

FXS-08

8-ports FXS VoIP Gateway (SIP)

User Manual



Revision Information		
Version	Date	Description
EN-V2.0a	Apr-2-2008	2 nd English Version

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1. Introduction

1.1 FXS-08 --8-ports Telephony Gateway

The FXS-08 is an 8-ports FXS VoIP gateway to connect 8 analog phones (POTS) and includes 1-WAN/4-LAN 10/100 base-T NAT router for diverse network environment. Field-proven quality of Voice communication and Fax transmission over IP broadband access network to makes FXS-08 to be an excellent solution for various VoIP applications.

1.2 Benefits:

- Ideally suited for Enterprise use, rich-feature designed to inter-work with IP-PBXs for small and middle enterprises.
- Carrier-grade features are supported and tested to be fully interoperable with leading Soft-Switches.
- Provide CDR for call shop application.
- Superb device for apartment VoIP service.

1.3 Physical Interface:

- Ethernet port (RJ-45, 10/100 base-T)
 - 1-WAN port, for connect to router, ADSL modem (ATU-R), or switch hub directly.
 - 4-LAN port, for PC or other network devices connecting.
- Telephony port (RJ-11)
 - 8-FXS ports, to connect with analog phone (POTS)
- Reset button (Factory Default)
- AC power Jack
- Status indicated LED
 - Indicates Ethernet, FXS, and SIP system status

1.4 Specification:

- **IP Network connection**
 - IPv4 (RFC 791)
 - MAC Address (IEEE 802.3)
 - PPPoE Client (RFC 2516)

- DNS Client
- DHCP Client (RFC 2131)
- DHCP Server (RFC 2131)
- NAT (RFC 1631)
- TCP/UDP (RFC 793/768)
- ICMP (RFC 792)
- RTP/RTCP (RFC 1889/1890)
- SNTP (RFC 2030)
- TFTP Client
- Telnet Server
- HTTP Server
- QoS – 802.1Q Virtual LANs
- DiffServ (RFC 2475) / ToS (RFC 791/1349)

- **IP Telephony (VoIP)**

- SIPv2 (RFC 3261)
 - Session Timer (RFC 4028)
 - Privacy Mechanism (RFC 3323)
 - Outbound proxy setting for increasing performance, productivity, and security.
 - SIP proxy redundancy- Setting Primary and Secondary proxy by IP or URI.
- Voice Codecs
 - G.711 (a-Law/u-Law): 64 bits (PCM)
 - G.723.1: 6.3k/5.3k bits
 - G.729A: 8k bits (CS-SCELP)
 - G.729B: adds VAD and CNG to G.729
- VAD – Voice Activity Detection with Silence Suppression
- CNG – Comfortable Noise Generation
- Echo Cancellation (G.165/G.168)
- Jitter Buffer – Adaptive & Configurable
- Packet Loss compensation - increasing voice quality
- DTMF: In-band, Out-of-band (RFC 2833), and SIP-Info
- Caller Generation – FSK
- FAX transmission
 - G.711 pass-through
 - T.38 Fax relay protocol
- Tone Generation & Detection
 - Ringing Tone

- Ring Back Tone
- Dial Tone
- Programming Tone
- Call Features
 - Call Hold
 - Call Transfer (Blind & consultant)
 - Call Forward (Unconditional / No Answer / Busy)
 - Call Conference (3-ways)
- MWI – Message Waiting Indication
- IP line hunting
- Adjustable volume level
- **Security**
 - HTTP 1.1 basic/digest authentication for WEB access
 - MD5 for SIP authentication (RFC 2069/2617)
 - Password protected Admin access authority

1.5 Setting and maintenance

- Configure & Update method
 - Web Browser (HTTP)
 - Telnet
 - FTP/TFTP
- Setting parameter Import /Export
- Voice announcement of IP address
- Syslog Client – Debug & CDR (Call Detail Record)

1.6 Environmental

- Dimension: 35 ×242 ×160 mm (Desktop)
- Weight: 0.935kg (unit)
- Operating Temp. & Humidity
 - Temp.: 0 45 (32 113)
 - Humidity: 10% 85% relative humidity, non-condensing
- Storage Temp. & Humidity
 - Temp.: 0 55 (32 131)
 - Humidity: 10% 95% relative humidity, non-condensing
- AC Power Adaptor:
 - INPUT: AC100V-240V, 50/60Hz

- OUTPUT: DC 12V, 3.0A
- Regulatory Compliance: FCC (Part 15, Class B) & CE

2. Appearance

2.1 Front Panel: LED Indicators



LED	Description
Power	When the power adapter is connected, the LED will light up green.
Proxy	When the gateway is registered successfully to a Proxy, this will light up green.
WAN	This will light up green when the gateway's WAN port is physically connected to the public internet. When data is transmitted through this port, it will flash green. The default IP of WAN port is 10.1.1.3.
LAN 1	This will light up green when the gateway's LAN port 1 is physically connected to a local network (Refer to Rear Panel section in page number for location of LAN port 1). When data is transmitted through this port, it will flash green. The default IP of LAN port is 192.168.123.123.
LAN 2	This will light up green when the gateway's LAN port 1 is physically connected to a local network (Refer to Rear Panel section in page number for location of LAN port 2). When data is transmitted through this port, it will flash green.
LAN 3	This will light up green when the gateway's LAN port 1 is physically connected to a local network (Refer to Rear Panel section in page number for location of LAN port 3). When data is transmitted through this port, it will flash green.
LAN 4	This will light up green when the gateway's LAN port 1 is physically connected to a local network (Refer to Rear Panel section in page number for location of LAN port 4). When

	data is transmitted through this port, it will flash green.
T1	The status LED for FXS port 1, this will light up amber orange when the connected phone's handset is lifted, or when the connected phone is engaged in a conversation. It will flash amber orange when there is an incoming call.
T2	The status LED for FXS port 2, this will light up amber orange when the connected phone's handset is lifted, or when the connected phone is engaged in a conversation. It will flash amber orange when there is an incoming call.
T3	The status LED for FXS port 3, this will light up amber orange when the connected phone's handset is lifted, or when the connected phone is engaged in a conversation. It will flash amber orange when there is an incoming call.
T4	The status LED for FXS port 4, this will light up amber orange when the connected phone's handset is lifted, or when the connected phone is engaged in a conversation. It will flash amber orange when there is an incoming call.
T5	The status LED for FXS port 5, this will light up amber orange when the connected phone's handset is lifted, or when the connected phone is engaged in a conversation. It will flash amber orange when there is an incoming call.
T6	The status LED for FXS port 6, this will light up amber orange when the connected phone's handset is lifted, or when the connected phone is engaged in a conversation. It will flash amber orange when there is an incoming call.
T7	The status LED for FXS port 7, this will light up amber orange when the connected phone's handset is lifted, or when the connected phone is engaged in a conversation. It will flash amber orange when there is an incoming call.
T8	The status LED for FXS port 8, this will light up amber orange when the connected phone's handset is lifted, or when the connected phone is engaged in a conversation. It will flash amber orange when there is an incoming call.

2.2 Rear Panel:



Item	Description
Reset	Press and hold over 5 seconds to reload factory default setting, this will erase all the settings configured on the gateway.
T8	The RJ-11 FXS port 8, connects analog phone sets, trunk line or PABX.
T7	The RJ-11 FXS port 7, connects analog phone sets, trunk line or PABX.
T6	The RJ-11 FXS port 6, connects analog phone sets, trunk line or PABX.
T5	The RJ-11 FXS port 5, connects analog phone sets, trunk line or PABX.
T4	The RJ-11 FXS port 4, connects analog phone sets, trunk line or PABX.
T3	The RJ-11 FXS port 3, connects analog phone sets, trunk line or PABX.
T2	The RJ-11 FXS port 2, connects analog phone sets, trunk line or PABX.
T1	The RJ-11 FXS port 1, connects analog phone sets, trunk line or PABX.
LAN 4	10/100 Base-T RJ-45 socket for LAN port 4, connects to local area network.
LAN 3	10/100 Base-T RJ-45 socket for LAN port 3, connects to local area network.
LAN 2	10/100 Base-T RJ-45 socket for LAN port 2, connects to local area network.
LAN 1	10/100 Base-T RJ-45 socket for LAN port 1, connects to local area network.
WAN	10/100 Base-T RJ-45 socket for WAN port, connects to wide area network.
DC 12V	The power socket, input AC 100V~120V; output DC12V.

3. Environment Setup and IP Connection

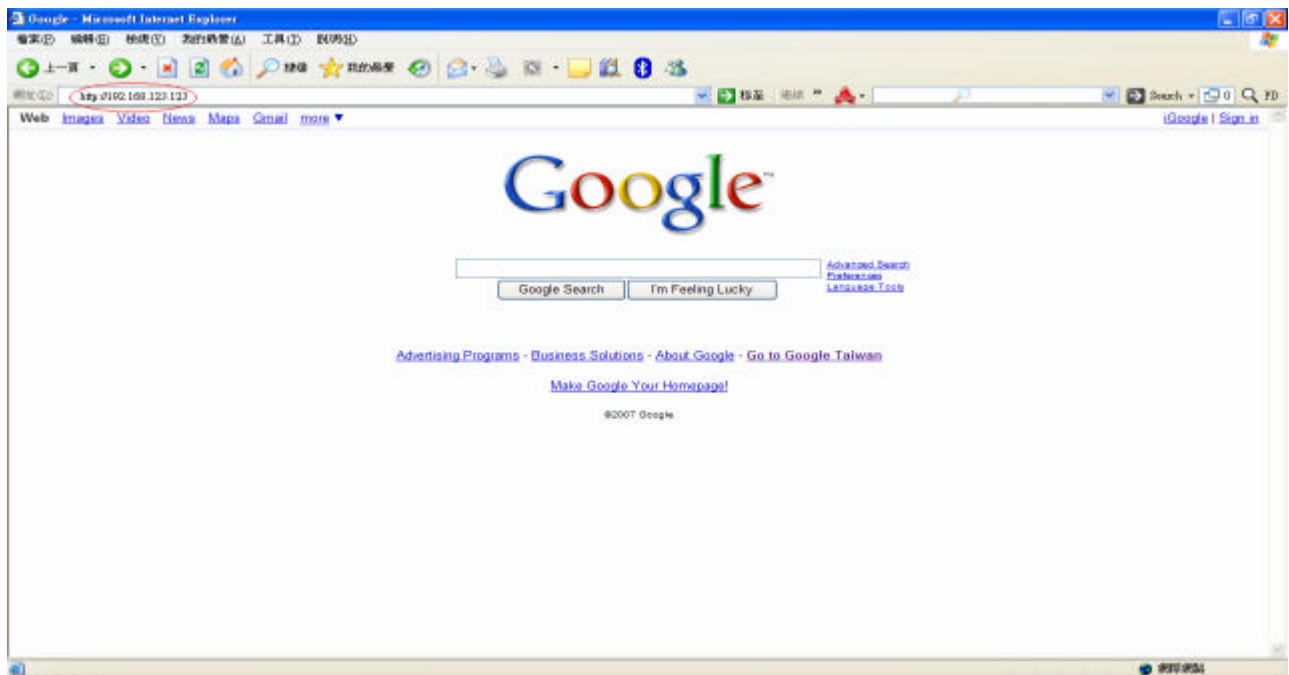
Please make sure that the network interface of your computer is working fine and the **cross over line** (RJ-45) is connected to the computer correctly. You can also connect your computer to the gateway using a **hub**.

The FXS-08 by default uses DHCP for its LAN port and assigns IP addresses to clients connected to it, please make sure that your PC or Notebook's network configuration is set to DHCP.

