FENGER®

INSTALLATION & CONFIGURATION MANUAL

FDH7150

(8 DVB-S/S2 to IP Streamer)

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Preface

Thank you for choosing our product.

This manual details the performance, installation and operation of the product. Please read this manual before use.

Our company does not assume any responsibility for any losses caused by violation of safety regulations.

1. Incoming inspection

(1) Open the equipment box and check the contents against the product packing list.

(2) If the packing list does not match the actual item, please contact us.

2. Read the instruction manual

Please read the instructions and follow all instructions.

(1) Power

The power supply used with this device must comply with the indicated power supply and be grounded. When not using the machine for a long time, please unplug the power cord.

(2) Working environment

Keep the equipment working in a ventilated and dry place. Avoid excessive heat, moisture, dust and heat.

(3) Equipment cleaning

Before cleaning the device, unplug the power cord. Do not use liquid or spray cleaners.

(4) Power cable protection

Pay special attention to the safety protection of plugs, sockets and power cords.

(5) Overload

Be careful not to overload the power supply at the outlet. Use caution when using extension cords or integrated sockets as this may result in electric shock and fire.

(6) Lightning

To prevent damage caused by lightning, please use this device in a lightning protection device, which can effectively prevent damage caused by lightning or power grid fluctuations.

(7) Foreign matter or liquid intrusion

Do not insert foreign objects into the machine or spill any liquid into the machine.

(8) Attachments

Do not use accessories not recommended by the manufacturer, as this may cause danger.

(9) Transportation

When transporting the machine, the original packaging of the product should be used to avoid damage. Do not place heavy objects on the machine or step on it. Otherwise, personal injury may occur and the machine may be damaged.

(10) Maintenance

Do not open the box and repair by yourself to avoid personal injury or serious damage to the machine.

During the warranty period, if the product is damaged due to natural causes and is disassembled without authorization, free warranty will not be provided.

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1. Product description

1.1. Overview

The FENGER® FDH7150 is a highly integrated platform engineered for centralized processing of digital TV front-end services. Designed for versatility, it supports both desktop installation and standard rack mounting, making it adaptable to a wide range of deployment environments.

Configuration and management can be performed locally or remotely through cloud-based network access, ensuring efficient and flexible operation. Its intuitive web interface features a clean, user-friendly design that simplifies setup, monitoring, and daily management.

Combining high integration with exceptional cost performance, the FDH7150 delivers a reliable and comprehensive signal processing solution for modern IPTV systems.

1.2. Pictures

Front panel

Rear panel

1.3. Parameters

FDH7150 Base unit parameter		
Size	318(L) x 260(W) x 44(H) mm	
Installation form	1U 19-inch chassis, Desktop	
Working temperature, humidity	5ºC ~ 45ºC, 40% ~ 70%	
Storage temperature and humidity	-10ºC ~ 70ºC, 40% ~ 95%	
Power parameters	**Supply voltage**	DC12V
	Maximum current	7000mA
Connector parameter of input module	**Total number of slots**	2
	Each slot can support modules	4 DVBS/S2 input module
IP output parameter	**IP output connector**	1 Gigabit RJ45 network port
	Output format	Supports UDP/RTP protocol output. Supports output IP stream in MPTS with 8 IP addresses or SPTS with 256 IP addresses.

1.4. Features

- Equipped with 8 DVB-S/S2 independent Tuners (FTA)
- Output IP streams in 8 MPTS or 256 SPTS
- Supports UDP/RTP transport protocols
- Selection and management of desired services for streaming
- Supports PID remapping, PSI/SI information editing and insertion
- 1 × Gigabit Ethernet (Data) port & 1 × Management port
- Graphical Web UI for fast and easy configuration
- Local or remote control via Ethernet
- 19'' rack-mount installation, with mounting brackets included

1.5. Application scenarios

- Hotels
- Resort
- Hospital
- Cruise ship
- School
- Leisure and entertainment clubs

2. Structure diagram

2.1. Front panel

Number	Function	
1	PER	This indicator light lights up when the device is powered on.
	RUN	This indicator light lights up when the device is running.
2	CH1	When the No. 1 port receives the signal, the indicator light lights up.
	CH2	When the No. 2 port receives the signal, the indicator light lights up.
	CH3	When the No. 3 port receives the signal, the indicator light lights up.
	CH4	When the No. 4 port receives the signal, the indicator light lights up.
	CH5	When the No. 5 port receives the signal, the indicator light lights up.
	CH6	When the No. 6 port receives the signal, the indicator light lights up.
	CH7	When the No. 7 port receives the signal, the indicator light lights up.

	CH8	When the No. 8 port receives the signal, the indicator light lights up.
3	DATA OUT	Gigabit output network port.
4	NMS	Management.
5	DEFAULT	Restore factory settings button. If you need to restore factory settings, you need to press and hold for 15 seconds.

2.2. Rear panel

Number	Function	
1	CH1	Signal input connector.
	CH2	Signal input connector.
	CH3	Signal input connector.
	CH4	Signal input connector.
2	CH1	Signal input connector.
	CH2	Signal input connector.
	CH3	Signal input connector.
	CH4	Signal input connector.
3	Switch.	
4	Ground.	
5	Power inlet.	

3. Installation guide

3.1. Preparation

When installing the device, follow these steps:

- Check for possible loss or damage of equipment during transportation.
- Prepare a suitable environment for installation.
- Install the required input and output cables.

Each detail of the equipment installation is described in the remainder of this chapter, using the rear panel diagram as a reference for specific locations.

3.2. Equipment installation process

Step 1: Unpacking and inspecting goods

Step 2: Fixed equipment

Step 3: Connect power and ground wires

Step 4: Connect signal cable

Step 5: Set device parameters

Step 6: Equipment operation

3.3. Environmental conditions requirements

Project	Requirement
Control room space	When installing multiple rows of cabinets, the distance between the front and rear doors of the cabinet is 1.2~1.5m and the distance from the wall is 0.8m.
Control room floor	Non-conductive and dust-free. The volume resistivity of the ground anti-static material is 1X107~1X1010, and the grounding current limiting resistance is 1M. The floor load-bearing should be greater than 450Kg/m^2.
Ambient temperature	For long-term work in an environment of 5~40ºC, and for short-term work in an environment of 0~45ºC, it is best to install air conditioners in places to facilitate heat dissipation.
Relative humidity	Work long-term in the 20% to 95% environment and short-term in the 10% to 97% environment.
Ambient air pressure	86kPa~106kPa.

