SUMAVISION

Operating Instructions

IPQAM modulator



SUMAVISION TECHNOLOGIES CO., LTD.

Introduction

Version Description

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Without paper permission of Sumavision Technologies Co., Ltd, any company or individuals are not allowed to extract, copy part or all of this book, and spread in any form. The product in this manual is:

SUMAVISION IPQAM 10K511 modulator

The version of this manual is V3.1.

This manual provides complete configuration introductions of IPOAM modulator serie

User can choose to read relevant parts of this manual according to the equipment purchased.

Any change or version upgrade of this manual will not notice again

The Agreements of the Instructions

Before reading the Instructions, please read the following agreements carefully:

- 1. Font and format
- ✓ The texts in the Instructions are prepared by using V Arial typeface;
- ✓ The first-level titles in the Instructions are prepared in bold using II Arial typeface, the second-level titles are prepared in bold using III Arial typeface, and the third-level titles are prepared in bold using IV Arial typeface;
- ✓ All the notes of the Instructions are prepared by using regular Arial, and are separated before and after the texts by using "======";

2. Keyboard operation

✓ The Arial characters in "<>" refer to the key name or button name, for instance
 <Enter>, <Tab>, <Back Space> are refer to Return, Tab, Backspace respectively.

<Key 1 + Key 2> refers to pressing the key 1 and key 2 on the keyboard at the same time, for instance <Ctrl+Alt+A> refers to pressing "Ctrl", "Alt" and "A" three keys at the same time.

< Key 1, Key 2> refers to pressing Key 1 first on the keyboard, releasing, and then pressing Key 2, for instance <Alt, D> refers to pressing <Alt> key, after releasing the key and then pressing <D> key.

- 3. Mouse operation
- ✓ Click: Quickly press and release a mouse button.
- ✓ Double-click: Press twice quickly and release a mouse button.
- \checkmark Drag: Hold down a mouse button, and move the mouse.

4. Signs

- ✓ ▲Note, carefulness, warning and danger: to remind users the matters should be paid attention to in the day-to-day maintenance and operation.
- Description, prompts and tips: to necessarily add and describe the descriptions of the operation contents.
- If Help: to describe in detail the parts of the operation contents that it is not easy for users to understand.

Target Readers

This manual introduces the functions and methods of using and maintaining the IPQAM modulator, and is applicable to the following readers:

- Digital video/audio engineering technicians
- Digital video/audio system administrators
- ✓ Digital video/audio system engineers

Contact Us

Sumavision Technologies Co., Ltd. is committed to providing a full range of technical support. When users are not familiar with the device or any fault of the device occurs, it is recommended not to disassemble the device, but to contact Sumavision Office or the After-sales Technical Support Department of the Company.

You can contact us by the following addresses:

Address: Building 1, No.15 Kaituo Road, Shangdi Information and Industry Base, Haidian District, Beijing ,CHINA, 100085

After-sales Technical Support Notline: 8008103018

24-hour hotline:

Website: www.sumavision.com



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IPQAM

Video Serve

Chapter 1 Overview

1.1 Instruction to product use

SUMAVISION IPQAM 10K511 modulator is a self-developed product of Beijing Sumavision Technologies Co., Ltd. for all-IP networking transmission and VOD (Video-On-Demand) system. It can be placed directly on the head end of the system, sub-head end, and any HUB node of an optical fiber trunk network in a residential quarter for achieving the reception, routing, multiplexing, scrambling, modulation and up-conversion to a **RF cable** television band of GbE (Gigabit Ethernet) data of MPEG over IP. The typical network diagram of the IPQAM modulator is as shown in FIG. 1-1.



Fig. 1-1 IPQAM modulator Networking Diagram

In FIG. 1-1, the IPQAM receives TS stream data, comprising the following steps of: firstly, finishing the decapsulation, filtering and emptying of UDP (User Datagram Protocol) packet, mapping programs to corresponding QAM (Quadrature Amplitude Modulation) channel according to the preset UDP port number; and then analyzing PID values of Video TS packet and Audio TS packet in various TS streams to finish PID mapping; and multiplexing various SPTS streams mapped in the same output channel as MPTS multi-program code streams, and outputting a RF (Radio Frequency) signal through QAM modulation.

The IPQAM modulator used in the network diagram is SUMAVISION 10K511.

1.2 Product Identification

There are product name, model and manufacturer, etc. on the front panel of IPQAM modulator, as shown in Fig. 1-2 IPQAM modulator Front Panel.



Fig. 1-2 IPQAM modulator Front Panel

Product name: IPQAM modulator

Model: SUMAVISION IPQAM 10K511 modulator

Manufacturer: Sumavision Technologies Co., Ltd., as shown in Fig. 1-2 IPQAM modulator

Front Panel

Identification description: there's the ex-factory identification on the rear panel of the device, as shown in Fig. 1-3 Ex-factory Identification.

S/N: 1209IPQAM30010

Fig. 1-3 Ex-factory Identification Where, "S/N" refers to the ex-factory serial number,"IPQAM" stands for the device model and "30010" is the production code.

1.3 Environmental Requirements

1.3.1 Requirements on Transportation Environment

The device must be handled prudently and carefully to avoid damages to the device. Ensure that people who transport, maintain or operate the device have professional skills and are familiar with the operation of device. If there's any question during the transport, maintenance and operation of the device, please contact the Aftersales Technical Support Department of Sumavision, with the way to contact refering to the foregoing contents. The device is high-grade electronic product, and should be handled gently and kept away from falling or collision. And additionally, attention should be paid to the following:

 \checkmark Please do not place this device on unstable trolleys, shelves, brackets or tables, otherwise, the device may fall and cause serious damages, which can lead to abnormal operation.

When user has arrived at the designated location or have to stop on the way, ensure whether the trolley is reliable first, and then stop moving to aviod the falling of device, causing malfunction.

 \checkmark Please arrange special person to transport or install this device, and avoid many persons participating in the transportation.

1.3.2 Site room environmental requirements

✓ Site room area:

The front door and back door of the cabinet should leave at least 1.2m to 1.5m for opening the door or routine maintenance. The cabinet can not be installed against the wall, and the distance between the cabinet side and the wall should be not less than 0.8m.

✓ Site room floor:

Site room floor should be non-conductive, dust-proof, and its surface smoothness error should be less than 2mm per square meter. The volume resistivity of anti-static material should range from $1 \times 10^7 \Omega$ to $1 \times 10^{20} \Omega$, and the ground current-limiting resistor is $1M\Omega$. Floor load-bearing should be larger than 450kg/m^2 .

✓ Environment temperature:

The device can operate normally in the environment whose temperature ranges from 10 $^{\circ}$ C to 40 $^{\circ}$ C, and the places where conditions permit can install air-conditioning system for cooling.

✓ Relative humidity:

Normal working humidity: ≤90% (20 °C);

Allowed working humidity: ≤95% (without condensation).

✓ Environmental pressure:

86-105kpa.

Site room doors and windows;

Doors and windows of the site room should be sealed with dust-proof rubber strips, and windows should be double-glazed and strictly sealed.

✓ Site room wall suface:

The wall suface of site room can use wallpapers or be printed with lusterless paint, however, powder coating is not suitable.

✓ Air cleanliness:

The requirements are shown as Table 1-1 Site room dust indicators and Table 1-2 Site room harmful gas indicators.

Maximum diameter (µm)	0.05	1.00	3.00	5.00
Maximum concentration (particles per cubic meter)	14×10 ⁵	7×10⁵	24×10 ⁴	13×10 ⁴

Gas	Average (mg/m ³)	Max. (mg/m ³)	
Sulfur dioxide SO ₂	0.20	1.50	
Hydrogen sulfide, H ₂ S	0.01	0.30	
Nitrogen dioxide, NO2	0.04	0.15	
Ammonia, NH₃	0.05	0.15	
Chlorine, Cl ₂	0.01	0.30	

Table 1-2 Site room harmful gas indicators

✓ Fire-fighting requirements:

Site room should be equipped with automatic fire alarm system, hand-held extinguishing system or fixed extinguishing system.

✓ Power supply requirements:

The devices, air-conditioning system and lighting system should have their own power system respectively.

1.3.3 Power supply requirement

Parameters for normal operation of EMR are shown as follows:

✓ Power supply:

Voltage: 100V-240V AC;

Power frequency: 50Hz-60Hz

.8A

- ✓ Power consumption: < 350W</p>
- ✓ Nominal fuse:

✓ Grounding: the device should be well grounded through the ground terminal.

Chapter 2 Product Descriptions

2.1 Appearance

IPQAM modulator appearance is shown as Fig. 2-1 IPQAM modulator Appearance.



2.1.2 Instructions to optional configuration

IPQAM 10K51 modulator is flexible in configuration, and various modulation cards may be selected based on user demands. The modulation cards QT242, QT241 and QT083 are provided for option at present. The optional board card supports the use of mixed insertion. The functional characteristics of three kinds of modulation cards are described as follows.

QT242 modulation card:

QT242 modulation card is provided with four SFP module interfaces and two RF output interfaces. Each RF output interface supports 24 non-adjacent frequency output. Each card supports 48 non-adjacent frequency output.

QT241 modulation card:

QT241 modulation card is provided with four SFP module interfaces and a RF output interfaces. RF output interface supports 24 non-adjacent frequency output. Each card supports 24 non-adjacent frequency output.

QT083 modulation card:

QT083 modulation card is provided with two SFP module interfaces and three RF output interfaces. Each RF output interface supports 8 non-adjacent frequency output. Each card supports 24 non-adjacent frequency output.

2.1.3 CA scrambling interface (CA)

The module provides two Ethernet interfaces for the user on the front panel for CA scrambling. The interface type is RJ45 and its various parameters are as shown in Table 2-1 Ethernet interface connector parameters.

Electrical	Maximum current	2 amps	-
characteristics	Insulation resistance	5000 megohms	Its appearances
	Signal pin DC resistance	30 milli-ohms @100 mA	the figure below:
	Metal shell shielding	Min. 20dB (20-200MHz)	
	force		
	Applicable ambient	<mark>-50</mark> ∼+105 °C	
	temperature		1
Material	Signal pin contact	Metal shell, tin-plated	
characteristics	surface plating		
	Filler	UL90V-0 retardant	
		thermoplastic	
Mechanical	Durability	750 times	
characteristics	Insertion/pullout	Max. 5 lbs	
	force		

Table 2-1 Ethernet interface connector parameters

2.1.4 **Network management control interface (CTRL)**

The module provides two Ethernet interfaces for the user on the front panel for network control and upgrading. The interface type is RJ45 and its various parameters are as shown in Table 2-1 Ethernet interface connector parameters.

.5 Gigabit Ethernet interface (GbE)

The modulator is provided with a total of 4 GbE input interfaces for the user to input a code stream. The interface type is SFP.

Its various parameters are as shown in Table 2-2 Parameters of GbE interface connector.

•

Interface connector	SFP	
Interface	1000Base-T/1000Base-X	The appearance diagram is
	In accordance with IEEE 802.3z	shown as follows:
Interface protocol	(optical interface) or IEEE	participant of the second s
interface protocol	802.3ab standard (electrical	
interface)		لدر
Interface rate	1000M self-adaptation	

Table 2-2 Parameters of GbE interface connector

2.1.6 RF output interface (RF)

The modulator is provided with a total of 8 RF output interfaces, outputting RF signals of the cable television within 45-1003MHz frequency bands. The output interface is of a 75Ω Inch F-type socket. If a test channel is to be used, plug an F plug on the radio-frequency cable into the output socket and tighten.

Electrical characteristics, material characteristics, mechanical characteristics and appearance diagrams are as shown in Table 2-3 Parameters of RF output interface connector

Electrical	Normal	75Ω	The appearance
characteristics	impedance		diagram is shown
	Frequency range	0-20GHz	as follows:
	Rated value of	500 VRMS (maximum at sea	
	voltage	level)	
	Voltage	1500 VRMS (minimum at sea	
	withstanding of	level)	
	dielectric		(•))
	Voltage standing	1.5 (maximum)	
	wave ratio		
Material	Body and metal	Nickel plating	
Characteristics	fittings		
Mechanical	Insertion force	Maximum torque 2.5 lbs	
characteristics	Pull-out force	Maximum axial tension 3 lbs	
	Nut tension	Minimum 100 lbs	
	Thrust of central	Minimum 6 lbs	
	needle		
	Durability	At least achieve 500 times of	
		drawing	

Table 2-3 Parameters of RF output Interface connector

2.1.7 Power Socket

The modulator provides two power sockets on the rear panel. The device will be powered

on if the power lead is insert the power socket correctly.

The power sockets used by the modulator fully conform to the international industrial standards, for detailed information, refer to Table 2-4 Power Socket Parameters.

Table 2-4 Power Socket Parameters				
GB 1002-1996	Types, basic parameters and dimensions of single phase plugs and socket-outlets for household and similar purposes			
GB 2099.1-1996	Plugs and Socket-outlets for Household and Similar Purposes – Part1: General Requirements			

2.1.8 Indicator

The modulator panel is provided with at least 8 indicator lights, including

- Power
- Run/Alarm
- Fan
- Ctrl
- 1
- 2
- 3
- 4

After determining the equipment is corrected accurately, plug the power line into a power socket of the rear panel of the equipment, open the equipment, if a Power light turns on, it indicates the equipment has been electrified, having conditions of equipment operation.

When the equipment operates normally, there is no any abnormal phenomenon and alarm indication, so that the Run/Alarm light of the equipment panel turns to green. If the work is abnormal and it gives an alarm, and the Run/Alarm light turns to red.

4 lights of QAM Card Status 1-4 correspond to 4 board cards in a card slot bit respectively; when the corresponding board card works in order, the light turns to green; otherwise, it turns to red; and if no board card inserts into the corresponding board card bit, the light does not turn on.

2.2 Heat Emission Descriptions

Six exhaust fans are installed on the rear panel of the modulator for reducing temperature rise of the equipment caused by heating various chips inside the equipment during working in operational process.

The exhaust flow of the modulator is as shown in FIG. 2-4.

Exhaust channel

5

Fig. 2-4 The exhaust flow of the modulator

2.3 Control Descriptions

SUMAVISION IPQAM 10K511 modulator can achieve the control through Web and SNMP

network management system.

Chapter 3 Technical Characteristics

3.1 Main performance parameters

Main functions of modulator are as follows:

 $\sqrt{}$ ITU-T J.83 Annex A, B and C international standards, compatible with DVB- C standard;

 $\sqrt{}$ GbE input, data throughout of 960Mbps maximum;

 $\sqrt{}$ Supporting multicast reception, as well as IGMP V1, V2 and V3 (with active IP filtration performance);

 $\sqrt{8+8}$ optical interfaces (optional electrical interface) redundancy, ensuring high reliability of data reception;

 $\sqrt{1}$ High integration, single RF port supporting 24-non-adjacent frequency points output;

 $\sqrt{}$ Stand-alone 1RU, reaching 192-frequency point RF signal output

 $\sqrt{}$ Each frequency point support 256 channels maximum, and single port may processes at most 512 PIDs;

 $\sqrt{2048}$ unicast addresses can be received by single GE port; and the total upper limit of the single device may be up to 8192;

 $\sqrt{2048}$ multicast addresses can be received by single GE port; and the total upper limit of the single device may be up to 8192;

 $\sqrt{}$ Strong kernel process: TS over IP, multiplexing, scrambling, PSI /SI process, modulation and up-conversion;

 $\sqrt{}$ Board card backup mechanism, ensuring the high reliability of data output;

 $\sqrt{}$ Compatible with DWDM optical fiber net, optioning single-mode/multi-mode light absorption.

Abundant QAM mode: 64, 128, 256;

Full-band agility: 45~1000MHz;

 $\sqrt{}$ Support VOD, broadcast, data traffic and multi-protocol, and achieve seamless connection with various types of VOD servers;

Support DATA and multi-protocol, and achieve seamless connection with various types of VOD servers;

Support HD/SD programme transmission;

- $\sqrt{}$ Adopt modularization plug-in design, facilitating upgrade and maintenance;
- $\sqrt{}$ Support hot plug and maintain conveniently;
- $\sqrt{}$ Dual-power standby, ensuring equipment operation;

 $\sqrt{}$ Strong background configuration function and web master monitoring system, ensuring high stability of equipment operation;



 $\sqrt{}$ Excellent RF index, ensuring high reliability and expansibility of the next generation network;

- $\sqrt{}$ Provide WEB network management, operating directly and conveniently;
- $\sqrt{}$ Concentrate SNMP network management system, being capable of realizing remote or local all-weather network monitoring;
- $\sqrt{}$ Remote on-line upgrading function, ensuring excellent expandability.

The output level is as shown in table 3-1:

Note: Different board cards are slightly different in level.

Table 3-1 Output level

Number of		
frequency	Single frequency point (dbuv)	Interface output (dbuy)
points		
points	120	120
1	120	120
4	112	120
8	109	120
12	107	120
16	105	120
20	104	120
24	103	120

3.2 Standard compliance

The modulator is in line with the international and domestic industry standards, including:

- ✓ GY/T 170-2001 Encoding and Modulation Standard for Digital CATV Broadcasting Channel
- ✓ GYT 198-2003 Technical Requirements and Measurement Methods for Digital
 CATV Broadcasting QAM Modulator

GY/T 106-1999Technical Specification for CATV Broadcasting SystemGY/Z 174-2001Information Specification of Digital TV Broadcasting BusinessIEEE Std 802.3ab-1999 (Clause 40), Physical Layer Parameters and Specificationsfor 1000 Mb/s Operation Over 4 Pair of Category 5 Balanced Copper Cabling, Type1000BASE-T

- ✓ IEEE Std 802.3z-1998 (Clauses 34-39, 41-42) Type 1000BASE-X MAC Parameters, Physical Layer, Repeater, and Management Parameters for 1000 Mb/s Operation
- ✓ ITU-T J.83 Annex A/B/C Digital Multiprogramme Systems for Television Sound and Data Services for Cable Distribution

C

✓ EN300 429 Digital Video Broadcasting (DVB): Framing structure, channel coding and modulation for cable systems

Chapter 4 Dimension and Weight

4.1 Dimensions

IPQAM 10K511 modulator external structure is shown as Table 4-1 IPQAM modulator Physical Parameters.

