

# *SS-501 E1*

## **Trunk Gateway Manual**

Model:

SS-501-1E

SS-502-2E1(2E1)

SS-504-4E1(4E1)

SS-508-8E1(8E1)

SS-516-16E1 (16E1)

# E1/T1 Trunk Gateway User Manual

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# Chapter 1 Equipment Introduction

## 1.1 Overview

With continuous development of Internet, the bandwidth of IP network increases gradually. In today's high speed development of broad band data access business, the number of broad band users increase continuously, and the demand on the expansion of IP network based business is increasingly imperative. IP network has been developed into a network with strong standardization, good openness and strong expandability that integrates voice, high speed data and video media business, in which IP voice business becomes a typical application in such expansion of business.

Trunk Gateway, Integrated access devices (DAG series, DEIT series), softswitch (EIX) and the matching billing system together form a complete set of VoIP operation system:

- ◆ “Trunk gateway” functions: communication between and softswitch is carried out through SIP/H.323 trunk; besides establishing SIP/H.323 trunk with softswitch, will also connect to traditional PSTN switch through E1/T1, and support SS7 and PRI signalling (ISDN 30B+D, 23B+D);

series media control gateway adopts case type structure; the height of device is 1U, the width is standard 19 inches, and it is easily installed in a standard cabinet.

provides 2 Ethernet interfaces of 10/100M, provide up to 32\*E1/T1 interfaces, and support up to 960/768 channels of concurrent lines.

## 1.2 Chassis Description

### 1.2.1 Front View

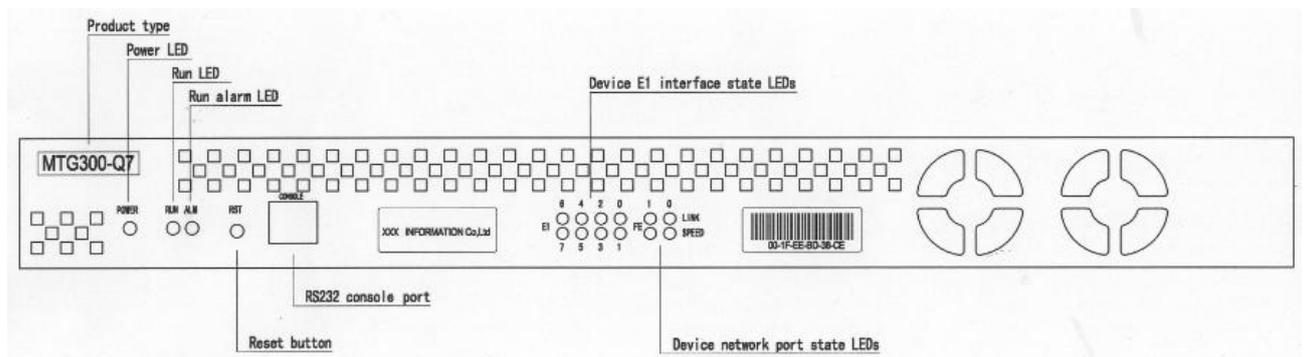


Figure 1-1 Front panel

Figure 1-1 shows the front view of an chassis, which is described as follow:

- ◆ Product model: it is the type for series product, for example: Trunk;
- ◆ POWER LED :it indicates that current device is powered on or not;

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- ◆ RUN LED: it indicates that the device is running or not, if the LED flashing in green means normal running, if the LED constant off or on means abnormal running.
- ◆ Running alarm LED: it indicates that the device is failed or not, if LED is red or constant off means no alarm information available, if the LED constant on or flashing means alarm information available;
- ◆ Reset button: it used to restart the device;
- ◆ RS232 console port: it is CONSOLE port, can be used to debug and configure the device;
- ◆ E1/T1 interface running LEDs: (E1, 0, 1, 2, ..... ) indicate that the physical connection of E1/TI interface is normal or not;
- ◆ Network interface state LEDs: (FE, SPEED, LINK) indicate the state of Ethernet port of device.

provides various product models as follow:

Product model	Specification
Trunk	Trunk gateway device,support 1/2/4/8/16/32 E1/T1 interfaces and 2 Ethernet ports

The indicators detail as follow:

Indicator	Function description	Color	Working state
RUN	Indicate that the device is running or not	Green	Off: Abnormal
			Flashing: Normal
ALM	Indicate that the device is failed or not	Red	Off: Normal (no alarms)
			On: the device is failed
POWER	Indicate that the device is powered on or not	Green	Off: Power is off
			On: Power is on
E1/T1	Indicate that the connection of device E1/T1 is correct or not 0, 1, 2, .....indicate the connection states of E1/T1 interfaces respectively	Green	Off: E1/T1 is not connected or the connection fails
			On: E1/T1 is connecting, sending and receiving normally
			Flashing: E1/T1 connection fails
FE	Indicate the connection state of Ethernet port; FE0 indicates Ethernet network interface FE0; FE1 indicates Ethernet network interface FE1; SPEED indicates network bandwidth;	SPEED-Yellow LINK-Green	SPEED LED and LINK LED are all off: It is not connected to the Ethernet or there is connection fault
			SPEED LED is off, and LINK LED is on: Ethernet connection is normal, and working in 10Mbps mode

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Indicator	Function description	Color	Working state
	LINK indicates that the network is connected or not;		SPEED LED is on, and LINK LED is on: Ethernet connection is normal, and working in 100Mbps mode

Table 1-1 Description of panel LEDs

### 1.2.2 Rear View

Figure 1-2 shows the rear view of chassis, description as follow

- ◆ Power switch is the main switch of device;
- ◆ Power jack is interface of 110-220VAC, 50/60Hz power supply;
- ◆ Master/slave switch is used to change over MASTER/SLAVE power supply; this switch is required to be changed over when current power supply is failed, so as to ensure normal running of device;
- ◆ E1/T1 interface provide BNC and RJ48 two types, in which RX is the receiving end, TX is the transmitting end;
- ◆ Ethernet interfaces FE0/FE1 are two standard 10/100BASE-TX Ethernet interfaces, which are used for the connection between the device and network;
- ◆ Device protective ground connection point is used to connect PGND (on the frame) after the device is mounted on the frame.

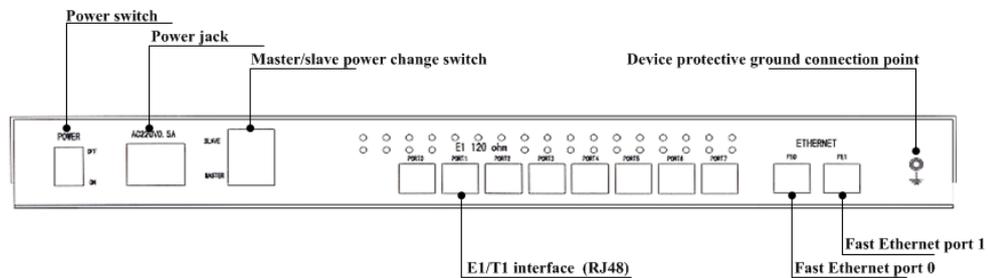


Figure 1-2 Back panel (RJ48 interface)

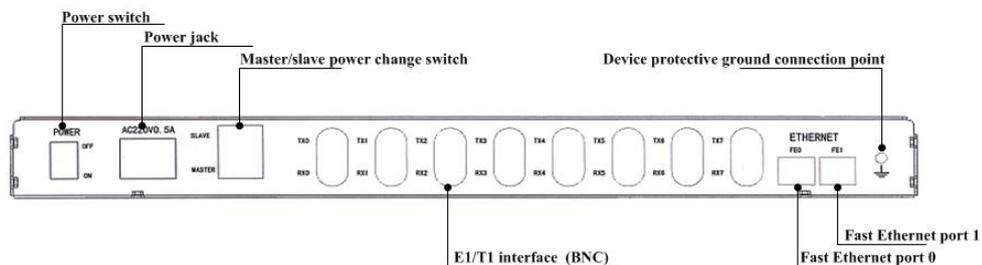


Figure 1-3 Back panel (BNC interface)

The two fast Ethernet network interfaces are described as follow:

- ◆ The two fast Ethernet interfaces FE0/FE1 are of the same function. Generally we use FE1 as the operating network of the device. Please note that the IP addresses of the two Ethernet interfaces should not be configured as within the same IP segment, otherwise the operation of the device will be affected.

**Default IP of FE0: 192.168.1.111**

**Default IP of FE1: 192.168.11.1**

### 1.3 Features and Specifications

The main function of series digital trunk gateway:

- ◆ is located in the edge of PSTN and IP and is enabling the delivery of SIP / H.323 into PSTN networks, as well as IP to IP transcoding for IP network peering applications. configured with 1 to 32 interfaces per chassis. It completes intercommunication with softswitch through SIP/H.323 trunk; realize interconnection and intercommunication with traditional PSTN through SS7 or PRI;
- ◆ Support multiple voice codec of ITU-T standard: G.711A, G.711 μ, G.729A/B, G.723.1, etc;
- ◆ Advanced IP voice signal processing ensured the high quality assurance (QoS): Realtime Transport Protocol (RTP) voice packetizing and depacketizing technology, dynamic jitter buffer management, echo cancellation (ITU-T G.168/165), dynamic compensation for packet loss, Voice Activity Detection (VAD) technology and Comfort Noise Generation (CNG) technology;
- ◆ Support multiple management and maintenance methods, such as SNMP, COM port, and Telnet command line, etc;

The technical specifications of series digital trunk gateway:

Technical parameters and specifications of Trunk	
Call control	H.323, SIP protocol, PRI/SS7 signaling
Voice processing	Voice code : G.711 64kbps, G723.1 5.3/6.4Kbps, G.729A/B 8Kbps Echo cancellation: G.168, up to 128ms Support Adaptive Voice Activity Detection (VAD) with Comfort Noise Generation (CNG), Packet Loss Concealment Support T.38 Support Pass-through
Data features	Support DNS client
Network management	Support SNMP Support TELNET for remote configuration and software upgrade

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Billing	Radius+ Interface
Trunk interface	Provide 1~32 E1/T1 interfaces with RJ48/BNC
Ethernet	Auto-negotiating 10/100Base-TX Ethernet port.
Console interface	RS-232 COM port, 9600bps
Operating temperature	0~40°C
Storage temperature	-20~80°C
Operating Humidity	10%~90%
Dimensions	43.5cm (width, 19") * 50.0cm (depth) * 4.45cm (height, 1U)
Power supply	85~265V AC, 50~60Hz, 1.2A
Power consumption	40W
Weight	6.5Kg

Table 1-2 Technical specification of media control gateway

## Chapter 2 Hardware Installation

This chapter is to describe the hardware installation, including installation environment, installation preparation, connection to PSTN, and connection to Ethernet.



Figure 2-1 Trunk

### 2.1 Installation Environment

Generally, can be installed in the IDC (Internet Data Center) of a traditional telecommunication operator (can provide Internet access and E1/T1 line access).

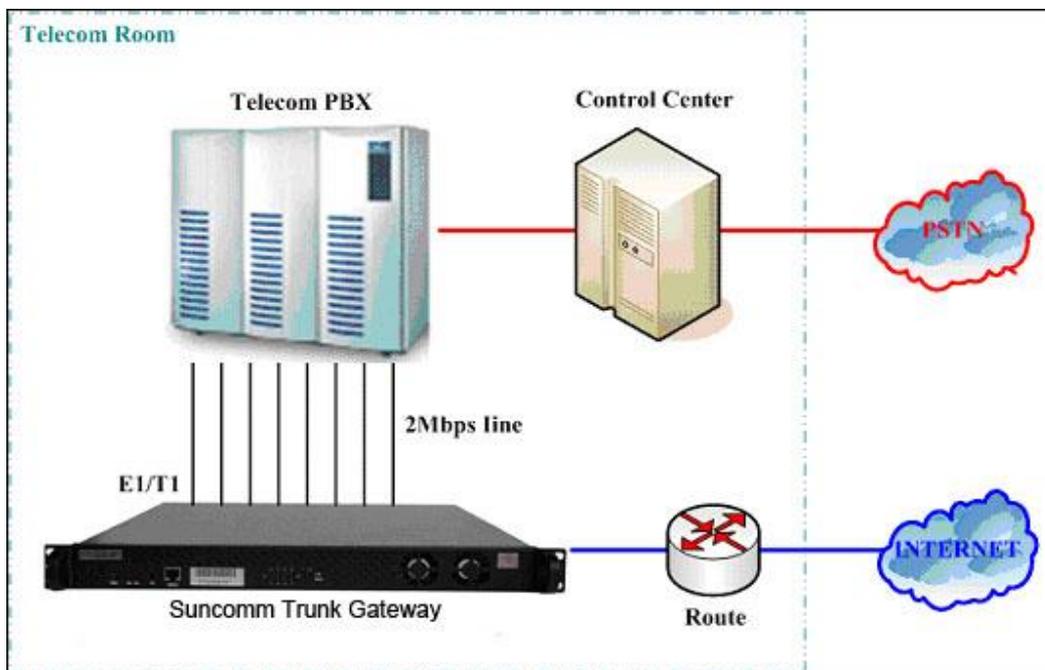


Figure 2-2 deployment and networking topology

The requirements for the installation environment of are: installed on standard cabinet of IDC;

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ventilation and heat dissipation conditions should be good; power supply should work stably.

There are 2 methods to install the device on cabinet:

**Methods 1:** for pallet installation, place the device flatwise on the pallet of cabinet and install mount angle and screws;

**Methods 2:** guide rail installation.

Before installation, the following items should be known:

- (1) What method is used to install the device and on which cabinet of the IDC it is installed? Whether the IDC can provide screws matching the cabinet? When pallet installation is adopted, does the cabinet provide pallet? If pallet is not provided and will be equipped by yourself, then what is the size of pallet?
- (2) How many IP addresses are required by the device? How many network ports can be actually provided by the IDC for access (to determine whether network switch is required)? How far is the installation cabinet of device away from the Ethernet interface provided by the IDC? Whether the IDC can provide CAT 5 network cable?
- (3) How many E1/T1 interfacing between and PSTN? How long is the actual wiring from each E1/T1 to the E1/T1 access point provided by the operator? Whether E1/T1 connector can be provided by IDC? What is the type of the E1/T1 connector used for interfacing (BNC 75  $\Omega$  ,RJ48 120  $\Omega$  ,SMB 75  $\Omega$  interface)?
- (4) Whether the IDC can provide UPS power supply with power specification of 110-240VAC, 50-60Hz?

## 2.2 Installation

Installation guide of this chapter mention below, the E1/T1 interface is to use RJ48 connector.

### 2.2.1 Fixing Parts of Device

Device/tool	Quantity	Description
	1 set	In packing case
Mount angle and mating screws	2 pieces	In packing case
Power cable	1 piece	In packing case
General network cable	1 piece	In packing case
Debugging COM port cable	1 piece	In packing case
Multimeter (optional)	1 piece	Used to examine line fault etc
Network crimper	1 piece	Make network cable connector
Scissors	1 piece	For use when needed

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Screwdriver	1 set	Include at least 2 types: flat-blade and phillips
Tag paper	1 piece	Tag E1/T1 line and device
Cable clip	50 pieces	Clip various cables to become tidy
Pen	1 piece	For record
Portable computer	1 set	Used for debugging

Table 2-1 Fixing parts for device installation

### 2.2.2 Preparation for Connection to Ethernet

Generally, 1 set of      only requires 1 Internet IP address.

Device/tool	Quantity	Description
RJ45 connector	Several	Network cable connector may be required
General network cable	Several	When network cable is not available in the IDC, The length of cable should be site-measured length plus 20% margin; actual requirement should prevail.

Table 2-2 List of materials for connecting Ethernet

### 2.2.3 Preparation for Connection to PSTN

The connection to PSTN is to connect      with the E1/T1 interfaces provided by the IDC by using E1/T1 coaxial cable. Assume that M pieces of E1/T1 are required to be connected, the actual length of each E1/T1 is  $L_i$  ( $i \leq M$ ) meter; because each piece of E1/T1 consists of 2 coaxial cables (that is receiving and transmitting), the total length of E1/T1 coaxial cable actually required is:  $2 \times (L_1 + L_2 + \dots + L_{M-1} + L_M)$  meters.

If the result of site surveying shows that the actual length is less than 5 meters, then you can prepare E1/T1 coaxial cables with E1/T1 connector in advance, and deploy them directly on site; generally, when the length is more than 5 meters, because the actual length is hard to measure accurately, we can only make preparation based on field surveying length, (according to the result calculated by the formula above), plus 20% margin, and make E1/T1 connectors when on-site installation is carried out.

### 2.2.4 Frame Installation

As mentioned above, there are 2 methods to install      on cabinet: pallet installation and guide rail installation.

If pallet installation is used, then it should be determined that if pallet can be provided by the IDC; if not, then pallets and screws conforming to the dimension of cabinet should be prepared.

If guide rail installation is used, then it should be determined that whether the dimension of cabinet is suited; if the width of cabinet is not enough, then it is required to remove 1 guide rail.

