8 Ch RF DVB to IP Gateway - CATV over IP MPTS

User Manual

1B-RF-IP-MPTS-GW

DIRECTORY

Chapter 1 Product Outline

1.1 Outline

1B-RF-IP-MPTS-GW 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, then output the IP package through different IP address and ports. It supports TS over UDP protocol. Furthermore, it can simultaneously convert the signals from 8 channels ASI to TS over UDP and output it.

1.2 Features

- Integrated with demodulation and gateway function

- Support 8 channels tuner (any DVB optional) input and 8 IP output

- Support MPEG-2 and MPEG-4 TS to IP one way conversion

- 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 TS over UDP protocol, unicast and multicast

- Support LCD display and keyboard

- Support NMS operation

1.3 Specifications

Interface	Input	8 Channels tuner input(any DVB)
	Output	1 GE output, TS over UDP protocol, unicast and Multicast
Transmission Bit-rate		Maximum total bit-rate is 800Mbps
General	Dimension (WxLxH)	482mm×410mm×44mm
	Weight	3.6kg
	Temperature	0~45℃(working)，-20~80℃(storage)
	Power supply	100~240VAC，50/60Hz
	consumption	20W

1.4 Principle Chart
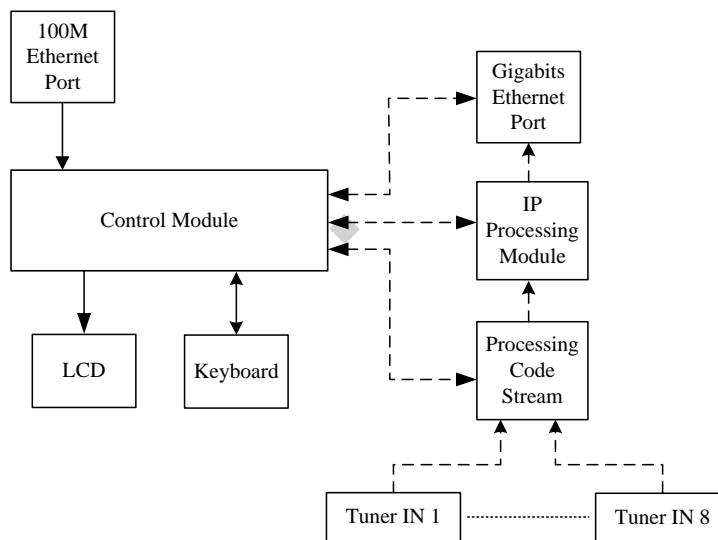
1.5 Appearance and Description

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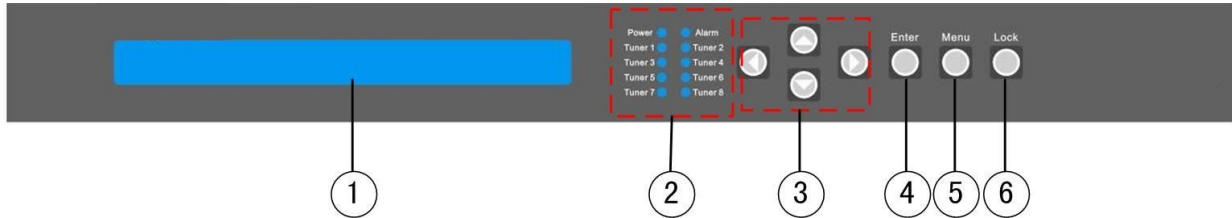
1	LCD Display	
2	Tuner in	Power Indicator
		Alarm Indicator
		Tuner 1(2/3…/8): when the input signal of tuner 1(2/3…/8) is locked, the light becomes green. Otherwise it is red.
3	Up (▲)/Down (▼) / Left (◄)/Right (►) button	
4	Enter	
5	Menu	
6	Lock	

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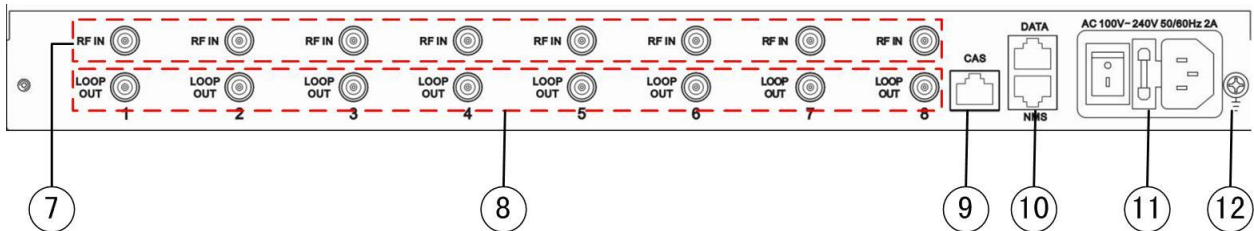
7	8 channels RF IN Interface
8	DVB Loop Out Interface
9	CAS port
10	Ethernet port: Network management interface Data port: IP in/out port
11	Integrated power switch and socket
12	Grounding rod

