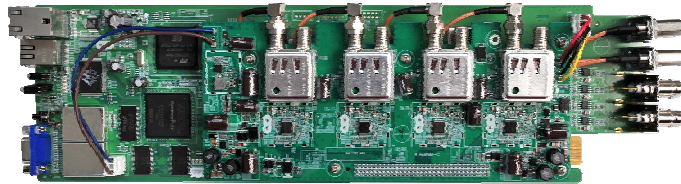




User's Manual

*Brighten Your Digital View!*



**DMM-2410D**

Quad Channels Receiver and Processor

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## Notices

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## WARRANTY

This warranty does not cover parts which may become defective due to misuse of the information contained in this manual.

Read this manual carefully and make sure you understand the instructions provided. For your safety, be aware of the following precautions.



**WARNING! IMPORTANT SAFETY INSTRUCTIONS**

**CAUTION: TO REDUCE THE RISK OF ELECTRIC SHOCK, DO NOT REMOVE COVER (OR BACK). NO USER SERVICEABLE PARTS INSIDE. REFER SERVICING TO QUALIFIED SERVICE PERSONNEL.**

### WARNING

- To reduce the risk of fire or electric shock, do not expose this apparatus to rain or moisture.
- To avoid explosion danger, do not dispose of batteries in an open fire.

## CE MARK FOR EUROPEAN HARMONISED STANDARDS



The CE mark which is attached to these products means it conforms to EMC Directive (89/336/EEC) and Low Voltage Directive (73/23/EEC).

## IMPORTANT INFORMATION

Please retain the original packaging, should it be necessary at some stage to return the unit.

### **Disposal of Old Electrical and Electronic Equipment (Applicable in the European Union and other European countries with separate collection systems)**



This symbol on the product or on its packaging indicates that this product shall not be treated as household waste. Instead it shall be handed over to the applicable collection point for the recycling of electrical and electronic equipment. By ensuring this product is disposed of correctly, you will help prevent potential negative consequences for the environment and human health, which could otherwise be caused by inappropriate waste handling of this product. The recycling of materials will help to conserve natural resources. For more detailed information about recycling of this product, please contact your local Civic Office, your household waste disposal service, or the shop where you purchased the product.

## COPYRIGHTS

Television programs, movies, video tapes, discs, and other materials may be copyrighted. Unauthorized recording of copyrighted material may be against the copyright laws in your region. Also, use of this product with cable television transmissions may require authorization from the cable television operator or transmitter/owner.

## VENTILATION

- Do not expose the product to high temperatures, such as placing it on top of other product that produce heat or in places exposed to direct sunlight or spot lights.
- The ventilation slots on top of the product must be left uncovered to allow proper airflow into the unit.
- Do not stand the product on soft furnishings or carpets.
- Do not stack electronic equipment on top of the product.
- Do not place the product in a location subject to extreme changes in temperature. The temperature gradient should be less than 10 degrees C/hour.
- Place the product in a location with adequate ventilation to prevent the build-up of heat inside the product. The minimum ventilation space around the unit should be 7 cm. The ventilation should not be impeded by covering the ventilation openings with items, such as newspapers, table cloth, curtains, etc.

## POWER SOURCES

- The product is not disconnected from the AC power source (mains) as long as it is connected to the power outlet or wall socket, even if the product is turned off.
- If the product will not be used for a long period of time, disconnect it from the AC power outlet or wall socket.

## Before Using the Device

Thank you for purchasing the DMM-2410D Quad channels Receiver and Processor. This User Manual is written for operators/users of the DMM-2410D to assist in installation and operation. Please read this user manual carefully before installation and use of the device.

### **FOR YOUR SAFETY**

This equipment is provided with a protective earthing ground incorporated in the power cord. The main plug shall only be inserted in a socket outlet provided with a protective earth contact. Any interruption of the protective conductor, inside or outside the device, is likely to make the device dangerous. Do not remove the covers of this equipment. Hazardous voltages are present within this equipment and may be exposed if the covers are removed. Only Beijing Jaeger trained and approved service engineers are permitted to service this equipment.

The supplied AC power cable must be used to power the device. If the power cord becomes damaged it must be replaced. No operator serviceable parts inside. Refer servicing to Beijing Jaeger trained and approved service engineers. For the correct and safe use of the device, it is essential that both operating and servicing personnel follow generally accepted safety procedures in addition to the safety precautions specified in this manual. Whenever it is likely that safety protection is impaired, the device must be made in-operative and secured against unintended operation. The appropriate servicing authority must be informed. For example, safety is likely to be impaired if the device fails to perform the intended measurements or shows visible damage.

### **WARNINGS**

- The mounting environment should be relatively dust free, free of excessive vibration and the ambient temperature between 0C° to 40C°. Relative humidity of 20% to 80% (non-condensed) is recommended.
- Avoid direct contact with water.
- Never place the equipment in direct sunlight.
- The outside of the equipment may be cleaned using a lightly dampened cloth. Do not use any cleaning liquids containing alcohol, methylated spirit or ammonia etc.
- For continued protection against fire hazard, replace line fused only with same type.
- Air intake for cooling is achieved via holes at the side of the device and the fans inside. The air flow should not be obstructed. Therefore, the device has to be placed on a flat surface, leaving some space at the sides of the device.
- When in operation, the internal temperature should not exceed the limit of 70C°.

# DMM-2410D Quad Channels Receiver and Processor

## 1 Overview

The DMM-2410D professional Quad DVB Demodulator has 4 independent tuners, 4 ASI outputs and 1 TS over IP port. It receives up to 4 TS streams with its tuner inputs and then remultiplexes and converts to TS/IP and ASI outputs. The DMM-2410D's internal remultiplexer enables to create new TS streams that are subsets of the original streams. DVB services (TV or Radio) could be outputted as multiple SPTS or MPTS over IP, as well as over ASI. Three TS/IP modes provided, they are simplex DVB output mode, simplex IPTV output mode and full duplex DVB TS/IP mode. External services or particular PID data from TS/IP input could be remultiplexed for outputs.