Table 4-1	IPQAM	modulator	Physical	Parameters

Physical Parameters	Value (Unit)
Height	44.4mm (1U)
Width	482.6mm (19")
Depth	675.5mm

4.2 Weight

Ģ

The device weights <15kg, and its specific quality is related to the configurations of the device. Please be subject to the device actually purchased.

Chapter 5 Installation and Debugging

5.1 Unpacking and Checking

Please check whether the package of the device is damaged or not when receiving the device; in case of device's damage, please contact the carrier company or the After-sales Technical Support Department of Sumavision in a timely manner.

If you complete the installation and debugging of the device by yourself, please pay attention to the deformation of device and abnormal sound inside the device when unpacking the device; check whether the device model and name are in conformity with those specified in the contract; whether the serial number of device is identical to that in the *Delivery and Maintenance Certificate of Device*; and whether the power lead, connectors and fittings, operating instructions and Certificate of Pitness are completely contained in the package case of the device.

If the installation and debugging are conducted by the after-sales technical engineers of Sumavision, they will confirm the above-mentioned information with you.

You are required to sign and return the *Delivery and Maintenance Certificate of Device* to our company after confirming there's no problem upon the uppacking and inspection, and according to which we'll provide high-quality satisfactory after-sales services.

5.2 Installation Precautions

Check whether the environmental requirements in Section 3 of Chapter I have been met. The device can be powered on for debugging after the installation is completed by following the installation steps

5.3 Steps and Methods of Installation

The IPQAM modulator needs to be installed and used on a 19-inch cabinet. When installing the device, please open the box first, then take out the device. To ensure the device is installed firmly, please put the device on L bracket after installing L bracket on the cabinet, and fasten the device on the assembly cabinet with screws. Device installation can be shown as Fig. 5-1 Assembly cabinet for IPQAM modulator.



However, the general principle for arranging the location of the device is that the connection between various stand-alone devices should be arranged neatly on the assembly cabinet in accordance with the flow of signal.

5.4 Debugging

Preparations before configuration:

- The device should be stably fixed on the cabinet, and the operation environment is normal.
- > The device should be connected to the ground very well.
- > Check whether input signals are correctly connected.
- > The device has been connected to the power supply correctly.
- It network management is needed to control devices, please connect the device with the computer.

Device power-on inspection:

- Indicators of the device display normal.
- Device keys can respond normally.
- The fans of the device can operate normally without harsh noise.
- > No abnormal sounds and offensive smell.

6

5.5 Debugging and inspection methods

IPQAM 10K511 Modulator offers users setting menu through WEB page. The users can set parameters of the equipment to make it satisfy users' demands.

✓ QAM card status

Know about current equipment operation information via inquiring this menu.

- Alarm information
 You can view the cause for alarm quickly when the equipment gives an alarm.
- QAM Card parameter setting
 You can set operation parameters of the equipment via setting this menu.
- Network setting
 You can establish connection between the equipment and the outside via setting this menu.
- ✓ Reboot the device

You can restart the modulator and initialize parameters of the modulator via setting this menu.

Chapter 6 Method of application

The modulator, as an integral and important part of the digital television system, is the mouthpiece of the system, requiring extremely high stability and reliability. IPQAM of Beijing Sumavision Technologies Co., Ltd. has relatively high stability and reliability and supports management system through WEB interface and IPQAM network, thus user can directly and conveniently configure modulator.

6.1 Instructions to optional board card

Single IPQAM supports four modulation cards maximum. The differences of the three kinds of modulation cards can be seen in Table 6-1 Differences of optional modulation cards in configuration

Type of board card	Number of SFP interface	Number of RF output interface	Number of frequency point output by single RF interface	Max number of frequency point output by single card
QT242	4 (2 backup sets)	2	24 non-adjacent frequency	48 non-adjacent frequency
QT241	4 (2 backup sets)		24 non-adjacent frequency	24 non-adjacent frequency
QT083	2 (1 backup set)	3	8 non-adjacent frequency	24 non-adjacent frequency

Table 6-1 Differences of optional modulation cards in configuration

6.1.1 QT242 modulation card

QT242 modulation card is provided with four SFP module interfaces and two RF output interfaces. Each RF output interface supports 24 non-adjacent frequency output. Each card supports 48 non-adjacent frequency output.



图 6-1 QT242 modulation card

6.1.2 QT241 modulation card

QT241 modulation card is provided with four SFP module interfaces and a RF output interfaces. RF output interface supports 24 non-adjacent frequency output. Each card supports 24 non-adjacent frequency output.



图 6-2 QT241 modulation card

6.1.3 QT083 modulation card

QT083 modulation card is provided with two SFP module interfaces and three RF output interfaces. Each RF output interface supports 8 non-adjacent frequency output. Each card supports 24 non-adjacent frequency output.



图 6-3 QT083 modulation card

6.2 Operating instruction to WEB network management

IPQAM provides a concise and humanized WEB operation interface with strong function. The parameters of the IPQAM modulator are able to be configured through the WEB to ensure its stable operation. The WEB operation interface mainly includes 6 items of [Summary], [Monitor], [Alarms], [Cards], [Maps] and [System]. Various main menus shall be introduced, aiming at the functions and operation methods of the IPQAM modulator.

The optional board cards are different, so the number of the input/output interfaces is slightly different, but the function sets are nearly the same. The function and operational approach of IPQAM modulator are introduced by taking QT242 as an example as follows.

6.2.1 WEB menu name and instruction

6.2.1.1 Requirement of IE version

Please use IE version and operation system as required, and requirement details are as follows:Operating systemIE versionScreen resolution

Windows XP SP3/ Wind	ows 7	IE v8.0/Firefox v23.0.1 and 1024*768 and above
SP1		above

6.2,1.2 **Backstage WEB logging-in**

Open the browser, input IP address of the equipment in the address bar, wherein the equipment default IP as 192.168.1.100, and then enter. At the moment, language type selection page will appear, as shown in Fig. 6-1 Network management language selection page. The language of the operation interface is divided into Chinese and English, need to input the password of the account after selecting the type of the language, as shown in FIG. 6-2, and then access the WEB network management interface of the equipment. Now we will take Chinese for example to do operation instruction below.

	Sumavision M H H H H Pou are welcome to use the system! Version 12 P X
	Version1.12 Copyright © 2012 Sumavision Inc. All rights reserved.
	Fig. 6-1 Network management language selection-page
	The server 192.165.152.181 at Sumavision requires a username and password. Warning: This server is requesting that your username and password be sent in an insecure manner (basic authentication without a secure connection). Image: Admin Image: Admin Image: Remember my credentials
	OK Cancel
	Fig. 6-2 Login frame
A Factory	default user: Admin; and password: sumavisionrd

The WEB network management setting interface of IPQAM modulator is mainly divided into the areas, as shown in the figure below:

Sumavision 数码视讯	IPC	A	Ν	1234565	2							Rebo	oot	Refresh	Help
Summary Monitor		Alarms	5	Cards		Maps		Scram	ble	5	syste	m		10	:29:28
ard List	🏫 > Moi	nitor > C:	ard 4 🤉	Input > Gbe 1	_			_	_						
Device Information	Disal	DID a i													_
Card 1	Dispi	ay PIDS I	nnex				1								
Card 2	GbE Inp	ut Strea	ms				4								
Card 3 j •Card 4 ≜∘Input	Туре	Send Mode	GbE Port	Source IP Address	Source UDP Port	Destination IP Address	UDP Port	SYNC	Prog Type	In Program	put PMT	PCR	Total ES DIDe	Input Bitrate (Mbps)	Replicated
Gbe 1	NORMAL	Unicast	3/1	192 165 152 137	2560	192 165 152 212	49156	0K	NI/A	Number	PID N/A		N/A	20 0837	1
Gbe 2	NORMAL	Unicast	3/1	192 165 152 137	2561	192 165 152 212	49412	OK	N/A	N/A	N/A	N/A	N/A	30 0259	1
GDE 3 Gbe 4	NORMAL	Unicast	3/1	192.165.152.137	2562	192,165,152,212	49668	OK	N/A	N/A	N/A	N/A	N/A	29,9837	1
■ Output	NORMAL	Unicast	3/1	192,165,152,137	2563	192,165,152,212	49924	OK	N/A	N/A	N/A	N/A	N/A	30.0259	1
RF Port 4/1	NORMAL	Unicast	3/1	192.165.152.137	2564	192,165,152,212	50180	OK	N/A	N/A	N/A	N/A	N/A	29.9837	1
Channel 4/1.1	NORMAL	Unicast	3/1	192.165.152.137	2565	192.165.152.212	50436	ОК	N/A	N/A	N/A	N/A	N/A	29.9837	1
Channel 4/1.2 Channel 4/1.3	NORMAL	Unicast	3/1	192.165.152.137	2566	192.165.152.212	50692 A	nalvsing	N/A	N/A	N/A	N/A	N/A	29.9837	1
Channel 4/1.4	NORMAL	Unicast	3/1	192.165.152.137	2567	192.165.152.212	50948	nalysing	N/A	N/A	N/A	N/A	N/A	30.0259	1
Channel 4/1.5	NORMAL	Unicast	3/1	192.165.152.137	2568	192.165.152.212	51204	ОК	N/A	N/A	N/A	N/A	N/A	29.9837	1
Channel 4/1.0 Channel 4/1.7	NORMAL	Unicast	3/1	192.165.152.137	2569	192.165.152.212	51460	ОК	N/A	N/A	N/A	N/A	N/A	29.9837	1
Channel 4/1.8	NORMAL	Unicast	3/1	192.165.152.137	2570	192.165.152.212	51716	ОК	N/A	N/A	N/A	N/A	N/A	29.9837	1
Channel 4/1.9	NORMAL	Unicast	3/1	192.165.152.137	2571	192.165.152.212	51972	ОК	N/A	N/A	N/A	N/A	N/A	29.9837	1
Channel 4/1.10	NORMAL	Unicast	3/1	192.165.152.137	2572	192.165.152.212	52228	ок	N/A	N/A	N/A	N/A	N/A	30.0259	1
- Channel 4/1.11	NORMAL	Unicast	3/1	192.165.152.137	2573	192.165.152.212	52484	ок	N/A	N/A	N/A	N/A	N/A	29.9837	1
Channel 4/1.13	NORMAL	Unicast	3/1	192.165.152.137	2574	192.165.152.212	52740 <i>/</i>	nalysing	N/A	N/A	N/A	N/A	N/A	30.0259	1
Channel 4/1.14	NORMAL	Unicast	3/1	192.165.152.137	2575	192.165.152.212	52996 <i>/</i>	nalysing	N/A	N/A	N/A	N/A	N/A	29.9837	1
	NORMAL	Unicast	3/1	192.165.152.137	2576	192.165.152.212	53252	ОК	N/A	N/A	N/A	N/A	N/A	30.0259	1
Channel 4/1.17	NORMAL	Unicast	3/1	192.165.152.137	2577	192.165.152.212	53508	ОК	N/A	N/A	N/A	N/A	N/A	29.9837	1
Channel 4/1.18	NORMAL	Unicast	3/1	192.165.152.137	2578	192.165.152.212	53764	ОК	N/A	N/A	N/A	N/A	N/A	30.0259	1
Channel 4/1.19	NORMAL	Unicast	3/1	192.165.152.137	2579	192.165.152.212	54020	ОК	N/A	N/A	N/A	N/A	N/A	29.9837	1
Channel 4/1.20	NORMAL	Unicast	3/1	192.165.152.137	2580	192.165.152.212	54276	ОК	N/A	N/A	N/A	N/A	N/A	29.9837	1
- Channel 4/1.22	NORMAL	Unicast	3/1	192.165.152.137	2581	192.165.152.212	54532	ок	N/A	N/A	N/A	N/A	N/A	30.0259	1
Channel 4/1.23	NORMAL	Unicast	3/1	192.165.152.137	2582	192.165.152.212	54788	nalysing	N/A	N/A	N/A	N/A	N/A	29.9837	1

Figure 6-4 Explanatory drawing of WEB network management interface of IPQAM modulator

- 1. Restart and page refresh functions (no help);
- 2. Function option of IPQAM modulator;
- 3. Tree list of input/output of board card;
- 4. State and parameter setting area.

The operation sequences of parameter setting is that select the function option in area 2, click the node in the tree list corresponding to input/output on the board card in area 3, and then set parameters in area 4.

6.2.1.4 Summary

After normally entering the WEB network management interface, directly enter the page of the device summary, as shown in FIG 6-3.List the current warning information of the device at the top of the page of the summary and display the state information of various interfaces in a mode of the schematic diagram of the rear panel of the device at the bottom. Show green in case the corresponding interface normally operates, show red in case of abnormality, and show blank on behalf of no hardware. Click on various interfaces on the picture to directly enter the setting page of the corresponding interface.