Windows	Dust-proof rubber strips must be added for sealing. It is recommended that windows be installed with double-glazing and strictly sealed.
Wall	Wallpaper can be applied or matte paint can be applied, but paint that is easily powdered should not be applied.
Fire protection requirements	The control room should be equipped with an automatic fire alarm system and a portable fixed fire extinguishing system.
Power requirements	Three independent power supply systems are required for equipment power supply, air conditioning power supply, and lighting power supply. The equipment is powered by AC power supply. The AC power supply adopts 220V±20% 50/60Hz. Please check carefully before operating the equipment.

3.4 Grounding requirements

- The good ground wire design of each functional module is the basis for the stable and reliable operation of the whole machine, and is the primary guarantee for lightning protection and anti-interference. Therefore, system grounding must follow the following principles.
- The ground conductor must use copper conductor to reduce high-frequency impedance, and the ground wire should be as thick and short as possible.
- The connection points at both ends of the grounding wire should be confirmed to have good electrical contact and should be treated with anti-corrosion treatment.
- It is strictly prohibited to use other equipment as part of the electrical connection of the ground wire.
- The cross-sectional area of the ground wire connecting the cabinet to the lightning protection unit must be greater than or equal to 25mm^2.

3.4.1. Cabinet grounding

The ground terminals of each cabinet in the same computer room should be connected to the protective ground copper bar provided by the control room. The grounding wire is required to be as short as possible. If the wiring is too long during project installation, it should be cut off to avoid coiling of the grounding wire. The cross-sectional area of the conductor from the ground terminal to the ground bar must be greater than or equal to 25mm^2.

4. Built-in web management terminal operation

4.1. Preparation

- The NMS network port of the device is connected to the PC network port.
- Power the equipment.

4.2. Login

- You can check the IP address of the device through the operation panel.
- Open IE browser / Firefox browser / Google Chrome / Opera browser, enter the device IP address in the address bar (generally default: **192.168.1.30**), and after confirmation, the login interface will be displayed as follows:
- Enter username and password, the default is: **user**
- Click to log in

Notice:

1. If the connection cannot be made, please check whether the PC and the device are on the same network segment. If not, please add a new network segment in the advanced TCP/IP settings of the PC. For example: the PC's IP address is 192.168.99.252, which can be changed to 192.168.1.xxx (xxx can be any value from "1" to "254" except "252" to avoid IP conflicts).

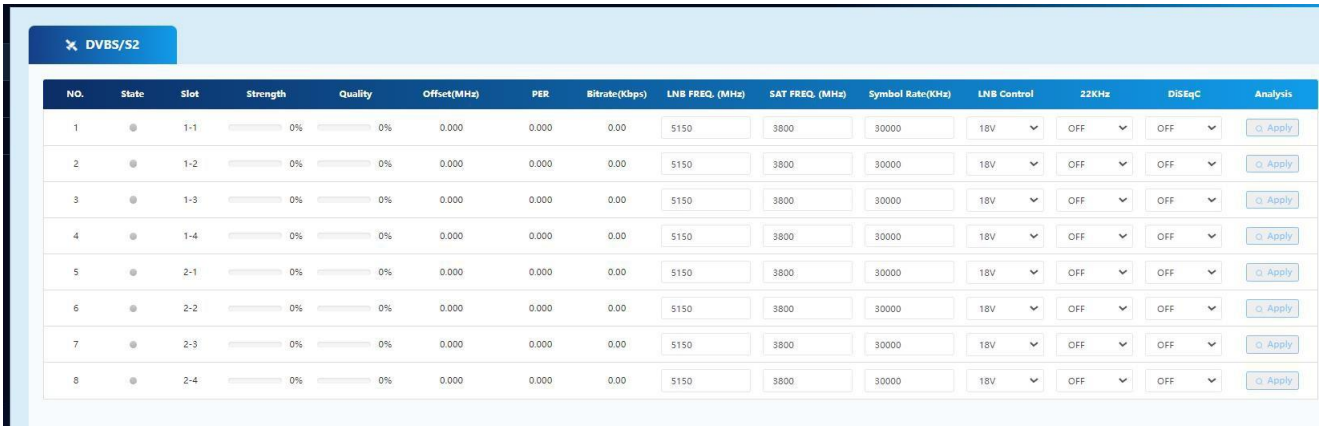
2. If you still cannot connect after the above operations, or you forgot to log in to the IP address, please operate the front panel of the device to restore the factory default values.
3. If you need to change the language, please change it in the upper right corner of the page. Select ENGLISH/CHINESE.

4.3. Device

Serial ID	Display device serial number.
Software version	Display the current software version number of the device.
Temperature	Display the temperature of the device's core board, and display the number of temperature progress bars based on the number of core boards.
Rear panel	Display the current access status of the rear panel. Green: connected; gray: not connected.
Fans	Display the operating status of the fans in the device. Under normal conditions, all fans will rotate. Blue: running; black: stopped; the fan stops running and a yellow triangle warning appears⚠

Frontal panel	Display the current access status of the front panel. Green: connected; gray: not connected.
Language settings	ENGLISH/CHINESE.
User name	Display the user name currently logged in to the device backend.
Quit	Exit the device background management terminal.
Cloud network Management binding status	Display the binding status of the device on cloud. Green: bound; gray: unbound.

