VINGTOR STENTOFON
by ZENITEL GROUP

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ATSC TO IP Gateway 8X

USER MANUAL

Vingtor-Stentofon IPTV System

Document Contents

1. Basic Information

1.1 Revision history

Document no.   A100K11719
Last revised by: Boris Cezner
Revision: 00
Date: 13.02.2017

1.2 Related documentation

For further information, refer to the following documentation

Doc.no.	Documentation
A100K11581	IPTV Administrator Guide

⚠️ **The WEEE Directive does not legislate that Zenitel, as a 'producer', shall collect 'end of life'.**
The owner who should use proper treatment and recycling measures should recycle this 'end of life' WEEE appropriately. It should not be disposed to landfill.
Many electrical items that we throw away can be repaired or recycled. Recycling items helps to save our natural finite resources and also reduces the environmental and health risks associated with sending electrical goods to landfill.

Under the WEEE Regulations, all new electrical goods should now be marked with the crossed-out wheeled bin symbol shown below:

Goods are marked with this symbol to show that they were produced after 13th August 2005, and should be disposed of separately from normal household waste so that they can be

2. Product Introduction

2.1 Outline

This Tuner to IP gigabits IP Gateway is a head-end interface conversion device which is used for DVB and Ethernet. It is integrated with tuner demodulation and gateway function, which can demodulate the signal from 8 tuners into TS and packet the TS into IP package, or directly convert the TS from ASI input into IP package, then output the IP package through different IP address and ports. It supports TS over UDP protocol.
BISS function is now embedded for tuner input to descramble your tuner input programs.

2.2 Features

- Integrate demodulation, BISS descrambling and gateway function – Tuner input version
- Support 8 channels tuner (ATSC_T) input and 8 IP (MPTS) output
- Support MPEG-2 and MPEG-4 TS to IP one way conversion
- Support BISS descrambling (Max up to 512 PID) ----For Tuner input
- 1 GE output (support parallel 1 Gbps data output channel)
- Support maximum 8 tuner to IP converting channel, the maximum output bit-rate is 800Mbps
- Support 8 MPTS over UDP protocol, unicast and multicast
- Support LCD display and keyboard
- Support Web based NMS management

2.3 Specifications

Interface	Input	8 RF & 8 RF loop-out (ATSC_T)
	Output	1 GE output, 8 MPTS over UDP protocol, unicast and Multicast
Transmission Bit-rate		Maximum total bit-rate is 800Mbps
BISS Mode		Mode 0, Mode 1, Mode E
General	Dimension	482mm×410mm×44mm (WxLxH)
	Weight	3.6kg
	Temperature	0~45℃(working）, -20~80℃(storage)
	Power supply	100~240VAC，50/60Hz
	consumption	20W

