

Multifunctional ASI+IP-to-IP Adapter GM-2730S User Manual



GOSPELL Digital Technology Co., Ltd

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- **!** Read this manual carefully before start operating the device.
- Removal of device cover without permission may cause harm to human body and the maintenance bond will be invalidated.
- Handle the device with care to avoid crashing and falling, or otherwise it may cause hazards to the internal hardware components.
- Keep all inflammable, metal and liquid materials from dropping into the device casing, or otherwise it may cause damages to the device.
- Avoid dusty places and places with heating resources nearby, direct projection of sunlight or instant mechanical vibrations for installation of the device.
- Connect the grounding connector on the rear panel to protect earth contact properly while in operation.
- Choose proper type of cable connectors for connecting network interfaces of the device.
- Avoid rapid and frequent power on/off, or it may cause damages to the semiconductor chipsets.
- Keep proper direction of the power cord when plug into or out from a power socket.
- U Do not touch the power socket with wet hands to avoid electric shocks.
- Take off all jewelry or ornaments, such as ring, necklaces, watches, bracelets, etc., before operating the device, or otherwise the metal contact may possibly cause short circuit and result in components damage.
- Make sure the AC power is unplugged in case of operator services within the device casing or close to power supply are needed.
- Only GOSPELL trained and approved staff is permitted to perform live line operation and maintenance within the device casing.
- Ensure good ventilation when the device is in operation, or otherwise it may cause damages to the device due to overheating.
- It is recommended to unplug the power cord from the socket if the device will not be used for a long period of time.

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§ 1 Introduction

§ 1.1 Functionality

GM-2730S is a new generation of ASI+IP-to-IP adapter for transforming MPTS to SPTS, which has eight channels of ASI inputs, IP inputs, and multiplexes. It adopts our newly developed functions such as "Module Management". The flexible customization and high expansibility can satisfy the user's current and future DTV system requirements.

The product is applied mainly to the DTV network head end room, edge of DTV backbone network, and DTV branch head end room.

§ 1.2 Key Features

This product has the following key features:

- 4 8 ASI inputs, 120 IP inputs
- 450 IP outputs
- ↓ IP output data rate range: 1~800Mbps
- ♣ Support multiplex via IP interface output
- ♣ Payload of UDP: 7 of 188-byte-length TS packets
- Support multiplex and PSI/SI process
- ♣ Support up to 512 program multiplexed
- Support SI/PSI auto-generation during multiplexing
- ♣ Support auto-generation of network information
- Support PID filtering and mapping
- Data input and output parameters can be flexibly configured and it can auto-detect the input bit stream
- ♣ Support many network protocols, such as UDP、ARP、ICMP、IGMP
- Support HD/SD program transmission
- ♣ Support Web/SNMP-based management and online remote update
- Support both Chinese and English in web page and related technical document
- Power-failure memory recovery
- Support device configuration import/export
- Powerful background configuration function and web monitor system, ensure the device's high stability

§ 1.3 Front Panel

As shown in figure 1, there are one LCD display, one 6-key keypad and three LED indicators on the front panel of GM-2730S.

The model type and logo notification information will be displayed on the LCD screen during the device initialization stage. User can check part of the working status of device, and set part of the parameters of GM-2730S by exploring a menu realized by buttons/LCD screen after system initialization, see section §3.3 for details.



- The POWER LED will be light if the device powers on successfully.
- ↓ The STATUS LED will show some working status of the device, see section §3.3 for details.
- The ALARM LED will indicate warning messages of the device, if exists, see section §3.3 for details.

GOSPELL® POWER GM-2730S STATUS Multifunction ASI+IP-to-IP Adaptor	
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Fig.1 Front Panel View of GM-2730S

§ 1.4 Rear Panel

As shown in figure 2, the rear panel of GM-2730S consists of one power supply connector, one power switch, one RJ45 connector for management, eight BNC ASI connectors for data input, one RJ45 connector for data output, and a grounding point.

- ♣ Power Input Port: To connect to 100~240V 50/60Hz AC input;
- Power Switch: To turn GM-2730S on or off;
- Management Port: RJ45 interface, to connect to management server via 100BaseT or Gigabit Ethernet;
- ↓ Data Input/Output Port: RJ45 interface, to connect to switches via Gigabit Ethernet;
- ASI Input Port: BNC-Female port, to connect to any ASI output device via ASI cable;
- 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 GM-2730S



§ 1.5 Typical Application Architecture



Fig.3 System Application Block Diagram of GM-2730S



§ 2 Before Use the Device

§ 2.1 Operation Requirements

I In order to ensure proper operation of GM-2730S, there are some requirements for other digital TV and network devices, which will connect with GM-2730S. Please see below for details:

§ 2.1.1 Requirements for Digital TV Devices

The output or input transport streams of the devices, which will provide signal source to or receive signal from GM-2730S 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.

For GM-2730S, 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.

GM-2730S may be able to receive/feed multiple transport streams from/into any devices with the TS format complies with the above-mentioned format.

§ 2.1.2 Requirements for Network Devices

The switch used for the GM-2730S data output and its destination devices' (the IPQAM modulator shown in figure 3) output port switch (the "gigabit switch" in figure 3) must be a Layer 3 gigabit switch which can be managed, indispensability to support IGMP2.0. The backboard exchange speed must be higher than 10Gbps; the maximum throughput of each port must be higher than 1Gbps.

The switch for the GM-2730S 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 with GM-2730S's output data switch, 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 GM-2730S. These additional signals may cause packet loss, network jitter worsening, and hence due to audio/video distortion at the audiences.

§ 2.2 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.



§ 3 Operating the Device

§ 3.1 Quick Start

Please follow the procedures below if it is the first time for you to use GM-2730S for constructing DTV head-end system:

- 1. Construct your hardware environment, including chassis installation, power supply system deployment, and connecting switches, GM-2730S, the preceding device(s)(e.g. IRD, encoders, etc.), the succeeding device(s), management workstation properly.
- 2. Plan for the IP addresses of management port and data port, the cable connectors (coaxial cable, Gigabit network) of each preceding/succeeding devices; as well as number of digital TV transport streams and their output channels. It is recommended to take remark of device addresses, port numbers and other configurations and keep it safely for checking purposes in future.
- Boot up each preceding devices of GM-2730S and configure the operating parameters, in order to ensure the proper signal receiving/decoding or output of encoded digital TV transport streams. Please refer to the user manuals of preceding devices provided by their suppliers for detailed configuration.
- 4、Boot up GM-2730S, If you have known the management port IP address of the GM-2730S you are currently using, and it is in the same subnet with the management workstation, you may also start configuring GM-2730S from the management workstation directly. Or otherwise you will need to configure the IP address of management port using front panel control (refer to section 错误! 未找到引用源。)
- 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 (refer to section§3.2.2)
- 6、 Configure the input and output data port(refer to section§3.2.2)
- 7、Search for input programs tree (refer to section §3.2.7.3), configure the output program settings, including: select input program for output stream(refer to section 错误! 未找到引用源。), configure the ES PID, SI/PSI version number of each program, and configure the auto-generated SI parameters or upload SI segments output program parameter (refer to section 错误! 未找到引用源。); if needed.
- 8、Configure the SNMP parameters if needed. (refer to section 错误! 未找到引用源。).
- Configure the data IP address of GM-2730S's preceding devices. The work parameter setting of GM-2730S's succeeding device refers to the user manuals provided by their suppliers.
- 10、 Make use of stream analyzer 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



§ 3.2 Web Management Operation of GM-2730S

Monitoring and control of GM-2730S can be performed through Web browser. We recommend you to use Microsoft Internet Explorer 6.0 or above and set your screen resolution to 1152 * 864.

§ 3.2.1 Web User Login

After launching the Web browser, key in the IP address of GM-2730S's management port into the Address bar of Web browser. Embedded Web server of GM-2730S will prompt with username and password for authentication, as shown in the figure below:

-		
	Remember my credentials	

Fig.4 Web Login

There is a factory default administrator user "admin" in GM-2730S with password of "000000". Please use this user and password to login to the system for the first time operation of GM-2730S. But changing password for this user is strongly recommended, and the new password should be kept safe. 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.