For the installation in 19" cabinet, the requirements of frame are:

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1. The width of frame is required to be standard 19", the depth should be greater than or equal to 550mm;
2. The frame should be fitted with earthing strip;
3. The installation position is recommended at more than 3U height, so as to ensure that there is no other device above and below 1U height;

Required fittings:

1. Guide rail: 1 set
2. 12 pieces of M4 x 10 cup head phillips screw; 12 pieces of M4 nut
3. 8 sets of frame screw

### I. Guide rail assembly

1. Assembly of guide rail mount angle (rear mount angle)

As shown below:

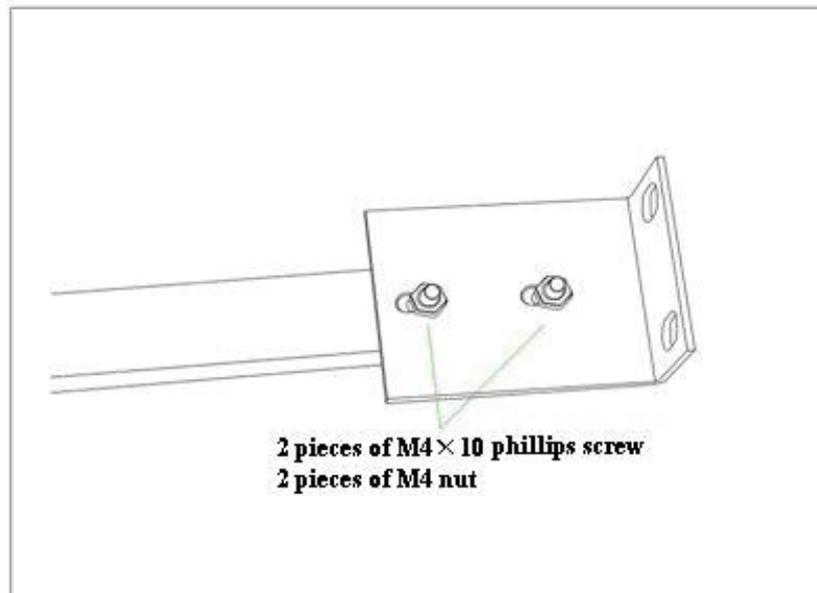


Figure 2-3 Mount angle assembly

See the figure 2-4 after assembly:

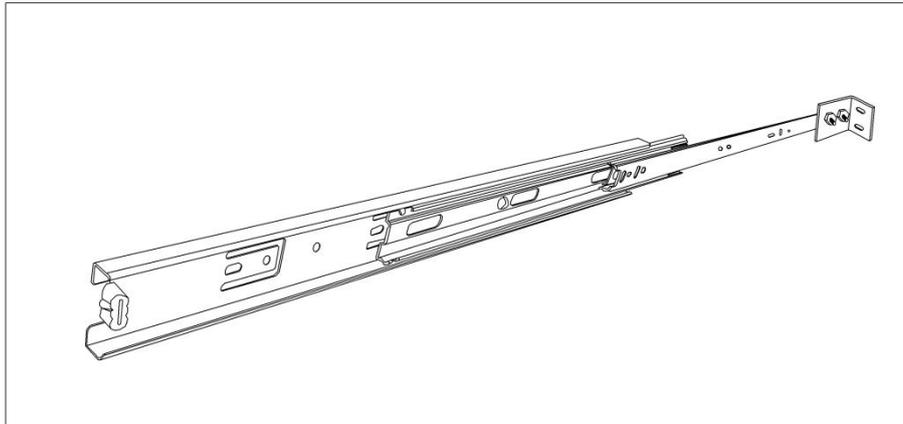


Figure 2-4 Mount angle assembly completed

2. Assembly between guide rail and device  
As shown below:

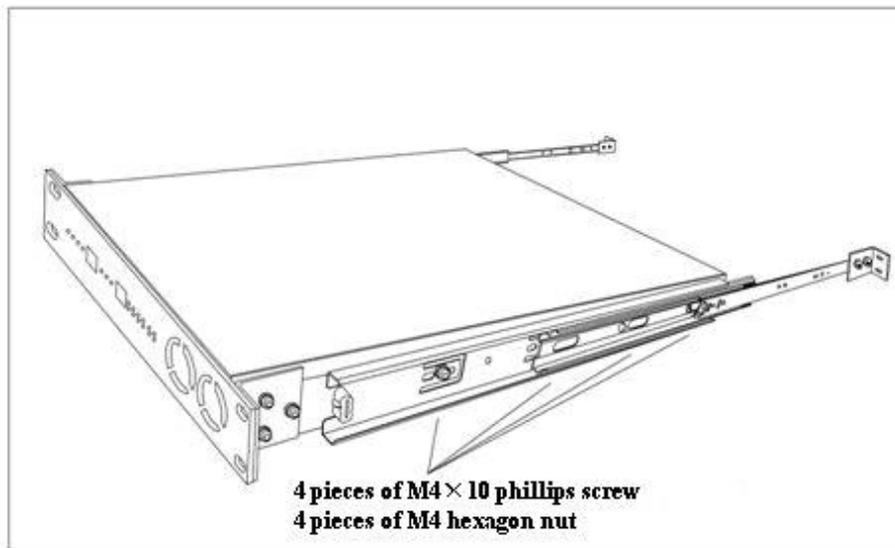


Figure 2-5 Assembly between guide rail and

## II. Install device on 19" cabinet

1. Front mount angle is installed on the slot for the side column at the front of cabinet  
If there is bracket on 19" cabinet, device can be directly placed on the bracket, and then carry out the following steps; otherwise, find an appropriate position on cabinet, and it is preferred that the height is more than 3U for the upper and lower spaces to facilitate heat dispersion. Firstly, clip the nut part for the screw of frame on the square groove of the frame, altogether 8 nuts as shown in the following:

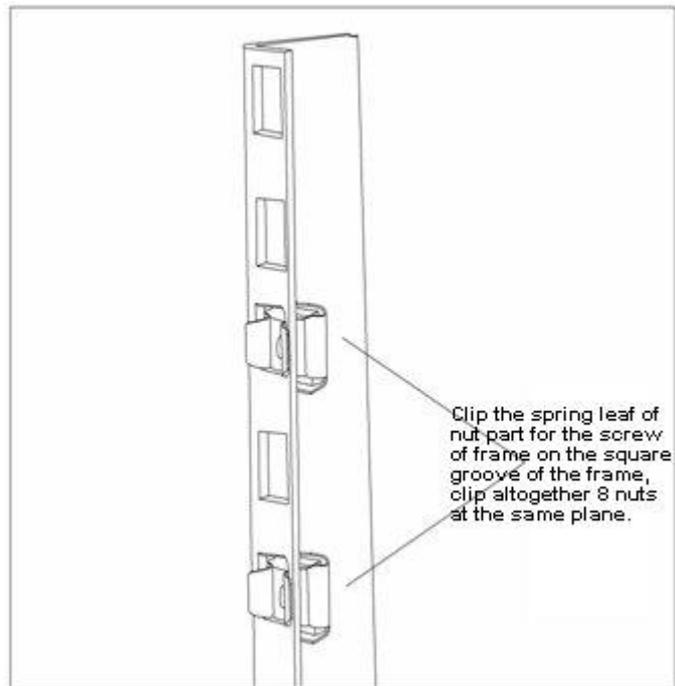


Figure 2-6 Nut fastening

The installation of front mount angle is shown in the following:

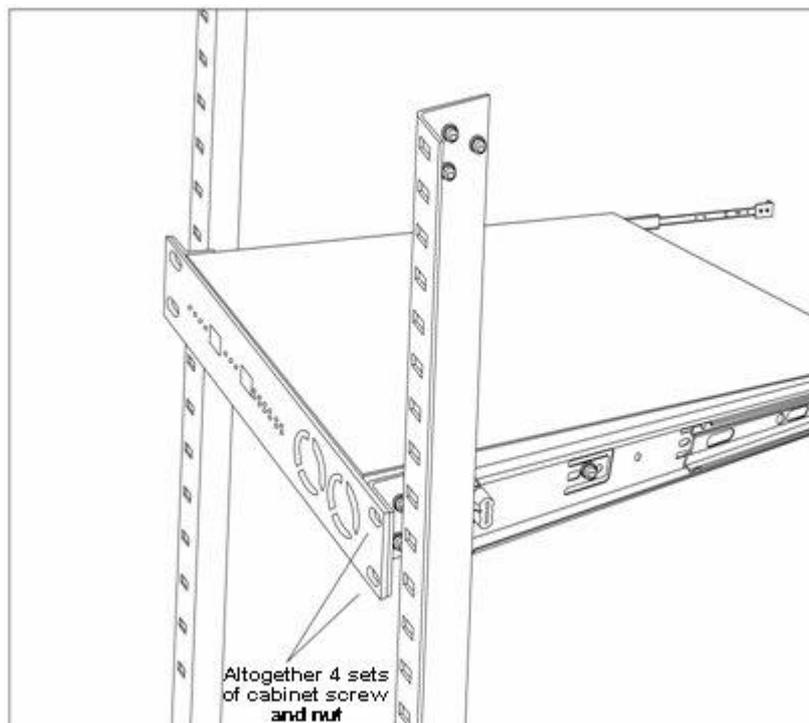


Figure 2-7 Front mount angle installation

2. Before fasten the screws of front mount angle, pay attention to stretch guide rail, so

that the rear mount angle are placed outside the frame of cabinet.

3. Fasten front mount angle screws
4. Fix rear mount angle on the slot for the side column at the rear of cabinet

The whole installation is shown in the following:

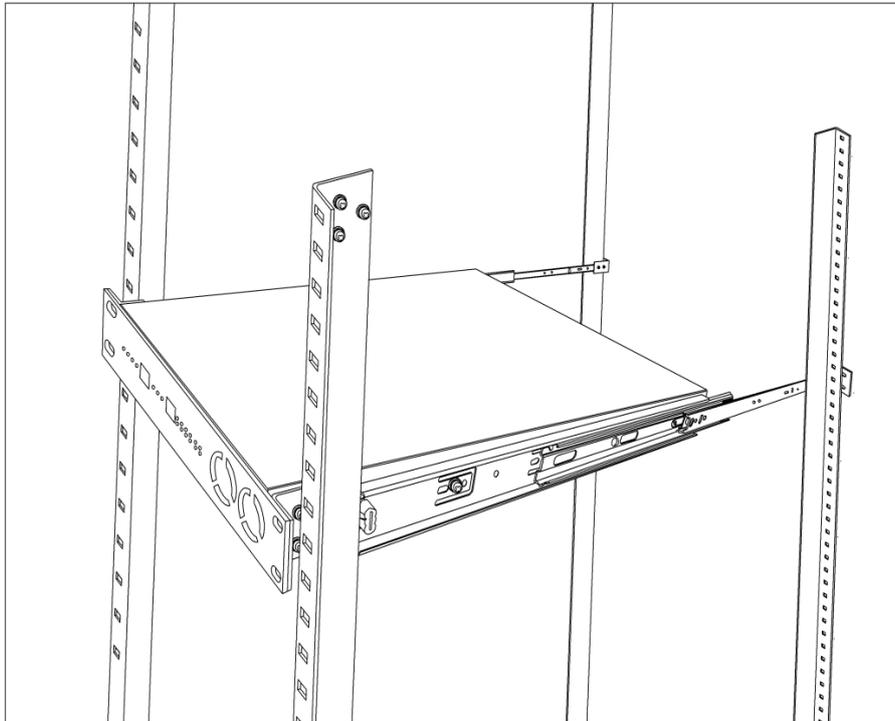


Figure 2-8 frame installation completed

The installation of ground wire is an essential step, theoretically, the cabinet itself is grounded well; therefore, connect one terminal of the ground wire to the protective ground connection point at the rear of device, as shown in the following:

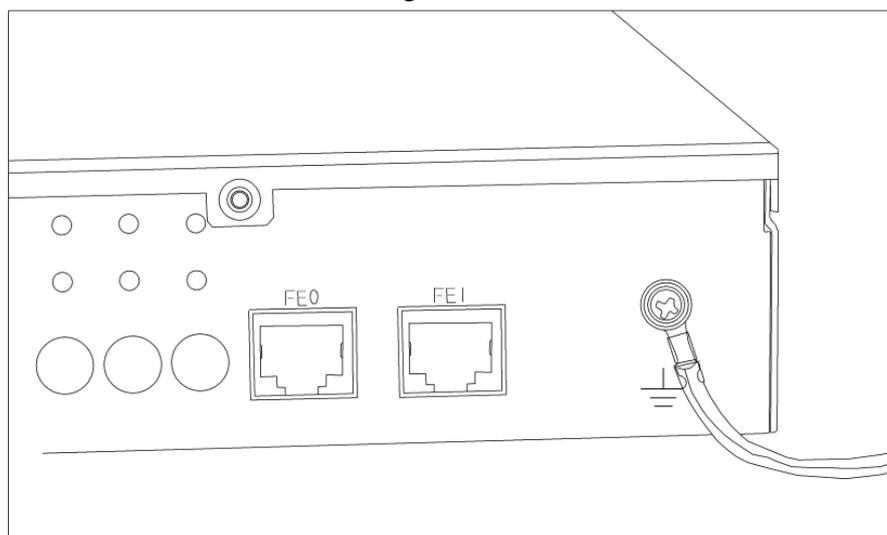


Figure 2-9 Grounding installation

Connect the other terminal of the earth wire to the earthing strip of the cabinet.

## 2.3 Steps of Connection to Ethernet

Connection to Ethernet is to connect to the network (Internet) of the IDC by using network cable.

### 2.3.1 Wiring

If it is necessary to arrange multiple lines, we recommend you to use tag paper for each line; write on IP address and tag on the device, so as to facilitate subsequent connection debugging and later management and maintenance.



**NOTE:**When you make marks pay attention to some digits that are easy to be confused, for example: 01 and 10, 06 and 09; we suggest that you make marks by combining digit and letter, for example: mark the receiving and transmitting lines of one E1/T1 line as 01A, 01B respectively.

### 2.3.2 Fabrication of RJ45 Connector

Network cable is divided into 2 types: general network cable and crossed network cable; generally, 2 standards are followed in its fabrication, that is, EIA/TIA568A and EIA/TIA568B.

EIA/TIA 568A standard			EIA/TIA568B standard		
Pin seq.	Direct connect signal of media	Sequence of twisted pair	Pin seq.	Direct connect signal of media	Sequence of twisted pair
1	TX+ (transmit)	White/Green	1	TX+ (transmit)	White/Orange
2	TX- (transmit)	Green	2	TX- (transmit)	Orange
3	RX+ (receive)	White/Orange	3	RX+ (receive)	White/Green
4	Not used	Blue	4	Not used	Blue
5	Not used	White/Blue	5	Not used	White/Blue
6	RX- (receive)	Orange	6	RX- (receive)	Green
7	Not used	White/Brown	7	Not used	White/Brown
8	Not used	Brown	8	Not used	Brown

Table 2-4 Fabrication standard of network cable

If the connectors of both ends of the network cable are fabricated by using the same standard, then such network cable is general network cable; if the connectors of both ends of the network cable are fabricated by using 2 standards respectively, then such network cable is crossed network cable.

The connection cable between and the Ethernet of the IDC can be a general network cable or a crossed network cable, because the network ports of the device (FE0 and FE1) can automatically adapt the connection of general network cable / crossed network cable.

### 2.3.3 Connection to Ethernet

The back panel of provides 2 network interfaces: fast Ethernet interface (FE0) and (FE1) (see the panel description of chapter 1); the two interfaces have the same function but we usually use FE1 as the working interface.



**NOTE: In some IDCs with access to over 2 operators' network (for example, in some IDCs in China there are two outlets, one for CNC group and the other for China Telecom), if necessary different IP addresses can be configured by FE0 and FE1 of the device to aim at different outlets, but these two IP addresses must not be in the same network segment. The default gateway of FE0 must be configured via command line. Please contact us if you have such kind of configuration.**

---

### 2.3.4 Troubleshooting

After the device is connected to Ethernet, if the corresponding SPEED LED and LINK LED at the front panel of the device are off, then it means the network connection fails.

For the troubleshooting of network connection failure, follow the steps below:

- A) Change to connect the network cable to interface FE0 instead of FE1, and observe the LED of FE0 to see if it is normal; or change connect the network cable to interface FE1 instead of FE0, and observe the LED of the FE1 business network interface to see if it is normal;

- B) If the LED is normal, then the other interface fails; if the LED is still off, then connect the network cable to a portable computer (notebook computer, or desktop computer if notebook computer is not available; please note that the network adapter generally cannot automatically recognize the connection method with uplink interface; please make sure that the connection between the network adapter of computer and uplink is correct, see the description below), and access the network;
- C) If the portable computer (computer) can normally access the network, then it is determined that the two network interfaces are failure; otherwise, we can be certain that the network interfaces are normal, and the connection from the device to the Ethernet of IDC has problem, and now connect the portable computer to the Ethernet switching interface provided by the IDC using another network cable to check the network communication to see if it is normal;
- D) If the communication is normal, it means that the network cable from the device to the Ethernet has problem and should be refabricated; if the communication fails, then notify the network administrator of the IDC and ask him to solve the problem;



### **NOTE: How can the computer connect to the network**

The network adapter of computer generally cannot automatically recognize the connection method (straight through connection or cross connection) with uplink interface; the uplink network device hub or switch generally includes 2 types of network interface: cascade connection port (UPLINK port) and general port; computer can generally connect to general port by using straight through connection network cable (some network device can support self adapting straight through or cross connection, so either cross or straight through cable can be used to connect in such case), and connect to uplink port by using crossed cable.

