

HP0201R IP Gateway Multiplexer

User's Manual

V1.1



Dear clients,

In order to give better play to the function of your device, we suggest that you take the precious time to read the user manual carefully before connecting and operating the device, so that you can master the use method and use points of the device.

Please keep this manual for future reference.

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1. Introduction

1.1 Product Overview

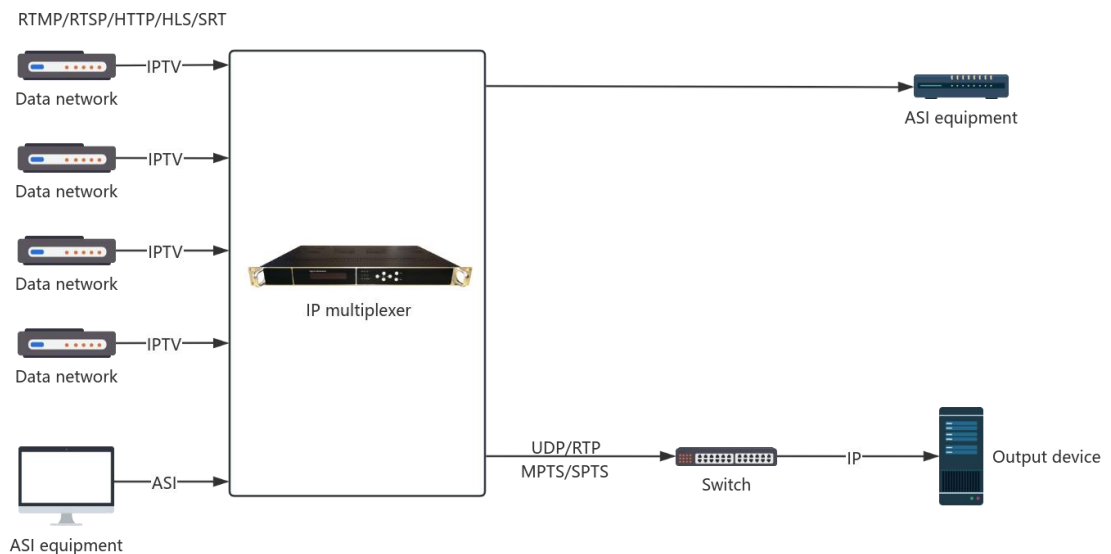
HP0201R IP Gateway Multiplexer is a high-performance, cost-effective processing device designed to solve digital TV signal sources in business locations. The device supports a maximum of three Gigabit network ports (2 input and 1 output). DATA1 supports **RTMP/HTTP/RTSP/HLS/SRT input**, DATA3 supports UDP/RTP input, and DATA2 supports **UDP/RTP output** (4 MPTS/ 512 SPTS). Supports **2 ASI input and 4 ASI output**. The equipment adopts 1U body, compact structure, high performance, low cost, high integration, good stability and so on. A single device integrates a complete set of front-end system functions, which is very suitable for all kinds of new generation digital TV broadcasting systems.



1.2 Key Features

- ❖ Provides 3 gigabit port input/output(2 port input,1 port output)
- ❖ Supports **RTMP/HTTP/RTSP/HLS/SRT** input(DATA 1) , UDP/RTP input(DATA 3)
- ❖ Supports 1 gigabit output (DATA2) ,**4 MPTS/ 512 SPTS** over **UDP/RTP**
- ❖ Supports 2 ASI input
- ❖ Supports 4 ASI output
- ❖ Using 1U chassis, a single device integrates a set of front-end device functions, saving installation and wiring space
- ❖ Supports network management (Web)
- ❖ Support online upgrades