4.4 Input



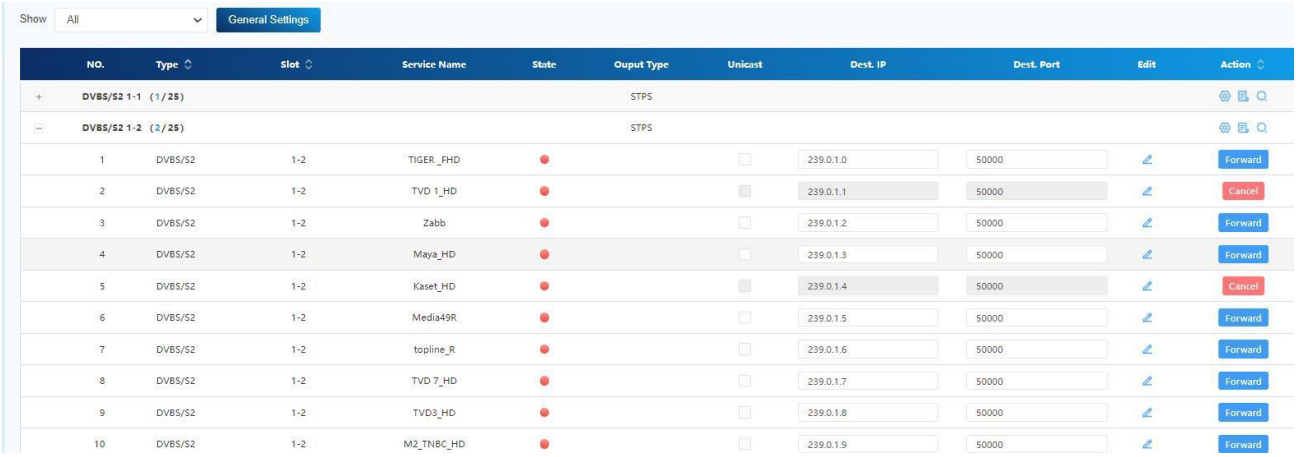
Serial number	Display the serial number of the channel number to visually display the number of channels.
Status	Display the signal status of the channel. - Gray: The signal is not connected - Green: The signal is locked and analyzed successfully
Channel	Display the card and corresponding channel number. For example: 1-1 represents the first channel of card 1.
Signal strength	Display the signal strength of each channel, the higher the signal strength, the better.
Signal quality	Display the signal quality of each channel, the higher the signal quality, the better.

Frequency (MHz)	Display the signal frequency offset value of each channel.
MER	Display the bit errors of the signal for each channel.
Code rate (Kbps)	Display the code rate of the signal of each channel.
LNB frequency (MHz)	The value range is 0-100000. Fill in according to the label of the tuner. The outdoor unit of the satellite radio and television receiving system is composed of receiving antenna, feed source, tuner and transmission feeder. The tuner is the most front-end equipment in the entire satellite radio and television receiving system.
SAT frequency (MHz)	Parameters of accepted satellites. First, you need to determine the position of the tuner, confirm the parameter information of the aligned satellite, and then fill in the accurate values according to the satellite reference table provided by the merchant, or check the satellite reference table online.
Symbol rate (KHz)	Parameters of accepted satellites. First, you need to determine the position of the tuner, confirm the parameter information of the aligned satellite, and then fill in the accurate values according to the satellite reference table provided by the merchant, or check the satellite reference table online, and match it with the downlink frequency. Value range: 1000-45000.
LNB control	Feed options include 13V, 18V or OFF. The purpose of different voltage levels between 13V and 18V is to choose the polarization method of the satellite pot tuner. Different polarization methods correspond to different signal radiation methods and different signal strengths. Normally 13V should correspond to the vertical polarization method; 18V should correspond to the 18V horizontal polarization method. In actual situations, we don't know how long the user's coaxial line is, so the output voltage needs to change to compensate for the impact of the long coaxial line.

22 KHz	After checking, the satellite signal flows through the line of port 22K. After the 22K switch receives this pulse signal, it is rectified by the internal rectification circuit of the 22K switch and obtains a DC voltage to drive the 22K switch from normally closed end conduction to normally open end conduction. to achieve switching purposes. The function of the 22k switch is to switch.
DiSEqC	Optional A, B, C, D or off.
Analyze	After clicking the Apply button, the signal of the channel is analyzed.

4.5. Router

In routing management, we can analyze and forward programs.



Check	You need to click the + sign first to expand the program before you can select the program. The all-select check box can only select all expanded programs. Programs that have not been expanded by pressing the plus sign cannot be selected.
Cancel forwarding	First check, then click the Cancel Forward button to cancel forwarding the Program.
Number	Represents: signal source subcard-channel (number of forwarded programs / total number of programs). Click the “+” sign to expand and display the program list under the channel. The programs can be set, analyzed and forwarded; Click the “-“sign to close the program list.

Type	Display the input type of this program.
Channel	Display the input channel of the program.
Service name	Display service name. It is analyzed from the program source and can be modified.
State	Display the status of the program, green: normal; red: interruption; yellow: PSI change. Program playback conditions are different in different states. When green and yellow, the program plays normally. When red, the program plays abnormally.
OUTPUT TYPE	Display information for single and multi-program streams.
Edit	Edit program information, which will be explained in detail below.
Forward	Forwarding a program, when clicked, it will turn into a cancel button, allowing you to cancel the forwarding.

State	Ouput Type	Unicast	Dest. IP	Dest. Port	Edit	Action
	STPS					
	STPS					
			239.0.1.0	50000		Forward
			239.0.1.1	50000		Cancel
			239.0.1.2	50000		Forward
			239.0.1.3	50000		Forward
			239.0.1.4	50000		Cancel
			239.0.1.5	50000		Forward
			239.0.1.6	50000		Forward
			239.0.1.7	50000		Forward
			239.0.1.8	50000		Forward
			239.0.1.9	50000		Forward
			239.0.1.10	50000		Forward

Edit (Slot: 1-2)