The default state of Web management page is in English. If you want to use Chinese, please set the language to Simple Chinese by changing the operation language in the pull-down list in the home page.

	Multifunct	ional ASI-to-	IP Adaptor	英文 English 🔽	
Information Monitor	I/O Configuration	Mux Settings	Scramble Settings	System Settings	





Fig.6 Operation language pull-down list

When you set this to Chinese, if there isn't any Chinese font library in your operation system, maybe some unreadable codes appear in your page.

After successfully logging into the system, browser will display the default page of GM-2730S, as shown in the figure below:



	Device Information			Introduction		
Device Model	GM-2730M		11		The last	
Serial Number	1C27A14FFF00000A7C		11			
Soft Version:	01.00	1	Depen	The last	A Part of the second se	
Hard Version:	01.00	\sim	5	1997 S 199		
Soft Ralease	2013-01-07		at the second			
		10	Chat.	at a seal		
FPGA Release	2012-11-08		P. An	and the second second	Carl I	
FPGA Ralease Manufacturer	2012-11-08		Price .			
FPGA Ratease Manufacturer Official	2012-11-08		1	License		
FPGA Release Manufacturer Official Website	2012-11-08	License Status		License With Mode :	3	
FPGA Release Manufacture: Official Vivosite	2012-11-08	Loense Status: Authorization Time		License Work Mode : Remaining Trail Time	(B) 575700	
FPGA Ralease Manufacturer Official Websfie	2012-11-08	License Status:		License Work Mode : Remaining Trail Time	0 (5) 575700	
FPGA Release Manufacture: Official Vivosite	2012-11-08	License Status: Authorization Time		License Vors Mode : Remaining Trait Time	0 (32 575700	
FPGA Ralesse Manufacturer Official Website	2012-11-08	License Status Authorization Time		License Work Mode : Remaining Trail Time	(3) 575700	

Fig.7 Default Page

In the default page, there is the information of device (model, serial number, etc), authorization state, and some important specifications will be refreshed in real time. You could enter into the "device monitoring", "Input & Output", "program multiplexing", "program scrambling", "device setting" page by clicking different hyperlinks in the area of main-menu across the top of this page.

Remark: Device will not autosave your parameters. If the device restarts, the parameters will change to the state which you saved last time. If you have never saved your parameters, all the parameters will change to the default state. So if you

want to save your own parameters, please click Save in lower right corner after you finish setting GM-2730S.



§ 3.2.2 User Management

We recommend you to change the user and password after login by the default user and password for the safety. You can edit your user information in the user management page.

Click "device setting" in the home page, and then you have the device setting page, as shown in the figure below:

Select Items	System Basic Settings	
⊡-ØSystem Settings	IP Settings	
	IPv4 Address: 120.120.120.210 Mask: 255.255.255.0 Gate: 120.120.120.1	Submit
User Management	MAC Settings	
	MAC Address: 00:5C:B1:00:04:A5	Submit
	NTP Settings	
	Server Address: 120.120.120.1 Auto Sync Interval (s): 28800 Enable Auto Sync: OFF 💌	Submit
	Time / Date (UTC)	
	Get Browser UTC Time	Submit
		Ketresh

Fig.8 Device setting page



Click "user management"

in the "select option" area on the left side of this page, and

then you have the user management page, as shown in the figure below:



	UserM	anagement		
Add New User	Index	User Name	Group	
User Name :] 1	admin	Administrator Mo	dify Remove
Login Password :				
Confirm Password :				
Submit				
	-1			
Modify Password				
Modify Password				
Modify Password				
Modify Password User Name :				
Modify Password User Name : New Password :				
Modify Password User Name : New Password : Confirm Password :				
Modify Password User Name : New Password : Confirm Password :				
Modify Password User Name : New Password : Confirm Password : Submit				
Modify Password User Name : New Password : Confirm Password : Submit				
Modify Password User Name : New Password : Confirm Password : Submit				
Modify Password User Name : New Password : Confirm Password : Submit				
Modify Password User Name : New Password : Confirm Password : Submit				
Modify Password User Name : New Password : Confirm Password : Submit				
Modify Password User Name : New Password : Confirm Password : Submit				
Modify Password User Name : New Password : Confirm Password : Submit				
Modify Password User Name : New Password : Confirm Password : Submit				Refresh

Fig.9 User management page

In this page, you could add new user, edit old users' information or delete a user. Remark: Only "admin" user could enter into the user management page.

§ 3.2.2.1 Add new user

In the area of "adding user", please input correctly users' user and password, and then confirm the password.

Add New	User
User Name :	gospell
Login Password :	•••••
Confirm Password :	

After finishing these steps, click "submit" to add a new user. If you add successfully a new user, there will show your user information on the right side, as shown in the figure below:

User M	anagement		
Index	User Name	Group	
1	admin	Administrator	Modify Remove
2	gospell	Operator	Modify Remove



Fig.10 new user information

Remark: All new users are normal users. They are only permitted to set different parameters, but they don't have the right to manage the other user or upgrade the system.

§ 3.2.2.2 Edit users' information

In the user information list in this page, you can edit a user by clicking the modification button in the same row.

User Ma	inagement		
Index	User Name	Group	
1	admin	Administrator	Modify Remove
2	gospell	Operator	Modify Remove

That makes you edit your password, as shown in the figure below:

Modify Pass	sword
User Name :	gospell
New Password :	
Confirm Password :	
Submi	it

Fig.11 Edit users information

In this bar, you can edit your user's password and that will be accomplished by clicking "submit". Remark: You could not delete the "admin" user, but you can change the password for this user. When you use GM-2730S for the first time, you should change admin's password at first and then save this password.

§ 3.2.2.3 Delete a user

In the user information list in this page, click the "delete" button in the same row to delete this user.

User Ma	anagement		
Index	User Name	Group	
1	admin	Administrator	Modify Remove
2	gospell	Operator	Modify Remove

Remark: GM-2730S will not permit you to delete admin user but the normal user.



§ 3.2.3 Basic parameter setting

In the system setting page, click "basic setting" in the "select option" area



To enter basic parameter setting page, as shown in the figure below:

		Syste	m Basic Set	ting		
IP Setting						
IPv4 Address: 120	0.120.120.105 Ma	sk: 255.255.255.0	Gate:	120.120.120.1		Submit
MAC Setting						
MAC Address:	00:5C:B1:00:00:64	1				Submit
NTP Setting						
Server Address:	120.120.120.1	Auto Sync Interval (s):	28800	Enable Auto Sync:	OFF -	Submit
Time / Date (UTC)	l.					
		Get Browser UTC	C Time			Submit
						Refresh

Fig.12 basic parameter setting page

In this page, you could accomplish the setting of IP address, MAC address, set the IP address of time synchronization server, open or close this service, and set the UTC time synchronization, etc.

§ 3.2.3.1 IP setting

In the page of figure 12, input a right IP address in the "IP setting" bar, then click "submit" to set GM-2730S' network parameter.



IP Settings						
IPv4 Address:	120.120.120.210	Mask:	255.255.255.0	Gate:	120.120.120.1	Submit

Remark: To ensure the working of device, you should guarantee that the management port IP address and GM-2730S' management server IP are in the same network segment

§ 3.2.3.2 MAC address setting

In the page of figure 12, input a right MAC address in the "MAC setting" bar, then click "submit" to set GM-2730S' MAC address.

MAC Settings		
MAC Address:	00:5C:B1:00:04:A5	Submit

Remark: Gospell's products have the first 3 bytes "00:5C:B1" in the MAC address, that shouldn't be modified.

§ 3.2.3.3 Parameter setting about system clock

Set time synchronization server: In the page of figure 12, you can set IP address of network clock server, auto synchronization time lag, auto synchronization switch in the "time synchronization protocol" bar.



Remark: When you set a right network clock server address, GM-2730S will update his system clock with the period which the user sets if SNTP service and network clock server are enabled.