System function diagram



1.3 Specifications

Input	2 Gigabit IP inputs (DATA1:RTMP/HTTP/RTSP/HLS/SRT input; DATA3: UDP/RTP input)	
	2 ASI input	
Output	1 Gigabit output,DATA2: 4 MPTS/ 512 SPTS,UDP/RTP output	
	4 ASI output	
System	Web/NMS	
	Chinese/English	
Miscellaneous	Dimensions	482mm×300mm×42mm
	Weight	4kg
	Temperature	0~45°C(Operation); -20~80°C(Storage)
	Voltage range	AC100~240V, 50/60Hz
	Power consumption	<30W

1.4 Interface



Number	Interface Overview
1	LCD
2	Keys and indicator lights
3	NMS: Network Management System
	DATA1: 1G port IP input ,RTMP/HTTP/RTSP/HLS/SRT protocol,
	DATA2: 1G port IP output ,4 MPTS/ 512 SPTS over UDP/RTP protocol
	DATA3: 1G port IP input, UDP/RTP protocol
4	ASI port (2 input and 4 output)
5	Power Switch

2. Operation

2.1 Installation

Check the possible loss or damage of the equipment during transportation before installing the equipment; Prepare the appropriate environment, connect > to the signal line, connect > to the power line, open the device, >, check the IP address of the network manager, >, adjust the network manager server, connect > to the network manager, check or modify all parameters, and then the device will be normally used after no abnormalities are found in >.

Note 1: the power supply must meet the working requirements of the equipment, such as voltage, frequency and power supply capacity.

Note 2: please observe the environment before the test and pay attention to safety during the test.

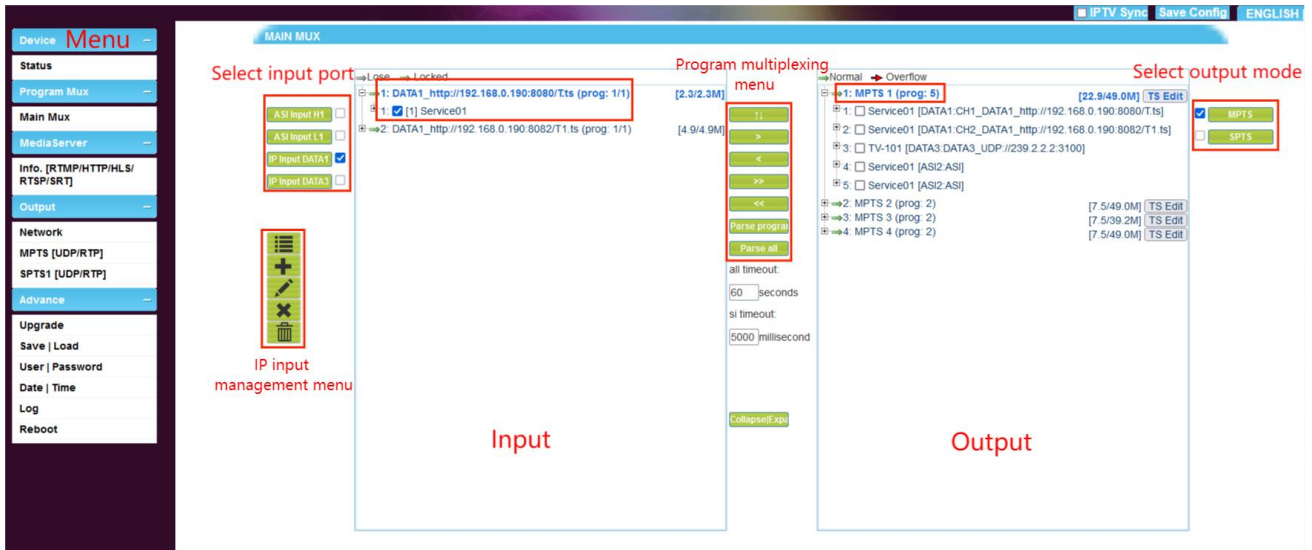
2.2 Connect

- Set the computer and the device IP in the same network segment according to the device network manager address (192.168.0.136)
- The IP address of the computer cannot be the same as that of the device
- In the address bar of Firefox browser, ENTER: 192.168.0.136 and press "ENTER". ENTER the user name: admin password: admin and ENTER the configuration window.

