SUMAVISION Operating Instructions

Integrated Media Processing Platform Enhanced Multimedia Router



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:

Enhanced Multimedia Router—an integrated media processing platform

The version of this manual is V1.5.

This manual provides complete configuration introductions of EMR series. 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.
- ✓ 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 integrated media processing platform--EMR, 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 Hotline: 8008103018

24-hour hotline:

Website: www.sumavision.com

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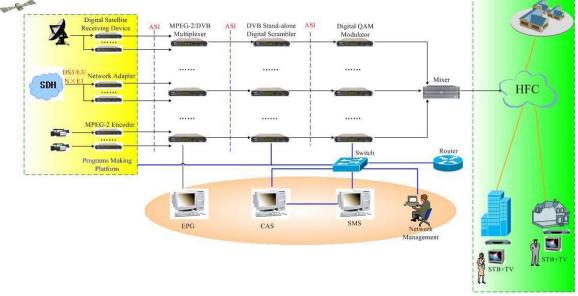
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Chapter 1 Overview

SUMAVISION Enhanced Multimedia Route, which can be abbreviated to EMR, is a new generation multi-media exchange platform. This device, which uses 1U card plug-in structure, and supports at most 6 boards (cards) as well as dual-power redundancy backup. The platform integrates multiple functions such as encoding, decoding, multiplexing, modulation, IP input/output and adaption, can be configured flexibly according to the different needs of users, and meet the vast number of operators' demands for integrated devices and multiple functions in the process of digital TV head-end platform construction sufficiently.

1.1 Network Solution



The typical networking of EMR is shown as Fig. 1-1 EMR Network solution Diagram.

Fig. 1-1 EMR Networking Diagram

In Fig. 1-2 EMR Network solution Diagram, EMR receives and encodes & compresses the analog or digital TV video & audio signals; and can also receive and adapt the adaptive signals such as DS3 and ATM; additionally, it can receive and demodulate the satellite signals as TS, and transmit them into the multiplexer, then multiplex with EPG information to become a standard DVB stream, which will be encrypted by the scrambler and CAS, and modulated by the modulator and finally transmitted on HFC network.

1.2 Main Performance Parameters

Main performance parameters of EMR are shown as follows:

✓ Support MPEG-2, H.264 standard encoding

- ✓ Support the encoding of HD and SD video resolutions
- ✓ Audio encoding: Dolby AC3 and MPEG-1 Layer II
- ✓ Support DS3, ATM and other adaption format
- ✓ Support Gigabit Ethernet input/output
- ✓ Support multi-channel ASI output
- ✓ Support ASI, DS3 and RF signal backup and switching
- Support bit rate shaping and statistical multiplexing
- ✓ The encoding supports at most 12-channel AV or SDI input and 24-channel single-track balanced audio input
- Support DVB-S/DVB-S2 descrambling and receiving, and support at most 6-channel DVB-S2 signal input descrambling
- ✓ Support BISS descrambling
- ✓ DVB-S/DVB-S2 receiving supports at most 24-channel satellite receiving and multiplexing
- ✓ DVB-T/DVB-T2 receiving supports at most 24-channel Terrestrial signal receiving and multiplexing
- ✓ Support digital SDI (embeddable audio) and digital audio input
- ✓ Support PCR correction, PSI/SI table editing and inserting functions
- ✓ Built-in comb filter and time-base correction circuitry, significantly reducing the requirements for signal sources
- ✓ Card-insertion 1U stand-alone structure, which can be used flexibly and conveniently
- ✓ Support key-press LCD operations
- Support SNMP network management functions

1.3 Applicable Standards

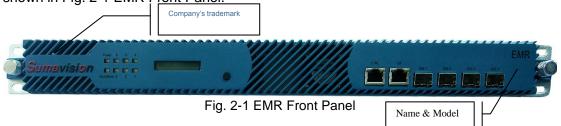
EMR is in compliance with the national and industrial standards, including:

- ✓ GB/T 17975.2-2000 Information technology--Generic coding of moving pictures and associated audio information--Part 2: Video
- ✓ GY/T 170-2001 Specifications of framing structure, channel coding and modulation for digital cable broadcasting system.

Chapter 2 Product Descriptions

2.1 Product Identification

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



Product name: Integrated Media Processing Platform

Model: EMR3.0, as shown in Fig. 2-2 EMR Front Panel.

Manufacturer: Sumavision Technologies Co., Ltd., as shown in Fig. 2-3 EMR Front Panel.

Identification description: there's the ex-factory identification on the rear panel of the device, as shown in Fig. 2-2 Ex-factory Identification.

S/N: EMR3B081006

Fig. 2-4 Ex-factory Identification

Where, "S/N" refers to the ex-factory serial number, "EMR3B" stands for the device model and "081006" is the production code.

2.2 Appearance

EMR appearance is shown as Fig. 2-3 EMR Appearance.

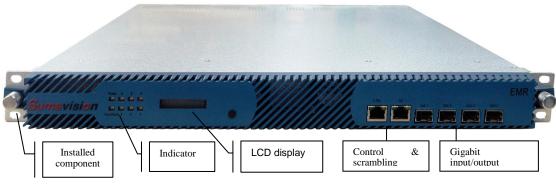
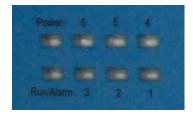


Fig. 2-3 EMR Appearance

2.2.1 Indicator

There are 8 indicators on EMR front panel, including:

• Power



Run/Alarm

• Operating indicators (1-6)

Connect to the power supply and turn on the power switch, the indicator of Power keep lighting.

When the device starts and operates normally, there is no abnormalty, the indicator of Run/Alarm on the device panel will turn green.

When the device operates abnormally, the indicator of Run/Alarm on the device panel will turn red, which prompts the user that an error has occurred.

Operating indicators of 1 to 6 are used to indicate the operating status of slot 1 to 6 respectively, and the indicator of Alarm is used to indicate the device status.

After the device has been powered on, generally the indicator of power will keep lighting once the device is started.

Table 2-1 Description for the operating status of indicator 1: lists the operating status of
indicator 1 by taking one MPEG2 analog encoding card in slot 1 as an example.
Table 2.1 Description for the operating status of indicator 1:

Operating	No.	Encoder	Signal	Multiplexing	Indicator	Slot	
indicator			source	or not	result		
	1	Encoder 1	Y	Y			
	1	Encoder 2	Y	Y			
	2	Encoder 1	Y	Y			
	2	Encoder 2	_	N	Green	Slot 1	
	3	Encoder 1	_	N	Green		
Indicator 1		Encoder 2	Y	Y			
mulcator i	4	Encoder 1	_	N			
		Encoder 2	_	N			
	F	Encoder 1	_	Y			
	5	Encoder 2	N	Y	Red		
	6	Encoder 1	N	Y			
	6	Encoder 2		Y			

Table 2-1 Description for the operating status of indicator 1:

Indicator 1 can be divided into six kinds of status as shown in the table above, "Y" stands for normal or Yes; "N" refers to abnormal or No; "-" denotes the content has nothing to do with this item. For detailed alarm contents, please query in [Status Information] of sub-cards in the menu of the device or in [Alarm Display] of Sumavision network management system.

The operating indicator of slot 2, 3, 4, 5 and 6 has the same status of indicator 1. Here no repeated description will be made.

2.2.2 LCD

Users can check IP address of the device and alarm information by querying LCD. Touch

LCD button to display IP and subnet mask information of the device, press and hold the LCD button to display current alarm information of the device.

2.2.3 Keyboard Operating

User can enable the LCD panel through keyboard to view the IP of the device.

2.2.4 Connector of the Device

SUMAVISION EMR rear panel adopts the form of sub-panels. 6 slots formed with 6 sub-panels can be handled independently, which can facilitate the plugging and un-plugging of sub-cards. Ground terminal, power switch are placed on the rear panel, see Fig. 2-4 Appearance of SUMAVISION EMR rear panel.

Definition of slot: lower left Slot 1; lower center Slot 2; lower right Slot 3; upper left Slot 4; upper center Slot 5; upper right Slot 6.

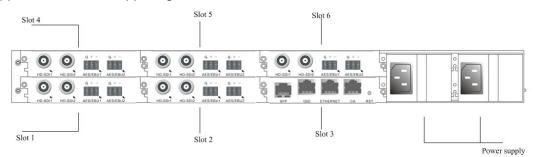


Fig. 2-5 Appearance of SUMAVISION EMR Rear Panel The corresponding relationship between the function board and the slot used is shown in Table 2-1 Function board and the slot used.

User can select to read relevant part of the Instructions according to the function board/card purchased.

	Slot 1	Slot 2	Slot 3	Slot 4	Slot 5	Slot 6
ASI 5-input card	▼	▼	▼	▼	▼	▼
ASI 4-output scrambling card	▼	▼	▼	▼	▼	▼
6-adjacent-channel QAM modulation card	▼	▼	▼	▼	▼	▼
4-frequency DVB-T2 Demodulation Receiving Card	▼	▼	▼	▼	▼	▼
Analog SD MPEG2 Encoding Card	▼	▼	▼	▼	▼	▼
HD 422 Decoding Card	▼	▼	▼	▼	▼	▼
4-frequency DVB-S2 Demodulation Receiving Card	▼	▼	▼	▼	▼	▼

Table 2-2 Function board and the slot used

2.2.5 Interface Performance

2.2.5.1 ASI 5-input card

ASI 5-input card provides 5-channel 75ΩBNC interface for ASI signal input, as shown in Fig. 2-6 ASI 5-input card:

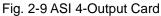


Fig. 2-7 ASI 5-input card

2.2.5.2 ASI 4-Output Scrambling Card

ASI 4-Output Scrambling Card provides 4-channel 75ΩBNC interface for ASI signal output, and an Ethernet interface for CAS connection, as shown in Fig. 2-8 ASI 4-Output Card:





2.2.5.3 6-adjacent-channel QAM modulation card

6-adjacent-channel QAM modulation card provides one 6-adjacent-channel RF output interface for the output of modulated signals, and one Ethernet interface for connecting and communicating CAS, as shown in Fig. 2-7 6-adjacent-channel QAM Modulation Card:

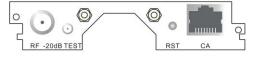


Fig. 2-10 6-adjacent-channel QAM modulation card

2.2.5.4 4-frequency DVB-T2 Demodulation Receiving Card

4-frequency DVB-T2 Demodulation Receiving Card provides four RF input interfaces, for DVB-T/T2 standard RF signal reception. 4-frequency DVB-T2 Demodulation Receiving Card is shown in Fig. 2-8.