## 2 Features

- Variety of input options DVB-T2/S2/S/C/T/T2 and TS/IP
- Built-in TS re-multiplexer receives 4×Tuner and TS/IP Output
- Dynamic PMT detection and automatic updating
- UDP/RTP, Unicast/Multicast, and SPTS/MPTS over IP
- Remote Control and Supervision by SNMP, HTTP WEB and Proprietary HDMS software
- On Site software update through IP
- RSSI, received Eb/No & BER monitoring

## 3 Technical Specifications

<b>DVB-S/S2 Tuner Input</b>	
Connector Type	4×F type female 75Ω for Input female 75Ω for loop through output
Input Frequency Range	950 2150MHz
Input Level	-25 -65dBm
Symbol Rate	2 40MBauds
Roll-off Factor	DVB-S QPSK: 0.35 DVB-S2 8PSK: 0.35, 0.25, 0.2
FEC Code Rate	DVB-S QPSK 1/2, 2/3, 3/4, 5/6, 7/8 DVB-S2 QPSK 1/2, 3/5, 2/3, 3/4, 4/5, 5/6, 8/9, 9/10 DVB-S2 8PSK 3/5, 2/3, 3/4, 5/6, 8/9, 9/10
Satellite Selection Command	DiSEqC 1.0
LNB Polarity Selection Voltage	0,13V,18V selectable
LNB Band Selection Tone	0/22KHz selectable
<b>DVB-C Tuner Input</b>	

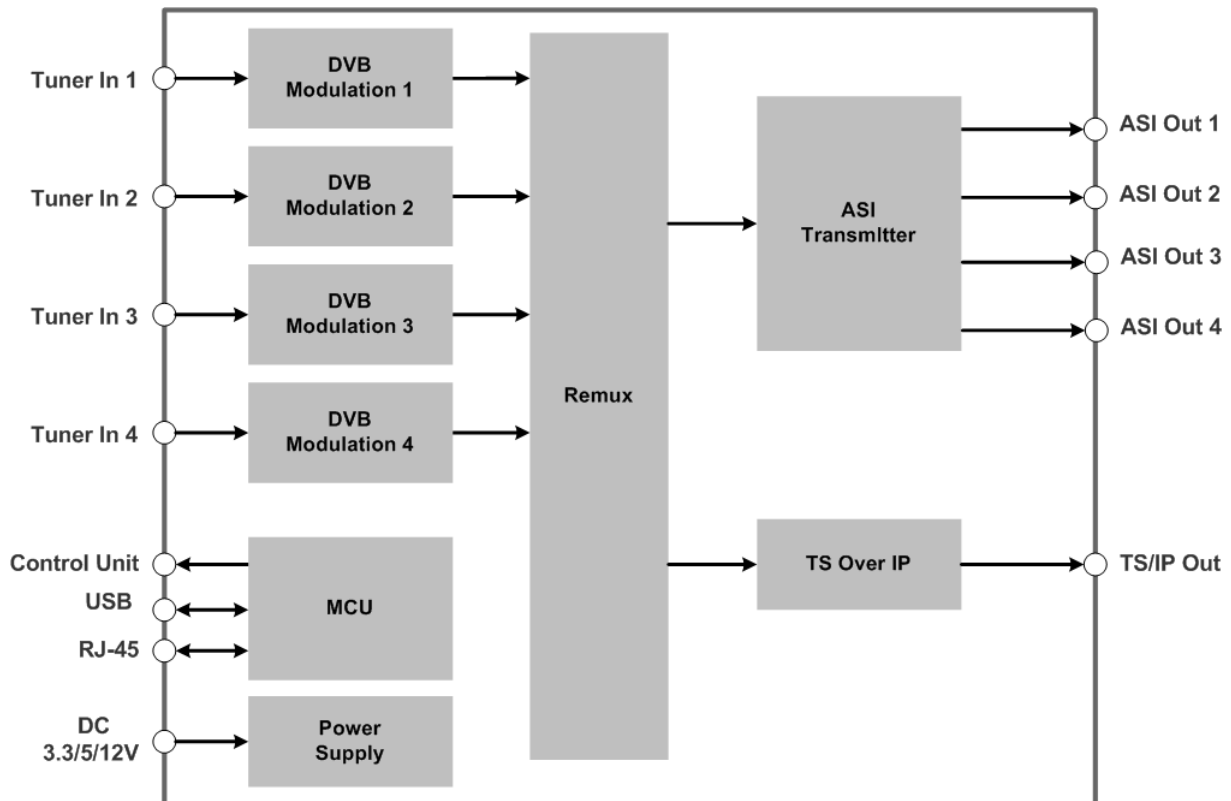
Connector Type	4 x F type female 75Ω
Input Frequency Range	48~860MHz
Input Level	45 75dBμV
Symbol Rate	1 7MBauds ITU J.83 Annex A
Constellation	16/32/64/128/256QAM
Bandwidth	6MHz/7MHz/8MHz
Return Loss	7dB
<b>DVB-T/T2 Tuner Input</b>	
Connector Type	4 x F type female 75Ω
Input Frequency	104~862MHz (VHF/UHF)
Input Level	-20 ~ -70dBm
Constellation	DVB-T: QPSK, 16QAM, 64QAM DVB-T2: QPSK, 16QAM, 64QAM, 256QAM
Bandwidth	6MHz/7MHz/8MHz
FFT Mode	DVB-T: 2K/8K DVB-T2: 1K, 2K, 4K, 8K, 16K, 32K
Guard Interval	DVB-T: 1/4, 1/8, 1/16, 1/32 DVB-T2: 1/4, 5/32, 1/8, 5/64, 1/16, 1/32, 1/64, 1/128
FEC Code Rate	DVB-T: 1/2, 2/3, 3/4, 5/6, 7/8 DVB-T2: 1/2, 3/5, 2/3, 3/4, 4/5, 5/6
Return Loss	7dB (typ.)
<b>ASI Output</b>	
Connector Type	4 x BNC female, 75Ω
Standard	DVB-ASI, EN50083-9
Output Bit Rate	≤108Mb/s
<b>TS over IP</b>	
Connector Type	1 x RJ-45, 100/1000 Base-T
Protocol	UDP/RTP, Multicast/Unicast, IGMP V2/V3
Operation Mode	1. Simplex DVB output mode, total 5 DVB MPTS streams, 4 from Tuners, 1 from internal reMUX 2. Simplex IPTV out mode, total 128 Program streams(for IP applications, no stuffing/null packet, non DVB standard), from any one of 4 tuners or from internal reMUX. 3. Full Duplex DVB mode, 1 DVB MPTS streams input and 1 DVB MPTS streams output Note: Please follow the User Manual to configurate these modes.
Effective Bit Rate	1. Simplex DVB out mode: 700Mb/s Max. 2. Simplex IPTV out mode: 550Mb/s Max. 3. Full Duplex DVB mode, Input: 80Mb/s Max., Output: 80Mb/s Max.
<b>Control &amp; Monitoring</b>	
Connector Type	1×RJ-45, 10/100 Base-T, for equipment IP Control
Remote Control	SNMP, HTTP (Web Interface), Proprietary HDMS (Headend Device Management System)

Software Upgrade	FTP Loader and Telnet
<b>Physical</b>	
Power Supply	DC 3.3V/5V/12V, supplied by DMM-1000MF or DMM-200MF chassis
Power Consumption	15W
Weight	560g
Storage Temperature	-10 to 55
Operating Temperature	0 to 45
Operating Humidity	10 to 90%, non-condensed

