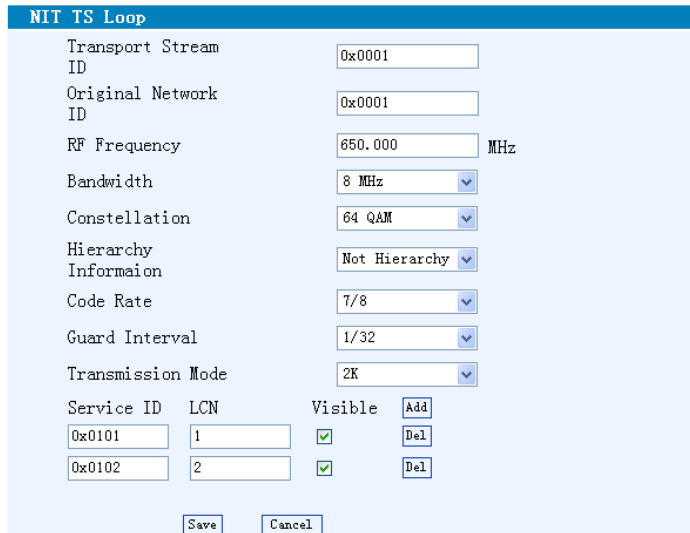


Figure-5

**Add**

Click “Add” from this page, it will display the screen as Figure-6 where it requires to add Service ID and configure other parameters for the programs.



**NIT TS Loop**

Transport Stream ID: 0x0001

Original Network ID: 0x0001

RF Frequency: 650.000 MHz

Bandwidth: 8 MHz

Constellation: 64 QAM

Hierarchy Information: Not Hierarchy

Code Rate: 7/8

Guard Interval: 1/32

Transmission Mode: 2K

Service ID	LCN	Visible	
0x0101	1	<input checked="" type="checkbox"/>	Add Del
0x0102	2	<input checked="" type="checkbox"/>	Add Del

Save Cancel

Figure-6

Add

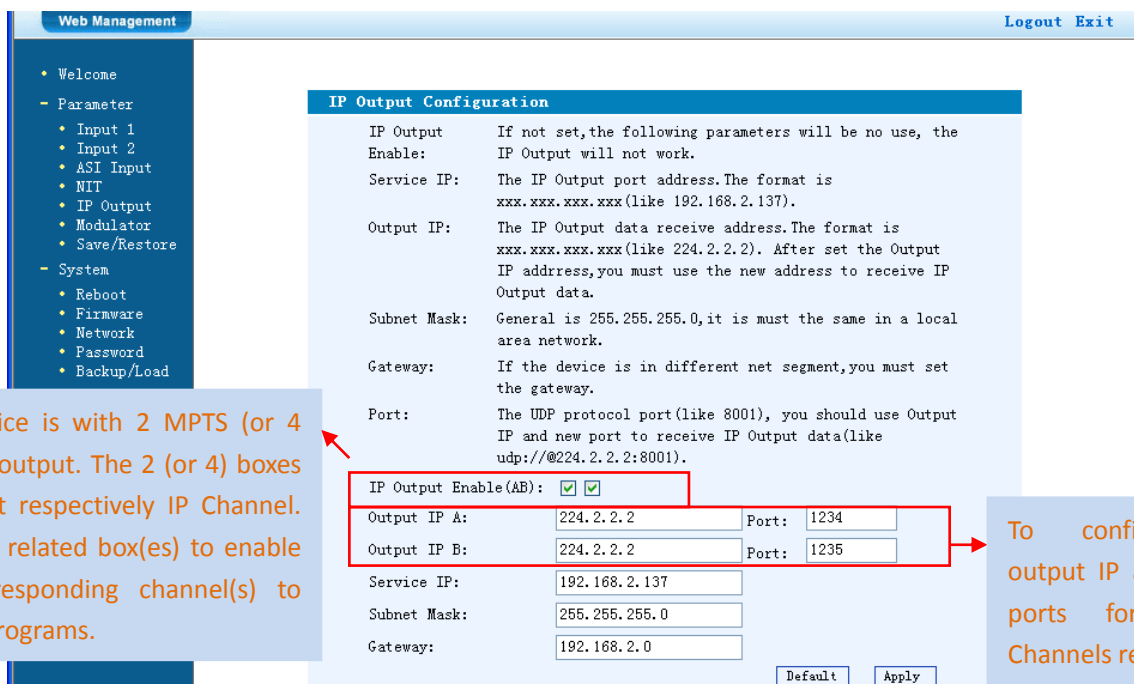
Here by clicking “Add”, users can set the program NIT in its respective field.