---

## **2.4 Steps for Connection to PSTN**

Connection to PSTN is to use RJ48 UTP cable (Unshielded Twisted Paired) to connect and DDF (Digital Distribution Frame).

### **2.4.1 Wiring**

The wiring is the same as the wiring of Ethernet. Pay attention to the following: follow the arrangement of management personnel of IDC; do not damage the layout for the wiring; be

careful as possible; do not interfere or damage the normal running of other device, and make marking to the lines.

### 2.4.2 Connection to Switch

Generally, the connection between and the switch is transferred through the distributing frame (DDF) of the IDC. connect to DDF via UTP cable (with RJ48 standard).

Before data configuration is carried out, it is required to carry out loopback test to determine that the E1/T1 cable can work normally. The loopback test is to connect the receiving end and the transmitting end of E1/T1 of , and observe the receiving and transmitting to see if it is normal.

Loopback test: according to the serial number at wiring, on the DDF carry out loopback for the receiving and transmitting ends of each E1/T1 cable at side. Observe the E1/T1 LED on the front panel of . If the E1/T1 LED remains on, then it is determined that the E1/T1 line connection is normal. Generally, loopback test operation is carried out on DDF by IDC administrator, if IDC unable to test it, in this situation, the installation engineer must to fabricate loopback cable and test by himself.

loopback method: Connect between the two E1/T1 interfaces with RJ48 UTP cable, The RJ48 PIN assignment as below

RJ48 Interface A side			RJ48 Interface B side		
Pin seq.	Direct connect signal of media	Sequence of twisted pair	Pin seq.	Direct connect signal of media	Sequence of twisted pair
1	TX+ (transmit)	White/Orange	1	TX+ (transmit)	Blue
2	TX- (transmit)	Orange	2	TX- (transmit)	White/Blue
3	RX+ (receive)	White/Green	3	RX+ (receive)	White/Green
4	Not used	Blue	4	Not used	White/Orange
5	Not used	White/Blue	5	Not used	Orange
6	RX- (receive)	Green	6	RX- (receive)	Green
7	Not used	White/Brown	7	Not used	White/Brown
8	Not used	Brown	8	Not used	Brown

Table 2-5 Fabrication standard of RJ48 UTP cable

After the loopback test has succeeded, can be connected to the switch: On the distributing frame, connect the E1/T1 coaxial cable of to the E1/T1 coaxial cable of the switch. Observe the

E1/T1 LEDs on the front panel of to see if they are normal.

### 2.4.3 Troubleshooting

When has been connected to the switch, but the E1/T1 LEDs on are off or flashing, this means that the connection between and the switch has failed then carry out examination according to the steps below:

- A) Check the E1/T1 connectors at the side and those at the E1/T1 access side provided by the IDC to see if they are connected well;
- B) Check the serial numbers at both ends of E1/T1 line to see if they are accordant;
- C) Carry out loopback test;

If the LED is on when loopback test is carried out, then it is determined that the failure occurred at the switch side, and please notify the administrator of the IDC to ask him to solve the problem; if the E1/T1 LED is still in trouble state after loopback test, please use the following method to further determine the reason: use a short piece of E1/T1 RJ48 cable at the back panel of to directly connect between two E1/T1 ports, and observe the E1/T1 LED; if the LED is normal, then it is determined that the failure occurred at the E1/T1 cable connection, and please refabricate the E1/T1 cable (failure generally occurred at E1/T1 connector, in this case, the only way is to refabricate E1/T1 connector).

## Chapter 3 Basic Configuration

This chapter will describe some basic configuration of : network (Ethernet) configuration, SS7/PRI trunk configuration, SIP trunk configuration, and H.323 trunk configuration. Through network configuration, can access the network; through SS7/PRI configuration, can intercommunicate with traditional PSTN; through SIP trunk configuration, softswitch can communicate with traditional PSTN through .

### 3.1 Ethernet Data Command Line Configuration

#### 3.1.1 Premise for the Connection to the Ethernet of Machine Room

For the graphical interfaces, refer to WEB configuration in next chapter.

The back panel of provides 2 network interfaces FE0 and FE1: the factory default IP of FE0 is 192.168.1.111, and that of FE1 is 192.168.11.1. We usually use FE1 to connect with the WAN/Internet for communicate with another equipments. Change the IP address of FE1 which provide by ISP.

There are 2 methods to change the IP address of :

1. COM port configuration, take out the COM port cable from the case of device, connect the RJ45 terminal of the cable to the CONSOLE port of the front panel, and connect the other terminal (RS-232) of the cable to a desktop computer. If a notebook computer is used, then a RS232 to USB converter should be used. After the cable is connected well, click ‘Start’—‘Programs’ —‘Accessories’ —‘Communications’ —‘HyperTerminal’ (Windows2000, XP), so as to enter the interface, and add a name (at will), as shown below:



Figure 3-1 Run HyperTerminal

After the name is entered, click “OK” to enter next interface, select the COM port actually used, as shown below:



Figure 3-2 Select COM port

Click “OK” to enter next interface, COM1 Properties, as shown below:

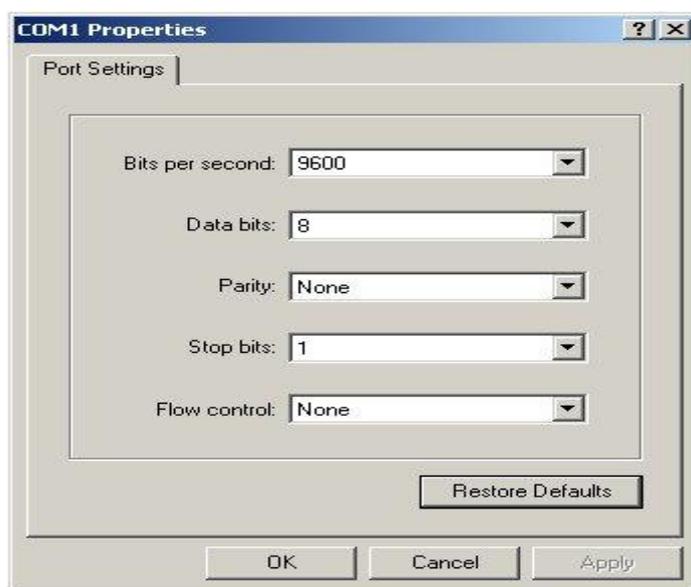


Figure 3-3 Restore defaults

Select “Restore Defaults”, and then click “OK”.

2. Network interface configuration, the IP address of the network management interface of device is 192.168.1.111 by default; find a network cable, connect one end of the cable to the FE0 interface of the device, and connect the other end to the computer. Enter the IP configuration interface of the computer. Add IP address of 192.168.1.xxx network segment, as shown below:

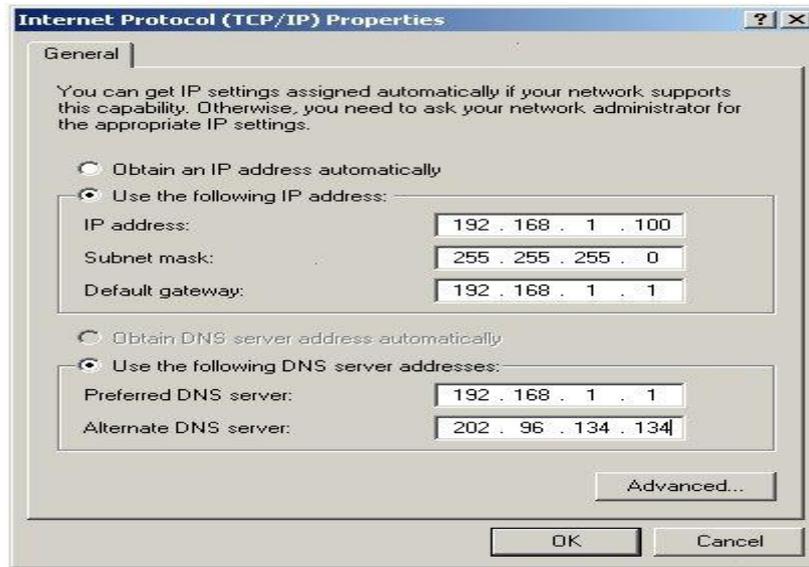


Figure 3-4 IP address configuration

Or click “Advanced...” of the Internet Protocol (TCP/IP) Properties interface to add IP address of 192.168.1.xxx network segment.

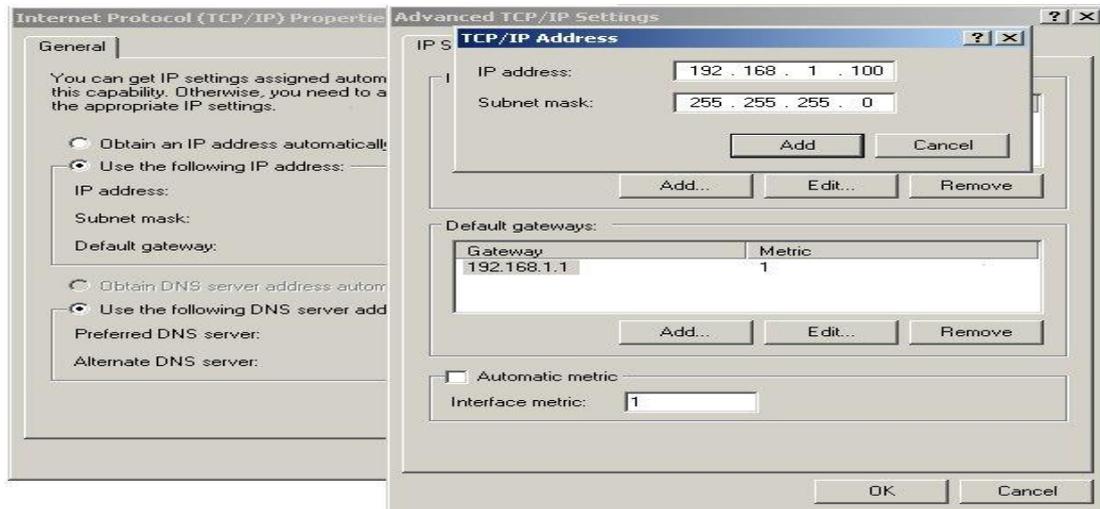


Figure 3-5 Default gateway configuration

After IP address is added, click ‘Start’ — ‘Run’, type ‘cmd’ in the opened field and press enter, so as to enter DOS interface, type telnet 192.168.1.111 in DOS interface to log in the device.

### 3.1.2 IP Address Configuration

After logging in the system, the IP address can be changed as per the following ways.  
 For example, the IP address assigned to by IDC is assumed to be 172.16.55.5, the mask is 255.255.0.0, and the gateway is 172.16.0.250.

```
Welcome to EIS System!
Username:admin
Password:*****
EIS>en
EIS#^i
Username: sa
Password:**
EIS(sql)#sel ipiftable (*) //inquire the IP configuration information
```

ROWID	Type	Ipaddr	Mask	CfgMTU	WorkMode
2	0	192.168.1.111	255.255.255.0	1500	1
1	1	172.16.160.161	255.255.255.0	1500	1
0	2	0.0.0.0	0.0.0.0	1500	1

```
3 rows selected
EIS(sql)#update ipiftable (type=1) (ipaddr=172.16.55.5,mask=255.255.0.0) //change the IP
address of FE1. If the IP address of FE0 is to be changes, then type=0.
1 Rows updated
```

```
EIS(sql)#sel staroute (*) //inquire the default gateway of FE1.
ROWID          DestIp          Mask          NextHop      Priority
-----
0              0.0.0.0        0.0.0.0       61.235.97.129 60
```

```
1 rows selected
EIS(sql)#update staroute (rowid=0) (nexthop=172.16.0.250)//change the default gateway
of FE1.
1 Rows updated
EIS(sql)#db save //After the change, save the configuration.
Starting save ..., please examine result after while.
EIS(config)#reset gmpu 172.16.160.161 //after saving the configuration, reset the device.
The new IP addresss will only be valid after the resetting, as the IP address before the resetting
is the old one.
```

Are you sure to reset gmpu? (y/n):y //choose y to reset the device.

### 3.1.3 Connectivity Check

After above configuration is completed, it is required to check the communication between and network to see if it is normal, the checking procedure is as follow:

- ✧ Use another computer (elsewhere on Internet) to ping the IP address of the device, the ping should be successful;
- ✧ Use another computer (elsewhere on Internet) to telnet the IP address of the device, and log in interface appears;

If the operations above are successful, then it means that the communication between the device and Internet is normal.

### 3.1.4 Troubleshooting

Generally, after the physical connection between and Ethernet is completed, this does not mean that the network communication of the device is straightway. Actually, if IP address or route are configured wrong on the device, then the device can't carry out network communication through IP address; furthermore, ISP may make some limits (for example: disable ping) to the IP address on the network. In such case, it may require the ISP to disengage the limit to IP address of the device, so that the device is fully opened to Internet ( is based-on embed operation system, and it has extremely strong immunological competence to virus). If the IDC has made MAC binding, please tell the MAC address of the device to the IDC to be set.

When the network communication of fails or the connection is not smooth, carry out troubleshooting according to the following aspects:

- A) Whether the network cables are connected correctly (whether the IP of the network interface is correctly configured);
- B) Whether the network cable connections contact well;
- C) Whether the configuration of Ethernet data on the device is wrong;
- D) Whether ISP has limited the IP address;
- E) Whether the data configuration of ISP machine room has fault;
- F) Whether the network is full of messages and result in network congestion;
- G) Whether the network cable or network interface has problem;

## 3.2 Supports Built-in SD Card

To meet the customization requirement of some customer, such as customized CRBT or IVR, is designed with a SD card slot for such purpose; only insert a SD card with the type specify by

into the SD card slot (support hot pmount angleing, and a card with maxium memory of 1G), carry out initialization for the card after insertion.

EIS#^ada

EIS(ada-3)#[108-11:50:22:120]ADA CONNECTED ...,WELCOME!

EIS(ada-3)#cmd 102 100 // SD card formatting command. If the formatting is successful, printing progress shown in percentage will be displayed.



**HINT: Refer to the website of our company or contact us for how to create CRBT and IVR.**

---

## Chapter 4 WEB Data Configuration

### 4.1 WEB Log in

Input the IP address of device in Internet Explorer to open the web page and enter the log in interface, which is shown below:



Figure 4-1 WEB log in

The default user name is admin, the password is admin. To guarantee the system safety, the WEB interface of the device prohibits login using the default password. When logging in for the first time, the system will prompt the user to modify the password. The interface is shown as below:

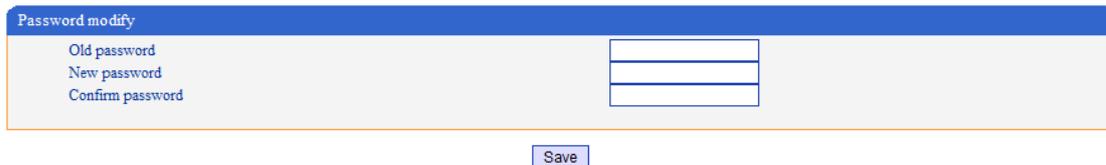


Figure 4-2 Modify login password

After inputting the old password, input a new password and confirm it by inputting it again.