#### 4 Order Information

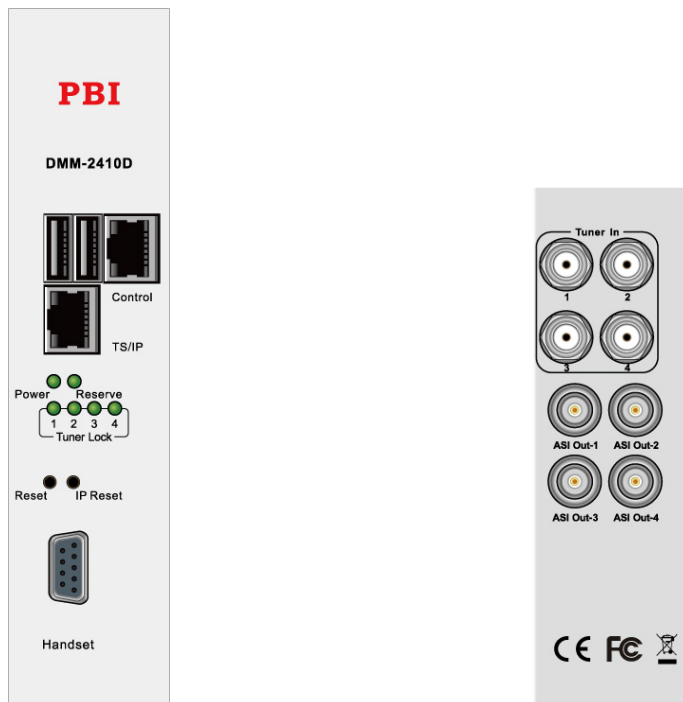
Function		DMM-2400D-S2/S	DMM-2400D-T2/T	DMM-2400D-C
Tuner Input	S2	<b>x4</b>		
			<b>x4</b>	<b>x4</b>
Output	ASI x2 (1xBackup)			
Control				
IP reset				

#### 5 Block Diagram





## 6 Front panel and rear panel instructions



## 7 Operation instructions using DMM-1000CU programmer

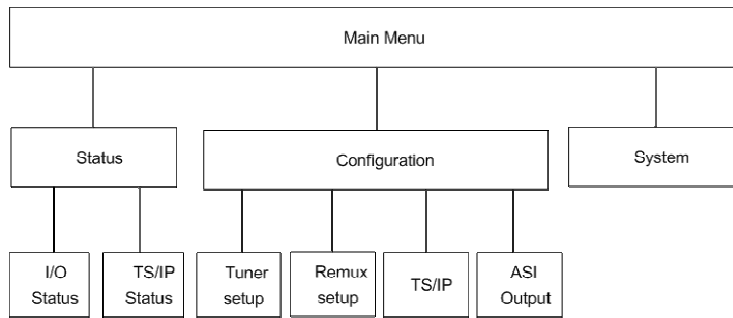


*NOTE: The DMM-1000CU Programmer is an universal programmer unit for PBI DMM products family. DMM-1000CU is a standalone product and not included in the package of DMM-2400D, please contact local sales agency for more information.*

## 7.1 Overview of the Menu

Users are advised to restore factory setting of the machine before the first time using it. Because of machine's too many functions, users are advised not to change those temporarily useless parameters in order to avoid unnecessary fault.

After power on, the Local IP address will be shown on the LCD of DMM-1000CU. User can press ENTER key to get into the main menu.



Status: show the status of the device.

Configuration: Configure remux and TS/IP parameters.

System: Configure the local settings of the device.

## 7.2 Description of menu

### 7.2.1 Status

Main-Menu	Sub-Menu1	Sub-Menu2	Sub-Menu3	Description	
Status	Tuner Status	RSSI->Tuner 1/2/3/4	Strength	Display tuner input signal Strength	
			C/N	Display tuner input signal C/N	
			Eb-No	Display tuner input signal Eb_No	
			BER	Display tuner input signal BER	
	Input Bit Rate	T1/2/3/4			Display tuner 1/2/3/4 input Bit rate
		IP			Display TS IP input Bit rate
	Output Bit Rate	A1/2/3/4			Display ASI-1/2/3/4 total and valid bit rate
	TS/IP Status	Link Status			Display IP link status: 10M/100M/1000M/Disconnect
		Gigabit Output Status			Display IP out status
		Gigabit In Status			Display IP in status

## 7.2.2 Configure

Main-Menu	Sub-Menu1	Sub-Menu2	Sub-Menu3	Description	
Configuration	Tuner Setup	Tuner 1/2/3/4	LNB Frequency	LNB Frequency	
			Satellite Frequency	Satellite Frequency	
			Symbol Rate	Setting Symbol Rate of Tuner1/2/3/4	
			LNB Voltage	switch OFF/13V/18V	
			LNB 22KHz	ON/OFF	
			DiSEqC	OFF/Port A/Port B/Port C/Port D	
	Remux	Remux Setup	Program Select		select the programs to remux. Click on Enter to select, double click to cancel. (The program(s) will be marked with an asterisk (*) once be selected)
					Select SPTS from Tuner 1 ~ 4
					IP Input:select the program(s) inputted via IP input port. (Note: this sub-menu is displayed only when the IP I/O is configured as full-duplex mode.)
			Bit Rate	Output Bit Rate: key in the bit rate of the newly generated MPTS, valid range from 100K~216000 Kb/s	
			Packet Size	188 Byte/204 Byte	
			TS ID	TS ID: key in the TSID of the newly generated MPTS, valid range from 0 to 65535 decimal	
			Remove CA	ON/OFF:	
			Insert EIT	ON/OFF:	
			Output Program	display the remux program	
			TS/IP	Gigabit Output	Gigabit Out Switch
	Source	Tuner1~4 Remux TS IP IN			
	Protocol	UDP: set UDP protocol to IP output			
		RTP: set RTP protocol to IP output			
	TS Pkts Per UDP	set the number of TS packets that can be carried by each UDP packet, valid range from 1~7			
	Time To Live	set TTL to the output IP packets, valid range from 1~255			
	Type Of Service	Min Delay/Max Reliability/Max Throughput/Min Monetary Cost/Normal			
	Uni/Multi IP Address	set the destination IP address			

			Uni/Multi UDP Port	set the destination port number, valid range from 1024~65531	
			ProMPEG FEC	Enable/Disable	
			Column FEC UDP Port	Port	
			Row FEC UDP Port	Port	
			ProMEG FEC Mode	1D,5x5/1D,5x20/1D,10x10/2D,5x5/2D,5x20/2D,10x10	
			FEC Aligment	Annex A/Annex B	
			Test Drop Packets		
		Gigabit Input Only mode Full Duplex		Uni/Multicast	select Unicast or Multicast
				Source Identify	on/off
				Source IP Address	Setting IP address
				Multicast Address	Setting Multicast Address
				Uni/Multi UDP Port	set the target port number of the uni/multicast IP input, valid range from 1~65535
				FEC Column UDP Port	Port
				FEC Row UDP Port	Port
				TS Clock Recovery	Auto: it is suggested to set Auto when there is accurate PCR carried by the inputted TS/IP Fixed Rate: when fixed rate is selected, user has to configure a bit rate to regenerate the TS clock. The configured fixed bit rate has to be a little bit higher than the bit rate of the inputted TS/IP.
		Gigabit Local		Gigabit Address	set the IP address of the IP port
				Gigabit Subnet Mask	set the net mask of the IP port
				Gigabit MAC Address	display the MAC address of the IP port
				Gigabit Gateway	set the gateway of the IP port
				Gateway MAC Address	set the MAC address of the gateway under which the unit is connected
		ASI Output	ASI-1/2/3/4 Output		ASI Output