After setting all the data, users need to click on “Save” **Save** to save the setting.

## IP Output

Click “IP Output” from the left menu, it will display the screen as Figure-7 where to configure the output IP.

After setting the parameters, click “Apply” to save the setting.



**Web Management** Logout Exit

- Welcome
- Parameter
  - Input 1
  - Input 2
  - ASI Input
  - NIT
  - IP Output
  - Modulator
  - Save/Restore
- System
  - Reboot
  - Firmware
  - Network
  - Password
  - Backup/Load

**IP Output Configuration**

IP Output Enable: If not set, the following parameters will be no use, the IP Output will not work.

Service IP: The IP Output port address. The format is xxx.xxx.xxx.xxx (like 192.168.2.137).

Output IP: The IP Output data receive address. The format is xxx.xxx.xxx.xxx (like 224.2.2.2). After set the Output IP address, you must use the new address to receive IP Output data.

Subnet Mask: General is 255.255.255.0, it is must the same in a local area network.

Gateway: If the device is in different net segment, you must set the gateway.

Port: The UDP protocol port (like 8001), you should use Output IP and new port to receive IP Output data (like udp://@224.2.2.2:8001).

IP Output Enable (AB): ☒ ☒

Output IP A: 224.2.2.2 Port: 1234

Output IP B: 224.2.2.2 Port: 1235

Service IP: 192.168.2.137

Subnet Mask: 255.255.255.0

Gateway: 192.168.2.0

Default Apply

This device is with 2 MPTS (or 4 SPTS) IP output. The 2 (or 4) boxes represent respectively IP Channel. Click the related box(es) to enable the corresponding channel(s) to output programs.

To configure the output IP address and ports for the IP Channels respectively.

Figure-7



## Modulator Setting

Enter in “Modulator” and it will display the Modulator Configuration screen as Figure-8 where can set modulation parameters.

**RF On** –To decide whether to enable the RF (carrier A/B) output or not.

**ASI Output**– To select carrier output channel for ASI output (**Output A:** The ASI output programs are same as carrier A; **Output B:** The ASI output programs are same as carrier B.)

After setting all the parameters, click “Apply” **Apply** to save the Modulator Configuration.

Figure-8

## Save/Restore

Clicking “Save/Restore” from the menu, it will display the screen as Figure-9 where can save the configuration permanently to the device. Click “Save Configuration”, for store the data permanently to the device.

By using “Restore Configuration” user can restore the latest saved configuration to the device.

By using “Factory Set” user can import the default factory configuration.