2.4 Principle Chart
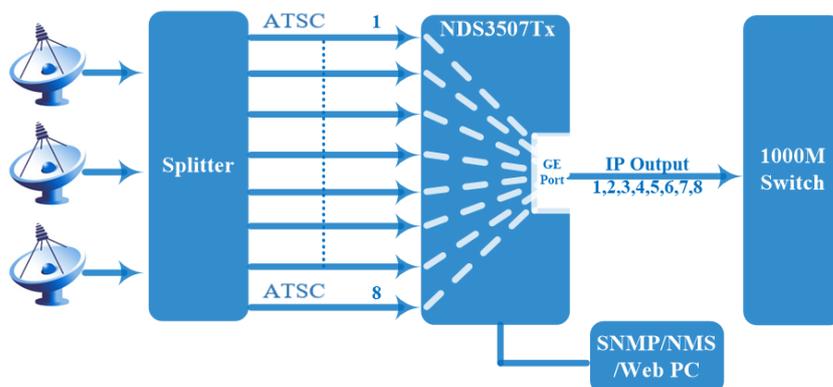
2.5 Appearance and Description

Front Panel Illustration:
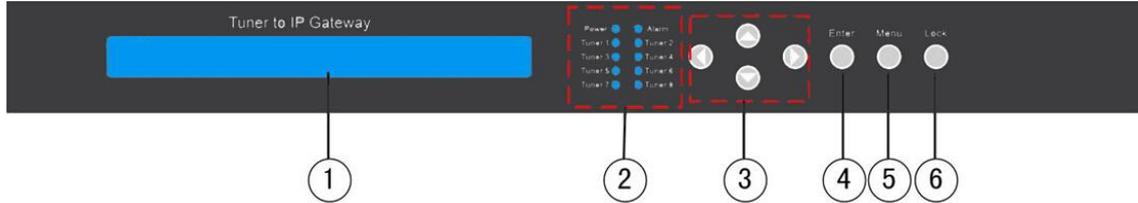
1	LCD Display	
2	Tuner in	Power Indicator
		Alarm Indicator
		Tuner 1(2/3…/8): when the input signal of tuner 1(2/3…/8) is locked, the light becomes green. Otherwise it is red.
3	Up (▲)/Down (▼) / Left (◄)/Right (►) button	
4	Enter	
5	Menu	
6	Lock	

Rear Panel Illustration:
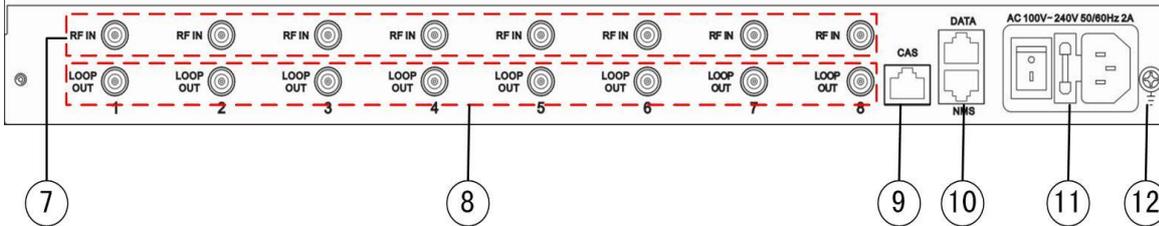
7	8 channels RF IN Interface
8	ATSC T Loop Out Interface
9	CAS port: Network management interface
10	Ethernet port: Network management interface ; Data port: IP out port
11	Integrated power switch and socket
12	Grounding rod

3. Installation Guide

3.1 Acquisition Check

When users open the package of the device, it is necessary to check items according to packing list. Normally it should include the following items:

- ATSC To IP Gateway 8X
- RF In and Loop Out Cable
- Power Cord

If any item is missing or mismatching with the list above, please contact local dealer.

3.2 Installation Preparation

When users install device, please follow the below steps. The details of installation will be described at the rest part of this chapter. Users can also refer rear panel chart during the installation.
The main content of this chapter including:

- Checking the possible device missing or damage during the transportation
- Preparing relevant environment for installation
- Installing Encoder
- Connecting signal cables
- Connecting communication port (if it is necessary)

3.2.1 Device's Installation Flow Chart is illustrated as following：
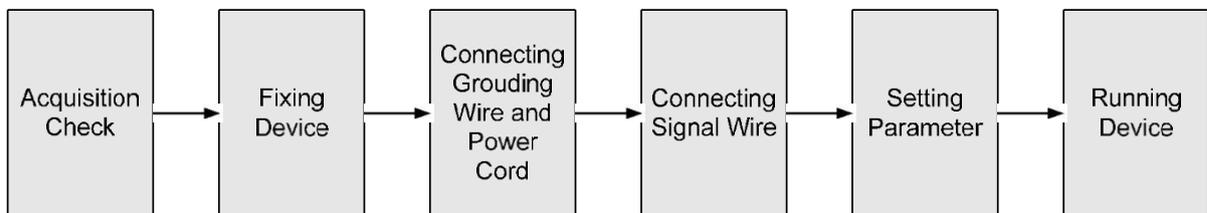
3.2.2 Environment Requirement