## 7.2.3 System

Main-Menu	Sub-Menu1	Sub-Menu2	Description
System	Network Setting	IP Address	set the IP address, valid range from 0.0.0.0~255.255.255.255
		Subnet Mask	set the net mask, valid range from 0.0.0.0~255.255.255.255
		Gateway	set the gateway,valid range from 0.0.0.0~255.255.255.255
		MAC Address	to display the MAC address
	Device Label	Edit Product name	user allows to rename the unit, press Enter and key in the name of the unit, then press Enter to confirm the setting or press Exit to cancel.
	Version	Software Version display	display the software version
	Factory Default		Enter: Yes: press Enter to recall the factory default settings.
			Exit: No: press Exit to cancel
	Machine Type	MAC Address	to Modify the MAC address
		S/N	display the serial number of the unit
		Gigabit MAC Address	to Modify the Gigabit MAC address
		Detail Version	Display the detail version of MCU,FPGA,LINUX OS
	WEB Login	Edit Login ID	press Enter and key in the login ID for WEB management
		Edit Login Password	press Enter and key in the password for WEB management
	Gigabit Mode		Multiple Output: the IP I/O is configured as multiple uni/multicast output mode, which delivers up to five streams over IP. There are four stuffed or un-stuffed SPTS (lower bit rate but less PCR accurate than normal SPTS, from local encoders) and one MPTS (from internal reMultiplexer) over the IP with different Unicast or Multicast IP addresses.
			IPTV Ouput 128 Channels IPTV SPTS/MPTS.
			Full Duplex: the IP I/O is configured as full duplex mode, which allows only one MPTS or SPTS over IP input and output in uni/multicast at the same time.

## 8. Web Control

DMM-2410D has an integrated web server. This web server allows configuration and status requests with a standard web browser. First make sure the IP Control port is well connected in the network and can be pinged by the host PC. Then enter IP address of the module into the browser, it will pop up a dialog asking for login user and password. The default user name and password are “root” and “12345”. The user name and password can be changed via either DMM-1000CU programmer or Web browser. If the username and password are forgotten, user have to use a DMM-1000CU to reset it.

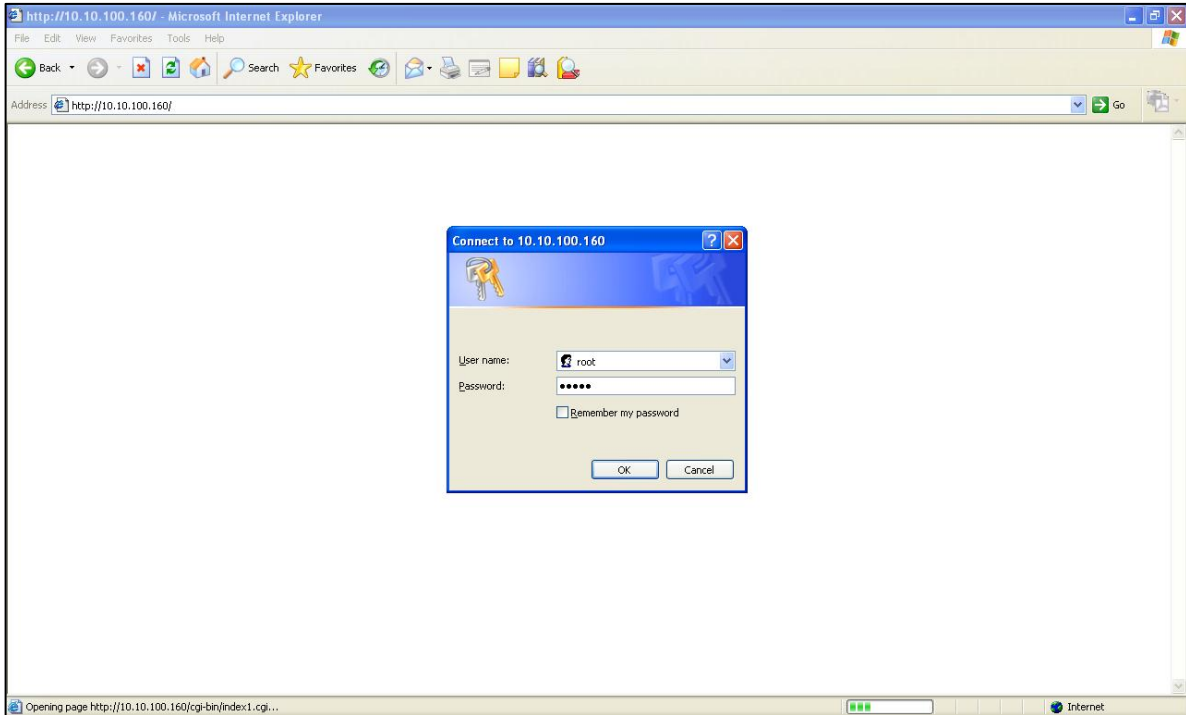



Figure 8-1 Login

### 8.1 Status

Via the status page, user can have an overview of four tuners working status of DMM-2410D.



**DMM-2410D-S2**

IP Address:010.010.070.048

Status	TS/IP	Remux	System	Configuration
<b>Input Bitrate</b>				
<b>Output Bitrate</b>				
<b>Tuner Status</b>				
<b>TS/IP Status</b>				
<b>Input Bitrate</b>				
	TS-1	Total Bit Rate (Kbps)	<input type="text" value="000000"/>	Valid Bit Rate (Kbps) <input type="text" value="000000"/>
	TS-2	Total Bit Rate (Kbps)	<input type="text" value="000000"/>	Valid Bit Rate (Kbps) <input type="text" value="000000"/>
	TS-3	Total Bit Rate (Kbps)	<input type="text" value="000000"/>	Valid Bit Rate (Kbps) <input type="text" value="000000"/>
	TS-4	Total Bit Rate (Kbps)	<input type="text" value="000000"/>	Valid Bit Rate (Kbps) <input type="text" value="000000"/>
	IP IN	Total Bit Rate (Kbps)	<input type="text" value="000000"/>	Valid Bit Rate (Kbps) <input type="text" value="000000"/>

Figure 8-2 Input Bitrate



**DMM-2410D-S2**

IP Address:010.010.070.048

Status	TS/IP	Remux	System	Configuration
Input Bitrate				
<b>Output Bitrate</b>				
Tuner Status				
TS/IP Status				

**Output Bitrate**

ASI	Max Bit Rate (Kbps)	Valid Bit Rate (Kbps)
ASI-1	<input type="text" value="000000"/>	<input type="text" value="000000"/>
ASI-2	<input type="text" value="000000"/>	<input type="text" value="000000"/>
ASI-3	<input type="text" value="000000"/>	<input type="text" value="000000"/>
ASI-4	<input type="text" value="000000"/>	<input type="text" value="000000"/>