Fig. 2-8 4-frequency DVB-T2 Demodulation Receiving Card

2.2.5.5 Analog SD MPEG2 Encoding Card

Analog SD MPEG2 Encoding Card provides the video input interface of 75ΩBNC, and provides audio input interface as the phoenix printed circuit board terminals of MINI COMBICON (MC) socket and plug, plug direction parallel with conductors axial. Analog SD MPEG2 Encoding Card is shown in Fig. 2-9.



Fig. 2-9 Analog SD MPEG2 Encoding Card

2.2.5.6 HD 422 Decoding Card

HD 422 Decoder Card has two types hardware 2.0 as Fig. 2-10, hardware 3.2 as Fig. 2-11.

Hardware 2.0 provides two HD-SDI digital video output interfaces, one group of analog video output interfaces CVBS / YPbPr , 2 AES / EBU digital audio output interfaces, and also an analog audio (balanced) output interface with the interface of phoenix printed circuit board terminal MINI COMBICON (MC) type socket.

Hardware 3.2 provides one GENLOCK frame synchronization signal input interface, two HD-SDI digital video output, an CVBS analog video output interface, two AES / EBU digital audio output interfaces, 2 audio output interfaces with DB-9 (male), which contains an analog balanced audio and an digital balanced audio.



Fig. 2-11 HD 422 Decoding Card (hardware 3.2)

2.2.5.7 4-frequency DVB-S2 Demodulation Receiving Card

4-frequency DVB-S2 Demodulation Receiving Card provides four RF input interfaces for DVB-S/S2 standard RF signal reception, Fig. 2-12 shows 4-frequency DVB-S2 Demodulation Receiving Card.



Fig. 2-12 4-frequency DVB-S2 Demodulation Receiving Card

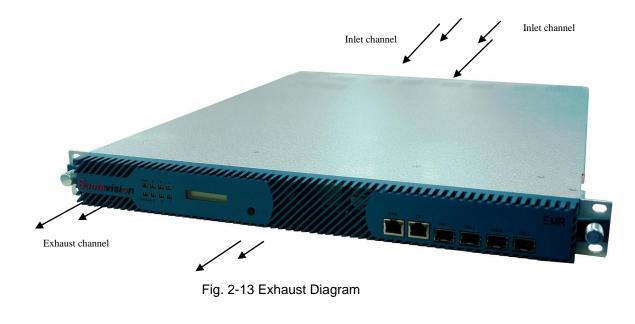
2.2.5.8 Power socket

EMR 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 EMR fully conform to the international industrial standards, for detailed information, refer to Table 10-3 Power Socket Parameters.

2.3 Heat Emission Descriptions

There are two exhaust fans installed inside the EMR to lower the risen temperature caused by the working chips during the operation of the device. EMR exhaust flow is shown as Fig.2-13 Exhaust Diagram.



Do not block the exhaust channel when installing the device.

2.4 Control Descriptions

The integrated media processing platform-- SUMAVISION EMR can achieve the control through Web and SNMP network management system.

Chapter 3 Safety Precautions

3.1 Outline Dimensions

EMR external structure is shown as Table 3-1 EMR Physical Parameters.

Physical Parameters	Value (Unit)						
Height	44.4mm (1U)						
Width	482.6mm (19")						
Depth	564.7mm						

3.2 Weight

The device weights <7.5kg, and its specific quality is related to the configurations of the device. Please be subject to the device actually purchased.

3.3 Environmental Requirements

3.3.1 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.

 \checkmark During transportation, the trolley used to transport the device should be kept balance. 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.

3.3.2 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/ m².

✓ Environment temperature:

The device can operate normally in the environment whose temperature ranges from 10° C to 40° 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 3-2 Site room dust indicators and Table 3-3 Table 3-2 Site room dust indicators

Maximum diameter (µm)	0.05	1.00	3.00	5.00
Maximum concentration (particles per cubic meter)	14×10 ⁵	7×10 ⁵	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, NH_3	0.05	0.15					
Chlorine, Cl ₂	0.01	0.30					

Table 3-3 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.

3.3.3 Power supply Requirement

Parameters for normal operation of EMR are shown as follows:

✓ Power supply:

Voltage: 100V-240V AC;

Power frequency: 50Hz-60Hz

- ✓ Power consumption:: < 100W</p>
- ✓ Nominal fuse: 2A
- ✓ Grounding: the device should be well grounded through the ground terminal.

3.4 Storage

Requirement:

Humidity: ≤95% (20°C) ;

Temperature: -20 $^\circ\!\mathrm{C}\!\sim\!60\,^\circ\!\mathrm{C}$

Don't store with corrosive liquids and gases.

Don't place the device nearby strong electromagnetic fields.

Prohibit infection by radioactive substances.

3.5 Transport

EMR 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.

Chapter 4 Installation and Debugging

4.1 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 Fitness 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 unpacking and inspection, and according to which we'll provide high-quality satisfactory after-sales services.

4.2 Installation Precautions

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

4.3 Steps and Methods of Installation

EMR 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. 4-1 Assembly cabinet for EMR.

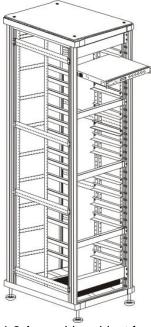


Fig. 4-2 Assembly cabinet for EMR

¹ The device can be installed in any plug-in frame of the assembly cabinet. 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.

4.4 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 video and audio signals are correct on the encoder side.
- > The device has been connected to the power supply correctly.
- If network management is needed to control devices, please connect the device with the computer.

Device power-on inspection:

- Indicators of the device display normal.
- Standby interface is displayed on the LCD of the device.
- Device keys can respond normally.
- The fans of the device can operate normally without harsh noise.
- No abnormal sounds and offensive smell.

4.5 Methods for Debugging and Testing

EMR provides the function of Device IP address search through LCD display. The button can be used to light the LCD normally to facilitate the use by users.

4.6 Device Upgrade

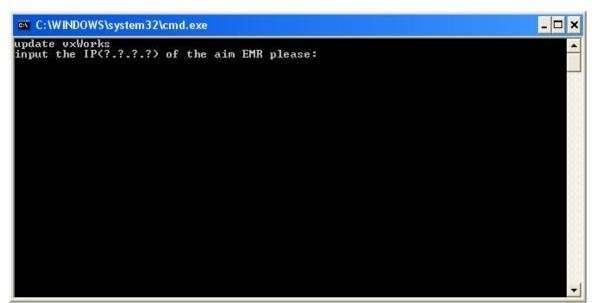
Step 1: View device IP through the LCD panel.



Step 2: Login the device ftp with ftp tool (Username: target, password: target), empty the original file. To preserve the original parameters, do not delete the files under para folder, and then upload new upgrade files.

Eile Edit Iransfer View Queue Server Help							
🎯 🔹 📴 🕼 🚇 🕸 🎉 🥷 🦹 Address: 192.165.5	58.55	User: target	Password:	Port:	21 Quick	connect 🗸	
Response: 226 Transfer complete Itatus: Directory listing successful Sommand: TYPE I Response: 200 Type set to I, binary mode TYPE A Response: 200 Type set to A, ASCII mode Command: REST 0							
Local Site: c:\	*	Remote Site: //tffs0/					
 Local Disk (C;) Documents and Settings 	~	Filename /	Filesi	ze Filetype	Date	Time	Permis
IPQAM1.0.0.5 Program Files C RECYCLER System Volume Information WINDOWS Coci Disk (0:)		back_board C304_ASI4OUT C350_ASI5IN C451E_GBEMULTI C508_QAM		File Folder File Folder File Folder File Folder File Folder	01/01/1980 01/01/1980 01/01/1980 01/01/1980 01/01/1980		drwx drwx drwx drwx drwx
Filename / Filesize Filetype Last Modified	~	Dara		File Folder	01/06/1980		drwx
		i web		File Folder	01/01/1980		drwx
Documents and Settings File Folder 4/29/2010 02:28		i webserver		File Folder File Folder	01/01/1980 01/01/1980		drwx drwx
IPQAM1.0.0.5 File Folder 10/25/2010 08:42		appInit.txt	6	05 Text Docu.			-rwx
Program Files File Folder 11/21/2011 15:25		C apparatore					(IIIS)
ECYCLER File Folder 10/24/2010 16:53							
System Volume Informa File Folder 4/29/2010 02:27	_						
WINDOWS File Folder 3/31/2012 17:13 AUTOEXEC.BAT 0 MS-DOS Batch File 4/29/2010 02:23							
boot.ini 354 Configuration 5 11/8/2011 11:27							
bootfont.bin 316 KB BIN File 12/12/2009 11:58							
CONFIG.SYS 0 System file 4/29/2010 02:23							
csb.log 58 Text Document 4/30/2010 00:02	~	<)	
i folders and 14 files with 806192016 bytes.		9 folders and 1 file with	605 bytes.				
Local Filename Size Direction Remote Filenam	ne	Host	Status		Ú).		

Step 3: Use the online upgrade tool and enter the device IP for upgrade.



The device will restart automatically after completing the upgrade.



Chapter 5 Operating Methods

This chapter mainly introduces the methods for system setting and use of EMR, which may be helpful for users to know initial knowledge about the system setting and operation steps of EMR. The system setting includes device IP, user management, factory reset and restart; and the operating method is composed of input setting, multiplexing setting and output interface operation.

5.1 Web Network Management

When setting the EMR the first time, searching IP address may be required, which can be realized through LCD on the front panel of the EMR by pressing the buttons, at this time, the LCD would display local device IP and subnet mask. The computer will be set the IP address again to make it be in the same network segment with EMR. Enter the IP address of EMR in the IE browser: http://IP_address/, with the initial username as Admin and password as sumavisionrd. The network management screen is shown as Fig. 5-1 EMR WEB Network Management Screen.

The browser must support HTML 4.0. Internet Explorer 8.0 is recommended.



Fig. 5-1 EMR WEB Network Management Screen

5.1.1 System Setting

The System Setting menu includes the following four sub-menu:

System parameter: search EMR version information, set the IP address, gateway address and subnet mask, then click "Submit" button to complete the setting;

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🙆 Sub Car	rd Parameters								
card15 Inpu	it ASI Card	Version I	nfo						
card24 Out	put ASI Card	Hardware Version:V2.0				Software Version: V3.0.1.3			
card36-Channel QAM Card		Ke	Kernel Version:V3.0.1.3			FPGA1 Version:V3.0.1.3			
card7Gbe A	ssist Handle Card	FF	FPGA2 Version: V3.0.1.2			FPGA3 Version:V3.0.1.1			
🐼 Routing	Multi Set	Network 1	Parameter						
Mux Set		IP /	IP Address: 192.165.58.55			Gateway: 192.165.58.1			
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🐼 System	Management								
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> User Management: you can add/delete users, the user types including

system administrator and ordinary user.

