



# Internet Telephony PBX System

## IPX-1900

### User's manual

Version 1.0.

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## Revision

User's Manual for PLANET Internet Telephony PBX System:

Model: IPX-1900

Rev: 1.0 (June, 2008)

Part No. EM-IPX1900 Series V1.0

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# Chapter 1 Introduction



## Overview

PLANET IPX-1900 IP PBX telephony systems are designed and optimized for the small business in daily communications. The IPX-1900 are able to accept 300 user registrations, and easy to install and manage a fully working system with the convenience and cost advantages. The PLANET IPX-1900 is also designed to operate on a variety of VoIP applications; it provides centralized call control, auto-attendant, voice conferencing, and PSTN access, digital and IP-based communications. Based on state-of-the-art embedded technology, the IPX-1900 provides a solid, uniform platform for voice communications as well as data network communications. The IPX-1900 offers a seamlessly integrated solution for the up-to-date telecommunication needs. The future IP PBX telephony system offers all of the essential features of telephony which is required by small business/enterprise users for their telecommunication/data needs.

Being more flexible, the IPX-1900 integrates up to 4 calls via the IPX-19FO (2\*FXO) / IPX-19FS (2\*FXS) / IPX-19SL (1FXO+1FXS) module to become a feature-rich PBX system that supports seamless communications between existing PSTN calls, analog, IP phones and SIP-based endpoints.

The IP PBX is the feature-rich SIP based IP PBX telephony system that integrates NAT functions to make it perfect for small business usage. The IP PBX integrates traditional PBX system functions and provides many advanced functions including voice mail to email, web management etc. Designed to run on a variety of VoIP applications, the IP PBX provide IP-based communications, voice conferencing, and call detailed record (CDR), centralized Auto-Attendant (AA), and Interactive Voice Responses (IVR). The IP PBX utilizes standard PSTN/GSM lines via the interfaces of FXO/GSM gateway to become a feature-rich IP PBX telephony system that supports seamless communications among existing local calls, SIP-based endpoints including low cost of long distance service, telephone number portability and one network for both voice and data.

With the IP PBX, standard SIP phones can be easily integrated in your office. Users may integrate PLANET IP Phone VIP-254T series, VIP-255PT/ 350PT/ 550PT, the VIP-156/ 157/ 158/ 161W of ATA (analog telephone adapter) series, the VIP-191/ 192 of Wi-Fi Phone, and Gateway series VIP-281/ 281GS/ 480 to build up the VoIP network deployment in minutes. Allowing distributed IP technology to meet traditional voice services with proactive managed interface, the IP PBX for enterprises in the daily business processes can make people more productive, more intelligent tasks and more customer satisfaction.

## IP PBX Features

- **PBX Features**

- Automated Attendant (AA)
- Interactive Voice Responses (IVR)
- Voicemail support (VM)
- Call Detailed Record (CDR)
- User Management via Web Browsers
- Display 300 Registered User's Status: Unregistered / Registered / On-Call
- Multiple Service Providers Lines / SIP Accounts (30)
- Simultaneous Trunk Links: 30 concurrent trunk calls
- SIP Trunk / Gateway Trunk / FXO Trunk Management
- Two-stage / One-stage call to Trunk by Trunk Group Configuration
- Build in 2 / 4 FXO PSTN trunk (Modular)
- By adding external FXO analog gateway to use Terminal trunk Line
- By adding external GSM VoIP gateway to use GSM trunk line
- Built-in SIP Proxy Server Following RFC-3261
- Support password authentication using MD5 digest and RFC2833 for DTMF Relay

- **Call Features**

- Call Forward Immediate
- Call Forward on Busy
- Call Forward on No Answer
- Call Pickup / Call Park
- Call / Pickup Group
- Caller ID / T.38 FoIP
- Music on Hold / Music on Transfer
- Call Transfer / Call Hold / Call Waiting
- Three-way conference with feature phones

- **Router Features**

- DHCP Server for LAN Users
- Packet / URL Filter Virtual Server / DMZ/ Port Trigger
- Static Route
- NAT/Bridge mode
- UPnP

## Package Content

The contents of your product should contain the following items:

Internet Telephony PBX system unit

Power Adapter

Quick Installation Guide

User's Manual CD

RJ-45 Cable

RS-232 Cable

Rack mount brackets

## Physical Details

The following figure illustrates the front/rear panel of IP PBX.

## Front Panel Indicators

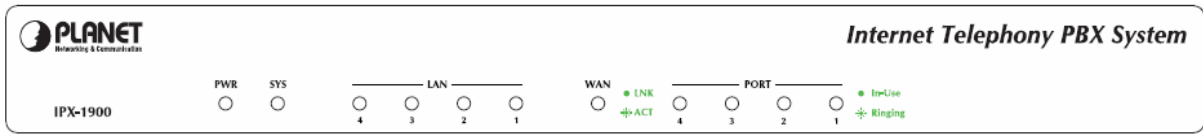


Figure 1-1. Front Panel of IPX-1900

| Front Panel LED     | State    | Descriptions                       |
|---------------------|----------|------------------------------------|
| <b>PWR</b>          | On       | PBX Power ON                       |
|                     | Off      | PBX Power OFF                      |
| <b>SYS</b>          | On       | System is booting                  |
|                     | Flashing | System is ready                    |
| <b>LAN</b>          | On       | LAN is connected successfully      |
|                     | Flashing | Data is transmitting               |
|                     | Off      | Ethernet not connected to PC       |
| <b>WAN</b>          | On       | PBX network connection established |
|                     | Flashing | Data traffic on cable network      |
|                     | Off      | Waiting for network connection     |
| <b>FXO/FXS Port</b> | On       | Port is busy                       |
|                     | Flashing | Ring indication. (FXS only)        |
|                     | Off      | Port is not enabled.               |

Table1-1. Front Panel description of IP PBX

## Rear Panel Indicators

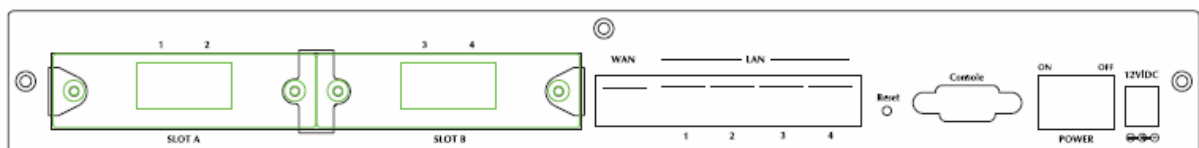


Figure 1-2. Rear Panel of IPX-1900

1      **12V DC**      12V DC Power input outlet

2      **Reset**      The reset button, when pressed, resets the IP PBX without the need to unplug the power cord.



|  |                                    |  |
|--|------------------------------------|--|
| 3  | <b>WAN</b>                         | The WAN port supports auto negotiating Fast Ethernet 10/100Base-TX networks. This port allows your IP PBX to be connected to an Internet Access device, e.g. router, cable modem, ADSL modem, through a CAT.5 twisted pair Ethernet cable.   |
| 4  | <b>LAN</b>                         | The LAN port allows your PC or Switch/Hub to be connected to the IP PBX through a CAT.5 twisted pair Ethernet cable.   |
|  | <b>Slost A/B</b>                   | <p>2 external slosts with compliance FXO/FXS module.</p> <p>FXO module is connects to PBX or CO line with RJ-11(Write) analog line. FXO port was connected to the extension port of a PBX or directly connected to a PSTN line of carrier</p> <p>FXS module is connects to Phone with RJ-11 (Black) analog line. FXS port was connected to your telephone sets, FAX, or Trunk Line of PBX.</p> |
| 5  | <b>FXS Port (Modular IPX-19FS)</b> | Connect to Phone with RJ-11 (Black) analog line. FXS port was connected to your telephone sets, FAX, or Trunk Line of PBX.   |
|  | <b>FXO Port (Modular IPX-19FO)</b> | Connect to PBX or CO line with RJ-11(Write) analog line. FXO port was connected to the extension port of a PBX or directly connected to a PSTN line of carrier   |
| <b>Note : IPX-19SL 2-Port PBX Life Line Module IPX-1900 (1FXO, 1FXS)</b> |                                    |  |

Table 1-2. Rear Panel description of IP PBX

# Chapter 2 Preparations & Installation

# 2

## Physical Installation Requirement

This chapter illustrates basic installation of IP PBX

- Network cables. Use standard 10/100Base-TX network (UTP) cables with RJ45 connectors.
- TCP/IP protocol must be installed on all PCs.

For Internet Access, an Internet Access account with an ISP, and either of a DSL or Cable modem (for WAN port usage)

## Administration Interface

---

PLANET IP PBX provides GUI (Web based, Graphical User Interface) for machine management and administration.

## Web configuration access:

To start IP PBX web configuration, you must have the web browsers installed on computer for management

- Microsoft Internet Explorer 6.0.0 or higher with Java support

Default LAN interface IP address of IP PBX is **192.168.0.1**. You may now open your web browser, and insert **192.168.0.1** in the address bar of your web browser to logon IP PBX web configuration page.

IP PBX will prompt for logon username/password, please enter: **admin / 123** to continue machine administration.



Figure 2-1. Input prompt

**Note**

In order to connect machine for administration, please locate your PC in the same network segment (192.168.0.x) of IP PBX. If you're not familiar with TCP/IP, please refer to related chapter on user's manual CD or consult your network administrator for proper network configurations.

## Network Interface quick configurations

Wizard is a tool to quickly setup IP PBX.

After pass the authentication, please click  for quick IPX PBX setup.

For most users, Internet access is the primary application. The IP PBX supports the WAN interface for Internet access and remote access. The following sections will explain more details of WAN Port Internet access and broadband access setup. When you click "Wizard Setup" the following setup page will be show.

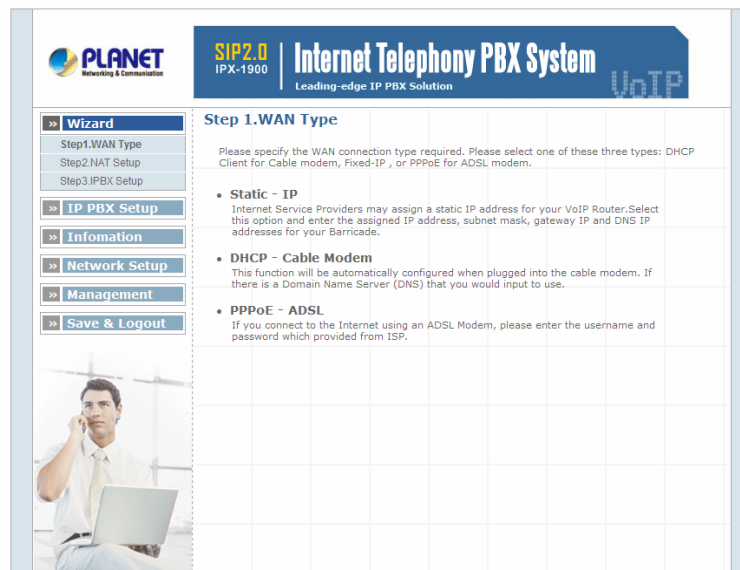


Figure 2-2. Wizard-Operating Mode settings

➤ **Step1. Wan Type**

### WAN Setting

|                           |   |
|---------------------------|---|
| <b>Static - IP</b>        | If you are a leased line user with a fixed IP address, fill out the following items with the information provided by your ISP.  |
| <b>DHCP – Cable Modem</b> | This function will be automatically configured when plugged into the cable modem. If there is a Domain Name Server (DNS) that you would input to use.   |
| <b>PPPoE - ADSL</b>       | Some ISP's provide DSL-based service and use PPPoE to establish communication link with end-users. If you are connected to the Internet through a DSL line, check with your ISP to see if they use PPPoE. If they do, you need to select this item. |

Table 2-1. WAN description of IP PBX

➤ Step2. NAT Setting

LAN IP Setting

|                                 |   |
|---------------------------------|---|
| <b>LAN IP Address</b>           | Private IP address for connecting to a local private network.<br>(Default: 192.168.0.1) |
| <b>Subnet Mask</b>              | Subnet mask for the local private network (Default: 255.255.255.0)                      |
| <b>DHCP Server</b>              | Enable to open LAN port DHCP server   |
| <b>Assigned DHCP IP Address</b> | DHCP server range from start IP to end IP   |
| <b>DHCP IP Lease Time</b>       | Client to ask DHCP server refresh time, range from 60 to 86400 seconds                  |

Table 2-2. LAN IP description of IP PBX



Figure 2-3. Wizard-NAT settings

➤ Step4. IPPBX Setup

The IP PBX allows multiple ITSP providers / User Extensions registration by simply fill-in the required information in the provided table.