Program Information

Destination PID

Service Number: 903

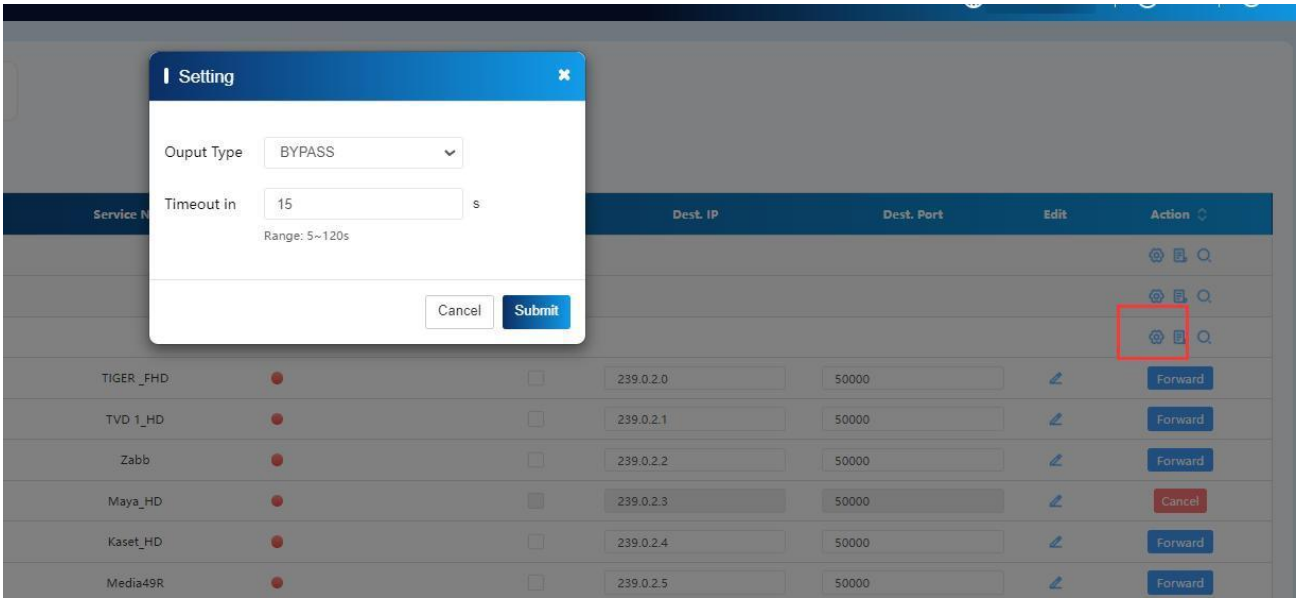
Service Name: Zabb

Service Provider:

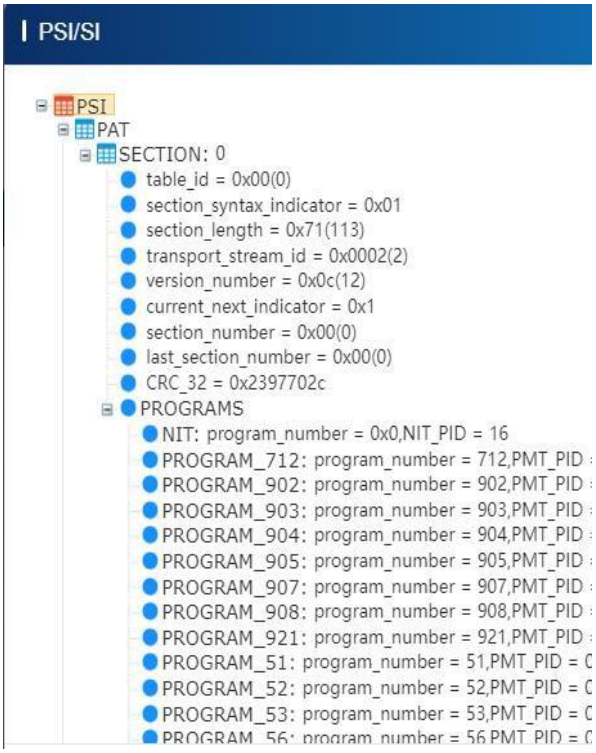
NO.	SRC PID	Type	TS Type
1	258	PMT PID	
2	514	PCR PID	
3	514	AVC(H264)	1B hex
4	752	Mpeg-2 AAC	F hex

Cancel Submit

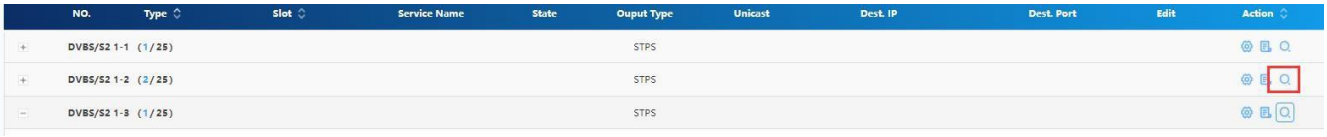
Detailed explanation of editing program information		
Target PID	Target program	Fill in according to actual needs, the value range is:
	Number	1-65535. The content shown in gray below is the target program number analyzed in the program source.
	Target Program name	Fill in the actual value, the value range is: 32 bytes. The content shown in gray below is the name of the target program analyzed in the program source.
	Service Provider (Target)	It is analyzed from the program source and does not need to be changed. The value range is: 32 bytes.
Number		List serial number.
Source PID		Each media data stream has a unique PID that identifies the source and type of media packets.
Type		The type of genre is determined by the content contained in the program source, and there may be more genres.
Type	PMT PID	Each program has a unique PMT PID that identifies the program's PMT.
	PCR PID	Each program needs an independent PCR PID to synchronize the audio and video streams of the program.
	AVC (H264)	Video compression standards.
	MPEG-2 AAC	Digital audio compression format.
Submit button	After the modified content is submitted successfully, it will take effect.	
Cancel button	Close editing page.	