Item	Requirement
Machine Hall Space	When user installs machine frame array in one machine hall, 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.
	Electric Isolation, Dust Free Volume resistivity of ground anti-static material: 1×10^{7}~1×10^{10} Ω, Grounding current limiting resistance: 1M (Floor bearing should be greater than 450Kg/m^2)
Environment Temperature	5~40°C (sustainable), 0~45°C (short time), installing air conditioning is recommended
Relative Temperature	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 power 100-240V 50/60Hz 2A. Please carefully check before running.

3.2.3 Grounding Requirement

- All function modules' good grounding designs are 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.
- Coaxial cable's outer conductor and isolation layer should keep proper electric conducting with the metal housing of device.
- 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 25mm2.

3.2.4 Frame Grounding

All the machine frames should be connected with protective copper strip. The grounding wire should be as short as possible and avoid circling. The area of the conduction between grounding wire and grounding strip should be no less than 25mm^2.

3.2.5 Device Grounding

Connecting the device's grounding rod to frame's grounding pole with copper wire.

3.3 Wire's Connection

The grounding wire conductive screw is located at the right end of rear panel, and the power switch, fuse, power supply socket is just beside ,whose order goes like this, power switch is on the left ,power supply socket is on the right and the fuse is just between them.

- Connecting Power Cord
  User can insert one end into power supply socket, while insert the other end to AC power.
- Connecting Grounding Wire
  When the device solely connects to protective ground, it should adopt independent way, say, share the same ground with other devices. When the device adopts united way, the grounding resistance should be smaller than 1Ω.

Before connecting power cord to ATSC To IP Gateway 8X, user should set the power switch to "OFF".

4. Operation

ATSC to IP gateway's front panel is user operation interface. Before operation, user can decide whether directly use the default setting or customize the input and output parameters setting. The detail operations go as follows:

Keyboard Function Description:

MENU: Canceling presently entered value, resuming previous setting; Return to previous menu.
ENTER: Activating the parameters which needs modify, or confirming the change after modification.
LEFT/RIGHT: To choose and set the parameters.
UP/DOWN: Modifying activated parameter or paging up/down when parameter is inactivated.
LOCK: Lock the screen / cancel the lock state. After pressing lock key, the system will question the users to save present setting or not. If not, the LCD will display the current configuration state.

At the "Resume Factory Setting" page, user can firstly press "ENTER" key, consequently system resumes factory parameter setting.

4.1 Initializing

After the device is powered on, the screen will display the system's stand-by interface. Information about channel number, signal type and etc. will be displayed alternatively in the second row. It is shown as follows:
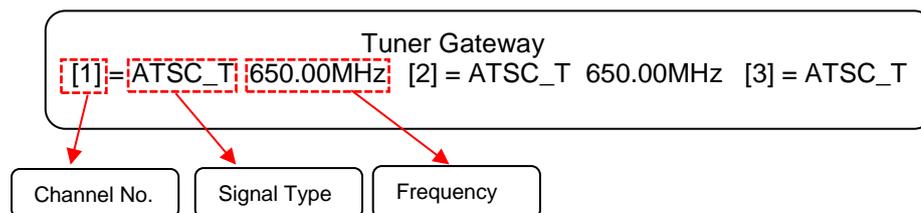
4.2 General Setting

Pressing LOCK key, it will enter the main menu, and the LCD will display the following pages:
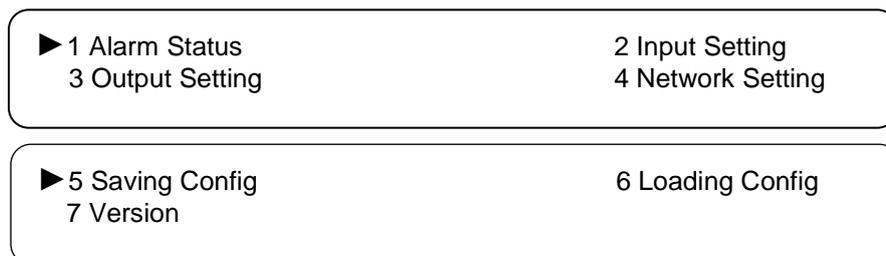
By pressing "ENTER", users can enter into each submenu to set parameters of input channel, device output, network and so on.