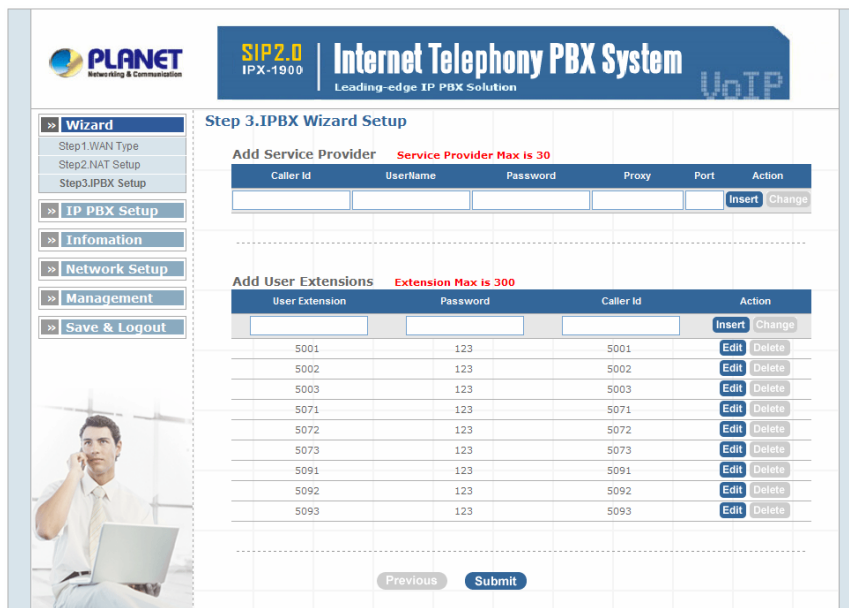


Figure 2-4. Wizard-IP PBX settings

*Service Provider:*

|                  |                                |
|------------------|--------------------------------|
| <b>Caller ID</b> | Service provider name          |
| <b>Username</b>  | Input Provider name            |
| <b>Password</b>  | Input Provider password        |
| <b>Host</b>      | Input Providers server address |
| <b>Port</b>      | Providers server port          |

Table 2-3. Service provider description

*User Extensions:*

|                       |                           |
|-----------------------|---------------------------|
| <b>User Extension</b> | Input Extension number    |
| <b>Password</b>       | Input Extension password  |
| <b>Caller Id</b>      | Input Extension caller id |

Table 2-4. User extension description

After completing the wizard setup, click “**Submit**” button, The IP PBX will save configuration and reboot IP PBX automatically, after 50 seconds, you can re-load setting page again.



Figure 2-5. Wizard-Rebooting

**Note**

Please consult your ISP personnel to obtain proper PPPoE/IP address related information, and input carefully. If Internet connection cannot be established, please check the physical connection or contact the ISP service staff for support information.

### RS-232 Console Port Configuration

RS-232 port (DB-9pin Female connector), Configure the COM Port Properties as following:  
 Bits per second: **57600**, Flow control: **None**

1. Connect Gateway RS-232 port to PC COM Port.
2. Power on gateway.
3. Open Terminal Program (ie. Windows XP Hyper Terminal)  
 [Start] → [Program file] → [Accessories] → [communications] → [Hyper Terminal]

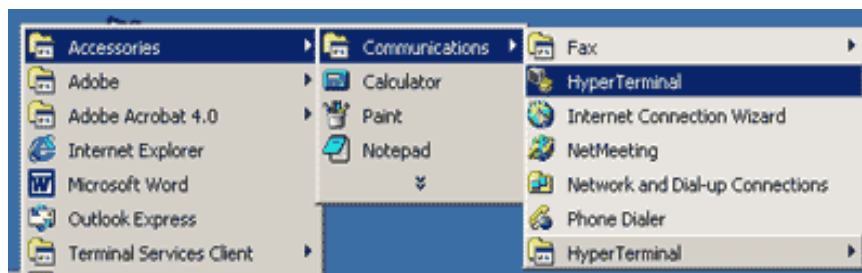


Figure 2-6. Windows Hyper Terminal Path

4. Create new connection. Select "COM" port that connect PC to gateway

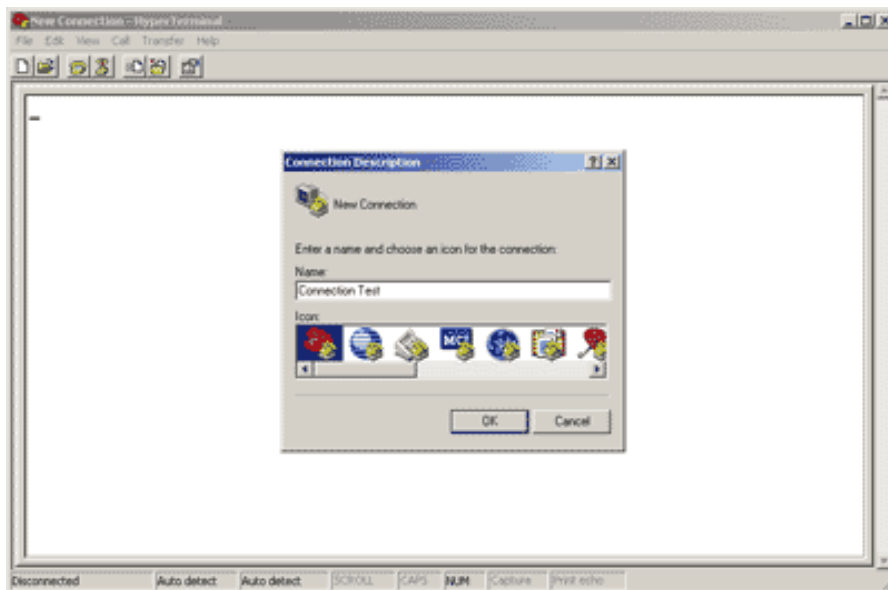


Figure 2-7. Hyper Terminal Screen

5. Make connection(Bits Pre second:**57600** Flow control: **None**)
6. Input "Enter" and Show Welcome display.
7. Login, input the Password to login.(Password as the same as Access, default is admin)
8. Setting Gateway Configure like telnet mode  
(Setting Table following as Telnet Setting table)

## SIP Basic Setting

SIP (Session Initiation Protocol) is a request-response protocol, dealing with requests from clients and responses from servers. Participants are identified by SIP URLs. Requests can be sent through any transport protocol. SIP determines the end system to be used for the session, the communication media and media parameters, and the called party's desire to engage in the communication. Once these are assured, SIP establishes call parameters at either end of the communication, and handles call transfer and termination.

### ➤ SIP Configuration

**IP PBX Setup**

- SIP Configuration**
  - UDP Port to bind to: 5060
  - Allow guest calls:
  - Allow Transfers:
  - Overlap dialing support:
  - Enable DNS SRV lookups (on outbound calls):
  - Min Registration/Subscription Time: 900
  - Max Registration/Subscription Time: 3600
  - Default Incoming/Outgoing Registration Time: 360
  - Min Roundtrip Time (T1 Time): 200
  - Language: English
  - Enable Relaxed DTMF:
  - Server UserAgent: PBX
  - DTMF Mode: rfc2833
- SIP Codecs**
  - Codec Priority 1: ulaw
  - Codec Priority 2: alaw
  - Codec Priority 3: ilbc
  - Codec Priority 4: gsm
  - Codec Priority 5: g723
  - Codec Priority 6: g726
  - Codec Priority 7: g729
- Outbound SIP Registrations**
  - Register TimeOut: 30
  - Register Attempts: 65535
- NAT Support**
  - Extern IP: [Empty]
  - Extern Refresh: 10
  - Local Network Address: [Empty]
  - NAT mode: yes
  - Allow RTP Reinvite: nonat

Submit Reset

Figure 3-1. SIP configuration settings

|   |  |
|---|--|
| <b>UDP Port to bind to</b>                        | This is SIP Local Port 5060, if you have any specific reason for change this port. |
| <b>Domain</b>                                     | IP PBX Server's IP address.  |
| <b>Allow guest calls</b>                          | Enable/Disable guest calls. Default is <i>Enable</i> . Default is all IP.          |
| <b>Overlap dialing support</b>                    | Enable/Disable overlaps dialing support. Default is <i>Enable</i> .                |
| <b>Allow Transfers</b>                            | Enable Call Transfers.   |
| <b>Enable DNS SRV lookups (on outbound calls)</b> | Enable DNS SRV lookups on calls  |



|  |  |
|--|--|
| <b>Max Registration Time</b>                       | Maximum duration of incoming registration/subscriptions we allow.<br>Default 3600 seconds. |
| <b>Min Registration Time</b>                       | Minimum duration of registrations/subscriptions. Default 60 seconds                        |
| <b>Default Incoming/Outgoing Registration Time</b> | Default duration (in seconds) of incoming / outgoing registration.                         |
| <b>Min RoundtripTime (T1 Time)</b>                 | Minimum roundtrip time for messages to monitored hosts, Defaults to 200 ms                 |
| <b>Language</b>                                    | Set default language for all users.  |
| <b>Enable Relaxed DTMF</b>                         | Use relaxed DTMF detection. Default is <i>Disable</i> .                                    |
| <b>Server UserAgent</b>                            | Enable you to change the trunk User agent string, Default is <i>PBX</i> .                  |
| <b>DTMF Mode</b>                                   | Set default DTMF mode for sending DTMF. Default: <i>rfc2833</i> .                          |

Table 3-1. SIP configuration description

### ➤ SIP Codecs

The Codec is used to compress the voice signal into data packets. Each Codec has different bandwidth requirement. There are 7 kinds of codec. To determine the priority, selects one codec algorithm from the pull-down menus individually.

• **SIP Codecs**

|                  |      |
|------------------|------|
| Codec Priority 1 | ulaw |
| Codec Priority 2 | alaw |
| Codec Priority 3 | gsm  |
| Codec Priority 4 | ilbc |
| Codec Priority 5 | g726 |
| Codec Priority 6 | g729 |
| Codec Priority 7 | g723 |

Figure 3-2. SIP codecs settings

### ➤ Outbound SIP Registrations

• **Outbound SIP Registrations**

|                   |       |
|-------------------|-------|
| Register TimeOut  | 30    |
| Register Attempts | 65535 |

Figure 3-3. Outbound SIP Registrations settings

|                          |  |
|--------------------------|--|
| <b>Register TimeOut</b>  | Retry registration calls at every 'x' seconds (default 20).              |
| <b>Register Attempts</b> | Number of registration attempts before we give up; 0 = continue forever. |

Table 3-2. Outbound DIP registration description

### ➤ NAT Support

The *externip*, *externhost* and *localnet* settings are used if you use IP PBX behind a NAT device to communicate with services on the outside.

• **NAT Support**

Extern IP

Extern Refresh

Local Network Address

NAT mode

Allow RTP Reinvite

Figure 3-4. NAT support settings

|                              |  |
|------------------------------|--|
| <b>Extern IP</b>             | Address that we're going to put in outbound SIP messages if we're behind a NAT.  |
| <b>Extern Host</b>           | Alternatively you can specify an external host, and <b>IP PBX</b> will perform DNS queries periodically. Not recommended for production environments! Use <i>externip</i> instead.   |
| <b>Extern Refresh</b>        | How often to refresh <i>externhost</i> if used. You may specify a local network in the field below.  |
| <b>Local Network Address</b> | <p>localnet=192.168.0.0/255.255.0.0; All RFC 1918 addresses are local networks</p> <p>localnet=11.0.0.0/255.0.0.0 ; Also RFC1918</p> <p>localnet=171.16.0.0/12 ; Another RFC1918 with CIDR notation</p> <p>localnet=168.254.0.0/255.255.0.0; Zero conf local network</p> |

Table 3-3. NAT support description

## User Extensions Setup

### ➤ Extension List

#### IP PBX Setup

##### • User Extensions Setting

Add New User Extensions

**Extensions List**    **Extension Max is 300**

| User Extension | Password | Caller Id | Action   |
|----------------|----------|-----------|--|
| 100            | 100      | 100       | <input type="button" value="Advance"/> <input type="button" value="Delete"/> |
| 101            | 101      | 101       | <input type="button" value="Advance"/> <input type="button" value="Delete"/> |
| 102            | 102      | 102       | <input type="button" value="Advance"/> <input type="button" value="Delete"/> |

Figure 3-5. User extension settings

|                |  |
|----------------|--|
| <b>Advance</b> | Click <input type="button" value="Advance"/> to edit an extension other setting. |
| <b>Delete</b>  | Click <input type="button" value="Delete"/> to delete an extension.              |

Table 3-5. User extension description

### ➤ Advance Setup

User Extension

Password

Caller Id

• **Call group / Pickup group select**

Call Group  1  2  3  4  5  6  7  8  9  10

Pickup Group  1  2  3  4  5  6  7  8  9  10

• **Call forward option**

DND (Forward to Voicemail)

Call Forward Always

Call Forward on Busy

Call Forward on No Answer  IF Time out  Sec

• **Voice mail**

Voicemail  Enable

Voicemail name

Voicemail password

E-mail address

Send voice to mail

Delete voicemail after send

Figure 3-6. Extension advance settings

|                       |                           |
|-----------------------|---------------------------|
| <b>User Extension</b> | Input Extension number    |
| <b>Password</b>       | Input Extension password  |
| <b>Caller Id</b>      | Input Extension caller id |