Set system clock by manual operation: In the page of figure 12, you can set manually the system clock in the "date/time(UTC)" bar. And you can also click "get UTC time", then click "submit" button to finish setting.

Time / Date (UTC)		
2012 - 10 - 12 2 : 20 : 44	Get Browser UTC Time	Submit

Remark:

- 1. If the network clock server address has already configured and enabled, and the SNTP server works properly, the device will get the system clock from the network clock server, at this time, the manually configured clock will be invalid.
- 2. The device will keep the system clock according to its internal circuit after each manually configuration; this clock circuit can work properly over two years without the external power supply.
- Select the synchro-browser UTC clock to be the standard UTC(0 zone) clock, and this clock may be different from the clock shown on server, e.g. if the server clock is UTC+8:00, the final clock will be differ about 8 hours.



§ 3.2.4 Advanced Parameter setting

In the "system setting" page, click "Advanced setting" in the "select option" area



To enter the parameter setting page, as shown in the figure below:

	System A	Advance Setting		
Parameter Import / Export / Reset				
Browse	e Import	Export	Export XML	Reset
Parameter Backup/Restore				
Enter Descriptions:	ackup	Current Backup Descriptions	GM-2700B Paramete	Restore
Software Upgrade/Export				
Browse	Upgrade	Backup		
License				
Browse	e Import	Export		
License Application Code				
				0
Device Control				
Reboot				
22				Refresh

Fig.13 Advanced setting page

In this page, you could import/export/reset the parameters, back-up/recover the parameters, upgrade/back-up the software, import the authorization document, restart the device, etc

§ 3.2.4.1 Import/export/reset the parameters

Import the parameters: In the page of figure 14, click "browse" button in the "import/export/reset the parameters" bar to choose the parameters' document of the device.

Parameter Import / Export / Reset			
	Browse Import	Export	Reset



Fig.14 Import/export/reset the parameters page

After choosing the parameters' document, click "Open" button. Then return to last page, click "import" button, system will change the page to uploading management page, as shown in the figure below:

	Uploa	ad Management	
Upload Information			
Upload Status : 🛜	Upload Size (Bytes):	23833	
File Information			
File Validation : 🔀	File Description:	GM-2730S Parameter Mode4	

System will checkout the uploading document, if its format is right, there will appear mark in the "uploading" bar and "document checkout" bar. Click "submit" button, you'll have this dialog box:



Click "OK" button to import the parameters.

Remark:

- 1. Please do not turn off the device or pull the power off when the device is importing the parameters.
- 2. The device will restart after importing the parameters.

Export the parameters: In the page of figure 14, click "export" button, then you'll have this dialog box:





Do you	rant to open or save this file?	
	Name: GM-2730S_Parameter_78787869_2013-9-23.bi Type: bin_auto_file, 4.42KB From: 120.120.120.105 Open Save Cance	n
?	While files from the Internet can be useful, some files can poter arm your computer. If you do not trust the source, do not oper	ntially n or

Click "save" button to choose the path you want to save these parameters. 2730S **Export the XML:** In the page of figure 14, click "export XML" button, then you'll have this dialog box:

Name: Type:	GM-273 XML Do	30S_Servic ocument, 4	e_78787869_2 4.20KB	2013-9-23	3.xml
From:	120.120	0.120.105			
		Open	Save		Cancel

Click "save" button to choose the path you want to save these parameters.

Reset the parameters: In the page of figure 14, click "reset" button, then you'll have this dialog box:





§ 3.2.4.2 Back-up/recover the parameters

Back-up the parameters: In the page of figure 15, there is a "parameter back-up/restore" bar:

Parameter Backup/Restore			
Enter Descriptions:	Backup	Current Backup Descriptions:	Restore

Fig.15 "parameter back-up/restore" bar

Fill in the "input parameter description information" (just like 2012-10-26), click "back-up" button, you'll have this dialog box:



Click "OK" button, system will create a new back-up document. In the same time, "input parameter description information" will show you the new back-up document' description, as shown in the figure below:

Parameter Backup/Restore				
Enter Descriptions:	Backup	Current Backup Descriptions:	2012-10-26	Restore

Remark: System could only save a unique back-up document each time, the new back-up document will cover the last one.

Recover the parameters: When the device has a back-up document, click "recover" button, you'll have this dialog box:



Click "OK" button to import the parameters

§ 3.2.4.3 Upgrade/back-up the software

As shown in the figur16, you can choose the upgrade document in the "software upgrade/back-up" bar, then import it to upgrade the device.



Software Upgrade/Export		
	Browse Upgrade	Backup

Fig.16 Software upgrade/backup page

Click "browse" button, you'll have the file selection box:

Select the upgrade document, click "Open" button, as shown below:

Software Upgrade/Export	
C:\Users\ZhaoXin\Desktop\Parameter\(浏览 Upgrade	Backup

Click "upgrade" button, system will change the page to uploading management page, as shown below:

	Upload Management	
Upload Information		
Upload Status : 🔽	Upload Size (Bytes): 1013967	
File Information		
File Validation : <table-cell></table-cell>	File Description:	
	Submi	t Back

System will checkout the uploading document, if its format is right, there will appear mark in the "uploading" bar and "document checkout" bar. Click "submit" button, you'll have this dialog box:



Click "OK" button to upgrade the device.

After upgrading, you can check the device version information in the "device information" bar.



Device Model:	GM-2730 S
Serial No.:	TC27A31FFF00000846
Soft version :	01.00
Hard version :	01.00

Remark:

- 1. Please do not turn off the device or pull the power off when the device is importing the parameters.
- 2. The device will restart after importing the parameters authorization

§ 3.2.4.4 Device control

As shown in the figure 17, there is a "restart" option in the "device control" bar.



Fig.17 Device control page

Click "restart" button, you'll have this dialog box:



Click "OK" button, to restart the device.



§ 3.2.5 SNMP Settings

Click "SNMP Settings"



in select items of "System Settings" to enter the SNMP page:

SNMP Setting
SNMP Switch
SNMP: OFF Trap: OFF
Trap IP Setting
IPv4 Address: 120.120.120.1 Port: 6000
Trap Interval
Trap Interval (ms): 500
SNMP Agent Setting
Read Community: public Write Community: private Port: 161
Device Name And Location
Device Name: Device Location:
Submit Refresh



§ 3.2.6 Input/output setting

Click "Input/Output" hyperlink in the navigation menu of the home page to input/output setting page of GM-2730S. The number and the name of input/output channel of the device is listed in the "Select Items" in the left side of this page, as shown below



Fig.18 List of the input/output channel

§ 3.2.6.1 Enquiry of ASI interface status

Click "ASI" hyperlink as shown above, the status of ASI interface is shown in the right side of the main page, as shown below:

			Channe	el Setting	
Input Chan	inel 01	ASI			
ASI Setting	E.				
Index	TsIndex				Status
1	001				ON 💌
2	002				ON 💌
3	003				ON 🔽
4	004				ON 👻
5	005				ON 💌
6	006				ON 💌
7	007				ON 💌
8	008				ON 👻
					Submit Refresh

Remark: the number and type of interface are subject to the available products.

§ 3.2.6.2 Enquiry and settings for IP Input Interface Status

Click "Input channel 02 Ethernet" hyperlink as shown in figure below. The Ethernet interface parameters



Input Ch	annel 01		Ethernet	
TH Setting	120.12	0.120.11	255 255 255 0 120 120 120 1 00 5C B1 01 04 57	
Index	TsIndex	Protocol	Source Address	Status
1	0001	UDP 🛩	224.10.10.1 5000	OFF 💌
2	0002	UDP 💌	224.10.10.2 5001	OFF 💌
3	0003	UDP 👻	224.10.10.3 5002	OFF 💌
4	0004		224.10.10.4 5003	OFF 💌
5	0005	UDP 💌	224.10.10.5 5004	OFF 💌
6	0006	UDP 💌	224.10.10.6 5005	OFF 💌
7	0007	UDP 💌	224.10.10.7 5006	OFF 💌
8	8000	UDP 👻	224.10.10.8 5007	OFF 💌
9	0009		224.10.10.9 5008	OFF 💌
10	0010	UDP 💌	224.10.10.10 5009	OFF 💌
11	0011	UDP 💌	224 10.10.11 5010	OFF Y
12	0012	UDP 💌	224.10.10.12 5011	OFF M
13	0013	UDP 👻	224.10.10.13 5012	OFF 💌
14	0014	UDP V	224.10.10.14 5013	OFF 💌

are shown in the channels setting page, as shown below:

Ethernet parameters:

IP address, subnet mask, gateway and MAC could be configured.