4.2.1 Alarm Status

After entering "1 Alarm Status", users can check the Alarm Count status in this submenu shown as below:
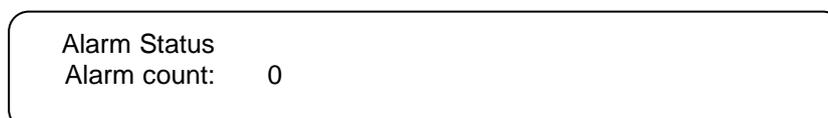
4.2.2 Input Setting

This ATSC to IP Gateway support 8 tuner input. User can set the tuner input parameter to receive signal. After entering "Input Setting", it will display submenus as follows:

```
► 2.1 Input 1 Setting          2.2 Input 2 Setting
   2.3 Input 3 Setting          2.4 Input 4 Setting
```

```
► 2.5 Input 5 Setting          2.6 Input 6 Setting
   2.7 Input 7 Setting          2.8 Input 8 Setting
```

Under this interface, users can use UP or DOWN key to choose channel, and press ENTER to go to the relevant submenu for setting parameters.

4.2.2.1 Input 1/…/8 Setting

The setting principle of input 2/3/4/5/6/7/8 is the same as Input 1.

Pressing ENTER button, users will enter to the submenu shown as below:

```
► 1.1 frequency
```
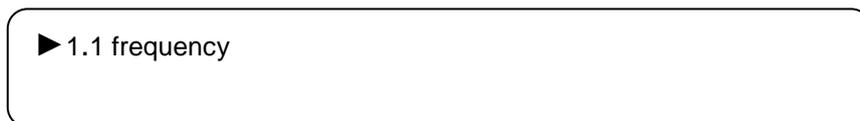
User could check and set the ATSC_T frequency

```
1.1  frequency
     650.000 MHz
```

NOTE: Below explanations are applied in this entire manual.
1) To press ENTER to start editing.
2) To move the underline through LEFT/RIGHT keys.
3) To modify the value of underlined character through UP/DOWN keys.
4) When user enter submenu, the LCD displays only one option which is the device's current option when user presses ENTER **again** to enter the operation interface.
5) Press LEFT/RIGHT buttons to specify the item with symbol "[ ]" , and then press Enter key to confirm

---

4.2.3 Output Setting

Return to the main menu and press ENTER to enter into submenu 3, the LCD will display below menus.
User can set the 8 MPTS output parameters under this menu.

```
►3.1 Out 1 Setting          3.2 Out 2 Setting
  3.3 Out 3 Setting          3.4 Out 4 Setting
```

```
►3.5 Out 5 Setting          3.6 Out 6 Setting
  3.7 Out 7 Setting          3.8 Out 8 Setting
```
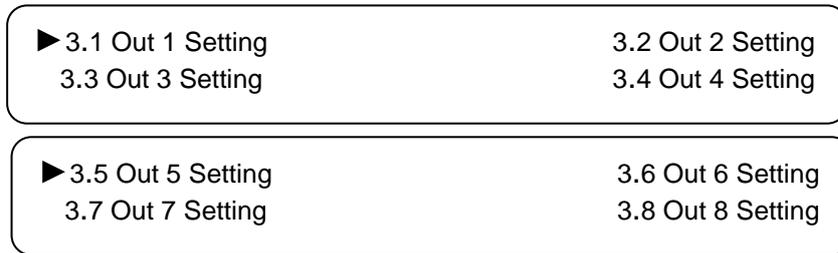
4.2.3.1 Out 1/….8 Setting