Figure 8-3 Output Bitrate



**DMM-2410D-S2**

IP Address:010.010.070.048

Status	TS/IP	Remux	System	Configuration
Input Bitrate				
Output Bitrate				
<b>Tuner Status</b>				
TS/IP Status				

**Tuner Status**

- Tuner-1
- Tuner-2
- Tuner-3
- Tuner-4

Figure 8-4 Tuner Status



**DMM-2410D-S2**

IP Address:010.010.070.048

Status	TS/IP	Remux	System	Configuration
Input Status				
Output Status				
Tuner Status				
<b>TS/IP Status</b>				

**TS/IP Status**

**Gigabit Out Status**

Total Output BitRate	0.000000 Mb/s
UDP Rate	0 Pkt/s
FEC Column	0 Pkt/s
FEC Row	0 Pkt/s

**Gigabit In Status**

Gigabit In Status	Unlock
-------------------	--------

**Link Status**

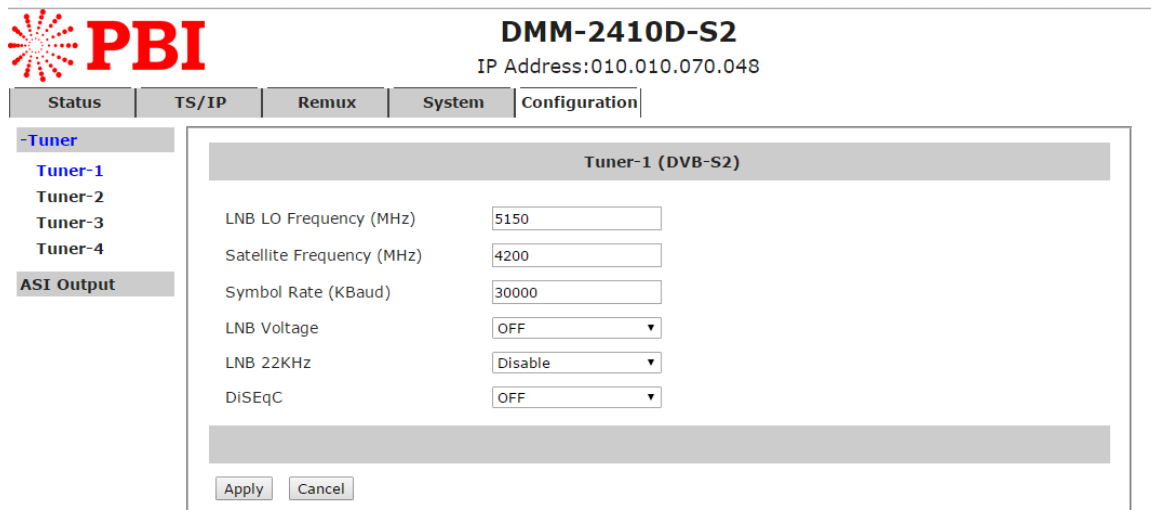
Link Status	Disconnect
-------------	------------

Figure 8-5 TS/IP Status

## 8.2 Configuration

### 8.2.1 Configuration - > Tuner

All parameters for Tuners and ASI Output can be found under the page "Configuration". Click the button "Apply" to submit your configuration or click the button "Cancel" to cancel and restore the previous settings.



The screenshot shows the web interface for the PBI DMM-2410D-S2. The page title is "DMM-2410D-S2" with the IP address "010.010.070.048". The navigation menu includes Status, TS/IP, Remux, System, and Configuration. The "Configuration" tab is active, and the "Tuner" sub-tab is selected. The "Tuner-1" sub-tab is also selected, showing the "Tuner-1 (DVB-S2)" configuration form. The form contains the following fields:

Tuner-1 (DVB-S2)	
LNB LO Frequency (MHz)	<input type="text" value="5150"/>
Satellite Frequency (MHz)	<input type="text" value="4200"/>
Symbol Rate (KBaud)	<input type="text" value="30000"/>
LNB Voltage	<input type="text" value="OFF"/>
LNB 22KHz	<input type="text" value="Disable"/>
DiSEqC	<input type="text" value="OFF"/>

At the bottom of the form are "Apply" and "Cancel" buttons.

Tuner-1~4:

There are 6 options to set DVB-S2 parameters. After signal locked, the TUNER LOCK indicator on front panel will turn green.

**LNB Frequency:** Input LNB frequency

**Satellite Frequency:** Input downstream frequency of satellite

**Symbol Rate:** Input symbol rate of satellite

**LNB Voltage:** select the correct LNB voltage output of the F-connector: Off, 13 V, 18 V. <A>

**LNB 22KHz:** activate the LNB 22 kHz control signal to the LNB: On or Off. <B>

**DISQEC:** Can select OFF/Port A/Port B/Port C/Port D

**Note:** please contact the local satellite operator for the satellite frequency and symbol rate.

<A> Normally, 13V switches the LNB to receive Vertical/Left hand polarization while 18V receive Horizontal/Right hand.

<B> Normally, 22KHz control signal switches the LNB to receive high band if any.

### 8.2.2 Configuration - > ASI OUT

Set parameters for ASI Output.





## DMM-2410D-S2

IP Address:010.010.070.048

Status	TS/IP	Remux	System	Configuration
+Tuner				
ASI Output				
<b>ASI Output</b>				
ASI-1 Output Source		Tuner-1 ▼		
ASI-2 Output Source		Remux TS ▼		
ASI-3 Output Source		IP In ▼		
ASI-4 Output Source		Tuner-1 ▼		
<input type="button" value="Apply"/> <input type="button" value="Cancel"/>				

### 8.3 TS/IP

2410D provides three TS/IP operation modes, "Multiple output", "Full Duplex" and "IPTV". The management webpage will be different following the change of the operation mode.


#### 8.3.1 Multiple Output Mode

The pages below are displayed under Multiple Output mode. To change the TS/IP operation mode, please refer to *chapter System-Device*.

##### 8.3.1.1 Gigabit Out

Under multiple output operation mode, user can set output uni/multicast IP address and port number for the built-in remux, and Tuner input. Each IP output channel can be switched ON/OFF independently. The source for TS/IP output 1-4 is forced linking with Tuner input 1-4 respectively and cannot be changed.

(Note: the page below is displayed only when the TS/IP operation mode is Multiple Output mode. To change the TS/IP operation mode, please refer to *chapter System-Device*.)



**DMM-2410D-S2**  
 IP Address: 010.010.070.048

Status | TS/IP | Remux | System | Configuration

Gigabit Out  
Gigabit In  
Gigabit Local

Gigabit Out

**Channel 1**

1-Uni/Multi IP Address          1-Uni/Multi UDP Port

1-Target MAC Address            1-Gigabit Out Switch

**Channel 2**

2-Uni/Multi IP Address          2-Uni/Multi UDP Port

2-Target MAC Address            2-Gigabit Out Switch

**Channel 3**

3-Uni/Multi IP Address          3-Uni/Multi UDP Port

3-Target MAC Address            3-Gigabit Out Switch

**Channel 4**

4-Uni/Multi IP Address          4-Uni/Multi UDP Port

4-Target MAC Address            4-Gigabit Out Switch

**Channel 5**

5-Uni/Multi IP Address          5-Uni/Multi UDP Port

5-Target MAC Address            5-Gigabit Out Switch

### 8.3.1.2 Gigabit In

Under Multiple output mode, the Gigabit Input is not available.