Summary Monitor Alarms Cards Maps Scramble System 09:32:04 > Summary > Summary Alarms Alarms Alarms Bescription Major THU JUN 05 08:66:43 2014 Description Major THU JUN 05 08:57:26 2014 Card 1 RF 1 Level Too Low Major THU JUN 05 08:00:30 2014 Card 1 RF 1 Level Too Low Major THU JUN 05 08:00:30 2014 Card 4 GBE 2 PHY Not Found Major THU JUN 05 09:00:30 2014 Card 4 GBE 2 1-1 Backun Switch Failure Major THU JUN 05 09:00:30 2014 Card 2 GBE 2 Link Down	Summary MonitorMarmsCardsMapsScrambleSystem09:32:04AlarmsAlarmsAlarmsSeverityTimeDescriptionMajorTHU JUN 05 08:56:43 2014Eower 1 No ingultMajorTHU JUN 05 08:57:26 2014Card 1 RF 1 Level Too LowMajorTHU JUN 05 09:00:30 2014Card 1 RF 1 Level Too LowMajorTHU JUN 05 09:00:30 2014Card 4 GBE 2 PHY Not FoundMajorTHU JUN 05 09:00:30 2014Card 4 GBE 3 1 + 1 Backup Switch FailureMajorTHU JUN 05 09:29:16 2014Card 2 GBE 2 Link Down	Sumavision 数码视讯	IPQA	M 1234	565			Reboot	Refresh Help
Image: Summary Alarms Description Severity Time Description Major THU JUN 05 08:56:43 2014 Rower 1 No Input Major THU JUN 05 08:57:26 2014 Card 1 RE 1 Level Too Low Major THU JUN 05 08:03:02 0014 Card 1 Hich Temperature Major THU JUN 05 08:03:02 0014 Card 4 GBE 2 PHY Not Found Major THU JUN 05 09:03:05 2014 Card 4 GBE 2 PHY Not Found Major THU JUN 05 09:03:05 2014 Card 4 GBE 3 1+1 Backup Switch Failure Major THU JUN 05 09:03:05 2014 Card 2 GBE 3 1+1 Backup Switch Failure Major THU JUN 05 09:29:16 2014 Card 2 GBE 3 1+1 Backup Switch Failure	Image Description Major THU JUN 05 08:56:43 2014 Eower 1 No Input Major THU JUN 05 08:57:26 2014 Card 1 RE 1 Level Too Low Major THU JUN 05 08:00:30 2014 Card 1 High Temperature Major THU JUN 05 09:03:05 2014 Card 4 GBE 2 HeY Not Found Major THU JUN 05 09:03:05 2014 Card 4 GBE 2 1-1 Backup Switch Failure Major THU JUN 05 09:29:16 2014 Card 2 GBE 2 Link Down	Summary Mon	itor Ala	irms	Cards	Maps	Scramble	System	09:32:04
Alarms Severity Time Description Major THU JUN 05 08:56:43 2014 Eower 1 No Input Major THU JUN 05 08:57:26 2014 Card 1 RE 1 Level Too Low Major THU JUN 05 08:07:26 2014 Card 1 RE 1 Level Too Low Major THU JUN 05 09:03:02 2014 Card 1 High Temperature Major THU JUN 05 09:03:05 2014 Card 4 GEE 2 PHY Not Found Major THU JUN 05 09:03:05 2014 Card 4 GEE 3 1 + 1 Backup Switch Failure Major THU JUN 05 09:03:05 2014 Card 4 GEE 3 1 + 1 Backup Switch Failure Major THU JUN 05 09:29:16 2014 Card 2 GEE 2 Link Down	Alarms Severity Time Description Major THU JUN 05 08:56:43 2014 Fower 1 No Input Major THU JUN 05 08:57:26 2014 Card 1 RF 1 Level Too Low Major THU JUN 05 09:00:30 2014 Card 1 RF 1 Level Too Low Major THU JUN 05 09:00:30 2014 Card 4 GEE 2 FHY Not Found Major THU JUN 05 09:00:30 2014 Card 4 GEE 2 11-1 Backup Switch Failure Major THU JUN 05 09:00:30 2014 Card 4 GEE 2 11-1 Backup Switch Failure Major THU JUN 05 09:20:16 2014 Card 2 GEE 2 Link Down	🏡 > Summary							
Severity Time Description Major THU JUN 05 08:56:43 2014 Fower 1 No Innuit Major THU JUN 05 08:57:26 2014 Card 1 RE 1 Level Too Low Major THU JUN 05 09:00:30 2014 Card 1 RE 1 Level Too Low Major THU JUN 05 09:00:30 2014 Card 1 RE 1 Level Too Low Major THU JUN 05 09:00:30 2014 Card 4 GEE 2 PHY Not Found Major THU JUN 05 09:00:30 2014 Card 4 GEE 2 HY Not Found Major THU JUN 05 09:00:20 2014 Card 4 GEE 2 HY Not Found Major THU JUN 05 09:20:16 2014 Card 2 GEE 2 Link Down	SeverityTimeDescriptionMajorTHU JUN 05 08:56:43 2014Exwer 1 No inputMajorTHU JUN 05 08:57:26 2014Card 1 RF 1 Level Too LowMajorTHU JUN 05 09:00:30 2014Card 1 RF 1 Level Too LowMajorTHU JUN 05 09:00:30 2014Card 4 GEE 2 PHY Not FoundMajorTHU JUN 05 09:00:30 2014Card 4 GEE 2 HY Not FoundMajorTHU JUN 05 09:00:30 2014Card 4 GEE 3 1 + 1 Backup Switch FailureMajorTHU JUN 05 09:29:16 2014Card 2 GEE 2 Link Down	Alarms							
Major THU JUN 05 08:56:43 2014 Power 1 No Input Major THU JUN 05 08:57:26 2014 Card 1 RF 1 Level Too Low Major THU JUN 05 09:00:30 2014 Card 1 RF 1 Level Too Low Major THU JUN 05 09:00:30 2014 Card 4 GEE 2 PHY Not Found Major THU JUN 05 09:00:05 2014 Card 4 GEE 3 1+1 Backup Switch Failure Major THU JUN 05 09:20:16 2014 Card 4 GEE 3 1+1 Backup Switch Failure	MajorTHU JUN 05 08:56:43 2014Rower 1 No inputMajorTHU JUN 05 08:57:26 2014Card 1 RE 1 Level Too LowMajorTHU JUN 05 09:00:30 2014Card 1 High TemperatureMajorTHU JUN 05 09:03:05 2014Card 4 GEE 2 PHY Not FoundMajorTHU JUN 05 09:03:05 2014Card 4 GEE 2 1+1 Backup Switch FailureMajorTHU JUN 05 09:29:16 2014Card 2 GEE 2 Link Down	Severity	Time		Des	scription			
Major THU JUN 05 08:57:26 2014 Card 1 RF 1 Level Too Lew Major THU JUN 05 09:00:30 2014 Card 1 High Temperature Major THU JUN 05 09:00:305 2014 Card 4 GBE 2 PHY Not Found Major THU JUN 05 09:00:305 2014 Card 4 GBE 3 1+1 Backun Switch Failure Major THU JUN 05 09:29:16 2014 Card 2 GBE 2 Link Down	Major THU JUN 05 08:57:26 2014 Carri 1 RE 1 Level Too Low Major THU JUN 05 09:00:30 2014 Carci 1 High Temperature Major THU JUN 05 09:03:05 2014 Carci 4 GEE 2 PHY Not Found Major THU JUN 05 09:03:05 2014 Carci 4 GEE 3 1+1 Backup Switch Failure Major THU JUN 05 09:03:05 2014 Carci 4 GEE 3 1+1 Backup Switch Failure Major THU JUN 05 09:29:16 2014 Carci 2 GEE 2 Link Down	Major	THU JUN 05 08:5	56:43 2014	Pov	wer 1 No Input			
Major THU JUN 05 09:00:30 2014 Card 1 High Temperature Major THU JUN 05 09:03:05 2014 Card 4 GBE 2 PHY Not Found Major THU JUN 05 09:03:05 2014 Card 4 GBE 3 1+1 Backup Switch Failure Major THU JUN 05 09:29:16 2014 Card 2 GBE 2 Link Down	Major THU JUN 05 09:00:30 2014 Card 1 High Temperature Major THU JUN 05 09:03:05 2014 Card 4 GEE 2 PHY Not Found Major THU JUN 05 09:03:05 2014 Card 4 GEE 3 1+1 Backup Switch Failure Major THU JUN 05 09:29:16 2014 Card 2 GEE 2 Link Down	Major	THU JUN 05 08:5	57:26 2014	Ca	rd 1 RF 1 Level Too L	<u>wc</u>		
Major THU JUN 05 09:03:05 2014 Card 4 GEE 2 PHY Not Found Major THU JUN 05 09:03:05 2014 Card 4 GEE 3 1+1 Backup Switch Failure Major THU JUN 05 09:29:16 2014 Card 2 GEE 2 Link Down	Major THU JUN 05 09:03:05 2014 Card 4 GEE 2 PHY Not Found Major THU JUN 05 09:03:05 2014 Card 4 GEE 3 1+1 Backup Switch Failure Major THU JUN 05 09:29:16 2014 Card 2 GEE 2 Link Down	Major	THU JUN 05 09:0	00:30 2014	Ca	rd 1 High Temperatur	<u>e</u>		
Major THU JUN 05 09:03:05 2014 Card 4 GEE 3 1+1 Backup Switch Failure Major THU JUN 05 09:29:16 2014 Card 2 GEE 2 Link Down	Major THU JUN 05 09:03:05 2014 Card 4.GEE 3.1 + 1 Backup Switch Failure Major THU JUN 05 09:29:16 2014 Card 2.GEE 2.Link Down	Major	THU JUN 05 09:0	03:05 2014	<u>Ca</u>	rd 4 GBE 2 PHY Not F	ound		
Major THU JUN 05 09:29:16 2014 Card 2 GBE 2 Link Down	Major THU JUN 05 09:29:16 2014 <u>Card 2 GBE 2 Link Down</u>	Major	THU JUN 05 09:0	03:05 2014	<u>Ca</u>	rd 4 GBE 3 1+1 Backu	p Switch Failure		
		Major	THU JUN 05 09:2	29:16 2014	Ca	rd 2 GBE 2 Link Dowr			
Equipment									

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Fig. 6-3 Page of equipment summary

6.2.1.5 Monitor

The device information and the input and output information of various daughter cards may be checked from [Monitor].Device information displays the temperature information and level information of the device board and card, and the rotating speed information of the cooling fan. The daughter card monitoring information displays the input and output information of various frequency points and the port in a mode of list for details.



Sumavis 数码视	in in in the second sec	IPC	A	N	1234565							[Rebo	oot	Refresh	Help]
Summary	Monitor		Alarm	5	Cards		Maps		Scram	ble	s	yste	m		10):29:28	
rd List	<	<u></u> ← Mo	nitor ≻ C	ard 4	> Input > Gbe 1												
Device Informati Card 1	on 🖻	🗆 Displ	ay PIDs i	n hex													
Card 2		GbE Inp	ut Strea	ms													
Card 3 Card 4 🛓 Input		Туре	Send Mode	GbE Port	Source IP Address	Source UDP Port	Destination IP Address	UDP Port	SYNC	Prog Type	In Program Number	PMT		Total ES PIDs	Input Bitrate (Mbps)	Replicated	
Gbe 1		NORMAL	Unicast	3/1	192.165.152.137	2560	192.165.152.212	49156	ОК	N/A	N/A	N/A	N/A	N/A	29.9837	1	
Gbe 2 Gbe 3		NORMAL	Unicast	3/1	192.165.152.137	2561	192.165.152.212	49412	ОК	N/A	N/A	N/A	N/A	N/A	30.0259	1	
Gbe 4		NORMAL	Unicast	3/1	192.165.152.137	2562	192.165.152.212	49668	ок	N/A	N/A	N/A	N/A	N/A	29.9837	1	
🗏 Output		NORMAL	Unicast	3/1	192.165.152.137	2563	192.165.152.212	49924	ок	N/A	N/A	N/A	N/A	N/A	30.0259	1	
RF Port 4/1		NORMAL	Unicast	3/1	192.165.152.137	2564	192.165.152.212	50180	ок	N/A	N/A	N/A	N/A	N/A	29.9837	1	
Channe	4/1.2	NORMAL	Unicast	3/1	192.165.152.137	2565	192.165.152.212	50436	ОК	N/A	N/A	N/A	N/A	N/A	29.9837	1	
- Channe	4/1.3	NORMAL	Unicast	3/1	192.165.152.137	2566	192.165.152.212	50692	Analysing	N/A	N/A	N/A	N/A	N/A	29.9837	1	
Channe	4/1.4	NORMAL	Unicast	3/1	192.165.152.137	2567	192.165.152.212	50948	Analysing	N/A	N/A	N/A	N/A	N/A	30.0259	1	
Channe	4/1.5 4/1.6	NORMAL	Unicast	3/1	192.165.152.137	2568	192.165.152.212	51204	ок	N/A	N/A	N/A	N/A	N/A	29.9837	1	E
- Channe	4/1.7	NORMAL	Unicast	3/1	192.165.152.137	2569	192.165.152.212	51460	ок	N/A	N/A	N/A	N/A	N/A	29.9837	1	
- Channe	4/1.8	NORMAL	Unicast	3/1	192.165.152.137	2570	192.165.152.212	51716	ок	N/A	N/A	N/A	N/A	N/A	29.9837	1	
Channe	4/1.9	NORMAL	Unicast	3/1	192.165.152.137	2571	192.165.152.212	51972	ок	N/A	N/A	N/A	N/A	N/A	29.9837	1	
Channe	4/1.10	NORMAL	Unicast	3/1	192.165.152.137	2572	192.165.152.212	52228	ок	N/A	N/A	N/A	N/A	N/A	30.0259	1	
Channe	4/1.12	NORMAL	Unicast	3/1	192.165.152.137	2573	192.165.152.212	52484	ок	N/A	N/A	N/A	N/A	N/A	29.9837	1	
- Channe	4/1.13	NORMAL	Unicast	3/1	192.165.152.137	2574	192.165.152.212	52740	Analysing	N/A	N/A	N/A	N/A	N/A	30.0259	1	
Channe	4/1.14	NORMAL	Unicast	3/1	192.165.152.137	2575	192.165.152.212	52996	Analysing	N/A	N/A	N/A	N/A	N/A	29.9837	1	
Channe	4/1.15	NORMAL	Unicast	3/1	192.165.152.137	2576	192.165.152.212	53252	ОК	N/A	N/A	N/A	N/A	N/A	30.0259	1	
- Channe	4/1.17	NORMAL	Unicast	3/1	192,165,152,137	2577	192,165,152,212	53508	ок	N/A	N/A	N/A	N/A	N/A	29,9837	1	
- Channe	4/1.18	NORMAL	Unicast	3/1	192,165,152,137	2578	192 165 152 212	53764	OK	N/A	N/A	N/A	N/A	N/A	30.0259	1	
Channe	4/1.19	NORMAL	Unicast	3/1	192 165 152 137	2579	192 165 152 212	54020	OK	N/A	N/A	N/A	N/A	N/A	29 9837	1	
Channe	4/1.20	NORMAL	Unicast	3/1	192 165 152 137	2580	192 165 152 212	54276	OK	N/A	N/A	N/A	N/A	N/A	29 9837	1	
- Channe	4/1.22	NORMAL	Unicast	3/1	192 165 152 137	2581	192 165 152 212	54522	OK	N/A	N/A	N/A	N/A	N/A	30.0250	1	Ч
- Channe	4/1.23	NORMAL	Unicast	3/1	192 165 152 137	2582	192 165 152 212	54788	Analysing	N/A	N/A	N/A	N/A	N/A	29 9837	1	
Chappo	L4/1 24 🔛	NORWAL	Unitast	3/1	182.103.132.137	2002	182.103.132.212	34/00	marysing	IN//A	19//5	IN/A	IN/A	TN/PA	23.3031	<u> </u>	

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6.2.1.6 Alarms

The [Alarms] page includes the existing alarm in the current device and the disappeared historical alarms. The alarm information includes the date of alarm generation, alarm level, alarm module, alarm type and detailed information. The user can take a clear understanding of the device and the working status of each modulation card through this page, quickly locate and solve the problem, so as to ensure normal operation of the device.



Sumavis 数码视	оп 		234565				[Reboot	Refresh Help	
Summary	Monitor	Alarms	Cards	Ν	laps	Scran	nble Syste	m	10:30:06	
Alarm List	<		arms							
Current Alarms History Alarms		Seve	rity: All 💌 M	odule: All	~ 1	ype: All [• Instance:	Filter		
Alarm Shield		Current Alarms								
		Date/Time	Severity	Module	Туре	Instance		Details		
		THU JUN 05 10:12:11 2	014 Major	Mainboard	Power	1	Po	wer 1 No Inp	out	
		THU JUN 05 10:12:53 2	014 Major	Card 4	GbE	2	Card 4 G	BE 2 PHY N	ot Found	
		THU JUN 05 10:12:53 2	014 Major	Card 4	GbE	3	Card 4 G	BE 3 PHY N	ot Found	
		THU JUN 05 10:12:53 2	014 Major	Card 4	GbE	4	Card 4 G	BE 4 PHY N	ot Found	
		THU JUN 05 10:12:54 2	014 Major	Card 1	RF	1	Card 1	RF 1 Level T	oo Low	
		THU JUN 05 10:12:54 2	014 Major	Card 2	GbE	2	Card 2	2 GBE 2 Link	Down	
		THU JUN 05 10:14:46 2	014 Major	Card 1	Other	0	Card 1	High Tempe	erature	
		Active alarm count: 7								
		Copyright© 2000-20	14 Sumavision Inc	All rights re	served. We	bsite:www.su	mavision.com			
				arning	inform	ation				

ng.

6.2.1.7 Cards

[Cards] page is used for setting the input internet access parameter of the modulation card and the modulated output parameter. The user will set the network parameter of the input internet access of the corresponding modulation card and the information of the output frequency point at this page.



Sumavision 数码视讯	IPQAM 1234	565				Reboo	t Refresh Help	
Summary Monitor	Alarms	Cards	Maps	Scram	ble	System	10:30:35	
Card List <								
E Card 1	GbE Input Configuration							
Card 2 Card 3							Apply Refresh	
E Ca <u>rd 4</u>	Port Configuration	Po	ort 1	Port 2		Port 3	Port 4	
Input	IP Address	192 165 15	2 212 1	92 165 152 22		192 165 152 23	192 165 152 24	
Gbe 1 Gbe 2	Subpot Mack	255 255 25	5.0 0	55 255 255 0		255 255 255 0	255 255 255 0	
Gbe 3	Catoway	100 165 45	0.0 2	00 165 150 1		100 165 150 1	100 165 150 1	
Gbe 4	MAC Addross	192.100.15	2.1 1	92.100.102.1		192.103.132.1	192.100.102.1	_
■ RF Port 4/1	Input Switch	00-24-06-0.		v-24-00-03-90-3C	•	0n	0-24-00-03-00-30	
Channel 4/1.1	Encod Select	Un 40haa Abl		Ohaa AN	Ľ	On	On AD	
Channel 4/1.2	Speed State	1Gbps AN	ا <u>ت</u>	GDDS AN		IGDDS AN	Link Error	Ľ
Channel 4/1.4	GhE Input Namo	CDE1		PE2		CRE2		_
Channel 4/1.5	Dort Dair Configuration	GDET	Dort Dai	ir 1		GDE3	GDE4	
Channel 4/1.6	Drimany Dort	4	FULLEA			POILT	- 411 2	_
Channel 4/1.8	Current Active Port					4		
- Channel 4/1.9	Dacket Format	199			1	1		
Channel 4/1.10	Redundancy Configuration	100				100		
Channel 4/1.12	Backup method	1.1						
Channel 4/1.13	Detention Mode of 1+1	On Che Lin	k Only					
Channel 4/1.14	Backup Enabled	Disabled	ik Offiy					
Channel 4/1.15 Channel 4/1.16	Check Time (100me)	5						
Channel 4/1.17	Povort To Driman	Dischlad						
Channel 4/1.18	Revert Check Time (400me)	Disabled						
- Channel 4/1.20	Dealwr Mada	Diffe He i						
Channel 4/1.21	Backup Mode	Diffe Mode						Ľ
Channel 4/1.22	Gratuitous AKP	Disable						_
Channel 4/1.23	Send Enabled	Disabled						
RF Port 4/2	Send Interval (s)	30						
	IGMP Setting							
	Send IGMP Version	IGMP_V3						~

6.2.1.8 Maps

The [Maps] page is used for adding the code stream port information received by various frequency points. The ERM of the board and card is also set at this page.



Sumavision 数码视讯		IF	PQA	M	123456	5								[Reboot	Refresh	Help
Summary Mo	onitor		Alar	ms	Care	ds	N	lap	s		Scramb	le	1	Syste	m	1	0:30:59
ard List	<	<u></u>	> Maps > (ard 4 > R	F Port 4/1												
Card 1		Str	eam Map	Configura	tion												
· Card 2 · Card 3														Add F	Row	Apply	Refresh
Card 4			Outp	ut nee	tin atlan ID				Allow	ed		C4			Dealers	Program	n Number
RF Port 4/1 Channel 4/1.1			# QAI	I Des	tination IP ddress	UDP Port	Activ	е	Ingre	ss	GbE Select	Stream Type	E	ackup nable	Backup UDP Port	Input	Output
Channel 4/1.2		0	0 4/1.	0.0.0.0		49156	True	~	Pair 1	, ~	Gbe 1	Normal	-	lo 🚺	0	0	2
Channel 4/1.3 Channel 4/1.4		1	1 4/1.	0.0.0.0		49158	True	~	Pair 1	-	Gbe 1	Normal		lo 🚺	0	0	3 3
Channel 4/1.5		2	2 4/1.	0.0.0.0		49160	True	~	Pair 1	-	Gbe 1	Normal	- N	lo 📃	0	0	4 4
Channel 4/1.6 Channel 4/1.7		3	3 4/1.	0.0.0.0		49162	True	~	Pair 1	*	Gbe 1	Normal		lo 📃	0	0	5 5
Channel 4/1.8		4	4 4/1.	0.0.0.0		49164	True	*	Pair 1	~	Gbe 1	Normal	• N	lo 📃	0	0	6 (
Channel 4/1.9 Channel 4/1 10		5	5 4/1.	0.0.0.0		49166	True	~	Pair 1	-	Gbe 1	Normal	- N	10	0	0	7
- Channel 4/1.11		6	6 4/1.	0.0.0.0		49168	True	~	Pair 1	~	Gbe 1	Normal		10	0	0	8 8
- Channel 4/1.12		7	7 4/1.	0.0.0.0		49170	True	~	Pair 1	4	Gbe 1	Normal		10	0	0	9 9
Channel 4/1.13		8	8 4/1.	0.0.0.0		49172	True	×	Pair 1		GDe 1	Normal		10	0	0	10
Channel 4/1.15		9	9 4/1.	0.0.0.0		49174	True	×	Pair 1		Gbe 1	Normal		10		0	11
Channel 4/1.16 Channel 4/1.17			0 4/1.	0.0.0.0		49412			<u>J</u> i an i			Norman				U	Z /
- Channel 4/1.18		Bas	se Rules														
Channel 4/1.19 Channel 4/1.20															mplement	Rules	Refresh
Channel 4/1.21		Base	Value	0.0.0.0		49156	False	~	Pair 1	~	Gbe 1	Normal	. N		0	0	2 0
		Row	Incremen	t 0		2										0	1 1
Channel 4/1.24		Char	nnel Offse	0		256											
RF Port 4/2		Start	QAM Chai	nel 4/1.1	End (QAM Chanr	nel 4/1.1	1 [* Ro	v St	art: 0	Row	End:	9			
		<					m										>
		Sho	w Advanc	ed Setting	S												



6.2.1.9 Scramble

The [Scramble] page is used for setting the scrambling information of the program. The current version with this function is not published temporarily.