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🛞 Sub Card P	arameters						<u>^</u>
card15 Input A	SI Card	User	Information				
card24 Output .	ASI Card			Name	Group	Operation	
card36-Channel	QAM Card			Admin	administrator	Je.	
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Factory reset: after using this function, EMR will restart automatically, and all parameters except the device IP will be resorted to the factory settings. Does not recommend to use.

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5.1.2 Operating Method

EMR is the core head-end access device of digital TV. By configuring different board cards,

users can finish encoding, decoding, QPSK demodulation, DVB-S2 demodulation and descrambling, QAM demodulation and descrambling, DS3 adaptive input/output, QAM modulation output, ASI multiplexing and routing, IP multiplexing and routing, TS and IP signal scrambling, etc. To complete the configuration of device successfully, we'll describe basic operating processes of EMR through three parts: input section, multiplexing section and output interface section.

EMR functions can be divided into three parts:

- Part one is about the input section . In consideration that each board card can achieve different input functions, EMR input daughter card can be understood as a separate device. For example, the encoding card is equivalent to an encoder, QPSK card is equivalent to a satellite receiver, DS3 adapter card is equivalent to the adapter, and the five ASI input card functions like the multiplexer.
- Part two is about the Multiplexing section which would be realized in multiplexing screen. The relationship between the input and output can be configured to achieve the service exchange between the input interface and output interface.
- Part three is about the output interface, which output configuration should be finished on the right side of the Multiplexing screen.

To complete the configuration of EMR, the above-mentioned three functional modules should be configured step by step.

5.1.2.1 Input

EMR platform can support several kinds of program sources according to the board cards inserted, including ASI input and IP input.

- ASI Input: ASI input cards are inserted into EMR (for the method of setting, please refer to ASI input card), to provide ASI input for the platform;
- IP Input: the platform's Gigabit card can provide IP input (Refer to the method of the Gigabit Ethernet port setting);

5.1.2.2 Multiplexing Setting

The multiplexing screen is shown as Fig. 5-2 Multiplexing Screen of WEB Network Management. The selected board card on the left is used as input source, which is multiplexed to the output board card on the right by pressing the Multiplex button.

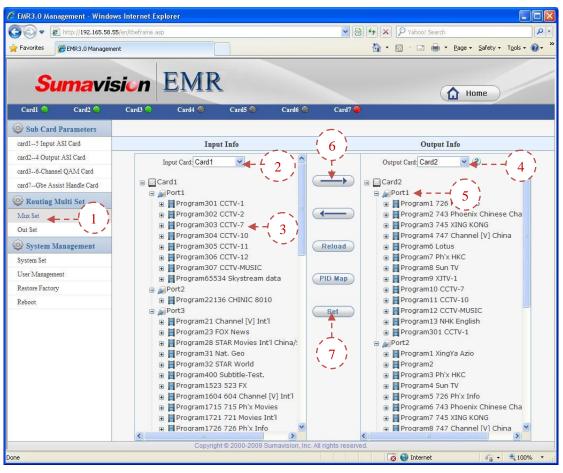


Fig. 5-1 Multiplexing Screen of WEB Network Management

Step 1: Click "Multiplexing Setting" on the network management screen to navigate to the multiplexing screen;

- Step 2: Select an input board card;
- Step 3: Select a program to be multiplexed;
- Step 4: Select an output board card for multiplexing;
- Step 5: Click a destination output port for multiplexing;
- Step 6: Click "Multiplex" button;
- Step 7: Click "Set" to make the multiplexing relationship valid.

5.1.2.3 Output Interface

Select different output interfaces to achieve diversified output streams of the platform. According to the board card inserted, the platform can select ASI output, IP output or RF output. The following describes the operating methods for board card output.

- ASI output: Insert ASI 4-channel output card (Refer to ASI 4-channel output card) into the platform to provide ASI output for the platform;
- IP output: the platform itself has a main contol gigabit card for IP output (for the method of setting, refer to Steps for Network Port Output Setting);

RF output: Insert a 6-adjacent-channel QAM modulation card (Refer to 6-adjacent-channel QAM modulation card) into the platform to provide RF output for the platform.

5.2 Board Card Description

This section will introduce the board cards applied in EMR to help users understand the version information, status information and parameter settings of each kind of board card.

5.2.1 Main Gigabit Card

The main Gigabit card is provided by the EMR itself and is different from other board cards because the main Gigabit card occupies any card slot but is integrated with the EMR. The interface card has four Ethernet ports, from left to right, they are Gigabit input/output port 1, Gigabit input/output port 2, Gigabit input/output port 3 and Gigabit input/output port 4. Gigabit input/output Ethernet port 1 and 2 are used for the output and input of IP stream, while Gigabit input/output Ethernet port 3 and 4 are backup Ethernet port of the Gigabit input/output Ethernet port 1 and 2, which requires Gigabit module to connect the Gigabit line and the router for normal communication.

The parameter screen of the main Gigabit card is shown as follows:

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💱 Sub Card Parameters	Status Info	Card Param	ARP Param	IF1 Input	IF2 Input	IF1 Output	IF2 Output		
card15 Input ASI Card	Status Into								
card24 Output ASI Card									
card36-Channel QAM Card	Versi	on Info							
card7Gbe Assist Handle Card		Hardware Version	:V3.0	Software Version:V3.0.1.2					
🞯 Routing Multi Set		FPGA Version:V3	.0.1.2	Board SN:					
Mux Set	Statu	s Info							
Out Set		IF1 Link State:Lin	ik Down		IF1 Stat	us:SFP			
🛞 System Management		IF2 Link State:Lir	ik Down		IF2 Stat	us:SFP			
System Set User Management	Input	Info							
Restore Factory			-						
Reboot	IF1 Por	t Syn	c Status	System Bit	rate	Valid Bitrate	PID Bitrate		
Reboot	IF2 Por	t Syn	c Status	System Bit	rate	Valid Bitrate	PID Bitrate		
	1	Inpu	it Async	0bps		0bps	0bps		
	2	Inpu	at Async	0bps		0bps	Obps		
	3	Inpu	it Async	0bps		0bps	0bps		
	4	Inpu	it Async	0bps		0bps	0bps		
	5	Inpu	it Async	0bps		0bps	Obps		
	6	Inpu	it Async	0bps		0bps	Obps		
	7	Inpu	it Async	0bps		0bps	Obps		
			it Async	0bps		Obps	Obps		

WEB Network Management Screen

There are the following seven sub-menu:

- Status information: search the version information, status information, input/output information of the board card;
- Board card parameter setting: Set the parameters for Ethernet port 1 and 2, including IP address, subnet mask, gateway, speed and duplex, optical output amplitude; after modifying the parameters, and click "Submit the setting" to finish the operations;
- > ARP parameters: Modify ARP static list and view ARP dynamic list;
- Ethernet port 1 input setting: Add the input port and other receiving parameters;
- Ethernet port 2 input setting: Same as above;
- Ethernet port 1 output setting: Add the output port and other sending parameters;
- Ethernet port 2 output setting: Same as above.

5.2.1.1 Steps for Ethernet Port Input Setting

The Network Management Input Setting screen displays the parameter information of the

added receiving port, and includes such functions as Add, Delete, Delete All and Modify in Batch. After finishing the modification, click "Submit" to make the modifications take into effect.

Add Port: This screen is used to add ports and set the parameters of the added ports.

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Sub Card Parameters card15 Input ASI Card	Status Info Card Param	ARP Param	IF1 Input	IF2 Input	IF1 Output	IF2 Output				
card24 Output ASI Card card36-Channel QAM Card	Input Parameters	Setting								
card7Gbe Assist Handle Card	Port Receive IP Rec P	ort Rec Mode So	urce IP1 Source	e IP2 Ref Sw	itch Ref Bitrate(bps) Appointed PI	D Alarm Switch			
🐼 Routing Multi Set		Submit Add	Delete	Delete All	Batch Modify	Refresh				
Mux Set			Clentrate	Clenckowin						
Out Set	Add Port									
😨 System Management			Add Port Num	:						
System Set			Receive IP	: 192.165.58.1	31					
User Management			IP Step Value	: 0						
Restore Factory			Receive Port	: 1234						
Reboot		1	Port Step Value	: 1						
			Receive Mode	: EXCLUDE	~					
			Source IP1	: 0.0.0.0						
			Source IP2	: 0.0.0.0						
			Ref Switch		~					
		I	Ref Bitrate(bps)							
			Specified PID							
			Alarm Switch	: ON	*					
			Submit	Cancel						
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Web Network Management Screen

Parameter	Range	Recommended value		
Number of port added	1~256	Complete according to the actual situations.		
Receiving IP	Local Ethernet port IP or multicast group IP	Complete according to the actual situations.		
IP address step value	1~	Complete according to the actual situations.		
Receiving port	1~65535	Complete according to the actual situations.		
Port No. step value	1~	Complete according to the actual situations.		
Receiving mode	INCLUDE/EXCLUDE	EXCLUDE		
Source IP1	1.1.1.1~223.254.254.254	Complete according to the actual situations.		
	(127.0.0.0~127.255.255.255,			

	the IANA reserved address unavailable)	
Source IP2	1.1.1.1~223.254.254.254	Complete according to the actual situations.
	(127.0.0.0~127.255.255.255,	
	the IANA reserved address unavailable)	
Baseline switch	On/Off	Off
Baseline bit rate	0-30000000	0
Specified PID	1~1FFF	1FFF
Alarm switch	On/Off	On

Delete: Delete the selected port;

Delete All: Delete all added ports;

Modify in batch: Select several ports to select and modify specific parameters;

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🞯 Sub Card Parameters	s	tatus	Info	Card Par	am	ARP Param	IF1 Input	IF2 Input	IF1 Output	IF2 Output		^
card15 Input ASI Card	-											
card24 Output ASI Card card36-Channel QAM Card			Inp	ut Parameter	s Setting	ţ						
card7Gbe Assist Handle Card		Port	I	Receive IP	Rec Port	Rec Mode	Source IP1	Source	IP2 Ref Switch	Ref Bitrate (bps)	Appointed PID	Alarn Switcl
🐼 Routing Multi Set		1	192.	165.57.132	51234	EXCLUDE	0.0.0.0	0.0.0.0	OFF 🛩		0x 1FFF	ON N
Mux Set		2	192.	165.57.132	51235	EXCLUDE	0.0.0	0.0.0	OFF 🛩	0	0x 1FFF	ON N
Out Set		3	192.	165.57.132	51236	EXCLUDE V	0.0.0.0	0.0.0	OFF 💌	0	0x 1FFF	ON N
System Management		4	192.	165.57.132	51237	EXCLUDE	0.0.0.0	0.0.0	OFF 💌	0	0x 1FFF	ON N
System Set		5	192.	165.57.132	51238	EXCLUDE	0.0.0	0.0.0	OFF 💌	0	0x 1FFF	ON N
User Management		6	192.	165.57.132	51239	EXCLUDE	0.0.0	0.0.0	OFF 🛩	0	0x 1FFF	ON 👌
Restore Factory		7	192.	165.57.132	51240	EXCLUDE	0.0.0	0.0.0	OFF ⊻	0	0x 1FFF	ON N
Reboot		8	192.	165.57.132	51241	EXCLUDE	0.0.0	0.0.0	OFF 🜱	0	0x 1FFF	ON 🔪
			Add	l Port	Submit	Add	Delete [Delete All Ba	atch Modify	Refresh		
	Add Port Num : Receive IP : 192 165 58 132 IP Step Value : 0 Receive Port : 1234 Port Step Value : 1 Receive Mode : EXCLUDE											
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Web Network Management Screen

