USER MANUAL

Professional Receiver DMB-90E

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DIGICAST

Digital Future Life

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Caution Statements:

Please observe the following safety requirements before operating the equipment.

Electrical Shock

Thoroughly check your electrical grounding and comectors prior to powering. Make sure all connectors are of the three prong type to ensure proper grounding.

Whenever the equipment is not used for a prolong period of time, you should disconnect the power cord 。

Power Disconnect

Disconnect the power cord under the following conditions ：

1.damage on cord and connector

2.equipment get wet or substantial moisture enter the chassis

3.exposure to rain or water

Do Not Open The Equipment

1. Do not try to repair by yourself
2. Do not use unauthorized part for repair
3. Do not open the covers of the equipment without proper factory authorization

Avoid Moisture

Do not use this equipment in high moisture environment .

No Heavy Stacking

Do not stack the equipment back to back to allow proper ventilation .

No Touching with Bare Hands

Do not touch the equipment during heavy lightening condition.

Caution

1.Do not place this equipment on unstable support.

2.Do not place objects on top of the equipment to block up the ventilation opening.

3.Do not place radio active instrument or object on top of adjacent to the equipment.

4.Provide proper room ventilation during operation of this equipment.

5.Verify with the repair engineer or authorized entity after repair is done to be sure the equipment can be put back to operation.

Chapter 1 Product Outline

1.1 Overview

DMB-90E Series 4/8/12/16/20/24 Channels professional Receiver, 4 Tuners ports per module, Up to 6 Modules in Back panel. It is integrated with tuner demodulation, which can demodulate from 4/8/12/16/20/24 tuners, then output the IP package through different IP address and ports. The Tuners support DVB-S/S2/T/T2/C/ISDB-T/ ATSC-T optional input, demodulate to TS and encapsulated output IP packet, IP Output Port by 256*SPTS and 4*MPTS channels. Meanwhile, it support 2*ASI independent input & output.

This is an ideal solution for environments where you have a large number of air Channel, and widely used in IPTV System, Hotel, entertainment facilities, education broadcasting systems at schools and government buildings or any kinds of Source signals convert to Cable TV broadcast System, largely cost down the source gathering of Digital TV Broadcasting system and IPTV/OTT system which based on IP construction. Being the ideal multi-channel professional receiver used for FTA (free to air) IP signal source capture from digital tuner

1.2 Features

- Tuner input: Up to 24 FTA Tuners input
- Tuner standard option:
- DVB-S/S2,DVB-T/T2, DVB-C, DTMB, ISDB-T/Tb,
- ATSC, 4 Tuners per module, Up to 6 Modules.
- Two separate ASI input for External TS Multiplexing
- Two separate ASI output
- IP stream output: 4*MPTS and 256*SPTS
- Output IP protocol: UDP/RTP
- the Value of PCR PID can set same as Video PID
- support LCN (Logical Channel Number)
- PID Remapping & Filtering
- Low cost headend receiver for IPTV OTT System
- Superior Shoulders and Excellent modulation
- quality MER
- Easy-to-Use System Management via Web
- PSI/SI editing & inserting
- Low power consumption and high reliability with
- MTBF(Mean Time Between Failure) ≦87600 Hours
- Highly compact , High-Integrate

- Support PCR correct and PCR interval adjusting
- 24*7 hours working stable, broadcasting quality

1.3 Specification

Transport Stream Input

Interface: 8/12/16/20/24*Tuner(DVB-S/S2/T/T2/C/ISDB-T/Tb) input and loop out

RF input range: 950MHz~2150MHz(DVB-S/S2)

Input level: -65~-25dBm

Connector: F-female type, 75ohm

Symbol rate: 2~45Msps for QPSK/8PSK

Rolloff factor: 0.35 for QPSK; 0.35,0.25,0.2 for 8psk

Convolution: DVB-S QPSK: 1/2, 3/5, 2/3, 3/4, 4/5, 5/6, 8/9, 8/10 ;

DVB-S2 8PSK: 3/5, 2/3, 3/4, 5/6, 8/9, 9/10

Standard: DVB‐S comply to EN300421

DVB‐S2 comply to EN302307

LNB Power Output: 0V/+DC 13V/18V, Imax=400mA

Transport Stream Output

IP Output

Output: 256*SPTS or 4*MPTS over IP

Interface: GigE port(100/1000M base-T Ethernet),RJ45

Transmission protocol: UDP, RTP, ARP, ICMP, IGMP protocol

Transmission mode: Unicast or Multicast

TS packet Length: 7 x 188Byte

ASI Output

2 x ASI(independent),impendence 75Ω, BNC Female

188/204 Bytes MPEG‐TS per packet length

Bit Rate≤100Mbps each

TS Processing

Capable of multiplexing,

General Options

Control and Monitoring

Interface: 1*RJ-45,10/100 Base-T network interface

Remote control: web-based management

Local operation: keyboard on front panel, LCD display

Physical and Power

Voltage: 90~260VAC, 50/60Hz

Consumption: 25W

Operating temperature: 0~50°C

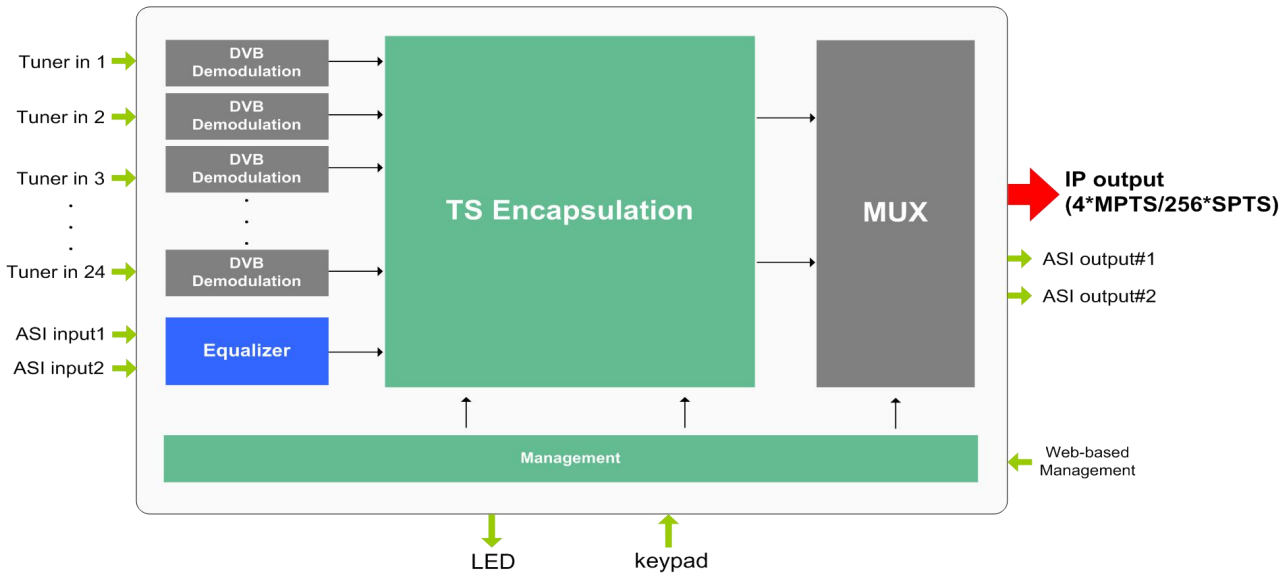
Storage temperature: -10~70°C

Relative humidity: 10%~90%(non-condensing)

Dimensions: 430mm(W)×400(D)mm×45mm(H)(19inch,1RU)

Weight: 4 KGS

Diagram



1.4 Panel

Fig.1 Front Panel View of DMB-90E

1	2*ASI INPUT
2	2*ASI OUTPUT
3	DATA output
4	NMS Port

As shown in figure 2, the rear panel of DMB-90E consists of one power supply connector, one power switch, one management port, eight RF input ports, one eight IP output ports, and a grounding point.