## 4.2 Navigation Tree

The left of the WEB configuration interface is a navigation tree, which consists of the menu items of Status & Statistics, Network Configuration, Voice & Fax Configuration, Protocol Configuration, Truck Configuration, Routing Configuration, Advanced Configuration and Management Configuration. You can select these menu items to carry out corresponding query and configuration work. The navigation tree is shown below:

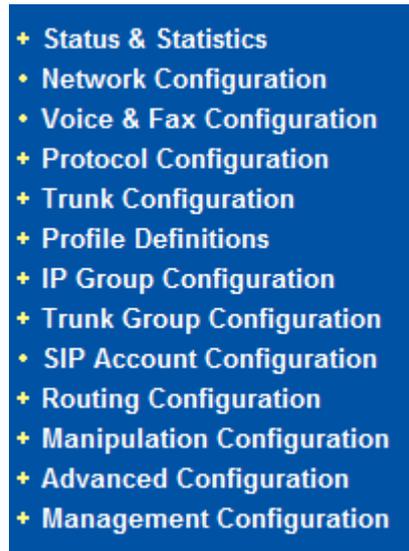


Figure 4-3 Navigation tree

### 4.3 Status & Statistics

Select “Status & Statistics” in navigation tree to view the working conditions of the device, including: system information, trunk status, PRI call statistics, SS7 call statistics, SIP call statistics, H.323 call statistics, etc, as shown below:

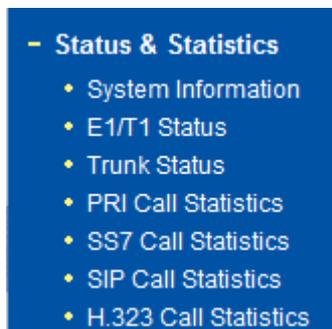


Figure 4-4 Status & Statistics

Select “System Information” in navigation tree to view the run information of the system, including MAC address, IP address, DNS, traffic statistics of network interface, etc. The display result is shown below:

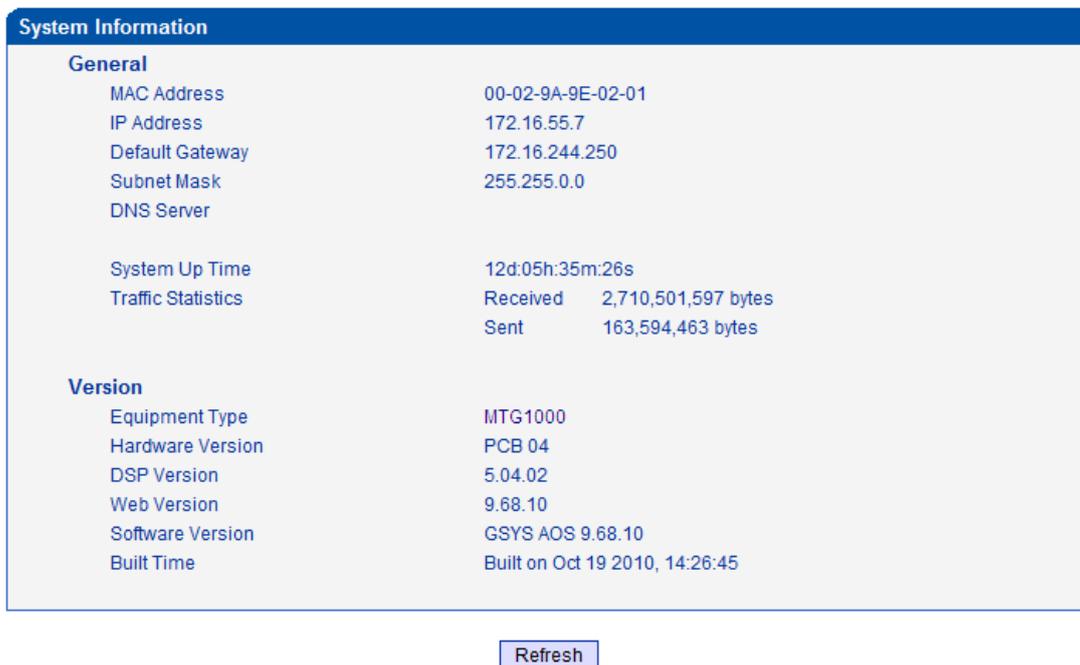


Figure 4-5 System Information

**Overview:**

**【MAC Address】** : MAC address of FE1 port.

**【IP Address】** : IP address of FE1 port.

**【Default Gateway】** : IP address of default gateway.

**【Subnet mask】** : Subnet mask for the network segment of FE1 port.

**【DNS server】** : IP addresses of primary DNS server and secondary DNS server.

**【System Up Time】** : Time elapsed from device power on to now.

**【Traffic Statistics】** : Total bytes of message received and sent by FE1 port.

**Version:**

**【Equipment type】** : Equipment type; this equipment is: 1000

**【Software Version】** : Software version of device running currently.

**【Hardware Version】** : Hardware version of device.

**【DSP Version】** : Version of digital signal processing chip.

**【WEB Version】** : Version of current WEB interface of device.

**【Built Time】** : The load time of current software version.

For the configuration of IP address of device and DNS server, please see “Network configuration”.

## 4.4 View E1/T1 Status

Select “E1/T1 Status” in navigation tree to view E1/T1 status information, including E1/T1 status, E1/T1 channel status and totalize. The display result is shown below:

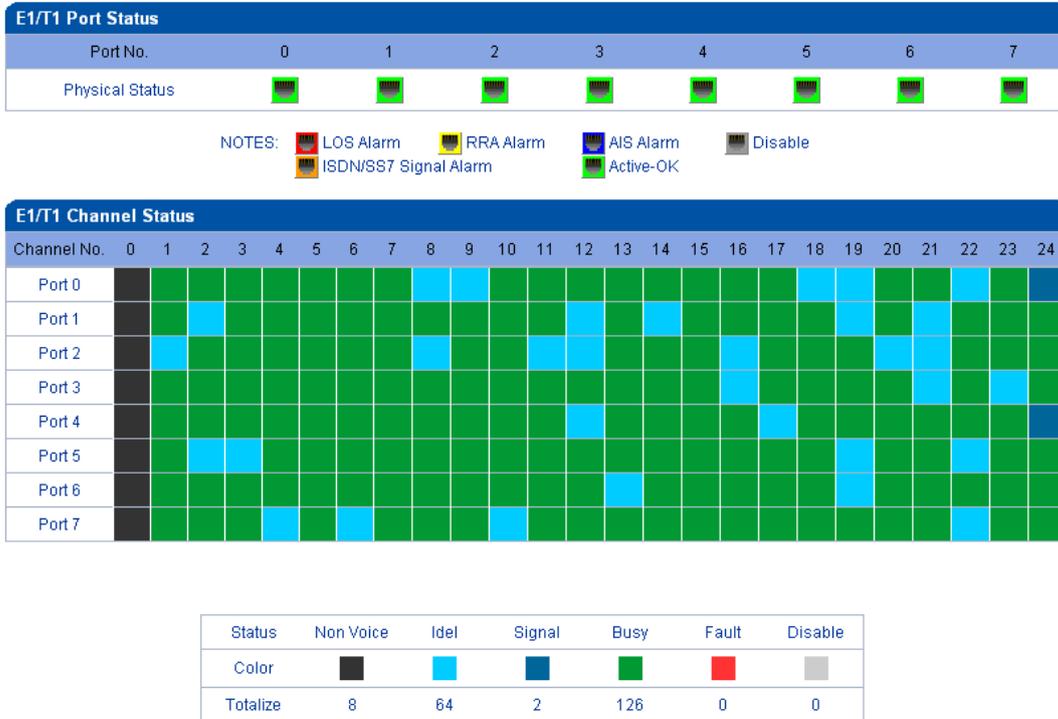


Figure 4-6 E1/T1 Status information

### E1/T1 Status:

**【Port No.】:** Physical port number of E1/T1, WEB page can automatically identify E1/T1 port number of , and create corresponding port number on the interface, which is numbered from left to right in ascending order beginning from 0.

**【Physical Status】:** Indicates whether the physical connectivity of E1/T1 is normal.



**NOTES:**

**LOS Alarm:** Signal loss alarm, this alarm is created when receiving is lost, please check the physical connection whether disconnected.

**RRA Alarm:** Receive Remote Alarm, when distant end detects LOS alarm or LFA alarm, it will insert an alarm message to near end device in transmit data, check the device of opposite terminal to see if it is perfect.

**AIS Alarm:** Alarm indicating; during a time interval, when received data is detected to have only 2 or less than 2 zeros, then AIS alarm is created, check line device.

**Disable:** Means that this E1/T1 is not used.

**D-Channel/SS7 Signal Alarm:** Means physical connection is normal, signaling link has problem.

**Active-OK:** Means that physical connection and signaling link are normal.

## 4.5 View Trunk Status

Select “Trunk Status” in navigation tree to view system trunk information, including E1/T1 status, PRI trunk link status and SS7 trunk link status, SIP trunk status. The display result is shown below:

PRI Link Status			
PRI Trunk No.	Trunk Name	E1/T1 Port No.	Link Status
---	---	---	---

SS7 Link Status			
SS7 Trunk No.	Trunk Name	E1/T1 Port No.	Link Status
0	ss7trunk	0	Established

SIP Trunk Status				
SIP Trunk No.	Username	Trunk Mode	Register Status	Link Status
1	---	Peer	---	Established
2	tt	Access	Unregistered	Fault
3	---	Peer	---	Fault

Refresh

Figure 4-7 Trunk Status information

### **PRI Link Status:**

**【PRI Trunk No.】:** The number of PRI trunk, each trunk corresponds to a PRI link.

**【Trunk Name】:** Identification of the trunk can be remembered easily.

**【E1/T1 Port No.】:** Indicate the E1/T1 line occupied by the PRI trunk.

**【Link Status】:** Indicate whether the PRI link is established.

### **SS7 Link Status:**

**【SS7 Trunk No.】:** The number of SS7 trunk, each trunk corresponds to a SS7 link. (2 links can be established)

**【Trunk Name】:** Identification of the trunk can be remembered easily.

**【E1/T1 Port No.】:** Indicate the E1/T1 line occupied by the SS7 trunk.

**【Link Status】:** Indicate whether the SS7 link is established.

### **SIP Trunk Status:**

**【SIP Trunk No.】:** The number of SIP trunk.

**【User Name】:** When SIP trunking is under registered mode, change the value in the configuration shown in the account registration, IF SIP trunking is under non-registered mode, the value is meaningless, as '---'

**【Trunk mode】:** are peer and access, peer is peer to peer mode, access is access mode

**【Register Status】:** Indicate the status of SIP trunk (access mode), register or unregister, when is under peer to peer mode, the values is meaningless, as '---'

**【Link Status】:** with Established and Fault status.

For the configuration of PRI trunk, please see the section “PRI configuration” in “System configuration”.

For the configuration of SS7 trunk, please see the section “SS7 trunk management” in “system configuration”.

For the configuration of SIP trunk, please see the section “SIP trunk management” in “system configuration”

## **4.6 View Call Statistical Information**

Select “Call Statistics” in navigation tree to view call statistical information on various trunks of system, including PRI trunk statistics, SS7 trunk statistics, SIP trunk statistics and H.323 trunk statistics. The display result is shown below:

## Series E1/T1 Gateway User Manual

PRI Trunk Call Statistics				
PRI Trunk No.	Trunk Name	Current Calls	Accumulated Calls	Percent of Call Completed
0	NoahTest	0	0	100%
2	MoseTest	0	0	100%
3	AtheneTest	0	0	100%

SS7 Trunk Call Statistics				
SS7 Trunk No.	Trunk Name	Current Calls	Accumulated Calls	Percent of Call Completed
1	ZuesTest	0	0	100%

SIP Trunk Call Statistics		
SIP Trunk No.	Trunk Name	Current Calls
1	MessiTest	0

H.323 Trunk Call Statistics		
H323 Trunk No.	Trunk Name	Current Calls
1	KakaTest	0

Figure 4-8 Trunk status statistics

**【Trunk No.】** : The number of PRI trunk, SS7 trunk, SIP or H.323 trunk.

**【Trunk Name】** : Identification of the trunk, which can be remembered easily.

**【Current Calls】** : Number of lines that are being called currently.

**【Accumulated Calls】** : Total number of calls from running start of system to current time.

**【Percent of Call Completed】** : The percent of calls completed in all calls.

## 4.7 Local Network Configuration

Select “Network Configuration” in navigation tree to configure IP address, subnet mask, default gateway and DNS server address of device. The configuration interface is shown below:

**Network Configuration**

**Use the following IP address**

IP Address	<input type="text" value="172.16.90.66"/>
Subnet Mask	<input type="text" value="255.255.0.0"/>
Default Gateway	<input type="text" value="172.16.0.250"/>

**Use the following DNS server addresses**

Primary DNS Server	<input type="text" value="202.96.134.133"/>
Secondary DNS Server	<input type="text" value="211.148.192.141"/>

**NOTE:** It must restart the device to take effect.

Figure 4-9 network configuration



**NOTE:** After above configuration is saved, restart the device to validate.

The “Network Configuration” here is only used to modify the IP address of FE1 port; the IP address of FE0 port can be configured through CONSOLE or login Telnet and use command to configure.

## 4.8 Voice & Fax Configuration

Select “Voice & Fax Configuration” in navigation tree to enter voice and fax configuration interface.

**Voice & Fax Configuration**

**Voice Parameter**

Disconnect Call on Silence Detection	<input checked="" type="radio"/> Yes <input type="radio"/> No
Silence Detection Period	<input type="text" value="60"/> s
PSTN->IP Gain	<input type="text" value="-1 dB"/>
IP->PSTN Gain	<input type="text" value="2 dB"/>

**Fax Parameter**

Fax Transport Mode	<input type="text" value="T.38"/>
--------------------	-----------------------------------

Figure 4-10 configuration of voice & fax parameters

**【Disconnect Call on Silence Detection】:** end the call when the function is enable and the call's silence time > define time as below "Silence Detection Period".

**【PSTN->IP Gain】:** adjust the PSTN to ip gain.

**【IP->PSTN Gain】:** adjust the ip to PSNTgain.

**【Fax Transport Mode】:** Two modes are provided: T.38, Pass-through (suit for better network environment), default option is T.38.

## 4.9 Protocol Configuration

Select "Protocol Configuration" in navigation tree, as shown below:

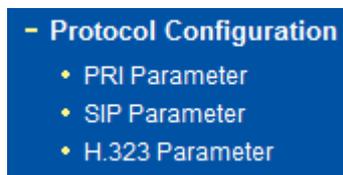
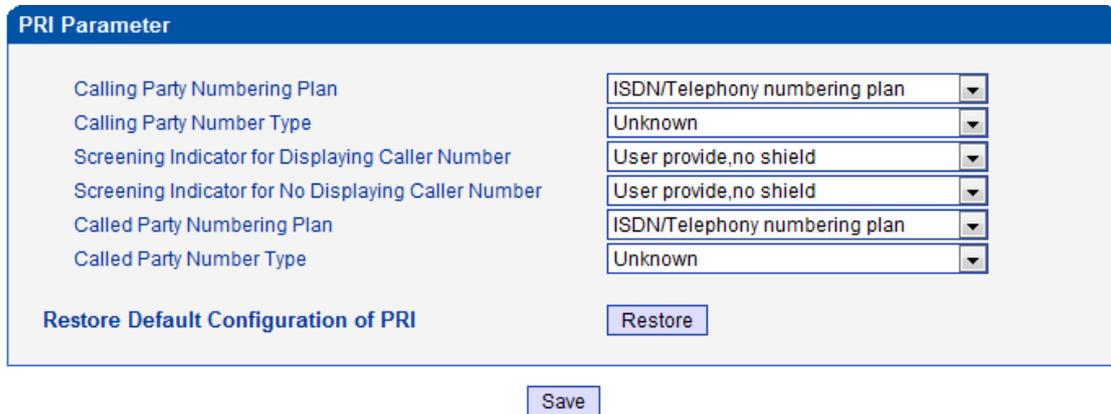


Figure 4-11 Protocol configuration

### 4.9.1 PRI Parameter

Select "PRI Parameters" in navigation tree, the display interface is shown below:



PRI Parameter	
Calling Party Numbering Plan	ISDN/Telephony numbering plan
Calling Party Number Type	Unknown
Screening Indicator for Displaying Caller Number	User provide,no shield
Screening Indicator for No Displaying Caller Number	User provide,no shield
Called Party Numbering Plan	ISDN/Telephony numbering plan
Called Party Number Type	Unknown
Restore Default Configuration of PRI	Restore

Save

**NOTE:** Any re-configuration might cause system works improperly. Do it carefully!

Figure 4-12 Configuration of PRI parameters

**【Calling Party Numbering Plan】:** Provide 6 plans: Unknown, ISDN/Telephony numbering plan, data numbering plan, telegraph numbering plan, national standard numbering plan, private numbering plan. The default is ISDN/Telephony numbering plan.

**【Calling Party Number Type】:** 6 optional types are provided for calling party: Unknown, International number, National number, Network special number, User number, Short code dialing. The default option is Unknown.

**【Screening Indicator for Displaying Calling Number】:** 4 options available: User provide, no

shield; User provide, check and send; User provide, check and having failure; Network provide. The default option is: User provide, no shield.

**【Screening Indicator for No Displaying Calling Number】:** 4 options available: User provide, no shield; User provide, check and send; User provide, check and having failure; Network provide. The default option is: User provide, no shield.

**【Called Party Numbering Plan】:** Provide 6 plans: Unknown, ISDN/Telephony numbering plan, data numbering plan, telegraph numbering plan, national standard numbering plan, private numbering plan. The default is ISDN/Telephony numbering plan.

**【Called Party Number Type】:** 6 optional types are provided for called party: Unknown, International number, National number, Network special number, User number, Short code dialing. The default option is Unknown.

Generally, PRI parameters can inter-communicate with switch successfully by using default configuration; only when the establishment of PRI link is normal, but phone call can't get through, then it is necessary to adjust PRI parameters.

Click “Restore” key to restore PRI parameters to default configuration.



**NOTE: Any change of configuration may result in abnormal work of device, take care to operate.**

---

## 4.9.2 SIP Parameter

Select “SIP Parameters” in navigation tree, the display interface is shown below:

SIP Parameter	
Local SIP Port	<input type="text" value="5060"/>
<input type="button" value="Save"/>	

Figure 4-13 Configuration of SIP protocol parameters

**【Local SIP Port】:** local SIP monitoring port, the default is 5060.

## 4.9.3 H.323 Parameter

Select “H.323 Parameters” in navigation tree, the display interface is shown below:

H.323 Parameter

Call Mode	FastStart
Call Signal Port	1720
Enable H.245 Tunneling	Yes
DTMF Transfer Mode	H.245 alphabet
Start H.245 on Fast Call	Enable
Start H.245 on	CONNET
Respond to FastStart on	PROCEEDING
Start H.245 Negotiation Actively	Enable

Restore Default Configuration of H.323
Restore

**NOTE:** Any re-configuration might cause system works improperly. Do it carefully!

Figure 4-14 configuration of H.323 protocol parameters

**【Call Mode】:** Call mode is classified as: FastStart and NormalStart, the default is FastStart.

**【Call Signal Port】:** Signal monitoring port of device H.323, the default is 1720, it is suggest to change it to other port.

**【Enable H.245 tunneling】:** When is used as calling party (initiate calling actively), whether H.245 tunneling is supported or not, the default is Yes.

**【DTMF Transfer Mode】:** DTMF dialing method that is mainly used for secondary dial, the dialing methods supported by are “H.245 alphabet” method “H.245 signaling” method, the default is “H.245 alphabet” method.