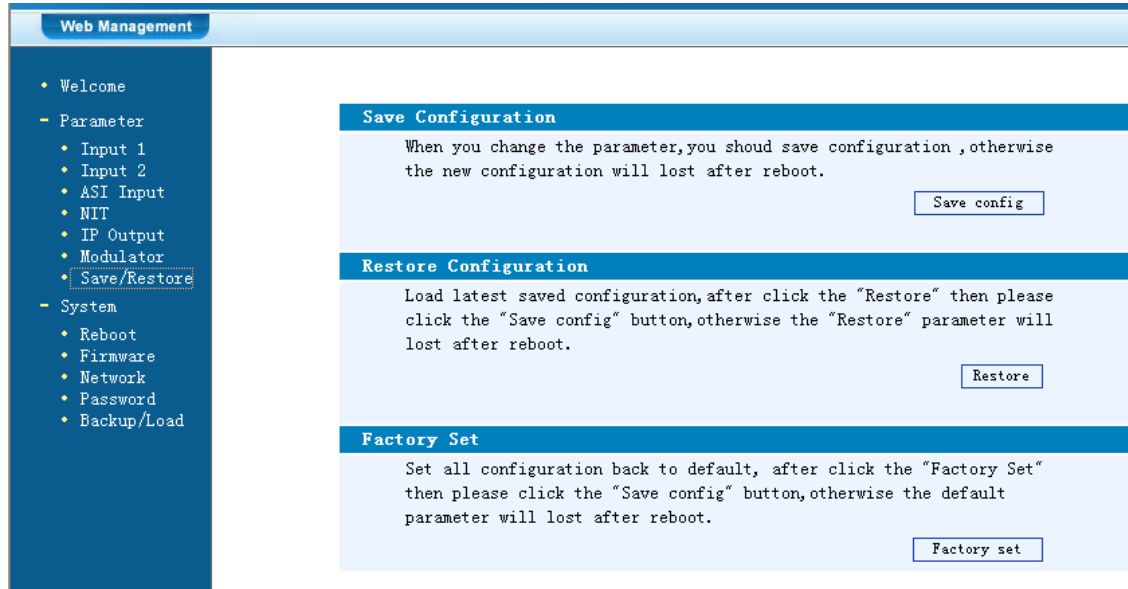


Figure-9

## Restart the Device

Click "Reboot" from the menu, the screen will display as Figure-10. Here when clicking "Reboot" box, it will restart the device automatically.

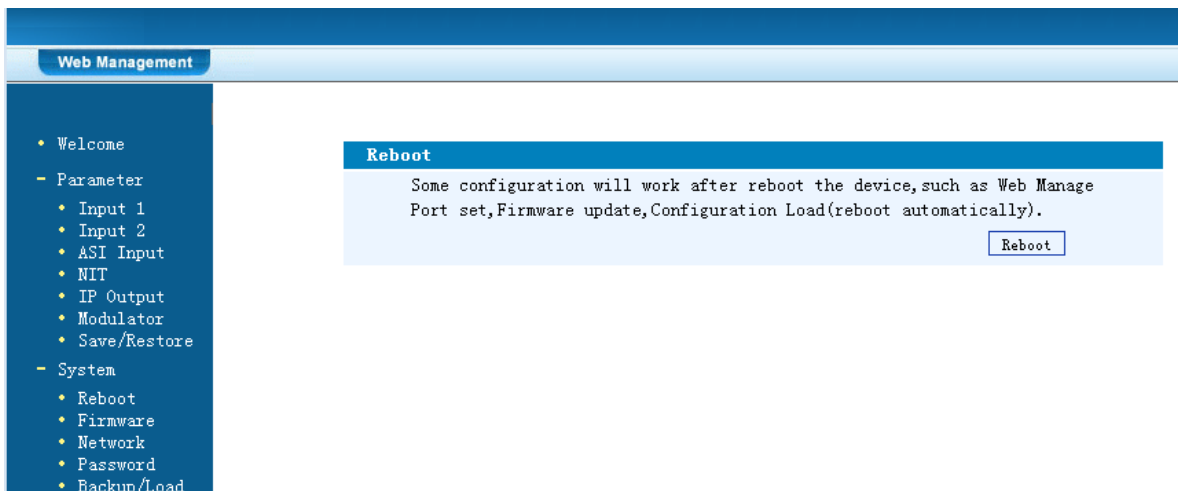


Figure-10

## Update the Device

Click "Firmware" from the menu it will display the screen as Figure-11. Here user can update the device by using the update file.

Click "Browse" to find the path of the device update file for this device then click "Update" to update the device.

After updating the device, user needs to restart the device by using Reboot option.