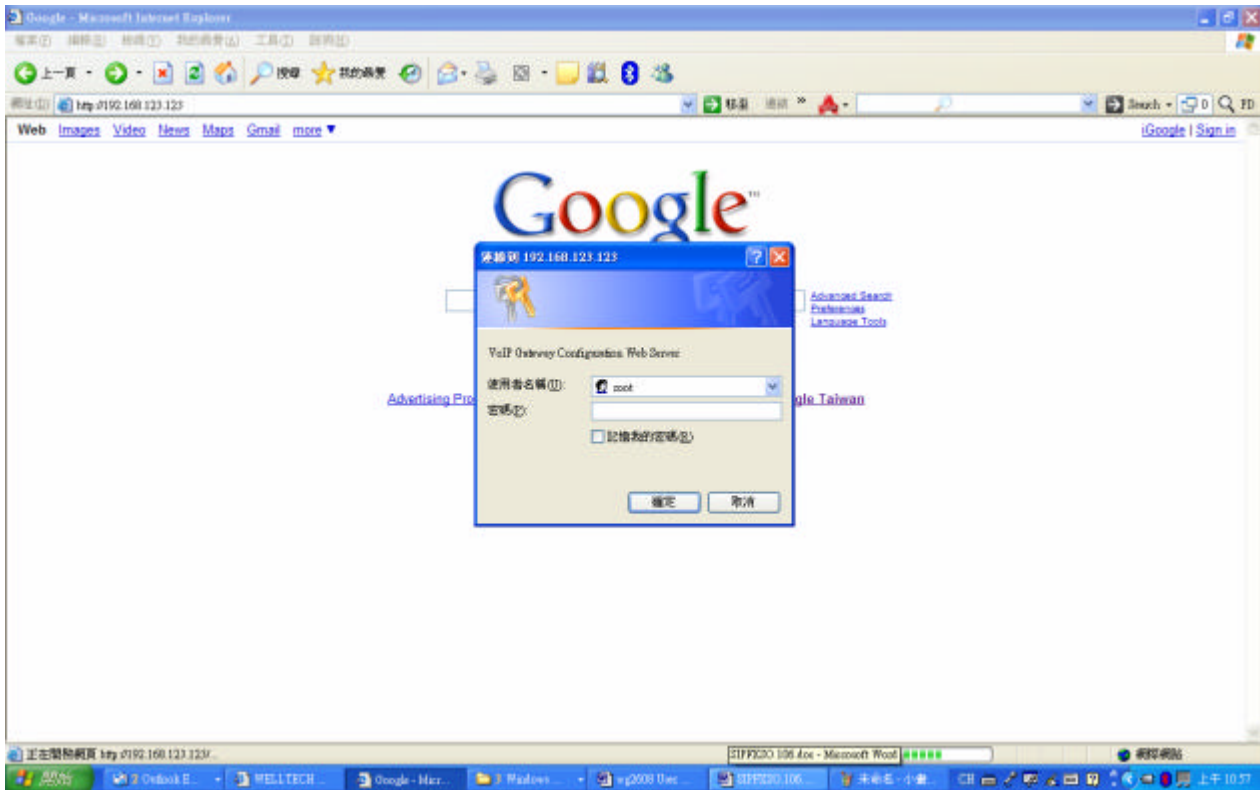
3.1 Configuration

Login to the FXS-08 web configuration menu

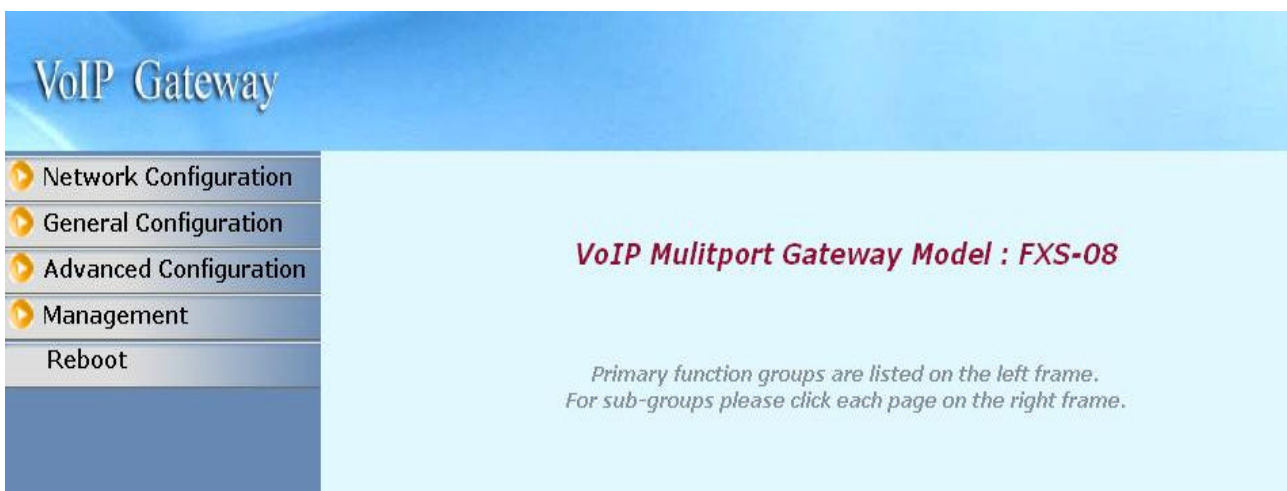
1. Get an Ethernet Cable to connect your PC and FXS-08 with LAN 1 port, then change the Internet protocol (TCP/IP) of your PC with IP 192.168.123.X, X can be 1~122.
2. Open your WEB browser and key in the IP address of the gateway (**http://192.168.123.123**) in the Address box (see figure below).



3. You will see a pop-up window requesting username and password before you can login to the web configuration menu. Username is “root” while password is blank “ ” (see figure below).



3. You will enter the main page of the web configuration interface after you keyed in the username and password correctly (see figure below).

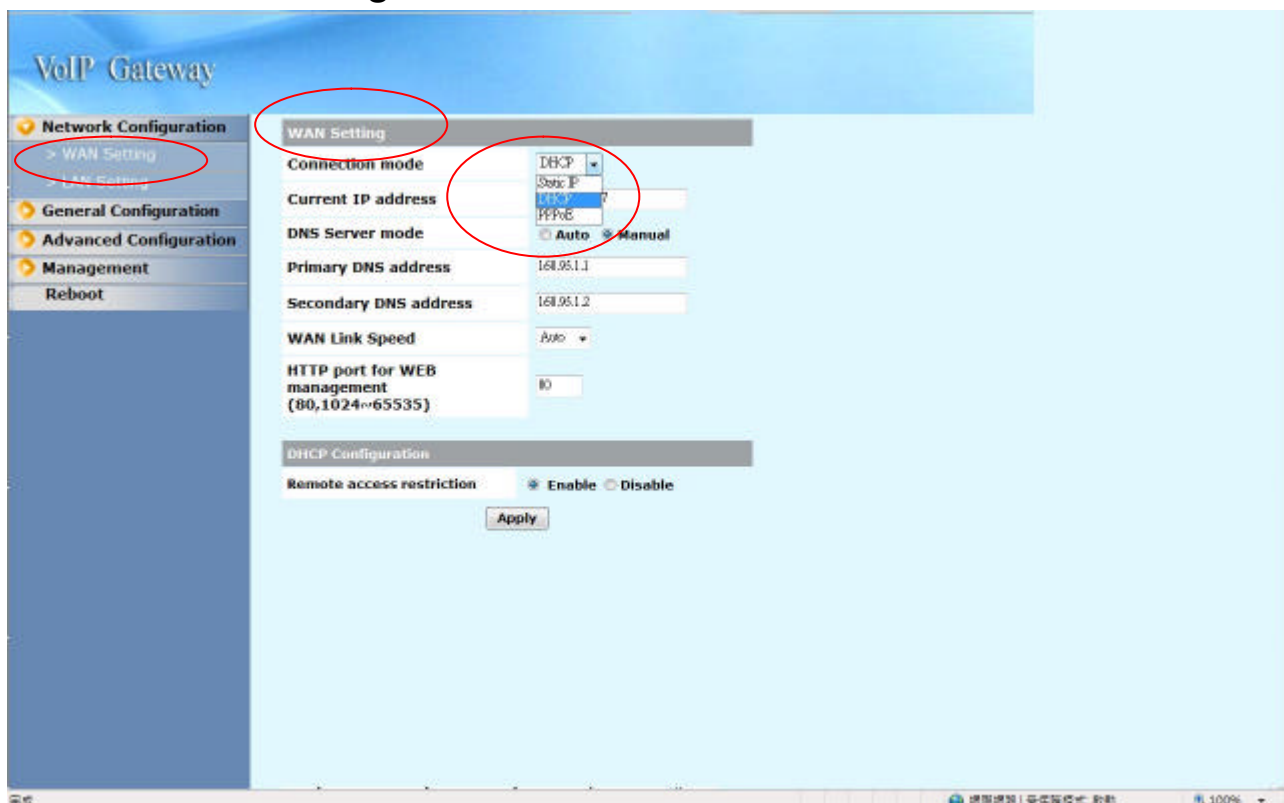


3.2 Network Configuration

The following instructions will explain the configurations for setting up the WAN port of the FXS-08. There are in total three methods of connections: Static IP, DHCP and PPPoE.

Note: You can retrieve the IP address of the WAN port by keying **#126#** on the phone set that is connected to the FXS port of the gateway. You will hear an IVR announcing the current IP address of the WAN port.

3.2.1 WAN Setting



The table shown below describes the configuration items for 3 connection types of network (Static IP, DHCP and PPPoE).

WAN Setting

Item	Description	Static IP	DHCP	PPPoE
Connected mode	Select the connection method for the WAN port of the FXS-08, you can choose the following: ● Static IP ● DHCP ● PPPoE	V	V	V
Current IP Address	Show current IP address	V	V	V
DNS server mode	Select the DNS behavior, you can choose the following: ● Auto ● Manual “DNS auto” will retrieve the DNS information sent from the DHCP server. “Manual” will look at the specified Primary and Secondary DNS address.	V	V	V
Primary DNS address	Specify the address of the Primary DNS.	V	V	V
Secondary DNS address	Specify the address of the Secondary DNS.	V	V	V
WAN Link Speed	Select the connection speed for the WAN port of the FXS-08, you can choose the following: ● Auto ● 100M ● 10M	V	V	V
HTTP port for WEB management	Specify the port number for WEB management, the allowable range is 80,1024~65535.	V	V	V
IP address	Specify the IP address.	V		
Subnet mask	Specify the subnet mask.	V		

WAN Setting

Item	Description	Static IP	DHCP	PPPoE
Default gateway	Specify the IP address of the default gateway.	V		
Remote access restriction	Restricts/Blocks users connecting to the WAN port's IP remotely, you can Enable / Disable this option.	V	V	V
PPPoE userID	Specify the username of the PPPoE account			V
PPPoE password	Specify the password associated to the PPPoE account above.			V
Reboot after remote host disconnection	When the remote host (PPPoE) fails, the gateway will retry 3 times to reconnect, if there is no reply from the remote host within 3 tries, then the gateway will reboot. You can Enable / Disable this option.			V

3.2.1.1 WAN Setting --Static IP

VoIP Gateway

Network Configuration

- WAN Setting
- LAN Setting
- General Configuration
- Advanced Configuration
- Management
- Reboot

WAN Setting

Connection mode: Static IP

Current IP address: 10.1.1.3

DNS Server mode: Auto Manual

Primary DNS address: 61.220.126.2

Secondary DNS address: 168.95.1.1

WAN Link Speed: Auto

HTTP port for WEB management (80,1024~65535): 80

Remote access restriction: Enable Disable

Static IP

IP address: 10.1.1.3

Subnet mask: 255.255.0.0

Default gateway: 10.1.1.254

Apply

1. Press the “**Apply**” button (at the bottom) after you finish to save changes.

VoIP Gateway

Network Configuration

- WAN Setting
- LAN Setting
- General Configuration
- Advanced Configuration
- Management
- Reboot

Reboot

It will take some time to reboot. Please reload web page after that.

Note: Please remember your network setting before Reboot.

Reboot

2. Press the “Reboot” button to apply the changes.

3.2.1.2 WAN Setting --DHCP

VoIP Gateway

Network Configuration

- > WAN Setting
- > LAN Setting
- General Configuration
- Advanced Configuration
- Management
- Reboot

WAN Setting

Connection mode: **DHCP**

Current IP address: 192.168.15.42

DNS Server mode: ☒ Auto ☐ Manual

Primary DNS address: 61.220.126.2

Secondary DNS address: 168.95.1.1

WAN Link Speed: Auto

HTTP port for WEB management (80,1024~65535): 80

Remote access restriction: ☒ Enable ☐ Disable

Apply

1. Press the **"Apply"** button (at the bottom) after you finish to save changes.
2. Press the **"Reboot"** button to apply the changes.

3.2.1.3 WAN Setting --PPPoE

VoIP Gateway

Network Configuration

- > WAN Setting
- > LAN Setting
- General Configuration
- Advanced Configuration
- Management
- Reboot

WAN Setting

Connection mode: **PPPoE**

Current IP address: 192.168.15.42

DNS Server mode: ☒ Auto ☐ Manual

Primary DNS address: 61.220.126.2

Secondary DNS address: 168.95.1.1

WAN Link Speed: Auto

HTTP port for WEB management (80,1024~65535): 80

Remote access restriction: ☒ Enable ☐ Disable

PPPoE Configuration

PPPoE userID: pppoe

PPPoE password: •••••

Reboot after remote host disconnection: ☒ Enable ☐ Disable

Mtu: 1492

Apply **CANCEL**

1. Press the **"Apply"** button (at the bottom) after you finish to save changes.
2. Press the **"CANCEL"** button (next to the Apply button) to clear the values in the page.
3. Press the **"Reboot"** button to apply the changes.