Channel parameters:

In the Ethernet interface parameters setting menu, user can set such as protocol interface type, source IP address and port, input switch parameters.

Parameters setting range:

Protocol type: UDP/RTP

Source IP address: 001.000.000 \sim 126.255.255.255 and 128.000.000 \sim 239.255.255.255"

Source port: 1000 \sim 65535

Input switch: ON/OFF

After IP channel parameters are setting OK, click "Submit" button at right-bottom of the page to save the setting.

§ 3.2.6.3 Enquiry and Settings for IP Output interface status

Click "Ethernet" hyperlink under "output channel" to enter the following interface (the interface name is subject to the available products):



				Channel Setting			
Out put Cha	nnel 01		Ethernet				
ETH Setting	120.12	0.120.11	255 255 255 0	120.120.120.1	00 5C B1 01 04 57		
Index	TsIndex	Protocol	Source A	ddress		Status	
1	0001		224.10.10.1	5000		OFF 💌	^
2	0002	UDP 💌	224,10,10,2	5001		OFF 💌	
3	0003	UDP 💌	224.10.10.3	5002		OFF 💌	
4	0004	UDP 💌	224.10.10.4	5003		OFF V	
5	0005		224.10.10.5	5004		OFF 💌	
6	0006	UDP 💌	224.10.10.6	5005		OFF 💌	
7	0007	UDP 👻	224.10.10.7	5006		OFF 💌	
8	0008	UDP 🗸	224.10.10.8	5007		OFF 💌	
9	0009		224,10.10.9	5008		OFF 💌	
10	0010	UDP 💌	224.10.10.10	5009		OFF 💌	
11	0011		224.10.10.11	5010		OFF 💌	
12	0012	UDP 💌	224.10.10.12	5011		OFF M	
13	0013	UDP 💌	224.10.10.13	5012		OFF 💌	
14	0014	UDP 💌	224 10 10 14	5013		OFF V	~

Channel parameters:

In the Ethernet interface parameters setting menu, user can set such as protocol interface type, source IP address and port, input switch parameters.

Parameters setting range:

Protocol type: UDP/RTP

Source IP address: 001.000.000 \sim 126.255.255.255 and 128.000.000 \sim 239.255.255.255"

Source port: 1000~65535

Input switch: ON/OFF

After IP channel parameters are setting OK, click "Submit" button at right-bottom of the page to save the setting.



§ 3.2.7 Multiplexing setting of Programs

Click "MUX Setting" hyperlink in the navigation menu of the home page to Multiplexing setting page of GM-2730S, as shown below:

Select Items		General Settings	
General Setting	Default Input/Output Charset	Output Charset:	
Manual FIJ Map Manual PSI Inserter MIT Edit	Time Zone :		
Dutput Service	TDT TOT Settings :		
	Update Cycle (s): 5	TOT Enable : OFF 💌	
=			
		Submit Refresh	J

Fig.19 Multiplexing setting of programs

The multiplex parameter configurations are listed in the "Select Items" in the left side of this page, including the general setting, manual PID map, manual PSI inserter, NIT edit, input programs and output programs.



Fig.20 List of the multiplex parameter configurations

§ 3.2.7.1 General setting

Click "General Setting" hyperlink, the basic information of the system is displayed in the right side of the page, as shown below:



	General Settings	
Default Input/Output Charset		
Input Charset : LATIN 💌	Output Charset: LATIN	
Time Zone :		
Select Time Zone : UTC +00:00 💌		
TDT TOT Settings :		
Update Cycle (s): 5	TOT Enable : OFF -	
		Submit Refresh

Fig.21 Base setting of program multiplexing

The default of input/output character-sets, time zone and TDT/TOT can be set in this page.

§ 3.2.7.1.1 The setting of the default character-sets

The character-sets setting and transform functions built in GM-2730S to ensure the received program information over transport stream can be displayed correctly, meanwhile ensure this information can be displayed correctly in the next device.

It can be set in the column of default character-sets of input/output.

Default Input/Out	put Charset			
Input Charset :	ATIN 💌	Output Charset :	LATIN	-

There are 3 kinds of character-sets:LATIN、GB2312、UTF-8



§ 3.2.7.1.2 Setting of time zone

Setting of time zone affect TOT table, after analyze the TOT table at the receiver side, the receiver can get this time zone.

Time Zone :	
Select Time Zone :	UTC +00:00 -



§ 3.2.7.1.3 Setting of TDT、TOT

The TDT table update cycle and TOT switch can be set in the column of TDT/TOT setting.

TDT TOT Settings	:	
Update Cycle (s):	5	TOT Enable : OFF 💌

TDT update cycle(per second): update the TDT table with cyclical time. **TOT switch:** set it on, the device insert TOT table in the sent transport stream.

After the configuration, click "Submit" button at right-bottom of the page to save the setting.

§ 3.2.7.1.4 Setting of SDT Switch

SDT SI	witc	h
SDT:	ON	~

Select ON or OFF in SDT switch bar, and then click the "submit" button to complete the setting.

§ 3.2.7.2 PID mapping function

The system will discard the private PID, if it cannot be identified. The needed private PID can be mapped by the PID mapping function, and mapped private PID can be passed through and transmitted by the device.

§ 3.2.7.2.1 Add new PID mapping function

As shown in figure 21, click "Manual PID Map" hyperlink, the PID mapping setting page will display in the right side. The following figure shows the "PID mapping" page:



			Manual PID Map			
Index	Input Ts Index	Input PID	Output Ts Index	Output PID	Enable	
			Add	Remove	Submit	Refresh

Fig.22 PID mapping

Click "add" button in the bottom of this page, a new column of PID parameter setting will display, as shown bellow:

			Manual PID Map			
Index	Input Ts Index	Input PID	Output Ts Index	Output PID	Enable	
1	1	8191	1	8191	OFF -	
					OFF	

Input TS index: choose the input TS channel from 1 to 16.
Input PID: select the PID, which is needed to map.
Output TS index: choose the output channel from 1 to 8.
Output PID: set a PID number from the input PID.
Switch: switch on, the selected PID will map to selected channel.

After the configuration, click "Submit" button at right-bottom of the page to save the setting.

Remark:

- 1. When the input TS index is out of the boundary, the operation will failure.
- 2. When the output TS index is out of the boundary, the operation will failure.
- 3. The input/output PIDs are decimal number

§ 3.2.7.2.2 Delete PID mapping



	Manual PID Map										
Index	Input Ts Index	Input PID	Output Ts Index	Output PID	Enable						
1	1	1012	1	8191	ON 💌						
2	1	4000	1	8191	ON 💌						

As shown above, select the check box in any column, after that click the "Delete" button in the bottom of this page, then, click "Submit", the selected PID mapping will be deleted.

			Manual PID Map			
Index	Input Ts Index	Input PID	Output Ts Index	Output PID	Enable	
1	1	1012	1	8191	ON 💌	

As shown above, the second PID mapping has been deleted.

§ 3.2.7.3 PSI information insertion

As shown in figure 23, click "🕂" button, which at the left side of the "input program" hyperlink, the input program menu spread up, as shown below:

🖕 📇 Inpu	t Servi	ce		
😟 🧰 C	hannel	01	-	ASI

Fig.23 Input program menu

The type of the current input channel is displayed in the input program menu. As shown in figure 24, spread "channel 01" menu, the number of this type of channel can be checked.

🚊 📇 Input Service
📩 📇 Channel O1 - ASI
TS 0002
TS 0003
TS 0004
TS 0005
TS 0006
TS 0007
TS 0008

Fig.24 Input channel list

As shown in figure 24, click any hyperlink of channel (i.e.: "TS 0100"), the input TS program information can be checked at the right side of the page.