### 8.3.1.3 Local Settings

Set parameters for the TS/IP output port.

## 8.3.2 Full-duplex Output Mode

The pages below are displayed under Full-duplex mode. To change the TS/IP operation mode, please refer to **System-Device**.

### 8.3.2.1 Gigabit Out

Under full-duplex operation mode, the device supports single uni/multicast output. The default source for TS/IP output is the built-in remux.

(Note: the page below is displayed only when the TS/IP operation mode is Full-duplex mode. To change the TS/IP operation mode, please refer to **chapter System-Device**.)



## DMM-2410D-S2

IP Address:010.010.070.048

Status	TS/IP	Remux	System	Configuration
<b>Gigabit Out</b>				
Gigabit In				
Gigabit Local				

**Gigabit Out**

**Gigabit Out**

Gigabit Out:

Source:

Protocol:

TS Pkt Per UDP Frame:

Time To Live:

Type of Service:

Uni/Multicast Address:

Uni/Multicast UDP Port:

ProMPEG FEC:

**IP Out Switch:** Enable or Disable the IP output

**Source:** select the source for the IP output in the drop-down list

**Protocol:** select UDP or RTP protocol for the IP output

**TS Pkts Per UDP:** select the number of TS packets that can be carried by each UDP packet

**Time To Live:** set TTL to the output IP packets

**Type of Service:** select the service type for the outputted IP streaming

**Uni/Multi IP Address:** set the unicast or multicast IP address for the output IP streaming

**Uni/Multi UDP Port:** set the port number, valid range from 1~65535

**ProMPEG FEC Switch:** Enable or Disable the ProMPEG FEC

### 8.3.2.2 Gigabit In

Under full-duplex operation mode, the device supports single uni/multicast reception. Set the uni/multicast target IP address and port number in the page.

Status	TS/IP	Remux	System	Configuration
<b>Gigabit Out</b>				
<b>Gigabit In</b>				
Gigabit Local				

**Gigabit In**

**Gigabit In**

Uni/Multicast:

Source Identify:

Source IP Address:

Multicast Address:

Uni/Multicast UDP Port:

FEC Column UDP Port:

FEC Row UDP Port:

TS Clock Recovery:

**Uni/Multicast:** select Unicast or Multicast

**Source Identify:** Enable or Disable.

**Source IP Address:** set the multicast address for the incoming IP streaming. To receive a unicast streaming, the submenu can be ignored.

**Multicast IP Address:** set the multicast address for the incoming IP streaming. To receive a unicast streaming, the submenu can be ignored.

**Uni/Multicast UDP Port:** set the port number for the incoming IP streaming.

**FEC Column UDP Port:** set the port number for column FEC

**Row FEC UDP Port:** set the port number for row FEC

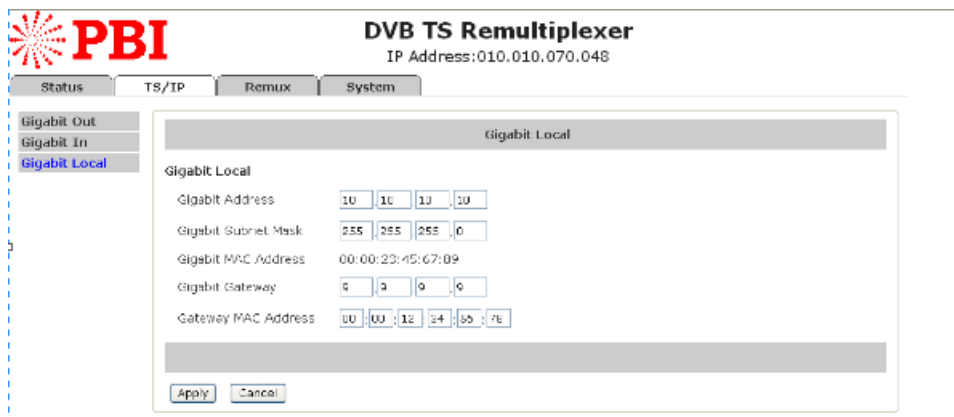
**TS Clock Recover:**

**Auto:** it is suggested to set Auto when there is accurate PCR carried by the inputted TS/IP

**Fixed Rate:** when fixed rate is selected, user has to configure a bit rate to regenerate the TS clock. The configured fixed bit rate has to be a higher than the bit rate of the inputted TS/IP.

### 8.3.2.3 Gigabit Local

Set the parameters for the TS/IP output port.



**Gigabit Address:** set the IP address of the IP port

**Gigabit Subnet Mask:** set the net mask of the IP port

**Gigabit MAC Address:** display the MAC address of the IP port, cannot be modified by user

**Gigabit Gateway:** set the gateway address under which the IP port is connected

**Gateway MAC Address:** set the MAC address of the gateway under which the device is connected, this is necessary when the IP streaming is needed to pass through the gateways

### 8.3.3 IPTV output

Under IPTV mode, user can set output uni/multicast IP address and port number for the built-in remux, and tuner input. Each IP output channel can be switched ON/OFF independently. The source for all channels can be set as one of 4 Tuner inputs or Remux.

**PBI** **DMM-2410D-S2**  
IP Address:010.010.070.048

Status | TS/IP | Remux | System | Configuration

Gigabit Out  
Gigabit In  
Gigabit Local

**Gigabit Out**

**Gigabit Out**

IPTV Channel: 128 ✓

Source: Tuner-1

Protocol: UDP

TS Pkts Per UDP: 7

Time To Live: 255

Type of Service: Min Delay

All Channel Switch: No Settings

Clean All IPTV Programs

IPTV Setup

**IPTV Channel:** enable the max IPTV channels which user will use, arrange is 1 ~ 128;

**Source:** IPTV output source;

**Protocol:** IPTV output stream protocol;

**TS Pkts Per UDP:** TS packets for each UDP package;

**Time To Live:** UDP package TTL, arrange 1 ~ 255;

**Type of Service:** Normal as default;

**All Channel Switch:** set up all IPTV channels status;

(Note: for Gigabit In and Gigabit local, please refer to **8.1.1** and **8.2.1**.)

### 8.4 Remux

The device supports one DVB-TS remux via Tuner In or TS/IP In (available only under full duplex mode). For remux, it can supports 256 PIDs or 50 services.