3.2.2. LAN Setting

VoIP Gateway

Network Configuration

- > WAN Setting
- > **LAN Setting**
- General Configuration
- Advanced Configuration
- Management
- Reboot

LAN Setting

LAN IP address: 192.168.123.123

LAN mask address: 255.255.255.0

DHCP server: ☒ Enable ☐ Disable

IP address from: 192.168.123.1

IP address to: 192.168.123.100

Domain Name: voip

Lease Time(sec): 86400

DNS Server mode: ☒ Auto ☐ Manual

Primary DNS address: 168.95.1.1

Secondary DNS address: 168.95.192.1

Apply

LAN Setting

ITEM	Description
LAN IP address	Specify the IP address of the FXS-08's LAN port.
LAN mask address	Specify the mask address for FXS-08's LAN port.
DHCP server	Enable / Disable DHCP function on the LAN port. Once enabled, the LAN ports will function as a DHCP server, network devices connected to them will be issued with IP addresses.
IP address from	When DHCP is enabled, you can specify the IP address to start from when assigning to attached network devices.
IP address to	When DHCP is enabled, you can specify the ending IP address assigned to the attached network devices.

LAN Setting

ITEM	Description
Domain Name	You can specify the domain name that will be assigned by the DHCP server to the attached network devices. The DHCP server will send information on the “server host name” to the DHCP client.
Lease time(sec)	You can specify the maximum lease time of the IP address allocated to the DHCP client.
DNS server mode	Select the DNS behavior, you can choose the following: ● Auto ● Manual “DNS auto” will retrieve the DNS information sent from the DHCP server. “Manual” will look at the specified Primary and Secondary DNS address.
Primary DNS address	Specify the address of the Primary DNS.
Secondary DNS address	Specify the address of the Secondary DNS.

1. Press the **“Apply”** button (at the bottom) after you finish to save changes.
2. Press the **“Reboot”** button to apply the changes.

3.3 General configuration

To make VoIP calls, you will need a SIP account provided by the SIP Proxy you are registered with. To configure the relevant SIP settings, please refer to the instructions explained below.

3.3.1 SIP Setting

3.3.1.1 Proxy mode

The screenshot shows the 'VoIP Gateway' configuration interface. On the left is a navigation menu with categories: Network Configuration, General Configuration, Advanced Configuration, and Management. Under General Configuration, 'SIP Setting' is selected. The main panel shows the 'SIP Setting' configuration table with columns: Enable, IP Address, Port, Domain Name, Expire Time(sec), MWI, and TTL. The 'Primary proxy/P2P IP' row is highlighted with a red circle, showing 'Enable' checked, 'IP Address' as '10.1.1.2', 'Port' as '5060', 'Domain Name' as an empty field, 'Expire Time(sec)' as '60', 'MWI' as '0', and 'TTL' as '0'. Below this is the 'Primary proxy Call Number Configuration' table with columns: Enable Line, Register, Account, Number, Password, and Display Name. It lists lines from 'Representative number' to 'Line8'. The 'Apply' button at the bottom right is also circled in red.

SIP Setting							
	Enable	IP Address	Port	Domain Name	Expire Time(sec)	MWI	TTL
Primary proxy/P2P IP	☒	10.1.1.2	5060		60	0	0
Secondary proxy	☐		5060		60	0	0
Outbound proxy	☐		5060				

Primary proxy Call Number Configuration						
	Enable Line	Register	Account	Number	Password	Display Name
Representative number	☒	☐	1008	1008	****	1008
Line1	☒	☒	1000	1000	****	1000
Line2	☒	☒	1001	1001	****	1001
Line3	☒	☒	1002	1002	****	1002
Line4	☒	☒	1003	1003	****	1003
Line5	☒	☒	1004	1004	****	1004
Line6	☒	☒	1005	1005	****	1005
Line7	☒	☒	1006	1006	****	1006
Line8	☒	☒	1007	1007	****	1007

Apply

Primary proxy/P2P IP	Specify the data of primary proxy : Enable/Disable, IP address, Port#, Domain Name, Expire time and MWI TTL. The P2P mode will be explained in next paragraph 3.3.1.2
Secondary proxy	Specify the data of secondary proxy: Enable/Disable, IP address, Port#, Domain Name, Expire time and MWI TTL
Outbound proxy	Specify the data of Outbound proxy: Enable/Disable, IP address and Port#.
Primary proxy Call Number	Configure the SIP account with

configuration	Representative Number mode or L1~L8 Separate Number mode, or the Blending mode (Representative Number & L1~L8 Separate Number mode)
Representative Number	Input the relevant data for Enable line, Register status, SIP Account, Number, Password, and Display Name. Note: If you use the representative number to register, please check the max. concurrent call of subscriber (the representative number) in your SIP proxy server or softswitch.
Line 1 ~ Line 8	Input the relevant data for Enable line, Register status, SIP Account, Number, Password, and Display Name.
Enable Line	Enable or disable the Line, the default setting is "Enable". Note: If you disable the line, all the registration and basic call for that line will be disabled.
Register	Register or Unregister to SIP Proxy
Account	Input the SIP Proxy registration account ID.
Number	Input the phone number.
Password	Input the password of IP Proxy registration account ID.
Display name	Specify the Display name of the phone number

1. Enter the IP address and port number of the SIP proxy into the Primary proxy address and Port fields. Select the line you would like to configure the account on in the Call line drop down list, and enter the relevant SIP account, phone number and password. Once finished, press the **"Apply"** button to save changes.
2. Press the **"Reboot"** button to apply the changes.

If you Enable the Secondary proxy, system will display the “Secondary proxy call Number Configuration” figure as shown below.

VoIP Gateway

Network Configuration

General Configuration

- > SIP Setting
- > SIP Advanced Setting
- > Payload Type Setting
- > Line Setting
- > QoS Setting
- > NAT Setting
- > Speed Dial Setting
- > Caller ID Setting
- > CDR Setting
- > Syslog Setting

Advanced Configuration

Management

Reboot

SIP Setting

	Enable	IP Address	Port	Domain Name	Expire Time(sec)	MWV1
Primary proxy/P2P IP	☒	10.1.1.1	5060		60	0
Secondary proxy	☒	192.168.1.23.1	5060		60	0
Outbound proxy	☐		5060			

Primary proxy Call Number Configuration

	Enable Line	Register	Account	Number	Password	Display Name
Representative number	☒	☐	1008	1008	****	1008
Line1	☒	☒	1000	1000	****	1000
Line2	☒	☒	1001	1001	****	1001
Line3	☒	☒	1002	1002	****	1002
Line4	☒	☒	1003	1003	****	1003
Line5	☒	☒	1004	1004	****	1004
Line6	☒	☒	1005	1005	****	1005

Secondary proxy Call Number Configuration

	Enable Line	Register	Account	Number	Password	Display Name
Line7	☒	☒	1006	1006	****	1006
Line8	☒	☒	1007	1007	****	1007
Representative number	☒	☐	1008	1008	****	1008
Line1	☒	☒	1000	1000	****	1000
Line2	☒	☒	1001	1001	****	1001
Line3	☒	☒	1002	1002	****	1002
Line4	☒	☒	1003	1003	****	1003
Line5	☒	☒	1004	1004	****	1004
Line6	☒	☒	1005	1005	****	1005
Line7	☒	☒	1006	1006	****	1006
Line8	☒	☒	1007	1007	****	1007

Apply

Secondary proxy Call Number configuration

If you enable the secondary proxy, System will display “**Secondary proxy Call Number configuration**” figure, Please refer to the description of “**Primary proxy Call Number configuration**” and fill the relevant data.

3.3.1.2 Peer to Peer mode

Peer A—FXS-08(for example the IP address is : 192.168.15.14)

VoIP Gateway

Network Configuration

General Configuration

- > SIP Setting
- > SIP Advanced Setting
- > Payload Type Setting
- > Line Setting
- > QoS Setting
- > NAT Setting
- > Speed Dial Setting
- > Caller ID Setting
- > CDR Setting
- > Syslog Setting

Advanced Configuration

Management

Reboot

SIP Setting

	Enable	IP Address	Port	Domain Name	Expire Time(sec)	MWI
Primary proxy/P2P IP	☒	192.168.15.62	5076		60	
Secondary proxy	☐		5060		60	
Outbound proxy	☐		5060			

Primary proxy Call Number Configuration

	Enable Line	Register	Account	Number	Password	Display Name
Representative number	☐	☐	1008	1008	....	1008
Line1	☒	☐	1000	66711	....	1000
Line2	☒	☐	1001	66713	....	1001
Line3	☒	☐	1002	66713	....	1002
Line4	☒	☐	1003	66714	....	1003
Line5	☒	☐	1004	66715	....	1004
Line6	☒	☐	1005	66716	....	1005
Line7	☒	☐	1006	66717	....	1006
Line8	☒	☐	1007	66718	....	1007

Apply

Peer B—FXS-08(for example the IP address is: 192.168.15.62)

VoIP Gateway

Network Configuration

General Configuration

- > SIP Setting
- > SIP Advanced Setting
- > Payload Type Setting
- > Line Setting
- > QoS Setting
- > NAT Setting
- > Speed Dial Setting
- > Caller ID Setting
- > CDR Setting
- > Syslog Setting

Advanced Configuration

Management

Reboot

SIP Setting

	Enable	IP Address	Port	Domain Name	Expire Time(sec)	MWI
Primary proxy/P2P IP	☒	192.168.15.14	5076		60	
Secondary proxy	☐		5060		60	
Outbound proxy	☐		5060			

Primary proxy Call Number Configuration

	Enable Line	Register	Account	Number	Password	Display Name
Representative number	☐	☐	1008	1008	....	1008
Line1	☒	☐	1000	66701	....	1000
Line2	☒	☐	1001	66702	....	1001
Line3	☒	☐	1002	66703	....	1002
Line4	☒	☐	1003	66704	....	1003
Line5	☒	☐	1004	66705	....	1004
Line6	☒	☐	1005	66706	....	1005
Line7	☒	☐	1006	66707	....	1006
Line8	☒	☐	1007	66708	....	1007

Apply

Primary proxy/ P2P IP (Peer A/ Peer B)	Specify the destination IP Address of Peer to Peer mode, and specify the port# with 5076 . In this application, we define the Peer to Peer mode in 2 groups. If you want to make call to others IP addresses, please refer to the paragraph 3.3.7 Speed dial setting.
Call number configuration	
Representative number (Peer A/ Peer B)	Disable and unregistered the representative line
Line 1~Line 8 (Peer A/ Peer B)	Please refer to the figure shown above, Enable all the line and Disable all the register of two sides. Specify the relevant data: Account, number, password and display name.

1. Press the **“Apply”** button (at the bottom) after you finish to save changes.
2. Press the **“Reboot”** button to apply the changes.