Chapter 2 Installation Guide

2.1 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:

- 1B-RF-IP-MPTS-GW Tuner to IP Gateway
- User's Manual
- Earth lead
- RF In and Loop Out Cable
- Power Cord

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

2.2 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 gateway
- Connecting signal cables
- Connecting communication port (if it is necessary)

2.2.1 Device's Installation Flow Chart Illustrated as following：

| Acquisition Check | → | Fixing Device | → | Connecting Grouding Wire and Power Cord | → | Connecting Signal Wire | → | Setting Parameter | → | Running Device |
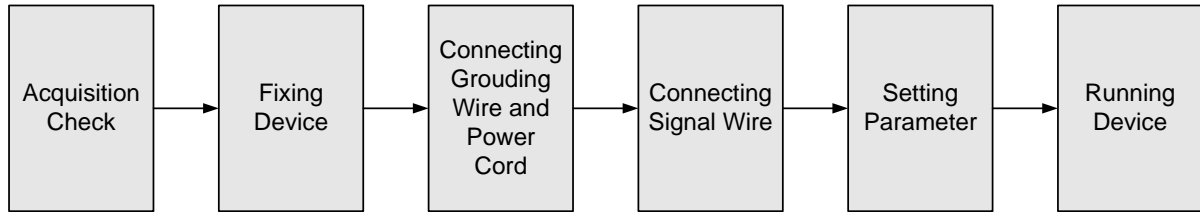
2.2.2 Environment Requirement

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.
Machine Hall Floor	Electric Isolation, Dust Free Volume resistivity of ground anti-static material: $1X10^7$~$1X10^{10\Omega}$, Grounding current limiting resistance: 1M (Floor bearing should be greater than 450Kg/㎡)
Environment Temperature	5~40℃(sustainable)，0~45℃(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 100V-240V 50/60Hz 2A. Please carefully check before running.

2.2.3 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 25mm^2.

2.2.4 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.

2.2.5 Device Grounding

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

2.3 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.

☞**Caution:**

Before connecting power cord to 1B-RF-IP-MPTS-GW Tuner to IP Gateway, user should set the power switch to "OFF".

Chapter 3 Operation

1B-RF-IP-MPTS-GW Tuner 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.

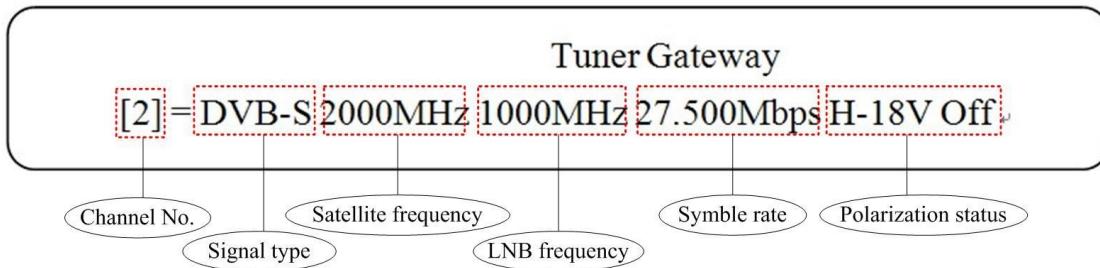**UP/DOWN**: Modifying activated parameter or paging up/down when parameter is inactivated.

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.
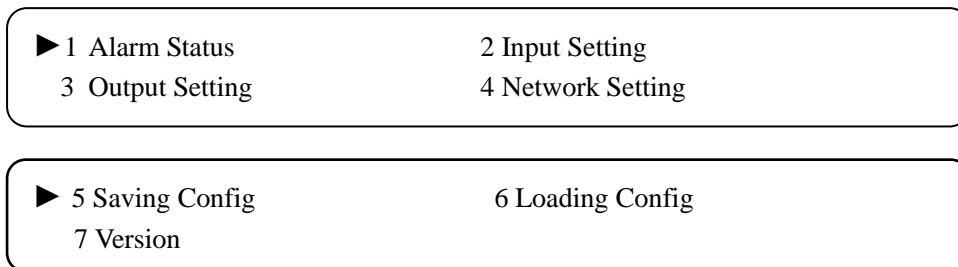
3.1 Initializing

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:

Tuner Gateway

[2] = DVB-S 2000MHz 1000MHz 27.500Mbps H-18V Off

Channel No.   Satellite frequency   Symble rate   Polarization status

Signal type   LNB frequency

3.2 General Setting

Pressing LOCK key, it will enter the main menu, and the LCD will display the following pages:

```
► 1 Alarm Status          2 Input Setting
  3 Output Setting        4 Network Setting
```

```
► 5 Saving Config         6 Loading Config
  7 Version
```

Hereon, by pressing "ENTER", users can enter into each submenu to set parameters of input channel, device output, network and so on.