SPTS and MPTS program streams optional



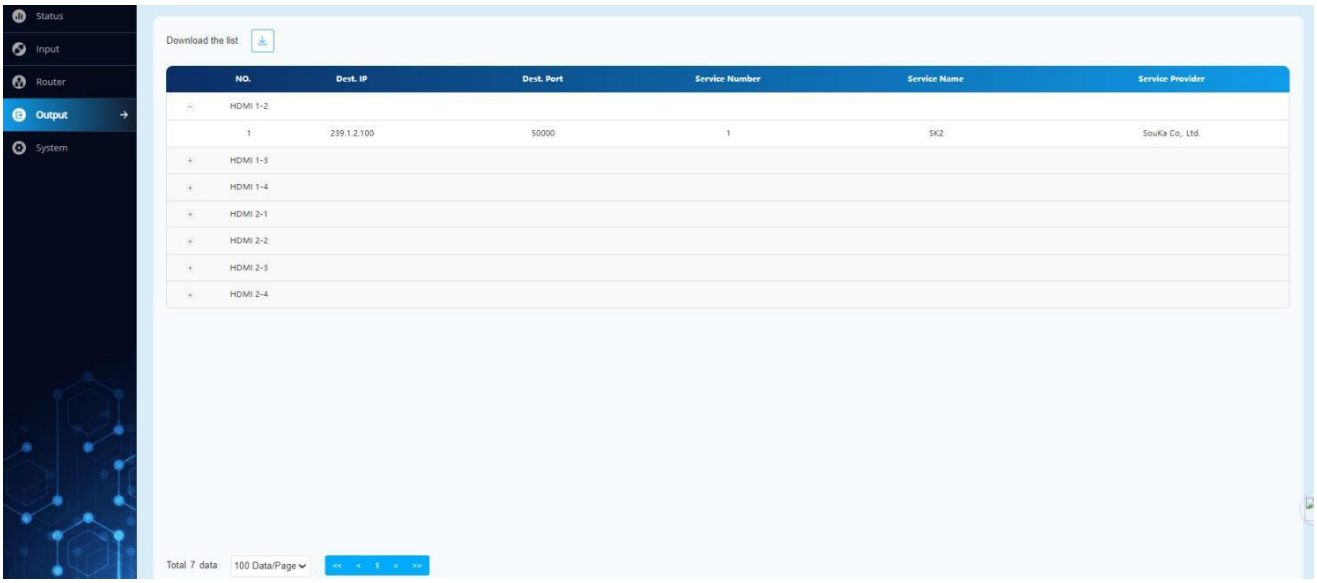
DVBS/S2 signal source details	
PSI	PSI information consists of program association table PAT, program mapping table PMT and network information table SDT.
PAT	The program association table associates the program number with the program mapping table PID, which is the beginning of data acquisition.
PMT	Program mapping table, specifying the PID of one or more programs.
SDT	Describe various program and service information in the transmitted digital television signal.



Analysis: Analyze the programs in the signal source. When not analyzed, the total number of black programs is 0.