Parameter	Range	Recommended value
Receiving IP	1.1.1.1~223.254.254.254 (127.0.0.0~127.255.255.255, the IANA reserved address unavailable)	Complete according to the actual situations.
Receiving port	1~65535	Complete according to the actual situations.
Receiving mode	INCLUDE/EXCLUDE	EXCLUDE
Source IP1	1.1.1.1~223.254.254.254 (127.0.0.0~127.255.255.255, the IANA reserved address unavailable)	Complete according to the actual situations.
Source IP2	1.1.1.1~223.254.254.254 (127.0.0.0~127.255.255.255, the IANA reserved address unavailable)	Complete according to the actual situations.
Baseline switch	On/Off	Off
Baseline bit rate	0-30000000	0
Specified PID	1~1FFF	1FFF
Alarm switch	On/Off	On

Refresh: Refresh the screen to acquire current parameters of the device.

5.2.1.2 Steps for Ethernet Output Setting

The Network Management Output Setting screen displays the parameter information of the added sending port, and includes such functions as Add, Delete, Delete All and Modify in Batch. After finishing the modification, click "Submit" to make the modifications take into effect.

Add Port: This screen is used to add ports and set the parameters of the added ports.

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Sub Card Para card15 Input ASI C card24 Output ASI	Card	Status Info	Card Param	ARP Param	IF1 Input	IF2 Input	IF1 Output	IF2 Output		
card36-Channel Q. ⁴	AM Card	Outpu	it Parameters Se	tting						
card7Gbe Assist H	landle Card	Port	Sys-Bitrate(b	ps) Pkt lei	ngth Dst IP	Dst Port	TTL Alarm S	witch Out Switch	Service	
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Mux Set			301		Delete	Deleteral	Daten Mouny	Keiresii		
Out Set		Add P	ort							
🐼 System Mana	gement				Add Port Num					
System Set				Syste	em Bitrate(bps)	and the second s				
User Management					Packet Length					
Restore Factory					Destination IP	IP : 192.165.52.100				
Reboot					IP Step Value	: 0				
				D	estination Port	: 1234				
				I	Port Step Value	: 1				
					TTL	: 255				
						: General servi	ces 💌			
					Alarm Switch	A CALL AND	*			
					Out Switch	: ON	~			
					Submi	t Cancel				
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Web Network Management Screen

Parameter	Range	Recommended value		
Number of port added	1~256	Complete according to the actual situations.		
System bit rate	0~100000000	3000000		
Output packet length	188/204	188		
Destination IP	Unicast IP or multicast IP	Complete according to the actual situations.		
Destination IP step value	1~	Complete according to the actual situations.		
Destination port	1~65535	Complete according to the actual situations.		
Port No. step value	1~	Complete according to the actual situations.		
TTL	1~255	255		
Service	General services / minimum cost / highest reliability / maximum throughput / minimum delay	Complete according to the actual situations.		
Alarm switch	On/Off	On		
Output switch	On/Off	On		

Delete: Delete the selected port;

Delete All: Delete all added ports;

Modify in batch: Select several ports to select and modify specific parameters;

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💱 Sub Card	Parameters	Statu	ıs Info	Card Param	ARP Par	am IF1 Input	IF2	Input	IFI	Output	IF2 C	Dutput	
card15 Input A	ASI Card												
card24 Output	it ASI Card		0	the transformed and the C									
ard36-Channe	iel QAM Card	-	0	utput Parameters S	etting								
ard7Gbe Ass	sist Handle Card		Port	Sys-Bitrate(bps)	Pkt length	Dst IP	Dst Port	TTL	Alarm S	witch O	at Switch	Service	
Routing N	Multi Set		1	1000000	188 💌	192.165.52.100	1234	255	ON	V 01		General services	~
Mux Set			2	1000000	188 💌	192.165.52.100	1235	255	ON	v 0		General services	~
Dut Set			3	1000000	188 💌		1236	255	ON	10		General services	~
System M	lanagement		4	10000000	188 <u>~</u> 188 ~	192.165.52.100 192.165.52.100	1237 1238	255	ON ON	10 ¥ 10 ¥		General services	*
ystem Set			6	10000000	188		1230	255 255	ON	0 V V 01		General services General services	~
Jser Manageme	ent		7	10000000	188 ~		1233	255	ON	10		General services	~
lestore Factory	y		8	10000000	188 🗸	192.165.52.100	1241	255	ON	v 01		General services	~
leboot			9	1000000	188 🗸	192.165.52.100	1242	255	ON	v 01	V V	General services	~
			10	1000000	188 🗸	192.165.52.100	1243	255	ON	v 01	V V	General services	~
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Web Network Management Screen

Parameter	Range	Recommended value		
System bit rate	0~100000000	3000000		
Output packet length	188/204	188		
Destination IP	Unicast IP or multicast IP	Complete according to the actual situations.		
Destination port	1~65535	Complete according to the actual situations.		
TTL	1~255	255		
Service	General services / minimum cost / highest reliability / maximum throughput / minimum delay	Complete according to the actual situations.		
Alarm switch	On/Off	On		
Output switch	On/Off	On		

Refresh: Refresh the screen to acquire current parameters of the device.

5.2.2 ASI 5-channel Input Card

ASI 5-channel input card supports 5-channel ASI input, and can search current version information, status information and parameter settings of ASI 5-channel input card through

EMR3.0 Management - Wind			~	🗟 😽 🗙 👂 Yahoo! Sear	-	
Favorites Among Annual Annua			(contraction)	🐴 🔹 🔂 - 🖂 🌧 - Page - Safety - 1		
	sion	EMR	Cardó Cardő		Home	
Sub Card Parameters						
card15 Input ASI Card	Versio	n Info				
card24 Output ASI Card		Hardware Version:V1.2		Software Version: V3.0.1.3		
card36-Channel QAM Card		FPGA Version:V3.0.1.11		Board SN:		
card7Gbe Assist Handle Card	Status	Info	: 			
😳 Routing Multi Set						
Mux Set	Port	Sync Status	System Bitrate	Valid Bitrate	PID Bitrate	
Out Set	Port1	188 Pkt Sync	38.015Mbps	33.154Mbps	4.860Mbps	
🛞 System Management	Port2 Port3	188 Pkt Sync	6.202Mbps 43.303Mbps	4.542Mbps	1.660Mbps	
System Set	Port4	188 Pkt Sync 188 Pkt Sync	38.015Mbps	34.333Mbps 36.733Mbps	8.969Mbps 1.281Mbps	
User Management	Port5	188 Pkt Sync	70.002Mbps	42.755Mbps	27.246Mbps	
Restore Factory				F		
Reboot	Param	eters Setting				
	Port	PID S	Set(Check The Appointed Rate)		Alarm Switch	
	Port1		0x 1FFF		ON 👻	
	Port2		0x 1FFF		ON 💌	
	Port3		0x 1FFF		ON 💌	
	Port4		0x 1FFF		ON 💌	
	Port5		0x 1FFF		ON 💌	
	23,50,50%		0x 1FFF	fresh		
		Copyright © 2000-	2009 Sumavision, Inc. All rights res	erved.		
ne				👩 🌍 Internet	🖓 + 🔍 100%	

WEB Network Management System.

Web Network Management Screen

Parameter	Range	Recommended value
Specified PID	1~1FFF	1FFF
Alarm switch	On/Off	On

5.2.3 ASI 4-channel Output Card

ASI 4-channel output card supports 4-channel ASI output, and achieves the scrambling of 4-channel ASI output programs through the scrambling Ethernet port integrated with the board card. The WEB Network Management System can be used to search current version information, status information and parameter settings of ASI 4-channel output

💽 🗢 🙋 http://192.165.58	3.55/en/theframe.asp		V 🛛 😽	💌 🗟 🍫 🗙 👂 Yahoo! Search			
Pavorites @EMR3.0 Management			🚵 🔹 💭 - 🖂 🌧 - Page - Safety -				
	ision	EMR	Card6 🕥 Card7 🥥		Home		
Sub Card Parameters							
card15 Input ASI Card	Versio	n Info					
card24 Output ASI Card		Hardware Version:V1.0	Software	Version:V3.0.1.3			
card36-Channel QAM Card		FPGA Version:V3.0.1.9	Board SN	:			
card7Gbe Assist Handle Card	Status	Info					
🎯 Routing Multi Set	Devel	0	D ¹	\$7-123	D:		
Mux Set	Port Port1		System Bitrate		Valid Bitrate 42.136Mbps		
Out Set	Port2		70.000Mbps 40.000Mbps		391.040Kbps		
😡 System Management	Port3	1	60.000Mbps 10.672Mbps				
System Set	Port4	0.00	.000Mbps				
User Management					•		
Restore Factory	OutCa	rd Set					
Reboot	Port	Output System Rate(bps)	Output packet length	Remake PCR	Alarm Switch		
	Port1	7000000	188 💌	ON 💉	ON 💌		
	Port2	4000000	188 💌	ON 💌	ON 💌		
	Port3	6000000	188 💌	OFF 👻	ON 🛩		
	Port4	6000000	188 💌	ON 💌	ON 💌		

card, as shown in the following figure:

WEB Network Management Screen

Parameter	Range	Recommended value
System output bit rate	0~213000000	3000000
Output packet length	188/204	188
Regenerated PCR	On/Off	Off
Alarm switch	On/Off	On

5.2.4 6-adjacent-channel QAM Modulation Card

6-adjacent-channel QAM modulation card is equipped with a RF output interface supporting 6-adjacent frequency output. The WEB Network Management System can be used to search the current version information, status information and system & output

parameter settings of 6-adjacent-channel QAM modulation card, as shown in the following