STATUS							
ASI IN	Prog Counts		Bit(Act)		Lock		
ASI-H1	2		9.9 Mbps		●		
ASI-L1	2		9.9 Mbps		●		
MPTS	Prog Counts		Bit(Act/Max)		Overflow		
1	5		27.2/49.0 Mbps		●		
2	2		9.9/49.0 Mbps		●		
3	2		9.9/39.2 Mbps		●		
4	2		9.9/49.0 Mbps		●		
SPTS1	Prog Counts			Bitrate			
1	4			18.0/18.0 Mbps			
ETH	IP	Subnet Mask	Gateway	Mac	Link Status	Set Code	
NMS	192.168.0.138	255.255.255.0	192.168.0.1	20:10:12:34:56:78	●	0	
DATA1	192.168.0.254	255.255.255.0	192.168.0.1	60:20:24:34:56:78	●	0	
DATA2	192.168.2.137	255.255.255.0	192.168.2.1	20:20:12:34:56:88	●	0	
DATA3	192.168.2.138	255.255.255.0	192.168.2.1	20:20:12:34:56:98	●	0	
ZQCOM	192.168.2.136	255.255.255.0	192.168.2.1	20:20:12:34:56:78	⊗	0	
RKCOM	192.168.2.2	255.255.255.0	192.168.2.1	20:60:12:34:56:78	⊗	3	
CPU	FPGA	Hardware	OS	Web	SN	Running Time	
3040.1189.FE1PTVIN	1.8.0.11	00000000	1.26.2.80G	2.111	202007151430	0 Day-05:07:47	

2.3 Parameter Settings

2.3.1 TS Multiplex Settings



In the TS stream setting column, parameters of the output channel can be set: stream selection, general parameters, PID transparent transmission. Mainly is carries on the choice to the output program.

In this interface, you can click the "+" button and input the corresponding IP address to add the input program source. Click "Parse program" or "Parse all" to parse the program from the network data.

After the program source is added into the device as required, the selected program can be output or deleted through the arrow to the right and left of "<" and "<<".

- Adjustment sequence
- multiplexed program to
- Delete program
- All multiplexed to
- Delete all
- Parse the program
- Parse all

- Import list
- Adding IP Channel
- Edit the selected IP channel
- Delete the selected IP channel
- Delete all IP channels

Input IP Stream Config.
[close]

Input URL: example:
udp://224.2.2.2:1000
http://aaa.com/aaa
rtsp://aaa.com/aaa
rtmp://aaa.com/aaa
srt://aaa.com/aaa

AdjustMode:

Muxrate: Kbps

UDP:

<
>

Add
Close

DATA1 supports RTMP/HTTP/RTSP/HLS/SRT protocol input, as shown in the figure.

Input IP Stream Config.
[close]

Unicast:

PCR Correct:

IP Address:

Step:

End IP:

Port:

Step:

End Port:

IGMP Snooping: ▼

Source IP:

Protocol: ▼

AdjustMode:

Add
Close

DATA3 supports UDP/RTP protocol input, as shown in the figure.

2.3.2 Program conversion module status information

You can view the status of the streaming media module.

INFO. [RTMP/HTTP/HLS/RTSP/SRT]

Tips:
 This page displays streaming channel information
 The network port that supports streaming media input is DATA1
 Reconnect:Close the current connection and reconnect the server
 GetStatus:Send a command to refresh the current status parameters

	Link	Busy	Version	Cpuusage Memusage Cputemp	Status	Action
Status	●	●	4.19.232-2.22-0.1-20240515	6% 4% 40°C	normal	Reconnect GetStatus

Pull Stream:

Channel	Input URL	Output URL	Bit(Act)
1	http://192.168.0.190:8080/T.ts	udp://239.2.2.2:4006	1.3 M
2	http://192.168.0.190:8082/T1.ts	udp://239.2.2.2:4007	4.6 M