3.3.2 SIP Advanced Setting

VoIP Gateway

SIP Advanced Setting

Local SIP port(1~65535)	5060
Local RTP port(1~65535)	16384
Session Expire(sec)	0
Min Session Expire(sec)	0
Session Refresh Request	☐ UPDATE ☒ re-INVITE
Session Refresher	☐ UAC ☒ UAS
Unregister All	☐ Enable ☒ Disable
Early Media Treatment	☐ Enable ☒ Disable
Support SIP Ping (Nortel)	☐ Enable ☒ Disable
IP Anonymous Caller ID	☐ Enable ☒ Disable
Support Message Waiting Indication (MWI)	☐ Enable ☒ Disable
SIP Message Resend Timer Base T1 (sec)	0.5
Max. Response Time for Invite(1~30sec)	10
Apply	

Local SIP port (1~65535)	Specify the local SIP port's number.
Local RTP port (1~65535)	Specify the local RTP port's number.
Session Expire(Sec)	Specify the session expire time that will be used to negotiate with the remote host or proxy.
Min Session Expire(Sec)	Specify the minimum session expire time that other host or proxy will need to follow when calling the FXS-08.
Session Refresh Request	Select the session refresh method that will be used on the FXS-08, you can choose among the two methods: ● UPDATE ● Re-Invite
Session Refresher	Select who will perform the refreshes, you can choose among the two methods: ● UAC (Client) ● UAS (Server) This will add the parameter

	refresher=uac or uas in the Session Refresh Request message.
Unregister All	Send SIP unregister signaling message after the FXS-08 has been restarted
Early media Treatment	Use early media treatment SIP protocol, where SIP invite messages will not include SDP.
Support SIP Ping	Special feature used with only Nortel's SIP proxy.
IP Anonymous Caller ID	When this feature is Enabled , all IP outgoing calls' Caller ID will not be displayed to the destination. (Please make sure your proxy server or softswitch supports the feature, if the proxy does not support it and you enable this feature, all IP outgoing calls will be dropped.) When Disabled , all IP outgoing calls' Caller ID will be displayed to the destination.
Support SIP 'Allow' Header	When enabled, the FXS-08 will provide information on what methods it supports in the allow header. You can choose to disable this option if you do not want to provide this information. Note: Some SIP proxy servers require this feature, like Broadsoft SIP proxy, when your facility connects to these servers, please Enable it.
Support Message Waiting Indication (MWI)	You can Enable or Disable the MWI function.
SIP Message Resend Timer Base (sec)	Specify the resend time in seconds for each SIP request message that has not received a response.
Max. Response Time for Invite (1~30sec)	Specify the timeout period for SIP Invite messages. For example, if the timeout period is 10 seconds, when the FXS-08 sends an Invite message and

	does not receive a response within 10 seconds, it will cancel the call.
--	---

1. Press the **“Apply”** button (at the bottom) after you finish to save changes.
2. Press the **“Reboot”** button to apply the changes.

3.3.3 Payload Type Setting

VoIP Gateway

Network Configuration

General Configuration

- > SIP Setting
- > SIP Advanced Setting
- > **Payload Type Setting**
- > Line Setting
- > QoS Setting
- > NAT Setting
- > Speed Dial Setting
- > Caller ID Setting
- > CDR Setting
- > Syslog Setting

Advanced Configuration

Management

Reboot

Payload Type Setting

RFC2833 payload type	101
T.38 FAX payload type	96
T.38 Redundancy payload type	104
T.30 FAX by pass payload type	102
Modem by pass payload type	103
Modem relay payload type	105

Apply

RFC2833 payload type	Specify the RFC2833 payload type (range is 96~128, however 100, 102~105 is reserved by other payload types).
T.38 FAX payload type	Specify the FAX payload type (range is 96~128, however 100, 102~105 is reserved by other payload types)
T.38 Redundancy payload type	Specify the Redundancy payload type (range is 96~128, default value is 104. 100, 102, 103, 105 is reserved by other payload types).
T.30 FAX by pass payload type	Specify the FAX by pass payload type (range is 96~128, default value is 102. 100, 103~105 is reserved by other payload types).
Modem by pass payload type	Specify the Modem by pass payload type (range is 96~128, default value is 103. 100, 102, 104, 105 is reserved by

	other payload types).
Modem relay payload type	Specify the Modem relay payload type (range is 96~128, default value is 105. 100, 102~104 is reserved by other payload types).

3. Press the **“Apply”** button (at the bottom) after you finish to save changes.
4. Press the **“Reboot”** button to apply the changes.

3.3.4 Line Setting

VoIP Gateway

Network Configuration

General Configuration

- > SIP Setting
- > SIP Advanced Setting
- > Payload Type Setting
- > **Line Setting**
- > QoS Setting
- > NAT Setting
- > Speed Dial Setting
- > Caller ID Setting
- > CDR Setting
- > Syslog Setting

Advanced Configuration

Management

Reboot

Line Setting

Representative Forward: Disable

Representative Forward Number:

No Answer Forward Time: 30

	TYPE	Line Number	Hotline	Wait to Hotline (sec)	Forward	Reg	Status
Line1	FXS	1000	☐	0	Disable	lg	Idle
Line2	FXS	1001	☐	0	Disable	lg	Idle
Line3	FXS	1002	☐	0	Disable	lg	Idle
Line4	FXS	1003	☐	0	Disable	lg	Idle
Line5	FXS	1004	☐	0	Disable	lg	Idle
Line6	FXS	1005	☐	0	Disable	lg	Idle
Line7	FXS	1006	☐	0	Disable	lg	Idle
Line8	FXS	1007	☐	0	Disable	No	Idle

VoIP Gateway

Network Configuration

General Configuration

- > SIP Setting
- > SIP Advanced Setting
- > Payload Type Setting
- > **Line Setting**
- > QoS Setting
- > NAT Setting
- > Speed Dial Setting
- > Caller ID Setting
- > CDR Setting
- > Syslog Setting

Advanced Configuration

Management

Reboot

Line Setting

Representative Forward: Disable

Representative Forward Number:

No Answer Forward Time: 30

	TYPE	Line Number	Hotline	Wait to Hotline (sec)	Forward	Reg	Status
Line6	FXS	1005	☐	0	Disable	No	Idle
Line7	FXS	1006	☐	0	Disable	No	Idle
Line8	FXS	1007	☐	0	Disable	No	Idle

	Call Transfer	Call Waiting	DND	FAX	Greeting (FXO Only)	Hot PSTN (FXO Only)
Line1	☒	☒	☐	☐		
Line2	☒	☒	☐	☐		
Line3	☒	☒	☐	☐		
Line4	☒	☒	☐	☐		
Line5	☒	☒	☐	☐		
Line6	☒	☒	☐	☐		
Line7	☒	☒	☐	☐		
Line8	☒	☒	☐	☐		

Apply

Representative Forward

Specify the Representative forwarding type to use, you can choose the following:

- Disable
- Unconditional
- Busy

	● No Answer The “Disable” option will allow you to disable this particular function.
Representative Forward Number	Specify the number to forward the call to when the call forwarding feature is enabled.
No Answer Forward Time	If you enable the No Answer Forward function (Representative number or L1~L8 number), please specify the time of no answer. The default setting is 30 sec.
Line1~Line8 relevant data	
Type	Displays the port type of that particular line.
Line Number	Displays the line numbers that specified in SIP Setting. The first is the number registers to Primary proxy. The second is the number registers to Secondary proxy. The default setting is 1000~1007.
Enable Hotline	Click the check box to enable hotline feature. If enabled, The check box will display as ☒ .
Hotline Number	Specify the number to forward the call to when the Hotline feature is enabled.
Wait to Hotline(sec)	Specify the time (sec) for wait to hotline, the default value is 0.
Forward Type	Specify the forwarding type to use, you can choose the following: ● Disable ● Unconditional ● Busy ● No Answer The “Disable” option will allow you to disable this particular function.
Forward Number	Specify the number to forward the call

	to when the call forwarding feature is enabled.
Reg.	Displays the registration status, whether it is registered or not.
Status	Displays the line status, whether it is ready (Idle) or busy.
Call transfer	Enable/Disable per-line Call transfer function.
Call Waiting	Enable/Disable per-line Call Waiting function.
DND	Enable/Disable per-line DND (Do Not Disturb) function.
FAX	Enable/Disable per-line FAX function.
Greeting(FXO only)	NA
Hot PSTN(FXO only)	NA

1. Press the **“Apply”** button (at the bottom) after you finish to save changes.
2. Press the **“Reboot”** button to apply the changes.

3.3.5 Qos Setting

VoIP Gateway

Network Configuration

General Configuration

- > SIP Setting
- > SIP Advanced Setting
- > Payload Type Setting
- > Line Setting
- > QoS Setting**
- > NAT Setting
- > Speed Dial Setting
- > Caller ID Setting
- > CDR Setting
- > Syslog Setting

Advanced Configuration

Management

Reboot

Type ☐ DSCP ☒ ToS

Differentiated Services Code Point Setting

DSCP RTP 0 (Best Effort, BE)

DSCP Signal 0 (Best Effort, BE)

ToS Setting

ToS RTP 000 (0) - Routine

ToS Signal 000 (0) - Routine

Apply

Type	Select Qos Type: DSCP or ToS
Differentiated Services Code Point Setting (DSCP)	
DSCP RTP	Select the DSCP value for RTP (voice packets), the value in the drop down list is expressed in binary format, you can choose the following: ● 0 ● 10 ● 12 ● 14 ● 18 ● 20 ● 22 ● 26 ● 28 ● 30 ● 34 ● 36 ● 38 ● 46

DSCP Signal	Select the DSCP value for SIP message, the value in the drop down list is expressed in binary format, you can choose the following: ● 0 ● 10 ● 12 ● 14 ● 18 ● 20 ● 22 ● 26 ● 28 ● 30 ● 34 ● 36 ● 38 ● 46
ToS Setting	
ToS RTP	Select the ToS value for RTP (voice packets), the value in the drop down list is expressed in binary format, you can choose the following: ● 000 ● 001 ● 010 ● 011 ● 100 ● 101 ● 110 ● 111
ToS Signal	Select the ToS value for SIP messages, the value in the drop down list is expressed in binary format, you can choose the following: ● 000

	● 001 ● 010 ● 011 ● 100 ● 101 ● 110 ● 111
--	---

1. Press the **“Apply”** button (at the bottom) after you finish to save changes.
2. Press the **“Reboot”** button to apply the changes.

3.3.6 NAT Setting

The screenshot shows the 'VoIP Gateway' configuration interface. On the left, a sidebar lists various configuration categories: Network Configuration, General Configuration (with sub-items like SIP Setting, SIP Advanced Setting, Payload Type Setting, Line Setting, QoS Setting, NAT Setting, Speed Dial Setting, Caller ID Setting, CDR Setting, and Syslog Setting), Advanced Configuration, and Management (with a sub-item 'Reboot'). The 'NAT Setting' option is highlighted. The main content area is titled 'NAT Setting' and contains two fields: 'IPSharing Mode' with radio buttons for 'Enable' and 'Disable' (where 'Disable' is selected), and 'IPSharing Address' with a text box containing '210.59.163.198'. Below these fields is an 'Apply' button.

IPSharing Mode	Select IPSharing mode : Enable or Disable
IPSharing Address	Specify the IPSharing Address when the IPSharing feature is enabled.

1. Press the **"Apply"** button (at the bottom) after you finish to save changes.
2. Press the **"Reboot"** button to apply the changes.

3.3.7 Speed Dial Setting

3.3.7.1 Speed Dial

VoIP Gateway

Speed Dial Editor

Speed Dial Number: Telephone Number: Name: **Add** **Del**

Index	Speed Dial Number	Telephone Number	Name
1	11	0202265699	welltech

Speed Dial Setting

Advanced Configuration

Management

Reboot

Speed Dial Editor

Specify the speed Dial Number/Telephone Number/Name, then press the Add or Del button to add or delete record

3.3.7.2 Internal Extension

Speed Dial Editor

Speed Dial Number	Telephone Number	Name

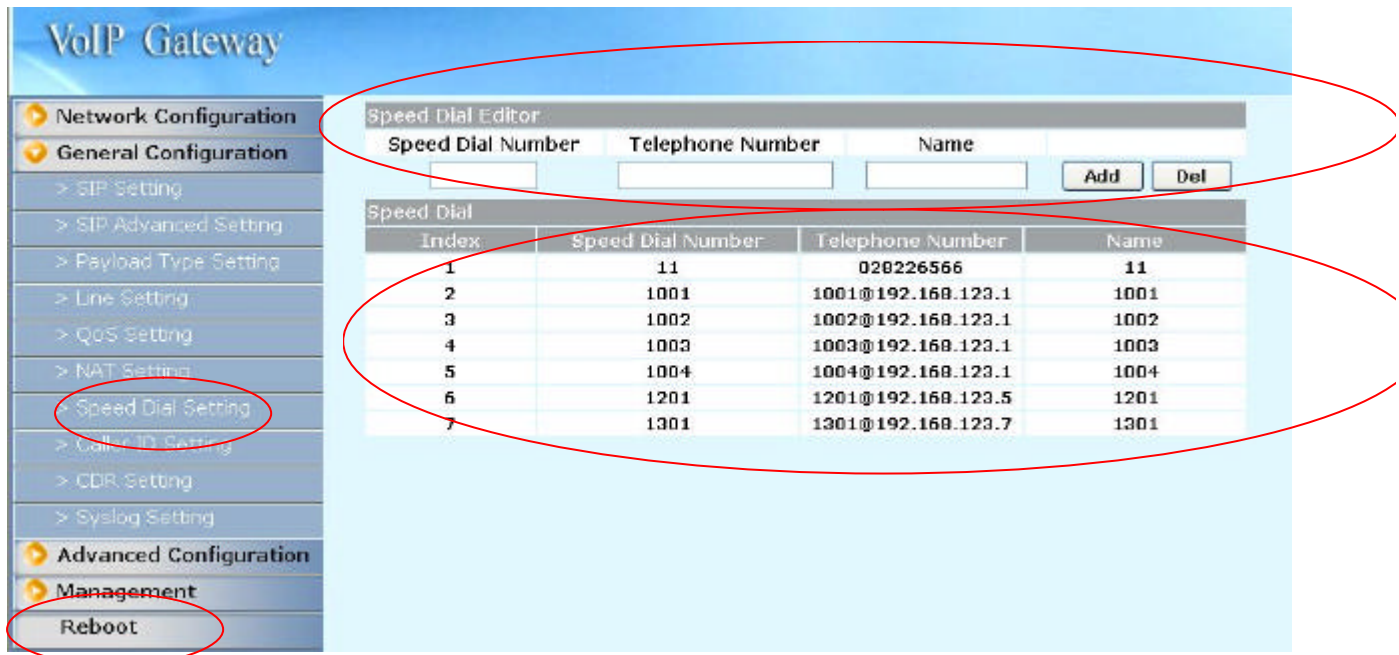
Speed Dial

Index	Speed Dial Number	Telephone Number	Name
1	1001	1001@192.168.123.1	AA
2	1002	1002@192.168.123.1	BB
3	1003	1003@192.168.123.1	CC