The setting principle of tuner 2/3/4/5/6/7/8 is the same as Out 1.

```
►3.1.1 IP Setting         3.1.2 Port Setting
  3.1.3 IP Enable         3.1.4 Packet Type
```

```
►3.1.5 Empty PKT Filt
```

⬇

```
3.1.1 IP Setting
   224.002.002.002
```

```
3.1.2 Port Setting
   01000
```

```
3.1.3 IP Enable
   Disable              [Enable]
```

```
3.1.4 Packet Type
   188                  [Auto]
```

```
3.1.5 Empty PKT Filt
   OFF                  [ON]
```
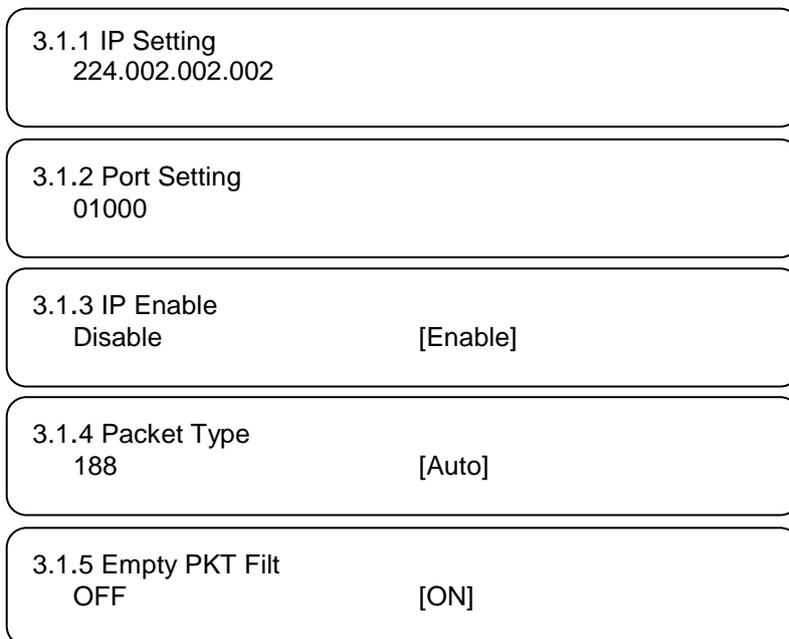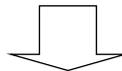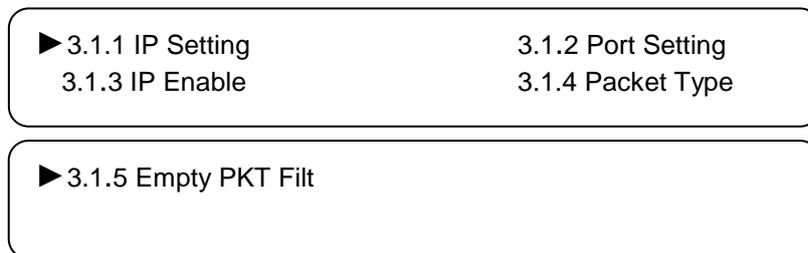
4.2.4 Network setting

Users can set the management port and service port by entering the system network configuration menu. The sub-menu is showed as follows:

> 4.1 IP Address   4.2 Subnet Mask
> 4.3 Gateway   4.4 Console Address

> 4.5 MAC Address   4.6 Data Port IP

Note: The MAC address is a factory setting and it's unique.

Under the following submenus, there are parameters which can be set manually; user can press "Up/Down" to choose this item. "Enter" and "Left/Right" to set the parameters. The system displays following pages.