**【Start H.245 on Fast Call】 :** When is used as called party and in case of “fast start”, whether H.245 channel is enabled by force. In order to improve call completing rate, the default is Disable, only when secondary dial (DTMF transfer) is carried out, then it can be considered to be Enable or not; in case of “slow start”, H.245 channel will opened automatically.

**【Start H.245 on】:** Establish H.245 phases, including 3 phases: Call Connection, Signal Sending and Proceeding; the default is Connect phase.

**【Respond to FastStart on】:** Respond phase when call mode is fast start mode, including 3 phases: Call Connection, Signal Sending and Proceeding; the default is Proceeding phase.

**【Start H.245 Negotiation Actively】:** If it is enabled, then end will actively send H.245 negotiation message.



**NOTE:** Any change of configuration may result in abnormal work of device, take care to operate.

---

### 4.9.4 Trunk Configuration

Select “Trunk Configuration” in navigation tree, the display interface is shown below:



Figure 4-15 Trunk configuration

Before trunk configuration is introduced, firstly introduce search, add, modify and delete operations.

In trunk configuration system, we provide search, add, delete and modify functions, we take “SIP trunk” for an example as follow.

**Data search:**

Select “Data Search” in navigation tree, the display interface is shown below:

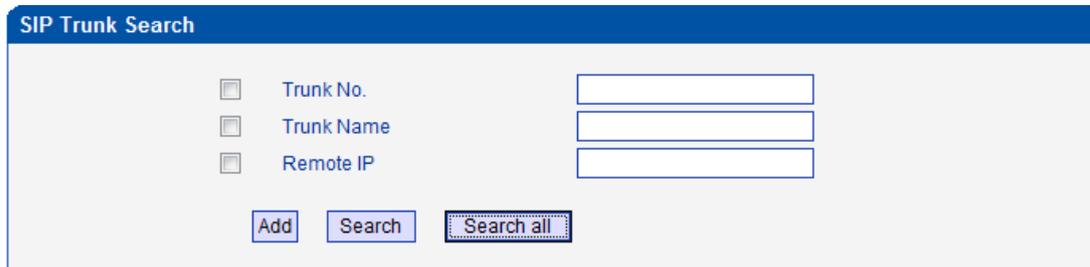


Figure 4-16 Search SIP trunk

**Search all:**

Click “Search all” key in above figure; you can see the interface as follow:



Figure 4-17 Search all SIP trunks

You can see many parameter data in this page, click Page 1 to select other page.

**Designate data to search:**

Figure 4-18 Search designated SIP trunk

Click  before “Trunk Name”, use “Trunk Name” as keyword of search, fill in “to69” in edit box, click “Search” key, you can see corresponding search result in WEB interface.

**Add data:**

There are 2 methods of adding data: one method is to click “Add” key in “SIP Trunk Search” interface, the other method is to click “Add” key in “SIP Trunk” interface. You can see the following interface when either method is used.

Figure 4-19 Add SIP trunk

Fill in corresponding information, click “OK” key to submit data, click “Reset” key to remove all input data and reset, click “Cancel” to cancel the operation of adding data and return to previous menu.

**Modify data:**

## Series E1/T1 Gateway User Manual

SIP Trunk										
Trunk number	Trunk name	SIP-T	Registration to the Remote Party	Register interval	Enable SIP Trunk	Remote IP	Remote port	Incoming authentication type	Authenticate name	
<input checked="" type="checkbox"/>	1	to69	No	Yes	3600	Yes	172.16.99.99	5060	IP Address	90666669

Total: 1entry 20entry/page 1/1page Page 1

Figure 4-20 Select data to be modified

Firstly click the check box  (marked part by red line in above figure) before the data option to be modified, then click “Modify” key.

SIP Trunk Modify	
Trunk No.	<input type="text" value="1"/>
Trunk Name	<input type="text" value="to69"/>
SIP-T Supported	<input type="text" value="No"/>
Registration to the Remote Party	<input type="text" value="Yes"/>
Register Interval(range: 1 - 3600s)	<input type="text" value="3600"/>
Remote IP	<input type="text" value="172.16.99.99"/>
Remote Port	<input type="text" value="5060"/>
Incoming SIP Authentication Type	<input type="text" value="IP Address"/>
Authenticate Name	<input type="text" value="90666669"/>
Username	<input type="text" value="90666669"/>
Password	<input type="password" value="....."/>
Confirm Password	<input type="password" value="....."/>
Play Ringback Tone to Tel	<input type="text" value="Prefer IP"/>
Max Outgoing Limitation	<input type="text" value="No"/>
Max Incoming Limitation	<input type="text" value="No"/>
Time Control	<input type="text" value="Disable"/>
Enable SIP Trunk	<input type="text" value="Yes"/>

Figure 4-21 Modify SIP trunk

### Delete data:

Select the data to be deleted (the method of search and delete data is the same as that of modify data), you can select several data to be deleted at the same time, click “Delete” key to delete.

## 4.9.5 E1/T1 Parameter

Select “E1/T1 Parameter” in navigation tree, the display interface is shown below:

## Series E1/T1 Gateway User Manual

E1/T1 Parameter						
Port No.	Work Mode	PCM Mode	Frame Mode	Line Code		
<input type="checkbox"/>	0	E1	Mu LAW	CRC-4	HDB3	
<input type="checkbox"/>	1	E1	Mu LAW	CRC-4	HDB3	
<input type="checkbox"/>	2	E1	Mu LAW	CRC-4	HDB3	
<input type="checkbox"/>	3	E1	Mu LAW	CRC-4	HDB3	

Figure 4-22 E1/T1 parameters

**E1/T1 Parameter Modify**

Port No.	0	
Work Mode	E1	▼
PCM Mode	Mu LAW	▼
Frame Mode	CRC-4	▼
Line Code	HDB3	▼

Figure 4-23 Modification of E1/T1 parameters

**E1/T1 Parameter Modify**

Port No.	0	
Work Mode	T1	▼
PCM Mode	Mu LAW	▼
Frame Mode	F4	▼
Line Code	B8ZS	▼

Figure 4-24 Modification of T1 parameters

**【Work Mode】:** E1 or T1, the default is E1.

**【PCM Mode】:** PCM mode: A LAW and Mu LAW, the default is A LAW

**【Frame Mode】:** Frame mode: the frame modes of E1/T1 are: DF, CRC-4, CRC4\_ITU, the default is CRC-4; the frame modes of T1 are: F12, F4, ESF, F72, the default is F4.

**【Line Code】:** Line Code: the line codes of E1/T1 are: NRZ, CMI, AMI, HDB3, the default is HDB3. The line codes of T1 are: NRZ, CMI, AMI, B8ZS, the default is B8ZS.



NOTE: Only port 0 can modify work mode and PCM mode.

---

### 4.9.6 PRI Trunk

Select “PRI Trunk” in navigation tree, the display interface is shown below:

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PRI Trunk								
	PRI Trunk No.	PRI Trunk Name	PRI ID	D-channel	E1/T1 Port No.	Standard Type	ISDN Terminal Side	Circuit Allocation Method
<input type="checkbox"/>	0	test0	0	yes	0	ISDN	User side	Cycle
<input type="checkbox"/>	3	test3	3	yes	3	ISDN	Network side	Assigned by remote
<input type="checkbox"/>	2	test2	2	yes	2	ISDN	User side	Min

NOTES: 1. Trunk No. has been created, please select in the drop-down list.  
 2. Trunk No. is a shared data, therefore, PRI Trunk No. can't be the same as SS7 Trunk No.

Figure 4-25 PRI trunk list

Click “Add” key in “PRI Trunk” interface to add PRI trunk, the display interface is shown below:

PRI Trunk Add	
Select Trunk No.	4
PRI Trunk Name	
PRI ID	
Is D-channel	Yes
E1/T1 Port No.	
Standard Type	ISDN
ISDN Terminal Side	User side
Circuit Allocation Method	Minimum Priority

NOTES: 1. Trunk No. has been created, please select in the drop-down list.  
 2. Trunk No. is a shared data, therefore, PRI Trunk No. can't be the same as SS7 Trunk No.

Figure 4-26 Add PRI trunk

PRI is mainly used to realize the calling connection with SPC exchange. Each E1/T1 can establish independent D channel, the share of D channel can be realized between several E1/T1, the system use the 16th time slot as D channel by default.

**【PRI Trunk No.】**: The number of PRI trunk; when you add PRI trunk, 0~7 number will appear in the pull-down box to be selected (the number here depends on E1/T1 physical port number actually existed in ). After trunk number is established, fill in corresponding port number in “E1/T1 Port No.”, so as to assign E1/T1 to designated trunk; each PRI trunk corresponds to a E1/T1 port, if it is required to share D channel by several E1/T1, please refer to “PSTN trunk binding” in route configuration.

**【PRI Trunk Name】** : Identification of PRI trunk, which can be remembered easily

**【PRI ID】** : Identification of PRI trunk number to outside (switch side), this number definition generally begin from 0.

**【Is D channel】:** Indicate whether this E1/T1 has D channel, the default is YES, which means it has D channel.

**【E1/T1 Port No.】:** E1/T1 port number is numbered according to the physical position sequence of E1/T1, it generally begins from 0.

**【Standard Type】 :** Interface type of PRI, two types available: ISDN and QSIG; the default is ISDN.

**【ISDN Terminal Side】:** Indicate PRI network property of E1/T1, it is divided into: “User side” and “Network side”. When PRI loopback is carried out, the network properties of E1/T1 port at both receiving and sending sides must be different.

**【Circuit Allocation Method】 :** Indicate time slot assignment strategy of E1/T1 in a group. There are 4 options: Minimum Priority (when system selects circuit, it always begin to select from the minimum circuit number), Maximum Priority (when system selects circuit, it always begin to select from the maximum circuit number), Rotation Priority (when system selects circuit, it always begin from the number next to the number selected last time; if the maximum circuit number is selected last time, then the next number is the minimum circuit number, and move in cycles like this), and Opposite Terminal (this terminal will no longer allocate time slot, the allocation method of time slot depends on the switch side of opposite terminal).



**NOTES:**

1. When “Trunk Number” is established, please select options in pulldown menu.
2. Trunk number is shared data, therefore, PRI trunk number can’t be the same as SS7 number.

### 4.9.7 SS7 Trunk

Select “SS7 Trunk” in navigation tree, the display interface is shown below:

SS7 Trunk										
	Trunk No.	Trunk name	Standard Type	SPC view Mode	OPC	DPC	Service Type	Network Indicator	Sending SLTM	Circuit Allocation Method
<input type="checkbox"/>	1	test1	ITU	ITU Pointcode Structure	2-33-4	4-33-2	ISUP	National Network	enable	Min

Figure 4-27 SS7 trunk list

Click “Add” key at the bottom of “SS7 Trunk” interface, the display interface is shown below:

SS7 Trunk Add

Select Trunk No.	4
Trunk Name	
Standard Type	ITU
SPC View Mode	Hex
OPC	
DPC	
Service Type	ISUP
Network Indicator	National Network
Sending SLTM	Enable
Circuit Allocation Method	Minimum Priority

Figure 4-28 Add SS7 trunk

- NOTES:**
1. 'Trunk No.' has been created, please select in the drop-down list.
  2. 'Trunk No.' is a shared data, therefore, SS7 'Trunk No.' can't be the same as PRI 'Trunk No.'
  3. SPC length is 24bits when option 'ANSI' or 'ITU-CHINA' is selected in item 'Standard Type'.
  4. SPC length is 14bits when option 'ITU' is selected in item 'Standard Type'.
  5. SPC Length represents the structure of OPC/DPC. SPC View Mode indicates which input format is selected for OPC/DPC structure.
  6. When SPC length is 24bits and 'ITU Pointcode Structure' are selected, the structure is like x-y-z, and x,y,z must be decimal number between 0-255. eg., 66-222-77.
  7. When SPC length is 24bits and 'Hex' are selected, the structure is like xyz, and x,y,z must be hex number between 00-FF. eg., 33AA55.
  8. When SPC length is 14bits and 'ITU Pointcode Structure' are selected, the structure is like x-y-z, and x,z must be decimal number between 0-7, and y must be decimal number between 0-255. eg., 6-222-3.
  9. When SPC length is 14bits and 'Hex' are selected, the structure is like xyz, and x/z is a 3 bit hex number, y is a 8 bit hex number. eg., 202E(100 00000101 110).

SS7 is a standard protocol to realize calling connection with SPC exchange.

**【Trunk No.】** : The number of SS7 trunk, when SS7 trunk is added, number 0~7 will appear in pull-down box to be selected (the number here corresponds to E1/T1 interface number actually existed in ). Generally, a DPC will establish a SS7 trunk number respectively, but SS7 trunk number should not conflict with PRI trunk number. After SS7 trunk is established, assign E1/T1 to SS7 trunk in “SS7 Circuit” option.

**【Trunk name】** :It can be edited freely, which can be identified and remembered easily.

**【Standard Type】** :SPC types: ITU-T (14 bit), ANSI (24 bit), ITU-CHINA (24 bit).

**【SPC view Mode】**: Include hexadecimal system and ITU pointcode structure (decimal system)

**【OPC】** : Original Point Code

**【DPC】** : Destination Point Code

**【Service Type】** : SS7 service types: ISUP (ISDN User Part) and TUP (Telephone User Part).

**【Network Indicator】** : Indicate the network property of SS7, including International Network, International Standby, National Network, National Standby; the default is “National Network”

(this type is used in China, USA, and Japan), “International Network” is generally used in inter-office switch room; others will be selected according to physical circumstances.

**【Sending SLTM】** : Signaling Link Test Message. Whether signaling link test message will be sent or not. (A signaling test message actively sent by )

**【Circuit Allocation Method】**: Indicate the time slot allocation method of E1/T1 in this group. There are 3 methods: Minimum Priority (when system selects circuit, it always begin to select from the minimum circuit number), Maximum Priority (when system selects circuit, it always begin to select from the maximum circuit number), Rotation Priority (when system selects circuit, it always begin from the number next to the number selected last time; if the maximum circuit number is selected last time, then the next number is the minimum circuit number, and move in cycles like this).



### NOTES:

1. Trunk has been preestablished, please select trunk number from pull-down options.
  2. Trunk number is shared by PRI and SS7, therefore, PRI trunk number can't be the same as SS7 number.
  3. When ANSI or ITU-CHINA standard is selected for SPC type, then SPC length is 24 bit.
  4. When ITU standard is selected for SPC type, then SPC length is 14 bit.
  5. SPC length indicates OPC/DPC structure, SPC display mode indicates the input format of OPC/DPC structure.
  6. When SPC is 24 bit “ITU Pointcode Structure (decimal system)” mode, the format is: X-Y-Z; X, Y, Z must be 0-255 decimal number; for example: 66-222-77.
  7. When SPC is 24 bit “hexadecimal system” mode, the format is: XYZ; X, Y, Z must be 00-FF hexadecimal number; for example: 33AA55.
  8. When SPC is 14 bit “ITU Pointcode Structure (decimal system)” mode, the format is: X-Y-Z; X, Z must be 0-7 decimal number, and Y must be 0-255 decimal number; for example: 6-222-3.
  9. When SPC is 14 bit “hexadecimal system” mode, the format is: XYZ; X, Z must be 3-digit hexadecimal number, Y is 8-digit hexadecimal number; for example: 202E (100 0000101 110).
- 

### 4.9.8 SS7 MTP Link

Select “SS7 MTP Link” in navigation tree, the display interface is shown below:

## Series E1/T1 Gateway User Manual

SS7 MTP Link					
	Trunk No.	Link No.	Signaling Link Code	E1/T1 Port No.	Circuit No.
<input type="checkbox"/>	1	0	1	1	16

Figure 4-29 SS7 link list

Click “Add” key at the bottom of “SS7 MTP Link” interface to add SS7 MTP link. The display interface is shown below:

SS7 MTP Link Add	
Select Trunk No.	0
Select Link No.	0
SLC	
E1/T1 Port No.	
Channel No.	16

- NOTES:
1. SLC: Signalling Link Code.
  2. Each SS7 trunk could add maximum 2 items which with different 'Link No.'.
  3. Link 0 and Link 1 have been created by system, you can select it in the drop-down list.

Figure 4-30 Add SS7 link

**【Trunk No.】** :It is consistent with foregoing “Trunk No.” of SS7 trunk.

**【Link No.】** : maximum support 2 signaling links ( only supports 2 links currently), these two links are load sharing, when one link fails, the other link will bear the work of all loads until restore from failure, and then they will share the load again.

**【Signaling Link Code】** :If a signaling point has established several signaling links, then the code of each signaling link will begin from 0.

**【E1/T1 Port No.】** :Indicate which E1/T1 this link is established on, it is stipulated that such numbering is carried out according to the physical position of E1/T1, i.e. carry out numbering beginning from 0 in sequence.

**【Circuit No.】** :Indicate which time slot this link is established on. It is generally 16 or 1 time slot, the default is 16 time slot.



**NOTES:**

1. SLC: Signaling Link Code
2. Each SS7 trunk maximum supports 2 links.
3. Use pull-down menu in the system to establish link 0 and link 1.