Input TS	Informations	
Input IS Settings TS 0001 TS ID - 0ON ID - 0 PAT Version - 0 CRC32 - 00000000 CAT Version - 0 Descriptor - 0 SDT Version - 0 CAS (EMM) - 0		
Analyse Timeout (ms): 1500 Default Charset: LATIN 💌 Batch Select Services Output Ts: 💌	Keep Services When Failed: OFF 💌	Service Analyse Submit Refresh

Fig.25 Input TS program information

§ 3.2.7.3.1 Program search

As shown in figure 25, click Service Analyse button at the bottom of the page, the system will search the corresponding channel automatically, and display the information, as shown below:

	PAT Version - 7 CRC32 -	68608A5A									
	CAT Version - 0 Descriptor -	0									
	SDT Version - 0										
	CAS (EMM) - 0										
• 🗀	CCTV-1	Number	-	1	0	utput TS	- OFF	-			
÷.	CCTV-2	Number	-	2	c	output TS	- OFF	-			
E	CCTV-3	Number	-	3	0	Output TS	- OFF	•			
E 🗀	CCTV-4	Number	-	4	0	output TS	- OFF	-			
÷ 🗀	CCTV-5	Number	-	5	0	output TS	- OFF	-			
Ð 🗀	CCTV-8	Number	-	6	0	output TS	- OFF	•			
÷ 🗀	CCTV-7	Number	-	7	0	utput TS	- OFF	-			
Ð- 🗀	CCTV-8	Number	-	8	0	utput TS	- OFF	-			
Ē 🗀	нво	Number	-	9	0	Output TS	- OFF	-			
÷ 🗀	SKY SPORTS	Number	-	10	0	utput TS	- OFF	-			
÷ 🗀	ESPN	Number	-	11	0	utput TS	- OFF	-			
Ē 🗀	NBC	Number	-	12	0	output TS	- OFF	•			
Ē 🗀	CNN	Number	-	13	0	output TS	- OFF	-			
÷-	BBC	Number	-	14	0	utput TS	- OFF	-			
Ē 📋	NHK	Number	-	15	0	utput TS	- OFF	-			
Ē	MNC TV	Number	-	16	0	utput TS	- OFF	+			

Fig.26 Input program information

§ 3.2.7.3.2 Program information check



The information of the TS is displayed above the program list, as shown below:



Fig.27 TS information

Click any "in" button at the right side of the program name, the details spread up below:

CCTV-1		Number -	1	Output TS -	OFF 👻
Туре –	Digi	tal Television			
PMT PID -	40 Version-	7 CRC	32 - AE70	C23F	
	60				
EIT Time Table	Tag - OFF	EIT Pre/	Post Time Tag	- 0	FF
CAS	(ECM) - 0				
PMT Descriptor	0				
	0				
🕀 💼 ES PID -	128 E	SType –	MPEG-2 Video	2	
🗄 🧰 ES PID -	144 E	SType –	13818-015		

Fig.28 Program TS information

§ 3.2.7.3.3 Single program multiplexing

When user multiplex the single program, the multiplexing output channel of this program can be chose, as shown below:



E Setting				
	в			
PAT Version - 7 CRC32 -	68608A5A			
Descriptor -	0			
SDT Version - 0				
			\cap	
E CCTV-1	Number	- 1	Output TS - OFF -	
	Number	- 2	Output TS - OFF 🔻	
🗄 🛅 ССТV-З	Number	- 3	Output TS - OFF 👻	
E CCTV-4	Number	- 4	Output TS - OFF 👻	
E-CTV-5	Number	- 5	Output TS - OFF 👻	
	Number	- 6	Output TS - OFF 👻	
E-CTV-7	Number	- 7	Output TS - OFF 🔻	
	Number	- 8	Output TS - OFF 🔻	
нво	Number	- 9	Output TS - OFF 🔻	
E C SKY SPORTS	Number	- 10	Output TS - OFF -	
ESPN	Number	- 11	Output TS - OFF 👻	
E NBC	Number	- 12	Output TS - OFF -	
	Number	- 13	Output TS - OFF -	
BBC	Number	- 14	Output TS - OFF -	
E NHK	Number	- 15	Output TS - OFF -	
	Number	- 16	Output TS - OFF -	

Fig.29 Program TS information

After the configuration, click "Submit" button at right-bottom of the page to save the setting.

§ 3.2.7.3.4 Batch program multiplexing

GM-2730S supports batch program multiplexing. It means multiplex all the programs of one channel to another selected channel. As shown below:

CAS CCTV-1 CCTV-2 CCTV-3 CCTV-4	(EMM) -	- ()
CCTV-1 CCTV-2 CCTV-3 CCTV-4			
CCTV-2 CCTV-3 CCTV-4			
CCTV-3 CCTV-4			
CCTV-4			
CCTV-5			
CCTV-8			
CCTV-7			
CCTV-8			
нво			
SKY SPORTS			
ESPN			
NBC			
CNN			
BBC			
NHK			
MNC TV			
	CCTV-8 CCTV-7 CCTV-8 HBO SKY SPORTS ESPN NBC CNN BBC NHK MNC TV	CCTV-8 CCTV-7 CCTV-8 HBO SKY SPORTS ESPN NBC CNN BBC NHK MNC TV	CCTV-8 CCTV-7 CCTV-8 HBO SKY SPORTS ESPN NBC CNN BBC NHK MNC TV



Fig.30 Program TS information

Open the drop-down list box of "the output location of the batch select program" and select the channel, click the "Submit" button, the multiplexing sets successfully as shown below:

	PAI Version - 7 URL32 -	OBODSAGA				
	CAT Version - 0 Descriptor -	U			<u>^</u>	
	SUT Version - 0					
		Number		Come TC	001	
	CCTV-1	Number -	1	Output TS -		
	CCTV-2	Number -	2	Output TS		
	CCTV-4	Number -	4	Output TS -	- 001 -	
	CCTV-5	Number -	5	Output TS	001 -	
	CCTV-8	Number -	6	Output TS	001 -	
-	CCTV-7	Number -	7	Output TS	001 -	
÷-~	CCTV-8	Number -	8	Output TS	001 -	
± 🛅	нво	Number -	9	Output TS	001 -	
÷ 👝	SKY SPORTS	Number -	10	Output TS	001 -	
÷ 🗀	ESPN	Number -	11	Output TS -	001 -	
÷ 🗀	NBC	Number -	12	Output TS -	- 001 -	
÷ 🗀	CNN	Number -	13	Output TS -	- 001 -	
÷ 🗀	BBC	Number -	14	Output TS -	- 001 -	
Ð 🗀	NHK	Number -	15	Output TS -	- 001	
÷- 🗀	MNC TV	Number -	16	Output TS -	- 101	
ect Ser	vices Output TS: 001 -				Submit	rest

Fig.31 Batch multiplexing

§ 3.2.7.3.5 Other functions

As shown in figure 25, "Keep Services When Failed", "Default Charset" and "Analyze Timeout" are also in this page:



Analyze timeout: when the search time is over the user setting, the search will stop.

Default char-set: detail in 3.2.6.1.1

Keep services when failed: when the search failure, switch on will delete all the information of current page.