Summavision Segee Safety Tople Cardl Card2 Card3			ows Internet Exp							
Summerican EMRE Card 2 Card 3 Card 4 Card 5 Card 6 Card 7 Sub Card Parameters Satus Info Set Board ard2 - Output ASI Card Set Board Board Parameters Set Board Board Parameters Set Board Board Parameters Set Board Board Parameters Setting Channel 6402AM Channel 6402AM 554000 100 Channel 6402AM 554000 100 Channel 6402AM 570000 100 Channel 6402AM 594000 100 Channels 6402AM 6020)⊙ - @	http://192.165.58	.55/en/theframe.asp	2						
Crdl Crd2 Crd3 Crd5 Crd6 Crd7 Sub Card Parameters Status Info Set Board crd3Chamel QAL Adopt ASIC Card Board Parameters Setting crd3Chamel QAL Mode Output Freq(KHz) Output Level(dBuV) KF Switch Symbol Rate(Ksps) @ Routing Multi Set Chamel G4QAM 555000 100 95.0-115.0 ON 6875 Mux Set Chamel G4QAM 570000 100 95.0-115.0 ON 6875 Chamel G4QAM 578000 100 95.0-115.0 ON 6875 Chamel G4QAM 578000 100 95.0-115.0 ON 6875 Chamel G4QAM 610000 100 95.0-115.0 ON 6875 Chamel G4QAM 610000 100 95.0-115.0 OFF 6875 Rebot Submit <t< th=""><th>Favorites</th><th>🚰 EMR3.0 Manager</th><th>nent</th><th></th><th></th><th></th><th>- the second sec</th><th>S · 🖂 🖶 •</th><th>Page - Safety - Tool</th><th>s 🕶 🔞</th></t<>	Favorites	🚰 EMR3.0 Manager	nent				- the second sec	S · 🖂 🖶 •	Page - Safety - Tool	s 🕶 🔞
Curdl Curdl <th< th=""><th></th><th></th><th></th><th></th><th></th><th></th><th></th><th></th><th></th><th></th></th<>										
Crdl Crdl <td< th=""><th>Su</th><th>mavi</th><th>sion</th><th>EMR</th><th></th><th></th><th></th><th>_</th><th></th><th></th></td<>	Su	mavi	sion	EMR				_		
Sub Card Parameters Status Info Set Board card3 Input ASI Card card4 Output ASI Card card4 Output ASI Card Board Parameters Setting cardChonel QAM Card Channel QAM (w) 554000 100 (p3.0-1130) ON w) 6875 Mux Set Channel G4QAM w) 552000 100 (p3.0-1130) ON w) 6875 Out Set Channel G4QAM w) 552000 100 (p3.0-1130) ON w) 6875 System Management System Set Channel G4QAM w) 578000 100 (p3.0-1130) ON w) 6875 Channel G4QAM w) 578000 100 (p3.0-1130) ON w) 6875 Gamel Channel G4QAM w) 588000 100 (p3.0-1130) ON w) 6875 Gamel Channel G4QAM w) 588000 100 (p3.0-1130) ON w) 6875 Gamel Channel G4QAM w) 69000 100 (p3.0-1130) ON w) 6875 Gamel G4QAM w) 69000 100 (p3.0-1130) OFF w) 6875 Gamel G4QAM w) 610000 <t< th=""><th></th><th></th><th></th><th></th><th>-</th><th></th><th></th><th>(1</th><th>Home</th><th></th></t<>					-			(1	Home	
curdl-3 Input ASI Card Sett Bard card3-4 Output ASI Card card3-6 Channel QAM Card card3-6 Channel QAM Card Set Bard Channel Channel QAM Mode Output Freq(KHz) Output Level(dBuV) RF Switch Symbol Rate(kspp) Channel G4QAM S62000 100 950-1150 ON 6875 Channel Out Set Channel 64QAM S62000 100 950-1150 ON 6875 Channel Channel 64QAM 562000 100 950-1150 ON 6875 Channel Channel 64QAM 562000 100 950-1150 ON 6875 Channel Channel 64QAM 562000 100 950-1150 ON 6875 Channel Channel 64QAM 58000 100 950-1150 ON 6875 Channel Channel 64QAM 58000 100 950-1150 ON 6875 Channel Channel 64QAM 650200 100 950-1150 ON 6875 Channel	Cardl 🔘	Card2 🔘	Card3 🔘	Card4 🥥	Card5 🥥	Card6 🥥	Card7 🥥			
Cardia - Singut ASI Card Control card2 - 4 Output ASI Card Board Parameters Setting card3 - 4 Channel QAM Card Channel QAM Mode Output Freq(KHz) Output Level(dHv)) RF Switch Symbol Rate(ksps) Channel QAM Mode Output Freq(KHz) Output Level(dHv)) RF Switch Symbol Rate(ksps) Channel G4QAM 562000 100 050-1150 ON 6875 Image: Channel G4QAM 562000 100 050-1150 ON 6875 Image: Channel G4QAM 578000 100 050-1150 ON 6875 Image: Channel G4QAM 584000 100 050-1150 ON 6875 Image: Channel G4QAM 584000 100 050-1150 ON 6875 Image: Channel G4QAM 602000 100 050-1150 ON 6875 Image: Channel G	🔅 Sub Card I	Parameters	Status Info	C . D .						
Board Parameters Setting Gard36Channel QAM Card Cannel QAM Mode Output Freq(KHz) Output Level(dBuV) RF Switch Symbol Rate(ksps) Mux Set Channel G4QAM w 554000 100 (9:0-115.0) ON w 6875 Out Set Channel G4QAM w 552000 100 (9:0-115.0) ON w 6875 System Management G4QAM w 570000 100 (9:0-115.0) ON w 6875 System Set Channel 64QAM w 570000 100 (9:0-115.0) ON w 6875 Generation 64QAM w 570000 100 (9:0-115.0) ON w 6875 System Set Channel 64QAM w 594000 100 (9:0-115.0) ON w 6875 Restore Factory Restore Factory 64QAM w 692000 100 (9:0-115.0) OFF w 6875 Rebot Submit Refresh Submit Refresh	card15 Input A	.SI Card	Status IIII0	Set Board						
Channel QAM Card Channel QAM Mode Output Freq(KHz) Output Level(dBuV) RF Switch Symbol Rate(ksps) Mx Set Channell 64QAM 554000 100 (95.0-115.0) ON 6875 1 W Set Channell 64QAM 552000 100 (95.0-115.0) ON 6875 1 Out Set Channell 64QAM 570000 100 (95.0-115.0) ON 6875 1 System Management System Set Channell 64QAM 554000 100 (95.0-115.0) ON 6875 1 System Set User Management 562000 100 (95.0-115.0) ON 6875 1 Restore Factory E40AM 554000 100 (95.0-115.0) OFF 6875 1 Reboot Imagement 640AM 6502000 100 (95.0-115.0) OFF 6875 1 Reboot Imagement 640AM 610000 100 (95.0-115.0) OFF 6875 1<	card24 Output	ASI Card								
Channell EdQAM 554000 100 (95.0-115.0) ON K Max Set Out Set Channell EdQAM 552000 100 (95.0-115.0) ON K 6875 Channell EdQAM S52000 100 (95.0-115.0) ON K 6875 Channell EdQAM S52000 100 (95.0-115.0) ON K 6875 Channell EdQAM S70000 100 (95.0-115.0) ON K 6875 Channell EdQAM S78000 100 (95.0-115.0) ON K 6875 Channell EdQAM S86000 100 (95.0-115.0) ON K 6875 Channell EdQAM S94000 100 (95.0-115.0) ON K 6875 Channell EdQAM S94000 100 (95.0-115.0) OFF 6875 Channell EdQAM S10000 100 (95.0-115.0) OFF 6875	card36-Channe	I QAM Card	Board	Parameters Set	ting					
Max Set Channel2 640AM 552000 100 950-115.00 DN © 6875 Out Set Channel3 640AM 570000 100 950-115.00 DN © 6875 0 System Management System Set Channel5 640AM 578000 100 950-115.00 DN © 6875 0 0 100 950-115.00 DN © 6875 0 0 0 0 950-115.00 DN © 6875 0<	card7Gbe Assis	st Handle Card	Channel	QAM Mode	Output Freq	(KHz)	Output Level(dBuV)	RF Switcl	h Symbol Rate(k	csps)
Num set Channel3 640AM 570000 100 050-115.00 ON × 6875 System Management System Set Channel5 640AM 678000 100 050-115.00 ON × 6875 Channel4 640AM 678000 100 050-115.00 ON × 6875 System Set Channel5 640AM 594000 100 050-115.00 ON × 6875 Channel5 640AM 652000 100 050-115.00 ON × 6875 Restore Factory Channel8 640AM 662000 100 050-115.00 OFF × 6875 Rebot Submit Refresh Submit Refresh Submit Refresh	😡 Routing M	ulti Set	Channel1	64QAM 💌	554000	100	(95,0~115	0) ON N	6875	
Chranel4 640AM 578000 100 050-115.00 DN © 6875 System Set Channel5 640AM 586000 100 050-115.00 DN © 6875 User Management Channel6 640AM 594000 100 050-115.00 DN © 6875 Restore Factory Channel8 640AM 602000 100 050-115.00 DFF © 6875 Reboot Channel8 640AM 610000 100 050-115.00 DFF © 6875	Mux Set		Channel2	64QAM	562000	100	(95.0~115	.0) ON 💽	6875	
Channel5 540AM 586000 100 05.0-115.0) DN © 6875 User Management Channel6 640AM 594000 100 05.0-115.0) DN © 6875 0 0 00 05.0-115.0) DN © 6875 0	Out Set		Channel3	64QAM 😒	570000	100	(95.0~115	.0) ON N	6875	
System Set Channel5 640AM S86000 100 05.0-115.00 ON 6875 User Management Channel6 640AM 594000 100 05.0-115.00 ON 6875 Restore Factory Channel8 640AM 602000 100 095.0-115.00 OFF 6875 Reboot Channel8 640AM 610000 100 095.0-115.00 OFF 6875	Stratom M.	nagomont	Channel4	64QAM	578000	100	(95.0~115	.0) ON N	6875	
User Management Channel6 640AM 594000 100 (95.0-115.0) ON 6875 Restore Factory Channel7 640AM 602000 100 (95.0-115.0) OFF 6875 Reboot Channel8 640AM 610000 100 (95.0-115.0) OFF 6875		inagement	Channel5	64QAM 🗠	586000	100	(95.0~115	.0) ON N	6875	
Restore Factory Channel? 640AM 602000 100 (95.0-115.0) OFF 6875 Reboot <t< td=""><td>1.000 v0.01</td><td></td><td>Channel6</td><td>64QAM 😪</td><td>594000</td><td>100</td><td>(95.0~115</td><td>0) ON N</td><td>6875</td><td></td></t<>	1.000 v0.01		Channel6	64QAM 😪	594000	100	(95.0~115	0) ON N	6875	
Reboot Reboot Reboot Reboot Reboot Refresh			Channel7	64QAM	602000	100	(95.0~115	0) OFF	6875	
Submit Refresh	2010/02/02/02/02/02/02/02/02/02		Channel8	64QAM 🕑	610000	100	(95.0~115	.0) OFF	6875	
	Reboot									
						Submit	Refresh			
Operational de 0000 0000 Operationer Jac All diskte segarand										
A service leak do 0,000,0000 A service laters. The All disable services of										