2.3.3 MPTS/ASI output setting

MPTS IP output channel status, parameter view, setting, etc

MPTS [UDP/RTSP]

Tips:
 1. RTSP can be supported by choosing RTP as the output protocol
 2. RTSP Output format for MPTS1 is as follows rtsp://192.168.2.136.6666/mpts1
 3. RTSP Output format for SPTS1 is as follows rtsp://192.168.2.136.6666/spts1
 4. 192.168.2.136 in RTSP output format is the IP address of DATA-1
 5. RTSP Output Protocol must have two channel ports spaced at or greater than 2

General:

Protocol:

ASI OUT H2:

ASI OUT L2:

ASI OUT H3:

ASI OUT L3:

Channel Info.(Alarm/Active/Total): 0/1/4

Channel	Address	Port	TTL	Enable	Null PKT Filter	Source TS	Out ETH	Bit(Act/Max)	<input type="button" value="Edit ALL"/>
1	<input type="text" value="239.2.2.2"/>	<input type="text" value="2000"/>	<input type="text" value="128"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	MPTS 1	DATA1	28.4/49.0 M	
2	<input type="text" value="239.2.2.2"/>	<input type="text" value="2002"/>	<input type="text" value="128"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	MPTS 2	DATA1	10.1/49.0 M	
3	<input type="text" value="239.2.2.2"/>	<input type="text" value="2004"/>	<input type="text" value="128"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	MPTS 3	DATA1	10.1/39.2 M	
4	<input type="text" value="239.2.2.2"/>	<input type="text" value="2006"/>	<input type="text" value="128"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	MPTS 4	DATA1	10.1/49.0 M	

Support 4 MPTS output, you can set the MPTS parameters, also can set the ASI output stream.

Edit ALL

[close]

Tips:

- Use this page to edit all ip streams.
- All IP Enable:Open/Close all ip streams.
- All IP Address:all ip streams use the same address.
- Start Port:the port of the first ip stream.
- Step:the step of port.if you do not want to modify the Address and Port,set 0.
- All IP Null PKT Filter:Open/Close Null PKT of all ip streams.

All IP Enable:

All IP Address:

Start Port:

Step:

TTL:

All IP Null PKT Filter:

Apply Close

2.3.4 SPTS output setting

IPTV SynE
Save Config
ENGLISH

- Device
- Status
- Program Mux
- Main Mux
- MediaServer
- Info. [RTMP/HTTP/HLS/RTSP/SRT]
- Output
- Network
- MPTS [UDP/RTP]
- SPTS1 [UDP/RTP]
- Advance

RTSPTips:

- 1.RTSP can be supported by choosing RTP as the output protocol
- 2.RTSP Output format for MPTS1 is as follows rtsp://192.168.2.136:6666/mpts1
- 3.RTSP Output format for SPTS1 is as follows rtsp://192.168.2.136:6666/spts1
- 4.192.168.2.136 in RTSP output format is the IP address of DATA-1
- 5.RTSP Output Protocol must have two channel ports spaced at or greater than 2

Rate Monitor:

- 1.ON:Turn off the output when the code rate is lower than 200kbps, and turn on the output when the code rate is higher than 1Mbps
- 2.OFF:Turn off rate monitoring function

General:

Protocol: UDP

Rate Monitor: OFF

Set

Channel Info.(Alarm/Active/Total): 0/2/4

SPTS 1-128							
Channel	Address	Port	TTL	Enable	Monitor Status	Source TS	Bit(Act)
1	<input type="text" value="239.2.2.2"/>	<input type="text" value="3000"/>	<input type="text" value="128"/>	✓	●	Service01(DATA1_http//192.168.0.190:8080/T1ts)	2.9 M
2	<input type="text" value="239.2.2.2"/>	<input type="text" value="3002"/>	<input type="text" value="128"/>	✓	●	Service01(DATA1_http//192.168.0.190:8082/T11ts)	8.2 M
3	<input type="text" value="239.2.2.2"/>	<input type="text" value="3004"/>	<input type="text" value="128"/>	✗	●	TV-101(DATA3_UDP//239.2.2.2:3100)	7.6 M
4	<input type="text" value="239.2.2.2"/>	<input type="text" value="3006"/>	<input type="text" value="128"/>	✗	●	IPTV9204(DATA3_UDP//239.2.2.2:1234)	0.0 M