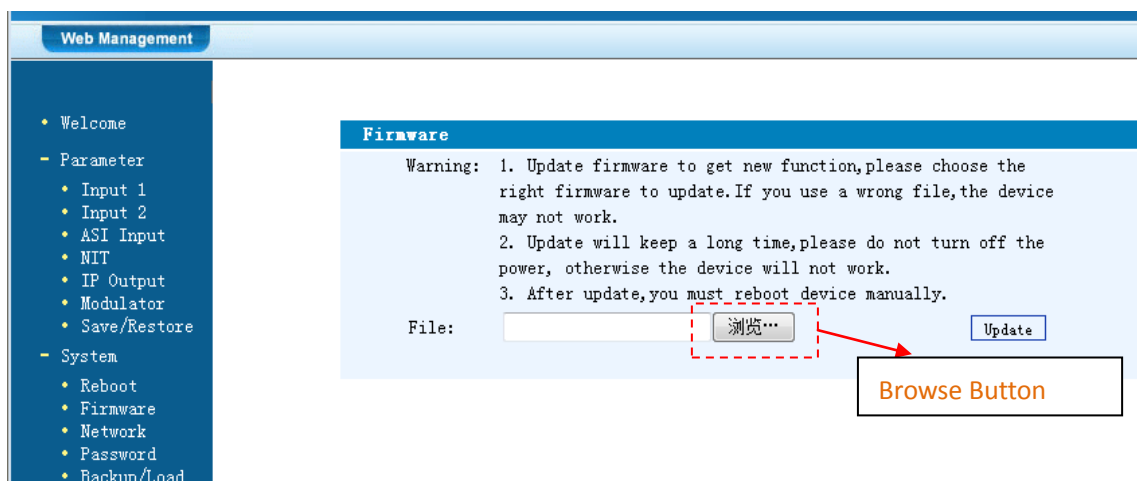


Figure-11

## Network

When user clicks “Network”, it will display the screen as Figure-12. It displays the network information of the device. Here user can change the device network configuration as needed.

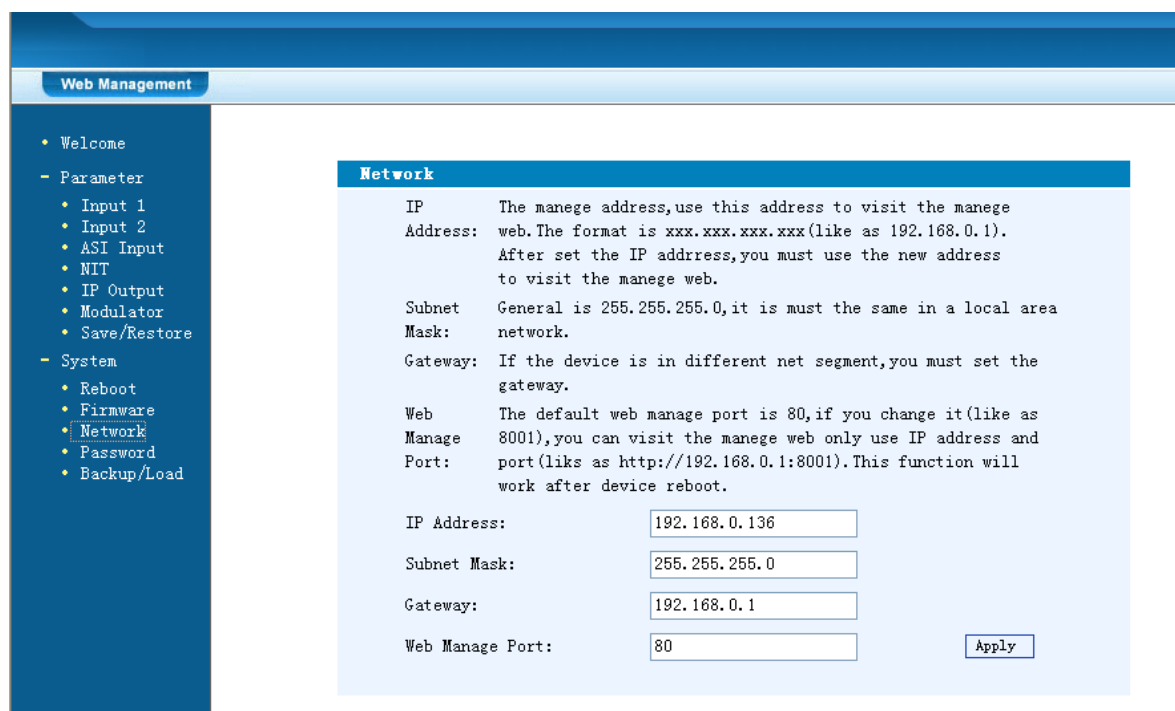


Figure-12

## Change Password

When user clicks “Password”, it will display the password screen as Figure-13. Here user can change the Username and Password for login to the device.

After putting the current and new Username and Password, click Apply” to save the configuration.

Figure-13

Keyboard and LCD Lock ☐

➤ **Keyboard and LCD Lock:** If it is marked with “√”, the LCD and keyboard will be locked to avoid unexpected modification or view of the device information and configurations. User can’t operate the keyboard & LCD while only the device IP address can be noted in the LCD window.