**Packet Size:** set the packet length of the new 188 or 204 Byte

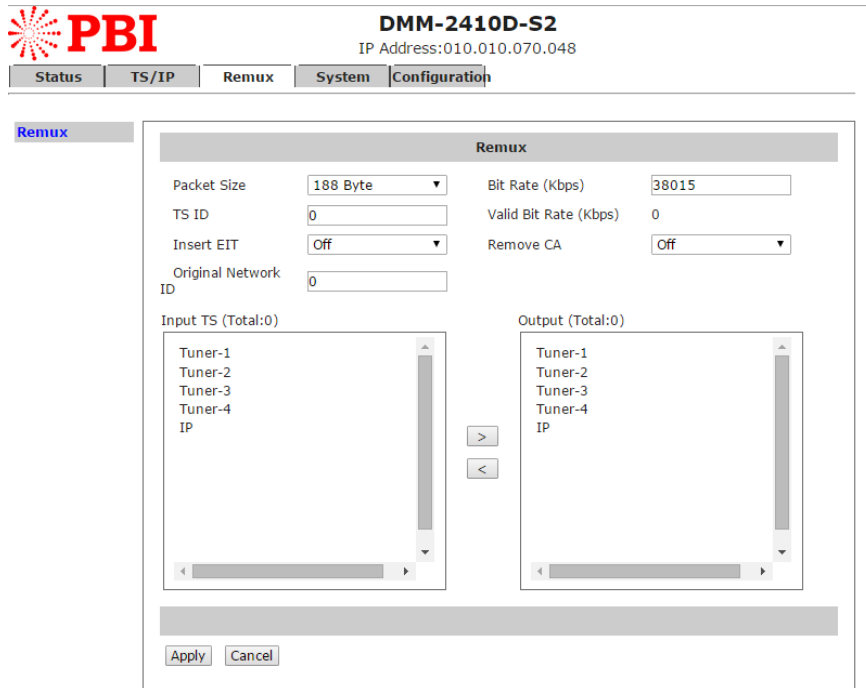
**Max Bit Rate (Kbps):** Set the bitrate for the new generated MPTS, valid range from 100~216000 Kb/s. The bitrate should be at least bigger than the total bitrate of selected programs, otherwise, packets may dropout.

**TS ID:** Set the TSID of the new generated transport stream, valid range from 0 to 65535 decimal

**Insert EIT:** ON: insert EIT into the output stream, EIT data may come from Tuner or IP input port

OFF: EIT will not be inserted into the output stream.

**Remove CA:ON:** remove the CA descriptors that are carried within the inputted TS over Tuner or IP  
**OFF:** keep the CA descriptors



**PBI** **DMM-2410D-S2**  
 IP Address:010.010.070.048

Status | TS/IP | **Remux** | System | Configuration

**Remux**

Packet Size: 188 Byte | Bit Rate (Kbps): 38015  
 TS ID: 0 | Valid Bit Rate (Kbps): 0  
 Insert EIT: Off | Remove CA: Off  
 Original Network ID: 0

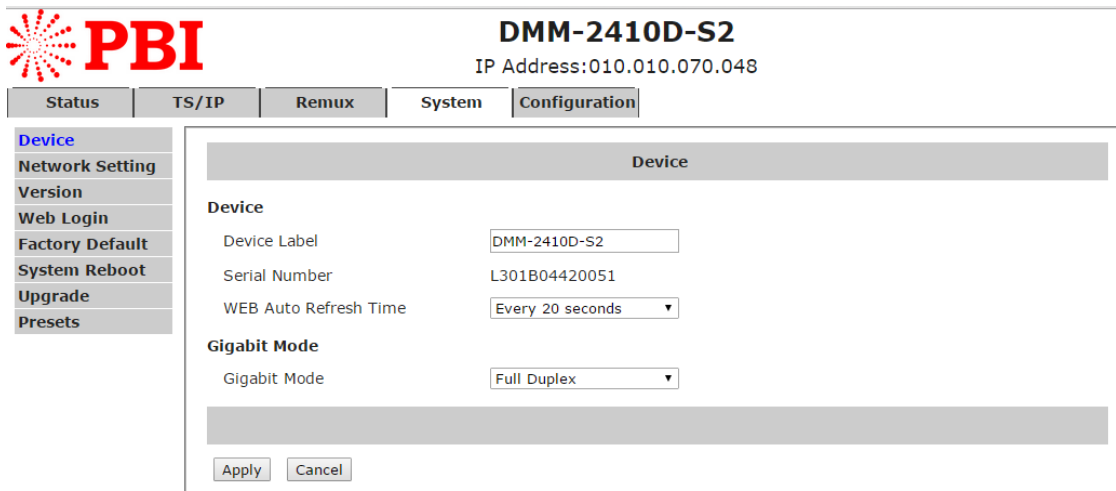
Input TS (Total:0): Tuner-1, Tuner-2, Tuner-3, Tuner-4, IP  
 Output (Total:0): Tuner-1, Tuner-2, Tuner-3, Tuner-4, IP

Apply | Cancel

## 8.5 System

The system page gives all information of this device including device name, serial number, software version, and so on. User can implement the alarm switch configuration, network settings, TS/IP operation mode and software upgrade under system page.

### 8.5.1 System -> Device



**PBI** **DMM-2410D-S2**  
 IP Address:010.010.070.048

Status | TS/IP | Remux | **System** | Configuration

**Device**

Device Label: DMM-2410D-S2  
 Serial Number: L301B04420051  
 WEB Auto Refresh Time: Every 20 seconds  
 Gigabit Mode: Full Duplex

Apply | Cancel

**Product name:** Check the name and the serial number of this device. User can resign this product name at will, the device name should be less than 24 characters. The serial number is read-only.

**Serial Number:** show the serial number for the device, cannot be modified by user.

**WEB Auto Refresh Time:** set the interval of webpage refresh.

**Gigabit Mode:** switch the TS/IP operation mode, “Multiple Output”, “Full duplex” and “IPTV”. The device will reboot after change.

### 8.5.2 System -> IP Control

The network settings for the device can be found and configured under the page below.

**PBI** **DMM-2410D-S2**  
IP Address:010.010.070.048

**Network Setting**

**Local Settings**

IP Address: 10 .10 .70 .48

Network Mask: 255 .255 .255 .0

Gateway: 10 .10 .70 .1

MAC: 00:06:f4:33:d1:0d

**IP Address:** set the device’s IP address

**Network Mask:** set the net mask of the device

**Gateway:** set the gateway address of the device

**MAC:** display the MAC address of the device, cannot be modified by user

### 8.5.3 System -> Version

User can check versions of various functional blocks of the device, as it shown in figure below.