Note: The speed dial function can be used as Internal Extension when the Ethernet is fail. For example :

1. When the FXS-08's IP is fixed IP 192.168.123.1, you can set the speed dial as the figure shown above (**please be informed that the speed dial number should be the same with SIP setting number** and the format of "Telephone Number" is "#@ipaddress" for example 1000@192.168.123.1), in the meantime, the WAN port is disconnected, and you can use it as internal extension.
2. When the FXS-08's IP is operating in DHCP client mode, you can also set the speed dial as figure 1, internal calls can work when the Ethernet is fail. But if you make power reset of the device when it has no WAN connection, the speed dial function (internal extension) will not work because it cannot get an IP address from a DHCP server.

3.3.7.2 Peer to Peer call



Speed Dial Editor
(In P2P application)

Specify the speed Dial Number/Telephone Number/Name, then press the Add or Del button to add or delete record
The format of "Telephone Number" is "#@ipaddress", for example
1000@192.168.123.1

3.3.8 Caller ID Setting

VoIP Gateway

Network Configuration

General Configuration

- > SIP Setting
- > SIP Advanced Setting
- > Payload Type Setting
- > Line Setting
- > QoS Setting
- > NAT Setting
- > Speed Dial Setting
- < Caller ID Setting**
- > CDR Setting
- > Syslog Setting

Advanced Configuration

Management

Reboot

Caller ID Setting

Line1: Disable [Auto]

Line2: Disable

Line3: Disable

Line4: Disable

Line5: Disable

Line6: Disable

Line7: Disable

Line8: Disable

DTMF Setting

DTMF Caller ID Start Symbol: D

DTMF Caller ID End Symbol: C

Apply

Caller ID Setting (Line 1~Line 8)

Select the (Line 1~Line 8) Caller ID generation type to use, you can choose the following:

- Disable
- DTMF
- FSK(Bellcore)
- ETSI(Before Ring)
- ETSI(Between ring)

AUTO: You can choose different caller ID type by line. If Line1~Line 8 uses the same type, you only need to set line 1 and click the “Auto” button, then the other lines will set the same type automatically.

The “Disable” option will allow you to disable this particular function.

DTMF Caller ID Start Symbol	Specify the DTMF Caller ID Start Symbol The default symbol is D.
DTMF Caller ID End Symbol	Specify the DTMF Caller ID End Symbol The default symbol is C.

1. Press the “**Apply**” button (at the bottom) after you finish to save changes.
2. Press the “**Reboot**” button to apply the changes.

3.3.9 CDR Setting

The screenshot shows the 'VoIP Gateway' interface. On the left is a navigation menu with categories: Network Configuration, General Configuration (containing SIP Setting, SIP Advanced Setting, Payload Type Setting, Line Setting, QoS Setting, NAT Setting, Speed Dial Setting, Caller ID Setting, CDR Setting, and Syslog Setting), Advanced Configuration, Management, and Reboot. The 'CDR Setting' option is selected and circled in red. The main content area is titled 'CDR Setting' (also circled in red) and contains three fields: 'CDR mode' with radio buttons for 'Enable' and 'Disable' (where 'Disable' is selected), 'CDR server address' with an empty text input box, and 'CDR server port' with a text box containing '514'. An 'Apply' button is circled in red at the bottom right of the settings area.

CDR mode	Select the CDR mode for Enable or Disable . If you Enable this feature, please specify the CDR Server address and port number at the CDR server address and port's text box, then you can get Call Detail Data from CDR Server.
CDR Server address	If you Enable the CDR mode, please specify the IP address of CDR Server for data storage.
CDR Server port	Specify the CDR Server port number, The default port number is 514.

1. Press the **"Apply"** button (at the bottom) after you finish to save changes.
2. Press the **"Reboot"** button to apply the changes.

3.3.10 Syslog Setting

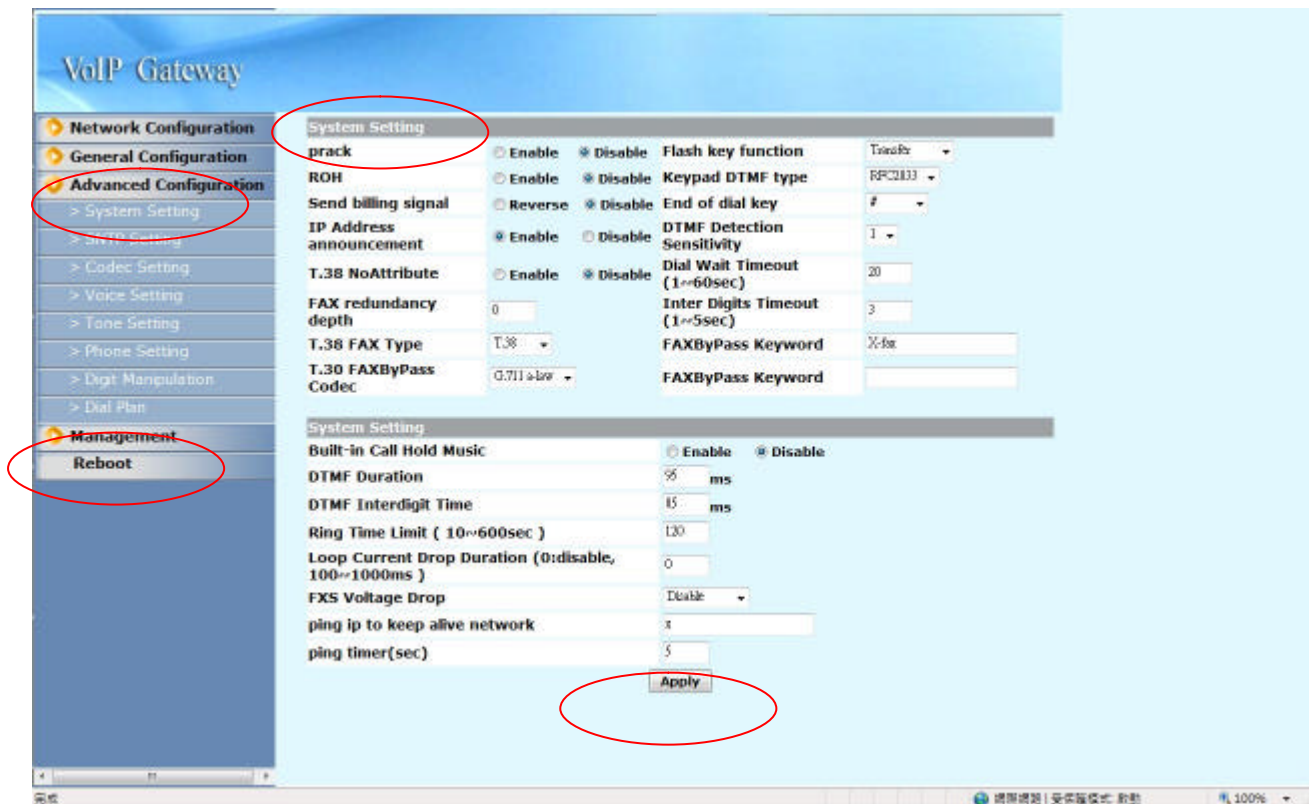
The screenshot displays the 'VoIP Gateway' configuration interface. On the left, a vertical menu lists various settings: Network Configuration, General Configuration (with sub-items like SIP Setting, SIP Advanced Setting, Payload Type Setting, Line Setting, QoS Setting, NAT Setting, Speed Dial Setting, Caller ID Setting, CDR Setting, and Syslog Setting), Advanced Configuration, Management, and Reboot. The 'Syslog Setting' option is highlighted. The main content area shows the 'Syslog Setting' form. It includes a 'Syslog mode' dropdown menu currently set to 'Disable', a text input field for 'Syslog server address', and a text input field for 'Syslog server port' with the value '514'. An 'Apply' button is located at the bottom right of the form.

Syslog mode	Select the Syslog mode for Enable or Disable . If you Enable this feature, please specify the Syslog Server address and port number at the Syslog server address and port's text box, then you can get detail system log from Syslog server.
Syslog Server address	If you Enable the Syslog mode, please specify the IP address of Syslog Sever for data storage.
Syslog Server port	Specify the Syslog Server port number, The default port number is 514.

1. Press the **"Apply"** button (at the bottom) after you finish to save changes.
2. Press the **"Reboot"** button to apply the changes.

3.4 Advanced Configuration

3.4.1 System setting



prack	PRACK is defined in RFC 3262: Reliability of Provisional Responses in SIP. You can accommodate your softswitch (Proxy Server) to Enable or Disable this feature.
ROH	Receiver-Off-Hook (ROH) Tone A ROH tone is sent to the subscriber to inform him that his receiver is off-hook. You can Enable/Disable this option.
Send billing signal	Polarity Reversal for billing signal, you can enable (Reverse)/Disable the feature.
T.38 NoAttribute	No attribute (Fax version, BitRate, Buffer, Datagram...) indicated in T.38 Re-Invite with Session Description

	Protocol (SDP). You can Enable/Disable this option.
FAX redundancy depth	Specify the resend times (0~3)for FAX error packet,
T.38 FAX Type	Select the FAX Type to use, you can choose the following: • T.38 • ByPass • Auto
T.30 FAXByPass Codec	Select the FAX ByPass Codec to use, you can choose the following: • G.711 a-law • G.711 u-law • G.726 32k
Flash key function	Select the function of Flash key, you can choose the following: • Disable • Transfer • SIP Message
Keypad DTMF type	Select the type of Keypad DTMF, you can choose the following: • In-Band • RFC2833 • SIP Info
End of dial key	Select the End of dial key, you can choose the following: • Disable • * • #
DTMF Detection Sensitivity	Specify the grade of DTMF Detection Sensitivity, the value range is (1~5)
Dial Wait Timeout (1~60sec)	Specify the duration of dial waiting when the receiver is off hook. The range is 1~60 sec.
Inter Digits Timeout (1~5sec)	Specify the interval of input digits, if the interval is over the setting, the system will end the dial and send out the DTMF. The limitation range is

	1 ~ 5sec.
FAXByPass Keyword	Some SIP Proxy need specify special keyword for FAXByPass function. Input the data as SIP Proxy required.
FAXByPass Keyword	Some SIP Proxy need specify special keyword for FAXByPass function. Input the data as SIP Proxy required.
IP Address announcement	You can Enable/Disable this function, If you select Enable, you can connect T1 port with a phone set and press #120#, you will hear the announcement of IP address of LAN port, or press #126# to get WAN port IP address.
Built-in Call Hold Music	System built-in music of call hold, you can Enable/Disable this feature.
DTMF Duration	Specify the DTMF tone duration.
DTMF Interdigit Time	Specify the interval of DTMF digit
Ring Time Limit (10~600sec)	Specify the limitation of Ring time for incoming call, when the ring is over the limit, system will drop the call. The default range is 10~600sec.
Loop Current Drop Duration (0:disable, 100~1000ms)	Specify the duration (100~1000ms) of loop current drop, 0 for disable. This feature is used when the FXS-08 is connected with answering machines. When the remote site disconnects, the system will drop FXS port's voltage to 0, and make the answering machines disconnect.
FXS Voltage Drop	This option is used when a stand alone relay box containing a PSTN and FXS port is connected to the FXS-08's FXS port. In this special application, if there is a network or registration failure, the system will drop the FXS port's voltage to 0, when the relay box detects the status, it will switch the

	line to PSTN. The default setting is “Disable”, if you are not using this particular special application mentioned above, please do not enable this function.
ping ip to keep alive network	Specify the IP for pinging to make sure the network keeps alive.
ping timer(sec)	Specify the interval of ping timer(sec)

1. Press the “**Apply**” button (at the bottom) after you finish to save changes.
2. Press the “**Reboot**” button to apply the changes.