6.2.1.10 System

The [System] page is mainly used to set the network parameters of the device and the board card control internet accesses, set the clock synchronization, and check the device version and log information, as well as set the parameters import and export, user management and card restart. In addition, the backup of the modulation card may also be set at this page.



summary	Monitor	Alarms	Cards	Maps	Scramble	System	10:31:29
tem List	<		nfiguration > IP Networ	k			
stem Configur	ation	Network Configuration					
- About - Loas		-				A	pply Refresh
IP Network			Main Board	Card 1	Card 2	Card 3	Card 4
- Clock - ASI Monitor		IP Address	192.165.10.151	192.165.10.152	192.165.10.153	192.165.10.154	192.165.10.155
- Card Backup		Subnet Mask	255,255,255.0	255.255.255.0	255.255.255.0	255.255.255.0	255.255.255.0
Device Backup	amont	MAC Address	00-24-68-03-60-09	00-24-68-04-30-0B	00-24-68-04-30-0F	N/A	00-24-68-03-70-3C
– User Manager	nent	Default Gateway	192.165.10.1	192.165.10.1	192.165.10.1	192.165.10.1	192.165.10.1
- Card Reboot				SNMP Trap Co	onfiguration		
		SNMP Trap Address 1	192.165.152.116				
		SNMP Trap Address 2	192.165.152.116				
		SNMP Trap Address 3	192.165.152.116				
		Copyright® 2000-201	4 Sumavision Inc. All ri	ghts reserved. Websit	le:www.sumavision.com	n	
		Copyright© 2000-201	4 Sumavision Inc. All ri g. 6-8. Settin	ghts reserved. Websit	te:www.sumavision.com	n	
		Copyright© 2000-201	4 Sumavision Inc. All ri g. 6-8 Settin	ghts reserved. Websit g page of sys	te:www.sumavision.com	n	



Sumavision	IPQAM 123	4565	1	`)		R	ebo	ot Refresh Help	þ
Summary Monitor	r Alarms	Cards	Ma	ps Scran	nbl	e System		10:32:07]
Card List								173	_
• Card 1 • Card 2	GbE Input Configuration			$\langle G \rangle$				(4)	
Card 3				3			1	Apply Refresh	
E Card 4	Port Configuration	Port 1	*	-Port 2		Port 3		Port 4	
- Gbe 1	IP Address	192.165.152.212		192.165.152.22		192.165.152.23		192.165.152.24	
Gbe 2	Subnet Mask	255.255.255.0		255.255.255.0		255.255.255.0		255.255.255.0	
Gbe 3 Gbe 4	Gateway	192.165.152.1		192.165.152.1		192.165.152.1		192.165.152.1	
■ Output	MAC Address	00-24-68-03-80-3C		00-24-68-03-90-3C		00-24-68-03-A0-3C		00-24-68-03-B0-3C	
■ RF Port 4/1	Input Switch	On	~	On	×	On	~	On (~
Channel 4/1.1 Channel 4/1.2	Speed Select	1Gbps AN	*	1Gbps AN	*	1Gbps AN	~	1Gbps AN	-
Channel 4/1.3	Speed State	1Gbps Full		Link Error		Link Error		Link Error	
- Channel 4/1.4	GbE Input Name	GBE1		GBE2		GBE3		GBE4	
Channel 4/1.5 Channel 4/1.6	Port Pair Configuration	1	Port F	Pair 1		Po	ort F	Pair 2	
Channel 4/1.7	Primary Port	1				1		[
- Channel 4/1.8	Current Active Port	1			v	1			-
Channel 4/1.9 Channel 4/1 10	Packet Format	188			_	188			
Channel 4/1.11	Redundancy Configuration								
- Channel 4/1.12	Backup method	1+1						[~
	Detention Mode of 1+1	On Gbe Link Only						[~
Channel 4/1.15	Backup Enabled	Disabled						(~
Channel 4/1.16	Check Time (100ms)	5							
	Revert To Primary	Disabled							~
Channel 4/1.19	Revert Check Time (100ms)	5							
Channel 4/1.20	Backup Mode	Diffe Mode						Ì	-
- Channel 4/1.21	Gratuitous ARP								- 1
	Send Enabled	Disabled						ĺ	~
Channel 4/1.24	Send Interval (s)	30							
E Dort 4/2									

6.2.2.1 Setting of GBE network parameter

Figure 6-5 Setting of network parameter of input interface

Step 1: click [Card Setting] in WEB network management to enter card parameter setting page; **Step 2:** click input corresponding to modulation card in the tree list on the left of WEB network management;

Step 3: set network parameters (IP, subnet mask, gateway, channel switch and speed selection) of the input channel;

Step 4: Click [Setting] on the page to bring the parameter settings into effect.

Table 6-2 GBE network parameter list

_	Name of parameter	Parameter range	Default
	IP Address	Unicast IP excludes 127.XXX.XXX.XXX	192.165.152.151
	Subnet Mask	Legal subnet mask address	255.255.255.0
	Gateway	Unicast excludes 127.XXX.XXX.XXX, and it must be in the same segment with this internet access IP	192.165.151.1
	Input Switch	On/Off	On
	Speed Select	Auto-Negotiation/1Gbps AN/1Gbps Full/100Mbps Full/100Mbps Half/10Mbps Full/10Mbps Half/	1Gbps AN
	Gbe Input Name	Legal set name	GBE1
	Packet Format	188/204	188
	Gratuitous ARP Send Enabled	Enabled/Disabled	Disabled
	Gratuitous ARP	0~65535	30

Send Interval		
Send IGMP Version	No Sending/IGMP_V1/ IGMP_V2/ IGMP_V3	No Sending

6.2.2.2 Setting of parameter of RF port

After the setting of the parameter of input internet access, click output in the left of the page and set the modulation output level, frequency range and port switch of RF port.

Summary Card List • Card 1 • Card 2 • Card 3 • Card 4 • Input • Gbe 1 • Gbe 2 • Gbe 3 • Gbe 4 • Output • RF Port 4/3	Monitor	Alarms	Cards Output Output Config RF Port 4/1	guration Output Level (dBuV)	Scran Frequency Ran	nble ge (MHz)	System Port Control	10:32:37
Card List Card 1 Card 2 Card 3 Card 3 Card 4 F Input -Gbe 1 -Gbe 2 -Gbe 4 Output F Card 4/2 -Gbe 4 -Gbe 4 -Gb		n > Cards > Card 4 > (Output Output Config RF Port 4/1	guration Output Level (dBuV) 95.0	Frequency Ran	ge (MHz)	Port Control	175
Card 1 Card 2 Card 2 Card 4 Card 4 F Input Gbe 1 Gbe 2 Gbe 4 Gbe 4 F Output F RF Port 4/3			Output Config RF Port 4/1	guration Output Level (dBuV) 95.0	Frequency Ran	ge (MHz)	Port Control	175
Card 3 = Card 3 = Card 4 = Input - Gbe 1 - Gbe 2 - Gbe 3 - Gbe 3 = Output ◀ = = RF Port 4/3			RF Port 4/1	Output Level (dBuV)	Frequency Ran	ge (MHz)	Port Control	173
■ Card 4 ■ Input ■ Gbe 1 ■ Gbe 2 ■ Gbe 3 ■ Gbe 4 ■ Output ■ RF Port 4/3			4/1	95.0				
Gbe 1 Gbe 2 Gbe 3 Gbe 4 Cutput 4 RF Port 4/:				00.0	45~795	·	On 💽 🗕 — —	-
Gbe 2 Gbe 3 Gbe 4 - Output - RF Port 4/:			4/2	95.0	45~795	~	On 💌	
Gbe 4 Gutput RF Port 4/:			RF Backup C	onfiguration				
RF Port 4/:	2		Back	kup Enabled	_	Off 💌		
	1		Ba	lain Port		RF Port 2	Port 1	
Channe	el 4/1.1		Du	Revert		Revert		
Channe	el 4/1.2		Bac	kup Status		No Switch		
Channe - Channe	a (<i>j</i> , 1, 1, 3) e) (<i>j</i> , 1, 1, 3) e) (<i>j</i> , 1, 1, 5) e) (<i>j</i> , 1, 1, 2) e) (<i>j</i> , 1, 2) e) (<i>j</i>	Copyright® 2000-2	2014 Symavisio	n Inc. All rights reserved	I Website www.su	mavision com		
		Figure 6-6 Set	ting of n	etwork param	eter of inp	out interfa	ice	
Step 1: click	c [Card Set	tting <mark>] in W</mark> EI	3 networ	rk manageme	nt to enter	r card pa	rameter se	tting page;
Step 2: clic network mar	k [Output nagement;	t] correspond	tch, and	modulation of set the output	card in th	ne tree lind output	ist on the t frequenc	left of WEB y range of the
Step 3: Turi	n on the u	seu port swi						
Step 3: Turi port as plant Step 4: Click	h on the u ned. k [Setting]	on the page	to bring	the paramete	er settings	into effe	ect.	
Step 3: Turi port as plani Step 4: Clic	h on the u ned. k [Setting]	on the page	to bring able 6-3 I	the paramete	er settings leters List	into effe	ect.	

1	parameter	Parameter range	Default
	Output Level	95~108.2dBuV (all optional board cards are different in maximum level)	95 dBuV
	Frequency Range	45~1000Mhz	45~795
	Port Control	On/Off	Off

Sumavis) 数码视	on 讯	IPQA	M 12	234565)				Rel	boot Refr	esh	Help
Summary	Monitor	Ala	irms	Cards		Maps	S	cramble		System		15:3	2:58
Card List	<		Card 4 > Out	put > RF Port 4/1									
Summary Card List Card 2 Card 2 Card 3 Card 4 Card	Monitor	Ala	Card 4 > Outp Card 4 > Outp Card 4 > Outp A A A A A A A A A A A A A A A A A A A	Cards put> RF Port 4/1	0 448 450	Maps Level	Si s of Chai 2 480 488 4 Frequency Original Network	Press Pres Pre	12 5.	System	Apply Channe	15:3 Ca	2:58 Normal arrier Wave Mute \$84 592 5 } Refresh Atten
- Channel - Channel - Channel	4/1.9 4/1.10 4/1.11	Row Output	Frequency	Modulation	4	Transp	Original	QAM		Add Channel QAM Group	Apply	el la la	Refresh
Channel	4/1.12	# Channel	(MHz)		(Mbaud)	ID	ID	Manag	er	Name	Mode	_	Auton
Channel - Channel -	4/1.13 4/1.14	0 4/1.1	400.000	QAM 64 💉 (6.875	1	1	VOD	×	QG11	Mute	~	0.000
- Channel	4/1.15	1 4/1.2 A	408.000	QAM 64 V (6.875 8.075	2	2	VOD	×	QG12	Mute	×	0.000
- Channel - Channel -	4/1.16 4/1.17	3 4/1.4	416.000	QAM 64	5.875	3	3	VOD	•	0614	Mute	~	0.000
- Channel	4/1.18	4 4/1.5	432.000	QAM 64 💌 (6.875	5	5	VOD	×	QG15	Mute	~	0.000
- Channel	4/1.19 4/1.20	5 4/1.6	440.000	QAM 64 💌 🤅	6.875	6	6	VOD	*	QG16	Mute	~	0.000
- Channel -	4/1.21	6 4/1.7	448.000	QAM 64 💌 (6.875	7	7	VOD	*	QG17	Mute	~	0.000
Channel	4/1.23	7 4/1.8	456.000	QAM 64 💌 (6.875	8	8	VOD	*	QG18	Mute	~	0.000
Channel	4/1.24	8 4/1.9	464.000	QAM 64 💉 (6.875	9	9	VOD	×	QG19	Mute	~	0.000
m RF POIL 4/2		9 4/1.10	472.000	QAM 64	6.875	10	10	VOD	×	QG110	Mute	×	0.000
		10 4/1.11	480.000		0.875	11 	11	VOD	Ľ	QG111	Mule		0.000
		Base Rules								Imple	ement Rules	Т	Refresh
		Base Value	0.0.0.0	4915	6 Fals	se 🔽 Pa	air 1 💌 Gbe	1 Nor	rmal	▼ No 0	0	2	2
		Row Increment	nt 0	2							0	1	1
		Channel Offse	et 0	256									
		Start QAM Cha	annel 4/1.1	End QAM C	hannel 4	/1.1 💌	Row Start: ()	Row	v End: 9			
		<							_				×
		Show Advance	ced Settings										
5 3 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	2164 510104 510104												

6.2.2.3 Setting of parameter of frequency point of modulation output

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Figure 6-7 Frequency point adding and batch adding

Step 1. click [Card Setting] in WEB network management to enter card parameter setting page;

Step 2: click RF port corresponding to modulation card in the tree list on the left of WEB network management;

Step 3: click [Add Frequency Point] to manually add frequency point;

Step 4: set frequency point output QAM parameter to be planned value (frequency, QAM mode and symbol rate);

Step 5: Click [Setting] on the page to bring the parameter settings into effect.

 \triangle 1. After adding the frequency point, the parameter line is green in default and may be yellow after modifying the frequency point parameter. Once the frequency point mode is selected to be deleted, the parameter line may be red;

2. The frequency point increment indicates the information of the port increment among various frequency points, such as setting the target IP increment as 0 and UDP port increment as 256.

Name of parameter	Parameter range	Default
Frequency	45~1000Mhz	100 Mhz
Modulation	QAM64/QAM128/QAM256	QAM64
Symbol Rate	3.5~7Mbaud	6.875
Transp Stream ID	0~65535	n
Original Network ID	0~65535	n
QAM Manager	VOD/Broadcast/S_VOD	VOD
QAM Group Name	Legal group name	QG1n
Chanel Mode	Normal/Mute/Carrier Wave/Delete	Mute
DTS Adjust	Enabled/Disabled	Disabled
SDV	Yes/No	No
Starting UDP Port	0~65535	0

Table 6-4 Added frequency point parameter list

Instructions to batch adding of frequency point

When adding more frequency points with regular frequency point increment, the batch adding function will be recommended to use to set the starting value of various items and the increment information of various frequency points, set the start and end frequency points and click settings after applying regularly. Namely, add multiple frequency points at one time.

Channel 4/1.8											Add Channel	A	pply		Refresh
- Channel 4/1.10 - Channel 4/1.11 - Channel 4/1.12	Row #	Output QAM Channel	Frequency (MHz)	Modulati	on	Symbol Rate (Mbaud)	Transp Stream ID	Original Network ID	QAM Manage	r	QAM Group Name	Ch	nannel Node		Atten
··· Channel 4/1.13	0	4/1.1	400.000	QAM 64	~	6.875	1	1	VOD	~	QG11	Mul	5	~	0.000
Channel 4/1.14	1	4/1.2	408.000	QAM 64	~	6.875	2	2	VOD	~	QG12	Mute	1	-	0.000
	2	4/1.3	416.000	QAM 64	~	6.875	3	3	VOD	~	QG13	Mute		·	0.000
Channel 4/1.17	3	4/1.4	424.000	QAM 64	-	6.875	4	4	VOD	~	QG14	Mute			0.000
	4	4/1.5	432.000	QAM 64	-	6.875	5	5	VOD	~	QG15	Mute		-	0.000
Channel 4/1.19	5	4/1.6	440 000	QAM 64	-	6 875	6	6	VOD	~	QG16	Mute			0.000
Channel 4/1.20	6	4/1.7	448 000	QAM 64	-	6.875	7	7	VOD	~	0617	Mute			0.000
- Channel 4/1.22	7	4/1.8	456.000	QAM 64	~	6.975		9	VOD	~	0618	Mute			0.000
Channel 4/1.23		4/1.0	464.000	OAM 64		6.075	0	0	VOD	- -	0010	Mute		-	0.000
Channel 4/1.24 RE Port 4/2	0	A/1.0	404.000	CAM 64	×	0.075	9	9	VOD	×	00110	Mute			0.000
	10	4/1.10	472.000	004464		0.075	10	10	VOD		00110	Muto			5.000
		4/1.11	480.000	QAM 04		0.875	11	11	100	<u> </u>	QG111	Mute			5.000
	Ba	se Rules		× /.						~	4) Imple	ement R	ules	1	Refresh
	Base	Value	0.0.0.0		491	156 Fal	se 🔺 Pa	iir 1 💌 Gbe	1 Norr	nal	▼ No 0		D	2	2
	1 2	eme	nt 0		2							(D	1	1
		Offs	et 0		256	j		1							
	Start	QAM Ch	annel 4/1.1	 End Q 	AM	Channel	4/1.1 💌	Row Start	3	Rov	v End: 9				
	<						III.)—			_	>
	Sho	w Advan	ced Settings												
		Copyrig	ht© 2000-2014	Sumavisio	on Ir	nc. All rights	s reserved.	Website:ww	w.sumavisio	on.c	om				



Step 1: set starting value (frequency, QAM mode and symbol rate) of bath adding of frequency

point in batch rule on the frequency point adding page, select VOD for QAM management, and normal for frequency point mode;

Step 2: set frequency point increment in batch rule on the frequency point adding page;

Step 3: set start frequency point and end frequency point in batch rule on the frequency point adding page (different modulation cards cause different frequency points added at most);

Step 4: click [Application Rule] to bring the rule into effect;

Step 5: Click [Setting] on the page ,frequency point adding comes into effect.