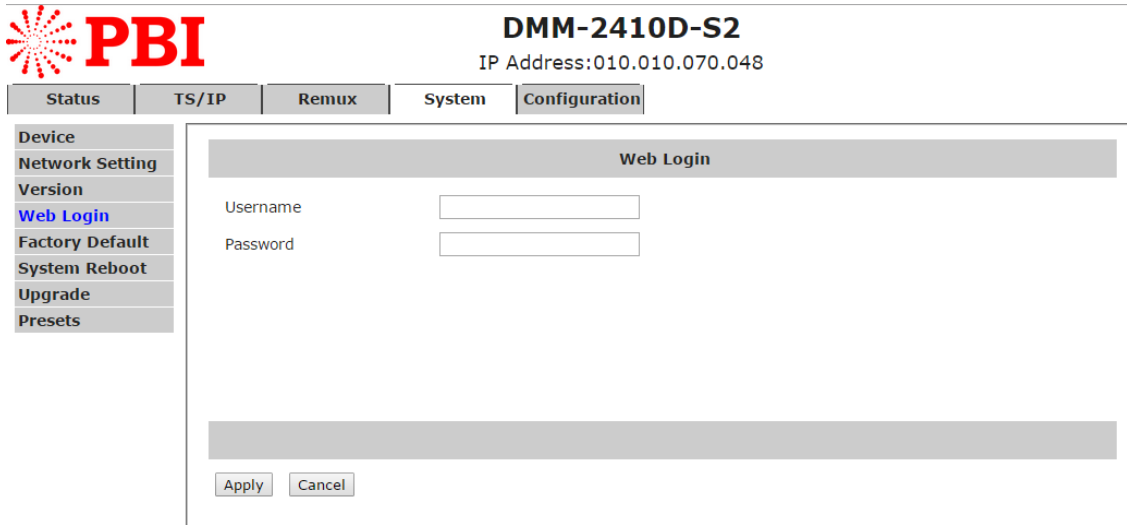
**PBI** **DMM-2410D-S2**  
IP Address:010.010.070.048

**Version**

Main Version	2410DR0014	FPGA Version	0004
WEB Version	010E	MCU Version	0014

### 8.5.4 System -> Login

Set the login ID and password for the web management server of the device.

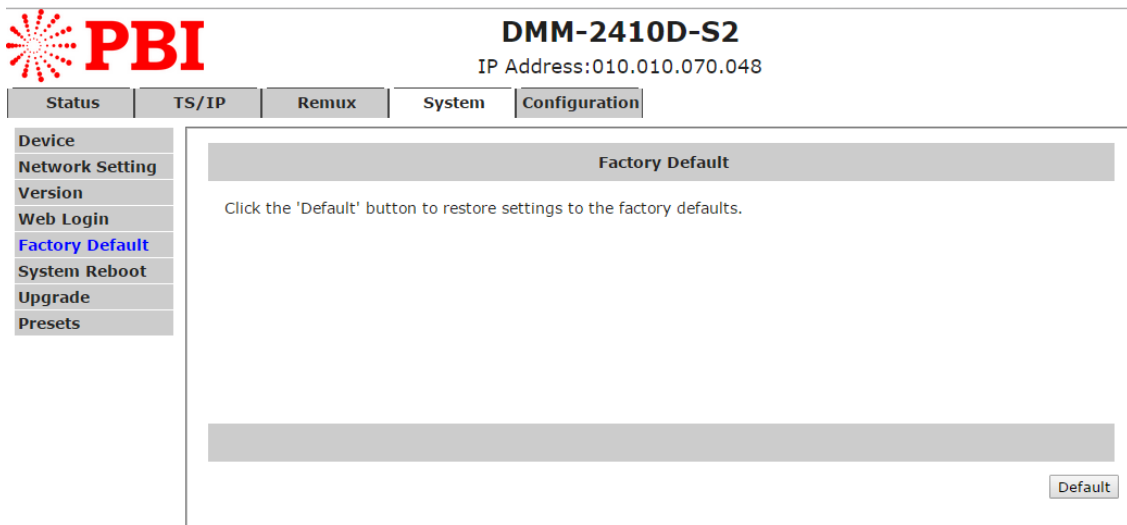


The screenshot shows the PBI web management interface for device DMM-2410D-S2 with IP address 010.010.070.048. The 'Configuration' tab is selected. On the left, a menu lists 'Web Login' as the active page. The main content area is titled 'Web Login' and contains two input fields: 'Username' and 'Password'. Below the fields are 'Apply' and 'Cancel' buttons.

### 8.5.5 System -> Factory Default

Click the button "Default" to restore the factory default settings to the device.

*Note: the IP address of the device and the operation mode of the Gigabit board will not be restored.*



The screenshot shows the PBI web management interface for device DMM-2410D-S2 with IP address 010.010.070.048. The 'Configuration' tab is selected. On the left, a menu lists 'Factory Default' as the active page. The main content area is titled 'Factory Default' and contains the text: 'Click the 'Default' button to restore settings to the factory defaults.' At the bottom right of the content area is a 'Default' button.



### 8.5.6 System -> System Reboot

User can reboot this device by clicking the button "Reboot".

The screenshot shows the PBI web interface for device DMM-2410D-S2 with IP Address: 010.010.070.048. The navigation tabs are Status, TS/IP, Remux, System, and Configuration. The left sidebar menu includes Device, Network Setting, Version, Web Login, Factory Default, System Reboot (highlighted in blue), Upgrade, and Presets. The main content area is titled "System Reboot" and contains the instruction: "Click the 'Reboot' button to restart the device". A "Reboot" button is located at the bottom right of the content area.

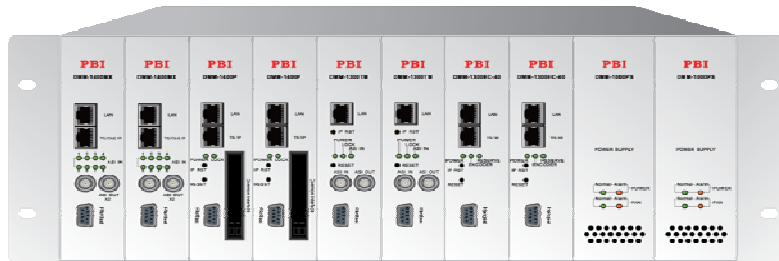
### 8.5.7 System -> Upgrade

User can upgrade software of this device via Web browser.

The screenshot shows the PBI web interface for device DMM-2410D-S2 with IP Address: 010.010.070.048. The navigation tabs are Status, TS/IP, Remux, System, and Configuration. The left sidebar menu includes Device, Network Setting, Version, Web Login, Factory Default, System Reboot, Upgrade (highlighted in blue), and Presets. The main content area is titled "Upgrade" and contains the instruction: "Update Upgrade File" followed by a file selection button labeled "选择文件" and the text "未选择任何文件". An "Upgrade" button is located at the bottom right of the content area.

## 9. Installation

- Fix the DMM-1100MF or DMM-210MF chassis into the standard EIA 19" rack.
- Insert the device into the fixed DMM-1100MF or DMM-210MF chassis.  
*Caution: the DMM-2200P can be accommodated in the DMM-1000MF or DMM-200MF chassis only. Inserting the device into other chassis or equipment may break the device and cause serious accident.*
- Fix the front and rear covers onto the DMM-1100MF or DMM-210MF.
- Connect all input output cables and Ethernet cables.
- Plug the power cable into DMM-1100MF or DMM-210MF. The POWER Indicator LED (A4) should be green and always light on during working. The DMM-2410D needs 1.5-2 minutes to boot up completely.
- Connect DMM-1000CU to configure locally or open a web browser on a connected PC and configure remotely.



DMM-1100MF, 8 slots, 2 power supplies



DMM-210MF, 2 slots, single power supply

## 10. Accessories

Front panel	1PC
Rear panel	1PC
CD-ROM	1PC
Certificate of quality /Guarantee card	1PC



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