Table 3-5. Extension advance description

- **Call group / Pickup group select :**

|                     |  |
|---------------------|--|
| <b>Call Group</b>   | An Extension can set single/multiple call group(s) 1-10 id   |
| <b>Pickup Group</b> | An Extension can set single/multiple Pickup group(s) 1-10 id |

Table 3-6. Call / Pickup group description

- **Call forward option :**

|                                   |  |
|-----------------------------------|--|
| <b>DND(Forward to Voice mail)</b> | Enable / Disable forward to voice mail.                    |
| <b>Call forward always</b>        | Input forward always number                                |
| <b>Call forward on busy</b>       | Input forward on busy number                               |
| <b>Call forward no answer</b>     | Input forward no answer number                             |
| <b>If time out "XXX" sec</b>      | This is the maximum number allowed no answer time out used |

Table 3-7. Call forward description

- **Voice mail :**

|                                     |                                      |
|-------------------------------------|--------------------------------------|
| <b>Voice mail select</b>            | Enable / Disable voice mail function |
| <b>Voice mail name</b>              | Input voice mail name                |
| <b>E-Mail address</b>               | Input E-mail address                 |
| <b>Send voice to mail</b>           | Enable / Disable send voice to mail  |
| <b>Delete voice mail after send</b> | Save / Delete voice mail after send  |

Table 3-8. Voice mail description

## Trunk Management – SIP Trunk

**Services Providers Setting** allows IP PBX register to different SIP systems and ITSP Services (SIP Trunk).

On the "**Providers List**", you can press "**Add**" to add a new service provider or press "**Advance**" to edit the information of specific Service Provider or press "**Delete**" to delete the specified service provider information. **Maximum 10 registrations on Server Provider list**

- **Server Providers Setting**

Add New Service Providers

| Providers List |            | Service Provider Max is 30 |                |      |  |                                       |  |
|----------------|------------|----------------------------|----------------|------|--|---------------------------------------|--|
| Caller Id      | UserName   | Password                   | Proxy          | Port | Action                                 |                                       |  |
| 0949103031     | 0949103031 | 0949103031                 | ITSP.SIP.Trunk | 5060 | <input type="button" value="Advance"/> | <input type="button" value="Delete"/> |  |
| 0949103032     | 0949103032 | 0949103032                 | ITSP.SIP.Trunk | 5060 | <input type="button" value="Advance"/> | <input type="button" value="Delete"/> |  |
| 0949103033     | 0949103033 | 0949103033                 | ITSP.SIP.Trunk | 5060 | <input type="button" value="Advance"/> | <input type="button" value="Delete"/> |  |
| 0949103034     | 0949103034 | 0949103034                 | ITSP.SIP.Trunk | 5060 | <input type="button" value="Advance"/> | <input type="button" value="Delete"/> |  |

Figure 3-7. Server Providers Setting

➤ **Add New Service Providers**

Step 1. Press “**Add**” button to add an new service provider information.



Figure 3-8. Add new service providers

Step 2. Fill in the required information in Service Provider Advance Setup page.

**Service Provider Advance Setup**

Caller id

User name

Password

Register server address

Port

Outbound server address

Port

- **On duty / Off duty voice select**

Enable
- **Incoming call attendant**

- Dial\_300\_Ring\_Sales\_team
  - Dial\_400\_Ring\_RD\_Team
  - Dial\_500\_Ring\_Group\_1\_RR
  - Dial\_600\_Ring\_Group\_2\_Random
  - Dial\_9\_to\_Ring\_Operator

Figure 3-9. Service provider advance setup

|                                 |  |
|---------------------------------|--|
| <b>Caller id</b>                | The caller ID will be sent between the callee and caller and will be displayed on SIP device LCD panel for identification. |
| <b>User name</b>                | User name for authentication   |
| <b>Password</b>                 | User password for authentication   |
| <b>Registrar Server Address</b> | Assigns the SIP Register Server's IP address / Domain name   |

|  |  |
|--|--|
| <b>Registrar Server Port</b>           | Port number of SIP Register Server. Assigns a value from 1024 to 65535, the common default SIP port is 5060.   |
| <b>Outbound Proxy Address</b>          | Outbound Proxy server's IP address / Domain name. Assign a server's IP / Domain name which is in charge of call-out service.   |
| <b>Outbound Proxy Port</b>             | Port number of Outbound Proxy Server. Assign a number from 1024 to 65535, the common default SIP port setting is 5060.   |
| <b>On duty / Off duty voice select</b> | When the service provider registered to PBX, incoming calls will hear On / Off duty voice, default settings are "Enable". (For how to record On/Off duty voice please refer " <a href="#">Record Voice Menu</a> ").  |
| <b>Incoming call attendant</b>         | <p>Choose a pre-set hunt groups, default is "blank". There are 3 types of combination setup.</p> <ol style="list-style-type: none"> <li>1. If On duty/ Off duty voice is "Enabled", after caller hear the voice menu one time, the call will be transferred to the pre-defined group for call attendant.</li> <li>2. If On duty/ Off duty voice is "Disabled", caller will not hear the voice menu, the call will be directly transferred to the pre-defined group for call attendant.</li> <li>3. If On duty/Off duty voice is "Enabled" and no group is pre-defined, voice menu will repeat itself until incoming caller respond to it.</li> </ol> <p>(For how to make hunt group please refer "<a href="#">Hunt Group Setting</a>")</p> |

Table 3-9. Service provider advance setup description

## Trunk Management – FXO Trunk

**FXO** (Foreign Exchange Office) **Trunk Setting**, can be Connected to PBX or CO line with RJ-11 analog line. FXO port can be connected to the extension port of a PBX or directly connected to a PSTN line of carrier

• **FXO List**

| Port Num | Call id | Action                  |
|----------|---------|-------------------------|
| 1        | 100     | <a href="#">Advance</a> |
| 2        | 200     | <a href="#">Advance</a> |
| 3        | 300     | <a href="#">Advance</a> |
| 4        | 400     | <a href="#">Advance</a> |

Figure 3-10. FXO Trunk setting

Press “Advance” to Edit an FXO Prot as below

• **FXO List**

| Port Num | Callid | Action  |
|----------|--------|---------|
| 1        | 100    | Advance |
| 2        | 200    | Advance |

Figure 3-11. FXO Trunk list

### FXO Advance Setup

Port Num

Caller id

• **DID**

▼

Figure 3-12. FXO Advance setting

|                  |   |
|------------------|---|
| <b>Port Num</b>  | Analog Port Number (System Define)  |
| <b>Caller id</b> | The caller ID will be sent between the callee and caller and will be displayed on SIP device LCD panel for identification.                |
| <b>DID</b>       | Any calls originating from the registered ITSP to IP PBX will go into the auto-attendant or direct to the selected user or hunting group. |

Table 3-13. Trunk Management - FXO Trunk setup description

## Trunk Management – Gateway Trunk

**Gateway Trunk Setting** allows IP PBX makes VoIP calls to external Gateway by peer-to-peer mode. If the FXO ports of external Gateway have connected with PSTN lines, the user can make outgoing PSTN calls via external Gateway by this function.

• **Gateway Trunk Setting**

Add Gateway trunk Gateway trunk Max is 10

| IP                   | Port                 | Action        |
|----------------------|----------------------|---------------|
| <input type="text"/> | <input type="text"/> | Insert Change |

Figure 3-13. Gateway Trunk setting

|             |  |
|-------------|--|
| <b>IP</b>   | Destination IP Address is the IP address of the destination Gateway that owns this phone number. |
| <b>Port</b> | Port is port of the destination Gateway use. (Default is 5060)                                   |

Table 3-11. Gateway Trunk setting description

## Trunk Management – Trunk Group

**Trunk Group** is defines the leading digit of the call out dialing number through SIP / FXO / Gateway Trunks of the same type between two given points. The IP PBX will in according to the leading digit to determine to use which SIP or Gateway Trunks for outgoing route.

• **Trunk Group Setting**

Add New Grop Name

**Group Name List** Trunk Group Max is 10

| Group Name | Group Number | Number             | Action           |
|------------|--------------|--------------------|------------------|
| External-A | 0            | proxy0949103031,pr | more Edit Delete |
| External-B | 85           | proxy0949103033,pr | more Edit Delete |

Figure 3-14. Trunk Group setting - 1

Press “more” to show the Service Provider Number under the group.

**Group Name List** Trunk Group Max is 10

| Group Name | Group Number | Number             | Action           |
|------------|--------------|--------------------|------------------|
| External-A | 0            | proxy0949103031,pr | more Edit Delete |
| External-B | 85           | proxy0949103033,pr | more Edit Delete |

Figure 3-15. Trunk Group setting - 2



Figure 3-16. Trunk Group more information



➤ **Add New Trunk Group**

Step 1. Press “Add” button to add an new Group Name information.



Figure 3-17. Add an new Group Name

Step 2. Fill in the required information in Trunk Group Setup page.

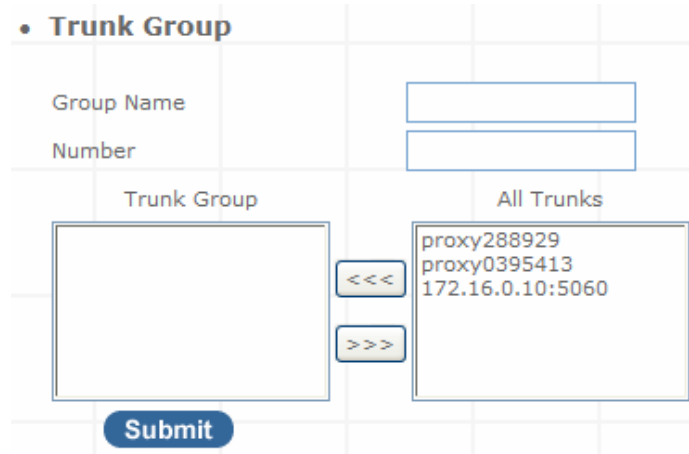


Figure 3-18. Trunk Group Setup


|                    |  |
|--------------------|--|
| <b>Group Name</b>  | The Trunk Group name   |
| <b>Number</b>      | If the leading digits are match with this number, IP PBX will delete this number and send out the following digits.  |
| <b>All Trunk</b>   | It will show all the available SIP Trunks and Gateway Trunks for selection.  |
| <b>Trunk Group</b> | Choose the trunk at All Trunk box and press the  button to move the activated trunk to Trunk Group box. |

Table 3-12. Trunk Group setting description

➤ **Scenario Sample**

IP PBX has created two different SIP trunks and one Gateway trunk for outgoing trunks.

| Group Name List |              | Trunk Group Max is 10 |        |        |  |
|-----------------|--------------|-----------------------|--------|--------|--|
| Group Name      | Group Number | Number                | Action |        |  |
| SIP_Trunk_1     | 81           | proxy288929           | Edit   | Delete |  |
| SIP_Trunk_2     | 82           | proxy0395413          | Edit   | Delete |  |
| FXO_Gateway     | 0            | 172.16.0.10:5060      | Edit   | Delete |  |

Figure 3-19. Trunk Group sample setting

**One-Stage Call:**

1. If user dials **81**123456, this call will hunt **SIP\_Trunk\_1** and send 123456 to call out.
2. If user dials **82**234567, this call will hunt **SIP\_Trunk\_2** and send 234567 to call out.
3. If user dials **0**345678, this call will hunt **FXO\_Gateway** and send 345678 to call out.

**Two-Stage Call:**

1. If user dials **81** and hear the dial tone, then dial 123456. This call will hunt **SIP\_Trunk\_1** and send 123456 to call out.
2. If user dials **82** and hear the dial tone, then dial 234567. This call will hunt **SIP\_Trunk\_2** and send 234567 to call out.
3. If user dials **0** and hear the dial tone, then dial 345678. This call will hunt **FXO\_Gateway** and send 345678 to call out.

**Trunk Management – Dialing Rules**

When want to make VoIP calls through the above SIP Trunk or Gateway Trunk, the user can use the “Dialing Rules” function to simplify the dialing number.