- Power Input Port: To connect to 100~240V 50/60Hz AC input;
- Power Switch: To turn DMB-90E on or off;
- Management Port: RJ45 interface, to connect to management server via 100BaseT or Gigabit Ethernet;
- RF Input Port: F10-75J connector, to connect to satellite and microwave signals of LNB/MMDS down converter;

- Data Output Port: RJ45 interface, to connect to data destination equipments of DMB-90E;
- Grounding Point: To connect the device with conductive earth. Please make sure of proper grounding of the device before start operating it for the safety of the operators and the device itself!

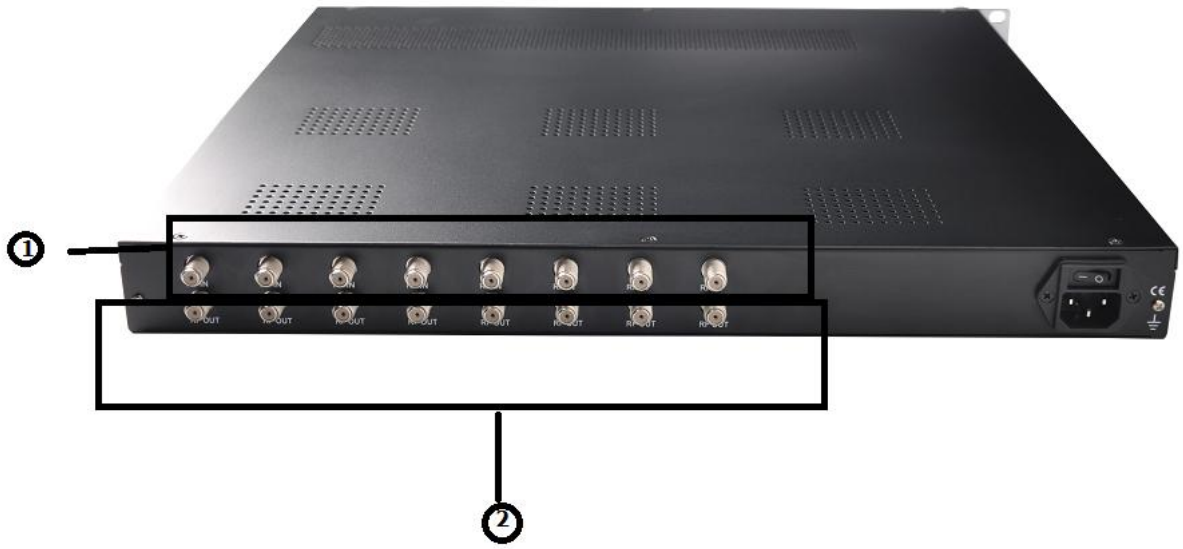
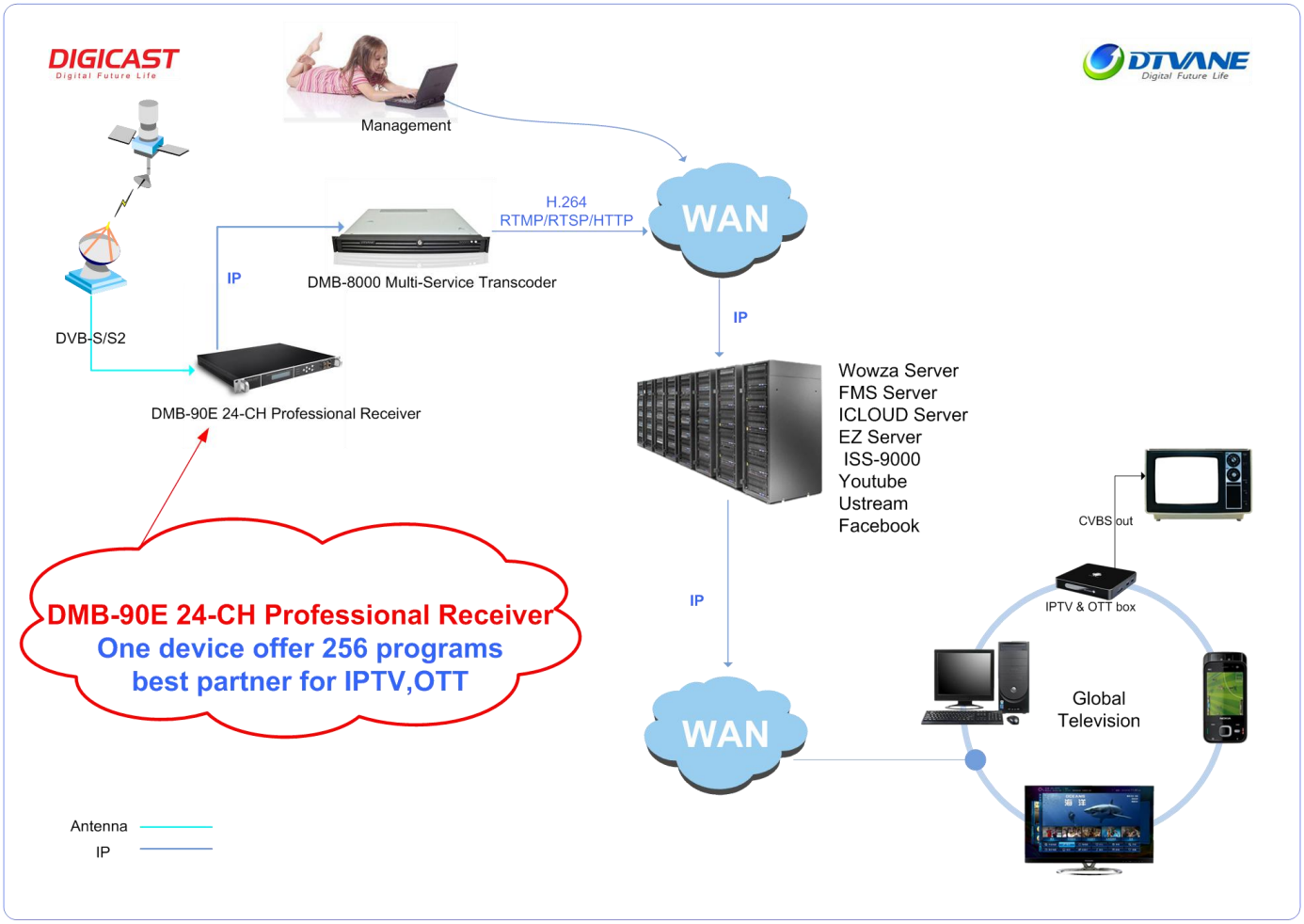


Fig.2 Rear Panel View of DMB-90E

1	8*Tuner input
2	8*Tuner output

1.5 Application



Before configure the Device

1.6 Operation Requirements

In order to ensure proper operation of DMB-90E, there are some requirements for other digital TV and network devices, which will connect with DMB-90E. Please see below for details:

Requirements for Digital TV Devices

The RF output signals of the devices, which will provide signal source to or receive signal from DMB-90E should comply with DVB-S/S2 modulation standard, and the input frequency range is from 950MHz to 2150MHz.. The device which will receive output signal from DMB-90E, should comply with
the following standards:

Transport Stream (TS): This means that the TS stream with one or more channels of digital TV, digital audio broadcasting or any other digital TV services should comply with DVB standard; it must contain PAT and PMT tables, which can completely describe the services.

The TS stream could be transmitted through ASI/Ethernet interface. For output IP interface, the TS packets must be encapsulated into UDP datagram. Each output TS should have unique destination IP address (unicast or multicast) and port number. The length of the UDP payload must be 7*188Byte (TS packets), and the payload must be synchronized by sync byte 0x47. The TS stream (except the stream with UDP format) also can be output from ASI interface, with standard format of 188 byte.

DMB-90E may be able to receive multiple transport streams from any devices with the TS format complies with the above-mentioned format.