Table 6-5 Batch adding frequency point parameter list

Name of parameter	Parameter range	Default
Frequency Base Value	45~1000Mhz	95 dBuV
Modulation Base Value	QAM64/QAM128/QAM256	45~795
Symbol Rate Base Value	3.5~7Mbaud	6.875
Transp Stream ID Base Value	0~65535	n
Original Network ID Base Value	0~65535	n
QAM Manager Base Value	VOD/Broadcast/S_VOD	VOD
QAM Group Name Base Value	Legal group name	QG1n
Chanel Mode Base Value	Normal/Mute/Carrier Wave/Delete	Mute
DTS Adjust Base Value	Enabled/Disabled	Disabled
SDV Base Value	Yes/No	No
Starting UDP Port Base Value	0~65535	0
Frequency Channel Offset	1~10Mhz	8
Transp Stream ID Channel Offset	0~65535	1
Original Network ID Channel Offset	0~65535	1
Starting UDP Port Channel Offset	0~65535	0
Start QAM Channel	1.1~1.n	1.1
End QAM Channel	1.1~1.n	1.1

Backup Enable

Backup UDP Port

			Rebool	Refresh Help
Summary Monitor	Alarms Cards	Maps Scramble	System	10:34:39
Card List <				3 (5)
E-Card 1	Stream Map Configuration		- IN	
- Card 3			Add Row	Apply Refresh
E Card 4	Row Output Destination 4	Allowed Stream	Backup Backup	Program Number
Channel 4/1.1	# Channel Address	Ports GDE Select Type	Enable UDP Por	rt Input Output
Channel 4/1.2	0 0 4/1.1 0.0.0.0 49150	5 True Verial Gold Normal V	No 0	0 2 2
Channel 4/1.4 Channel 4/1.5	1 1 4/1.1 0.0.0.0 49158 2 2 4/11 0.0.0 49160	True Pair 1 Gbe 1 Normal		0 3 3
Channel 4/1.6	3 3 4/1.1 0.0.0.0 49162	2 True Pair 1 👻 Gbe 1 Normal 💌	No 0	0 5 5
- Channel 4/1.8	4 4 4/1.1 0.0.0.0 49164	t True 💌 Pair 1 💌 Gbe 1 🔜 Normal 💌	No 0	0 6 6
Channel 4/1.9 Channel 4/1.10	5 5 4/1.1 0.0.0.0 49166	5 True v Pair 1 v Gbe 1 Normal v	No 0	0 7 7
Channel 4/1.11	6 6 4/1.1 0.0.0.0 49168 7 7 4/1.1 0.0.0.0 491768	True Pair 1 Gbe 1 Normal		0 8 8
- Channel 4/1.12	8 8 4/1.1 0.0.0.0 49172	2 True Pair 1 Gbe 1 Normal 💌	No 0	0 10 1
Channel 4/1.14 Channel 4/1.15	9 9 4/1.1 0.0.0.0 49174	t True V Pair 1 V Gbe 1 Normal V	No 0	0 11 1
Channel 4/1.16	10 0 4/1.2 0.0.0.0 49412	2 True Pair 1 Gbe 1 Normal	No 0	0 2 2
- Channel 4/1.17	Pago Pulog			
Channel 4/1.19 Channel 4/1.20	Dase Rules		Implemen	t Rules Refresh
- Channel 4/1.21	Base Value 0.0.0.0 49156	False Y Pair 1 Y Gbe 1 Normal Y	No 0	0 2 2
Channel 4/1.22	Row Increment 0 2			0 1 1
Channel 4/1.24 RF Port 4/2	Channel Offset 0 256		- 4	
		m Row Start 0 Row E	na. g	
	Show Advanced Settings			
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	Figu <mark>re 6-9 Por</mark> t a	dding and batch adding		
Step 1: click [Settin	Figure 6-9 Port a	dding and batch adding WEB network managemen	it to enter	mapping table
Step 1: click [Settin setting page;	Figu <mark>re 6-9 Port</mark> a g of Ma pp ing Table] on	dding and batch adding WEB network managemen	it to enter	mapping table
Step 1: click [Settin setting page;	Figure 6-9 Port a g of Mapping Table] on	dding and batch adding WEB network managemen	t to enter	mapping table
Step 1: click [Settin setting page; Step 2: click RF por	Figure 6-9 Port a g of Mapping Table] on t corresponding to modu	dding and batch adding WEB network managemen llation card in tree list on t	it to enter he left of	mapping table WEB network
Step 1: click [Settin setting page; Step 2: click RF por management;	Figure 6-9 Port a g of Mapping Table] on t corresponding to modu	dding and batch adding WEB network managemen Ilation card in tree list on t	t to enter he left of	mapping table WEB network
Step 1: click [Settin setting page; Step 2: click RF por management; Step 3: click [Add Po	Figure 6-9 Port a g of Mapping Table] on t corresponding to modu prt] to manually add port;	dding and batch adding WEB network managemen Ilation card in tree list on t	it to enter he left of	mapping table WEB network
Step 1: click [Settin setting page; Step 2: click RF por management; Step 3: click [Add Po Step 4: Setport page	Figure 6-9 Port a g of Mapping Table] on t corresponding to modu ort] to manually add port;	dding and batch adding WEB network management Ilation card in tree list on the second	t to enter he left of	mapping table WEB network
Step 1: click [Settin setting page; Step 2: click RF por management; Step 3: click [Add Po Step 4: Set port rece code stream sending	Figure 6-9 Port a g of Mapping Table] on t corresponding to modu ort] to manually add port; whg parameters (target I value)	dding and batch adding WEB network managemen Ilation card in tree list on t P address, UDP port and th	it to enter he left of e like) acc	mapping table WEB network ording to front
 Step 1: click [Settin setting page; Step 2: click RF por management; Step 3: click [Add Po Step 4: Set port rece code stream sending 	Figure 6-9 Port a g of Mapping Table] on t corresponding to modu ort] to manually add port; ving parameters (target I value;	dding and batch adding WEB network managemen Ilation card in tree list on t P address, UDP port and th	it to enter he left of e like) acc	mapping table WEB network ording to front
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Step 1: click [Settin setting page; Step 2: click RF por management; Step 3: click [Add Po Step 4: Set port rece code stream sending Step 5: Click [Setting Name of parameter Destination IP Addre UDP Port	Figure 6-9 Port a g of Mapping Table] on t corresponding to modu ort] to manually add port; tving parameters (target I value; g] on the page to bring the Table 6-6 Addi pr ss I	dding and batch adding WEB network management allation card in tree list on the P address, UDP port and the e parameter settings into effing ng port parameter list arameter range Legal IP Address 1~65535	It to enter he left of e like) acc ect.	mapping table WEB network ording to front Default 0.0.0.0 49156
Step 1: click [Settin setting page; Step 2: click RF por management; Step 3: click [Add Po Step 4: Set port rece code stream sending; Step 5: Click [Settin; Name of parameter Destination IP Addree UDP Port Active	Figure 6-9 Port a g of Mapping Table] on a corresponding to modu ort] to manually add port; iving parameters (target I value; g] on the page to bring the Table 6-6 Addi ss I I	dding and batch adding WEB network managemen Ilation card in tree list on t P address, UDP port and th e parameter settings into eff ng port parameter list arameter range legal IP Address 1~65535 frue/False/Delete	it to enter he left of e like) acc ect.	mapping table WEB network ording to front Default 0.0.0.0 49156 6.875
Step 1: click [Settin setting page; Step 2: click RF por management; Step 3: click [Add Po Step 3: click [Add Po Step 4: Sat port rece code stream sending Step 5: Click [Setting Name of parameter Destination IP Addree UDP Port Active Allowed Ingress Port	Figure 6-9 Port a g of Mapping Table] on t corresponding to modu ort] to manually add port; tving parameters (target I value; g] on the page to bring the Table 6-6 Addi P ss I s	dding and batch adding WEB network management allation card in tree list on the P address, UDP port and the e parameter settings into effing port parameter list arameter range Legal IP Address 1~65535 frue/False/Delete Pair1/ Pair2	it to enter he left of e like) acc ect.	mapping table WEB network ording to front Default 0.0.0.0 49156 6.875 Pair1
Step 1: click [Settin setting page; Step 2: click RF por management; Step 3: click [Add Po Step 3: click [Add Po Step 4: Set port rece code stream sending, Step 5: Click [Setting Name of parameter Destination IP Addre UDP Port Active Allowed Ingress Port Gbe Select	Figure 6-9 Port a g of Mapping Table] on t corresponding to modu ort] to manually add port; tving parameters (target I value; g] on the page to bring the Table 6-6 Addi 0 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	dding and batch adding WEB network management allation card in tree list on the P address, UDP port and the e parameter settings into effect ng port parameter list arameter range Legal IP Address 1~65535 frue/False/Delete Pair1/ Pair2 GBE1/ GBE2	it to enter he left of e like) acc ect.	mapping table WEB network ording to front Default 0.0.0.0 49156 6.875 Pair1 GBE1

Yes/No

1~65535

6.2.2.4 Setting of parameter of mapping table

No

0

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Program Number Input	0~65535	0
Program Number Output	0~65535	n
PMV	0~510	0
Data Rate Enable	Yes/No	No
Data Rate	0~200000kbps	0
Switch Rate	0~20000kbps	0

Instructions to port batch adding:

When adding more ports with regular port increment, the batch adding of the port may also be performed by using the basic batch rule at the bottom of the page. Fill in the various starting values of the port, increment of each line and among various frequency points, set the information of start frequency point, end frequency point, start line and end line information, and click settings after applying regularly. Namely, add multiple ports at one time.

📕 Card 1	St	roam	Man Co	afiguration												
🗎 Card 2	31	ream	map coi	ingurauon								-	_	_	-	
Card 3												Add	Row	Apply	Refres	h
È Card 4			Output	Destination ID				Allow	ed		0.0	Deale	Dealers	Program	Number	A
E RF Port 4/1		Row	QAM	Destination IP	UDP Port	Activ	e	Ingre	SS	GbE Select	Stream	Backu	p Backup		inumber	
Channel 4/1.1		"	Channel	Address				Port	S		Type	LIIGDIG	5 ODF FOI	X	Output	
Channel 4/1.2	0	0	4/1.1	0.0.0.0	49156	True	~	Pair 1	×	Gbe 1	Normal 💌	No	0	5 ;	2	2
Channel 4/1.3	1	1	4/1.1	0.0.0.0	49158	True	~	Pair 1	*	Gbe 1	Normal ×	No	0	0-1	3	3
- Channel 4/1.5	2	2	4/1.1	0.0.0.0	49160	True	~	Pair 1	~	Gbe 1	Normal 💌	No	0	0	4	4
- Channel 4/1.6	3	3	4/1.1	0.0.0.0	49162	True		Pair 1		Gbe 1	Normal	No	0	0	5	F
Channel 4/1.7	4	4	4/1.1	0.0.0.0	49164	True		Pair 1		Gbe 1	Normal	No	0	0	6	e
Channel 4/1.9	5	5	4/1 1	0.0.0.0	40166	True		Pair 1		Ghe 1	Normal	No		0	7	
Channel 4/1.10	6	6	4/1.1	0.0.0.0	49100	True		Pair 1		Che 1	Normal	No		0	0	6
Channel 4/1.11	0	0	4/1.1	0.0.0.0	49168	Thue	-	Fall I	8	GDe T	Norman	INU		0	8	8
Channel 4/1.12	7	7	4/1.1	0.0.0.0	49170	True	×	Pair 1	*	Gbe 1	Normal ×	No	0	0	9	9
Channel 4/1.13	8	8	4/1.1	0.0.0.0	49172	True	~	Pair 1	*	Gbe 1	Normal 💌	No	0	0	10	1
Channel 4/1.14	9	9	4/1.1	0.0.0.0	49174	True	~	Pair 1	*	Gbe 1	Normal 💌	No	0	0	11	1
Channel 4/1.15	10	0	4/1.2	0.0.0.0	49412	True	~	Pair 1	~	Gbe 1	Normal 👻	No	0	0,->	2	2
Channel 4/1.17	<				Υ <u></u>	m	_		_					1		2
Channel 4/1.18	_	_		Ú 1	1									ζ, 4		_
Channel 4/1.19	Ba	ise R	ules	I	/									100		
Channel 4/1.20				N N									Implement	Rules	Refres	h
- Channel 4/1.21	Bas	e Val	ue	0000	40156	False	v	Pair 1	v	Gbe 1	Normal 👻	No	10	0	2	2
	Row	/ Incr	ement	0	2				_					0	4	4
Channel 4/1	Cha	nnol	Offeet	0	2											-
RF Port 4/2	Cna	mer	onset	0	256	_	_	-						42	۱ <u> </u>	4
	Star	t QAN	Channe	I 4/1.1 💌 End	QAM Chann	el 4/1.	1	Ro	w St	art: 0	Row En	id: 9	-	-\ 3	1	
	<					m								~		>

how Advanced Settings

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Figure 6-10 Batch adding for port

Step 1: set starting value of port adding parameter in batch setting rule on port adding page;

Step 2: set line increment and frequency point increment;

Step 3: set start frequency point and end frequency point, and set start line and end line;

Step 4: click [Application Rule] to bring the rule into effect;

Step 5: Click [Setting] on the page ,port adding comes into effect.

Table 6-7 Batch adding port parameter list

Name of parameter	Parameter range	Default
Destination IP Address Base Value	Legal IP Address	0.0.0.0
UDP Port Base Value	1~65535	49156

Active Base Value	True/False/Delete	6.875
Allowed Ingress Ports Base Value	Pair1/ Pair2	Pair1
Gbe Select Base Value	GBE1/ GBE2	GBE1
Stream Type Base Value	Normal/DataP/DataR/Data	Normal
Program Number Input Base Value	1~65535	0
Program Number Output Base Value	1~65535	2
PMV Base Value	0~510	2
Data Rate Enable Base Value	Yes/No	No
Data Rate Base Value	0~20000kbps	0
Destination IP Address Row Increment	0~999	0
UDP Port Row Increment	0~999	2
Program Number Input Row Increment	0~999	0
Program Number Output Row Increment	0~999	1
PMV Row Increment	0~999	1
Destination IP Address Channel Offset	0~999	0
UDP Port Channel Offset	0~999	256
Start QAM Channel	1.1~1.n	1.1
End QAM Channel	1.1~1.n	1.1
Row Start	0~63	0
Row End	0~63	9
_		

2 1. The line increment refers to the increment information among various ports in the same frequency point, such as setting the line increment of the target IP as 0 and the UDP port interval as 2. The increment of the mapping input program number is 0, the increment of the output program number is 1, and the PMV increment is 1;

2. The frequency point increment indicates the information of the port increment among various frequency points, such as setting the target IP increment as 0 and UDP port increment as 256.

After setting the parameters of the mapping table, be able to enter [Card Monitoring Information] page to check the input and output information of the modulation card. In case the parameter setting is correct and program source is at normal state, the input information of various ports and the modulation output information of various frequency points may be seen under the normal situation of the program source. At the moment, get access to Set Top Box to receive output of modulator and decode to watch program.

6.2.3 Broadcast mode operation

When using the broadcast mode of the equipment, set the GBE network parameter, RF port parameter, modulation output frequency point parameter and mapping table parameter to be consistent with VOD mode operation. In case of only adding the frequency point, set as Broadcast in the QAM management item. At the moment, the front end will send multi-program streams to the device receiving port.

In the event of using the broadcast mode, firstly, set the network parameter, add the frequency point and receive the port information, and receive the program stream at the front end. Then, use the IPQAM network management system to do multiplexing and publication setting. Firstly, install the eManager network management system in the network management computer, create and configure database, and then use the eManager network management to refresh IPQAM broadcast mode and set multiplexing.

The operating steps are as follows:

1) Open the network management

Double click eManager procedure eManager in desktop, fill IP address of network management data server, username and password, and then click Confirm to log in network management (username is Admin, and the initial password is sumavisionrd).

		Sumavision
eManage	2 r	数 码 视 讯
User Name:	Admin	
Password:	*****	
Server IP address:	127 . 0 . 0 . 1	
ОК	Cancel	

- 2) Add equipment
- a. Click on the right of the mouse in the blank space, and select the Add Device under ADD





b. After correctly inputting equipment IP in the frame of adding equipment, click on Query, input the equipment name, and click on OK.

Device Info	X
Add Device	
Device lp:	192 . 165 . 10 . 151 (*) Query
Device Name:	192.165.10.151 (*)
Device Type:	lpqam30
Device Mark(OID):	.1.3.6.1.4.1.32285.2.2.2
Contact Information:	LiuLiXian
Device Position:	Beijing
System Name:	IPQAM V3.00
Snmp Version:	SnmpV2
etherDetection:	WhetherDetect (It can edit when device is the IPQAM)
Description:	IPQAM V3.00 SN:IPQAM-XXXXXXXXX
-	OK Cancel

3)

a.



After multiplexing setting interface is popped up on the network management, click refresh b. hardware in the interface to refresh equipment input/output hardware.