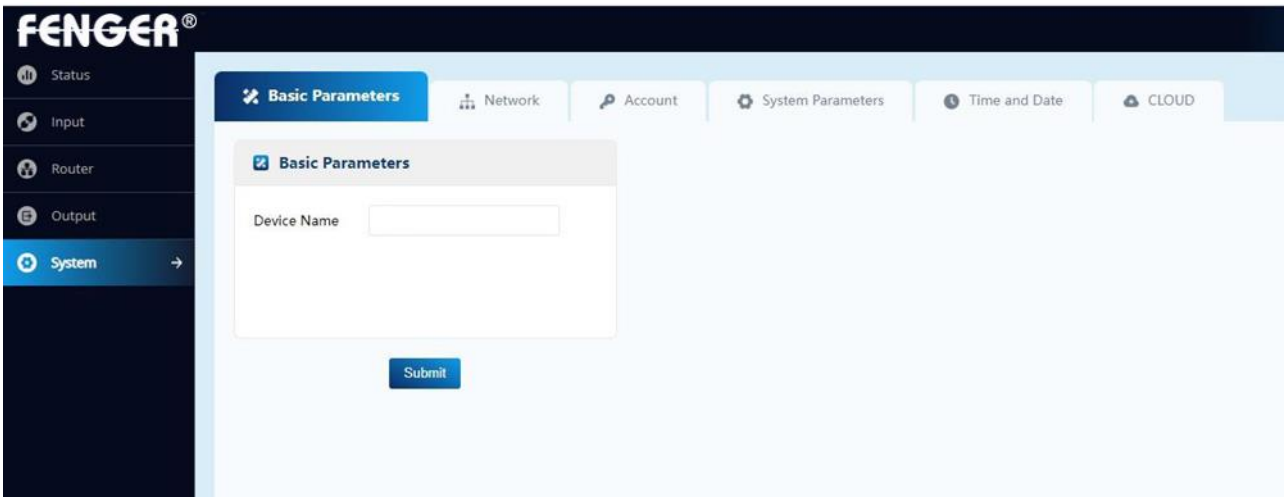
4.6. Output

Program information lists can be downloaded in batches

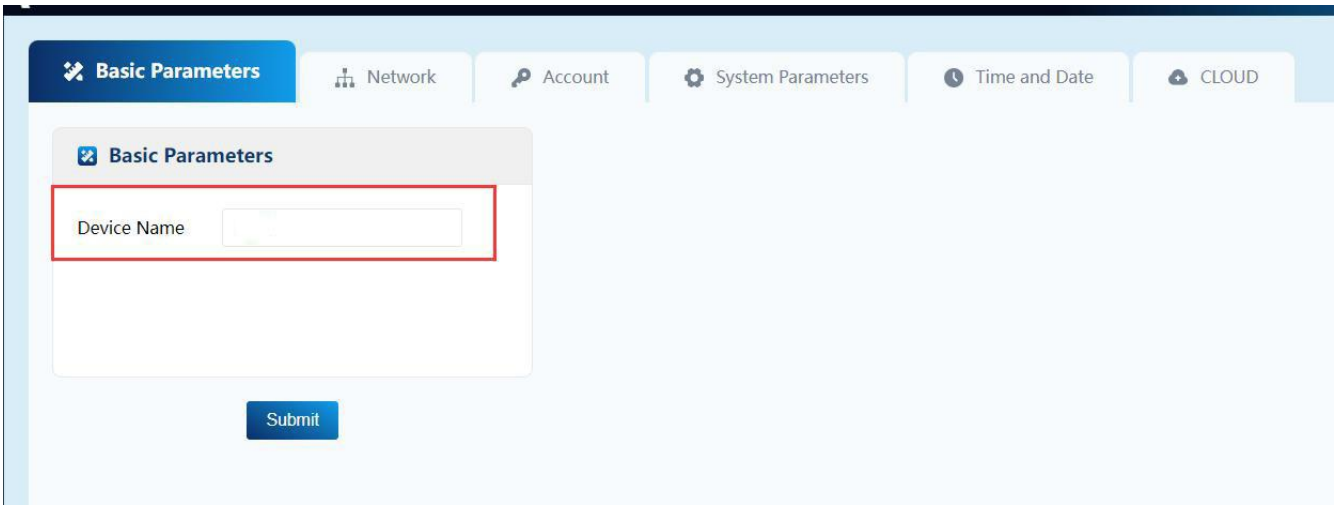


4.7. System

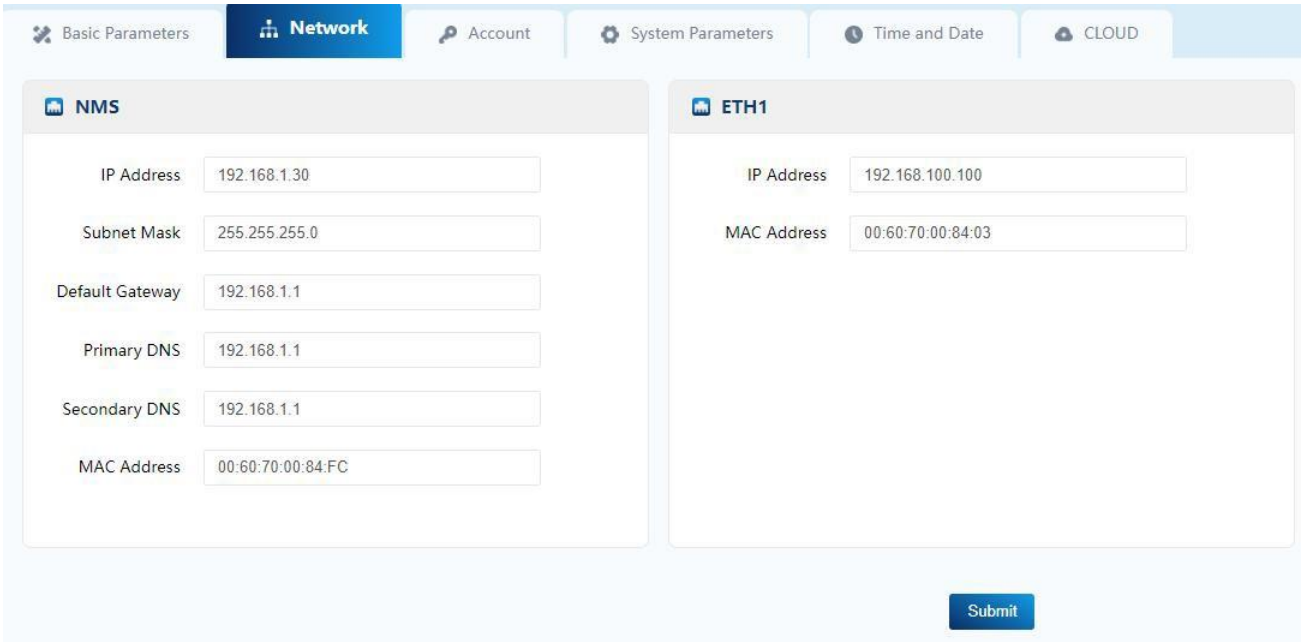
Able to perform network and IP input network port settings, password settings, system configuration, time settings and cloud network management binding.



4.7.1. Basic parameters



4.7.2. Network



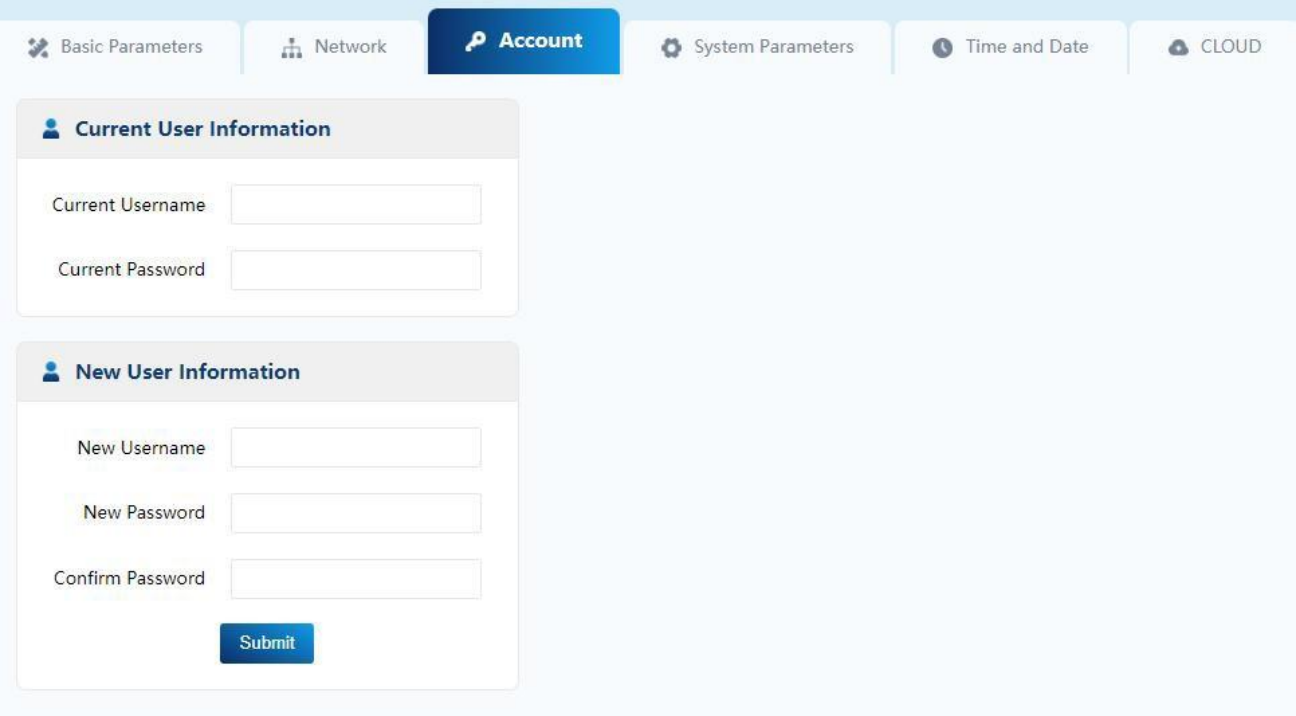
Network	
NMS	Network management port, connected computers must be in the same network segment.
ETH1	Network port 1; fill in according to actual needs.