3.4.2 SNTP Setting

The screenshot shows the 'VoIP Gateway' configuration interface. On the left sidebar, under 'Advanced Configuration', 'SNTP Setting' is selected and circled in red. Below it, 'Reboot' is also circled in red. The main configuration area for 'SNTP Setting' includes:

- SNTP mode:** Radio buttons for 'On' (selected) and 'Off'.
- SNTP server address:** Text input field containing '168.95.195.12'.
- Time Zone-GMT:** Dropdown menu showing 'GMT+08:00'.
- Time setting:** Fields for 'YYYY/MM/DD' (1970 / 01 / 01) and 'HH : MM : SS' (02 : 30 : 16).
- Apply:** A button at the bottom right, circled in red.

SNTP mode	Select the SNTP mode : On or Off
SNTP server address	Specify the SNTP server address for time synchronization.
Time Zone -GMT	Select the Time Zone of your location
Time setting	You can specify the time with year/month/date /hour/minute /second when you select the SNTP mode with "Off".

1. Press the **"Apply"** button (at the bottom) after you finish to save changes.
2. Press the **"Reboot"** button to apply the changes.

3.4.3 Codec Setting

VoIP Gateway

- Network Configuration
- General Configuration
- Advanced Configuration
 - > System Setting
 - > SNTP Setting
 - > **Codec Setting**
 - > Voice Setting
 - > Tone Setting
 - > Phone Setting
 - > Digit Manipulation
 - > Dial Plan
- Management
 - Reboot**

Codec Setting			
	Codec Priority	Codec Packet Size	BandWidth Required
First	G.729	G.711U 20	85.6 kbps
Second	G.711U	G.711A 20	85.6 kbps
Third	G.711A	G.723 30	20.8 kbps
Fourth	G.723	G.729 20	29.6 kbps
Fifth	G.726	G.726_32 20	53.6 kbps

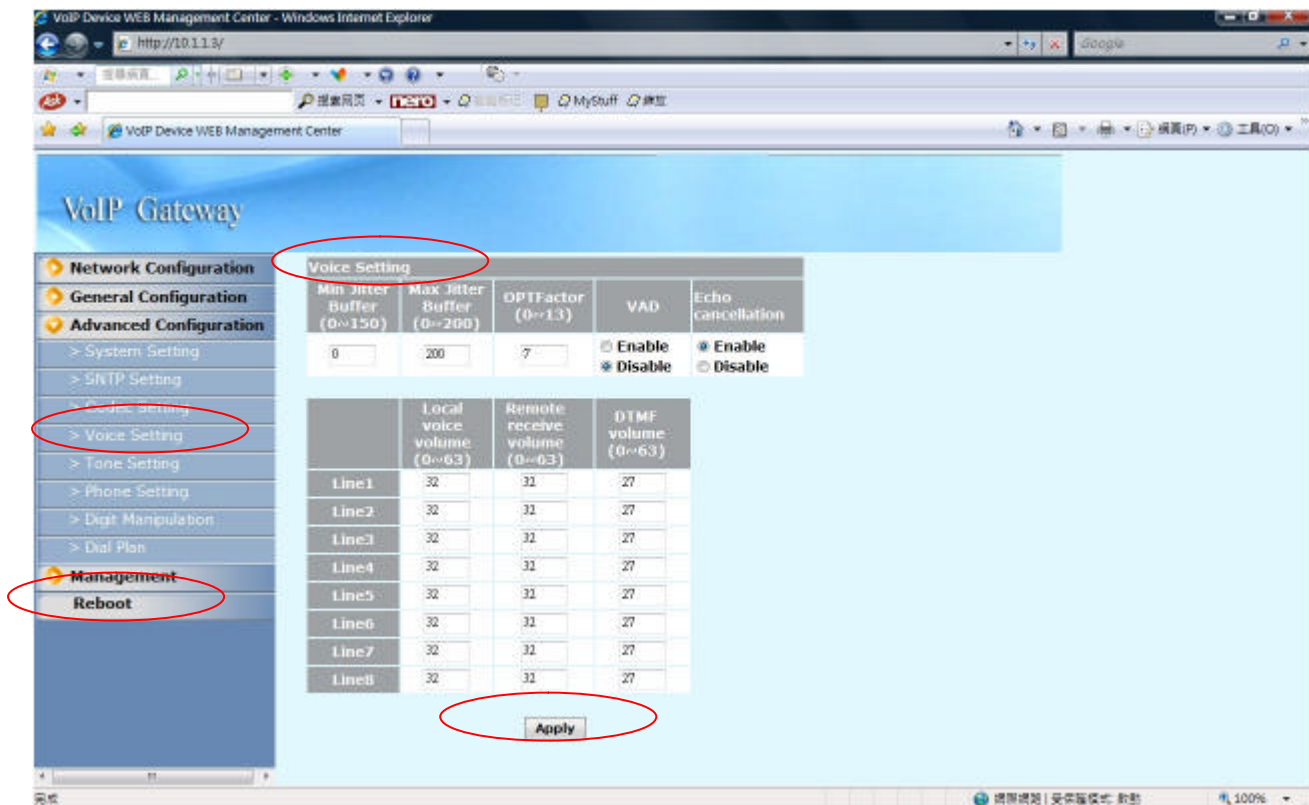
Apply

Codec Priority	You can specify the priority of the codec from First to Fifth (first being the highest priority and Fifth being the lowest). You can choose the following codecs: ● G711U ● G711A ● G723 ● G729 ● G726										
Codec Packet Size	You can specify the packet size in the drop down list for each particular codec, you can choose the following: <table border="1"> <tbody> <tr> <td>G711U</td><td>10,20,30,40,50,60</td></tr> <tr> <td>G711A</td><td>10,20,30,40,50,60</td></tr> <tr> <td>G723</td><td>30,60,90</td></tr> <tr> <td>G729</td><td>10,20,30,40,50,60</td></tr> <tr> <td>G726</td><td>10,20,30,40,50,60</td></tr> </tbody> </table>	G711U	10,20,30,40,50,60	G711A	10,20,30,40,50,60	G723	30,60,90	G729	10,20,30,40,50,60	G726	10,20,30,40,50,60
G711U	10,20,30,40,50,60										
G711A	10,20,30,40,50,60										
G723	30,60,90										
G729	10,20,30,40,50,60										
G726	10,20,30,40,50,60										
Bandwidth Required	When you select the codec packet size										

	shown above, system will set default requirement of bandwidth.
--	--

1. Press the “**Apply**” button (at the bottom) after you finish to save changes.
2. Press the “**Reboot**” button to apply the changes.

3.4.4 Voice Setting



Jitter Buffer	
Minimal Delay	Specify the minimal delay of the jitter buffer. The range is 0~150 ms and the default setting is 0 ms.
Maximal Delay	Specify the maximal delay of the jitter buffer. The range is 0~200 ms and the default setting is 200 ms.
OPTFactor	Specify the dynamic jitter buffer frame error/delay optimization factor, the range is 0~13.
VAD	Enable/Disable the VAD (Voice Activity Detection) feature. This is supported on all codecs that the FXS-08 equips.
Echo cancellation	Enable/Disable the echo cancellation feature. The default setting is "Enable".
Local voice volume	Specify the volume gain of the voice in the local side (0~63, default is 32). You can set this option for each of the 8

	lines.
Remote receive volume	Specify the volume gain of the voice in the remote side (0~63, default is 32). You can set this option for each of the 8 lines.
DTMF volume	Specify the volume gain of the DTMF (0~63, default is 27). You can set this option for each of the 8 lines.

1. Press the “**Apply**” button (at the bottom) after you finish to save changes.
2. Press the “**Reboot**” button to apply the changes.

3.4.5 Tone Setting

VoIP Gateway

- Network Configuration
- General Configuration
- Advanced Configuration
 - > System Setting
 - > SNTP Setting
 - > Codec Setting
 - > Voice Setting
 - > **Tone Setting**
 - > Phone Setting
 - > Digit Manipulation
 - > Dial Plan
- Management
 - Reboot

	Dial tone	Ring back tone	Busy tone	Call-waiting	Voice-Notify	ROH Tone	Disconnect tone1	Disconnect tone2
Frequency high (0,300~1980)	440	480	620	440	0	480	620	620
Frequency low (0,300~1980)	350	440	480	350	0	0	480	480
Frequency high level(0~63)	13	19	24	24	13	6	8	13
Frequency low level(0~63)	13	19	24	24	13	0	8	13
Tone1 On (0~8000)	300	100	50	25	20	500	20	20
Tone1 Off (0~8000)	0	200	50	25	20	0	0	0
Tone2 On (0~8000)	0	0	0	25	20	0	0	0
Tone2 Off (0~8000)	0	0	0	25	20	0	0	0

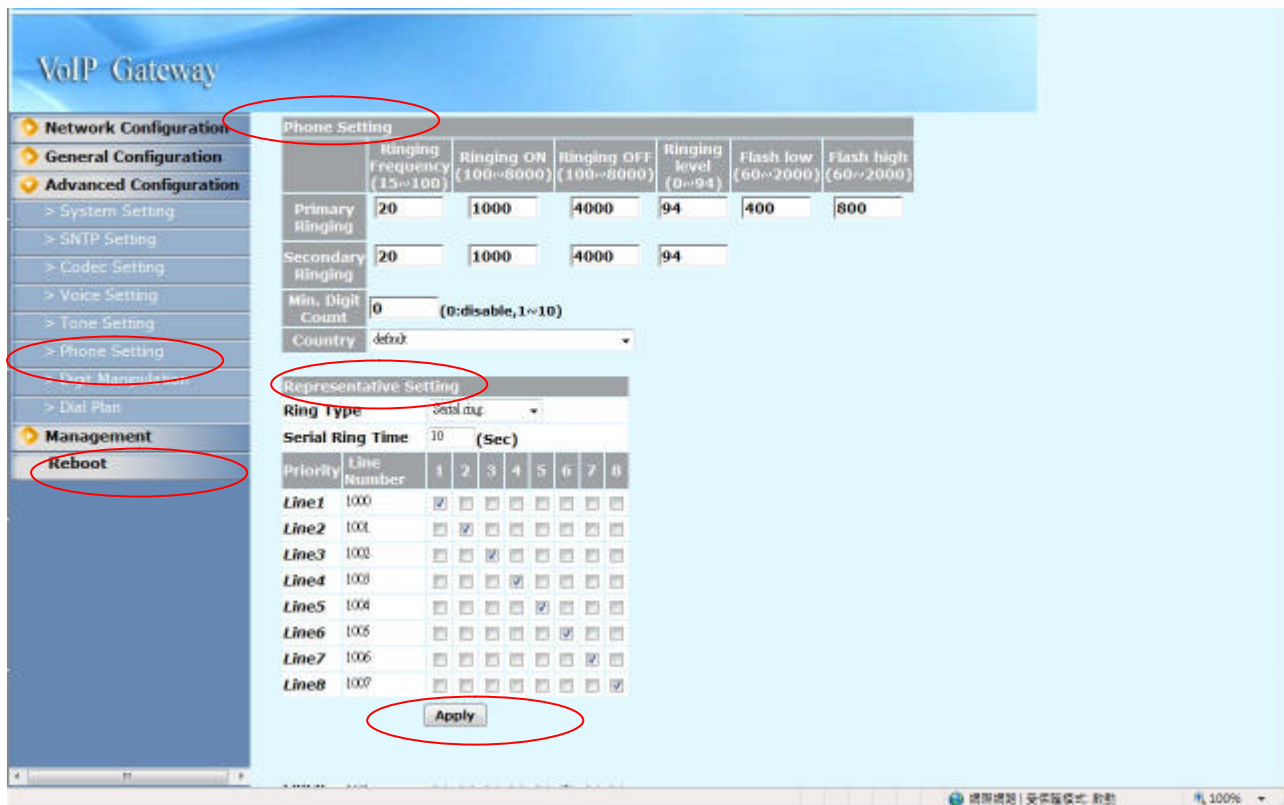
Apply

Dial tone	Specify the pattern of the Dial tone, you can adjust the high frequency, low frequency, high level, low level, the On and Off time for tone 1 and 2.
Ringback tone	Specify the pattern of the Ringback tone, you can adjust the high frequency, low frequency, high level, low level, the On and Off time for tone 1 and 2.
Busy tone	Specify the pattern of the Busy tone, you can adjust the high frequency, low frequency, high level, low level, the On and Off time for tone 1 and 2.
Call-waiting	Specify the pattern of the call-waiting tone, you can adjust the high frequency, low frequency, high level, low level, the On and Off time for tone 1 and 2.
Voice-Notify	Specify the pattern of the Voice-Notify, you can adjust the high frequency, low

	frequency, high level, low level, the On and Off time for tone 1 and 2.
ROH Tone	Specify the pattern of the ROH Tone, you can adjust the high frequency, low frequency, high level, low level, the On and Off time for tone 1 and 2. The ROH tone is a single high frequency tone used to warn users that their phone is not placed on-hook (hang up) correctly.
Disconnect tone 1	Specify the pattern of the disconnect tone for disconnect tone 1 (first set), you can adjust the high frequency, low frequency, high level, low level, the On and Off time for tone 1 and 2.
Disconnect tone 2	Specify the pattern of the disconnect tone for disconnect tone 2 (second set), you can adjust the high frequency, low frequency, high level, low level, the On and Off time for tone 1 and 2.