In the “Dialing Rules” settings: Maximum Entries: **100 records**

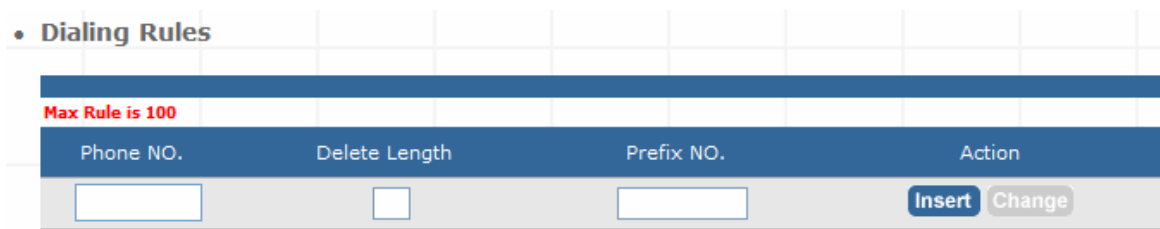


Figure 3-20. Dialing Rules settings

|                      |  |
|----------------------|--|
| <b>Phone NO</b>      | <p>Phone Number. is the leading digit of the call out dialing number.</p> <p>Phone NO Pattern: “N” single digit from 2 to 9.</p> <p>“z” single digit from 1 to 9.</p> <p>“X” single digit from 0 to 9.</p> <p>“.” unlimited length of digit.</p> |
| <b>Delete Length</b> | Delete Length is the number of digits that will be stripped from beginning of the dialed number.   |
| <b>Prefix NO</b>     | Prefix NO is the digits that will be added to the beginning of the dialed number.  |

Table 3-13. Dialing Rules description

➤ Scenario Sample

**Example I: Phone Pattern**

| Max Rule is 100      |                      |                      |   |
|----------------------|----------------------|----------------------|---|
| Phone NO.            | Delete Length        | Prefix NO.           | Action  |
| <input type="text"/> | <input type="text"/> | <input type="text"/> | <input type="button" value="Insert"/> <input type="button" value="Change"/> |
| 1N                   | 0                    |                      | <input type="button" value="Edit"/> <input type="button" value="Delete"/>   |
| 2Z                   | 0                    |                      | <input type="button" value="Edit"/> <input type="button" value="Delete"/>   |
| 3X                   | 0                    |                      | <input type="button" value="Edit"/> <input type="button" value="Delete"/>   |
| 4[1,2,8-9]           | 0                    |                      | <input type="button" value="Edit"/> <input type="button" value="Delete"/>   |
| 5.                   | 0                    |                      | <input type="button" value="Edit"/> <input type="button" value="Delete"/>   |

Figure 3-21. Dialing Rules list - 1

**1. 1N (N: single digit from 2~9, excl. 0 and 1)**

In this example, when the caller (User/IP-Phone) dial the number range from “12 to 19”, iPBX / WiPBX will send the call to SIP Proxy Server

**2. 2Z (Z: single digit from 1~9, excl. 0)**

In this example, when the caller (User/IP-Phone) dial the number range from “21 to 29”, iPBX / WiPBX will send the call to SIP Proxy Server

**3. 3X (X: single digit from 0~9)**

In this example, when the caller (User/IP-Phone) dial the number range from “30 to 39”, iPBX / WiPBX will send the call to SIP Proxy Server

**4. 4[1,2,8-9]**

In this example, when the caller (User/IP-Phone) dial the number “41, 42, 48 or 49”, iPBX / WiPBX will send the call to SIP Proxy Server

**5. 5. (dot)**

In this example, when the caller (User/IP-Phone) dial the any length of number with “5” as it beginning digit number, iPBX / WiPBX will send the call to SIP Proxy Server

**Example II: Speed Dial to Registered server.**

| Max Rule is 100      |                      |                      |   |
|----------------------|----------------------|----------------------|---|
| Phone NO.            | Delete Length        | Prefix NO.           | Action  |
| <input type="text"/> | <input type="text"/> | <input type="text"/> | <input type="button" value="Insert"/> <input type="button" value="Change"/> |
| 555                  | 3                    | 0943123123           | <input type="button" value="Edit"/> <input type="button" value="Delete"/>   |
| 0943123123           | 0                    |                      | <input type="button" value="Edit"/> <input type="button" value="Delete"/>   |
| 43123123             | 0                    | 09                   | <input type="button" value="Edit"/> <input type="button" value="Delete"/>   |

Figure 3-22. Dialing Rules list - 2

1. When User / IP-Phone call “555”, iPBX will automatically dial “0943123123” to SIP Proxy Server.

2. When User / IP-Phone call “0943123123”, iPBX will automatically dial “0943123123” to SIP Proxy Server.
3. When User / IP-Phone call “43123123”, iPBX will automatically dial “0943123123” to SIP Proxy Server.

**How to setting call out by SIP trunk / FXO (PSTN)trunk / Gateway trunk ?**

**Step 1. Create SIP Trunk or Gateway Trunk**

1.1 For example create 4 SIP Trunk accounts to register ITSP.

• **Server Providers Setting**

Add New Service Providers **Add**

**Providers List** Service Provider Max is 10

| Caller Id  | Username   | Password   | Proxy          | Port | Action         |        |
|------------|------------|------------|----------------|------|----------------|--------|
| 0949103031 | 0949103031 | 0949103031 | ITSP.SIP.Trunk | 5060 | <b>Advance</b> | Delete |
| 0949103032 | 0949103032 | 0949103032 | ITSP.SIP.Trunk | 5060 | <b>Advance</b> | Delete |
| 0949103033 | 0949103033 | 0949103033 | ITSP.SIP.Trunk | 5060 | <b>Advance</b> | Delete |
| 0949103034 | 0949103034 | 0949103034 | ITSP.SIP.Trunk | 5060 | <b>Advance</b> | Delete |

Figure 3-23. SIP provider list

1.2 For example create 4 Gateway Trunk IP Address and Port

**Add Gateway trunk** Gateway trunk Max is 10

| IP                   | Port                 | Action        |        |
|----------------------|----------------------|---------------|--------|
| <input type="text"/> | <input type="text"/> | <b>Insert</b> | Change |
| 192.168.1.80         | 5060                 | <b>Edit</b>   | Delete |
| 192.168.1.81         | 5060                 | <b>Edit</b>   | Delete |
| 192.168.1.82         | 5060                 | <b>Edit</b>   | Delete |
| 192.168.1.83         | 5060                 | <b>Edit</b>   | Delete |

Figure 3-24. Gateway trunk list

**Step 2. Create SIP Trunk Group Number or Gateway Trunk Group Number**

2.1 Group number “001” means you want Group these 4 SIP Trunk (SIP\_Trunk\_1)



## IP PBX Setup

### • Trunk Group

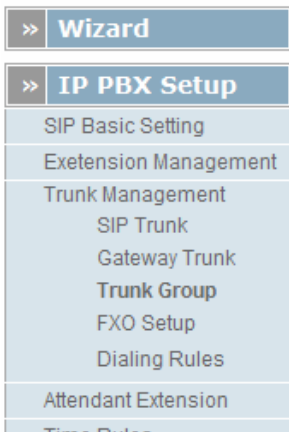
Group Name   
 Number

Trunk Group

All Trunks  
 proxy0949103031  
 proxy0949103032  
 proxy0949103033  
 proxy0949103034  
 192.168.1.80:5060  
 192.168.1.81:5060  
 192.168.1.82:5060

Figure 3-25 IP PBX Trunk group - 1

2.2 Group number "002" means you want Group these 4 Gateway Trunks (GW\_Trunk\_A)



### • Trunk Group

Group Name   
 Number

Trunk Group

All Trunks  
 proxy0949103032  
 proxy0949103033  
 proxy0949103034  
 192.168.1.80:5060  
 192.168.1.81:5060  
 192.168.1.82:5060  
 192.168.1.83:5060

Figure 3-26 IP PBX Trunk group – 2

Group number "003" means you want Group these 4 FXO (PSTN) Trunk (PSTN\_Trunk\_C)



## IP PBX Setup

### • Trunk Group

Group Name   
 Number

Trunk Group

All Trunks  
 10.10.10.123:8888  
 10.10.10.147:9999  
 10.10.10.159:7777  
 FXO\_Port\_1  
 FXO\_Port\_2  
 FXO\_Port\_3  
 FXO\_Port\_4

Figure 3-27 IP PBX Trunk group - 3

**Step 3.** Start to call by SIP trunk / FXO (PSTN) Trunk / Gateway trunk

(一)One-Stage call by SIP trunk

Example : Call out and hunt “SIP\_Trunk\_1” SIP Trunk  
Pickup the IPPHONE  
Dial “001xxxxxxxxxxxxxxxxxxxxx”  
This call will hunt “SIP\_Trunk\_1” SIP Trunk 1 – 4 to call out

(二)Two-Stage call by SIP trunk

Example : Call out and hunt “SIP\_Trunk\_1” SIP Trunk  
Pickup the IPPHONE  
Dial “001”  
Hear “Dial tone”  
Dial your number “xxxxxxxxxxxxxxxxxxxxx”  
This call will hunt “SIP\_Trunk\_1” SIP Trunk 1 – 4 to call out

(三) One-Stage call by Gateway trunk

Example : Call out and hunt “GW\_Trunk\_A” Gateway Trunk  
Pickup the IPPHON

## Attendant Management

**Attendant Number** in IP PBX system helps you to configure internal dial plan for extension setup. It can allow more calls to be handled by IVR from Gateway's FXO, and FXS port. **Attendant Extension Provide 10 sets of IVR.**

• **Attendant Extension**

|                               |                      |
|-------------------------------|----------------------|
| Attendant Extension Number 1  | <input type="text"/> |
| Attendant Extension Number 2  | <input type="text"/> |
| Attendant Extension Number 3  | <input type="text"/> |
| Attendant Extension Number 4  | <input type="text"/> |
| Attendant Extension Number 5  | <input type="text"/> |
| Attendant Extension Number 6  | <input type="text"/> |
| Attendant Extension Number 7  | <input type="text"/> |
| Attendant Extension Number 8  | <input type="text"/> |
| Attendant Extension Number 9  | <input type="text"/> |
| Attendant Extension Number 10 | <input type="text"/> |

Figure 3-28. Attendant extension settings

The IP PBX will handle incoming *Caller ID* and show to remote / local registered IP-Phone.

**Note**

If your Gateway can bypass Mobile/Analog Phone number, The IP PBX will handle incoming caller ID and show to remote / local registered IP-Phone.

➤ Sample:

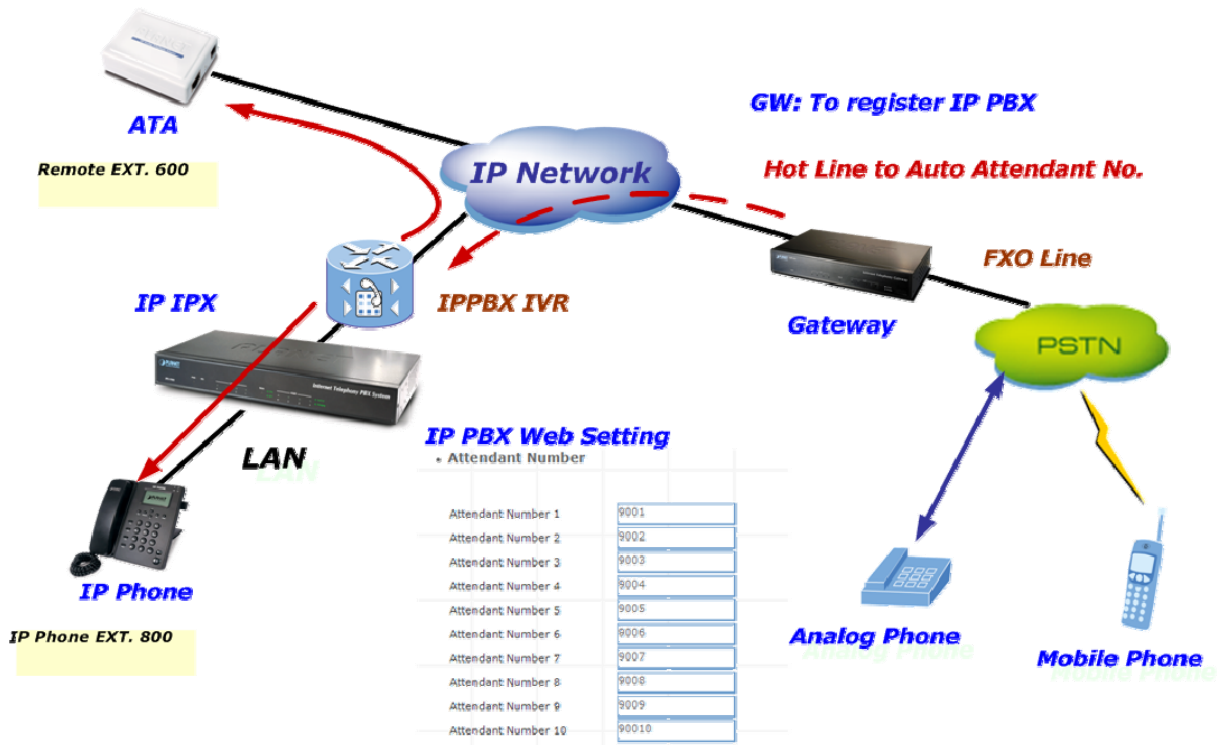


Figure 3-29. Auto-attendant sample

## Attendant Message

The Attendant Message on the IPBX systems, it is can auto-answer attendant message setting on the attendant time, IPBX message can play voice to SIP Trunk and Gateway's FXO, and FXS port.

IP PBX Setup

- Attendant Message

| Message | Service Digit | Action  |
|---------|---------------|---------|
| onduty  |               | Advance |
| offduty |               | Advance |
| custom1 |               | Advance |
| custom2 |               | Advance |
| custom3 |               | Advance |

Figure 3-30. Auto-attendant message

## Attendant Message Advance Setting :

- Attendant Message Advance

G.711 (.gsm)  Browse...