IGMP version: IGMPv1 defines the basic group member query and reporting process. IGMPv2 adds a mechanism for querier election and group member departure on this basis. The main function added in IGMPv3 is that members can specify to receive or not to receive certain Packets from the multicast source.

4.7.3. Account

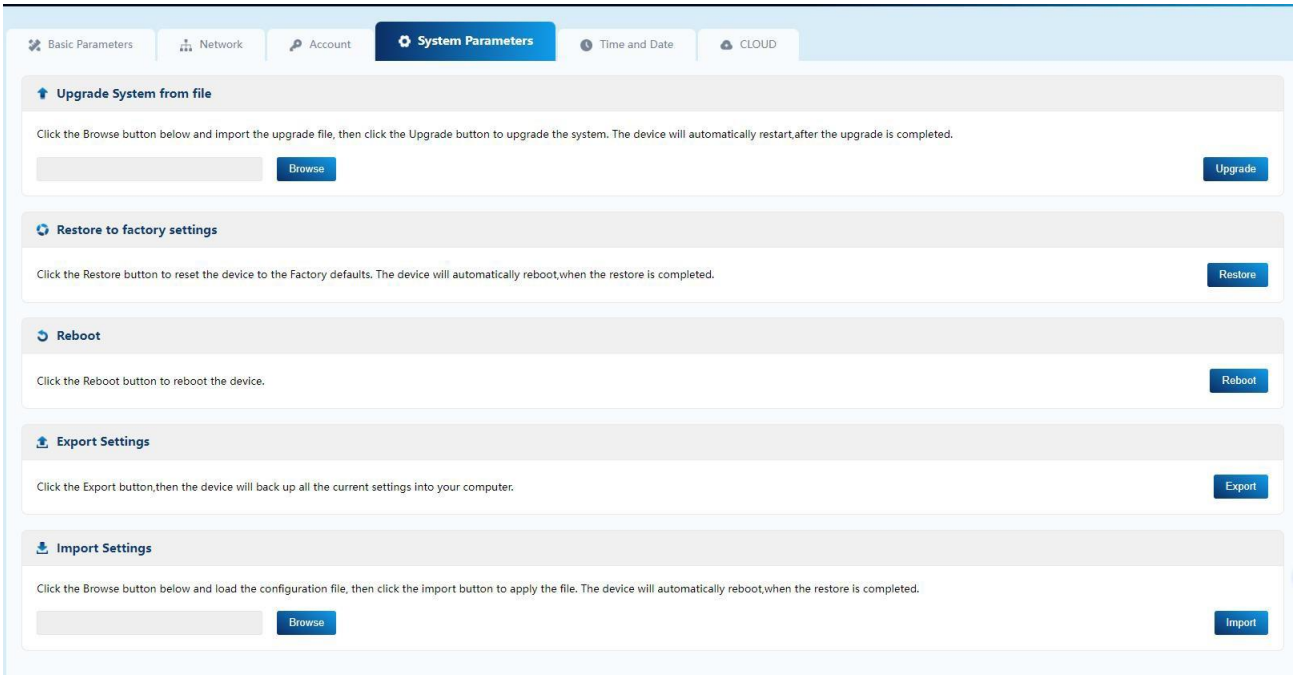
Reset a new username and password.

Operation steps: First fill in the username and password in the initial information, and then fill in the new username and password. Only when the initial username and password are entered correctly can the password be modified.