Requirements for Network Devices

The switch used for the DMB-90E data output and its destination devices must be a Layer 3 gigabit switch, indispensability to support IGMP2.0. The backboard exchange speed must be higher than 10Gbps; the maximum data exchange speed of each port must be higher than 1000Mbps.

The switch for the DMB-90E and the managing workstation should be a 100M or gigabit switch, the maximum data exchange speed of each port must be higher than 40Mbps. Normally, It can be the same switch of data output, the two ports need to be configured to different VLANs.

Any hosts that may worsen the network traffic, such as some workstations or servers installed real-time communication tools, streaming media server or WEB server, must not be located at the LAN switch of the output of DMB-90E. These additional signals may cause packet loss, network jitter worsening, and hence due to audio/video distortion at the audiences.

1.7 System Requirements

Management workstation must have network connection and support TCP/IP protocol. Microsoft Windows 2000/XP (or higher versions) and Internet Explorer 6.0 (or higher version) are the recommended operating systems of the management workstation, and JavaScript must be supported by the web browser.

Operating the Device

1.8 Quick Start

Please follow the procedures below if it is the first time for you to use DMB-90E for constructing DTV head-end system:

1、 Construct your hardware environment, including chassis installation, power supply system deployment, and connecting switches, DMB-90E, the source device etc.

2、 Plan for the IP addresses of management port and data output port, the cable connectors of each source/destination devices; as well as number of digital TV transport streams. It is strongly recommended to take note of device addresses, port numbers and other configurations and keep them safely for checking purposes in future.

3、 Boot up each source devices of DMB-90E and configure the operating parameters, in order to ensure the proper signal receiving/decoding of RF signals. Please refer to the user manuals of source devices provided by their suppliers for detailed configuration.

4、 Boot up DMB-90E. If you have known the management port IP address of the DMB-90E you are currently using, and when it is in the same subnet with the management workstation, you may also start configuring DMB-90E from the management workstation directly. Otherwise you will need to configure the IP address of management port using front panel control

5、 Login to the web browser from the management workstation, key in the default user name “admin” and password “000000”; add and configure usernames and passwords of users allowed to access the device

6、 Configure the port number and IP address of DMB-90E data output

7、 Search for input programs tree , configure the output program settings of DMB-90E , including: select input program for output stream , output mode , output program parameter configure the PID mapping parameters if needed

8、 If there are scrambled programs in the system, you need configure the CA operating parameters as well.

Make use of stream analyzer or set-top box to test the system. If the device works properly and the output signal can be received, then it is ready for transmission in the real network

1.9 Web Management Operation of DMB-90E

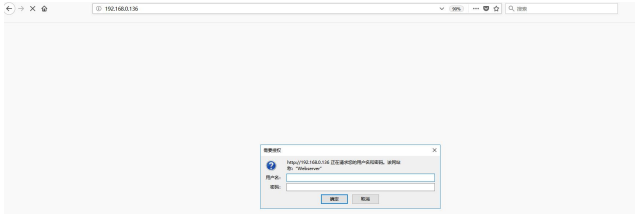
The management and control of DMB-90E can be done via a web browser. We recommend you to use Internet Explorer 6.0 or higher version, and configure the display resolution to be (or higher than) 1024*768.

Web User Login：

The device is connected to the input signal, connected to the power supply, and the equipment is controlled through the browser after the equipment starts normally.

1、: Enter the IP address of the device on the browse（default address：192.168.0.136）

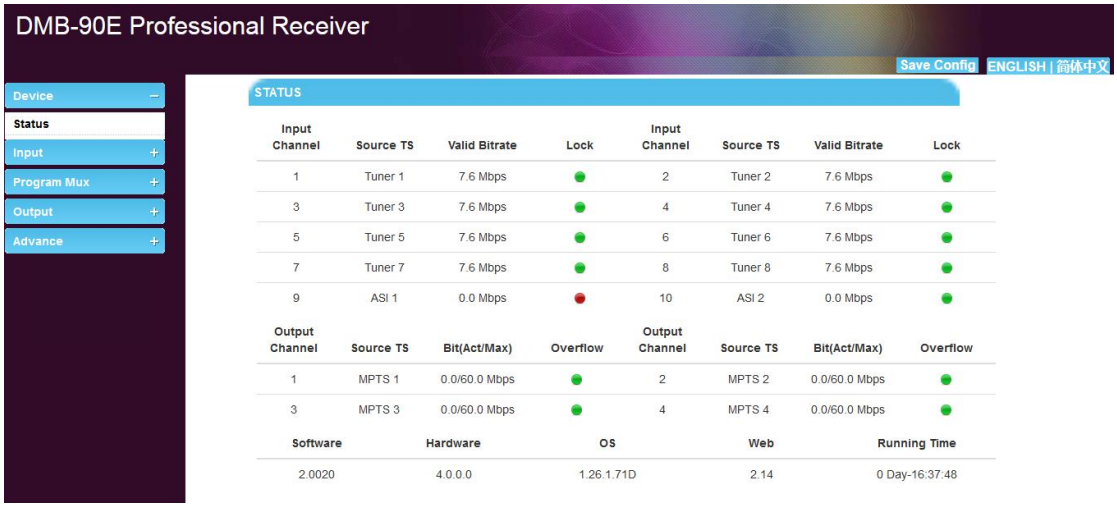
2、Username and password（default address：admin）



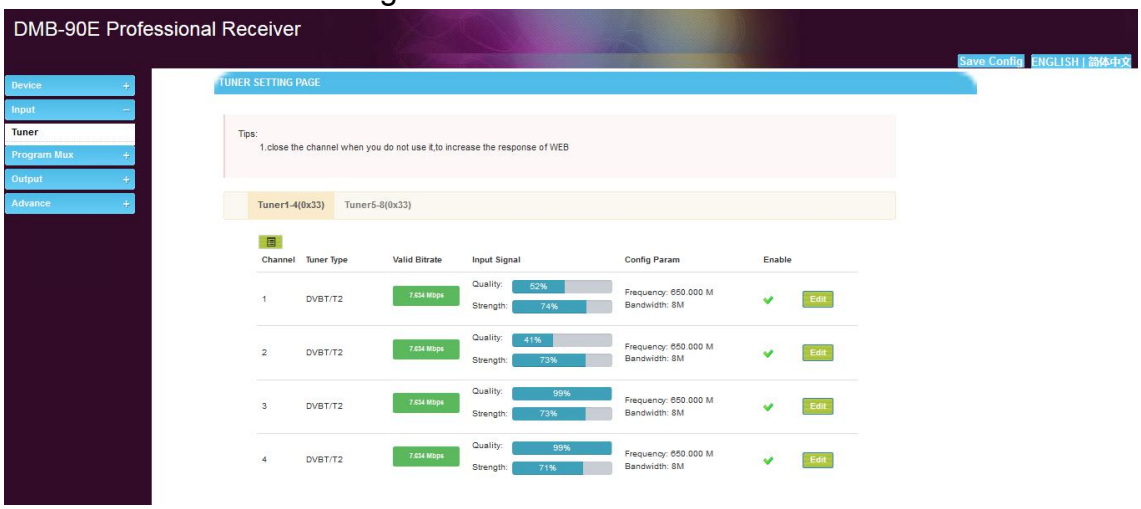
There is a factory default administrator user “admin” in DMB-90E with password of “admin”. Please use this user and password to login to the system for the first time operation of DMB-90E. But changing of password for this user is strongly recommended, and the new password should be kept safely. If you choose “remember my proof”, you needn’t input your user and password when you login in the next time. But to ensure the safety, please do not choose this option in the public server.