1. Press the **“Apply”** button (at the bottom) after you finish to save changes.
2. Press the **“Reboot”** button to apply the changes.

3.4.6 Phone Setting



Primary Ringing	
Ringing Frequency	Specify the Ringing frequency value. ringing frequency : 15~100 (Unit : Hz)
Ringing ON	Specify the Ringing ON value. ringing ring ON : 0~8000 (Unit : ms)
Ringing OFF	Specify the Ringing OFF value. ringing ring OFF : 0~8000 (Unit : ms)
Ringing level	Specify the ringing level. ringing level : 0 ~ 94 (Unit : V)
Flash low	Specify the value of the flash (low). : 60~2000 (Unit : ms)
Flash high	Specify the value of the flash (high). : 60~2000 (Unit : ms)
Secondary Ringing	
Note: The feature will be enabled automatically when the Min. Digit Count has been enabled and specified.	
Ringing Frequency	Specify the Ringing frequency value. ringing frequency : 15~100 (Unit : Hz)

Ringing ON	Specify the Ringing ON value. ringing ring ON : 0~8000 (Unit : ms)
Ringing OFF	Specify the Ringing OFF value. ringing ring OFF : 0~8000 (Unit : ms)
Ringing level	Specify the ringing level. ringing level : 0 ~ 94 (Unit : V)
Min. Digit Count	Specify the minimum digit count (1~10, 0:Disable), this feature is used to change the ringing frequency by detecting the digit length of incoming calls' number. When the digit length of an incoming call number is greater than the specified setting, the system will use primary ringing. If the digit is less than the specified setting, the system will use the secondary ringing.
Country	Specify the ringing standard to use.
Phone setting– Representative number	
Ring Type	Select the Ring Type of representative number. You can choose the following: ● Serial ring (Follow the ring priority defined below) ● Simultaneous(ring all)
Ring Time (s) for Serial ring	Specify the Ring Time for Serial ring
Priority	Select the group of representative number, and specify the priority. The default setting L1~L8 is grouped.

1. Press the **“Apply”** button (at the bottom) after you finish to save changes.
2. Press the **“Reboot”** button to apply the changes.

3.4.7 Digit Manipulation

VoIP Gateway

- Network Configuration
- General Configuration
- Advanced Configuration
 - > System Setting
 - > SNTP Setting
 - > Codec Setting
 - > Voice Setting
 - > Tone Setting
 - > Phone Setting
 - > **Digit Manipulation**
 - > Dial Plan
- Management
 - > **Reboot**

Digit Manipulation Testing

	Testing Dial No.	Result	Route
Run			VOIP

FXO Dial Pause

	Prefix	Outline Number	Delay Time
Apply		0	500 (10~10000ms)

Digit Manipulation Editor

	Prefix	Drop	Insert	Route
Apply		DISABLE		VOIP

	Index	Prefix	Drop	Insert	Route
--	-------	--------	------	--------	-------

Digit Manipulation Testing	This option allows users to test dial a number and check the resulting dialed number and its routing path that is edited by the Digit Manipulation Editor function (see Digit Manipulation Editor section below for more information on it).
FXO Dial Pause	N/A
Digit Manipulation Editor	With this option, you can specify whether to add digits to a prefix number or drop a prefix number, and its destination route depending on the prefix of the number dialed. For example, if the user sets: <u>First Example</u> ● Prefix: 02 ● Drop: Enable ● Insert: ● Route: VOIP If the user dials 0282265699, the resulting dial out number will be 82265699.

	<u>Second Example</u> ● Prefix: 7 ● Drop: Disable ● Insert: 886 ● Route: VOIP If the user dials 778, the resulting dial out number will be 886778. <u>Third Example (Only applicable for WG2680 FXO)</u> ● Prefix: 8226 ● Drop: Disable ● Insert: 02 ● Route: PSTN (Only applicable to WG2680 FXO) If the user dials 82265699, the resulting dial out number will be 0282265699 with a destination route to PSTN. In other words, the number 0282265699 will be dialed out to the PSTN line from the WG2680 (FXO). You can configure up to 50 entries in the Digit Manipulation Editor. Note: Destination route to PSTN and DENY is only available on the WG2680 FXO).
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1. Press the **“Apply”** button (at the bottom) after you finish to save changes.
2. Press the **“Reboot”** button to apply the changes.

3.4.8 Dial Plan

VoIP Gateway

Dial Plan Editor

Function	Leading digit	Total digit count	Route	
Enable		(1~25)	VOIP	Add Del

Dial Plan

Index	Function	Leading digit	Totle digit count	Route
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Dial Plan Editor

Using this feature, users can specify the number that will be immediately dialed out without having to press the “#” (at the end of the dialed number) on the keypad or until the dial time timeout period. The number can be specified depending on the length of the dialed number, or the prefix of the dialed number.

For example, if the user sets:

First Example

- Function: Enable
- Leading digit: 02
- Total Digit count: 10
- Route: VOIP

If the user dials a 10 digit number with a prefix of 02 (e.g. 0282265699), the FXS-08 will immediately detect it and dial this number straight away.

Second Example

- Function: Enable
- Leading digit:

	● Total digit count: 8 ● Route: VOIP If the user dials an 8 digit number (e.g. 82265699), the FXS-08 will immediately detect it and dial this number straight away. <u>Third Example</u> ● Function: Disable ● Leading digit: 02 ● Total digit count: 10 ● Route: VOIP If the user set the Function parameter as “Disable”, the call number with a length of 10 digits and a prefix of 02 will proceed as normal. The user will need to wait until dial timeout period for the call to be made, or press the “#” on the keypad at the end of the dialing number to make the call. <u>Fourth Example (Only applicable for WG2680 FXO)</u> ● Function: Enable ● Leading digit: 7 ● Total digit count: 5 ● Route: PSTN If the user dials a 5 digit number with a prefix of 7 (e.g. 76543), the WG2680 (FXO) will immediately detect it and dial this number to PSTN. You can configure up to 50 entries in the Dial Plan. Note: Destination route to PSTN and DENY is only available on the WG2680 FXO).
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1. Press the “**Apply**” button (at the bottom) after you finish to save changes.
2. Press the “**Reboot**” button to apply the changes.

3.5 Management

3.5.1 Provision Server

The screenshot shows the 'VoIP Gateway' web interface. On the left, a navigation menu includes 'Network Configuration', 'General Configuration', 'Advanced Configuration', 'Management', and 'Reboot'. The 'Provision Server' option under 'Management' is selected. The main configuration area for 'Provision Server' includes:

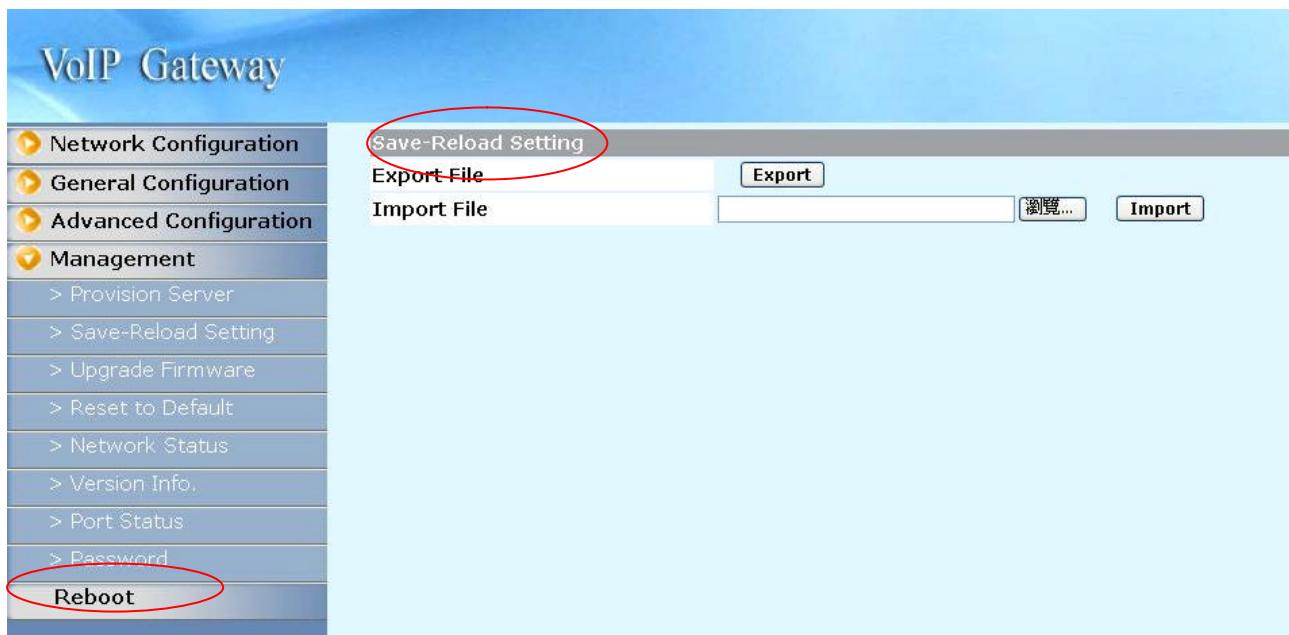
- Provision server Mode:** Radio buttons for 'Enable' and 'Disable' (currently 'Disable' is selected).
- Provision server IP address:** An empty text input field.
- Provision server port:** A text input field containing '61003'.
- Provision cycle time:** A text input field containing '0'.
- Provision default time:** A time selection field showing '00:00' with '(HH:MM)' next to it.
- Buttons:** An 'Apply' button is located at the bottom right of the configuration area.

Note: The provision function is only compatible with some proprietary provision server. If you need this requirement, please contact with your agent.

Provision server Mode	Enable/Disable provision function
Provision server IP address	Specify the Provision Server's IP address.
Provision server port	Specify the Provision server port
Provision cycle time	Specify the cycle time of the provisioning.(unit: sec)
Provision default time	Specify a scheduled time in a day

1. Press the **"Apply"** button (at the bottom) after you finish to save changes.
2. Press the **"Reboot"** button to apply the changes.

3.5.2 Save-Reload setting



Export File	Click the “Export” button to export “user.cfg” data
Import File	Specify the file path and file name to Import the configure data.

1. Press the **“Reboot”** button to apply the changes.

3.5.3 Upgrade Firmware

VoIP Gateway

Upgrade Firmware

Download mode: TFTP

TFTP/FTP server IP address:

FTP login: User name Password

Target file name: **Start**

Http Upload: **Start**

After pressing start, please wait for success message, and DO NOT power off.

Reboot

Download mode	Select the connection method to update the FXS-08's firmware, you can choose the following: ● TFTP ● FTP
TFTP/FTP server IP address	Specify the TFTP/FTP server's IP address.
FTP login	Specify the login username/password for the FTP server.
Target file name	Specify the target file name for the firmware.
Http Upload	Specify the location of the firmware for uploading through Http.

3.5.3.1 Updating the firmware by FTP

The screenshot shows the 'VoIP Gateway' web interface. On the left is a sidebar menu with the following items: Network Configuration, General Configuration, Advanced Configuration, Management, > Provision Server, > Save/Reload Setting, > Upgrade Firmware, > Reset to Default, > Network Status, > Version Info, > Port Status, > Password, and Reboot. The 'Upgrade Firmware' option in the sidebar and the 'FTP' option in the 'Download mode' dropdown are circled in red. The main content area is titled 'Upgrade Firmware' and contains the following fields: 'Download mode' (a dropdown menu showing 'FTP'), 'TFTP/FTP server IP address' (a text box), 'FTP login' (a section with 'User name' and 'Password' text boxes), and 'Target file name' (a text box with a 'Start' button next to it). Below these fields is an 'Http Upload' section with a text box, a file selection icon, and a 'Start' button. A red warning message at the bottom states: 'After pressing start, please wait for success message, and DO NOT power off.'