WEB Network Management Screen

Parameter	Range	Recommended value		
Channel encoding mode	ANNEX_A/B	Set according to the needs		
Channel bandwidth	6/8M	Set according to the channel encoding mode		
Authorization code	Output 1-6 Channels	No need to modify		
QAM mode	64/128/256QAM	64QAM		
Output frequency	52-940Mhz	Set according to the needs		
Output level	95-115dB	Set according to the needs		
RF switches	On/Off	Open with the frequency point setting		
Symbol rate	5000-7000Khz	6875Khz		

5.2.5 4-frequency DVB-T2 Demodulation Receiving Card

4-frequency DVB-T2 Demodulation Receiving Card provides 4 RF input interfaces, for DVB-T/T2 standard RF signal reception. The WEB Network Management System can be used to search the current status information and set receiving parameters of 4-frequency DVB-T2 Demodulation Receiving Card, as shown in the following figure:

Sum	avision	EMI	R					Home
Cards	System	n Mu	uxing Setting	Output Setting	Logou	ıt		
Cards >	card5-4 DVB-T2 De	mod Card > Ca	rd Param					
Status Info	Card Param							
Port1 P	arameter							
	Output	Switch: ON	*			Alarm Switch:	OFF 🗸	
	Central Frequer					Bandwidth:		
		andard: DVB_T				PLP_ID:		(0~255)
						PROFILE:		
Port2 P	arameter							
	Output	Switch: OFF	~			Alarm Switch:	OFF 🗸	
	Central Frequer					Bandwidth:		
		andard: DVB_T				PLP_ID:		(0~255)
						PROFILE:		
Port3 P	arameter							
	Output	Switch: OFF	~			Alarm Switch:	OFF 🗸	
	Central Frequer					Bandwidth:		
	Input Sta	andard: DVB_T	2 🖌			PLP_ID:	0	(0~255)
						PROFILE:	HP 🗸	
Port4 P	arameter							
	Output	Switch: OFF	~			Alarm Switch:	OFF 🗸	
	Central Frequer	ncy(Hz): 554000	0000			Bandwidth:		
	Input Sta	andard: DVB_T	~			PLP_ID:		(0~255)
						PROFILE:	HP 🗸	
				Submit	Refresh			
Card1 🥥	Card2 🔘	Card3 🥚	Card4 🔘	Card5 🧼	Card6 🔘	Card7 🥚		

WEB Network Management Screen

5.2.6 Analog SD MPEG2 Encoding Card

Analog SD MPEG2 Encoding Card can encode 2 analog programs, including video and audio, into TS format. The WEB Network Management System can be used to search the current status information and set receiving parameters of Analog SD MPEG2 Encoding Card, as shown in the following figure:

	avisĭon ^L	MR				Home
Cards	System	Muxing Setting	Output Setting	Logout		
Cards > c	card3AENC Card > Port1					
ort1	Port2					
	Alarm Switch: C	N 🔹				
Video Pa	rameter					
	Video Switch: 0	DN 💌		Video No Input Out:	Colorbar	1
	Video Pattern: F			Video Level:		
	Video Bitrate Control: C	BR 🔹		Chroma phase:	128]
	Video Bitrate(bps): 4	200000		Black Level:	128	
	Avg VBR Rate(bps): 3	800000		Chroma gain:	128]
	GOP Structure:	BBP		Aspect Ratio:	4:3	
	GOP Size: 1	2		Hor Resolution:	D1 💌	
Audio Pa	rameter					
	MP2 Audio Switch:	DN 💌		AC3 ENC Switch:	OFF •	1
	MP2 Audio Mode: S			AC3 Audio Mode:		-
	MP2 Volume Level: 0			AC3 Volume Level:		
	MP2 Audio Rate: 2			AC3 Audio Rate:		-
	MP2 Audio Samplerate: 4	8Kbps 💌		AC3 Audio Samplerate:	48Kbps 💌	
				AC3 ENC Delay(ms):	0	
TS Stream	m Set					
	Multiplex Switch: 0	DN 💌		PMT PID:	112]
	Program No: 7			Video PID:	L	
	Service Name: E	NC5		MPEG2 Audio PID:	114	1
	Service Provide: D	VT		AC3 Audio PID:	116	
	PCR PID: 1	13				
VBI Info						
	TT Switch:)FF 💌		CC Field1 Switch:	OFF 💌	1
	TT PID: 8			Field1 Line Num:		
	CC Switch: C			Field2 Line Num:		
	CC Field2 Switch: C					-
			Submit	Refresh		

WEB Network Management Screen

5.2.7 HD 422 Decoding Card

HD 422 Decoding Card can decode SD or HD program, supporting the outputs of 1 video and 2 audios (hardware version V3.2 supports 4 audio outputs). The program needed to be decoded can be selected by multiplexing function. The WEB Network Management System can be used to search and set the current status of HD 422 Decoding Card, as shown in the following figure:

Sum	avision	EMR	R					Home
Cards	Syste	m Mux	king Setting	Output Setting	Log	jout		
Cards >	card4HD-422 DEC	Card > Port 1 > F	Parameter Set					
Card Set	Port 1							
Ctatus Info	Desemator	Cat						
Status Info	Parameter	Set						
Decode	Set							
	Decode Sv	witch: ON	•			Audio1 PID:	8191	
	PID I	Node: Select Prog				Audio2 PID:		
	STC Co	rrect: ON	-			Audio3 PID:	8191]
	Error Pa	ttern: Freeze	•			Audio4 PID:	8191	
	Prog S	elect: 65535				Teletext PID:	8191	
	Video	o PID: 8191						
Video P	arameter							
	A)	/ Out: CVBS	•					
		/ Out. CVB3	-					
Audio P	arameter							
	Audio1 Volume	e(dB): 0			A	udio2 Volume(dB):	0	
	Audio1 I	lode: Stereo	•			Audio2 Mode:	Stereo	•
	Audio XLR	1 Out: Audio1	•			Audio XLR2 Out:	Audio2	•
	Audio AES	1 Out: Audio1	-			Audio AES2 Out:	Audio2	
	Audio EMB ²	1 Out: Audio1	-			Audio EMB2 Out:		
	Audio EMB3	3 Out: Audio3	•			Audio EMB4 Out:	Audio4	•
GENLO	CK Parameter							
		Index OFF	•		501	lor Dhage/Cleakly	2750	
	FS Ver. Phase(Node: OFF	-		131	Hor. Phase(Clock):	2750	
	1 5 Vel. Fildsen	Line). 35						
VBI Par	ameter							
	CC O	n/Off: OFF	•			VANC Mode:	Line21	-
	CC Delay(Fra	ame): 1				VANC Line(Line):		
				Submit	Refresh			
Card1 🔘	Card2 🔘	Card3 🥥	Card4 🥚	Card5 🔘	Card6 🥥	Card7 🥚		

WEB Network Management Screen

5.2.8 4-frequency DVB-S2 Demodulation Receiving Card

4-frequency DVB-S2 Demodulation Receiving Card provides 4 RF input interfaces, for DVB-S/S2 standard RF signal reception. The WEB Network Management System can be used to search the current status information and set receiving parameters of 4-frequency DVB-S2 Demodulation Receiving Card, as shown in the following figure:

Sumavision	EMR			Home
Cards System	Muxing Setting	Output Setting	Logout	
Cards > card64-ch.DVBS2 De	emod Card > Demod Set			
Card Set Demod Set	BISS Set Status Info			
Port1 Demod Parameters Sett	ting			
Tuner Switch	h: OFF 💌		22KHz Switch:	OFF
Standard	d: DVB-S		Downfreq(KHz):	4080000
Polarize	e: OFF		Localfreq(KHz):	5150000
Search	h: Stop 💌		Symbolrate(sps):	27500000
Descramble Type	e: No Descramble 💌			
Port2 Demod Parameters Sett	ting			
Tuner Switch	h: OFF		22KHz Switch:	OFF 🔹
	d: DVB-S		Downfreq(KHz):	
Polarize			Localfreq(KHz):	
Search	h: Stop		Symbolrate(sps):	27500000
Descramble Type	e: No Descramble 👻			
Port3 Demod Parameters Sett	ting			
Tuner Switch	h: OFF		22KHz Switch:	OFF 🔹
	d: DVB-S		Downfreg(KHz):	
Polarize			Localfreq(KHz):	
	h: Stop		Symbolrate(sps):	27500000
Descramble Type	e: No Descramble 💌			
Port4 Demod Parameters Set	ting			
Tuner Switcl	h: OFF		22KHz Switch:	OFF
	d: DVB-S		Downfreg(KHz):	
Polariz			Localfreg(KHz):	
Search	h: Stop		Symbolrate(sps):	27500000
Descramble Type	e: No Descramble 💌			
		Submit	(Refresh)	
Card1 🌒 Card2 🌒 Ca	ard3 🔴 🛛 Card4 🔴	Card5 🔘	Card6 🥥 Card7 🔴	

WEB Network Management Screen

5.3 Web Network Management for Scrambling Module

In EMR, the Scrambling module uses CA network interface, and can be set independently by web network management. The first time setting scrambling module in EMR, we need to query the IP address, which can be checked from the web network management. Logging in the system setting page, we can see the CA IP directly. Then, we need to reset the IP Address of the client PC to make sure in the same subnet mask. After that, type http://IP_address/ of EMR in the IE explorer, initial user: Admin, password: sumavisionrd. The network management page is shown below in Fig. 5-3.

Web browser needs to support HTML 4.0, suggest to use Internet Explorer 8.0.

Sumavison
EMR3.0 Scramble Module
简体中文 English
Copyright 2000-2012 Sumavision Inc. All rights reserved. 阿拉 <u>www.sumavision.com</u>
Fig. 5-3 EMR3.0 Web NMS for Scrambling Module

5.3.1 System Setting

- > There are four submenus in the system setting menu.
- System parameters: in which we can set IP address, subnet mask and gateway, set authorization information, and set PID's display. Click button "Submit" to finish setting, seen in figure 5-4.