By default, the operation language of Web page is English. If you want to operate under the Chinese interface, please select the ‘Simple Chinese” form the dropdown list. As shown in the figure below:

3、 Enter the Device->Status bar to clearly detect the running status of the device



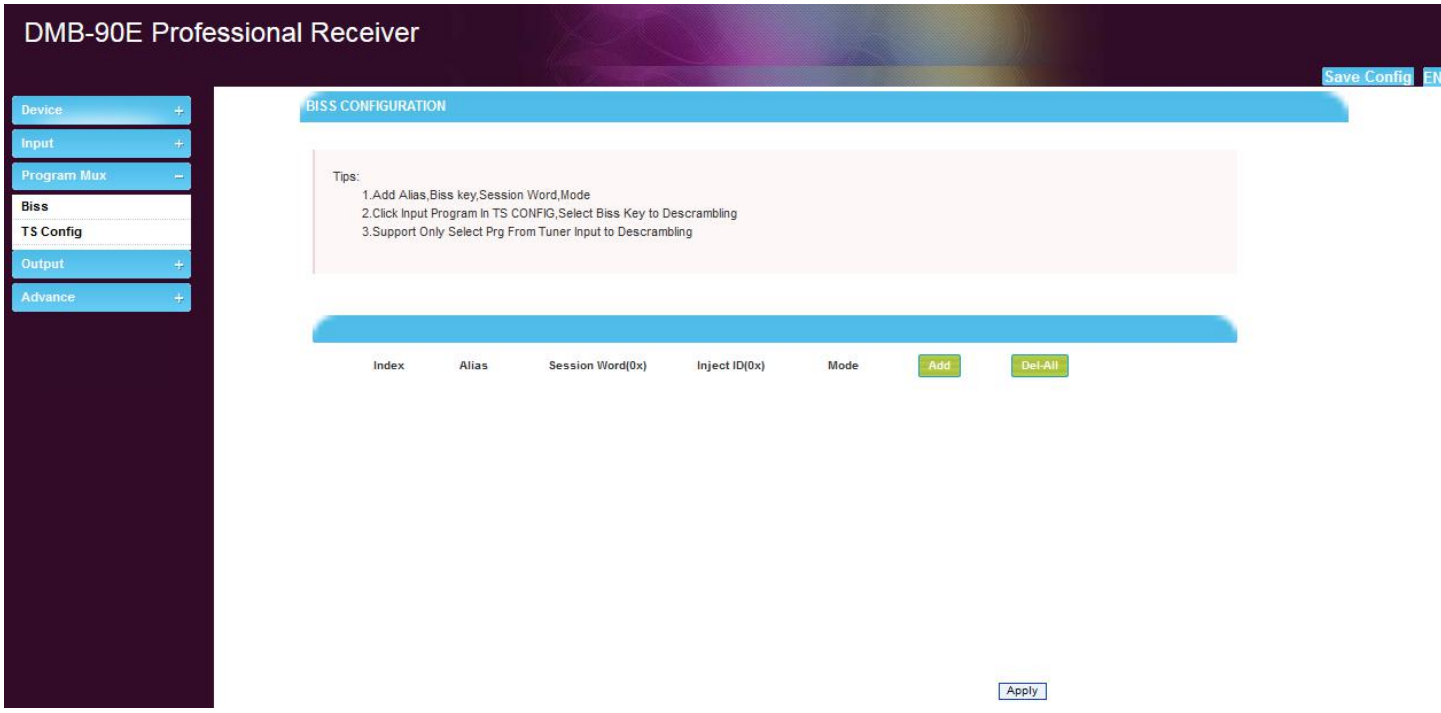
4、Tuner Parameter setting

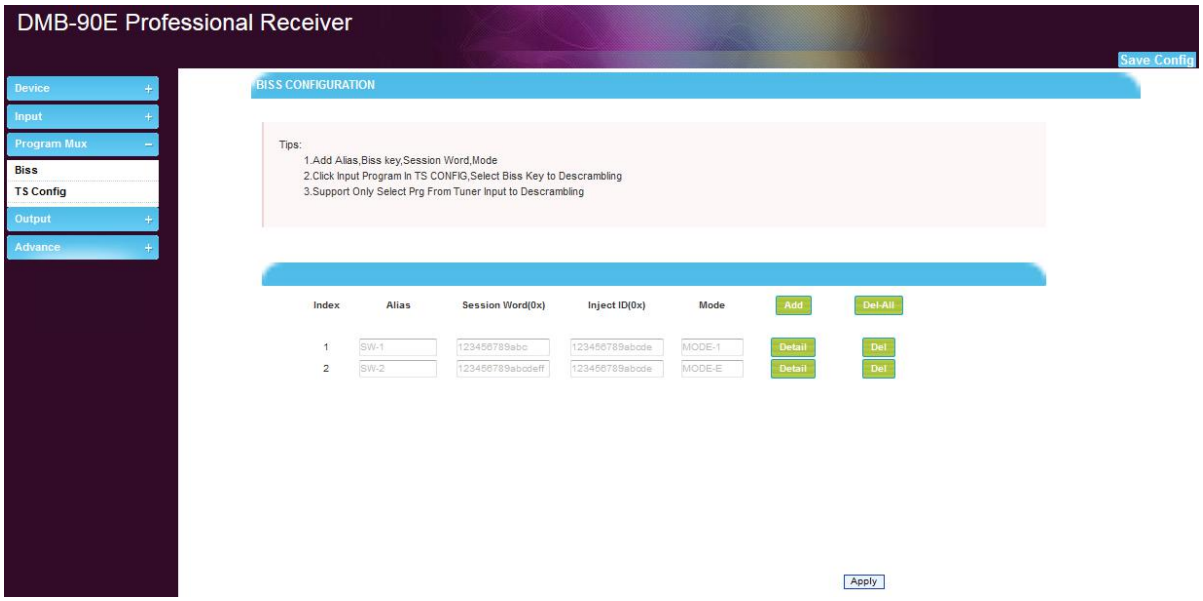


A、Tuner Parameter，click"Edit"Set parameters

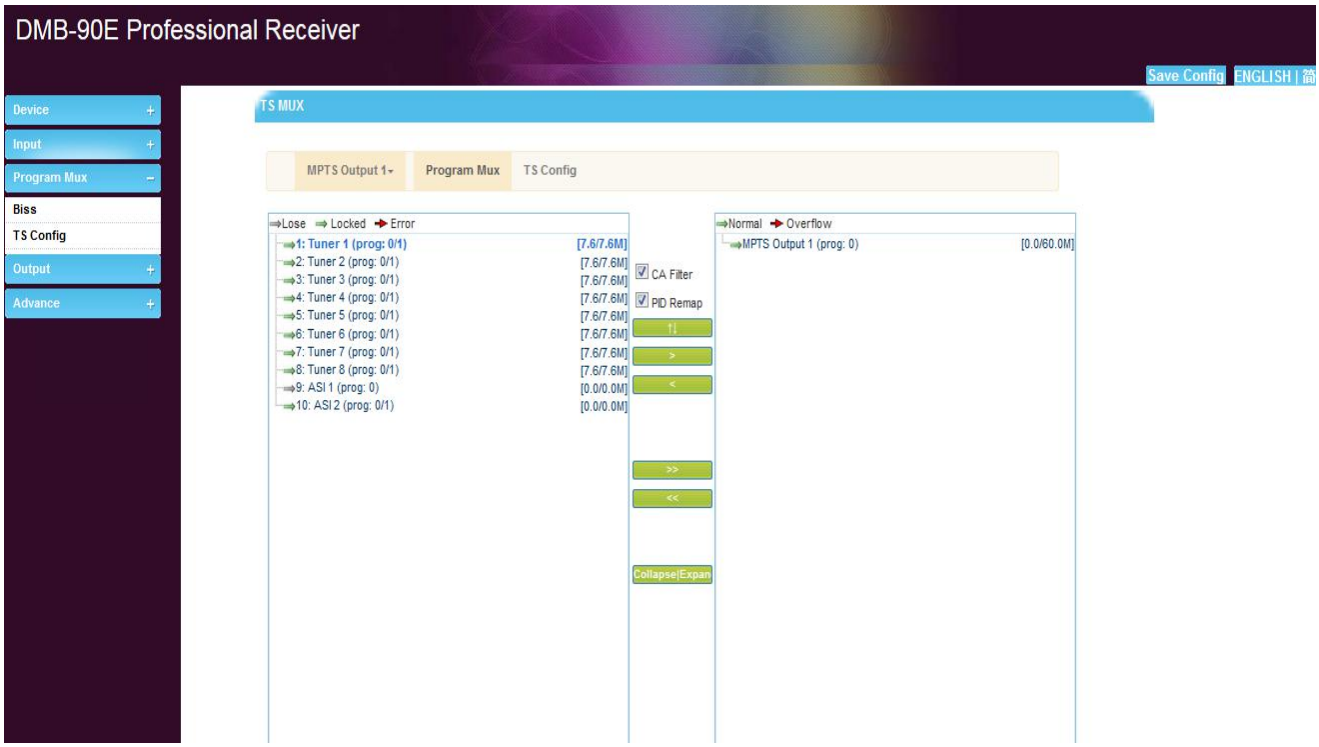
B. Click"Enable"undown" ✔ "to" ✖ "(meaning that the input channel is turned off and the unused input channel should be turned off)