Service Number

Ext/Hunt Group  ▾

Figure 3-31. Auto-attendant message advance setting

|                       |  |
|-----------------------|--|
| <b>G.11( .gsm )</b>   | You can upload gsm format voice file to IPBX.  |
| <b>Service Number</b> | Associate a dial number with a call group voice instruction to instruct incoming calls |
| <b>Ext/Hunt Group</b> | Specificity the call group hunting.  |

Table 3-14. Attendant Messages setup description

## Attendant Time

Defined **Attendant Time** on the IPBX systems, it is can answer attendant message to match on the attendant time.

IP PBX Setup

- Attendant Time

| Time        | Weekdays | Month   | Date | Message | Action                                     |
|-------------|----------|---------|------|---------|--|
| 08:30-17:30 | Mon-Fri  | Jan-Dec | 1-31 | onduty  | <a href="#">Edit</a> <a href="#">Reset</a> |
| 00:00-23:59 | Mon-Sun  | Jan-Dec | 1-31 | offduty | <a href="#">Edit</a> <a href="#">Reset</a> |
|             |          |         |      |         | <a href="#">Edit</a> <a href="#">Reset</a> |
|             |          |         |      |         | <a href="#">Edit</a> <a href="#">Reset</a> |
|             |          |         |      |         | <a href="#">Edit</a> <a href="#">Reset</a> |

Figure 3-32. Auto-attendant time list

### Attendant Time Advance Setting :

IP PBX Setup

- Attendant Time

Time Setting

Start Time  :

End Time  :

Day Setting

Start Day  End Day

Month Setting

Start Month  End Month

Date Setting

Start Date  End Date

Message

choise

Auto Attendant Service method  Ext/Hunt group

Figure 3-33. Auto-attendant time setting



|                                      |  |
|--------------------------------------|--|
| <b>Day Setting</b>                   | Defined Start Day / End Day.   |
| <b>Time Setting</b>                  | Defined Start Time / End Time.   |
| <b>Month Setting:</b>                | Defined Start Month / End Month .  |
| <b>Date Setting</b>                  | Defined Start Date / End Date.   |
| <b>Message</b>                       | Select play voice message.   |
| <b>Auto Attendant Service Method</b> | Defined the Auto Attendant Service Method.<br>a). Always play attendant messages<br>b). Always goto EXT/HuntGroup<br>c). User try error goto EXT/HuntGroup |

Table 3-15. Attendant Time setup description

## Record Auto Attendant

Allow you to record On / Off duty voice menu over a register ip-phone.

### • Record Voice Menu

|  |  |         |
|--|--|---------|
| Record voice   | <input type="text" value="*9"/>  | Ex: *9  |
| Play voice   | <input type="text" value="*10"/>   | Ex: *10 |
| Default voice  | <input type="text" value="*11"/>   | Ex: *11 |
| Password   | <input type="text" value="1234"/>  |         |
| <input type="button" value="Submit"/> <input type="button" value="Reset"/> |  |         |
| Answer Extension   | <input type="text"/>   |         |
| On - Off Duty  | <input type="button" value="Record"/> <input type="button" value="Play"/> <input type="button" value="Default"/> |         |

Figure 3-34. Record voice menu settings

Pick up your register IP-Phone handset and press “function key + password “ to enter into voice menu guide.

|                      |   |
|----------------------|---|
| <b>Record voice</b>  | Record your voice menu , Default is *9                    |
| <b>Play voice</b>    | Play your record voice menu ,Default is *10               |
| <b>Default voice</b> | To set default voice menu, Default is *11                 |
| <b>Password</b>      | This is record / default voice password , Default is 1234 |

Table 3-16. Record voice menu description

Answer Extension enable you to record the customized voice menu remotely from a registered IP-Phone.

|                         |   |
|-------------------------|---|
| <b>Answer extension</b> | Call from registered IP-Phone to record the voice menu. |
|-------------------------|---|

Table 3-17. Answer extension description

## Upload Voice File

This page allows transfer music on hold file or PBX Voice Files from your PC to IPBX.

The screenshot shows a web interface for uploading a music on-hold voice file. It features a title "IP PBX Setup" and a sub-section "Upload Music Onhold voice file". Below this, there is a text input field, a "Browse..." button, and an "Upload" button. A note below the buttons states: "Please upload .gsm file or .wav file( 8KHz, 16bit, Mono, 15kb/sec)".

Figure 3-35. On-hold voice uploads

Click **Browse** and select your file, then click **upload** to finish.

The screenshot shows a web interface for uploading a PBX voice file. It features a title "IP PBX Setup" and a sub-section "Upload PBX voice file". Below this, there are three input fields: "Answer Extension", "Sound File", and another empty field. There are also three buttons: "Play", "Browse...", and "Upload". A note below the buttons states: "Please upload .gsm file or .g729 file".

Figure 3-36. Answer extension voice upload

|                         |  |
|-------------------------|--|
| <b>Answer extension</b> | Call from registered IP-Phone to record the voice menu.                    |
| <b>Sound File</b>       | Select G.711 Voice file, then click <b>play</b> to your registered device. |

Table 3-18. Voice upload setup description

## Call Parking

Build a calling rule for IP Phone to park the calls during the phone conversation.

The screenshot shows a web interface for configuring call parking settings. It features a title "IP PBX Setup" and a sub-section "Call Parking". Below this, there are three input fields: "Extension to Dial for Parking Calls" (value: 700), "What extension to park calls on" (value: 701-720, with a note "Ex:100-150"), and "Number of seconds a call can be parked for" (value: 30). At the bottom, there are two buttons: "Submit" and "Reset".

Figure 3-37. Call parking settings

|   |  |
|---|--|
| <b>Extension to Dial for Parking Calls</b>        | Set an extension number to dial when need to park the call. Default number is 700. |
| <b>What extension to park calls on</b>            | Set the Extension range for call parking retrieving. (Example: '701-720').         |
| <b>Number of seconds a call can be parked for</b> | Set allowed parking time for the parking call. Default is 30/sec.                  |
| <b>Pickup Extension</b>                           | Set up a number for IP Phone to retrieve back the call. Default is *8.             |
| <b>Timeout for answer on attended transfer</b>    | Set a timeout value for answer the transferred call. Default is 30 Sec.            |

Table 3-20. Call parking description

## General Setting

IP Phone or sip device extension connected IP PBX, extension have call forward / transfer and pickup / voice key ...

### ➤ Call Forward Key

| • Call Forward Key     |         |    |              |
|------------------------|---------|----|--------------|
| Call Forward Always    | Enable  | *1 | (default:*1) |
|                        | Disable | *2 | (default:*2) |
| Call Forward Busy      | Enable  | *3 | (default:*3) |
|                        | Disable | *4 | (default:*4) |
| Call Forward No Answer | Enable  | *5 | (default:*5) |
|                        | Disable | *6 | (default:*6) |

Figure 3-38. Call forward key settings

|                               |  |
|-------------------------------|--|
| <b>Call forward always</b>    | <b>Enable:</b> Dial the “ *1 + number ” enable call forward always function<br><b>Disable:</b> Dial the “ * 2 ” disable call forward always function       |
| <b>Call forward Busy</b>      | <b>Enable:</b> Dial the “ *3 + number ” enable call forward busy function<br><b>Disable:</b> Dial the “ * 4 ” disable call forward busy function           |
| <b>Call forward no answer</b> | <b>Enable:</b> Dial the “ *5 + number ” enable call forward no answer function<br><b>Disable:</b> Dial the “ * 6 ” disable call forward no answer function |

Table 3-21. Call forward description

➤ Transfer Feature

• **Transfer Feature**

|                        |                                 |              |
|------------------------|---------------------------------|--------------|
| Attendant Transfer     | <input type="text" value="#1"/> | (default:#1) |
| Blind Transfer         | <input type="text" value="#2"/> | (default:#2) |
| Transfer Digit Timeout | <input type="text" value="30"/> | (default:30) |

Figure 3-39. Transfer feature settings

|                                |   |
|--------------------------------|---|
| <b>Attendant Transfer</b>      | When you attendant transfer fail, you can definition other transfer number  |
| <b>Blind Transfer</b>          | Blind Transfer , When Ex: Ext 100 call Ext 200, Ext 200 blind transfer to Ext 300 , Ignore the Ext.300 status, the Ext.200 will immediately on-hook |
| <b>Transfer Digit time out</b> | Set (Attendant/blind) transfer digit time out sec   |

Table 3-22 Transfer feature description

➤ Pickup Key

• **Pickup Key**

|                  |                                 |              |
|------------------|---------------------------------|--------------|
| Pickup Extension | <input type="text" value="*8"/> | (default:*8) |
|------------------|---------------------------------|--------------|

Figure 3-25. Pickup key settings

|                         |                                  |
|-------------------------|----------------------------------|
| <b>Pickup Extension</b> | Set call pickup (Default is *8 ) |
|-------------------------|----------------------------------|

Table 3-40. Pickip description

➤ Voice Mail

• **Voice Mail**

|                                   |                                  |               |
|-----------------------------------|----------------------------------|---------------|
| Max Time of A Voice Mail          | <input type="text" value="20"/>  | Seconds(5~20) |
| Max Number of Messages Per Folder | <input type="text" value="3"/>   | Seconds       |
| Dial Voice Mail Number            | <input type="text" value="*12"/> | (default:*12) |
| Dial My Voice Mail Number         | <input type="text" value="*13"/> | (default:*13) |

Figure 3-26. Voice mail settings

|  |   |
|--|---|
| <b>Max time of a voice mail</b>          | Set a voice mail max time                       |
| <b>Max number of messages per folder</b> | Max number of voice mail per folder             |
| <b>Dial voice mail number</b>            | Dial “ *12 “ into voice mail guide              |
| <b>Dial my voice mail number</b>         | Dial “ *13 + Ext number “ into voice mail guide |

Table 3-23. Voice mail description

## ➤ SMTP Setting

SMTP is a relatively simple, text-based protocol, where one or more recipients of a message are specified. Input the valid account number, the extension setting voice mail will be been in used.

- **SMTP Setting**

|                             |                      |
|-----------------------------|----------------------|
| SMTP Server IP / Address    | <input type="text"/> |
| SMTP Autheticated User Name | <input type="text"/> |
| SMTP Autheticated Password  | <input type="text"/> |
| From Email                  | <input type="text"/> |

Figure 3-41. SMTP settings

|                                      |  |
|--------------------------------------|--|
| <b>SMTP server IP / Address</b>      | Input server IP / Address                                |
| <b>SMTP Authentication user name</b> | Input SMTP Authentication user name                      |
| <b>SMTP Authentication password</b>  | Input SMTP Authentication password                       |
| <b>From Email</b>                    | Input your Email, if server to check your email address. |

Table 3-24. SMTP description

## Hunt Group Setting

This setting will allow the caller to choose the specific extension group to answer the phone (e.g. Press 9 for Operator). Every incoming call (from Service Provider or Attendant Extension) will first hear the pre-recorded On / Off Duty Voice for call group options for caller to select.

Users can also setup multiple groups to manage the incoming calls.

- **Hunt Group Setting**

Add New Gropu Name

Group Name List

| Group Name                   | Extension Number |                                     | Action  |
|------------------------------|------------------|-------------------------------------|---|
| Dial_300_Ring_Sales_team     | 301,30           | <input type="button" value="more"/> | <input type="button" value="Edit"/> <input type="button" value="Delete"/> |
| Dial_400_Ring_RD_Team        | 400,40           | <input type="button" value="more"/> | <input type="button" value="Edit"/> <input type="button" value="Delete"/> |
| Dial_500_Ring_Group_1_Round  | 500,50           | <input type="button" value="more"/> | <input type="button" value="Edit"/> <input type="button" value="Delete"/> |
| Dial_9_to_Ring_Operator      | 100,20           | <input type="button" value="more"/> | <input type="button" value="Edit"/> <input type="button" value="Delete"/> |
| Dial_600_Ring_Group_2_Randon | 100,10           | <input type="button" value="more"/> | <input type="button" value="Edit"/> <input type="button" value="Delete"/> |

Figure 3-42. Hunt Group settings

Press **“Add”** to add a new Hunt Group;

Press **“Edit”** to the edit a specified hunt group;

Press **“Delete”** to delete a specified hunt group;

Press **“more”** to show the extension number under the group.