> 4.1 IP Address
>   010.001.020.003

> 4.2 Subnet Mask
>   255.255.255.000

> 4.3 Gateway
>   010.001.020.001

> 4.4 Console Address
>   010.001.020.003

> 4.5 MAC Address
>   ffffffffffffffffffff

> 4.6 Data Port IP
>   192.168.002.200

4.2.5 Saving configuration

User can choose to save the current configured parameters by pressing ENTER key. The system displays following page:

> Saving, please wait:
> Erasing…….

After saving finished, the menu automatically turns back.

4.2.6 Load configuration

The system can load two kinds of configurations. One is customer saved configurations; the other is factory default configuration.

```
6.1 Load Saved CFG        6.2 Load Default CFG
```

Under the corresponding menu, Users press ENTER to choose configuration needing load.

```
Loading, please wait:
>>>>>>>>>>>>>>>>
```

After loading finished, the menu automatically turns back.

4.2.7 Version

The hardware and software version can be displayed in this menu. It is showed as follows:

```
     SW   X.XX        HW   X.XX
```

5. WEB NMS Operation

User not only can use front buttons for setting 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 Gateway's IP address; otherwise, it would cause IP conflict.

5.1 Login

The default IP of this device is 10.1.20.3. We can modify the IP through the front panel. Connect the PC and the device with LAN cable, and use ping command to confirm they are on the same network segment. Use web browser to connect the device with PC by inputting the ATSC to IP Gateway 8X address in the browser's address bar and press Enter. It will display the Login interface.

Input the Username and Password (default Username is "admin" and Password is "Zenitel!".) and then click "Sign" to start the device setting.
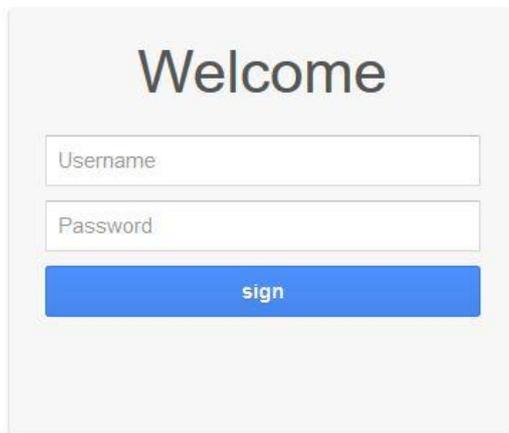
5.2 Operation

5.2.1 Tuner input

From the menu on top side of the webpage, click "Tuner", it displays the interface where users can check the 8 channels Tuner input status.
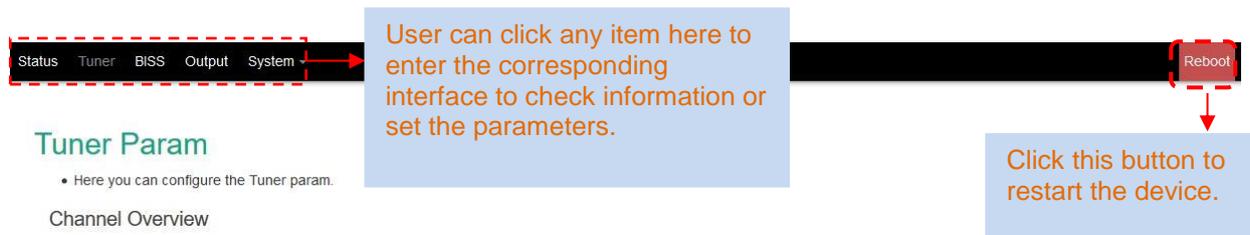
User can click any item here to enter the corresponding interface to check information or set the parameters.

Click this button to restart the device.

Tuner Param

- Here you can configure the Tuner param.