N+M backup settings

Edit Report Address

Auto Arrange

Property

(~
Refresh Psi/si View Cr	ard: All	Scrambling	Psi/Si Edit Card: All	~ Query
Card 1(QT242 QAM Card)		Refresh Hard	Card 1(QT242 QAM Card)	
Card 2(QT242 QAM Card)			Card 2(QT242 QAM Card)	
Card 4(QT242 QAM Card)		>	Card 4(QT242 QAM Card)	
		<		
		Set		
Property	Value	_	Property	Value
RF Port Number	0	-		
	Apply	ſ		Apply
Refresh Psi/si View C	ard: All	Scrambling	Psi/Si Edit Card: All	Query
Card 1(QT242 QAM Card)		Refresh Hard	Card 1(QT242 QAM Card)	
Card 3(QT242 QAM Card)		>	Card 2(QT242 QAM Card)	
Card 4(QT242 QAM Card)	Refresh		Card 4(QT242 QAM Card)	
		Set		
Property	Value	Set	Property	Value
Property RF Port Number	Value 0	Set	Property	Value
Property RF Port Number	Value 0	Set	Property	Value
Property RF Port Number	Value 0	Set	Property	Value
Property RF Port Number	Value 0	Set	Property	Value
Property RF Port Number	Value 0	Set	Property	Value
Property RF Port Number	Value 0	Set	Property	Value
Property RF Port Number	0 Apply	Set	Property	Value
Property RF Port Number	Value 0 Apply	Set	Property	Value
Property RF Port Number	Value 0 Apply	Set	Property	Value
Property RF Port Number	Value 0 Apply to be multiplexed, clicit	Set	Property o refresh the input lis	Value Apply t.
Property RF Port Number	Value 0 Apply co be multiplexed, clicit	Set	Property o refresh the input lis	Value Apply t.
Property RF Port Number	Value 0 Apply to be multiplexed, clic	Set	Property o refresh the input lis	Value Apply t.
Property RF Port Number	Value 0 Apply to be multiplexed, clic.	Set	Property o refresh the input lis	Value Apply t.
Property RF Port Number	Value 0 Apply to be multiplexed, clicit	Set	Property o refresh the input lis	Value Apply t.

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Card 2(01242 QAM Card 3(01242 QAM Card 4(01242 QAM Card 4(0124 QAM Card 4(0124 QAM Card 4(0124	W Card: All Card) Card) Card) Broadcast] PB Fai/si View Delete Udp Port DP) DP) DP) DP) Broadcast] Value Filter Filter Filter	Scrambling Refresh Hard	Psi/Si Edit Card: All Card 1(QT242 QAM Card) Card 2(QT242 QAM Card) Card 3(QT242 QAM Card) Card 3(QT242 QAM Card) Card 4(QT242 QAM Card)	Value	
PMT SDT NIT BAT CAT	Filter Filter Filter Filter Filter				
upper angle after	setting to check for	r correct setting	sk on inquiry building		the right
Inequency point upper angle after [192.165.10.151 Refresh Psi/si Vie Card 2(0T242 0AM Card 3(0T242 0AM Card 3(0T242 0AM Card 4(0T242 0AM Card 4(0T240 0AM Card 4(0T240 0AM Card 4(0T240 0AM Card 4(0T240	w Card: All Card) Card) Card) Card) Broadcast] DP) ferenced PIDs PIDs ram301(0x012d) ram302(0x012e)	correct setting.	Psi/Si Edit Card: All Psi/Si Edit Card: All Card 1(QT242 QAM Card) Card 2(QT242 QAM Card) Card 2(QT242 QAM Card) Card 3(QT242 QAM Card) Card 3(QT242 QAM Card) Card 4(QT242 QAM Card) C	icast] Ds 12d)(Card4->RFPort1->Freq 12e)(Card4->RFPort1->Freq 12e)(Card4->RFPort1->Freq	1->UDPPo 1->UDPPo
Inequency point upper angle after [192.165.10.151 Refresh Ps/siVie Card 2(07242 0AM Card 3(07242 0AM Card 3(07240 0AM Card 3(w Card: All Card) Card: Card: Card) Card: Card: Broadcast] DP) Frenced PIDs PIDs ram301(0x012e) ram304(0x0130) ram306(0x0132) ram306(0x0132) ram306(0x0132) ram307(0x0133) DP) DP) Value 306 306	on , choose , choo	Psi/Si Edit Card: All Psi/Si Edit Card: All Card 1(QT242 QAM Card) Card 2(QT242 QAM Card) Card 3(QT242 QAM Card) Card 4(QT242 QAM Card) C	icast] Ds 12d)(Card4->RFPort1->Freq 12e)(Card4->RFPort1->Freq 130)(Car	1->UDPPo 1->UDPPo 1->UDPPo
Irequency point upper angle after [192, 165, 10, 151 Refresh Ps/siVie Card 2(01242 QAM Card 2(01242 QAM Card 2(01242 QAM Card 2(01242 QAM Card 4(01242 QAM Card 4(0124 QAM	Value 306 CCTV 12 CCTV 12 CCTV 12 CCTV 12 CCTV 12 CCTV 12 Not scrambled Not scrambled	Scrambling	Psi/Si Edit Card: All Psi/Si Edit Card: All Card 1(QT242 QAM Card) Card 2(QT242 QAM Card) Card 2(QT242 QAM Card) Card 3(QT242 QAM Card) Card 3(QT242 QAM Card) Card 3(QT242 QAM Card) Card 3(QT242 QAM Card) Program301(bxt) Program30(bxt) Progr	Icast] Ds 12d)(Card4->RFPort1->Freq 12e)(Card4->RFPort1->Freq 12e)(Card4->RFPort1->Freq 130)(Card4->RFPort1->Freq ast] ast] ast] ast] sst] Send Send Send Send Send Send Send Send	1->UDPPo 1->UDPPo 1->UDPPo 2

IPQAM equipment of Beijing Sumavision Technologies Co., Ltd. provides so many backup functions, including input access backup, UDP port backup, RF output backup, modulation card backup and equipment backup. The backup function is implemented together with the front end equipment of Sumavision to realize relatively high stability and reliability. The setting of various backup functions of the equipment is described sequentially as follows.

6.2.4.1 Setting of input access backup

Input access backup is namely that two Gigabit accesses in one input group of IPQAM can realize backup. In case of abnormal transmission in main line, the backup line input can be adopted to ensure output stability.

XX 4-9 176 414		·									
Summary Monito	r Alarms	Cards	Ма	ps	Scrambl	е	System	۱	13:38:01		
rd List 🔍	☆ > Cards > Card 4 > Input								17		
Card 1	GbE Input Configuration								, 5 j		
Card 2									Apply Refresh		
ard 4	Port Configuration	Port '	1	Port	2		Port 3	_	Port 4		
	IP Address	192,165,152,2	12	192,165,152,2	2	192.1	65.152.23		192.165.152.24		
	Subnet Mask	255.255.255.0		255.255.255.0		255.2	255.255.0		255.255.255.0		
	Gateway	192.165.152.1		192.165.152.1		192.1	65.152.1		192.165.152.1	-1	
	MAC Address	00-24-68-03-8	0-3C	00-24-68-03-90	0-3C	00-24	I-68-03-A0-3C		00-24-68-03-B0-3C		
	Input Switch	On	~	On	~	On		~	On	~	
	Speed Select	1Gbps AN	~	1Gbps AN		1Gbp	s AN		1Gbps AN	~	
	Speed State	1Gbps Full		Link Error		Link E	Error		Link Error		
	GbE Input Name	GBE1		GBE2		GBE3	3		GBE4		
	Port Pair Configuration		Port Pair 1				F	Port F	Pair 2		
	Primary Port	1			~	1				~	
	Current Active Port	1				1					
	Packet Format	188				188					
	Redundancy Configuration										
	Backup method										
	Detention Mode of 1+1	On Gbe Link O	nly							~	
	Backup Enabled	Enabled								~	
(4)-	Check Time (100ms)	5									
	Revert To Primary	Enabled								~	
	Revert Check Time (100ms)	5									
	Backup Mode	Diffe Mode								~	
	Gratuitous ARP										
	Send Enabled	Disabled								~	
	Send Interval (s)	30									

Figure 6-11 Setting of input access backup

Step 1: click [Card Setting] on WEB network management to enter card parameter setting page;

Step 2: click [Input] corresponding to modulation card in the tree list on the left of WEB network management;

Step 3: select 1+1 for backup mode;

Step 4: select switching condition for backup, select backup enable to be Yes, set failback main channel enable to be Yes, set switching time and failback time, and select different backup modes;

Step 5: Click [Setting] on the page to bring the parameter settings into effect.

Table 6-8 Access backup parameter list

Name of param	neter	Parameter range	Default
Primary Po	rt	1/2	1
Backup meth	od	UDP/1+1/LOOP	1+1
Detention Mod 1+1	le of	On Gbe Link Only/ On Gbe Link With IP/ On Gbe Link With UDP	On Gbe Link Only
Backup Enab	led	Enabled/Disabled	Disabled
Check Time	e	0~999	5
Revert To Prin	nary	Enabled/Disabled	Disabled

Revert Check Time	0~999	5
Backup Mode	Diffe Mode/Same Mode	Diffe Mode

6.2.4.2 Setting of input UDP port backup

Input UDP port backup is namely that different UDP receiver ports in one input of IPQAM can realize backup. In case of abnormality in input of main UDP port, the input of the UDP port of the backup line can be used to ensure output stability.

Sumavisi	Sn	IPOAM 1234	4565 👔	N				Reb	oot F	Refresh H	lelp
数码视 Summary	祝 Monitor	Alarms	Cards	Ma	ps S	crambl	e	System		13:39:17	7
ard List	<									(EN	
Card 1		GbE Input Configuration								Δ^{2}	
Card 2									Apply	Refresh	
Ca <u>rd 4</u>	2	Port Configuration	Port 1		Port 2		F	Port 3	- apply	Port 4	
		IP Address	192,165,152,212		192,165,152,22		192,165,1	52.23	192.1	65.152.24	
		Subnet Mask	255,255,255,0		255,255,255.0		255,255.2	55.0	255.2	55.255.0	
		Gateway	192 165 152 1		192,165,152,1		192,165,1	52.1	192.1	65.152.1	
		MAC Address	00-24-68-03-80-30	;	00-24-68-03-90-	3C	00-24-68-	03-A0-3C	00-24-	-68-03-B0-3C	
		Input Switch	On	~	On	~	On		On		~
		Speed Select	1Gbps AN	~	1Gbps AN	~	1Gbps AN		1Gbp	s AN	~
		Speed State	1Gbps Full		Link Error		Link Error	_	Link E	rror	
		GbE Input Name	GBE1		GBE2		GBE3		GBE4		
		Port Pair Configuration		Port	Pair 1			Port	Pair 2		
		Primary Port	1				1				
		Current Active Port	1				1				
		Packet Format	188	۱,			188				
		Redundancy Configuration	-11	<u>'</u> /							
		Backup method	UDP								*
	_ [Detention Mode of 1+1	On Gbe Link Only								
		Backup Enabled	Enabled								~
		Check Time (100ms)	5								
Ì	<u> </u>	Revert To Primary	Enabled								~
	La construction de la constructi	Revert Check Time (100ms)	5								
		Backup Mode	Diffe Mode								*
		Gratuitous ARP									
		Send Enabled	Disabled								*
		Send Interval (s)	30								[

Figure 6-12 Setting of UDP port backup 1

Step 1: click Card Setting on WEB network management to enter card parameter setting page;

Step 2: click [Input] corresponding to modulation card in the tree list on the left of WEB network management;

Step 3: select UDP for backup mode;

Step 4: select backup enable to be Yes, set failback main channel enable to be Yes, set switching time and failback time, and select different backup modes;

Step 5: Click [Setting] on the page to bring the parameter settings into effect.

Table 6-9 UDP port backup parameter list 1

Name of parameter	Parameter range	Default
Primary Port	1/2	1
Backup method	UDP/1+1/LOOP	1+1
Detention Mode of 1+1	On Gbe Link Only/ On Gbe Link With IP/ On Gbe Link With UDP	On Gbe Link Only
Backup Enabled	Enabled/Disabled	Disabled

Check Time	0~999	5
Revert To Primary	Enabled/Disabled	Disabled
Revert Check Time	0~999	5
Backup Mode	Diffe Mode/Same Mode	Diffe Mode

A Amaps > Card 4 > RF Port 4/1 1 Stream Map Configuration 2 Add Row Port 4/1 Add Row Channel 4/1.1 Allowed Channel 4/1.1 Allowed Channel 4/1.2 Allowed Amaps > Card 4 > RF Port 4/1 Add Row Apply Refresh Port 4/1 Allowed Channel 4/1.1 Allowed Channel 4/1.2 Allowed Amaps > Card 4 > RF Port 4/1 Channel 4/1.1 Add Row Apply Refresh Port 4/1 Allowed Channel 4/1.2 Allowed Amaps > Card 4 > RF Port 4/1 Stream Map Configuration Add Row Apply Refresh Port 4/1 Channel 4/1.2 Allowed Amaps > Card 4 > RF Port 4/1 Allowed Amaps > Card 4 > RF Port 4/1 Allowed Amaps > Card 4 > RF Pair 1 Channel 4/1.2 Allowed Amaps > Card 4 > RF Pair 1 Channel 4/1.6 Allowed Channel 4/1.10 Allowed Channel 4/1.11 Gbe 1 Channel 4/1.12 Allowed Channel 4/1.13 Allowe Channel 4/1.14 Allowe </th <th>ary Monitor</th> <th>Alarms</th> <th>5 Ci</th> <th>ards</th> <th>Ма</th> <th>ips</th> <th>Scr</th> <th>amble</th> <th></th> <th>System</th> <th></th> <th>13:</th> <th>:42:33</th> <th></th>	ary Monitor	Alarms	5 Ci	ards	Ма	ips	Scr	amble		System		13:	:42:33	
1 Stream Map Configuration 2 Add Row Apply Refresh Port 4/1 Allowed Ingress GbE Select Stream Type Enable UDP Port Program Number Input Output Put Refresh Channel 4/1.1 Add Row Apply Refresh Add Row Apply Refresh Allowed Ingress GbE Select Stream Type Enable UDP Port Put Output Put Refresh Add Row Apply Refresh Annel 4/1.2 Aptise True Pair 1 © Gbe 1 © Normal © Ves Ø9158 0 2 2 0 No © 0 000 3 0 0 0 0 0 3 3 No © 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	<	🏠 > Maps > Card	d 4 > RF Port 4/1										$\langle \rangle$	
2 Add Row Apply Refresh Port 4/1 UDP Port Active Allowed Stream Backup Backup Backup Program Number PNV Rate Ra		Stream Map Cor	nfiguration									10	$\langle \mathcal{I} \rangle$	
4 Port 4/1 Allowed Ingress GbE Select Stream Type Backup Enable Program Number Input Output Date Rate Rate Rate Rate (kbps) Switch Rate (kbps) Channel 4/1.1 49156 True Pair 1 Gbe 1 Normal Yes 49158 0 2 No 0 2000 Channel 4/1.3 49158 True Pair 1 Gbe 1 Normal No 0 0 3 No 0 <td></td> <td><u>y</u></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>Add Row</td> <td>4</td> <td>pply</td> <td>Refresh</td> <td></td>		<u>y</u>								Add Row	4	pply	Refresh	
Port 4/1 UDP Port Active Ingress GbE Select Stream Backup Backup Program Mainee Pinv Rate Rate <thr< td=""><td></td><td></td><td>Allowed</td><td></td><td></td><td></td><td></td><td>Drogram</td><td>n Numbor</td><td></td><td>Data</td><td>Data</td><td>Switch</td><td></td></thr<>			Allowed					Drogram	n Numbor		Data	Data	Switch	
Channel 4/1.1 Ports	ort 4/1	UDP Port Act	tive Ingress	GbE Select	Stream Type	Backup Enable	Backup UDP Port	Program	Outrut	PMV	Rate	Rate	Rate	9
Channel 4/1.3 49156 Tue arit Gue	hannel 4/1.2	LOIDO TRIO	Ports	Cho 1	Normal	Veelar	40159	input	Output		Enable	(KDDS)	(KDps)	11
Channel 4/1.4 19 108 True Pair 1 Get 1 Normal No 0 0 3 3 NO 0 0 4 4 No 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 </td <td>hannel 4/1.3</td> <td>49156 True</td> <td>Pair 1</td> <td>Che 1</td> <td>Normal -</td> <td>No. r</td> <td></td> <td>0</td> <td>2</td> <td>2</td> <td>No -</td> <td></td> <td>0000</td> <td></td>	hannel 4/1.3	49156 True	Pair 1	Che 1	Normal -	No. r		0	2	2	No -		0000	
Channel 4/1.6 100	hannel 4/1.4 hannel 4/1.5	49158 True	v Pair 1 v	Che 1	Normal	No z	0	5-5	3	3	No ~		<u> </u>	
Channel 4/1.7 49162 True Pair 1 Gbe 1 Nomal No 0 5 5 NO 0 0 Channel 4/1.8 49164 True Pair 1 Gbe 1 Nomal No 0 0 7 7 No 0 0 Channel 4/1.10 49166 True Pair 1 Gbe 1 Nomal No 0 0 7 7 No 0 0 Channel 4/1.10 49168 True Pair 1 Gbe 1 Nomal No 0 0 8 8 No 0	hannel 4/1.6	49160 True	V Pair 1 V	Cho 1	Normal ×	No V	0	2 1	4	4	No x	4		
Channel 4/1.8 49164 True an u	hannel 4/1.7	49162 True	Pair 1	Cho 1	Normal		0	3/	0	5	No V	- <u>-</u>	<u> </u>	
Channel 4/1.10 49166 True Pair 1 Gbe 1 Nomal No 0 0 7 7 No 0 0 Channel 4/1.11 49168 True Pair 1 Gbe 1 Nomal No 0 0 8 8 No 0 0 Channel 4/1.12 49170 True Pair 1 Gbe 1 Nomal No 0 0 9 9 No 0 0 Channel 4/1.13 49172 True Pair 1 Gbe 1 Nomal No 0 0 11 11 No 0 0 0 Channel 4/1.13 49174 True Pair 1 Gbe 1 Nomal No 0 0 11 11 No 0	hannel 4/1.8 hannel 4/1.9	49164 True	Pair 1	Cho 1	Normal		0	0	•	-	No In		0	
Channel 4/1.11 49158 True Pair 1 Gbe 1 Normal No 0 0 8 8 NO 0 0 Channel 4/1.12 49170 True Pair 1 Gbe 1 Normal No 0 0 9 9 No 0 0 Channel 4/1.13 49170 True Pair 1 Gbe 1 Normal No 0 0 10 10 No 0 0 Channel 4/1.14 49174 True Pair 1 Gbe 1 Normal No 0 0 11 11 No 0 0 0 Channel 4/1.15 49412 True Pair 1 Gbe 1 Normal No 0 0 11 11 No 0 0 0 Pair 1 Gbe 1 Normal No 0 0 2 No 0 0 Pair 1 Gbe 1 Normal No 0 0 2 No 0 0 Pair 1 10 No 0 0 10 10 No 10	hannel 4/1.10	49166 True	Pair 4	GDE T	Normal		0	0	-	-		1.	0	
Channel 4/1.12 49170 True Pair 1 0 0 0 9 9 No 0 0 Channel 4/1.13 49172 True Pair 1 Gbe 1 Normal No 0 0 10 10 No 0 0 Channel 4/1.13 49172 True Pair 1 Gbe 1 Normal No 0 0 11 11 No 0 0 Channel 4/1.15 49172 True Pair 1 Gbe 1 Normal No 0 0 11 11 No 0 <td< td=""><td>hannel 4/1.11</td><td>49168 True</td><td>Pair I</td><td>Gbell</td><td>Normai</td><td></td><td></td><td>0</td><td>8</td><td>8</td><td>NO Y</td><td></td><td>0</td><td></td></td<>	hannel 4/1.11	49168 True	Pair I	Gbell	Normai			0	8	8	NO Y		0	
Channel 4/1.13 49172 True Pair 0 0 0 10 10 N0 0 0 Channel 4/1.15 49174 True Pair 1 Gbe 1 Normal No 0 0 11 11 No 0 0 Channel 4/1.15 49172 True Pair 1 Gbe 1 Normal No 0 0 11 11 No 0	hannel 4/1.12	49170 True	Pair 1	GDE 1	Normai			0	9	9	NO Y		0	
Channel 4/1.15 49174 True Pair Color Normal No 0 0 11 11 No 0 0 V Channel 4/1.16 49112 True Pair Color Color 0 0 2 2 No 0 0 V V 0 0 V V 0 0 V V 0 0 V V 0 0 V V 0 0 V V 0 0 V V 0 0 V V 0 0 V V 0 0 V V 0 0 V V 0 0 0 V V 0 0 V V 0 0 V	hannel 4/1.13	49172 True	Pair 1 💌	GDE 1	Normal	NO 🔛	0	0	10	10	NO Y	0	0	
Channel 4/1.16 49412 True Pair 1 Gbe 1 Normal No 0 0 2 2 No 0 0 Channel 4/1.17 Image: Channel 4/1.18 Image: Channel 4/1.19 Image: Channel 4/1.20 Image: Channel 4/1.20 Image: Channel 4/1.21	hannel 4/1.15	49174 True	Pair 1	Gbe 1 💌	Normal -	No 👻		0	11	11	No 🗠	0	0	•
Channel 4/1.17 Channel 4/1.18 Base Rules Implement Rules Refresh Channel 4/1.21 Implement Rules Refresh Refr	hannel 4/1.16	49412 True	Pair 1	Gbe 1	Normal -	No 💌	0	0	2	2	No 🗠	0	0	
hannel 4/1.19 hannel 4/1.20 hannel 4/1.21	hannel 4/1.17 hannel 4/1.18	<											×	
Channel 4/1.20 Implement Rules Refresh	hannel 4/1.19	Base Rules												
Channel 4/1.21	hannel 4/1.20									Impl	ement F	tules	Refresh	
Chapped 4/1 22 Base Value 0.0.0.0 49156 False V Pair 1 V Gbe 1 V Normal V No V 0 0 2 2	hannel 4/1.21	Base Value	0.0.0	49156	False -	Pair 1	- Gbe 1	- Nor	mal 👻 N	10 - 0		0	2 2	
hamle 4/1/22 Row Increment 0 2 0 1 1	hannel 4/1.22	Row Increment	0	2								0	1 1	
Channel 4/1.24 Channel Offset 0 256	hannel 4/1.24	Channel Offset	0	256										
ort 4/2 Start QAM Channel 4/1.1 v End QAM Channel 4/1.1 v Row Start: 0 Row End: 9	ort 4/2	Start QAM Channe	I 4/1.1 💌 Er	nd QAM Char	nnel 4/1.1	Rov	v Start: 0		Row End:	9				
		[]			111					-				