### Group Name List

| Group Name               | Extension Number |      | Action      |
|--------------------------|------------------|------|-------------|
| Dial_300_Ring_Sales_team | 301,30           | more | Edit Delete |
| Dial 400 Ring RD Team    | 400,40           | more | Edit Delete |

Figure 3-43. Hunt Group list



Figure 3-42. Hunt Group more information

### ➤ Add New Hunt Group

**Step 1.** Press “Add” button to add a new Group Name information.



Figure 3-43. Add an new Group Name

**Step 2.** Fill in the required information in Hunt Group Setup page.

• Hunt Group

Group Name

Hunt Mode

Incoming Call Dial Number

Ring (Group/Extension) Timeout  sec(default:30)

Ring Group

All Extension/Users

100  
101  
102  
103  
104  
105  
106

Submit

Figure 3-44. Hunt Group setup

|                                  |  |
|----------------------------------|--|
| <b>Group Name</b>                | Input your group name  |
| <b>Hunt Mode</b>                 | <p>There are 3 modes available: <b>Round Robin / Ring All / Random Mode.</b></p> <ol style="list-style-type: none"> <li>1. Round Robin: Take turns ringing each available Extension / Users</li> <li>2. Ring All: Ring all Extension/Users, until any one Extension / Users answer the call.</li> <li>3. Random: Ring random group inside Extension / Users</li> </ol> |
| <b>Incoming Call Dial Number</b> | Associate a dial number with a call group voice instruction to instruct incoming calls (e.g. If “20” is associated with Group  |

A, when the caller dial “20”, all extensions under Group A will ring). Default incoming call dial number is *empty*.

|                               |  |
|-------------------------------|--|
| <b>Ring (Group/Extension)</b> | Setup a timeframe to control the call group hunting timeout. |
| <b>Timeout</b>                | Default setting is 30 sec.                                   |

Table 3-25. Hunt Group description

➤ **To add extension/users to Ring group**

**Step 1.** Select your extension

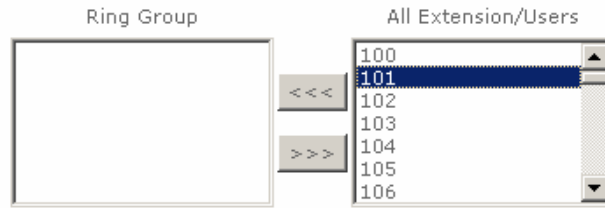



Figure 3-45. Add Extension/User

**Step 2.** Press  to add extension/users to ring group.

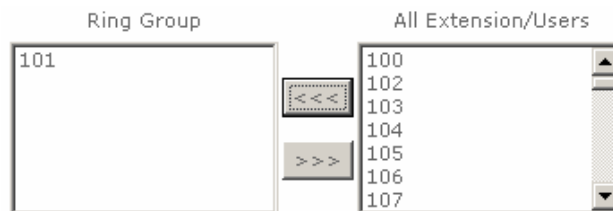


Figure 3-46. Add Extension/User

➤ **To delete Ring Group inside extension/users**

**Step 1.** Select the extensions

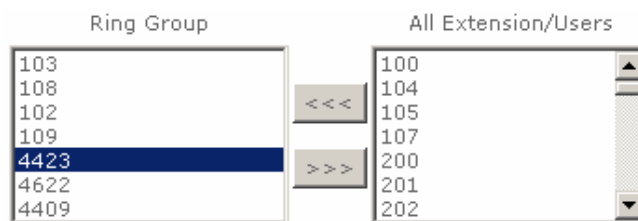



Figure 3-47. Delete Extension/User

**Step 2.** Press  to delete extension/users to ring group.

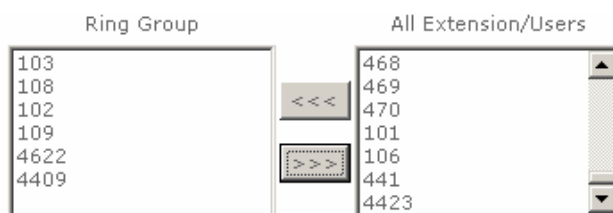


Figure 3-48. Delete Extension/User

## WAN & LAN Setup

WAN (Wide Area Network) is a network connection connecting one or more LANs together over some distance. For example, the means of connecting two office buildings separated by several kilometers would be referred to as a WAN connection. The size of a WAN and the number of distinct LANs connected to a WAN is not limited by any definition. Therefore, the Internet may be called a WAN.

WAN Settings are settings that are used to connect to your ISP (Internet Service Provider). The WAN settings are provided to you by your ISP and often times referred to as "public settings". Please select the appropriate option for your specific ISP.

For most users, Internet access is the primary application. IP PBX supports the WAN interface for internet access and remote access. The following sections will explain more details of WAN Port Internet access and broadband access setup. When you click "**WAN & LAN Setup**", the following setup page will be shown. Three methods are available for Internet Access.

The screenshot displays the 'Network Settings' interface, divided into two main sections: 'WAN Setting' and 'LAN Setting'. The 'WAN Setting' section includes fields for NAT/Bridge Mode (set to NAT), WAN Port IP Assignment (Static IP selected), Host Name (SIP and IPPBX), WAN Port MAC (Original MAC selected), IP Address (172.16.0.1), Subnet Mask (255.255.0.0), Default Gateway (172.16.0.254), MTU (1500 bytes), MRU (1500 bytes), Primary DNS Server (168.95.1.1), Secondary DNS Server (168.95.192.1), and Ping from WAN (checked). The 'LAN Setting' section includes fields for LAN IP Address (192.168.0.1), Subnet Mask (255.255.255.0), and DNS Proxy (checked). At the bottom, there are 'Submit' and 'Reset' buttons.

| Section     | Field                  | Value                            |
|-------------|------------------------|----------------------------------|
| WAN Setting | NAT / Bridge Mode      | NAT                              |
|             | WAN Port IP Assignment | Static IP                        |
|             | Host Name              | SIP, IPPBX                       |
|             | WAN Port MAC           | Original MAC (00:30:4F:FD:54:0F) |
|             | IP Address             | 172.16.0.1                       |
|             | Subnet Mask            | 255.255.0.0                      |
|             | Default Gateway        | 172.16.0.254                     |
|             | MTU                    | 1500 bytes                       |
|             | MRU                    | 1500 bytes                       |
|             | Primary DNS Server     | 168.95.1.1                       |
|             | Secondary DNS Server   | 168.95.192.1                     |
|             | Ping from WAN          | Allowed                          |
|             | LAN Setting            | LAN IP Address                   |
| Subnet Mask |                        | 255.255.255.0                    |
| DNS Proxy   |                        | Enable                           |

Figure 4-1. Network settings



➤ **Static IP**

If you are a leased line user with a fixed IP address, enter in the IP address, subnet mask, gateway address, and DNS (domain name server) address(es) provided to you by your ISP. Each IP address entered in the fields must be in the appropriate IP form, which are four IP octets separated by a dot (x.x.x.x). The Router will not accept the IP address if it is not in this format. *Example: 168.95.1.2*

The screenshot shows the 'Network Settings' page with the 'WAN Setting' section expanded. The 'NAT / Bridge Mode' is set to 'NAT'. Under 'WAN Port IP Assignment', 'Static IP' is selected. The 'Host Name' is 'SIP.IPPBX'. Under 'WAN Port MAC', 'Original MAC (00:30:4F:FD:54:0F)' is selected. The 'IP Address' is '172.16.0.1', 'Subnet Mask' is '255.255.0.0', and 'Default Gateway' is '172.16.0.254'.

Figure 4-2. WAN-Static IP settings

|                        |                               |
|------------------------|-------------------------------|
| <b>IP Address</b>      | Check with your ISP provider. |
| <b>Subnet Mask</b>     | Check with your ISP provider. |
| <b>Default Gateway</b> | Check with your ISP provider. |

Table 4-1. WAN-Static IP description

➤ **DHCP**

Dynamic Host Configuration Protocol (DHCP), Dynamic IP (Get WAN IP Address automatically). If you are connected to the Internet through a Cable modem line, then a dynamic IP will be assigned.

**Note**

WAN port gets the IP Address, Subnet Mask and default gateway IP address automatically, if DHCP client is successful.

**• WAN Setting**

NAT / Bridge Mode:

WAN Port IP Assignment:  Static IP  DHCP  PPPoE

Host Name:  .

WAN Port MAC:  Original MAC (00:30:4F:4F:00:00)  Manual Setting

MTU:  bytes

MRU:  bytes

Set DNS server:  Manually  Automatically

Ping from WAN:  Allowed

Figure 4-3. WAN-DHCP settings

➤ **PPPoE**

Point-to-Point Protocol over Ethernet (PPPoE). Some ISPs provide DSL-based services and use PPPoE to establish communication link with end-users. If you are connected to the Internet through a DSL line, check with your ISP to see if they use PPPoE. If they do, you need to make sure the following items, PPPoE User name: Enter username provided by your ISP. PPPoE Password: Enter password provided by your ISP.

**• WAN Setting**

NAT / Bridge Mode:

WAN Port IP Assignment:  Static IP  DHCP  PPPoE

Host Name:  .

WAN Port MAC:  Original MAC (00:30:4F:4F:00:00)  Manual Setting

PPPoE Username:

PPPoE Password:

Connect Type:

Max Idle Time:  seconds. (default:600)

MTU:  bytes

MRU:  bytes

Set DNS server:  Manually  Automatically

Ping from WAN:  Allowed

Figure 4-4. WAN-PPPoE settings

➤ **Host Name**

The Host Name field is optional but may be required by some Internet Service Providers. The default host name is the model number of the device. It is a computer that is connected to a TCP/IP network, including the Internet. Each host has a unique IP address. Assign the domain name or IP address of your host computer. When the host operating system is set up it is given a name. This name may reflect the prime use of the computer. For example, a host computer that converts host names to IP addresses using DNS may be called cvs.IP-PBX.com and a host computer that is a web server may be

called [www.IP-PBX.com](http://www.IP-PBX.com). When we need to find the host name from an IP address we send a request to the host using its IP address. The host will respond with its host name.

### ➤ WAN Port MAC

The MAC (Media Access Control) Address field is required by some Internet Service Providers (ISP). The default MAC address is set to the MAC address of the WAN interface in the device. It is only necessary to fill the field if required by your ISP.

The WAN port allows your voice gateway to be connected to an Internet Access Device, e.g. router, cable modem, ADSL modem, through a CAT.5 twisted pair Ethernet Cable. MAC addresses are uniquely set by the network adapter manufacturer and are sometimes called "physical addresses" for this reason. MAC assigns a unique number to each IP network adapter called the MAC address. The MAC address is commonly written as a sequence of 12 hexadecimal digits as follows: **00:3f:4f:88:81:18**. The first six hexadecimal digits of the address correspond to a manufacturer's unique identifier, while the last six digits correspond to the device's serial number.

Some Internet service providers track the MAC address of a home router for security purposes. Many routers support a process called cloning that allows the MAC address to be simulated so that it matches one the service provider is expecting. This allows end-user to change their router (and their real MAC address) without having to notify the provider. For example, you could allow packets which have your name server's IP on them, but come from another MAC address (one way of spoofing packets).



Figure 4-5. WAN port MAC settings

### ➤ MTU and MRU

MTU stands for Maximum Transmission Unit, the largest physical packet size, measured in bytes that a network can transmit. Any messages larger than the MTU are divided into smaller packets before being sent.

MRU stands for Maximum Receiving Unit. The largest physical packet size, measured in bytes that a network can receive. Any messages larger than the MRU are divided into smaller packets before being received.

The key is to be deciding how big your bandwidth pipe is and select the best MTU for your configuration. For example, you have a 33.6 modem, you use a MTU and MRU of 576, and if you have a larger pipe you may want to try 1500.

|     |                                   |       |
|-----|-----------------------------------|-------|
| MTU | <input type="text" value="1500"/> | bytes |
| MRU | <input type="text" value="1500"/> | bytes |

Figure 4-6. MTU and MRU settings

**Note**

For Static IP, both MTU and MRU are set to 1500 bytes as default value.  
 For DHCP, both MTU and MRU are set to 1500 bytes as default value.  
 For PPPoE, both MTU and MRU are set to 1492 bytes as default value.

➤ **DNS Server**

DNS stands for Domain Name System. Every Internet host must have a unique IP address; also they may have a user-friendly, easy to remember name such as [www.ippbx.com](http://www.ippbx.com). The DNS server converts the user-friendly name into its equivalent IP address. The original DNS specifications require that each domain name is served by at least 2 DNS servers for redundancy. When you run your DNS, web, and mail servers all on the same MACHine - if this MACHine goes down, it doesn't really matter that the backup DNS server still works.

The recommended practice is to configure the primary and secondary DNS servers on separate MACHines, on separate Internet connections, and in separate geographic locations.

|                      |   |
|----------------------|---|
| Primary DNS Server   | <input type="text" value="168.95.1.1"/>   |
| Secondary DNS Server | <input type="text" value="168.95.192.1"/> |

Figure 4-7. DNS server settings

|                             |  |
|-----------------------------|--|
| <b>Primary DNS Server</b>   | Sets the IP address of the primary DNS server.   |
| <b>Secondary DNS Server</b> | Sets the IP address of the secondary DNS server. |

Table 4-2. DNS server description

➤ **Ping From WAN**

Ping is a basic Internet program that lets you verify that a particular IP address exists and can accept requests. Ping is used diagnostically to ensure that a host computer you are trying to reach is actually operating.

The default setting is allowed user can ping the host computer from remote site. If you disallow, the host computer doesn't response any user who issues Ping IP address command from any remote sites.