§ 3.2.7.4 Output service

As shown in figure 32, unfold "Output Service" to open the output program channel menu, shown as below:



Fig.32 Output Channel Menu

Output program channel will list the type of output channel. As shown in figure 32, unfold "channel 01"



menu to check the number of channels, shown as below:

-	-0u	tput	Serv	ice		
	06	Cha	nnel	01	-	Ethernet
	-		TS	001		
			TS	002		
			TS	003		
			TS	004		
			TS	005		
			TS	006		
			TS	007		
	-		TS	800		
	-	0	TS	009		
			TS	010		
		-	TS	011		
	-		TS	012		
	-	-	TS	013		
			TS	014		
	-		TS	015		
			TS	016		



Shown as figure 33, click a channel link, for example "TS001", to enter the output TS program information page, shown as below:

Output IS Settings TS 0001 - Routed From Input Tx - 0001 TS ID - 1 08 ID - 0 PAT Version - 0 Interval (ns) - CAT Version - 0 Interval (ns) - SUT Version - 0 Netterval (ns) - Reflex CAS (DBM) - 4 Reflex CAS (DBM) - 0 SUT VSPORTS Netterval	- OFF - C	2N v 2N v Remove Mark -	Pefine⊕escrip	pter - Edit		
B CCTV-1 Number B CCTV-6 Number B SKY SPORTS Number	- <u>1</u> - 6	Remove Mark -	83			
B CTV-6 Number B CTV-5 Number	- 6	Remove Mark -				
🖲 🛄 SKY SPORTS Number			23			
	- 10	Remove Mark	23			
🕀 🛄 BBC Number	- 14	Remove Mark	2			
🗄 🛄 NHK Number	- 15	Remove Mark	23			
ServiceRemove MarkSelect All:				(Submit	Refresh
Index Descripto	r Data (HEX	0		En	able	£3



Fig.34 Output TS information page

§ 3.2.7.4.1 Output TS Information Monitoring and Configuration

Shown as figure 34, the output TS information page will display the TS related information, such as TS ID, PAT version, PMT version, output programs, etc.

PSI/SI Information: users can manually configure the PSI/SI information of the output TS. Remark: firstly, turn on the SDT switch to configure the SDT related settings. Configurable parameters includes:

• TS ID
TS ID - 1 ON ID - 0
 PAT version, PAT sending interval
] PAT Version - 0 Interval (ms) - 100 - ON 💌
 SDT version, SDT sending interval
SDT Version - 0 Interval (ms) - 500 - ON 💌
TDT/TOT sending interval
TDTTOT Interval (ms) - 5000 - ON 💌
Remark] range of PAT version0 – 31.

§ 3.2.7.4.2 Program Information Edit

GM-2730S allows users to edit each individual program information. Click is button at the front of the program name to open the program information. As shown following:

		Number -	1	Output TS - OFF -
Туре –	Digi	tal Television		
PMT PID -	40 Version-	7 CR0	32 - AE7C	C23F
PCR PID -	160			
EIT Time Table	e Tag - OFF	EIT Pre	/Post Time Tag	- OFF
CAS	(ECM) - 0			
PMT Descriptor	0			
SDT Descriptor	0			
🕀 🧰 ES PID -	128 E	SType –	MPEG-2 Video	
🗄 🔂 ES PID -	144 E	SType –	13818-015	

Fig.35 Program TS information

Editable information include program name, program number, PMT information, PCR PID, EIT information, CA related information, ES information, etc.

TS information

Users can type the program name, program number, and provider in the corresponding boxes, and click "Submit" button to validate the setting.

PMT information

Users can type the value of PMT PID, PMT version, sending interval in the corresponding boxes, and



click "Submit" button to validate the setting.

PCR PID

Users can type the value of PCR PID in the corresponding box, and click "Submit" button to validate the setting.

• EIT information

- EIT Time Table Tag - OFF -- EIT Pre/Post Time Tag - OFF

Users can turn ON/OFF the EIT time table tag, EIT previous/succeeding information tag, and click "Submit" button to validate the setting.

CA information

÷-	SCS CI	IS Q	- (100	4	
-0	Rellux	CAS	(EMM) -	0	

Click button in front of SCS CAS to open the CA information list.

Users can type the value of CA PID in the corresponding box and turn ON/OFF the CA channel, then click "Submit" button to validate the setting.

• PMT descriptor

PMT Descriptor 0

To edit the PMT descriptors, click the "Edit", then the "Descriptor Type" box at the bottom of the page will display Service PMT Descriptors, shown as below:

Descriptor Type: Service PM	Descriptors		
Index	Descriptor Data (HEX)	Ena	ible 📃
		Add Remove	Submit Refresh

The way to edit PMT descriptor is the same as the way to edit NIT descriptor, see section 3.2.6.4.1.

• SDT descriptor

SDT Descriptor 0

To edit the SDT descriptors, click the "Edit", then the "Descriptor Type" box at the bottom of the page will display Service SDT Descriptors, shown as below:

Index	Descriptor Data (HE	X)	E	nable	
		Add	Remove	Submit	Refresh

The way to edit SDT descriptor is the same as the way to edit NIT descriptor, see section 3.2.6.4.1.

ES information



Click button in front of the TS to open the TS information list.

Users can type the value of ES PID in the corresponding box and turn ON/OFF the sending switch. To



edit ES descriptor, click "Edit" button, then the "Descriptor Type" box at the bottom of the page will display Service ES Descriptors, shown as below:

Descriptor Type:	ES PMT Descriptors			
Index	Descriptor Data (HEX)		Enable	
		Add	Remove Submi	Refresh

Remark:

- 1. PMT, SDT descriptors uses hexadecimal format.
- 2. Please strictly comply with the DVB SI standard to edit the descriptors.

§ 3.2.7.4.3 Remove Service

To delete a service, check its corresponding service remove box, shown as below:

÷	CCTV-1	 Number	- [1]	Remove Mark -	
÷	CCTV-5	 Number	- [5]	Remove Mark -	
÷	SKY SPORTS	 Number	- [10]	Remove Mark -	
÷	BBC	 Number	- [14]	Remove Mark -	1
÷	NHK	 Number	- [15]	Remove Mark -	

Fig.36 Delete Single Program

Click "Submit" button to delete the program. To delete all programs, check the "Service Remove Mark Select All" box at the lower left corner, shown as below:

+	CCTV-5	 Number	-	5		Remove Mark
÷.	SKY SPORTS	 Number	- [10		Remove Mark -
÷	BBC	 Number	- [14]	Remove Mark
÷	NHK	 Number	- [15]	Remove Mark

Fig.37 Remove All services

All service remove mark will be automatically checked, then click "Submit" button to delete all programs.

§ 3.2.7.5 Batch output services settings

Click the "batch output services setting" link to display the batch setting page, as shown below:



			Program Output Settin	Ig			
Index	Output TS Index	Program name	Program Number	Input TS Index	Program name	Program number	
1	1	1	14	1	1	1	^
2	2	2	2	1	2	2	
3	3	3	3	1	3	3	
4	4	4	4	1	4	4	
5	5	1	5	1	1	5	
6	6	2	6	1	2	6	
7	7	3	7	1	3	7	
8	8	4	8	1	4	8	
9	9	1	9	1	1	9	
10	10	2	10	1	2	10	
11	11	3	11	1	3	11	
12	12	4	12	1	4	12	
13	13	1	13	1	1	13	
14	14	1	1	2	1	1	~

The output service name and number could be modified by clicking of "submit". Remark: repetitive inspection to service No, are not allowed,



§ 3.2.8 Monitoring

Click "Monitor" button in the navigation bar to enter the monitoring page, shown as below:

Defect frem	A	larm in	formation			
B-@ Monitor Item		Index	Description	Status	Counter	Reset
Display		1	Data process fail		0	Reset
Set		2	Data input error		0	Reset
a Bitrate monitor		3	Data output error		0	Reset
in Channel 01 - ASI		4	NTP service timeout		0	Reset
Grannel 01 - Ethernet		5	EMM error		0	Reset
		6	ECM error		0	Reset

Fig.38 Monitoring Page

§ 3.2.8.1 Alarms

Unfold "Alarms" menu to open the alarming information page, shown as below:

ė. 🔁 Al	arms
-0	Display
	Setting

Fig.39 Alarms Menu

§ 3.2.8.1.1 Alarms Display

Click "Display" button, the alarm display page will be shown as below:



IndexDescriptionStatusCounterReset1Data process failImage: Counter of the constraint o		Alar	m 1n	formation				0
1 Data process fail 0 Reset 2 Data input error 0 Reset 3 Data output error 0 Reset 4 NTP service timeout 0 Reset 5 EMM error 0 Reset 6 ECM error 0 Reset		1	Index	Description	Status	Counter	Reset	
2 Data input error 0 Reset 3 Data output error 0 Reset 4 NTP service timeout 0 Reset 5 EMM error 0 Reset 6 ECM error 0 Reset			1	Data process fail		0	Reset	
3 Data output error 0 Reset 4 NTP service timeout 0 Reset 5 EMM error 0 Reset 6 ECM error 0 Reset			2	Data input error		0	Reset	
4 NTP service timeout 0 Reset 5 EXM error 0 Reset 6 ECM error 0 Reset			3	Data output error		0	Reset	
5 EMM error O Reset 6 ECM error O Reset			4	NTP service timeout		0	Reset	
6 ECM error 🥥 0 Reset			5	EMM error		0	Reset	
			6	ECM error		0	Reset	
	- 1	1						
				Undate Data	Re	set All Cour	ter) Refea	sh

Fig.40 Alarm Information

Shown as figure 40, right column displays multiple alarm information. When there is no alarm, the status

light will be ; when there is an alarm, the status light will turn to , and the counter will start to count

the number of errors occurred.