### 4.9.9 SS7 Circuit

Select “SS7 Circuit” in navigation tree, the display interface is shown below:

SS7 Circuit			
	Trunk No.	E1/T1 Port No.	Start CIC No.
<input type="checkbox"/>	1	1	32

Figure 4-31 SS7 circuit list

Click “Add” key at the bottom of “SS7 Circuit” interface to add SS7 circuit link. The display interface is shown below:

**SS7 Circuit Add**

Select Trunk No.

E1/T1 port No.

Start CIC No.

- NOTES:**
1. TS0 and signalling TS have been included in the CIC numbering plan.
  2. 'Start CIC No.' must be the multiples of 32, when option 'ITU' or 'ITU-CHINA' is selected in item 'Standard Type' of corresponding SS7 trunk.
  3. 'Start CIC No.' must be the multiples of 128, when option 'ANSI' is selected in item 'Standard Type' of corresponding SS7 trunk.

Figure 4-32 Add SS7 circuit

CIC (circuit identification code) is an important parameter of SS7 circuit, should be confirmed with your counterpart central office switches provider. If the CIC is different, the fault of SS7 circuit one-way connection will appear.

**【Trunk No.】** : The “Trunk No.” here corresponds to the “Trunk No.” of SS7 trunk.

**【E1/T1 Port No.】** : Fill in the port number of E1/T1, assign E1/T1 to selected SS7 trunk.

**【Start CIC No.】** : An initial circuit number to this E1/T1 agreed by both parties.



**NOTES:**

- 1. Time slot 0 and signaling time slot must be included in CIC number.**
- 2. When “ITU” or “ITU-CHINA” is selected for “Standard Type” in SS7 Trunk, “Start CIC No.” must be the multiple of 32.**
- 3. When “ANSI” is selected for “Standard Type” in SS7 Trunk, “Start CIC No.” must be the multiple of 128.**

### 4.9.10 SIP Trunk

Select “SIP Trunk” in navigation tree; click “Search all” to enter SIP trunk interface.

Trunk No.	Trunk Name	SIP-T	Registration to the Remote Party	Register Interval	Enable SIP Trunk	Remote IP	Remote Port	Incoming Authentication Type	Authorization Name	Username	Play Ringback Tone to Tel
1	Noahstest	Yes	Yes	3600	Yes	172.16.77.77	5060	IP Address	172.16.77.77	admin	Prefer IP

Total: 1entry 20entry/page 1/1page Page 1

[Add](#) [Delete](#) [Modify](#)

Figure 4-33 SIP trunk list

Click “Add” key at the bottom of “SIP Trunk” interface to add SIP trunk. The display interface is shown below:

SIP Trunk Add	
Trunk No.	1
Trunk Name	Noahstest
SIP-T Supported	Yes
Registration to the Remote Party	Yes
Register Interval(range: 1 - 3600s)	3600
Remote IP	172.16.77.77
Remote Port	5060
Incoming SIP Authentication Type	IP Address
Authorization Name	172.16.77.77
Username	admin
Password	•••••
Confirm Password	•••••
Play Ringback Tone to Tel	Prefer IP
IP to PSTN Limitation	No
PSTN to IP Limitation	No
IP to PSTN Time Control	Disable
Enable SIP Trunk	Yes

Figure 4-34 Add SIP trunk

**【Trunk No.】** : The range of number is 1~50.

**【Trunk Name】** : It can be edited freely, which can be identified and remembered easily.

**【SIP-T supported】** : Defined by IETF work group RFC3372, it is a standard used to establish communication between SIP and ISUP; the default is “Yes”; if SIP trunk does not support, then set it to “No”.

**【Registration to Remote Party】** : Whether register request message to opposite equipment will be sent or not, you can select “Yes” or “No”.

**【Call mode】** : Only when **【Registration to Remote Party】** selected Yes, This option will displayed if the call uses access mode, any calls through this SIP Trunking, the Caller ID will show this SIP trunking username ; IF call use peer mode , no through this SIP relay, the Caller ID will not change

**【Register Interval】** : Time interval of sending register request message to opposite equipment each time; the range is from 1-3600 seconds.

**【Remote IP】** : IP address of remote platform interfacing with this .

**【Remote Port】** : Q.931 port of SIP of remote platform interfacing with this , the default is 5060

**【Incoming SIP Authentication Type】** : You can select IP address authentication or password authentication, when “IP Address” authentication is selected, the calling initiated from remote will not subject to domain name or password authentication, only judge whether the IP address is legal or not; if “No” is selected, authentication realm/password authentication will be carried out.

**【Authorization Name】**: Domain name of authentication, which constitutes SIP protocol safety authentication together with password.

**【Password】** : It constitutes SIP protocol safety authentication together with domain name of authentication.

**【Confirm Password】** : Input password again to verify password.

**【Play Ringback Tone to Tel】** : Ring back tone will be sent back by opposite terminal (mainly used for color ringback tone service), or directly play ringback tone by locally. The default is ring back tone sent back by opposite terminal.

**【IP to PSTN Limitation】**: IP to PSTN calls; the range is 0~65535, the default is no limitation; if Yes is selected, then input limited calls in the edit box appeared.

IP to PSTN Limitation	Yes
IP to PSTN Calls	<input type="text"/>

Figure 4-35 IP to PSTN calls limitation of SIP trunk

**【PSTN to IP Limitation】**: PSTN to IP calls, the range is 0~65535; the default is no limitation; if Yes is selected, then input limited calls in the edit box appeared.

PSTN to IP Limitation	Yes
PSTN to IP Calls	<input type="text"/>

Figure 4-36 PSTN to IP calls control of SIP trunk

**【IP to PSTN Time Control】**: The default is Disable; if Enabled is selected, then you can edit the start and stop time of prohibition time interval. Within this time interval, all calls from IP to PSTN are prohibited. (Calls from PSTN to IP are not limited)

Time Control	Enable
Prohibition Time	From
	To
	00 hr 00 min 00 sec
	00 hr 00 min 00 sec

Figure 4-37 Time control of SIP trunk

**【Enable SIP Trunk】** : A switch used to enable this SIP trunk or not; you can select “Yes” or “No”, when “No” is selected, this SIP trunk is invalid.



**Key Point of Configuration:**

In the case that safety can be ensured, it is suggested to set “IP Address” authentication to “Yes”, so that system treatment efficiency can be improved. If “IP Address” authentication is set to “Yes”, then “Authorization Name”, “Username”, and “Password” items are invalid. When “IP to PSTN Time Control” is set to “Enable”, all calls from IP to PSTN on the trunk are prohibited, but calls from PSTN to IP are not affected.

Select “H.323 Trunk” in navigation tree; click “Search all” to enter H.323 trunk interface.

H.323 Trunk					
	Trunk No.	Trunk Name	Enable H.323 Trunk	Remote IP	Remote Port
<input type="checkbox"/>	1	MessiTest	Yes	172.16.88.88	1720
<input type="checkbox"/>	2	RooneyTest	Yes	172.16.88.99	1720

Total: 2entry 20entry/page 1/1page Page 1

Figure 4-38 H.323 trunk list

Click “Add” key at the bottom of “H.323 Trunk” interface to add H.323 trunk. The display interface is shown below:

H.323 Trunk Add	
Trunk No.	<input type="text" value="1"/>
Trunk Name	<input type="text" value="MessiTest"/>
Remote IP	<input type="text" value="172.16.88.88"/>
Remote Port	<input type="text" value="1720"/>
IP to PSTN Limitation	<input type="text" value="No"/>
PSTN to IP Limitation	<input type="text" value="No"/>
IP to PSTN Time Control	<input type="text" value="Disable"/>
Enable H.323 Trunk	<input type="text" value="Yes"/>

Figure 4-39 Add H.323 trunk

**【Trunk No.】:** The range of number is 1~50;

**【Trunk Name】:** Trunk name can be set freely, so as to extinguish each trunk.

**【Remote IP】:** IP address of remote platform interfacing with this device.

**【Remote Port】:** Q.931 port of H.323 of remote platform interfacing with this device, the

default is 1720.

**【IP to PSTN Limitation】:** IP to PSTN calls; the range is 0~65535, the default is no limitation; if Yes is selected, then input limited calls in the edit box appeared (initial value is 65535).

**【PSTN to IP Limitation】:** PSTN to IP calls, the range is 0~65535; the default is no limitation; if Yes is selected, then input limited calls in the edit box appeared (initial value is 65535).

**【IP to PSTN Time Control】:** The default is Disable; if Enabled is selected, then you can edit the start and stop time of prohibition time interval. Within this time interval, all calls from IP to PSTN are prohibited. (Calls from PSTN to IP are not limited)

Time Control		Enable				▼	
Prohibition Time	From	00	hr	00	min	00	sec
	To	00	hr	00	min	00	sec

Figure 4-40 time control of H.323 trunk

**【Enable H.323 Trunk】:** A switch used to enable this H.323 trunk or not; you can select “Yes” or “No”, when “No” is selected, this H.323 trunk is invalid.

## 4.10 Profile Definitions

Select “Profile Definitions” in navigation tree, the display interface is shown below:



Figure 4-41 Profile Definitions

“Profile definitions” Used to define rules and ability that send and receive call from PSTN and IP part so on parameters

### 4.10.1 Coder Group

Select “Coder Group” in navigation tree, the display interface is shown below:

Coder Group Configuration					
Coder Group ID		0			
	Coder Name	Payload Type	Packetization Time (ms)	Rate (kbps/s)	Silence Suppression
1st	G723	4	30	6.3	Disable
2nd	G729	18	20	8	Disable
3rd	G711A	8	20	64	Disable
4th	G711U	0	20	64	Disable

Figure 4-42 Coder Group

**【Coder Group】:** Used for configure the voice codec parameters, through it can configured voice capabilities into 8 groups, each group can have different audio capabilities, such as the priority of voice codec, packaging length and whether to support silence suppression

**【Coder Group ID】:** ID standard for Voice Ability, total with 8 groups, where 0 is the default group ID number, the codec that equipment support in the grouping will be displayed in 0 group ,on the map only shows 4 kinds , mean equipment only support this 4 codecs

**【Coder Name】:** Codec name, choose empty mean cancel the selection

**【Payload Type】:** coder name is the interpretation of the field, each codec has a unique value, refer to RFC3551

**【Packetization Time(ms)】:** Voice Codec packetization time, you can define different kinds of coding and decoding, minimum packetization time

**【Silence Suppression】:** It is disabled by default. During talking, the bandwidth occupied by voice transmission will be released automatically for silence party or when talk is paused.



**Note:**

1.0 No packet voice codec can not be canceled, only to adjust its priority

### 4.10.2 Dial Plan

Select “Dial Plan” in navigation tree, the display interface is shown below:

Dial Plan				
	Dial Plan Index	Prefix	Minimum Length	Maximum Length
<input type="checkbox"/>	0	.	0	30

Dial Plan ID: 0 (dropdown menu with options 0, 1, 2, 3, 4)

Total: 1 entry

Page 1 (dropdown menu)

Buttons: Add, Delete, Modify, Search

Figure 4-43 Coder Group

Dial plan use for configure the receiving number, you can configure different prefix number, these rules can be divided into 5 groups, separate with a dial plan ID, where 0 is the default setting, there is only a list of data which can not be deleted , 1 to 4 groups can be respectively configured up to 2000 list data,

**【Dial Plan Index】:** dial plan priority rules take effect in accordance with dial plan index size, and not according to the maximum number received, for example,in the following are 2 list data:

	Dial Plan Index	Prefix	Minimum Length	Maximum Length
<input type="checkbox"/>	20	02	16	24
<input type="checkbox"/>	21	0201	4	14

receive number is 0201458877, the effective dial plan is index of 20 rules, index value of 21 is not in the force rules

**【Prefix】:** Match number, "." mean representative of any number

**【Minimum Length】:** The minimum receiving Number length (0 to 30), if the number received does not meet minimum number length require,the system will determine the number receiving incomplete closing, will continue to wait Number arrive, if has received the end of indicator numbers, the system will return number which is not completely wrong, then release the call

**【Maximum Length】:** The largest Received number length (0 to 30), the maximum number length that can be received, if the received number in this length, the system will determine the receiving number is completed, no longer continue to receive numbers, immediately begin numbers analyzed, If there are numbers keep to send over, the system will drop the new numbers dial plan rules can through manangement configuratuion-> Data Restore into dial plan, the file is a txt format, the data configuration rules are as follows:

```
[AOS_PLAN:2]----- dial plan ID is 2
00,16-24----- prefix 00, minimum lengthis16, maximum lengthis24
10,16-24
099, 16-30
[AOS_PLAN:3]
04,7-24
11,16-31
```



**Note:**

1. In order to ensure each rule can take effect, long matching numbers (prefix) rule dial plan index value need smaller, so when through the file into the rules, need put t long matching numbers (prefix) rule before the file
2. No maximum length is 30, this value is the number of the total length, including the prefix length, such prefix is 0123, the maximum value of Maximum Length is only 26, and "." Wildcard is not included in the number length

### 4.10.3 Dial Timeout

Select “Dial Timeout” in navigation tree, the display interface is shown below:

Dial Timeout					
	Dial Timeout ID	Description	Initial Digit Timeout(s)	Before Minimum Number Length Timeout(s)	After Minimum Number Length Timeout(s)
<input type="checkbox"/>	0	Default	20	10	10

Figure 4-44 Dial Timeout

Dial timeout is used to configure dial-up over time , total 8 kinds of configured timeout rules

**【Initial Digit Timeout】:** No dial-up timeout, generally refer to the user pick up the handset , the maximum time waiting to press first key, in this case refers to after the system get the receipt of income Signaling, the maximum time waiting to receive the first number

**【Before Minimum Number Length Timeout(S)】:** After receive number, the number have not yet reached the length of the minimum receiving number, the length of timeout

**【After Minimum Number Length Timeout(S)】:** After receive number, the number has reached the minimum length No. length, but not reach the maximum length of the dial timeout

### 4.10.4 PSTN Profile

Select “PSTN Profile” in navigation tree, the display interface is shown below:

PSTN Profile										
	PSTN Profile ID	Description	Code Group ID	RFC2833 Payload	1st Tx DTMF	2nd Tx DTMF	3rd Tx DTMF	Dial Plan ID	Dial Timeout ID	Receiving of Overlap Dialing
<input type="checkbox"/>	0	Default	0	101	RFC2833	SIP INFO	Inband	0	0	Enable

**PSTN Profile Add**

PSTN Profile ID	1
Description	test
Code Group ID	0
RFC2833 Payload Type	101
1st Tx DTMF Option	RFC2833
2nd Tx DTMF Option	SIP INFO
3rd Tx DTMF Option	Inband
Dial Plan ID	0
Dial Timeout ID	0
Receiving of Overlap Dialing	Disable

Figure 4-45 PSTN profile

PSTN profile is configured Pstn call number rules, you can configure total 16 rules, can be interpreted as config the receiving number rule from pstn incoming call and the ability parameter that provide by the rules

**【Description】** : Give a meaningful description of the rule in order to understand memory

**【RFC2833 Payload Type】** : the item is 101 by default.

**【Code Group ID】** :refer to 4.10.1 [• Coder Group](#)

**【DTMF】** : supports three DTMF mode : RFC2833, SIP Info and Inband.

**【Dial Plan ID】** :refer to 4.10.2 [• Dial Plan](#)

**【Dial Timeout ID】** :refer to 4.10.3 [• Dial Timeout](#)

**【Receiving of Overlap Dialing】** : whether support receive Overlap dialing, default not support.

### 4.10.5 IP Profile

Select “IP Profile” in navigation tree, the display interface is shown below:

IP Profile						
	IP Profile ID	Description	Declare RFC2833 in SDP	Support Early Media	Play Ringback Tone from	Wait Peer RTP
<input type="checkbox"/>	0	Default	Yes	Yes	Local	No

Figure 4-46 IP profile

This menu use to configure receiving IP number rules and the rules provide parameters ability. A

total of 16 rules can be configured **【Declare RFC2833 in SDP】** : default support

**【Support Early Media】** : whether support Early Media(183)

**【Play Ringback Tone From】** : IP-> PSTN call ring back tone player side, if set to local, play from the , set to IP will play by the called

**【Wait Peer RTP】** : IF set to No, will auto send RTP packets during the call, if set to Yes, will wait the RTP packet was sent by the back side first ,then send out RTP packets

## 4.11 IP Group Configuration

Select “IP Group Configuration” in navigation tree, the display interface is shown below:



Figure 4-47 IP Group configuration

IP Group configuration, according to different attributes,set the various SIP and H323 into different group and specify the priority. Users can through IP group set the called ID which from PSTN to the corresponding group on Softswitch

### 4.11.1 IP Group Attribute

Select “IP Group Attribute” in navigation tree to enter the interface of trunk binding.

IP Group Attribute			
	IP Group ID	Description	IP Trunk Select Mode
<input type="checkbox"/>	0	test	Ascending
<input type="checkbox"/>	7	china ip group	Cyclic Ascending

Figure 4-48 IP Group Attribute

Add IP group, and describe the ip group, specify the routing strategy, a total of 16 sets of data can be added

**【IP Trunk Select Mode】:** Indicate time slot assignment strategy of SIP/H.323 in a group. There are 4 options: Ascending (when system selects trunk’s Priority, it always begin to select from the minimum priority number), Descending (when system selects priority, it always begin to select from the maximum priority number), Cyclic Ascending (when system selects trunk’s Priority, it always begin from the number next to the number selected last time, if the maximum priority number is selected last time, then the next number is the minimum priority number, and move in cycles like this; Cyclic Descending (when system selects trunk’s Priority, it always begin from the number before to the number selected last time, if the minimum priority number is selected last time, then the next number is the maximum priority number, and move in cycles like this).