Ping from WAN  Allowed

Figure 4-8. Ping from wan settings

## ➤ LAN Setting

These are the IP settings of the LAN (Local Area Network) interface for the device. These settings may be referred to as "private settings". You may change the LAN IP address if needed. The LAN IP address is private to your internal network and cannot be seen on the Internet. The default IP address is 192.168.0.1 with a subnet mask of 255.255.255.0.

LAN is a network of computers or other devices that are in relatively close range of each other. For example, devices in a home or office building would be considered part of a local area network.



• LAN Setting

|                |  |
|----------------|--|
| LAN IP Address | 192.168.0.1                                |
| Subnet Mask    | 255.255.255.0                              |
| DNS Proxy      | <input checked="" type="checkbox"/> Enable |

Figure 4-9. LAN settings

|                       |  |
|-----------------------|--|
| <b>LAN IP Address</b> | Assign the IP address of LAN server, default is 192.168.0.1            |
| <b>Subnet Mask</b>    | Select a subnet mask from the pull-down menu, default is 255.255.255.0 |

Table 4-3. LAN description

## ➤ DNS Proxy

A proxy server is a computer network service that allows clients to make indirect network connections to other network services. The default setting is Enable the DNS proxy server.



DNS Proxy  Enable

Figure 4-10. DNS proxy settings

## DHCP

DHCP stands for Dynamic Host Control Protocol. The DHCP server gives out IP addresses when a device is starting up and request an IP address to be logged on to the network. The device must be set as a DHCP client to "Obtain the IP address automatically". By default, the DHCP Server is enabled in the unit. The DHCP address pool contains the range of the IP address that will automatically be assigned to the clients on the network.

DHCP client computers connected to the unit will have their information displayed in the DHCP Client List table. The table will show the Type, Host Name, IP Address, MAC Address, Description, and

Expired Time of the DHCP lease for each client computer. DHCP Server is a useful tool that automates the assignment of IP addresses to numbers of computers in your network. The server maintains a pool of IP addresses that you use to create scopes. (A DHCP scope is a collection of IP addresses and TCP/IP configuration parameters that are available for DHCP clients to lease.) Then, the server automatically allocates these IP addresses and related TCP/IP configuration settings to DHCP-enabled clients in the network. The DHCP Server leases the IP addresses to clients for a period that you specify when you create a scope. A lease becomes inactive when it expires. Through the DHCP Server, you can reserve specific IP addresses permanently for hardware devices that must have a static IP address (e.g., a DNS Server).

An advantage of using DHCP is that the service assigns addresses dynamically. The DHCP Server returns addresses that are no longer in use to the IP addresses pool so that the server can reallocate them to other machines in the network. If you disable this DHCP, you would have to manually configure IP for new computers, keep track of IP addresses so that you could reassign addresses that clients aren't using, and reconfigure computers that you move from one subnet to another. The DHCP Static MAP table lists all MAC and IP address which are active now.

Figure 4-11. DHCP server settings

When you enable the DHCP server, you are able to enter:

|                                 |  |
|---------------------------------|--|
| <b>Assigned DHCP IP Address</b> | Enter the starting IP address for the DHCP server's IP assignment and the ending IP address for the DHCP server's IP assignment. |
| <b>DHCP IP Lease Time</b>       | Assign the length of time for the IP lease, default setting is 86400 seconds.  |

Table 4-4. DHCP server description

## Static Route

Static routes are special routes that the network administrator manually enters into the router configuration for local network management. You could build an entire network based on static routes. The problem with doing this is that when a network failure occurs, the static route will not change without you performing the change. This could be IP-PBX if the failure occurs when the administrator is not available.

The route table allows the user to configure and define all the static routes supported by the router.

### Network Settings

- Static Route

| Enable                   | Type | Target | Netmask       | Gateway | Action        |
|--------------------------|------|--------|---------------|---------|---------------|
| <input type="checkbox"/> | Net  |        | 255.255.255.0 |         | Insert Change |

Figure 4-12. Static route settings

|                |  |
|----------------|--|
| <b>Enable</b>  | Enable/Disable the static route.   |
| <b>Type</b>    | Indicates the type of route as follows, Host for local connection and Net for network connection.  |
| <b>Target</b>  | Defines the base IP address (Network Number) that will be compared with the destination IP address (after an AND with NetMask) to see if this is the target route.   |
| <b>NetMask</b> | The subnet mask that will be AND'd with the destination IP address and then compared with the Target to see if this is the target route.   |
| <b>Gateway</b> | The IP address of the next hop router that will be used to route traffic for this route. If this route is local (defines the locally connected hosts and Type = Host) then this IP address MUST be the IP address of the router. |
| <b>Action</b>  | Insert a new Static Router entry or update a specified entry.  |

Table 4-5. Static route description

## NAT

NAT (Network Address Translation) serves three purposes:

1. Provides security by hiding internal IP addresses. Acts like firewall.
2. Enables a company to access internal IP addresses. Internal IP addresses that are only available within the company will not conflict with public IP.
3. Allows a company to combine multiple ISDN connections into a single internet connection.

**Network Settings**

- NAT Setting**

|                             |  |
|-----------------------------|--|
| Network Address Translation | <input checked="" type="checkbox"/> Enable |
| IPSec Pass Through          | <input checked="" type="checkbox"/> Enable |
| PPTP Pass Through           | <input checked="" type="checkbox"/> Enable |
| L2TP Pass Through           | <input checked="" type="checkbox"/> Enable |
| SIP ALG                     | <input type="checkbox"/> Enable            |
| NetMeeting ALG              | <input type="checkbox"/> Enable            |
| DMZ                         | <input type="checkbox"/> Enable            |

**Submit** **Reset**
- Virtual Server Mapping**

| Enable                   | WAN Port             | Protocol | LAN IP               | LAN Port             | Action                      |
|--------------------------|----------------------|----------|----------------------|----------------------|-----------------------------|
| <input type="checkbox"/> | <input type="text"/> | TCP      | <input type="text"/> | <input type="text"/> | <b>Insert</b> <b>Change</b> |
- Port Trigger**

| Enable                   | Trigger Port         | Trigger Type | Public Port          | Public Type | Action                      |
|--------------------------|----------------------|--------------|----------------------|-------------|-----------------------------|
| <input type="checkbox"/> | <input type="text"/> | TCP          | <input type="text"/> | TCP         | <b>Insert</b> <b>Change</b> |

Figure 4-13. NAT settings

➤ **NAT Setting**

**NAT Setting**

|                             |  |
|-----------------------------|--|
| Network Address Translation | <input checked="" type="checkbox"/> Enable |
| IPSec Pass Through          | <input checked="" type="checkbox"/> Enable |
| PPTP Pass Through           | <input checked="" type="checkbox"/> Enable |
| L2TP Pass Through           | <input checked="" type="checkbox"/> Enable |
| SIP ALG                     | <input checked="" type="checkbox"/> Enable |
| NetMeeting ALG              | <input checked="" type="checkbox"/> Enable |
| DMZ                         | <input checked="" type="checkbox"/> Enable |
| DMZ LAN IP                  | <input type="text" value="192.168.0.11"/>  |

**Submit** **Reset**

Figure 4-14. NAT settings

|                                    |  |
|------------------------------------|--|
| <b>Network Address Translation</b> | Enable/Disable NAT.  |
| <b>IPSec Pass Through</b>          | IPsec (Internet Protocol Security) is a framework for a set of protocols for security at the network or packet processing layer of network communication. Enable/Disable this framework verification.                |
| <b>PPTP Pass Through</b>           | PPTP (Point-to-Point Tunneling Protocol) is a protocol that allows corporations to extend their own corporate network through private "tunnels" over the public Internet. Enable/Disable this protocol verification. |



**L2TP Pass Through**

L2TP (The Layer 2 Tunnel Protocol) is an emerging Internet Engineering Task Force (IETF) standard that combines the best features of two existing tunneling protocols: Cisco's Layer 2 Forwarding (L2F) and Microsoft's Point-to-Point Tunneling Protocol (PPTP). L2TP is an extension to the Point-to-Point Protocol (PPP), which is an important component for VPNs. VPNs allow users and telecommuters to connect to their corporate intranets or extranets. Enable/Disable this function.

**SIP ALG**

SIP, the Session Initiation Protocol, is a signaling protocol for Internet conferencing, telephony, presence, events notification and instant messaging. Enable/Disable this protocol verification.

**DMZ**

In computer networks, a DMZ (Demilitarized Zone) is a computer host or small network inserted as a "neutral zone" between a company's private network and the outside public network. It prevents outside users from getting direct access to a server that has company dIP-PBX. Think of DMZ as the front yard of your house. It belongs to you and you may put some things there, but you would put anything valuable inside the house where it can be properly secured. Setting up a DMZ is very easy. If you have multiple computer s, you can choose to simply place one of the computers between the Internet connection and the firewall.

**DMZ IP LAN**

If you have a computer that cannot run Internet applications properly from behind the device, then you can allow the computer to have unrestricted Internet access. Enter the IP address of that computer as a DMZ host with unrestricted Internet access. Adding a client to the DMZ may expose that computer to a variety of security risks; so only use this option as a last resort.

Table 4-6. NAT description

**➤ Virtual Server Mapping**

The device can be configured as a virtual server so that remote users accessing services such as Web or FTP services via the public (WAN) IP address can be automatically redirected to local servers in the LAN network. Depending on the requested service (TCP/UDP port number), the device redirects the external service request to the appropriate server within the LAN network. You will only need to input the LAN IP address of the computer running the service and enable it.

A Virtual Server is defined as a service port, and all requests to this port will be redirected to the computer specified by the server IP.

• **Virtual Server Mapping**

| Enable                              | WAN Port | Protocol | LAN IP       | LAN Port | Action                      |
|-------------------------------------|----------|----------|--------------|----------|-----------------------------|
| <input checked="" type="checkbox"/> | 80       | TCP      | 192.168.0.17 | 80       | <b>Insert</b> <b>Change</b> |

Figure 4-15. Virtual server mapping settings

|                 |   |
|-----------------|---|
| <b>Enable</b>   | Enable/Disable the virtual server mapping, default setting is Disable.  |
| <b>WAN Port</b> | The port number on the WAN side that will be used to access the virtual service. Enter the WAN Port number, e.g. enter 80 to represent the Web (http server), or enter 25 to represent SMTP (email server). Note: You can specify maximum 32 WAN Ports. |
| <b>Protocol</b> | The protocol used for the virtual service. Select a protocol type is TCP or UDP.  |
| <b>LAN IP</b>   | The server computer in the LAN network that will be providing the virtual services. Enter the IP address of LAN.  |
| <b>LAN Port</b> | The port number of the service used by the Private IP computer. Enter the LAN port number.  |
| <b>Action</b>   | Insert a new WAN port or update a specified WAN port.   |

Table 4-7. Virtual server mapping description

➤ **Port Trigger**

Some applications require multiple connections, such as Internet gaming, video conferencing, Internet telephony and others. These applications have difficulties working through NAT (Network Address Translation). If you need to run applications that require multiple connections, specify the port normally associated with an application in the "Trigger Port" field, select the protocol type as TCP (Transmission Control Protocol) or UDP (User DIP-PBXgram Protocol), then enter the public ports associated with the trigger port to open them for inbound traffic.

• **Port Trigger**

| Enable                              | Trigger Port | Trigger Type | Public Port | Public Type | Action                      |
|-------------------------------------|--------------|--------------|-------------|-------------|-----------------------------|
| <input checked="" type="checkbox"/> | 40           | TCP          | 40          | TCP         | <b>Insert</b> <b>Change</b> |

Figure 4-16. Port trigger settings

|                     |   |
|---------------------|---|
| <b>Enable</b>       | Enable/Disable the port trigger, default setting is Disable.  |
| <b>Trigger Port</b> | This is the port used to trigger the application. It can be either a single port or a range of ports. |

|                     |  |
|---------------------|--|
| <b>Trigger Type</b> | This is the protocol used to trigger the special application.  |
| <b>Public Port</b>  | This is the port number on the WAN side that will be used to access the application. You may define a single port or a range of ports. You can use a comma to add multiple ports or port ranges. |
| <b>Public Type</b>  | This is the protocol used for the special application.   |
| <b>Action</b>       | Insert a new Port Trigger or update a specified Port Trigger.  |

Table 4-8. Port trigger description

## Packet Filter

Controlling access to a network by analyzing the incoming packets and letting them pass or halting them based on the IP addresses of the source. (This function can be useful for residential screening as well – for parental screening or other)

### Network Settings

- Packet Filter

**WAN**  Enable

| Enable                   | Source IP            | Dest. Port           | Protocol | Block  | Day | Time          | Action           |
|--------------------------|----------------------|----------------------|----------|--------|-----|---------------|------------------|
| <input type="checkbox"/> | <input type="text"/> | <input type="text"/> | TCP      | Always | All | 00:00 ~ 00:00 | Insert<br>Change |

---

**LAN**  Enable

| Enable                   | Source IP            | Dest. Port           | Protocol | Block  | Day | Time          | Action           |
|--------------------------|----------------------|----------------------|----------|--------|-----|---------------|------------------|
| <input type="checkbox"/> | <input type="text"/> | <input type="text"/> | TCP      | Always | All | 00:00 ~ 00:00 | Insert<br>Change |

---

**MAC**  Enable

| Enable                   | MAC Address          | Block  | Day | Time          | Action           |
|--------------------------|----------------------|--------|-----|---------------|------------------|
| <input type="checkbox"/> | <input type="text"/> | Always | All | 00:00 ~ 00:00 | Insert<br>Change |

Figure 4-17. Packet filter settings

### ➤ WAN

**WAN**  
**Enable/Disable** The WAN IP port packet filter function, control a network IP port, default setting is *Enable*.