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2.3.5 Network Settings

Set IPTV input IP address and other parameters

NETWORK

NMS

IP Address:

Subnet Mask:

Gateway:

Web Manage Port:

MAC Address:

DATA-1

Mode:

IP Address:

Subnet Mask:

Gateway:

MAC Address:

DATA-2

IP Address:

Subnet Mask:

Gateway:

MAC Address:

DATA-3

IP Address:

Subnet Mask:

Gateway:

MAC Address:

ZQCOM

IP Address:

Subnet Mask:

Gateway:

MAC Address:

RQCOM

IP Address:

Subnet Mask:

Gateway:

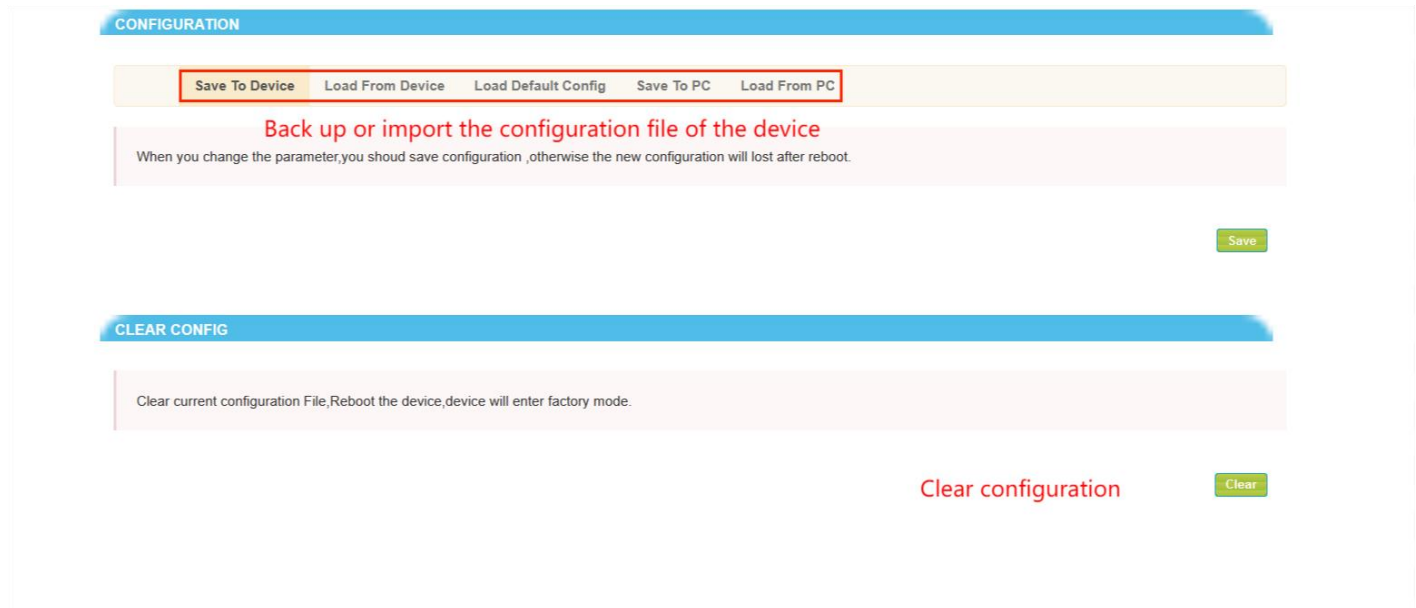
MAC Address:

Do not modify the internal test port Settings

Note: Do not modify the internal test port parameters.