Channel Overview

Interface	Status	Actions
CHAN1 0.000 ATSC-T	Signal Quality: 0% Signal Strength: 0% Freq: 650 MHz	Modify
CHAN2 0.000 ATSC-T	Signal Quality: 0% Signal Strength: 0% Freq: 650 MHz	Modify
CHAN3 0.000 ATSC-T	Signal Quality: 0% Signal Strength: 0% Freq: 650 MHz	Modify
CHAN4 0.000 ATSC-T	Signal Quality: 0% Signal Strength: 0% Freq: 650 MHz	Modify
CHAN5 0.000 ATSC-T	Signal Quality: 0% Signal Strength: 0% Freq: 650 MHz	Modify
CHAN6 0.000 ATSC-T	Signal Quality: 0% Signal Strength: 0% Freq: 650 MHz	Modify
CHAN7 0.000 ATSC-T	Signal Quality: 0% Signal Strength: 0% Freq: 650 MHz	Modify
CHAN8 0.000 ATSC-T	Signal Quality: 0% Signal Strength: 0% Freq: 650 MHz	Modify

5.2.2 Modification

Users can configure the input tuner parameters to receive signals. When clicking Modify, it triggers a dialog box below where users can configure tuner parameters according to your signal source to receive programs.

Channel **1**

Freq 650000 KHz

Apply

Apply Click "Apply" button to apply the input data to start receive signals.

5.2.3 BISS

From the menu on top side of the webpage, clicking "BISS", it displays the interface where users can configure BISS parameters to descramble programs. The Max BISS descrambling capacity is up to 512 PID

Status Tuner BISS Output System ▾   Reboot

BISS Parameters

• Here you can config BISS param,for the output program select.

Channel Overview

Index	Alias	Session Word	Inject ID	Mode	Actions
1	SW-0	123456789ABC	123456789ABCDE	MODE-1	Edit
2	SW-1	123456789ABC	123456789ABCDE	MODE-1	Edit
3	SW-2	123456789ABC	123456789ABCDE	MODE-1	Edit
4	SW-3	123456789ABC	123456789ABCDE	MODE-1	Edit
5	SW-4	123456789ABC	123456789ABCDE	MODE-1	Edit
6	SW-5	123456789ABC	123456789ABCDE	MODE-1	Edit
7	SW-6	123456789ABC	123456789ABCDE	MODE-1	Edit
8	SW-7	123456789ABC	123456789ABCDE	MODE-1	Edit
9	SW-8	123456789ABC	123456789ABCDE	MODE-1	Edit
10	SW-9	123456789ABC	123456789ABCDE	MODE-1	Edit
11	SW-10	123456789ABC	123456789ABCDE	MODE-1	Edit
12	SW-11	123456789ABC	123456789ABCDE	MODE-1	Edit
13	SW-12	123456789ABC	123456789ABCDE	MODE-1	Edit
14	SW-13	123456789ABC	123456789ABCDE	MODE-1	Edit
15	SW-14	123456789ABC	123456789ABCDE	MODE-1	Edit
16	SW-15	123456789ABC	123456789ABCDE	MODE-1	Edit
17	SW-16	123456789ABC	123456789ABCDE	MODE-1	Edit
18	SW-17	123456789ABC	123456789ABCDE	MODE-1	Edit
19	SW-18	123456789ABC	123456789ABCDE	MODE-1	Edit
20	SW-19	123456789ABC	123456789ABCDE	MODE-1	Edit
21	SW-20	123456789ABC	123456789ABCDE	MODE-1	Edit

When clicking Edit , it triggers a dialog box below where user needs to input keys to descramble program according to the BISS scrambling side.

SPTS Set

Alias   SW-0

SW   123456789ABC   48 bit | 12 character

Mode   MODE-1 ▾

                        Close   Set

Input corresponding items and data to active the BISS descrambling as principles

| Modulating Side (BISS SCR)	Receiving Side (BISS DESCR)	Digit (0x----)
Mode 0+SW Data	Mode 0+SW Key	12
Mode 1+SW Data	Mode 1+SW Key	12
Mode E+ESW Data + Input ID	Mode E +ESW Key + Inject ID Key	16+14

## 5.2.4 Output Parameters

5.2.4.1   Output Settings

Enter in "Output Setting" and it will display the screen where user can set the parameters of the 8 MPTS separately and choose programs for BISS descrambling.