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Figure 6-13 Setting of UDP port backup 2

Step 1: Click [Setting of Mapping Table] on WEB network management to enter mapping table setting page;

Step 2: click RF output port corresponding to modulation card in the tree list on the left of WEB network management,

Step 3: select backup line port (backup line UDP port) needing UDP backup, select backup enable to be Yes, fill backup UDP port value (UDP port value of main line);

Step 4: set backup switch code rate of UDP port;

Step 5: Click [Setting] on the page to bring the parameter settings into effect.

The UDP port of which the backup enable is selected to be Yes serves as the backup line of the rear UDP port value, namely, UDP port 49158 as shown in Figure. 6-21 Setting of UDP port backup 2 serves as the main port, 49156 serves as the backup port; the input stream of the 49158 port of the main line is used for the output under normal condition. If the 49158 is abnormal, the input may switch to 49156. After the 49156 is returned to normal, automatic failback may be performed to use the input stream of 49158 port.

Table 6-10 UDP port backup parameter list 2

Name of parameter	Parameter range	Default
Backup Enable	Yes/No	No
Backup UDP Port	0~65535	0
Switch Rate	0~213000	0

6.2.4.3 Setting of access loop out

Access loop out is namely that the second line access in some input group of IPQAM may output the input stream of the first line access in the manner of loop-out, and the front end input stream may be analyzed without influencing later output.

Sumavision 数码规讯		IPQAM	1234	565	1)			Reb	oot	Refresh He	lp
Summary Moni	itor	Alarms		Cards	Ν	Лај	ps	Scram	ble	e System		13:43:18	
Card List	<		nput									17	
E Card 1 E Card 2 Card 3		GbE Input Configuration	n								Appl	y Refresh	
E Card 4		Port Configuratio	n	Port '	1		Po	ort 2		Port 3		Port 4	
Input		IP Address		192.165.152.2	12		192.165.15	2.22		192.165.152.23	192	2.165.152.24	
		Subnet Mask		255.255.255.0			255.255.25	5.0		255.255.255.0	258	5.255.255.0	
		Gateway		192.165.152.1			192.165.15	2.1		192.165.152.1	192	2.165.152.1	
		MAC Address		00-24-68-03-80	0-3C		00-24-68-03	3-90-3C	-	00-24-68-03-A0-3C	00-	-24-68-03-B0-3C	
		Input Switch		On		~	On	(~	On 💌	On	I	~
		Speed Select		1Gbps AN	(*	1Gbps AN	(*	1Gbps AN] 1G	bps AN	~
		Speed State		1Gbps Full			Link Error			Link Error	Lin	k Error	
		GbE Input Name		GBE1			GBE2			GBE3	GB	E4	
		Port Pair Configurat	tion		Po	rt P	Pair 1			Port	Pair	2	:
		Primary Port		1						1			
		Current Active Po	rt	1]		1			
		Packet Format		188	1 2	1	1		ŀ	188			
		Redundancy Configur	ration	- v'	1,3	1							
		Backup method		LOOP									×
		Detention Mode of	1+1	On Gbe Link O	nly								
		Backup Enabled	1	Enabled									
		Check Time (100m	ns)	5									
		Revert To Primar	У	Enabled									
		Revert Check Time (10	00ms)	5									
		Backup Mode		Diffe Mode									-
		Gratuitous ARP											h
		Send Enabled		Disabled									~
		Send Interval (s))	30									Ē
		Copyright© 2000-2	014 Sun	navision Inc. All	rights re-		ved IWebsi	ite manager		vision com			

Figure 6-14 Setting of access loop out

Step 1: click [Card Setting] on WEB network management to enter card parameter setting page;

Step 2: click [Input] corresponding to modulation card in the tree list on the left of WEB network management;

Step 3: select LOOP for backup mode;

Step 4: Click [Setting] on the page,the input stream of GBE1 in some input group can be output through GBE2

Table 6-11 Access loop-out parameter list

Name of parameter	Parameter range	Default
Backup method	UDP/1+1/LOOP	1+1

Backup Enabled

Enabled/Disabled

Disabled

6.2.4.4 RF Output port backup

RF output port backup is namely that RF output port of IPQAM may enable the RF output of the last line to be used as the backup line. In case of abnormality in output of main RF, the backup RF port output may be switched and put into use so as to ensure output stability.

Summary	Monitor	Alarms	Cards	Maps	Scramble	System	13:44:27
Card List	< :	🏠 > Cards > Card 4 >	Output				
■ Card 1			Output Configura	ation			
■ Card 2 Card 3	\frown		RF Port Ou	Itput Level (dBuV)	Frequency Range (MHz)	Port Control	
E Card 4	2		4/1	95.0	45~795 📺	On 💌	
 Output 			4/2	95.0	45~795	0,	
			RF Backup Confi	guration		31	
			Backup	Enabled	On 💌		
			Backu	p Port	RF Port 2		
			Rev	vert	Revert		
			Backup	Status	No Switch	n	
		Copyright® 2000-	2014 Sumavision Inc	2. All rights reserved.] tting of RF 1	Website:www.sumavision.c port backup	om	
Zton 1. aliak I		Copyright® 2000- Fig	2014 Sumavision Inc ure 6-15 Set	c. All rights reserved. I tting of RF j	Website:www.sumavision.c	om	softing page.
Step 1: click [Card Set	Copyright© 2000- Fig ting] on WF	2014 Sumavision Inc ure 6-15 Se EB network	2. All rights reserved. J tting of RF j t manageme	Website:www.sumavision.c port backup ent to enter card	om I parameter i	setting page;
Step 1: click [Step 2: click network mana	Card Set Output gement;	Copyright@ 2000- Fig ting] on WF] correspon	2014 Sumavision Inc ure 6-15 Set EB network ding to me	c. All rights reserved. I tting of RF j c manageme odulation c	Website:www.sumavision.c port backup ent to enter card card in the tree	om I parameter a e list on the	setting page; e left of WEB
Step 1: click [Step 2: click network mana Step 3: select	Card Set Output gement; backup e	Copyright© 2000- Fig ting] on WF] correspon enable in the	2014 Sumavision Inc ure 6-15 Se EB network ding to me e RF backup	2. All rights reserved. J tting of RF j t manageme odulation c p setting to	Website:www.sumavision.c port backup ent to enter card card in the tree be Yes;	om I parameter ; e list on the	setting page; e left of WEB
Step 1: click [Step 2: click network mana Step 3: select Step 4: select	Card Set [Output gement; backup e	Copyright© 2000 Fig ting] on WF] correspon enable in the	2014 Sumavision Inc ure 6-15 Se EB network ding to mo e RF backup	2. All rights reserved. J tting of RF j t manageme odulation c p setting to	Website:www.sumavision.c port backup ent to enter card card in the tree be Yes;	om I parameter a e list on the	setting page; e left of WEB
Step 1: click [Step 2: click network mana Step 3: select Step 4: tick m	Card Set [Output genent; backup e ain port;	Copyright@ 2000- Fig ting] on WF] correspon enable in the	2014 Sumavision Inc ure 6-15 Se EB network ding to me RF backuj	c All rights reserved [tting of RF] c manageme odulation c p setting to	Website.www.sumavision.c port backup ent to enter card eard in the tree be Yes;	om I parameter e list on the	setting page; e left of WEB
Step 1: click [Step 2: click network mana Step 3: select Step 4: tick m Step 5: Click	Card Sel [Output gement; backup e ain port; [Setting]	Copyright® 2000- Fig ting] on WF] correspon enable in the on the page	2014 Sumavision Inc ure 6-15 Se EB network ding to mo e RF backup e to bring th	e. All rights reserved. I tting of RF j t manageme odulation c p setting to ne paramete	Website:www.sumavision.c port backup ent to enter card eard in the tree be Yes; r settings into e	om l parameter t e list on the	setting page; e left of WEB

RF output backup may switch to use backup line output in case of abnormality in main line. After the main line is recovered, the equipment may not be automatically switched to use the main line output, the switch button as shown in Figure 6-23 Setting of RF port backup shall be manually clicked to manually switch to the main line.

Ģ

Name of parameter	Parameter range	Default
Backup Enabled	On/Off	Disabled
Main Port	Option RF Port 1	Not ticked
Backup Port	RF Port 2	RF Port 2
Revert	Revert switch	Non-revert
Backup Status	Status indication	No Switch

Table 6-12 RF output port backup parameter list

6.2.4.5 Backup of board card

The backup of board card of IPQAM may realize 1+1 backup ant 1+n backup at board card level.

1+1 backup of board card is namely that cards 1 and 2 (or 3 and 4) may be used as a backup group to realize backup at board card level. In case of abnormality in board card of the main line, the output of the backup line board card may be switched and put into use so as to ensure output stability.

1+n backup of board card is namely that the modulation card 4 is specified as the backup card, the board cards 1, 2 and 3 can be specified as the main cards for realizing backup. In case of abnormality in board card of the main line, the output of the backup line board card may be switched and put into use so as to ensure output stability.

し Sumavisで 数码视	р л ід	PQAM	1234565					1)	Reboot	Refresh Help		
Summary	Monitor	Alarms	Cards		Maps	S	ramble		System	13:45:25		
System List	< 🏠	> System > System	Configuration > Card	Backup				1	-			
■ System Configuratio	on		Cond Dealure						5 }			
About			Card Backup					*	1			
- Logs IP Network							/	Apply	Refresh			
- Clock			C Backup Disabled									
- ASI Monitor	{2;		1+1 Backup									
- Device Backup		125		•	P	air 1			Pair 2			
Param Managem	ent		Main Card		Card 1			Card	3			
User Managemer	nt		Backup Card		Card 2			Card	4			
Card Rebool			Backup Enable		Enabled			Enab	led			
			Synchronize Param		Sync			Syn	IC			
			Revert		Revert			Reve	ert			
			C AN Declara		No Switch			NO SW	Itch			
			V 1+N Backup		Cord 4		Oard 0		Oard 2			
			Main Card		Card 1		Card 2		Card 3			
			Backup Caru				alu 4					
			Supersonize Decem				Supe					
			Boyort				Boyort					
			Revert			NIZ	Switch					
			Card Packup Switch	Condition		INC	Switch					
			card Backup Switch			Cor	d lo Pullod	Out				
		4	System Group		Card Is Pulled Out							
		121	system oroup	П	Hardware Error							
				0			None				ш	
				0		GBF	PHY Not F	ound				
				С		(BE No Lin	k				
				0		GE	BE No IP Da	ata				
			Input Group	e		GB	No UDP D	Data				
				С	G	BE 1+1 6	ackup Swi	tch Failure				
				0	C UDP Backup Switch Failure							
				0	UDP F	ort Input	Effective B	itrate Abno	rmal			
				e			None					
			Output Group	0		R	F Level Err	or				
				0		RF	Backup Fai	lure			×	

Figure 6-16 Setting of 1+1 backup of board card

Step 1: click [System Setting] on WEB network management to enter system parameter setting page;

Step 2: click [Card Backup] in system configuration tree list;

Step 3: click to select [1+1 Backup]

5

Step 4: tick switch condition for 1+1 backup of board card;

Step 5: Click [Setting] on the page to bring the parameter settings into effect.

Sumavis 数码视	in the second se	IPQAM	1234565						Reboot	Refre	esh Help)			
Summary	Monitor	Alarms	Cards	Ν	/laps	Scr	amble	Sys	tem		13:46:43]			
System List	< 1	🏠 > System > System	Configuration > Card I	Backup				1	1						
🗏 System Configu	ration		Card Backup					× °	, — — — — — — — — — — — — — — — — — — —			^			
About			our a baonap				Δη	nly Re	fresh			- 11			
- IP Network			C Backup Disabled					pij				- 11			
- Clock	1 2	Y	C 1+1 Packup									- 11			
Card Backup	A (-)		~ т+т Баскир	2	Pa	air 1			air 2			- 11			
Device Backu	p		Main Card		Card 1			Card 3	un 2						
– Param Manag – User Manage	jement ment		Backup Card		Card 2			Card 4							
Card Reboot	incinc		Backup Enable		Enabled			Enabled							
			Synchronize Param		Sync			Sync							
			Revert		Revert			Revert	1			- 11			
			Backup Status		No Switch			No Switch				- 11			
		1+N Backup							- 11						
		(3)	Main Card		Card 1	•	Card 2		Card 3			- 11			
			Backup Card	1	1	Ca	ard 4					- 11			
			Backup Enable	4	<u> </u>	En	abled					- 11			
		S			S	Synchronize Param	×-	-	\$	Sync					- 11
			Revert			R	evert					- 11			
			Backup Status			No S	Switch					- 11			
			Card Backup Switch	Condition								- 11			
		155				Card	Is Pulled O	ut				- 11			
			system Group			Card	vo Respon	se							
				0		нап	None					E			
				0		GBE P	HY Not Fou	ind							
				0		GE	E No Link								
				С		GBE	No IP Data	3				- 11			
			Input Group	e		GBE I	No UDP Da	ta				- 11			
				0	GE	BE 1+1 Ba	ckup Switc	h Failure							
				0		UDP Back	up Switch F	Failure							
				0	UDP P	ort Input E	ffective Bitr	ate Abnorma							
				0			None								
			Output Group	0		RF	Level Error								
						RF Ba	ackup Failu	re							

Figure 6-17 Setting of 1+n backup of board card

Step 1: click [System Setting] on WEB network management to enter system parameter setting page;

Step 2: click [Card Backup] in system configuration tree list;

Step 3: click to select [1+n Backup]

Step 4: tick main line board card;

Step 5: tick switch condition for 1+1 backup of board card;

Step 6: Click [Setting] on the page to bring the parameter settings into effect.

Board card backup may switch to backup line board card to output in case of abnormality of pain line board card. After the main line is recovered, the equipment may not automatically switch to main line to output, and the failback button as shown in Figure 6-24 Setting of 1+1 backup of board card shall be manually clicked to manually switch to the main line.