2.3.6 Configuration

Save or restore the device system configuration, or load other configuration parameters



1. Save to device: After change any of the data or settings, please click “save to device” to match the settings between the software and the device.
2. Load from device: This is to download the recent settings from the device. Please save the settings when finish the downloading.
3. Load the default config: This is to reset the device to the factory settings.
4. Save to PC: This is to save the current configuration to local files in PC. Users are suggested saving the settings before upgrading the device.
5. Load from PC: Users can replace the current settings with the backup settings from local files (PC). Note: Do not turn off the computer on the process of downloading, otherwise the device will not work.
6. CLEAR CONGLG: Click “Clear” to delete all the current setting to reset the data settings.

2.3.7 System Upgrade

FIRMWARE

Tips:

1. Please get firmware (Software.pkg /OS pkg/Hardware.bin) from the manufacturer, do not make any changes, choose firmware to upgrade.
2. Do not turn off the power when the equipment is upgraded. Otherwise the equipment will be damaged.
3. When the upgrade is successful, you need to reboot the machine and the new firmware will work.
4. upgrade Software pkg/Hardware.bin will keep about 10 seconds.
5. upgrade OS pkg will keep about 1 minutes.
6. Upgrading requires a very stable network and advises against connecting to the Internet.

Software Version: 3040.1189.FEIPTVIN

Hardware Version: 1.8.0.11

OS: 1.26.2.80G

File:

Upgrade

We generally suggest users do not do software updating without our online supporting. If you need to upgrade the software, please contact us to make online supporting.

2.3.8 LOG

Device status information

8in1 DVB-T Modulator IPTV.Sync Save Config ENGLISH

- Device +
- Program Mux +
- Output -
- Modulator
- Network
- MPTS IP Stream
- Advance -
- Upgrade
- Save | Load
- User | Password
- Date | Time
- Log
- Reboot

LOG

Log Type: Kernel Log Auto 0 Export Clear Log

```

[ 0.000000] Kernel Log: local CPU 0x0
[ 0.000000] System Log: linux (root@localhost.localdomain) (gcc version 4.9.1 (Sourcery CodeBench Lite 2014.11-30) ) #65 SMP PREEMPT Tue Aug 30 17:34:09 CST 2022
[ 0.000000] Alarm Log: br [413c090] revision 0 (ARMv7), cr=18c5387d
[ 0.000000] Machine model: xmx-zynq-7000
[ 0.000000] cma: Reserved 16 MiB at 0x04400000
[ 0.000000] Memory policy: Data cache writealloc
[ 0.000000] On node 0 totalpages: 65536
[ 0.000000] free_area_init_node: node 0, pgdat 405aee00, node_mem_map 4fd0000
[ 0.000000] Normal zone: 512 pages used for memmap
[ 0.000000] Normal zone: 0 pages reserved
[ 0.000000] Normal zone: 65536 pages, LIFO batch:15
[ 0.000000] PERCPU: Embedded 9 pages/cpu @4fd3000 s8128 r8192 d20544 u36864
[ 0.000000] pcpu-alloc: s8128 r8192 d20544 u36864 alloc=9*4096
[ 0.000000] pcpu-alloc: [0] 0 [0] 1
[ 0.000000] Built 1 zonelists in Zone order, mobility grouping on. Total pages: 65024
[ 0.000000] Kernel command line: console=ttyPS0,115200
[ 0.000000] log_buf_len individual max cpu contribution: 131072 bytes
[ 0.000000] log_buf_len total cpu_extra contributions: 131072 bytes
[ 0.000000] log_buf_len min size: 131072 bytes
[ 0.000000] log_buf_len: 262144 bytes
[ 0.000000] early log buf free: 129692(98%)
[ 0.000000] PID hash table entries: 1024 (order: 0, 4096 bytes)
[ 0.000000] Dentry cache hash table entries: 32768 (order: 5, 131072 bytes)
[ 0.000000] Inode-cache hash table entries: 16384 (order: 4, 65536 bytes)
[ 0.000000] Memory: 224308K/262144K available (3868K kernel code, 222K rwdata, 1504K rodata, 192K init, 291K bss, 21452K reserved, 16384K cma-reserved, 0K highmem)
[ 0.000000] Virtual kernel memory layout:
[ 0.000000] vector : 0xffff0000 - 0xffff1000 ( 4 kB)
[ 0.000000] fixmap : 0xffc00000 - 0xff000000 (3072 kB)
[ 0.000000] vmalloc : 0x50800000 - 0xf0000000 (2792 MB)
[ 0.000000] lowmem : 0x40000000 - 0x50000000 (256 MB)
[ 0.000000] pkmap : 0x3fe00000 - 0x40000000 ( 2 MB)
[ 0.000000] modules : 0x30000000 - 0x30000000 ( 14 MB)
[ 0.000000] text : 0x40000000 - 0x405472c0 (5373 kB)
[ 0.000000] .init : 0x40548000 - 0x40578000 ( 192 kB)
[ 0.000000] .data : 0x40578000 - 0x4058a600 ( 223 kB)
[ 0.000000] .bss : 0x4058a600 - 0x4058aa8 ( 292 kB)
[ 0.000000] Preemptible hierarchical RCU implementation.
[ 0.000000] RCU restricting CPUs from NR_CPUS=4 to nr_cpu_ids=2.
[ 0.000000] RCU: Adjusting geometry for rcu.fanout=16 nr_cpu_ids=2
                    
```