Sumavis	Son EN	IR3.0	Scramble	Module	(Home
System	Program Scramble	Port Set	CAS Set	EMM Set	Logout	
System > Syste	em Set					
Network Param	neter					
	IP Address: 192.165.52 Net Mask: 255.255.25			-	192.165.52.1 00-24-68-00-B1-82	
License Info						
	License: Port	100Ports		SimulCrypt License:	: 3SimulCrypt	
Other						
	PID Display: Hexadecin Moudule SN: 1202C472			AC-Mode:	: Normal 💌	
			Submit	Refresh		

Fig. 5-4 System Setting for Scrambling Web

User Management: we can add or delete users, and the user type can be system manager or common user, as Fig. 5-5 shows.

System	Program Scramble	Port Set	CAS Set	EMM Set	Logout	
User Inform	nation					
		Name	User Permission	Operation		
		Admin	administrator	ð		
		Guest	user	<i>े</i> ×		
			Add Refre	sh		
			Nuu (Keire)			

Fig. 5-5 User Information for Scrambling Web

Status information: there are three sub pages: system status, ECM status and EMM status. System status shows the version information of the system, EMM's total bit rate and EMM's memory used percent,Fig. 5-; ECM status shows the connect status of ECM, as shows in Fig. 5-7; EMM status shows the connect status of EMM, as shows in Fig. 5-8.

Sum	avision	EMR	3.0 \$	Scramble	Module		Home
System	Program So	cramble	Port Set	CAS Set	EMM Set	Logout	
System Status	ECM Status	EMM Status					
	Soft Vers	ion:V3.0.5			EMM Total Bi	trate:0kb/s	
	FPGA Vers	ion:V3.1.6			Memory I	Used:0%	
	Web Vers	ion:V3.0.3					
				Refre	sh		

Fig. 5-6 System Status

Suma	avision	Lawing	3.0 Scra	IIIDIC	mouule		Home
System	Program	Scramble	Port Set	CAS Set	EMM Set	Logout	
n Status	ECM Status	EMM Status					
Group	D	NO.1 ECM	NO.2 ECM		NO.3 ECM	NO.4 ECM	EIS Module
Group	1	closed	closed		closed	closed	closed
Group	2	closed	closed		closed	closed	closed
Group	3	closed	closed		closed	closed	closed
Group	4	closed	closed		closed	closed	closed
Group	5	closed	closed		closed	closed	closed
Group	6	closed	closed		closed	closed	closed
Group	7	closed	closed		closed	closed	closed
Group	8	closed	closed		closed	closed	closed
Group	9	closed	closed		closed	closed	closed
Group '	10	closed	closed		closed	closed	closed
Group '	11	closed	closed		closed	closed	closed
Group '	12	closed	closed		closed	closed	closed
Group 13 closed		closed	closed		closed	closed	closed
Group '	14	closed	closed		closed	closed	closed
Group '	15	closed	closed		closed	closed	closed
Group '	16	closed	closed		closed	closed	closed

Fig. 5-7 ECM Status

Sumavision D				ramble M	oudio	Home			
System	Program	Scramble	Port Set	CAS Set	EMM Set	Logout			
m Status	ECM Status	EMM Status							
EMMG		EMM Link		EMM Rate		EMM TS Rate			
NO.1 EMM	G	closed		0kb/s(MAX:0kb/s)		0kb/s(MAX:0kb/s)			
NO.2 EMM	G	closed		0kb/s(MAX:0kb/s)		0kb/s(MAX:0kb/s)			
NO.3 EMM	G	closed		0kb/s(MAX:0kb/s)		0kb/s(MAX:0kb/s)			
NO.4 EMM	G	closed		0kb/s(MAX:0kb/s)		0kb/s(MAX:0kb/s)			
NO.5 EMM	G	closed		0kb/s(MAX:0kb/s)		0kb/s(MAX:0kb/s)			
NO.6 EMM	G	closed		0kb/s(MAX:0kb/s)		0kb/s(MAX:0kb/s)			
NO.7 EMM	G	closed		0kb/s(MAX:0kb/s)	0kb/s(MAX:0kb/s)				
NO.8 EMM	G	closed		0kb/s(MAX:0kb/s)		0kb/s(MAX:0kb/s)			
NO.9 EMM	G	closed		Okb/s(MAX:0kb/s)		0kb/s(MAX:0kb/s)			
NO.10 EMM	IG	closed		0kb/s(MAX:0kb/s)		0kb/s(MAX:0kb/s)			
NO.11 EMM	IG	closed		0kb/s(MAX:0kb/s)		0kb/s(MAX:0kb/s)			
NO.12 EMM	IG	closed		0kb/s(MAX:0kb/s)		0kb/s(MAX:0kb/s)			
NO.13 EMM	IG	closed		0kb/s(MAX:0kb/s)		0kb/s(MAX:0kb/s)			
NO.14 EMM	IG	closed		0kb/s(MAX:0kb/s)		0kb/s(MAX:0kb/s)			
NO.15 EMM	IG	closed		0kb/s(MAX:0kb/s)		0kb/s(MAX:0kb/s)			
NO.16 EMM	IG	closed		0kb/s(MAX:0kb/s)		0kb/s(MAX:0kb/s)			

Fig. 5-8 EMM Status

Device restart: this function is for the scrambling module in EMR to restart itself,Fig. 5-.

S	umavis)	en E	MR3.0	Scramble	Module		Home
Syst	tem F	Program Scramb	le Port Se	et CAS Set	EMM Set	Logout	
				Are you sure to rel			
				Fig. 5-9 Re:	start Page		

5.3.2 Program Scramble

The web page for Program Scramble is displayed in Fig.Fig. 5-.

Suma	vision	EMR3.) Scramb	le Mod	ule	(Home
System	Program S	cramble Port	Set CAS	S Set	EMM Set	Logout	
Program Sc	ramble						
Port Select							
Searce Scramble S	Select Port:	Search All Main Gbe Card 🔽	Set Search				
Prog		SCG ID	CAS-ID	ECM PID	Access C	riteria Data	ECM Private Description
			Submit	Refresh)		
After the co	mpletion of all s	ettings,click on the Star	Scramble button				
			Start Scramb	le Stop Scra	mble		

Fig. 5-10 Program Scramble Web Page

There are three parts in the program scramble page: port select, scramble set and scamble option. In this web page, first we need to select the port, searching programs in this port. We suggest to search all in the first time searching, this will get all ports' information of all cards in EMR3.0. If only one port's programs is needed, then we can select the right card and the right port, then click button "Search", then we get the programs of this port. If search job is finished, we only need to select the right card and right port to do the setting job, don't forget to click button "setting" in the final step.

Notes: sometimes it is not success in searching all programs or searching tables, so we suggest to search more than two times.

After the port is setting ok or the table is searched, if the port, CAS, EMM is already setting ok, then we only need to do the scramble setting job. For the single PID scrambling, we need to select the checkbox before the "Program list" to scrambling all PIDs. ECMPID need to set ok, other scrambling parameters please under the guides of CAS setting.

After modifying the scrambling program, we must click button "Start Scramble" to make it works. We suggest before the last click of "Start Scramble", we have finished all the parameters setting.

5.3.3 Port Setting

Port setting web page is displayed in Fig.Fig. 5-.

Sum	avison	EMR	3.0 Scra	mble N	Iodul	e		Home	
System	Progran	n Scramble	Port Set	CAS Set	ЕММ	l Set	Logout		
Port Se	t								
Main Gbe Card	Card1	Card2	Card3	Card4	Card5	Card6			
l									
Port	Group	Key Mode	Fixed Key	Filte	r CAT	EMM1	EMM2	EMM3	EMM4
Port Group Key Mode Fixed Key Filter CAT EMM1 EMM2 EMM3 EMM4 Submit Refresh									

Fig. 5-11 Port Setting

First, select the card in the upper menu, which will refresh the corresponding ports and its programs. (if no programs in one port it will not display). Default display is the main gigabit card.

In the subgruop setting page, we select the CAS group corresponding to the port. Select "Close" if no need to scrambling this port. Default setting is "Close", all options in the following page is gray, unsettable. Make it settable we need to select the subgroup.

The key mode can be randomly or fixed. If fixed mode is selected, we need to fill the value. CAT fliter is for the scramble card to filter the original CAT information in the programs. EMM1, 2, 3, 4 respectly display the EMM setting for 4 simucrypt. EMM PID is set in the frontt, and EMMG in the back.

After all the settings, click button "Submit".

5.3.4 CAS Setting

CAS setting page is shown below in Fig. 5-12.

CAS Set	Program Scramble	Port Set	CAS Set	EMM Set	Logout	
	Select Group: Group1 EIS Switch: OFF EIS Port: 8000	v		CA Version: N CW Period(s): 1		
Param L	ist I	No.1 CA	No.2 CA	No.:	3 CA	No.4 CA
CA Swit	ch ON	~	OFF 💌	OFF	~	OFF 💌
CAS-I	0x4AD2	2	0x4AD2	0x4AD2		0x4AD2
Sub-CAS	-ID 0x1		0x1	0x1		0x1
ECM-Chan	nellD 1		1	1		1
Main ECM	G-IP 192.16	5.58.105	192.165.58.106	192.165.5	8.107	192.165.58.108
Main ECM0	G-Port 2000		2100	2200		2300
Backup EC	MG-IP 192.16	8.2.10	192.168.2.11	192.168.2	.12	192.168.2.13
	IG-Port 2001		2101	2201		2301
Backup ECM						

Fig. 5-12 CAS Setting

First, select group, and set the CAS parameters for the group. Key period's value deponds on the customer's requirement, other parameters are supplied by CAS, and the parameters just need to match the CAS server.

5.3.5 EMM Setting

EMM Setting page is shown in Fig.Fig. 5-.

System	Prog	ram Scramble	Port Set	CAS	Set	EMM Set	Logout	
EMMG	EMMG Switch	n CAS-ID	Sub-CAS-ID	EMMG Mode	TCP Port	UDP Port	EMMG BitRate CA Version	EMM Private Description
lo.1 EMMG	OFF	~		TCP 💌			N0.1 💌	
lo.2 EMMG	OFF	~		TCP 💌			N0.1 💌	
lo.3 EMMG	OFF	~		TCP 💌			N0.1 💌	
lo.4 EMMG	OFF	~		TCP 💌			N0.1 💌	
lo.5 EMMG	OFF	~		TCP 💌			N0.1 💌	
lo.6 EMMG	OFF	~		TCP 💌			N0.1 💌	
lo.7 EMMG	OFF	~		ТСР 💌			N0.1 💌	
lo.8 EMMG	OFF	v		ТСР 💌			N0.1 🗸	/
Io.9 EMMG	OFF	•		TCP 💌			N0.1 🗸	
o.10 EMMG	OFF	~		ТСР 💌			N0.1 💌	
o.11 EMMG	OFF	~		TCP 💌			N0.1 💌	
o.12 EMMG	OFF	•		TCP 💌			N0.1 💌	
o.13 EMMG	OFF	~		ТСР 💌			N0.1 💌	
o.14 EMMG	OFF	~		ТСР 💌			N0.1 🗸	
o.15 EMMG	OFF	•		ТСР 💌			N0.1 🗸	
o.16 EMMG	OFF	~		TCP 💌			N0.1 🗸	
							· ·	·,

For all the contents in this page please under the guide of CAS setting.