The counter will not automatically restore to zero even the error is cleared. Users need to click the "Reset" button to reset the counter to zero.

[Remark] the status light will stay red as long as the counter is not zero (though there may not be any real-time errors).

§ 3.2.8.1.2 Alarm Setting

Click the "Setting" link to enter the alarm setting page, shown as below:



		Ala	rm setting			
General switch	ON 👻	Index	Description	Trap	Panel	Log level
I		1 [Data process fail	~	V	Err 🗸
		2	Data input error	✓		Err 💌
		3	Data output error	~	~	Err 💌
		4	NTP service timeout	✓	~	Err 💌
		5 [EMM error	✓		Err 💌
		6	ECM error	V	V	Err 🗸
						Submit Refresh

Fig.41 Alarm Setting page

As shown in figure 41, the left column is for the temperature alarm setting and the right column is for other alarm information settings.

General Switch: choose between ON/OFF to enable/disenable the temperature alarms. Click "Submit" to validate the setting.

Trap: when it is ON, GM-2730S will send the trap information to server through SNMP.

Panel: when it is ON, the alarm light on the front panel of GM-2730S will display the alarm.

Log Level: set level of severity for the alarm, from lowest to highest level: disable, info, warning, critical. SNMP will judge the severity of the alarm depending its log level.

When finish the settings, click "Submit" button to validate them.

[Remark] The realization of Trap and log level is relate to the SNMP, for specific instructions, see the SNMP user manual.

§ 3.2.8.2 Bitrate Monitor

Shown as figure 56, Unfold the "Bitrate Monitor" menu to select to monitor the input/output bit rate, shown as below:







Fig.42 Bitrate Monitor Menu

§ 3.2.8.2.1 Input Channel Bit Rate

Shown as figure 42, Unfold the "Input Channel" menu, shown as following:



Fig.43 Input channel sub-menu

1、ASI input alarm

Click "channel 01 - ASI" link to enter the input channel bit rate monitoring page and set alarm information, shown as below:

			Bitrate Monitor / Bitrate Al	larm Setti	ing				08
Index	Sub Index	TsIndex	Bitrate (Mbps)	Index	Sub Index	Low (Mbps)	High (Mbps)	Enable	
1	01		95.268	1	01	0.000	0.000	OFF -	
2	02		95.268	2	02	0.000	0.000	OFF -	
3	03		95.268	3	03	0.000	0.000	OFF -	
4	04		95.268	4	04	0.000	0.000	OFF -	
5	05		95.268	5	05	0.000	0.000	OFF -	
6	06		95.268	6	06	0.000	0.000	OFF -	
7	07		95.268	7	07	0.000	0.000	OFF -	
8	08		0.000	8	08	0.000	0.000	OFF -	
			Update Data				Submit	Refres	sh

Fig.44 Input Channel Bit Rate Monitoring

Shown as figure 44, the left column displays the real-time bit rate of each channel; the right column enable users to set the bit rate alarm setting, including lower limit, upper limit, and the enable switch.

Lower Limit: when the real-time bit rate is lower than this lower limit value, it will trigger an alarm. **Upper Limit:** when the real-time bit rate is higher than this upper limit value, it will trigger an alarm.

Enable Switch: turn ON/OFF the alarm.

When finish the settings, click "Submit" button to validate them.

Shown as figure 43, unfold "channel 01 - ASI" menu, shown as below:



😑 😋 Bitrate Monitor	
🖨 😋 Input Channel	
🗀 🔂 Channel 01 -	ASI
Sub-channel	01
Sub-channel	02
Sub-channel	03
	04
Sub-channel	05
Sub-channel	06
Sub-channel	07
Sub-channel	08



Click "sub-channel 01" to enter the sub-channel Pid and bitrate information page, shown as following:

	DIS				Ditrate mo	onitor		(111)		03 /111
Index	PID	PID	Min bitrate	(Mbps)	Max bitrate	(Mbps)	Avg bitrate	e (Mbps)	Current bitrate	CMbps
1	0	0x0000							0.015	
2	1	0x0001							0.015	
3	17	0x0011]						0.000	
4	193	0x00C1]						0.009	
5	257	0x0101]						0.015	
6	258	0x0102]						0.015	
7	512	0x0200]						17.889	
8	513	0x0201]						17.886	
9	650	0x028A]						0.457	
10	660	0x0294]						0.460	
11	1521	0x05F1]						0.012	
12	1641	0x0669]						0.012	
13	8191	0x1FFF]						4.434	
14	Total br]						41.228	

Fig.46 Channel sub-menu

2、IP input alarm

Click "channel 012- Ethernet" link to enter the input channel bit rate monitoring page and set alarm information, shown as below:



Index	PID	PID	Min bitrate	(Mbps)	Max b	itrate	(Mbps)	Avg	bitrate	(Mbps)	Curre	nt bitrat	e (Mbps
1	0	0x0000]									0.015	
2	1	0x0001]									0.015	
3	17	0x0011]									0.000	
4	193	0x00C1]									0.009	
5	257	0x0101]									0.015	
6	258	0x0102]									0.015	
7	512	0x0200]									17.889	
8	513	0x0201]									17.886	
9	650	0x028A]									0.457	
10	660	0x0294]									0.460	
11	1521	0x05F1]									0.012	
12	1641	0x0669]									0.012	
13	8191	0x1FFF]									4.434	
14	Total br]									41.228	

§ 3.2.8.2.2 Output Channel Bit Rate

Shown as figure 47, Unfold the "Output Channel" menu, shown as following:



Fig.47 Output channel sub-menu

Click "channel 01 - Ethernet" to enter the output channel bit rate monitoring page, and set alarm information, shown as below:



index	Sub Index	TsIndex	Bitrate (Mbps)		Index	Sub Index	Low (Mbps)	High (Mbp:	s) Enable	
1	01		0.463	-	1	01	0.000	0.000	OFF 👻	-
2	02		0.000		2	02	0.000	0.000	OFF 👻	
3	03		0.000		3	03	0.000	0.000	OFF 💌	
4	04		0.000		4	04	0.000	0.000	OFF 💌	
5	05		0.000		5	05	0.000	0.000	OFF 💌	
6	06		0.000		6	06	0.000	0.000	OFF 💌	
7	07		0.000		7	07	0.000	0.000	OFF 👻	
8	08		0.000	=	8	08	0.000	0.000	OFF 💌	E
9	09		0.021		9	09	0.000	0.000	OFF 💌	
10	10		0.021		10	10	0.000	0.000	OFF 💌	
11	11		0.021		11	11	0.000	0.000	OFF 💌	
12	12		0.021		12	12	0.000	0.000	OFF 💌	
13	13		0.021		13	13	0.000	0.000	OFF 💌	
14	14		0.021		14	14	0.000	0.000	OFF 💌	
15	15		0.021		15	15	0.000	0.000	OFF 💌	
16	16		0.021	-	16	16	0.000	0.000	OFF 💌	Ŧ

Fig.48 Output Channel Bit Rate Monitoring

Shown as figure 48, the left column displays the real-time bit rate of each channel; the right column enable users to set the bit rate alarm setting, including lower limit, upper limit, and the enable switch

Lower Limit: when the real-time bit rate is lower than this lower limit value, it will trigger an alarm. **Upper Limit:** when the real-time bit rate is higher than this upper limit value, it will trigger an alarm. **Enable Switch:** turn ON/OFF the alarm.