BISS Configuration



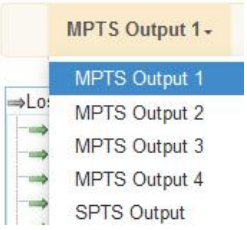


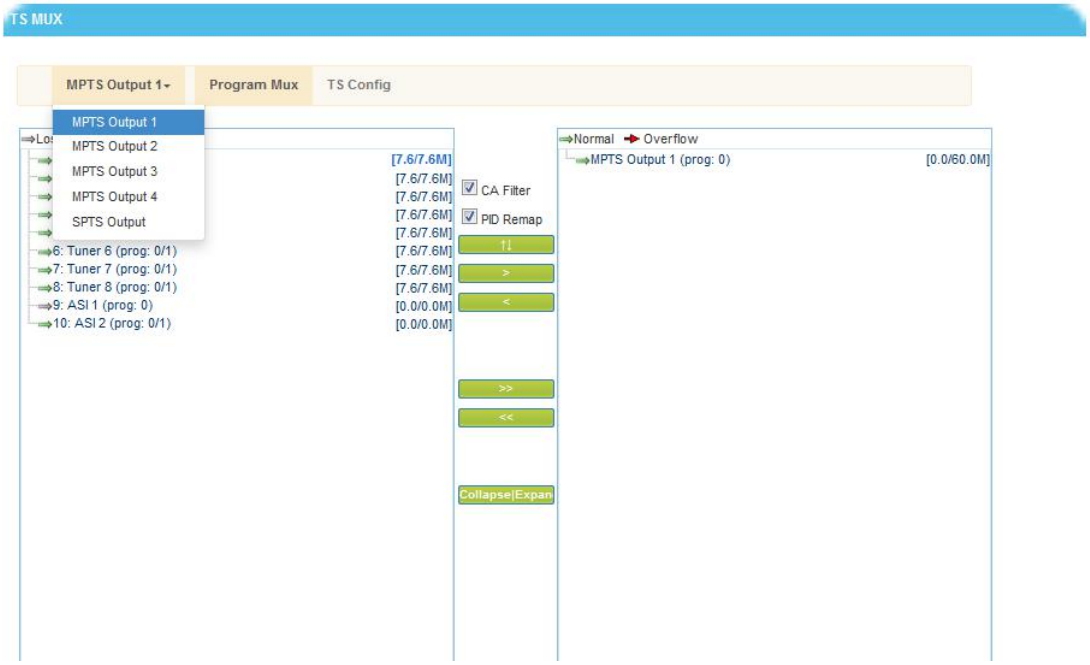
5、TS config，It is mainly to multiplex and output the program signals of the input channels.

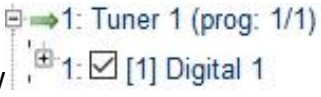


A、The program can be analyzed first, one channel at a time, and any channel can be selected，click“ 

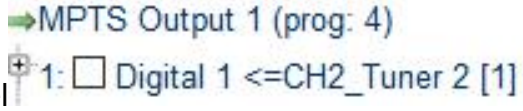
”。You can also parse all channels “ 

”， Select output channel 

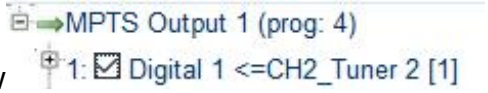


B、Program MUX：Select a program in the input window 

, Tick the box ☑ , click“ 

”， Multiplexing the program into an output channel 

。

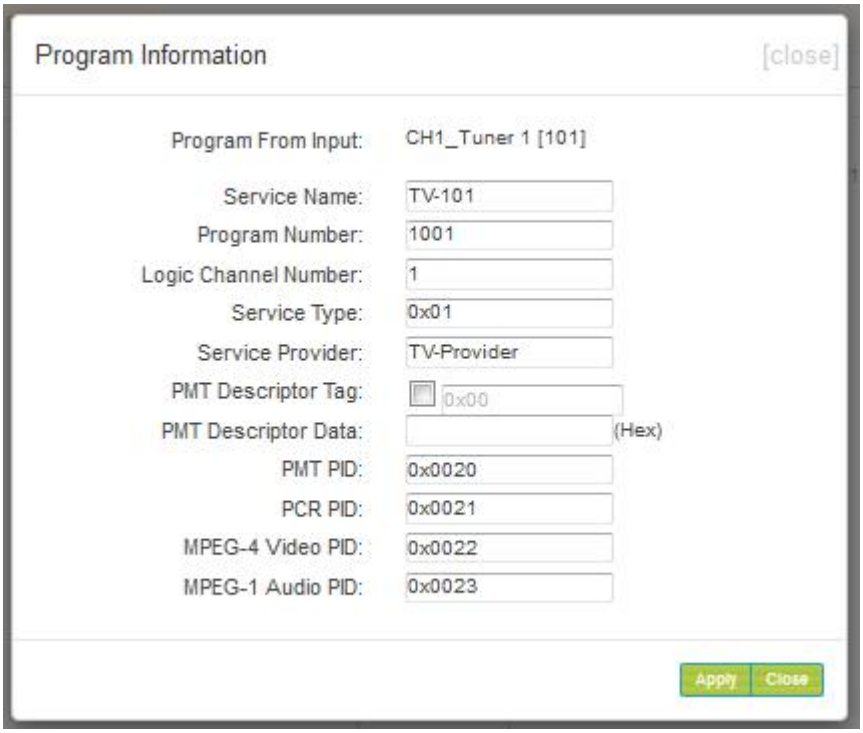
B、Delete program ： Select a program in the output window 

， Tick the box☑，click“ 

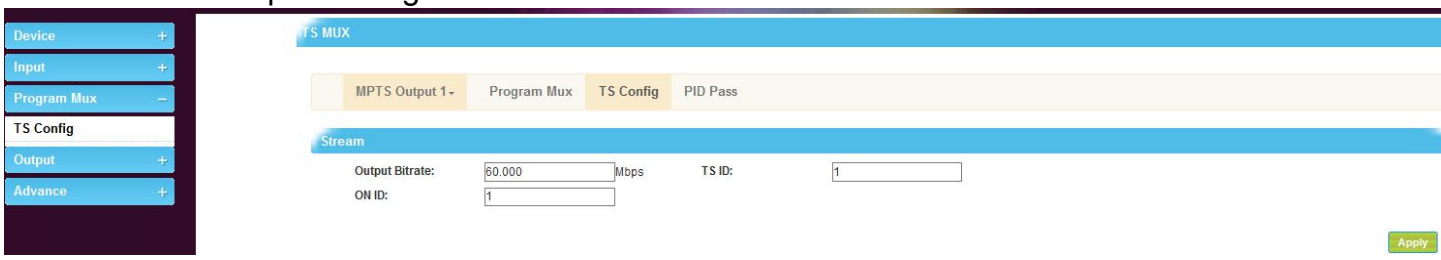
”, Delete the program, at this point, the program disappears in the output window。