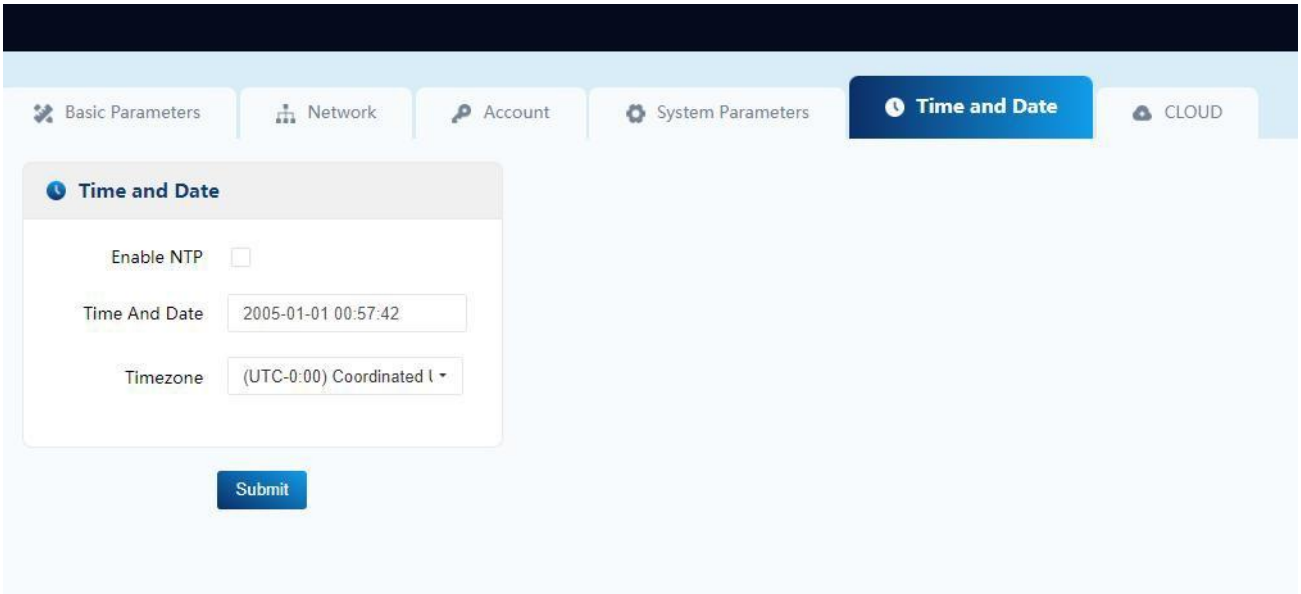
4.7.4. System parameters

In the system configuration, follow the operating instructions to upgrade the system, restore the factory, restart, export the system configuration file, and import the system configuration file. The import and export files can manually back up the system configuration information. When you need to restore the previous configuration information, import the corresponding configuration file is enough.



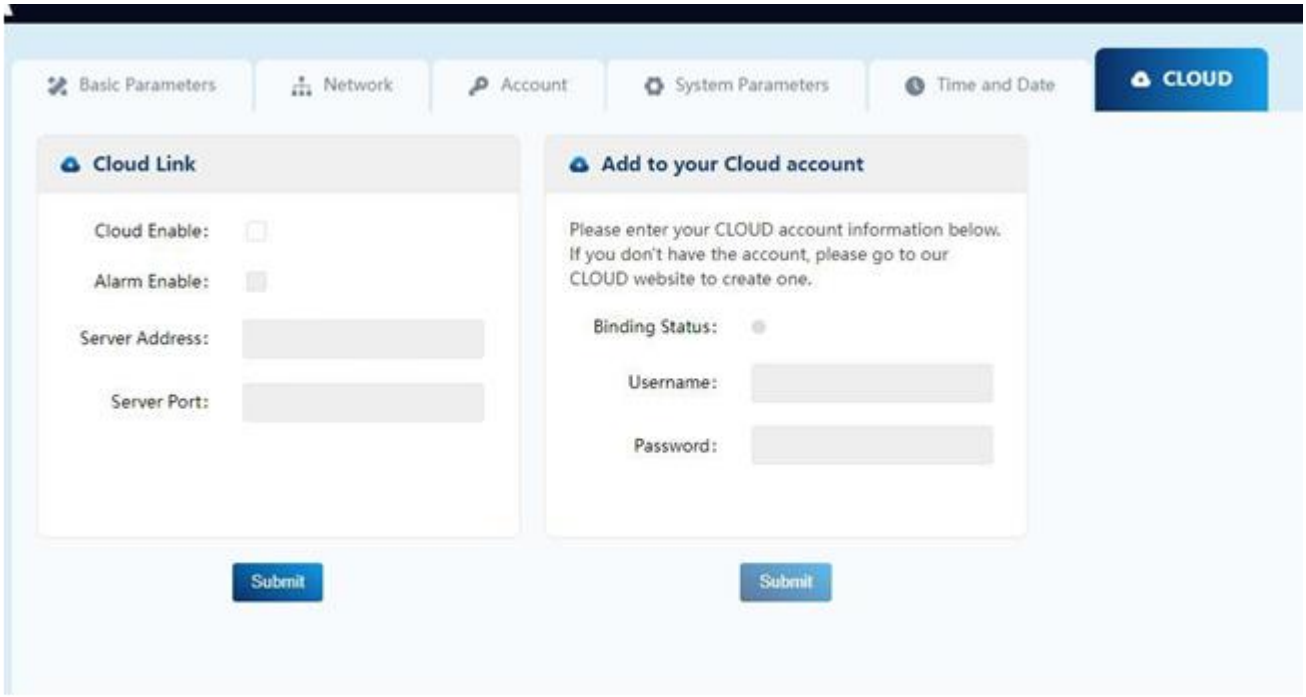
4.7.5. Time and Date

It can automatically calibrate time information, or manually set the time and adjust the time zone according to actual needs.



4.7.6. Cloud

Please enter the cloud network management system account to bind the device. If you do not have an account, please register an account in the cloud network management system. Enter the cloud network management account and password to bind. After the binding is successful, the binding status light turns green.



Cloud enable	Cloud network management is enabled, checked by default. After unchecking, the device will be disconnected from the cloud network management.
Alarm enable	Checked by default, device alarm information can be detected on the cloud network management.
Server address	Fill in the server domain name of the cloud network management.
Server port	Fill in the server port of the cloud network management.
Binding status	Green: Binding successful; Gray: Unbound.
Username	User name registered on the cloud network management system.
Password	Password registered on the cloud network management system.

5. Equipment operation precautions

The company's product quality assurance system includes equipment testing and operating procedure inspections to ensure the reliability of product quality. The company has taken all possible measures before the product leaves the factory. The optical, electrical and mechanical indicators of the products all meet national standards. During use, in order to prevent possible potential problems, the following precautions should be strictly followed for relevant operations.

5.1. Precautions

1. Place the device at an ambient temperature of 0~45°C. Other conditions meet the required scope of work.
2. Make sure the rear panel radiator is well ventilated and make sure all jacks are not blocked.
3. Check whether the power supply voltage is within the specified range and whether all connections are correct.
4. Check whether the adjustment level (dB) change is within its allowable range.
5. Check whether the connection of each signal line is loose.
6. Please do not switch machines frequently (the switching interval should be at least 10 seconds).

5.2. The chassis needs to be unplugged from the power supply

1. The power cord or socket is damaged.
2. If there is liquid injection equipment.
3. Any debris falls into the chassis hole, causing an internal short circuit.
4. Use water or soak.
5. Collision or internal damage.
6. Do not use this machine for a long time.
7. If the preset is restored and the power is turned on, the device still does not work properly.
8. Equipment needs maintenance.

5.3. Common malfunctions

1. Missing program: Please check whether there is a channel conflict, whether the video signal input is normal, and restart the device.

These terms are subject to change without prior notice, and we reserve the right of final interpretation. If you have any further questions, please contact our sales department directly.

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