### 4.11.2 IP Group

Select “IP Group” in navigation tree to enter the interface of trunk binding.

IP Group						
	IP Group ID	Priority	Trunk Type	Trunk No.	IP Profile ID	
<input type="checkbox"/>	0	0	SIP	1	0	
<input type="checkbox"/>	0	1	SIP	2	0	
<input type="checkbox"/>	0	2	H.323	0	0	

Figure 4-49 IP Group

Add IP group, and describe the ip group, specify the routing strategy, a total of 16 sets of data can be added, have the same properties can be divided into a group of soft-switching and specify a different priority order to different soft switching

**【IP Group ID】:** Trunking ip group ID。

**【Priority】:** Priority order, highest priority is 0, the minimum priority is 15

**【Trunk Type】:** SIP or H323

**【Trunk Type】:** SIP or H323 Trunk Type

**【IP Profile ID】:** refer 4.10.5 [IP Profile](#).

### 4.12 Trunk Group Configuration

Select “Trunk Group Configuration” in navigation tree, the display interface is shown below:



Figure 4-50 Trunk Group configurations

“Trunk group configuration” is set E1 and the E1 time slots into different grouped and designated subgroups PSTN profile ID, use for outbound routing

### 4.12.1 Trunk Group Attribute

Select “Trunk Group Attribute” in navigation tree to enter the interface of trunk binding.

Trunk Group Attribute			
	Trunk Group ID	Description	Channel Select Mode
<input type="checkbox"/>	0	test	Ascending

Figure 4-51 Trunk Group Attribute

Add Trunk group, and describe trunk group, specify the routing strategy, a total of 16 sets of data can be added

**【Channel Select Mode】:** Indicate time slot assignment strategy of E1/T1 in a group. There are 4 options: Ascending (when system selects Channel, it always begin to select from the minimum Channel number), Descending (when system selects Channel, it always begin to select from the maximum Channel number), Cyclic Ascending (when system selects Channel, it always begin from the number next to the number selected last time, if the maximum channel number is selected last time, then the next number is the minimum channel number; Cyclic Descending (when system selects Channel, it always begin from the number before to the number selected last time, if the minimum Channel number is selected last time, then the next number is the maximum Channel number, and move in cycles like this).

### 4.12.2 Trunk Group

Select “Trunk Group” in navigation tree to enter the interface of trunk binding.

Trunk Group						
	Start E1/T1	End E1/T1	Start Channel	End Channel	Trunk Group ID	PSTN Profile ID
<input type="checkbox"/>	0	1	---	---	0	0
<input type="checkbox"/>	2	2	1	12	0	0

Figure 4-52 Trunk Group

**【Start E1/T1】 / 【End E1/T1】:** start/end E1/T1 No

**【Start channel】 / 【Start channel】:** Start / end time slot number, assigned the group to a precise time slot

**【Trunk Group ID】:** ET/T1 time slot group No

**【PSTN Profile ID】:** refer4.10.4 [PSTN Profile](#).

## 4.13 SIP Account Configuration

Select “SIP Account Configuration” in navigation tree, the display interface is shown below:

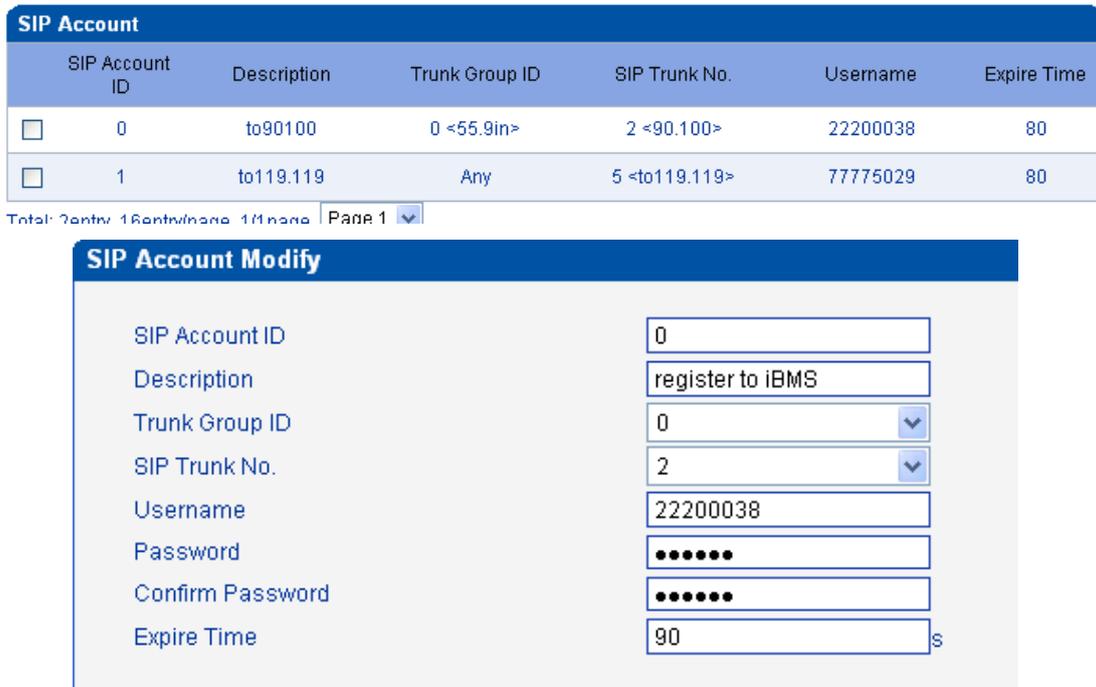


Figure 4-53 SIP account configuration

The menu use for configure SIP Account of the device, use when the device is under the registration mode, work with 4.8.10 SIP Trunk

**【SIP Account ID】:** SIP account number, a value of 0 to 127

**【Description】:** Describe to a Account ID

**【Trunk Group ID】:** Pls refer to 4.12.2 [Trunk Group](#), any mean any trunk group.

**【SIP Trunk No.】 :** The account corresponding to the SIP trunk No

**【Username】 :** SIP's registered account name. the same SIP trunk can configured with multiple SIP accounts, corresponding to different trunk group ID

**【Password】 / 【Confirm Password】:** Registered SIP account / password

**【Expore Time】:** SIP registration interval

## 4.14 Routing Configuration

Select “Routing Configuration” in navigation tree, the display interface is shown below:



Figure 4-54 Routing configuration

Routing configuration of incoming and outgoing calls.

The key how to Configure routing:

the more accurate routing configuration, index values should be smaller

Any and "." is useful, suggest configuration, to avoid cannot match the routing

- 1、 when Configure routing, configue from big value idex, to avoid when add an exact match routing, the data can not be directly inserted
- 2、 when configure routing ,suggest reserve index value

### 4.14.1 PSTN -> IP Routing

Select “PSTN -> IP Routing” in navigation tree, the display interface is shown below:

**PSTN->IP Routing**

PSTN->IP Routing Mode:

	Index	Description	Source Trunk Group ID	Destination Prefix	Source Prefix	Destination IP Group ID
<input type="checkbox"/>	0	test	Any	.	.	0
<input type="checkbox"/>	1	to Softswitch	0	0755	010	0

Total: 2entry 16entry/page 1/1page

**Route PSTN->IP Add**

Index:

Description:

Source Trunk Group ID:

Destination Prefix:

Source Prefix:

Destination IP Group ID:

Figure 4-55 PSTN->IP Routing

“PSTN -> IP Routing”: Routing Call from PSTN to IP

**【Index】:** Route index number (0 ~ 255), "PSTN -> IP Routing" priority rule is in accordance with the index size, and can refer to index of 4.10.2 [Dial Plan](#)

**【Source Trunk Group ID】:** refer to 4.12.2 [Trunk Group](#), "Any" mean any.

**【Destination Prefix】:** called number match prefix number, "." Is a wildcard, representing any called number

**【Source Trunk No.】:** Caller ID number matches the prefix, "." Is a wildcard, representing any Caller ID

**【Destination IP Group ID】:** refer to 4.11.2 [IP Group](#).

### 4.14.2 IP -> PSTN Routing

Select “IP -> PSTN Routing” in navigation tree, the display interface is shown below:

**IP->PSTN Routing Mode** Route calls before manipulation

	Index	Description	Source IP Trunk Type	Source IP Trunk No.	Destination Prefix	Source Prefix	Destination Trunk Group ID	Source IP Group ID
<input type="checkbox"/>	0	test	Any	Any	.	.	0	Any
<input type="checkbox"/>	1	test	Any	Any	0598	.	1	Any
<input type="checkbox"/>	2	tt	H.323	0	.	.	0	0

Total: 3entry 16entry/page 1/1page Page 1

Add Delete Modify

**IP->PSTN Routing Add**

Index: 255

Description:

Source IP Trunk Type: SIP

Source IP Trunk No.: 1 <to66.69>

Destination Prefix:

Source Prefix:

Destination Trunk Group ID: 0 <ss7outto55.5>

Source IP Group ID: Any

Figure 4-56 IP->PSTN Routing

“IP -> PSTN Routing”: Routing Call from IP to PSTN

**【Index】:** Route index number (0 ~ 255), "IP -> PSTN Routing" priority rule is in accordance with the index size, and can refer to index of 4.10.2 [Dial Plan](#)

**【Source IP Trunk Type】:** there are SIP and H.323, “Any” mean two representatives both included, while under “Any” setting, “Source IP Trunk No. Option” will not displayed

**【Source IP Trunk No.】:** SIP or H323 trunk No

**【Destination Prefix】:** called number match prefix number, "." Is a wildcard, representing any called number.

**【Source Trunk No.】:** Caller ID number matches the prefix, "." Is a wildcard, representing any Caller ID.

**【Destination Trunk Group ID】:** refer to 4.12.2 [Trunk Group](#)。

**【Source IP Group ID】:** refer to 4.11.2 [IP Group](#)。

## 4.15 Manipulation Configuration

Select “Manipulation Configuration” in navigation tree, the display interface is shown below:

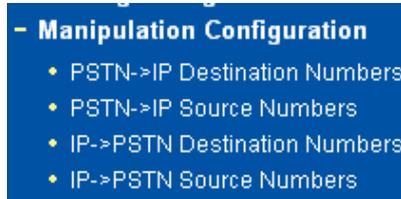
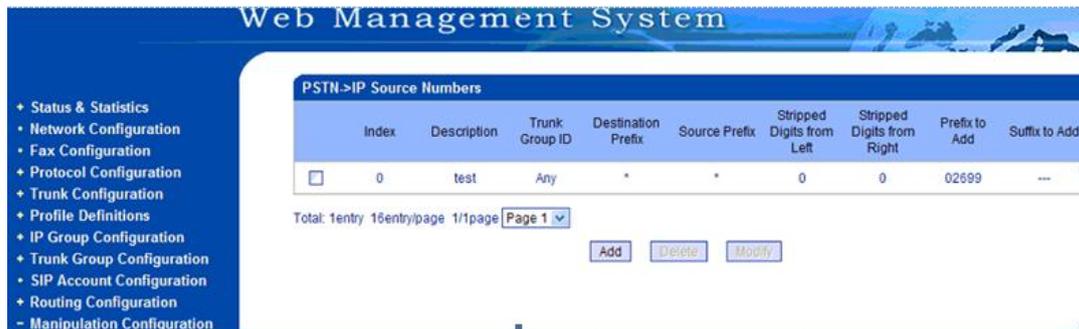


Figure 4-57 Manipulation configuration

"Manipulation Configuration" use to replaced numbers, user can flexible replace and remove the inbound and outbound calling / called number

The key how to replace

- 1.The more precise configuration, index values should be smaller
- 2.Any and ".\*", suggest configure Any and ".\*", Avoid miss the call for the replace number.
- 3.when Configure data, suggest start from big idex value, to avoid adding an exact match data, can not directly into the data
- 4.When configure data,suggest keep index Value



### 4.15.1 PSTN-> IP Destination Numbers

Select “PSTN->IP Destination Numbers” in navigation tree, the display interface is shown below:

## Series E1/T1 Gateway User Manual

PSTN->IP Destination Numbers										
Index	Description	Trunk Group ID	Destination Prefix	Source Prefix	Stripped Digits from Left	Stripped Digits from Right	Prefix to Add	Suffix to Add	Number of Digits to Leave from Right	
<input type="checkbox"/>	0	0755	2 <6657in>	0755	.	4	0	---	---	---
<input type="checkbox"/>	1	mobile	Any	013	.	1	0	---	---	---
<input type="checkbox"/>	127	test	Any	0598	.	0	0	6600	22	4

Total: 3entry 16entry/page 1/1page Page 1

### PSTN->IP Destination Numbers Add

Index	<input style="width: 90%;" type="text" value="126"/>
Description	<input style="width: 90%;" type="text"/>
Trunk Group ID	<input style="width: 90%;" type="text" value="Any"/>
Destination Prefix	<input style="width: 90%;" type="text"/>
Source Prefix	<input style="width: 90%;" type="text"/>
Stripped Digits from Left	<input style="width: 90%;" type="text"/>
Stripped Digits from Right	<input style="width: 90%;" type="text"/>
Prefix to Add	<input style="width: 90%;" type="text"/>
Suffix to Add	<input style="width: 90%;" type="text"/>
Number of Digits to Leave from Right	<input style="width: 90%;" type="text"/>

NOTES: 'Destination Prefix' or 'Source Prefix' field: '.' means wildcard string.

Figure 4-58 PSTN->IP Destination Numbers

“PSTN->IP Destination Numbers”: Replace the called number from PSTN

**【Index】**: Index number (0 ~ 127), "PSTN-> IP Destination Numbers" the priority effect rules is determined by the size of index, and can refer to index of 4.10.2 [Dial Plan](#)

**【Trunk Group ID】**: refer to 4.12.2 [Trunk Group](#), "any" mean any Trunk Group.

**【Desctination Prefix】**: Called number prefix, "." mean any called number。

**【SourcePrefix】**: Caller number prefix, "." mean any caller number

**【Stripped Digits from Left】**: Remove the called number digits from the left, such as the original called number is 012388889999, "Stripped Digits from Left" value is 4, delete 0123, transformed into a called number 88889999

**【Stripped Digits from Right】**: Remove the called number digits from the right, such as the original called number is 012388889999, "Stripped Digits from Right" is 4, delete 9999, transformed into a called number 01238888

**【Prefix to Add】**: Add a called number prefix, such as the original called number is 88889999, "Prefix to Add" the value is 0598, the called number 88889999 prefix will add 0123, called number transformed into 059 888 889 999

**【Suffix to Add】:**

Add a called number suffix, such as the original called number is 88889999, "Prefix to Add" the value is 0598, the called number 88889999 added after 0758, the called number transformed into 888 890 210 598

**【Number of Digits to Leave from Right】:**

Starting from the right to retain the called number digits, such as the original called number is 01238889999, "Number of Digits to Leave from Right" of the value is 9, then keep the first 7 numbers called, transformed the called number into 01238889

**4.15.2 PSTN-> IP Source Numbers**

Select “PSTN->IP Source Numbers” in navigation tree, the display interface is shown below:

PSTN->IP Source Numbers										
Index	Description	Trunk Group ID	Destination Prefix	Source Prefix	Stripped Digits from Left	Stripped Digits from Right	Prefix to Add	Suffix to Add	Number of Digits to Leave from Right	
<input type="checkbox"/>	127	delete0598	Any	0598	.	4	0	---	---	---

Total: 1 entry 16 entry/page 1/1 page Page 1

**PSTN->IP Source Numbers Add**

Index

Description

Trunk Group ID

Destination Prefix

Source Prefix

Stripped Digits from Left

Stripped Digits from Right

Prefix to Add

Suffix to Add

Number of Digits to Leave from Right

NOTES: 'Destination Prefix' or 'Source Prefix' field: '.' means wildcard string.

Figure 4-59 PSTN->IP Source Numbers

Replace the Incoming caller ID from PSTN

**【Index】:** Index number (0 ~ 127), “PSTN->IP Source Numbers” the priority effect rules is determined by the size of index, and can refer to index of 4.10.2 [Dial Plan](#)

**【Trunk Group ID】:** refer to 4.12.2 [Trunk Group](#), "any" mean any Trunk Group.

**【Desctination Prefix】:** Called number prefix, "." mean any called number

**【SourcePrefix】:** Caller number prefix, "." mean any caller number

**【Stripped Digits from Left】:**

Remove the called number digits from the left, such as the original called number is 012388889999, "Stripped Digits from Left" value is 4, delete 0123, transformed into a called number 88889999

**【Stripped Digits from Right】:**

Remove the called number digits from the right, such as the original called number is 012388889999, "Stripped Digits from Right" is 4, delete 9999, transformed into a called number 01238888

**【Prefix to Add】:**

Add a called number prefix, such as the original called number is 88889999, "Prefix to Add" the value is 0598, the called number 88889999 prefix will add 0123, called number transformed into 059 888 889 999

**【Suffix to Add】:**

Add a called number suffix, such as the original called number is 88889999, "Prefix to Add" the value is 0598, the called number 88889999 added after 0758,the called number transformed into 888 890 210 598

**【Number of Digits to Leave from Right】:**

Starting from the right to retain the called number digits, such as the original called number is 012388889999, "Number of Digits to Leave from Right" of the value is 9, then keep the first 7 numbers called, transformed the called number into 012388889

### 4.15.3 IP -> PSTN Destination Numbers

Select “IP-> PSTN Destination Numbers” in navigation tree, the display interface is shown below:

IP->PSTN Destination Numbers										
	Index	Description	IP Group ID	Destination Prefix	Source Prefix	Stripped Digits from Left	Stripped Digits from Right	Prefix to Add	Suffix to Add	Number of Digits to Leave from Right
<input type="checkbox"/>	0	0755del	Any	0755	.	4	0	---	---	---
<input type="checkbox"/>	127	to6657	0 <to69>	0598	.	4	0	---	---	---

Total: 2entry 16entry/page 1/1page Page 1

IP->PSTN Destination Numbers Add	
Index	126
Description	
IP Group ID	Any
Destination Prefix	
Source Prefix	
Stripped Digits from Left	
Stripped Digits from Right	
Prefix to Add	
Suffix to Add	
Number of Digits to Leave from Right	

OK Reset Cancel

NOTES: 'Destination Prefix' or 'Source Prefix' field: '.' means wildcard string.