When clicking [Edit] in the "Descramble Enable", it triggers a dialog box below where user can choose programs to be descrambled.

[Set] - Click this button to apply the modified parameters

5.2.4.2   Data IP Setting

Data IP Setting is for setting the Data parameters for the device.

5.2.5 System

5.2.5.1 System→Config

Clicking "Config" from "System" menu, it will display the screen where user can save the configuration permanently to the device.

By using "Save Configuration" user can store 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.
By using "Local Save" user can save the configuration to Local.
By using "Local Load" user can update the Local file to the device.


5.2.5.2 System→Network

When user clicks "Network", it will display network information of the device. Here user can change the device network configuration as needed.
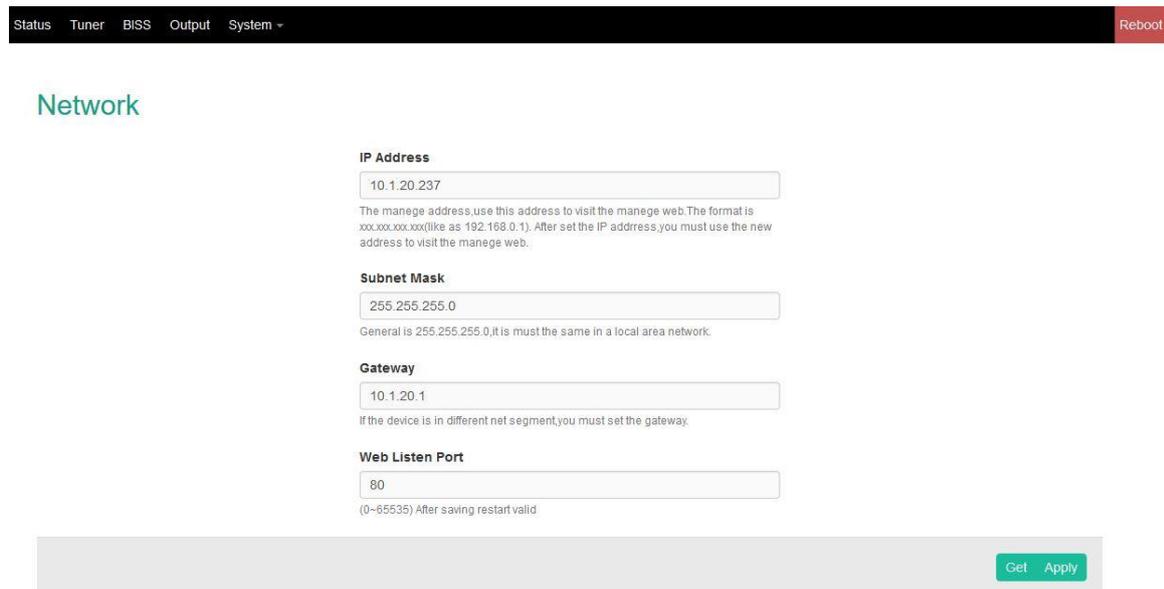
5.2.5.3   System→Password

When user clicks "Password", it will display the password screen. Here user can change the Username and Password for login to the device. After putting the current and new Username and Password, click "Set" to save the configuration

6. Troubleshooting

ISO9001 quality assurance system has been approved by CQC organization. For guarantee the products' quality, reliability and stability. All 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. To prevent potential hazard, please strictly follow the operation conditions.

6.1   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 the device on/off is prohibited; the interval between every switching on/off must greater than 10 seconds.

6.2   Conditions when you need to unplug the power cord

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

7. Packing list

- ATSC To IP Gateway 8X   1 pcs
- Power cord   1 pcs