1. Select FTP mode in the drop down list.
2. Key in the IP address, login name, password of your FTP server and specify the correct filename of the firmware.
3. Press the Start button (next to the Target file name text box) to execute the upgrade process.
4. Please wait while the device updates itself with the firmware.
5. After the update process is finish, you will be taken to a web page indicating that it was successful (see figure below).
6. Press the **"Reboot"** button to apply the changes.

3.5.3.2 Updating the firmware by TFTP

The screenshot shows the 'VoIP Gateway' web interface. On the left is a sidebar with navigation options: Network Configuration, General Configuration, Advanced Configuration, Management, Provision Server, Save-Reload Setting, Upgrade Firmware, Reset to Default, Network Status, Version Info., Port Status, Password, and Reboot. The 'Upgrade Firmware' section is highlighted in the main area. It contains a 'Download mode' dropdown menu set to 'TFTP', a text box for 'TFTP/FTP server IP address', 'FTP login' fields for 'User name' and 'Password', and a 'Target file name' text box. A 'Start' button is next to the 'Target file name' field. Below this is an 'Http Upload' section with a file selection button and a 'Start' button. A red warning message states: 'After pressing start, please wait for success message, and DO NOT power off.' The 'Reboot' button in the sidebar is also highlighted.

1. First, download the TFTP program from our website <http://www.welltech.com/support/utility.htm>. Unzip the TFTP to a directory that you desire in your hard drive and execute the TFTP program. Make sure that the TFTP program points to the directory of where your firmware is stored. Now, leave the TFTP program running and switch back to the FXS-08 web configuration interface.
2. Under Device Management => Software Upgrade select TFTP mode in the drop down list.
3. Key in the IP address of the TFTP server and specify the correct filename of the firmware.
4. Press the Start button (next to the Target file name text box) to execute the upgrade process.
5. Please wait while the device updates itself with the firmware.
6. After the update process is finish, you will be taken to a web page indicating that it was successful (see figure below).
7. Press the **"Reboot"** button to apply the changes.

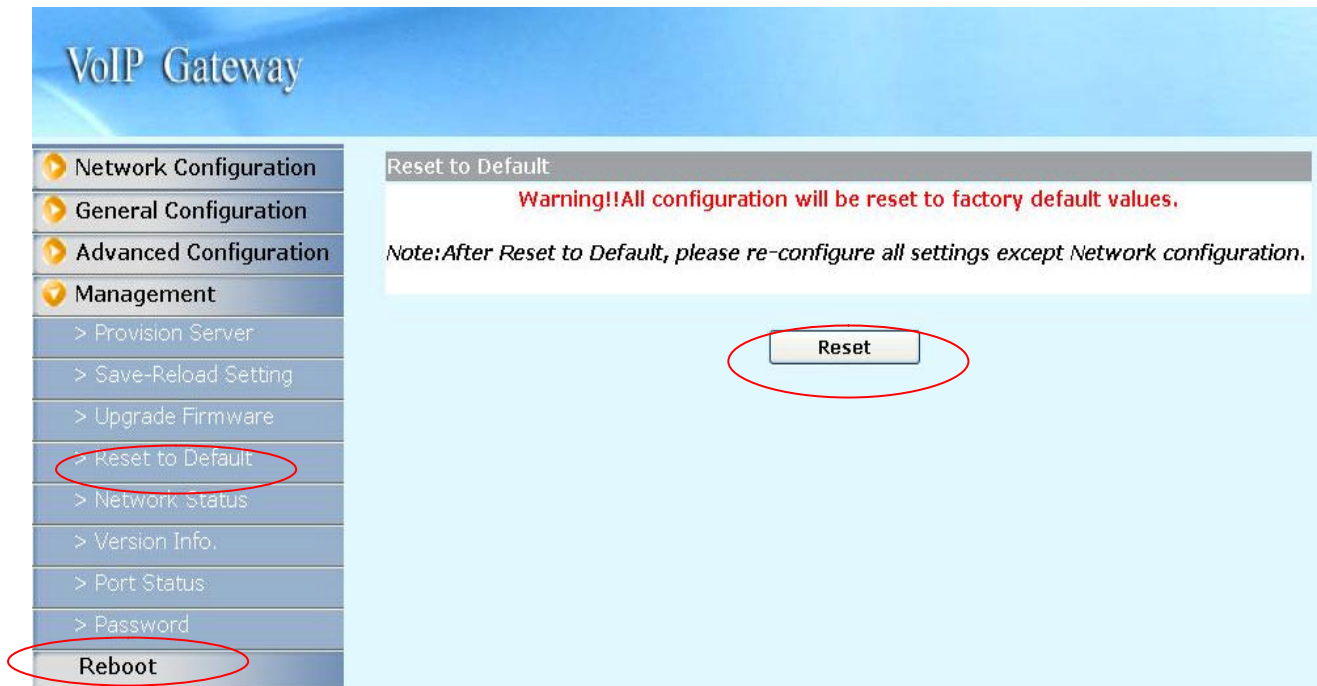
3.5.3 3 Updating the firmware by HTTP

The screenshot shows the 'VoIP Gateway' web interface. On the left, a navigation menu is expanded to 'Management', with 'Upgrade Firmware' selected. The main content area is titled 'Upgrade Firmware'. It includes a 'Download mode' dropdown set to 'TFTP'. Below this are input fields for 'TFTP/FTP server IP address', 'FTP login' (with 'User name' and 'Password' sub-fields), and 'Target file name'. A 'Start' button is next to the 'Target file name' field. Below these fields is the 'Http Upload' section, which has a text input field, a '浏览...' (Browse) button, and a 'Start' button. A red box highlights the 'Http Upload' section and the warning message below it: 'After pressing start, please wait for success message, and DO NOT power off.'

1. Under Device Management => Software Upgrade web menu, specify the location of the firmware by clicking the Browse button next to the Http Upload text box.
2. You will be prompted with a window requesting the location of the firmware.
3. Locate the firmware that is stored in your hard drive.
4. Once located, click the Open button.
5. Back in the web configuration menu, press the Start button (next to the Http Upload's browse button) to execute the upgrade process.
6. Please wait while the device updates itself with the firmware.
7. After the update process is finish, you will be taken to a web page indicating that it was successful (see figure below).

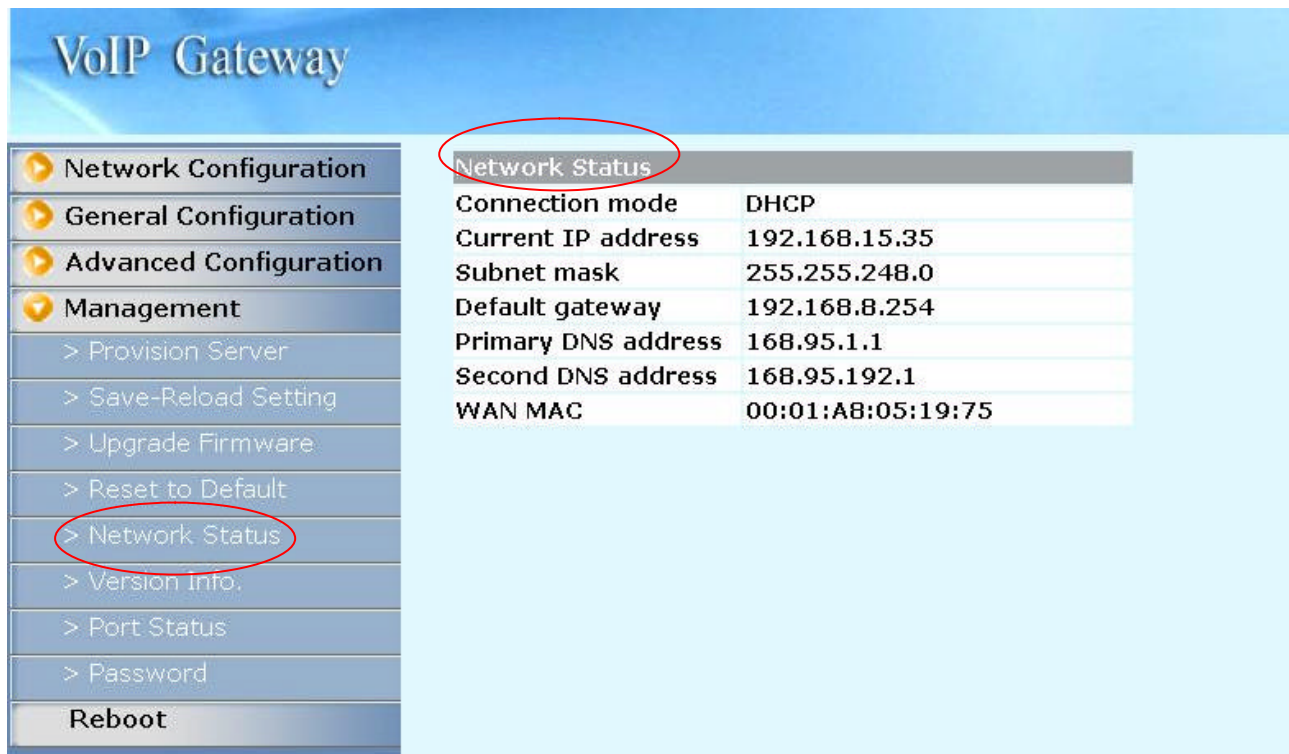
Note: For consistency, it is recommended to reload default setting every time you update the firmware on the FXS-08. However, you will lose all the settings configured on the FXS-08 except Network configuration. For more details on reload default setting, please refer to the next page below.

3.5.4 Reset to Default



Users can restore back to factory default settings using this feature. The password of the account and the network configurations are the things that will not be changed when this feature is executed.

3.5.5 Network Status



Connection mode	Displays the current connection mode.
Current IP address	Displays the current IP address of the WAN port.
Subnet mask	Displays the current subnet mask's IP.
Default gateway	Displays the current default gateway's IP.
Primary DNS address	Displays the current primary DNS address.
Second DNS address	Displays the current secondary DNS address.
WAN MAC	Displays the MAC address of the WAN port.

3.5.6 Version Info.



Boot version	Displays the current boot version loaded on the FXS-08.
Post version	Displays the current post version loaded on the FXS-08.
Application version	Displays the current application version loaded on the FXS-08.

3.5.7 Port Status

VoIP Gateway

Network Configuration

- General Configuration
- Advanced Configuration
- Management
 - > Provision Server
 - > Save-Reload Setting
 - > Upgrade Firmware
 - > Reset to Default
 - > Network Status
 - > Version Info.
 - > Port Status
 - > Password
- Reboot

Port Status

Item	Status	Port Type	Register Proxy 192.168.13.247
Port1	ENABLE	FXS	No
Port2	ENABLE	FXS	No
Port3	ENABLE	FXS	No
Port4	ENABLE	FXS	No
Port5	ENABLE	FXS	No
Port6	ENABLE	FXS	No
Port7	ENABLE	FXS	No
Port8	ENABLE	FXS	No

Item	Displays the corresponding port number.
Status	Displays the status of the port.
Port Type	Displays the port type (FXS,FXO)of the corresponding port number.
Register	Displays the registration status of the corresponding port number.

3.5.8 Password

The screenshot shows the 'VoIP Gateway' web interface. On the left sidebar, under the 'Management' section, the 'Password' and 'Reboot' options are highlighted with red circles. The main content area is titled 'Password' and contains the following fields:

- Username:** A dropdown menu with 'root' selected.
- Current password:** A text input field.
- New password:** A text input field.
- Confirm new password:** A text input field.
- Apply:** A button at the bottom right, highlighted with a red circle.

Username	Select the type of user name that you would like to configure the password for, you can choose the following: ● root ● user
Current password	Specify the current password for the user selected in the drop down list above.
New password	Specify the new password for the user selected in the drop down list above.
Confirm new password	Repeat the new password again for confirmation.

1. Press the **“Apply”** button (at the bottom) after you finish to save changes.
2. Press the **“Reboot”** button to apply the changes.

3.6 Rebooting the system

Executing this function will reboot the whole system, when configuration changes are made to the device, it needs to be rebooted for the changes to take effect (see figure below).