C、Edit Program: Click the program name in the output window “ Digital 1 <=CH2_Tuner 2 [1] ”， The following window pops up and editing

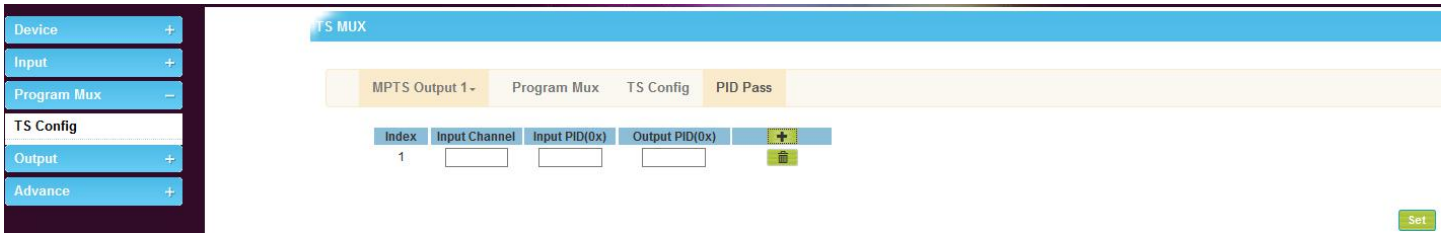
parameters are modified.