When the device is abnormal, the device work log can provide some useful information.

3. Trouble Removal

3.1 Prevention Measures

- 1) Put equipment in the environmental temperature 0 °C ~ 45 °C, other conditions meet the requirements of operating range.
- 2) Check that the supply voltage is within the specified range and that all connections are correct.
- 3) Check that the supply voltage is within the specified range and that all connections are correct.
- 4) Please do not switch the machine frequently (switch the machine at least every 10 seconds or more).

3.2 Common Problems

Common problems	The solution
boot failure	Check that the input voltage and connection of the power supply operating range are correct
signal failure	Check whether the signal source is normal. Check that the cables are properly connected
Program Scan failure	The program name and program number of the output signal are manually added in the TS stream setting

4. Packing list

Number	Name	Count	Comment
1	IP Multiplexer + converter	1	
2	Power line	1	
3	ASI	1	

Warranty description:

1. The product warranty period is one year, calculated from the time of shipment from the factory;
2. The warranty covers the problems that occur under normal use of the product.

The warranty does not apply to the following conditions:

- 1) Beyond the warranty period;
- 2) Damage caused by transportation, loading and unloading during return or repair;
- 3) Disassemble, modify or maintain the equipment without authorization;
- 4) Equipment failure or damage caused by accidental factors or humans (such as extrusion scratches, bump deformation, liquid intake, foreign matter falling into, network virus, incorrect insertion and removal, etc.);
- 5) Malfunctions or damages caused by equipment not being installed in the correct working conditions or environment (such as: bad working environment, high temperature, low temperature, high salt and high humidity, low voltage, high voltage or unstable power supply, not correctly grounded , abnormal physical pressure, corrosion, etc.);
- 6) Equipment failure or damage caused by not following the installation, use, maintenance, and storage requirements of the user manual.
- 7) The equipment nameplate, QR code does not match the product model, or the factory label cannot be recognized or is altered;
- 8) Failure or damage caused by the use of other products or parts other than our company;
- 9) Failure or damage caused by force majeure factors (including natural disasters such as flood, fire, lightning, earthquake, etc., and social events such as war, unrest, etc.);
- 10) If the equipment fails or is damaged due to the above reasons, we will charge the corresponding fee after repair.