Chapter 6 Descriptions of Advanced

6.1 Output Settings

This screen can add the corresponding pass-through relationship by applying the function of set-port mapping, and then the output port can directly output the input stream of corresponding port.

♥ ● http://192.165.58.	55/en/theframe.asp	N		💌 🔯 😽 🗶 🖓 Yahoo! Search		
Favorites CEMR3.0 Managem	ient			🟠 • 🗟 •	🖸 🖶 🝷 Page 🔹 Safety 👻 Tools 🔹	• T <u>o</u> ols • 🔞 • '
Sumavi					Home	
Cardl 🔴 Card2 🔵	Card3 🚫	Card4 🥥	Card5 🥚 Card6 🔘	Card7 🥏		
Sub Card Parameters						
card15 Input ASI Card	Output	setting	<u> </u>	<u> </u>	(3)	
card24 Output ASI Card	Out Card	Out Port	Out Mode	In Card	In Port	
ard36-Channel QAM Card	Card2	Port1	FILT 🗸	None	None	
ard7Gbe Assist Handle Card	Card2	Port2	BYPASS V	Card1 🗸	Port2	
Routing Multi Set	Card2	Port3	FILT	None 🗸	None 🖌	
vlux Set	Card2	Port4	FILT 💌	None	None 😪	=
Dut Set	Card3	Port1	FILT 💌	None 💉	None 😪	
System Management	Card3	Port2	FILT 💌	None	None 😽	_
System Set	Card3	Port3	FILT 💌	None 💉	None 😪	
Jser Management	Card3	Port4	FILT 💌	None 💉	None	
Restore Factory	Card3	Port5	FILT 💌	None 💉	None 💉	
Reboot	Card3	Port6	FILT 💌	None 💉	None 💉	
	Card3	Port7	FILT 💌	None 💉	None 😪	
	Card3	Port8	FILT 💌	None	None 🗸	
	Card7	IF1 Port1	FILT 💌	None 💉	None 😪	
	Card7	IF1 Port2	FILT 💌	None	None	
	Card7	IF1 Port3	FILT 💌	None 💉	None 😒	
	Card7	IF1 Port4	FILT 💌	None 💌	None 💉	
	Card7	IF1 Port5	FILT 💌	None 🗸	None 😪	
	Card7	IF1 Port6	FILT 💌	None 🗸	None 🗸	
	Card7	IF1 Port7	FILT	None 😪	None 🖌	
	Card7	IF1 Port8	FILT 💙	None 😒	None 😪	

Step 1: Set the output mode of corresponding output port as pass-through;

Step 2: Select the board card where the output source to be passed through is located;

Step 3: Select the port corresponding to the input source to be passed through;

Step 4: Click "Submit" button to make the pass-through relationship valid.

Chapter 7 Fault Analysis and Troubleshooting

7.1 Alarm Information

When EMR runs abnormally, the alarm indicator on the front panel of the device will light, and the Web network management will provide a variety of abnormality alarm to prompt the users to facilitate the investigation and solve the problems. Users can search the WEB network management alarm on the device and parameters of the menu to make a preliminary judgment on the reasons causing EMR alarm and take appropriate measures. If users fail to solve the problem of EMR abnormity by themselves, they can call the After-sales Technical Support Department of Sumavision.

The EMR alarm information is shown as Table 7-1.

	Shouling of Elvik Common Faula	
Fault	Reason	Solution
LCD does not display or	The power lead is poorly	Replace the power lead.
working indicator is not	connected;	
on after powering on	The fuse on the power socket is broken.	Replace the fuse.
ASI 5-channel input card	No input signal is available.	Check the line for input signal.
fails to refresh any input signals.		Check the input signal sources.
ASI 4-channel output	The output program stream	Check the multiplexing program
card fails to output the	decoding turns out no video	sources.
decoding normally	& audio frequency	
	The output program stream	Check the output system bit rate.
	decoding turns out mosaic.	
The QAM modulator output can't be received	QAM output level is too high.	Lower the level or increase the number of attenuators.
by STB	Wrong parameters of the STB are set.	Set parameters matching with QAM again.
The main Gigabit card	The input program stream is	Check head-end program sources
inputs no system bit rate	interrupted.	and network cable connection.
The destination IP of the	The connection with the	Check the network settings of
main Gigabit card is	sending device is broken.	destination device and network
unreachable.	C C	cable connection.
The main Gigabit card	The input program stream is	Check whether the multiplexing
outputs no valid bit rate.	interrupted.	program sources are normal.

Table 7-1 Troubleshooting of EMR Common Faults or Abnormity

7.1.1 LCD does not display after powering on

Reasons for such fault:

- ✓ The LCD module of the device is broken;
- ✓ The power lead is poorly contacted;
- \checkmark The fuse on the power socket is broken.

Solution:

EMR can be allowed to leave the factory only if the test ensures that all function indicators meet the requirements. Therefore it is almost unlikely that the LCD module of the device is broken, thus this cause can be excluded; check the power lead of the device to confirm whether there's any damage to the surface of the power lead, check the quality of power socket to confirm whether the supply voltage is normal.

In case of fault in the power lead, suggest replacing he power lead to ensure smooth signal transmission inside the power lead;

In case of fault in the power socket, suggest checking whether the power supply switch of the power socket is on first; if the power supply switch is on and the power supply to the slot where the faulty device is located is normal, but the LCD is still abnormal, suggest checking whether the fuse on the socket is broken, and replacing the fuse.

If the foregoing solutions can't be enough to solve the problems, it is suspected that the LCD module is damaged. Please notify the After-sales Technical Support Department of Sumavision for solution.

7.1.2 ASI 5-channel input card fails to refresh any input signals.

Reasons for such fault:

 \checkmark The input signal or the line for input sign is abnormal.

Solution:

Confirm the board card of the device with normal input signal can receive which kind of signals; check the cable for input signal is exempted from short circuit and open circuit; check the port that which is connecting the cable for input signal is existing refresh port of the device.

7.1.3 ASI 4-channel output card fails to output the decoding normally

Reasons for such fault:

- ✓ The input program source is abnormal
- The output bit rate overflows

Solution:

Confirm normal input program sources of the input board card, without video & audio loss; modify the settings of output system bit rate to make the bit rate be larger than the valid bit

rate for output programs.

7.1.4 6-adjacent-frequncy QAM modulation card output can't be received by STB.

Reasons for such fault:

- ✓ The output level of 6-adjacent-frequency QAM modulation card is too high;
- ✓ Wrong receiving parameters of the STB are set.

Solution:

Lower the output level of 6-adjacent-frequency QAM modulation card to be in the range that STB can receive the output; or increase the number of attenuator to lower the output level to be in the range that STB can receive the output.

Check and set the demodulation parameters of the STB as identical to the output parameters of 6-adjacent-frequency QAM modulation card.

7.1.5 The main Gigabit card inputs no system bit rate.

Reasons for such fault:

✓ The input program stream is interrupted.

Solution:

Check the head-end program sources and network cable connection of the device.

7.1.6 The main Gigabit card outputs abnormally

Reasons for such fault:

- ✓ The input program stream is interrupted.
- \checkmark The connection with the output destination device is broken.

Solution:

Check the head-end program sources; check whether the connection between the device and the destination device is normal.

Chapter 8 Maintenance

8.1 Maintenance method

To make the EMR 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 EMR should be maintained according to the following rules.

Must prepare for the detailed device maintenance target plan.

The EMR 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 EMR maintenance.

Establish the device maintenance archive.

The individual maintenance archive should be kept since the EMR 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 EMR 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 EMR 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 EMR can be controlled in the control center by using the network management software, the network management password of EMR 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 of site room (DC/AC)	Check the power monitoring system or test the power output voltage	The power gives no exception	0.05
	Temperature of site room	Measure temperature	Temperature range: 5-40°C; 15℃-30℃ is recommended	
	Humidity of site room	Measure relative humidity	Relative humidity: 20%-80%; 40%-65% is recommended。	
Inspect the device operation status	Indicator status on the device panel		Only power indicator is on under normal operation. The operation indication keeps on.	0.1
Inspect the device operation status	Service tel. status (2-3 times every month)	Test the calling.	Addressing call and conference call support normal communications.	0.1

Table 8-1 Routine maintenance

8.4 Monthly maintenance

Refer to Table 8-2 for monthly maintenance.

Table 8-2 Monthly maintenance	
-------------------------------	--

Maintenance	Maintenance contents	Operation guide	Reference standard	Reference
	Maintenance contents	Operation guide	Reference standard	Relefence
type				maintenance
				hour
				(man×hour)
Check	Cabinet cooling hole	Check the state of	Keep clean around the cooling	0.1
external	state	cooling holes.	holes, without any mess.	
environment				

8.5 Quarterly Maintenance

Refer to Table 8-3 for quarterly maintenance.

Table 8-3 Quarterly 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 Annual Maintenance

Refer to Table 8-4 for annual maintenance.

Table 8-4 Annual	maintenance
------------------	-------------

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

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 label intact and correct.

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 EMR.

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

Observe the indicators on front panel of EMR 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 EMR 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 EMR in highly noisy environment.

Annex A

Table 8-5 Parameters of input/output ASI interface

Electrical	Normal	75Ω	Its appearances
characteristics	impedance		can be shown as
	Frequency range	0-2GHz	the figure below:
	Voltage rating	500 VRMS (Sea-level Max.)	
	Dielectric	1500 VRMS (Sea-level Min.)	
	withstand		
	voltage		
	VSWR	1.5 (Max)	
Material	Main part and	Nickel plating	
characteristics	metal fittings		
Mechanical	Insertion force	Max. acrotorque 2.5 lbs	
characteristics	Pullout force	Maximum axial tensile force	
		3 lbs	
	Nut pulling force	Min. 100 lbs	
	Centric pin thrust	Min. 6 lbs	
	Durability	More than 500 times	
		drawing	

Table 8-6 Ethernet interface connector parameters

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

Table 10-3 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	