Figure 4-60 IP->PSTN Destination Numbers

“IP -> PSTN Destination Numbers”: Replace the Incoming called ID from IP

**【Index】:** Index number (0 ~ 127), “PSTN->IP Source Numbers” the priority effect rules is determined by the size of index, and can refer to 4.10.2 [Dial Plan](#)

**【IP Group ID】:** refer to 4.11.2 [IP Group](#), ”any” mean any IP Group.

**【Desctination Prefix】:** Called number prefix, "." mean any called number

**【SourcePrefix】:** Caller number prefix, "." mean any caller number

**【Stripped Digits from Left】:** Remove the called number digits from the left, such as the original called number is 012388889999, "Stripped Digits from Left" value is 4, delete 0123, transformed into a called number 88889999

**【Stripped Digits from Right】:** Remove the called number digits from the right, such as the original called number is 012388889999, "Stripped Digits from Right" is 4, delete 9999, transformed into a called number 01238888

**【Prefix to Add】:** Add a called number prefix, such as the original called number is 88889999, "Prefix to Add" the value is 0598, the called number 88889999 prefix will add 0123, called number transformed into 059 888 889 999

**【Suffix to Add】:** Add a called number suffix, such as the original called number is 88889999, "Prefix to Add" the value is 0598, the called number 88889999 added after 0758, the called number transformed into 888 890 210 598

**【Number of Digits to Leave from Right】:** Starting from the right to retain the called number digits, such as the original called number is 012388889999, "Number of Digits to Leave from Right" of the value is 9, then keep the first 7 numbers called, transformed the called number into 012388889

### 4.15.4 IP -> PSTN Source Numbers

Select “IP-> PSTN Source Numbers” in navigation tree, the display interface is shown below:

Index	Description	IP Group ID	Destination Prefix	Source Prefix	Stripped Digits from Left	Stripped Digits from Right	Prefix to Add	Suffix to Add	Number of Digits to Leave from Right
<input type="checkbox"/> 0	test	Any	.	.	0	0	22	---	10

Total: 1 entry 16entry/page 1/1page Page 1

**IP->PSTN Source Numbers Add**

Index: 127

Description:

IP Group ID: Any

Destination Prefix:

Source Prefix:

Stripped Digits from Left:

Stripped Digits from Right:

Prefix to Add:

Suffix to Add:

Number of Digits to Leave from Right:

OK Reset Cancel

Figure 4-61 IP->PSTN Source Numbers

“IP -> PSTN Source Numbers”: Replace the Incoming caller ID from IP

**【Index】:** Index number (0 ~ 127), “PSTN->IP Source Numbers” the priority effect rules is determined by the size of index, and can refer to 4.10.2 [Dial Plan](#)

**【IP Group ID】:** refer to 4.11.2 [IP Group](#), ”any” mean any sone IP Group.

**【Desctination Prefix】:** Called number prefix, "." mean any called number

**【SourcePrefix】:** Caller number prefix, "." mean any caller number

**【Stripped Digits from Left】:** Remove the called number digits from the left, such as the original called number is 012388889999, "Stripped Digits from Left" value is 4, delete 0123, transformed into a called number 88889999

**【Stripped Digits from Right】:** Remove the called number digits from the right, such as the original called number is 012388889999, "Stripped Digits from Right" is 4, delete 9999, transformed into a called number 01238888

**【Prefix to Add】:** Add a called number prefix, such as the original called number is 88889999, "Prefix to Add" the value is 0598, the called number 88889999 prefix will add 0123, called number transformed into 059 888 889 999

**【Suffix to Add】:** Add a called number suffix, such as the original called number is 88889999,

"Prefix to Add" the value is 0598, the called number 88889999 added after 0758, the called number transformed into 888 890 210 598

**【Number of Digits to Leave from Right】:** Starting from the right to retain the called number digits, such as the original called number is 012388889999, "Number of Digits to Leave from Right" of the value is 9, then keep the first 7 numbers called, transformed the called number into 012388889



**NOTE:**The "\*" of called prefix represents wildcard character. Wildcard character string data is only allowed to be made for 1 item, and should be added manually.

## 4.16 Advanced Configuration

Select "Advanced Configuration" in navigation tree, the display interface is shown below:



Figure 4-62 Advanced configuration

### 4.16.1 Caller Number Pool Management

Select "Caller Number Pool Management" in navigation tree, click "Search All" to enter the Caller Number Pool Management interface.

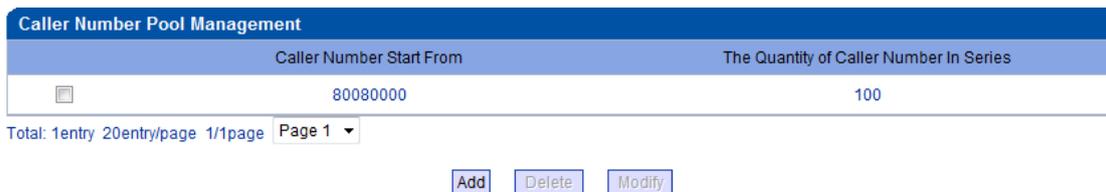
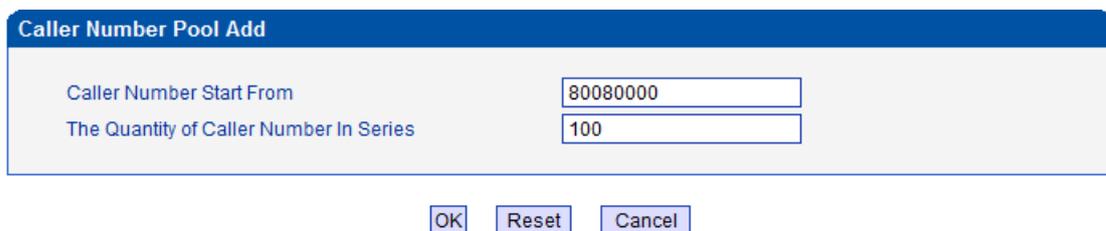


Figure 4-63 number pool list

Click the "Add" key at the bottom of "Caller Number Pool Management" interface to add caller number pool data, the display interface is shown below:



**NOTE:** eg.: option 'Caller Number Start From' is 80080000, and option 'The Quantity of Caller Number In Series' is 100, means that caller number range is 80080000-80080099.

Figure 4-64 Add number pool data

**【Caller Number Start From】** : The first number of a batch of numbers in series.

**【The Quantity of Caller Number in Series】** : Above figure indicates adding 100 numbers in series in number pool: 80080000-80080099.



**NOTE: For example: “Caller Number Start From” is 80080000, “The Quantity of Caller Number in Series” is 100, it means adding 100 numbers in series in number pool: 80080000-80080099. If caller numbers are inconsecutive numbers in several sections, then it is required to establish multiple pools.**



**NOTE: Switch can allocate a batch of numbers to device; when initiates call to switch, one of the numbers will be selected as caller number. One device can be configured with multiple number pools inside. When initiate call to switch, if there is no caller number or caller number is illegal, then caller number will be replaced by the number in number pool.**

---

## 4.17 Management Configuration

Select “Management Configuration” in navigation tree, the display interface is shown below:



Figure 4-65 Management configuration

### 4.17.1 Management Parameter

Select “Management Configuration” -> “Management Parameter”, as shown below:

**Management Parameter**

**WEB Configuration**  
WEB Port: 80

**Loading Configuration**  
TFTP Task Listening Port: 69  
FTP Task Listening Port: 21

**Syslog Configuration**  
Enable Syslog:  Yes  No  
Server Address: 0.0.0.0  
Syslog Level: NONE (dropdown menu open showing: NONE, DEBUG, NOTICE, WARNING, ERROR)

Save

**NOTE:** It must restart the device to take effect.

Figure 4-66 Management parameter

**【WEB Configuration】 :**

WEB Port: listening port of local WEB service, the default is 80.

**【Loading Configuration】 :**

TFTP Task Listening Port: local listening port when TFTP loading is used, the default is 69.

FTP Task Listening Port: local listening port when FTP loading is used, the default is 21.

**【Syslog Configuration】 :**

Enable Syslog: the default is “No”.

Server Address: address for saving system log.

Syslog Level: None, Debug, Notice, Warning, Error.

### 4.17.2 SNMP Parameter

Select “Management Configuration” -> “SNMP Parameter”, as shown below:

SNMP Parameter	
<b>Basic Configuration</b>	
SNMP Enable	<input type="radio"/> Yes <input checked="" type="radio"/> No
SNMP Manager Address	<input type="text"/>
Trap Port	<input type="text" value="162"/>
<b>Community Configuration</b>	
Read-only Community String	<input type="text" value="public"/>
Read-only Community String	<input type="text"/>
Read-only Community String	<input type="text"/>
Read/Write Community String	<input type="text" value="private"/>
Read/Write Community String	<input type="text"/>
Read/Write Community String	<input type="text"/>
Trap Community String	<input type="text" value="trapuser"/>

Figure 4-67 SNMP parameter configuration

#### Basic Configuration

**【SNMP Enable】** : Simple Network Management Protocol is enabled or not; the default is No.

**【SNMP Manager Address】** : IP address of SNMP management host computer. The host computer of the IP address will carry out monitoring and management to .

**【Trap Port】** : The port where managed device ( ) provides trap message (it is generally alarm message) to SNMP management host computer, the default is 162.



**NOTE:“Trap”**: when certain fatal error appeared in managed device, it will actively send warning message to the management workstation. The speed of this method is very fast, sometimes it is used for other purpose, for example send large numbers of status information timely.

#### Community Configuration

**【Read-only Community String】** : Allow the software to carry out read operation if the software has provided corresponding string message. Three groups of string can be edited; the first group of string is “public” by default, which means that read access is provided to any software if the string provided by the software is “public”.

**【Read/Write Community String】** : Allow the software to carry out read/write operation if the software has provided corresponding string message. Three groups of string can be edited; the first group of string is “private” by default, which means that read access is provided to any software if the string provided by the software is “private”.

**【Trap Community String】** : Trap string “trapuser”. It is a verification string required when SNMP management host computer carries out trap monitoring to managed device ( ). For

example: if management host computer sends trap string “trapuser” to , then when has problem, it will send warning message to the management host computer.

### 4.17.3 Database Backup

Select “Management Configuration” -> “Database Backup”, as shown below:

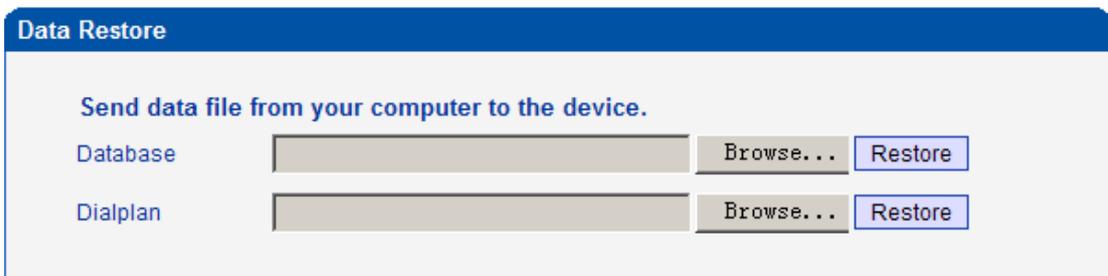


Figure 4-68 Database file backup

**【Database Backup】** : “Click here for download database file to your computer”. Click the underlined text, then click “Save” on popup window to select the save path of download.

### 4.17.4 Database Restore

Select “Management Configuration” -> “Database Restore”, as shown below:



**NOTES:**

1. The upload process will last about 90s.
2. Once uploading successfully, the next uploading operation will be only available after about 60s.
3. After uploading, please restart the device to take effect.

Figure 4-69 Database file backup

**【Database】** : Load database file from local; the default database file name is dbdefault.ldf. After the file is selected well, click Upload to begin loading.

**【Dialplan】**: Load dialplan file from local..

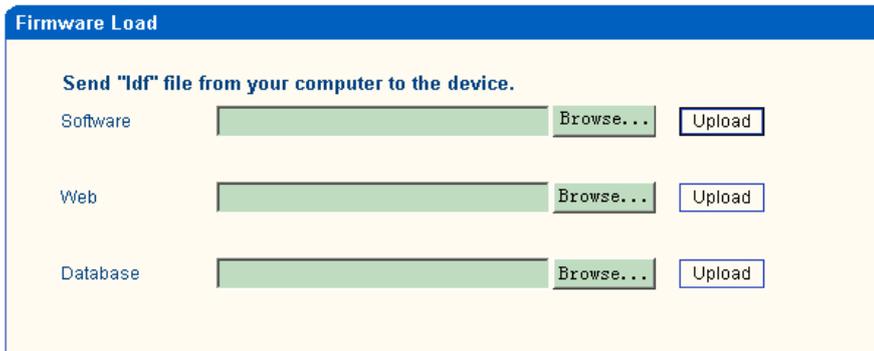
### 4.17.5 Firmware Load



**NOTE:** Firmware is a program necessary for normal work of device.

---

Select “Management Configuration” -> “Firmware Load”, as shown below:



- NOTES:**
1. The upload process will last about 90s.
  2. Once uploading successfully, the next uploading operation will be only available after about 60s.
  3. After uploading, please restart the device to take effect.

Figure 4-70 Firmware load

Send “.ldf” file from your computer to device.

**【Software】** : Load the system file of principal machine from local; the file name is generally H323app.ldf. After the file is selected well, click Upload to begin loading.

**【WEB】** : Load WEB file from local; the file name is generally web.ldf. After the file is selected well, click Upload to begin loading.

**【Database】** : Load database file from local; the default database file name is dbdefault.ldf. After the file is selected well, click Upload to begin loading.

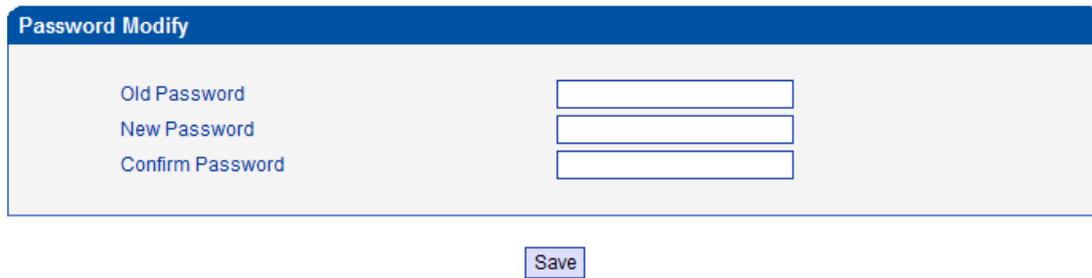


**NOTES:**

1. The upload process will last about 90s.
  2. Once uploading successfully, the next uploading operation will be only available after about 60s.
  3. After uploading, please restart the device to take effect.
- 

### 4.17.6 Password Modify

Select “Tool” -> “Password Modify” in navigation tree, as shown below:



Old Password

New Password

Confirm Password

Save

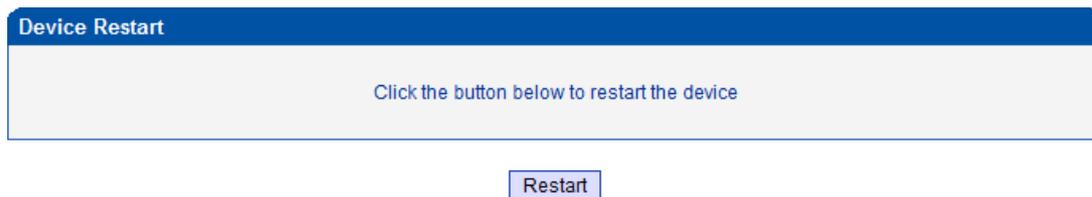
Figure 4-71 Modify WEB password

- 【Old Password】** : Password used currently for WEB login.
- 【New Password】** : New password for WEB login.
- 【Confirm Password】** : Confirm the new password for WEB login.

Click “Save” button will pup up confirm box, it is required to use new password to login again.

### 4.17.7 Device Restart

Select “Tool” -> “Device Restart” in navigation tree, as shown below:



Click the button below to restart the device

Restart

Figure 4-72 Restart device

**【Device Restart】** : “Click the button below to restart the device”. Click “Restart” to restart the device.