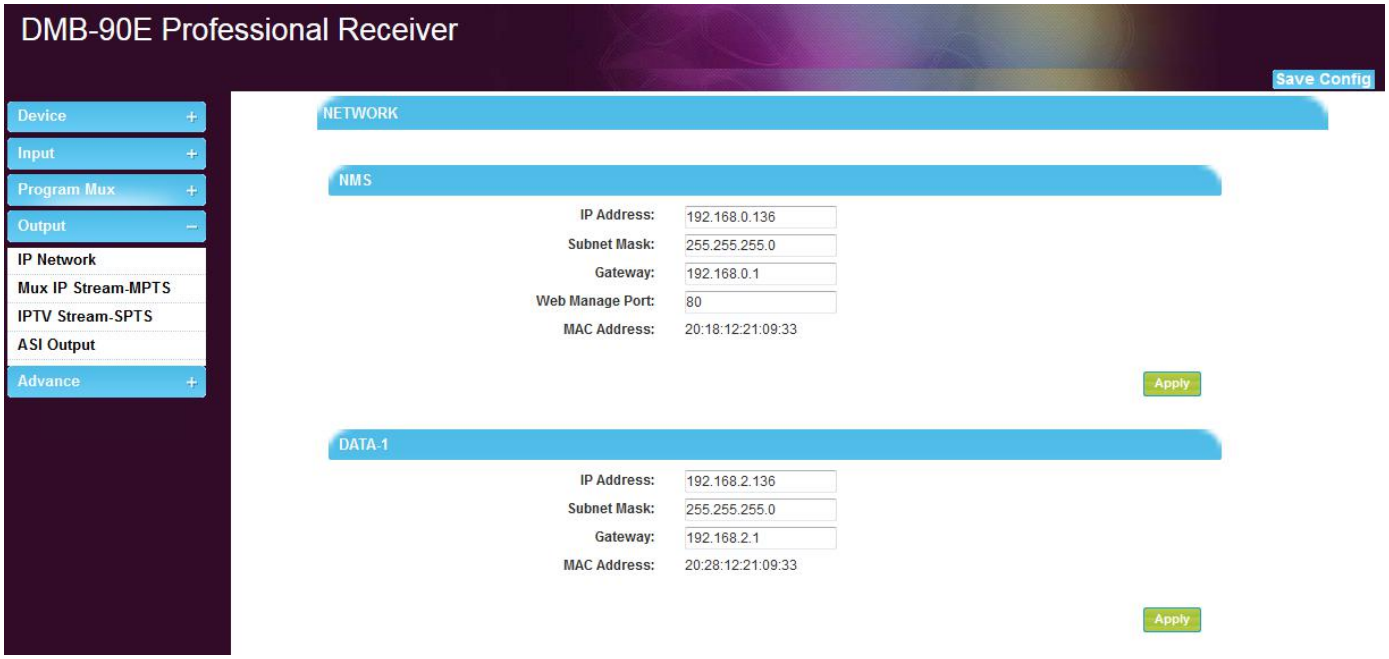
6、TS Stream Output Settings



7、PID Transmitting Setting in TS Streaming

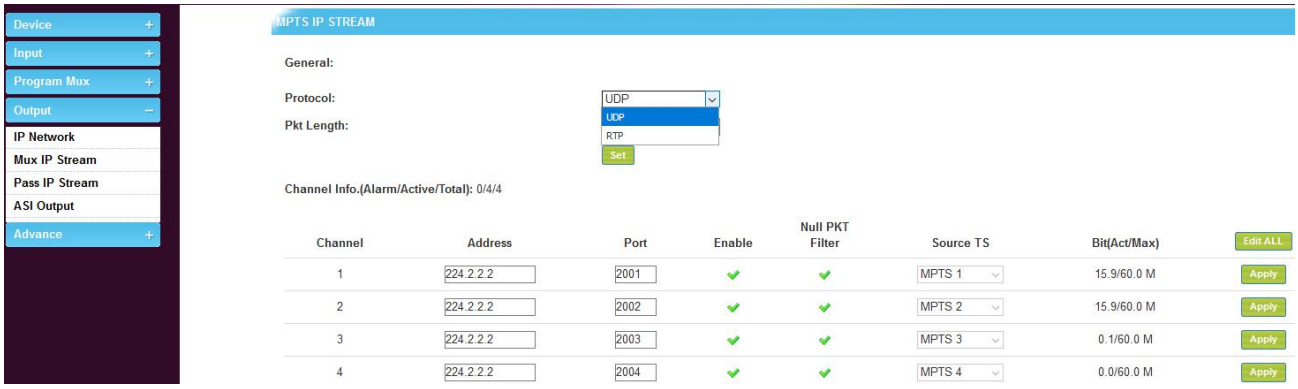


8、IP address setting of equipment

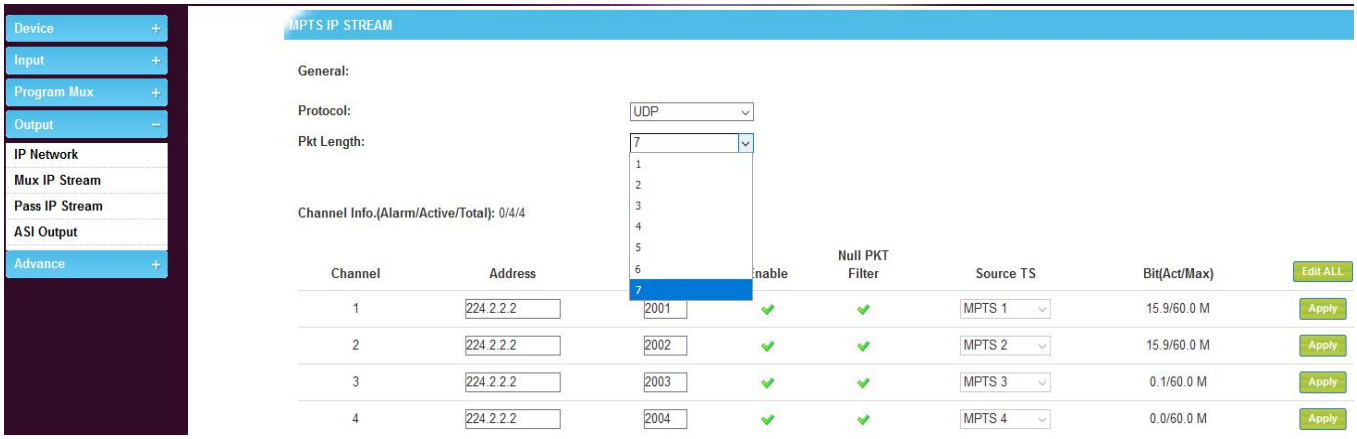


9、Multiplexing MPTS Output IP Flow Settings

A、Output protocol selection

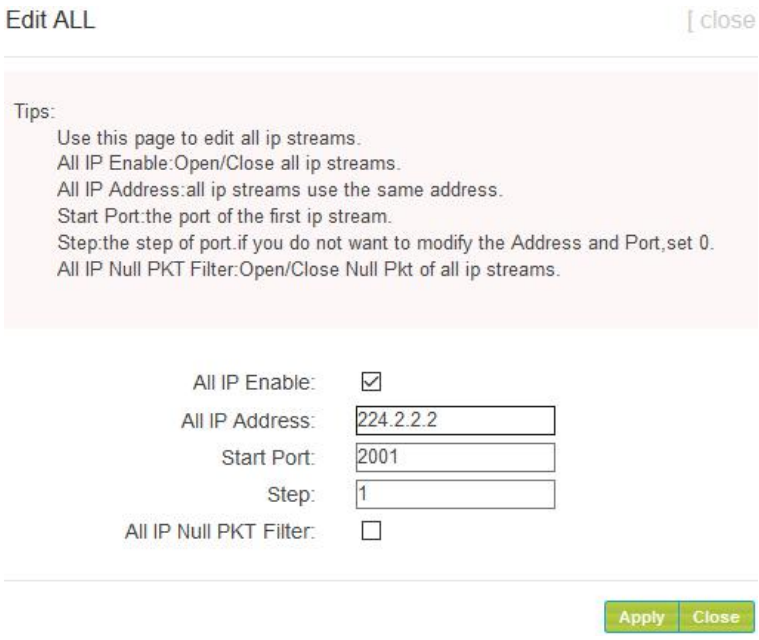


B、Output packet length

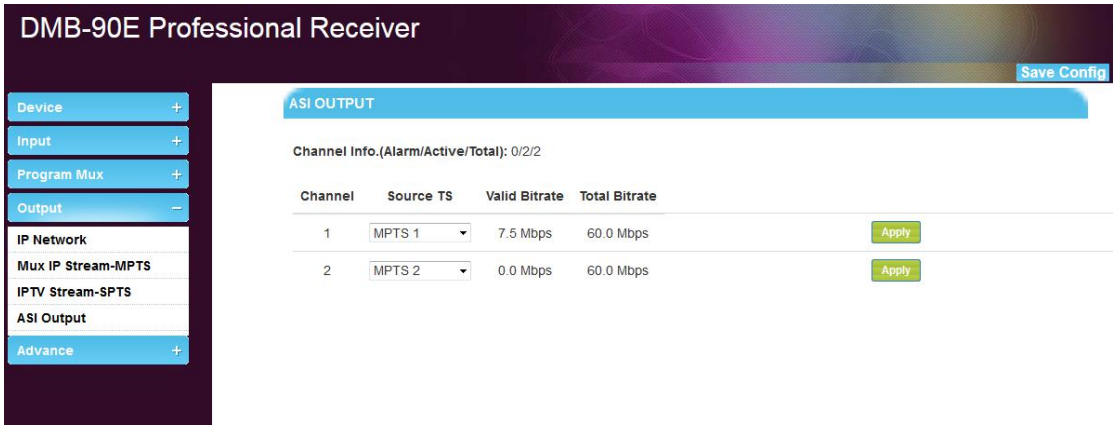


C、Output address, port settings，click “ 

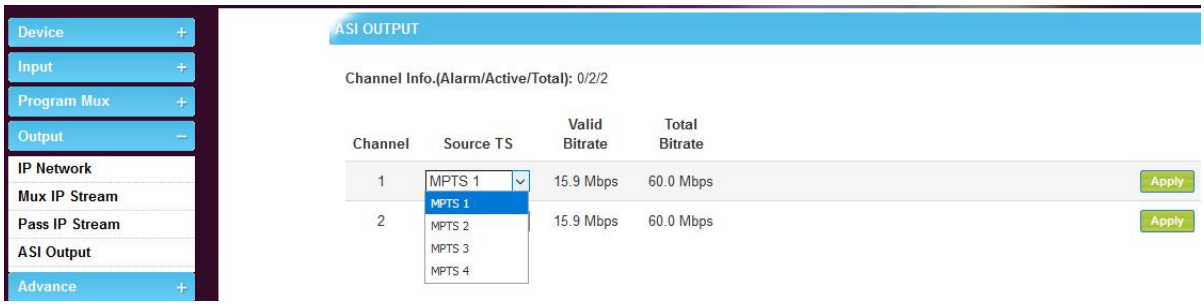
”



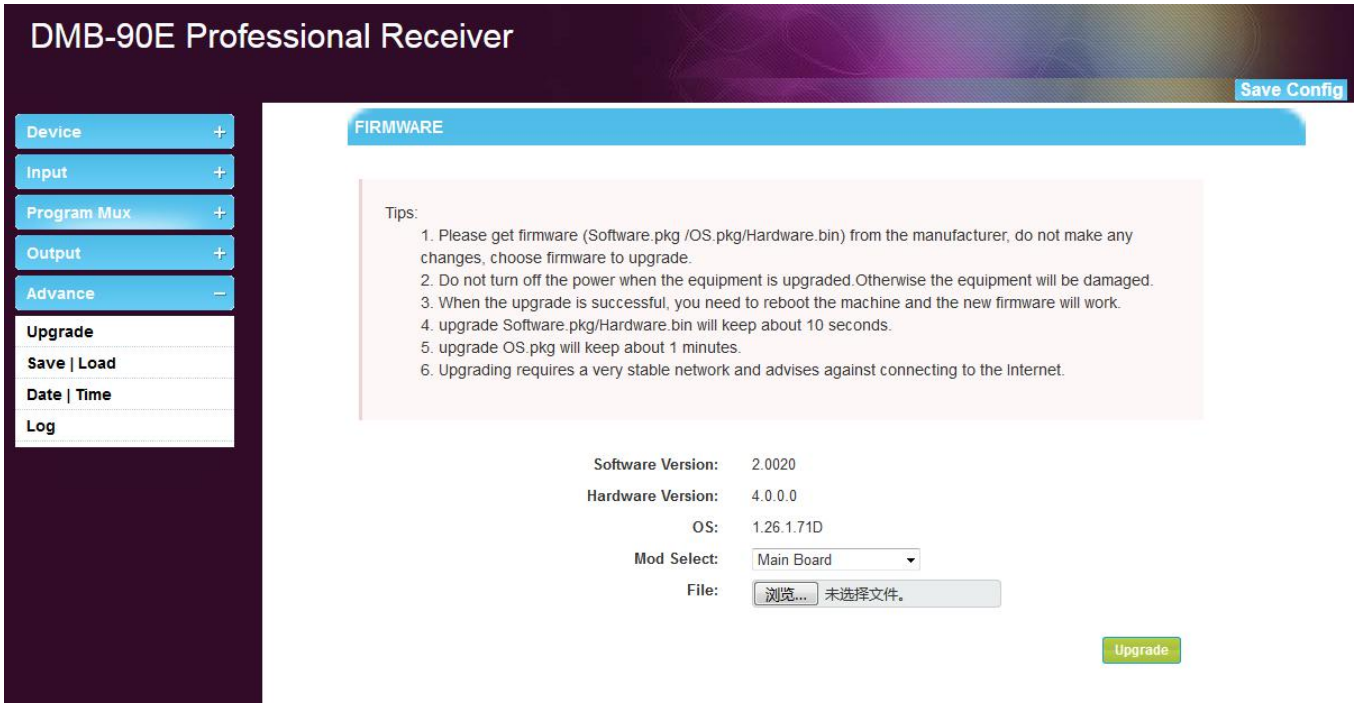
10、ASI output setting, with two ASI outputs, can be output independently