Table 6-13 Card backup parameter list

Name of parameter	Parameter range	Default
Card Backup Mode	Backup Disabled/1+1 Backup/1+n Backup	Backup Disabled
1+1 Backup Pair	Pair 1/Pair 2	Not ticked
1+n Backup Main Card	Card 1/ Card 2/ Card 3	Not ticked
Backup Enable	Option Enabled	Not ticked
Synchronize Param	Option Sync	Not ticked
Revert	Option Revert	Not ticked
Backup Status	Status indication	No Switch
Card Backup Switch Condition	System Group/Input Group/Output Group	Not ticked

6.2.4.6 Equipment backup

The equipment backup is namely that two IPQAM with the same configuration can realize backup at equipment level. In case of abnormal transmission of main equipment, the backup line equipment may be switched and put into use so as to ensure input/output stability at modulation level.

Summary	Monitor	Alarms	Cards	Maps	Scramble	System	13:4
System List	< 🖌	> System > System	Configuration > Device E	Backup		(D)	
System Configur	ration		Device Backup			20/	
- About Logs					Apply	Refresh	
- IP Network			Local Device Backup E	nabled Main D	Device	-	
ASI Monitor		````	175		IP Address		
Card Backup	2)	Device T 3	192.16	55.10.141 🛛 🚽 🗕	-1 -1	
Device Backu Param Manac	p Jement		Target Device Conneuv	ity Test	Test	4	
- User Manage	ment		Target Device Stat	tus	No Connect		
Card Reboot			Switch To Target De	evice	Switch		
			Backup Status		Local Device In Us	e	
		ſ	Devive Backup Switch (Condition			
		1-1			Card Is Pulled Ou	t	
		5	System Group		Card No Respons	e	
		~		L 6	Hardware Error		
				0	None		
				0	GBE PHY NOLFOUR	iù	
				0	GBE No IP Data		
			Input Group	0	GBE No UDP Dat	a	
				0	GBE 1+1 Backup Switch	Failure	
				0	UDP Backup Switch Fa	ailure	
				0	UDP Port Input Effective Bitra	te Abnormal	
				۲	None		
			Output Group	0	RF Level Error		
				0	RF Backup Failur	e	
				0	Card Backup Failu	re	

Figure 6-18 Setting of equipment backup

Step 1: click [System Setting] on WEB network management to enter system parameter setting page;

Step 2: click [Equipment Backup] in system configuration tree list;

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Step 3: select main equipment for main line equipment, backup equipment for backup line equipment, according to the local backup enable;

Step 4: fill IP address of target equipment, fill IP address of backup line equipment for main line equipment, and fill IP address of main line equipment for backup line equipment;

Step 5: tick switch condition for equipment backup;

Step 6: Click [Setting] on the page to bring the parameter settings into effect.

Equipment backup may switch to use the backup line equipment to output in case of abnormality of main line equipment. After the main line equipment is recovered, the equipment may not automatically switch to main line equipment to output, the switch button as shown in Figure 6-26 Setting of equipment backup shall be manually clicked to manually switch to the main equipment.

Name of parameter	Parameter range	Default
Local Device Backup Enabled	Disabled/Main Device/Backup Device	Disabled
Device To Switch IP Address	IP address of target equipment	0.0.0.0
Target Device Connectivity Test	Option Test	Not ticked
Target Device Status	Indication of connection state of target equipment	No Connect
Switch To Target Device	Option Switch	Not ticked
Backup Status	Indication of equipment backup state	Local Device In Use
Device Backup Switch Condition	System Group/Input Group/Output Group	Not ticked

Table 6-14 Equipment backup parameter list



Chapter 7 Fault analysis and troubleshooting

7.1 Alarm information

When the modulator operates abnormally, the status indicating lamp on the front panel turns to red for indicating the user. The user can preliminarily judge the reason for the alarm of the modulator through various parameters of [Alarms] menu on the WEB page and take corresponding treatment measures. When the user fails to solve the abnormal problem of the modulator, call the user service department of Beijing Sumavision Technologies Co., Lto

7.1.1 Alarm of backstage WEB network management

7.1.1.1 Backstage WEB network management fails to be in correct connection with the equipment

Fault cause:

- 1) The PC machine with the backstage WEB network management is not communicated with the network;
- 2) The equipment is not communicated with the network;

Solution:

1) Check the setting of the computer

Check whether the network connection is established via ping order that is in the form of "IP address (xxx.xxx.xxx.xxx.xxx) of ping equipment)".First, connect IP address of ping network management ping xxx.xxx.xxx.xxx", if it is not communicated (return result is "Request time out"), it indicates the software and hardware of the computer are broken down; check whether the network adapter in WIN2000 "network" attribute is installed correctly and whether TCP/IP protocol is installed correctly. Check whether the network adapter is installed correctly through "equipment management", in "system" icon of WIN2000 "control panel", if the equipment has "exclamation mark" or "question mark", it indicates the equipment is not operated normally; reset the network adapter and the TCP/IP protocol, and restart the computer.(if change the network card configuration, restart the computer).

If possible, connect the two computers with PING opposite with cross-over cable; if successful, it indicates the network management computer and the reticle are correct.

2) Connect the reticle, the ETN light of the modulator shall turn on, the green light of the network card on the computer will turn on and the red light thereof will turn off.

If no, check the reticle firstly. Check the reticle through a multimeter to measure whether both ends of the recticle are communicated, pay attention to the difference between



cross-over cable and the standard reticle. (Note: reticles 1 and 2 shall be a pair of twisted pair cable, reticles 3 and 6 shall be a pair of twisted pair cable, which can transmit 60m generally; otherwise, the transmission distance will be limited greatly.)

If the reticle test is right, the recticle connector may not be contacted well, considering making it again.

For the system connected by a hub, check whether the hub works in order, for example whether the hub power supply is connected normally; the reticle connecting the network management or the modulator fails to insert into the port marked with "UPLINK"; if linking normally, the indicating light of the corresponding port on the hub shall turn on; otherwise, exchange the other jack to try again.

3) IP address of PING modulator on network management compute

After the above two steps of test have been passed through, check the IP address of the PING modulator on the network management computer. If PING is not communicated, check whether the IP address of the equipment has been amended manually

If PING order is normal but it fails to log in, the problem should occur on the main control panel or the host software.

7.1.1.2 Alarm information displaying: MainBoard SNTP Sync Error

Fault cause:

- 1) The SNTP Server IP Address isn't set correctly, when the clock synchronization is enabled;
- 2) The SNTP Server does not provide time synchronization.

Solution:

- 1) Modify the network management PC settings to provide time synchronization services to other devices within the network;
- Click and enter the [System] page, click on the Clock at the left side, set the Main SNTP Server IP Address and Backup SNTP Server IP Address.

7.1.1.3 Alarm information displaying: Fan 1 Speed Too Low

Fault cause:

) The cooling fan is not working properly;

olution:

1) Click and enter the [Monitor] page, click on the Device Information at the left side, s check the fan speed, and then please contact with the customer service of Sumavision.

7.1.1.4 Alarm information displaying: Card 1 GBE1 PHY Not Found

Fault cause:

- 1) Card 1 channel 1 switch is open, but there is no module in the module socket 1;
- 2) The module in Card 1 channel 1 slot is damaged.

Solution:

- 1) Insert a SFP module for card 1 channel 1;
- 2) Replace with a new SFP module and observe whether the alarm disappears, if there is still an alarm, please contact with the customer service of Sumavision.

7.1.1.5 Alarm information displaying: input code rate istoo high

Fault cause:

- 1) The effective input TS stream code rate of the equipment is too high;
- 2) The parameter setting of the equipment is incorrect.

Solution:

- 1) Recalculate the containable maximum code rate according to the setting of the different QAM modes and the symbol rates;
- 2) Confirm whether the selection of the modulator QAM mode and the setting of the symbol rate are reasonable;
- 3) Amend the front end equipment and set the reasonable input TS stream code rate.

7.1.1.6 Network management indicates that the temperature of the QAM card is too high

It is extremely possible that the cooling fan of the equipment stops working; please do troubleshooting in time.

7.1.2 Modulator part

7.1.2.1 Indicating light does not display after starting up

Fault cause:

- The power line is not connected well;
- 2) The fuse on the power socket is blown out.

Solution:

- 1) Reconnect the power line;
- 2) Replace the fuse.

7.1.2.2 Alarm information display: no Gb input data

Fault cause:

- 1) Selection of the main channel of the Gb input interface of the equipment is wrong;
- 2) The Gb input signal line of the equipment is not connected or contacts worse;
- 3) Gb SFP receiving module is damaged;
- 4) The signal of the front-end equipment is broken down.

Solution:

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- 1) Select correct main channel of the Gb input interface;
- 2) Collect or replace input Gb rectile;
- 3) Replace the SFP receiving module;
- 4) Confirm the Gb reticle is connected with effective program signal.

Chapter 8 Maintenance

This chapter describes the troubleshooting methods of IPQAM 10K511 Modulator. In the routine maintenance, refer to the analysis method and processing method in this chapter for quick analysis, addressing, processing and troubleshooting. If a special failure cannot be solved according to the method described in this guidance, please contact the the Customer Service Department of Sumavision Technologies Co., LTD. for further technical support.

8.1 Maintenance method

To make the IPQAM modulator operate under the best operating status, extend the service life of device, discover and eliminate the potential problems in time, and ensure normal operation of the device, the routine maintenance must be carried out regularly. The IPQAM modulator should be maintained according to the following rules.

Must prepare for the detailed device maintenance target plan.

The IPQAM modulator should be checked and maintained every day. If not, some small failures will develop into worse, so proper daily inspection, monthly inspection, quarterly inspection and annual inspection plans should be developed according to the operation features of the device, including the maintenance and inspection class in every period (class I maintenance, class II maintenance and class III maintenance) and detailed maintenance contents.

Appoint the maintenance person.

It is the key for the device maintenance. The combination mode of "one person inspection and several persons' inspection" is recommended for the IPQAM modulator maintenance.

> Establish the device maintenance archive.

The individual maintenance archive should be kept since the IPQAM modulator is purchased till it is abandoned. The maintenance and repair should be recorded in details. The replaced and changed parts and wire should be marked on the circuit diagram and device maintenance archive, so the diagram is consistent with the actual device. Meanwhile, it can facilitate others to maintain and repair the device.

8.2 Maintenance details

The following details should be paid attention to in the routine maintenance of the IPQAM modulator device.

> The transmission device is of great importance, and should have trained person for the routine maintenance.

Keep the site room clean, dustproof and damp-proof.

Follow the "Device Maintenance Target Plan" for routine inspection and test of the device, and record the checking results.

> Wipe the dustproof mesh of the fan every week. If the surface temperature of the device is too high, check whether the dustproof mesh of the fan is blocked.

The device is inspected according to the specifications & instruction manual of Sumavision Technologies Co., Ltd. The man-made accident should be prevented.

> Wear the anti-static bangle when operating the device hardware.

The connection between other devices in the cabinet and the IPQAM modulator should not be plugged-in or unplugged freely; to plug-in or unplug the connection, you're required to mark the original location for plugging.

➢ If the IPQAM modulator can be controlled in the control center by using the network management software, the network management password of the IPQAM modulator should be strictly managed and regularly changed, which is only distributed to the responsible maintenance person. The administrator password can only be known by the responsible maintenance person.

> Installing other software in the computer for network management system transmission and playing games with such computer are strictly prohibited; the computer with network management system should be installed the real-time virus detection software for regular virus killing.

> The computer with network management system uses UPS for power supply and regular data backup will be conducted.

> Don't reset the device easily and change the service data.

For any alarm with unidentified reasons, please contact the After-sales Technical Support Department of Sumavision Technologies Co., Ltd.



8.3 Routine maintenance

Refer to Table 8-1 for routine maintenance.

Maintenance type	Maintenance contents	Operation guide	Reference standard	Reference maintenance hour (man×hour)
Inspect external environment	Power supply in site room (DC/AC)	Check the power monitoring system or test the power output voltage.	The voltage output is normal. The power gives no abnormal alarm.	0.05
	Temperature in site room	Measure temperature.	Temperature range: 5 °C-40 °C; 15 °C-30 °C is recommended	
	Humidity in site room	Measure relative humidity.	Relative humidity: 20%-80%; 40%-65% is recommended.	
Inspect the device operation status.	Indication status of the device panel	Observe the indicator of the device panel.	Normally the power indicator, operation indicator and Gigabit indicator keep on	0.1
Inspect the device operation status.	State of official telephone (2-3 times a month)	Test call situation.	Site selection call and conference call can be normal.	0.1
Network management maintenance contents	Log on the network management system	Low-level users log on the network management system, and it is proposed each maintenance personnel have an account.	Network management system can log in normally.	0.1
	Alarm inspection	The alarm query and view function of the network management system are used to view current and historical alarm.	Unknown alarm in the system.	0.3
	Monitoring of performance events	The performance data query of the network management system is used to inquire the current and historical performance data.	The performance of equipment is reported normally.	0.5

Table 8-1 Routine maintenance

Maintenance type	Maintenance contents	Operation guide	Reference standard	Reference maintenance hour (man×hour)	
	Log query	Use the operation log query of the network management system.	No attempt to log on the network management system; No unknown data change operations.	0.05	

8.4 Monthly maintenance

8.4 Mo Refer to Tal	nthly mainte	nance maintenance.		
	, T	able 8-2 Monthly		
Maintenance type	Maintenance contents	Operation guide	Reference standard	Reference maintenance hour (manxhour)
Inspect external environment	State the cooling holes in the cabinet	View the state of cooling holes	It should be clean around the cooling holes, with no debris	0.1
Network management maintenance content	Inspect the start-up and closing of the network management system	Start, shut down network management software and computer.	It should be in both normal start-up and shutdown.	0.05
	Change the login password of the network management users	Change the user's password every month.	Change the password every month.	0.05
	Maintenance of network computers	Check the directory and the hard disk space, and antivirus.	Contents and documents are normal, with no illegal files (such as games), and the hard disk space is sufficient.	0.5
	Status of a variety of hardware interface	Check the working conditions of the mouse, keyboard, monitor, printer and others.	It can be normally used.	0.05

8.5 Quarterly Maintenance

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Refer to Table 8-3 for quarterly maintenance.

		able e e daarterij	maintenance		-
Maintenance	Maintenance	Operation guide	Reference standard	Reference	
type	contents			maintenance	
				hour	
				(man×hour)	
Inspect the cabinet cleanness	Inspect the cabinet cleanness	Observe the inside and outside the cabinet.	The cabinet surface is clean. There is no much dust inside the cabinet. Otherwise, the cabinet should be cleaned	0.5	
Inspect the device cleanness	Inspect the device cleanness	Observe device surface	There no much dust outside the device. Otherwise, it should be cleaned. Watch out the external wiring of the device in cleaning.	0.5	
8.6 Ann Refer to Tabl	ual Mainten le 8-4 for annual r	ance		0	

Table 8-3 Quarterly maintenance

8.6 Annual Maintenance

Maintenanc e type	Maintenance	Operation guide	Reference standard	Reference				
71	contents			maintenance				
				hour				
				(man×hour)				
Inspect grounding, ground cable and power lead connection	Check the	Use the earth	The joint grounding resistance is less	1				
	earth	resistance tester	than 1 ohm.					
	resistance	for testing.						
	Check the	Inspect whether	The connection is secure and	0.2				
	ground cable	the ground cable is	reliable.					
	connection.	reliably and	(2) No wire aging exists.					
		securely	(3) No erosion exists on the ground					
		connected to the	cable group, with proper anti-corrosion.					
		ground cable	0 17 1 1					
		group of the office.						
	Inspect the	Inspect whether	(1) The connection is secure and reliable.	0.2				
	power lead	the power lead is	(2) No wire erosion and aging exist.					
	connection	reliably and	()					
		securely						
		connected to the						
		power lead of the						
		office.						

Table 8-4 Annual maintenance

8.7 Clean-up and maintenance

Pay attention to the following contents for the clean-up and maintenance of the device.

Clean the working site; wipe the device shell with a soft cloth. The water can not be penetrated into the device.

Do not plug in and out all connection cables with current without instructions.

Check whether the cable is pressed or pulled by the heavy object, whether the plug and socket are connected tightly, ensure that the cable is not extruded by the external force and is placed in order. The connection part is under good contact.

Check whether the device and cable label are missing and incorrect. Keep the \triangleright label intact and correct.

 \triangleright Check whether the engineering document is complete and correct. Keep the engineering document complete for check at any time.

8.8 Operation and maintenance

Pay attention to the following contents for the maintenance when the device is operating.

> Check whether the ground cable and power supply are normal. Ensure the power supply works properly before turning on the power.

Sequence for starting the device: start the power supply of peripheral devices, and power on the cabinet, and ensure the device for signal input works normally before starting the IPQAM modulator.

Sequence for device shutdown: contrary to the sequence for starting the device.
 Power off the IPQAM modulator, and then other devices.

> Observe the indicators on front panel of the IPQAM modulator and observe the system running in the studio and the control room. In case of any abnormity, the maintenance instructions in this chapter can be referred for solution as soon as possible.

> Before the system is used, power on and inspect the system, adjust the peripheral device, and guarantee that the IPQAM modulator functions are normal.

> The local configuration can't be changed without instructions. The configuration can only be changed by the professional operator.

> Do not place the IPQAM modulator in highly noisy environment.



Chapter 9 Storage and Transport

9.1 Storage

Requirement:

Humidity: ≤95% (20℃) ; Temperature: -20℃~60℃

Don't store with corrosive liquids and gases.

Don't place the device nearby strong electromagnetic fields.

Prohibit infection by radioactive substances.

9.2 Transport

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The IPQAM modulator is packaged by using the special packaging of Sumavision. In case of intact packaging, such transportation modes like highway, railway, airline and shipping are acceptable. In case of damaged packaging, the device should be transported after being packaged by professional electronic product transportation companies.

During the transportation, the device should be handled gently to avoid throwing, falling or severe collision, and kept the labeling on the package upward.