When finish the settings, click "Submit" button to validate them.

Click "sub-channel 01" to enter the sub-channel Pid and bitrate information page, shown as following:





			PID bitrate monitor	03
Index	PID	PID	Min bitrate (Mbps) Max bitrate (Mbps) Avg bitrate (Mbps)	Current bitrate (Mbps)
1	0	0x0000]	0.015
2	1	0x0001		0.015
3	17	0x0011]	0.000
4	193	0x00C1]	0.009
5	257	0x0101]	0.015
6	258	0x0102]	0.015
7	512	0x0200]	17.889
8	513	0x0201]	17.886
9	650	0x028A]	0.457
10	660	0x0294]	0.460
11	1521	0x05F1]	0.012
12	1641	0x0669]	0.012
13	8191	0x1FFF]	4.434
14	Total br			41.228

Fig.49 Output sub-channel Pid and bitrate monitor page

§ 3.2.8.2.3 System Bit Rate

Shown as figure 50, the lower right corner displays the system input, output, and insert bit rate, shown as below:

INPUT :	666.883 Mbps
OUTPUT :	16.727 Mbps
INSERTER :	0.001 Mbps

Fig.50 System Bit Rate Monitoring



§ 3.3 Front Panel Operation of GM-2730S

Front panel LCD display of GM-2730S will show some initializing messages of the device at boot up stage, such as but not limited to company logo, model number, etc. If there is an error during boot up, then it will display the error message.

The front panel display will be locked if there is no key pressed within 60 seconds after device booting. System configuration and menu browsing cannot be performed through the front panel keypad while it is in LOCK status, and the LCD display will show current working status and alert messages (if available) alternately.

User may unlock the LCD display by pressing "UP" and "DOWN" key continuously while it is locked, in order to activate the front panel menu. After activating the menu, the LCD display will show the first sub-menu of the main menu (VIEW ALARMS), as shown in the figure below:



Fig.51 Front Panel Menu

When entering operating menu, user may switch between different sub-menus by pressing "LEFT" and "RIGHT" keys.

The front panel sub-menu items of GM-2730S are shown in the below table:

Menu ID	Function	Operating Description	Remarks
1.0	Alarms	 Display the system alarm information if available. Use "↑" and "↓" keys to switch between alarms if there are more than one alarms. 	
2.0	Serial No.	Display serial number of the device	
2.1	Software Version	Display software version information.	Read-only
2.2	Hardware Version	Display hardware Version information.	
2.3	Software Release Date	Display software release date.	
2.4	FPGA Release Date	Display FPGA version information.	
		Set the management port IP address of	The IP address should
3.0	Local IP	GM-2730S.	be within the same
		Press "ENTER" key to remove cursor.	subnet with the



		Use " \leftarrow " and " \rightarrow " keys to switching	management
		between different digits of the IP address.	workstation.
		Press "ENTER" key to apply changes.	
3.1	Subnet Mask	Set the management port subnet mask of GM-2730S. Press "ENTER" key to remove cursor. Use "←" and "→" keys to switching between different digits of the subnet mask. Press "ENTER" key to apply changes.	Default is 255.255.255.0
3.2	Default Gateway	Set the management port gateway of GM-2730S. Press "ENTER" key to remove cursor. Use "←" and "→" keys to switching between different digits of the default gateway. Press "ENTER" key to apply changes.	
3.3	MAC Address	Display the MAC address.	Read-only
4.0	Factory reset	Execute a factory reset. Press "ENTER" key to enter the selection mode. Use "←" and "→" keys to select.	Select "OK" to reboot the device.
4.1	Factory Defaults	Restore to factory defaults. Press "ENTER" key to enter the selection mode. Use "←" and "→" keys to select. Press "ENTER" key to apply changes.	Select "OK" to reboot the device.
5.0	Language	Set the menu language on front panel. Press "ENTER" key to enter the selection mode. Use "←" and "→" keys to select. Press "ENTER" key to apply changes.	Support Chinese/English menu.

After complete menu operation, user may lock the front panel LCD display and keypad by Pressing "MENU" and "ENTER" key continuously.



Annex A: Technical Specifications

A.1 Common Technical Specifications

Characteristic	4 Properties	Specifications
	AC Input Voltage	100~240VAC
Power Supply &	AC Input Frequency	50~60Hz
Consumption	Power Consumption	35W
	No. of Power Supply Modules	1
	Operating Temperature	5°C ~40°C (41°F ~104°F)
Operating/Storage	Storage Temperature	-25°C ~70°C (-13°F~158°F)
Environment	Air Pressure	86~106KPa
	Humidity	10%~90%

A.2 Interfaces

Characteristic	+ Properties	4 Specification
Dete lanut	BNC-FEMALE	RJ45
	Quantity	8
IIILEITACE	Impedance	75Ω
	MAC	IEEE 802.3 1000BASET self-adaptive
Managament	Connector	RJ45
Nanagement	Physical bandwidth	100Mbps
FUIL	Maximum transmission distance	100M
	Cable requirement	Cat5e or Cat 6
	MAC	IEEE 802.3 1000BASET self-adaptive
	Connector	RJ45
Data	Quantity	1
input/outputs	Physical bandwidth	1250Mbps
	Maximum transmission distance	100M
1	Cable requirement	Cat5e or Cat 6

A.3 Multiplexing Specifications

Characteristic	4 Properties	Specification
	Input TS number	0~128
TS input	Total services number(total)	0~512
	Service number per input TS	0~64
TS output	Output TS number	0~450
	Total services number(total)	0~512



	Service number per output TS	0~64
PSI for output TS	Standard(syntax and send period)	ISO/IEC 13818-1
		DVB SI(ESI EN300468)
	Table type	PAT/PMT: Generated automatically
		TDT/TOT: Optional

A.4 Input / Output Performance

Characteristic	4 Properties	Specification
ASI Input	Quantity	0~8
ASI Input	Maximum bit rate per channel	≤100Mbps
IP Input	Quantity	0`~120
	Total bit rate	≪800Mbps
IP Output	Quantity	0`~450
	Total bit rate	≤800Mbps





Annex B: Frequently Asked Questions

🖶 Symptoms	🖶 Possible Causes	Recommended Resolution	
No display at boot up	The power supply cable is not plugged in	Plug in the power supply cable	
The error message " cannot find	Network connect error	Check if the manage computer and the manage port of GM-2730S has been connected to a same network	
when access equipment by a	IP address mismatch	Input correct IP address in URL bar	
web browser	Subnet mismatch, i.e., manage port of GM-2730S and computer locate in different subnet	Modify the manage port IP of GM-2730S by front panel operations.	
Fail to scan any input programs	Improper connection of BNC cable at data input.	Check if the cable is properly connected.	
Fail to scan programs in specific input	Source device is not working properly	Check malfunction in the source device	
Succeeding device fails to	Improper connection of output cable	Connect the output cable properly.	
receive any program	Error IP address of succeeding device	Check the IP address of succeeding device	
Succeeding device fails to	The succeeding device is not	Check malfunction in the succeeding	
receive data in specific output.	working properly.	device (e.g. DVB-C receiver)	
Serious mis-decoding occurs in all programs.	Program data overflow.	Reduce number of programs or streams in order to maintain the total output bit rate under the total modulated output bit rate.	
Serious mis-decoding occurs in specific program.	Preceding device of this program is not working properly.	Check the configuration errors and malfunction in the preceding device.	

Postscript

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GOSPELL Digital Technology Co., Ltd Address: F10-F12 Idea Land, F518 Baoyuan Road, Baoan Central Distinct, Shenzhen, China Technical Support Tel: +86-755-26715680 Fax: +86-755-26716142 Technical Support Email: <u>service@gospell-dtv.com</u> Website: <u>www.gospell.com</u>