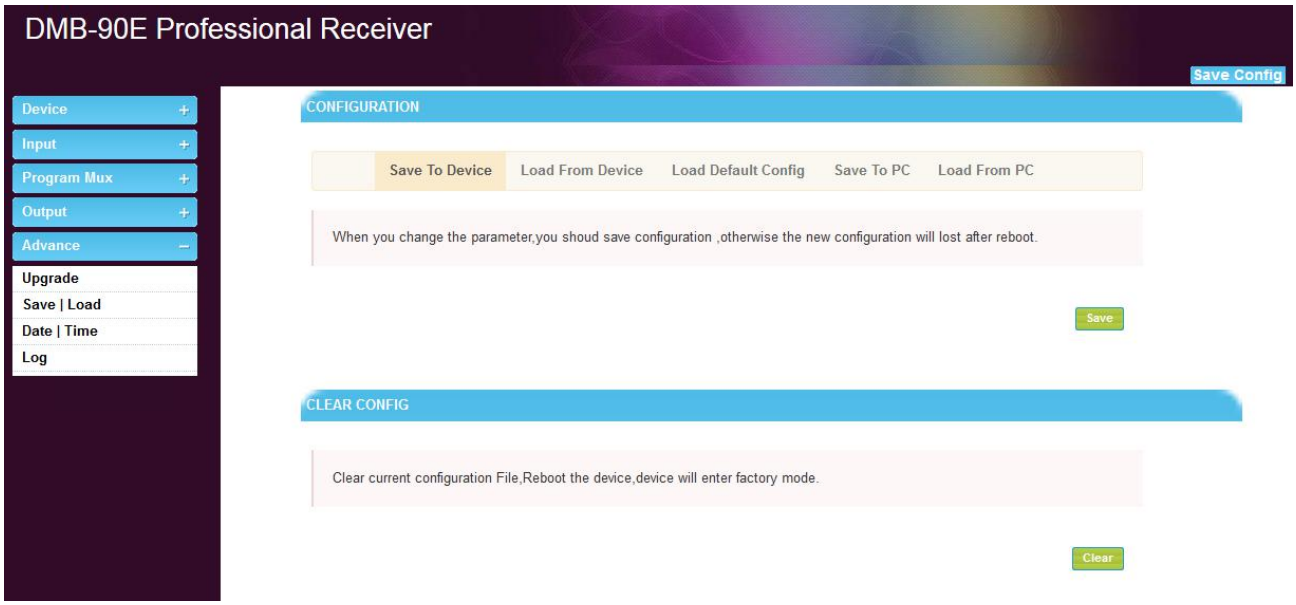
A、Select Set Output



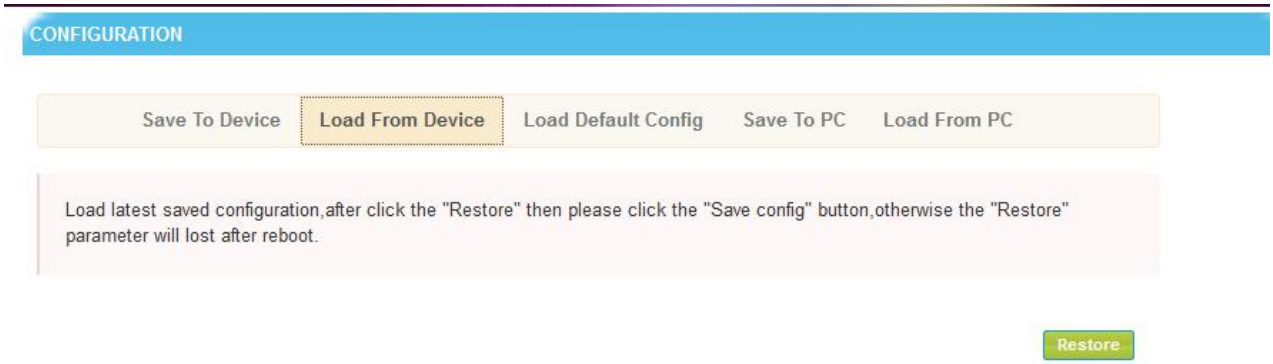
11、Upgrade



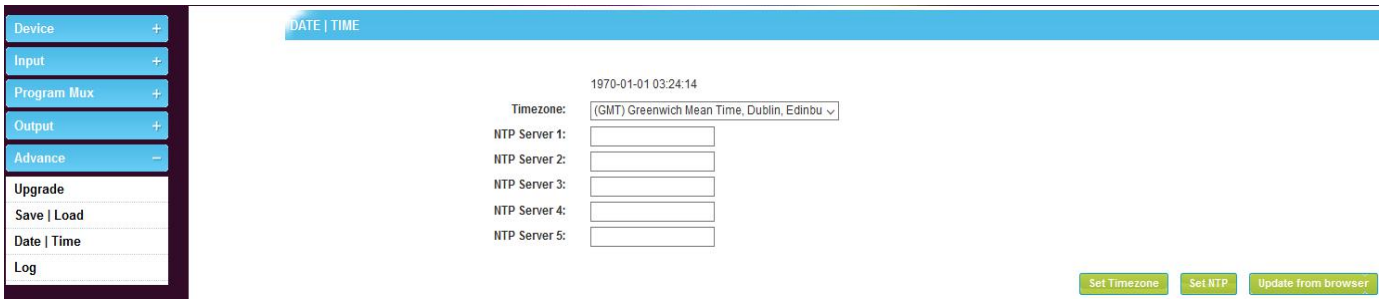
12、Save, load and empty parameter settings



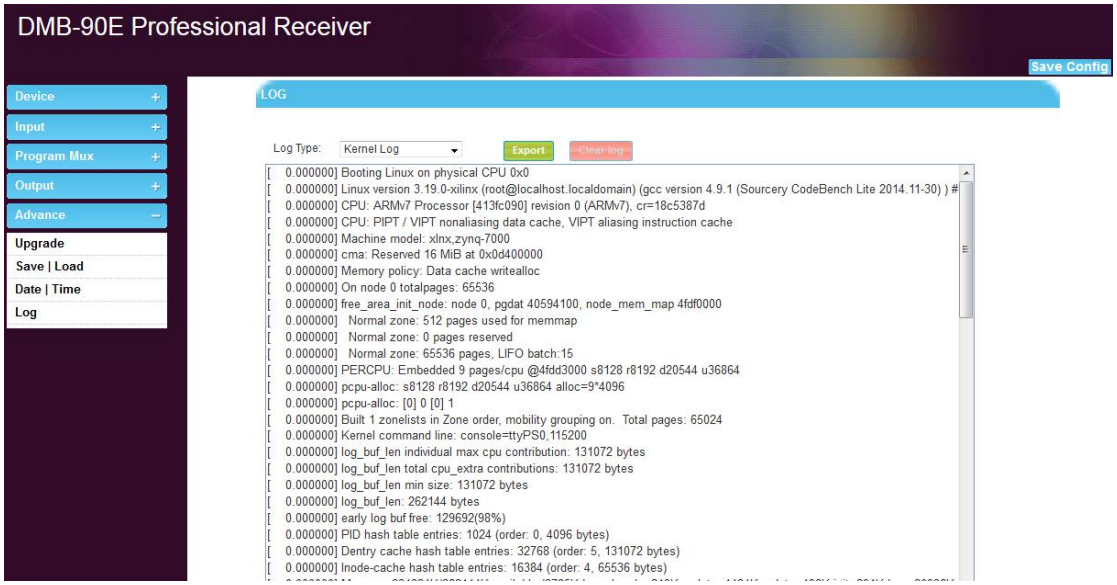
13、Date and time display, test monitoring



14、 Log, test monitoring



15、Log, test monitoring



16、After all parameters are configured, you need to save the parameters“ 

”， In order to avoid power failure, reset the parameters next time.

HANGZHOU
DIGICAST TECHNOLOGY CO.,LTD
E-mail: info@digicast.cn Http: // www.digicast.cn
Tel: +86 571 85020366 Fax: +86 571 85020368
Addr.: 9/F , No.1 Building Yitian Plaza, No.292 Eastcom Avenue, Hangzhou, China