3.2.1 Alarm Status

<mark>After entering "1 Alarm Status", users can check the Alarm Count status in this submenu shown as below:</mark>

```
Alarm Status
Alarm count 0
```

3.2.2 Input Setting

After entering "Input Setting", it will display submenus as follows:

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

```
►2.5 Tuner 5 Setting          2.6 Tuner 6 Setting
  2.7 Tuner 7 Setting          2.8 Tuner 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.

3.2.2.1 Tuner 1 Setting

Hereby this manual will take 2.1 Tuner 1 to illustrate the configuration of parameters.

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

```
►1.1 Satellite frequ          1.2 LNB frequency
  1.3 Symbol rate             1.4 Polarization
```

```
►1.5 22KHZ switch
```

User could check and set the satellite frequency, LNB frequency and symbol rate of its corresponding submenu "1.1", "1.2", "1.3" by pressing ENTER to go to editing mode, then set cursor location by pressing LEFT and RIGHT, modifying figures by pressing UP and DOWN. After modification finished, users press ENTER to exit editing mode and press UP and DOWN to turn page for other parameters modification.

```
1.1  Satellite frequency
     02000 MHz
```

```
1.2 LNB frequency
     01000 MHz
```

```
1.3 Symbol rate
    27.500 Msps
```

Likely, at the submenu1.1.4, users can check the current LNB Voltage (mark with symbol "[ ]") and switch it as needed.

```
1.4 Polarization
                V-18v
```

```
1.4 Polarization
    V-13v              [V-18v]              Off-0v
```

And at 1.1.5, users can decide whether to enable or disable the 22 KHz Switch.

```
1.5 22KHZ switch
    [Off]                On
```

3.2.2.1 Tuner 2/3/…/8 Setting

The principle of setting tuner 2/3/…/8 is the same with that of Tuner 1 setting.

3.2.3 Output Setting

Return to the main menu and press ENTER to enter into submenu 3, the LCD will display below menus.

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

```
►3.5 Tuner 5 Setting          3.6 Tuner 6 Setting
  3.7 Tuner 7 Setting          3.8 Tuner 8 Setting
```

3.2.3.1 Tuner 1 Setting

Hereby this manual will take 3.1 Tuner 1 to illustrate the configuration of outputting parameters.

```
►3.1.1 IP Setting              3.1.2 Port Setting
  3.1.3 IP Enable
```

Under menu 3.1.1, users can set the IP output address of relevant channel.

```
1.1 IP Setting
    224.002.002.002
```

```
1.1 IP Setting
    224.002.002.002
```

And under menu 3.1.2, users can set the corresponding IP port of relevant channel.

```
1.2 Port Setting
    01000
```

```
1.2 Port Setting
    01000
```

Under menu3.1.3, users can set whether the relevant channel output stream or not.

```
1.3 IP Enable
    Disable                    [Enable]
```

3.2.3.2 Tuner 2/3/....8 Setting

The principle of setting tuner 2/3/…/8 is the same with that of Tuner 1 setting.

3.2.4 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 as the 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
    192.168.000.136
```

```
4.2 Subnet Mask
    255.255.255.000
```

```
4.3 Gateway
    192.168.000.001
```

```
4.4 Console Address
    192.168.000.211
```

```
4.5 MAC Address
    ffffffffffffffffffff
```

```
4.6 Data Port IP
    192.168.002.200
```

.

3.2.5 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.

3.2.6 Load configuration

The system can load two kinds of configurations. One is customer saved configurations; the other is factory default configuration.
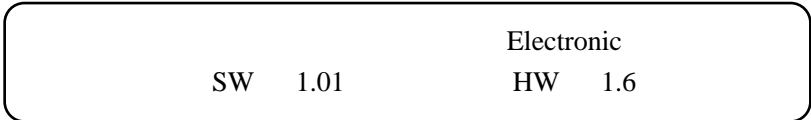
```
6.1 Load Saved CFG                    6.2 Load Default CFG
```

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

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

After loading finished, the menu automatically turns back.

3.2.7 Version

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

```
                        Electronic
        SW    1.01          HW    1.6
```

Chapter 4 Troubleshooting

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