**IP Address**  
192.168.000.136

## Backup/Load

Click “Backup/Load” from the menu, it will display the screen as Figure-14.

**Backup Configuration** – To back up the device configuration file to a folder

**Load Configuration** – If user needs to load the old configuration to the device, click “Browse” and find the backup configuration file path. After selecting the file, click “Load File” to load the backup file to the device.

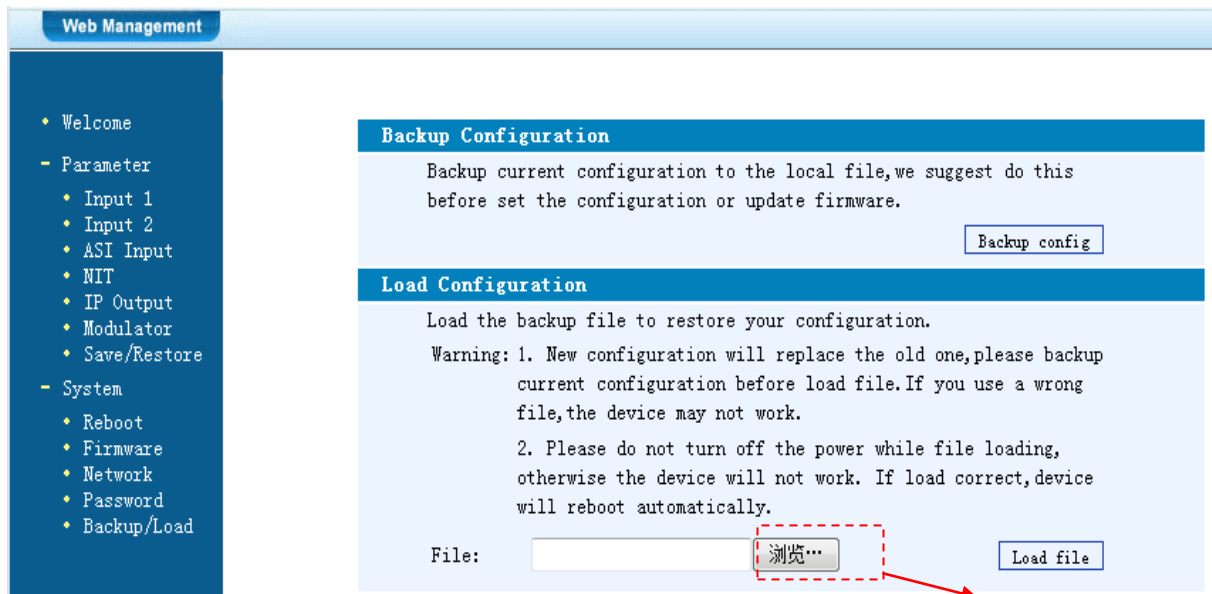


Figure-14

Browse  
Button

## Chapter 5 Troubleshooting

ClearView's ISO9001 quality assurance system has been approved by CQC organization. For guarantee the products' quality, reliability and stability. All ClearView products have been passed the testing and inspection before ship out factory. The testing and inspection scheme already covers all the Optical, Electronic and Mechanical criteria which have been published by DEXIN. To prevent potential hazard, please strictly follow the operation conditions.

### Prevention Measure

- Installing the device at the place in which environment temperature between 0 to 45 °C
- Making sure good ventilation for the heat-sink on the rear panel and other heat-sink bores if necessary
- Checking the input AC within the power supply working range and the connection is correct before switching on device
- Checking the RF output level varies within tolerant range if it is necessary
- Checking all signal cables have been properly connected
- Frequently switching on/off device is prohibited; the interval between every switching on/off must greater than 10 seconds.

### Conditions need to unplug power cord

- Power cord or socket damaged.
- Any liquid flowed into device.
- Any stuff causes circuit short
- Device in damp environment
- Device was suffered from physical damage
- Longtime idle.
- After switching on and restoring to factory setting, device still cannot work properly.
- Maintenance needed

## Chapter 6 Packing List

Sd4260 Encoder Modulator	1PC
User Manual	1PC
S-Video Cables	4PCs
CVBS Cables	4PCs
YPbPr Cables	4PCs
Power Cord	1PC