**Enable** Enable/Disable the Internet to WAN IP source port rules, default setting is *Disable*.

**Source IP** This is the filter WAN IP address. *Example: 209.131.36.158*

**Dest. Port** This is the port used for source IP service.

**Protocol** This Protocol Used for the source IP service. Select either TCP or UDP.

|              |  |
|--------------|--|
| <b>Block</b> | Wan IP Port Block time setting. Select <i>Always</i> or <i>By Schedule</i> .               |
| <b>Day</b>   | Block Day setting, select a All / Mon-Sat./ Mon-Fri./Mon./ Tues./ Wed./Thu./Fri./Sat./Sun. |
| <b>Time</b>  | Block Time setting, select time range is 00:00 to 23:59.                                   |

Table 4-9. Packet filter-WAN description

➤ LAN

|                           |   |
|---------------------------|---|
| <b>LAN Enable/Disable</b> | Internet to LAN filter function, default setting is <i>Enable</i> . A prohibitive rule set should only allow the necessary Internet/DMZ services to LAN (Local Area Network) clients. |
| <b>Enable</b>             | Enable/Disable the WAN IP source port rules, default setting is <i>Disable</i> .  |
| <b>Source IP</b>          | This is the filter source IP address to LAN.  |
| <b>Dest. Port</b>         | This is the port used for source IP.  |
| <b>Protocol</b>           | This Protocol Used for the WAN Filter service. Select either TCP or UDP.  |
| <b>Day</b>                | Block Day setting, select All / Mon-Sat./ Mon-Fri./Mon./ Tues./ Wed./Thu./Fri./Sat./Sun.  |
| <b>Time</b>               | Block Time setting, select time range is 00:00 to 23:59   |

Table 4-10. Packet filter-LAN description

➤ MAC

|                           |  |
|---------------------------|--|
| <b>MAC Enable/Disable</b> | Form internet MAC filter function, default setting is <i>Enable</i> .                      |
| <b>Block</b>              | Wan IP Port Block time Setting. Select <i>Always</i> or <i>By Schedule</i> .               |
| <b>Day</b>                | Block Day setting, select a All / Mon-Sat./ Mon-Fri./Mon./ Tues./ Wed./Thu./Fri./Sat./Sun. |
| <b>Time</b>               | Block Time setting, select time range is 00:00 to 23:59                                    |

Table 4-11. Packet filter-MAC description

## URL Filter

URL filter allows you to block sites based on a black list and white list. Sites matching the black list but not matching the white list will be automatically blocked and closed.

• **URL Filter**

Enable

| Enable                   | Client IP            | URL Filter String    | Action  |
|--------------------------|----------------------|----------------------|---|
| <input type="checkbox"/> | <input type="text"/> | <input type="text"/> | <input type="button" value="Insert"/> <input type="button" value="Change"/> |

Figure 4-18. URL filter settings

|                          |  |
|--------------------------|--|
| <b>Enable</b>            | Enable/Disable the URL filter function, default setting is Disable.    |
| <b>Enable</b>            | Enable/Disable Block URL to the Client IP, default setting is Disable  |
| <b>Client IP</b>         | This is the Client IP is LAN address. <i>Example:</i><br>192.168.0.100 |
| <b>URL Filter String</b> | This is the filter URL. <i>Example:</i> "http://www.yahoo.com/"        |

Table 4-12. URL filter description

## Security

Intrusion Detection has powerful management and analysis tools that let your IT administrator see what's going on in your network. Such as whose surfing the Web, and gives you the tools to block access to inappropriate Web sites.

Malicious code (also called vandals) is a new breed of Internet threat that cannot be efficiently controlled by conventional antivirus software alone. In contrast to viruses that require a user to execute a program in order to cause damage, vandals are auto-executable applications

• **Security Setting**

Intrusion Detection  Enable

Drop Malicious Packet  Enable

Figure 4-19. Security settings

|                              |   |
|------------------------------|---|
| <b>Intrusion Detection</b>   | Enable / Disable , network / internet security protection.              |
| <b>Drop Malicious Packet</b> | Enable / Disable , Detect and drop malicious application layer traffic. |

Table 4-13. Security description

## UPnP

UPnP provides support for communication between control points and devices. The network media, the TCP/IP protocol suite and HTTP provide basic network connectivity and addressing needed. On top of these open, standard, Internet based protocols, UPnP defines a set of HTTP servers to handle discovery, description, control, events, and presentation.

The screenshot shows a web interface for UPnP settings. Under the heading "UPnP Setting", there is a section for "UPnP Internet Gate Device" with a checked "Enable" checkbox and "Submit" and "Reset" buttons. Below this is the "UPnP Map" section, which features a table with the following headers: "Remote Host", "External Port", "Internal Client", "Internal Port", "Protocol", "Duration", and "Description". A "Refresh" button is located below the table.

Figure 4-20. UPnP settings

---

|                                  |   |
|----------------------------------|---|
| <b>UPNP Internet Gate Device</b> | Enable/Disable UPNP Service to working, default setting is <i>Disable</i> . |
|----------------------------------|---|

---

Table 4-18. UPnP description

## DDNS

The DDNS (Dynamic DNS) service allows you to alias a dynamic IP address to a static hostname, allowing your computer to be more easily accessed from various locations on the Internet. Without DDNS, the users should use the WAN IP to reach internal server. It is inconvenient for the users if this IP is dynamic. With DDNS supported, you apply a DNS name (e.g., [www.IPPBX.com](http://www.IPPBX.com)) for your server (e.g., Web server) from a DDNS server. The outside users can always access the web server using the [www.IP-PBX.com](http://www.IP-PBX.com) regardless of the WAN IP.

When you want your internal server to be accessed by using DNS name rather than using the dynamic IP address, you can use the DDNS service. The DDNS server allows to alias a dynamic IP address to a static hostname.

Unlike DNS that only works with static IP addresses, DDNS works with dynamic IP addresses, such as those assigned by an ISP or other DHCP server. DDNS is popular with home networkers, who typically receive dynamic, frequently-changing IP addresses from their service provider.

DDNS is a method of keeping a domain name linked to a changing (dynamic) IP address. With most Cable and DSL connections, you are assigned a dynamic IP address and that address is used only for the duration of that specific connection. With the IP-PBX, you can setup your DDNS service and the IP-PBX will automatically update your DDNS server every time it receives a different IP address.

## Network Settings

### • DDNS Setting

|                            |  |
|----------------------------|--|
| DDNS                       | <input checked="" type="checkbox"/> Enable |
| DDNS Server Type           | <input type="text" value="DynDns.org"/>    |
| DDNS Username              | <input type="text"/>                       |
| DDNS Password              | <input type="text"/>                       |
| Confirmed Password         | <input type="text"/>                       |
| Hostname to register       | <input type="text"/>                       |
| DDNS Interval Registration | <input type="checkbox"/> Enable            |

Figure 4-21. DDNS settings

|                             |   |
|-----------------------------|---|
| <b>Enable</b>               | Enable/Disable the DDNS service, default setting is Disable.        |
| <b>DDNS Server Type</b>     | The IP-PBX support two types of DDNS, DynDns.org or No-IP.com       |
| <b>DDNS Username</b>        | The username which you register in DynDns.org or No-IP.com website. |
| <b>DDNS Password</b>        | The password which you register in DynDns.org or No-IP.com website. |
| <b>Confirmed Password</b>   | Confirm the password which you typing.                              |
| <b>Hostname to register</b> | The hostname which you register in DynDns.org or No-IP.com website  |

Table 4-14. DDNS description

## SNMP

The simple network management protocol (SNMP) forms part of the internet protocol suite as defined by the Internet Engineering Task Force (IETF). SNMP is used by network management systems to monitor network-attached devices for conditions that warrant administrative attention. It consists of a set of standards for network management, including an Application Layer protocol, a IP-PBXbase schema, and a set of IP-PBX objects.

• **SNMP Setting**

|                      |  |
|----------------------|--|
| SNMP                 | <input checked="" type="checkbox"/> Enable             |
| SNMP Read Community  | <input type="text" value="public"/> (default:public)   |
| SNMP Write Community | <input type="text" value="private"/> (default:private) |
| SNMP Trap Host       | <input type="text"/>                                   |
| SNMP Trap Community  | <input type="text" value="public"/> (default:public)   |

Figure 4-22. SNMP settings

|                             |  |
|-----------------------------|--|
| <b>Enable</b>               | Enable/Disable the SNMP service, default setting is Disable. (Support SNMP version 1 or SNMP version 2c).  |
| <b>SNMP Read Community</b>  | SNMP Read Community string so that EPICenter can retrieve information.(default :public)  |
| <b>SNMP Write Community</b> | Specifies the name of the SNMP write community to which the printer device that this actual destination represents belongs.(Default:private)           |
| <b>SNMP Trap Host</b>       | Defines an SNMP trap host to which AppCelera will send trap messages. (Default address is empty)   |
| <b>SNMP Trap Community</b>  | The SNMP trap community name. The community name functions as a password for sending trap notifications to the target SNMP manager. (Default: public). |

Table 4-15. SNMP description



## Admin Account

The administrator account can access the management interface through the web browser.

The screenshot shows a web interface titled "Management". It contains two main sections:

- Administrator Account:**
  - Administrator Name:
  - Administrator Password:
  - Confirm Password:
- Remote Administration:**
  - Remote administration:  Enable
  - Http port for remote:
  - Remote administration only from IP:

A "Submit" button is located at the bottom right of the form.

Figure 5-1. Management settings

|   |   |
|---|---|
| <b>Administrator Name</b>                 | Assign a name to represent the administrator account. Maximum 16 characters. Legal characters can be the upper letter "A" to "Z", lower letter "a" to "z", digit number "0" to "9" and an underscore sign; "_".   |
| <b>Administrator Password</b>             | Assign an administrator password. Maximum 16 characters and minimum 6 characters with mix of digits and letters characters. Legal characters can be the upper letter "A" to "Z", lower letter "a" to "z", digit number "0" to "9" and an underscore sign "_". |
| <b>Confirm Password</b>                   | Enter the administrator password again. Remote Administrator allows the device to be configured through the WAN port from the Internet using a web browser. A username and password is still required to access the browser-based management interface.       |
| <b>Remote Administration</b>              | Enable/Disable to access from remote site. Default setting is "Disable".  |
| <b>Http port for remote</b>               | If you allowed the access from the remote site, assign the http port used to access the IP-PBX. Default port number is "8080".  |
| <b>Remote administration only from IP</b> | Internet IP address of the computer that has access to the IP-PBX. Assign the legal IP address.<br><i>Example:</i> http://x.x.x.x:8080 where as x.x.x.x is the WAN IP address and 8080 is the port used for the Web-Management interface.                     |

Table 5-1. Management description

## Note

- The administrator name and password are case-sensitive and the "blank" character is an *illegal character*
- Only the administrator account has the ability to change account password.

## Date & Time

### ➤ Manual Time Setting

#### Management

##### • Date/Time

Date Time Set By  Manual Time Setting  NTP Time Server

Time Zone

Daylight Saving

Date Value Setting Year:  Month:  Day:

Time Value Setting Hour:  Minute:  Second:

Figure 5-2. Date/Time-Manual time settings

---

|                            |                           |
|----------------------------|---------------------------|
| <b>Manual Time Setting</b> | Set up the time manually. |
|----------------------------|---------------------------|

---

Table 5-2. Date/Time-Manual time description

### ➤ NTP Time Server

#### Management

##### • Date/Time

Date Time Set By  Manual Time Setting  NTP Time Server

Time Zone

Daylight Saving

NTP Update Interval  hours (1..1000, default:24)

NTP Server 1

NTP Server 2

Figure 5-3. Date/Time-NTP time settings

---

#### NTP Time Server

Protocol used to help match your system clock with an accurate time source. For example atomic clock or a server.

---

|                            |   |
|----------------------------|---|
| <b>Time Zone</b>           | Choose your time zone, Default is (GMT+8:00) Beijing, Singapore, Taipei.  |
| <b>Daylight Saving</b>     | Enable / Disable. Default is Disabling, time during which clocks are set one hour ahead of local standard time; widely adopted during summer to provide extra daylight in the evenings. |
| <b>NTP Update Interval</b> | Default is 24 hours; This is used to select the frequency of. NTP updates.  |
| <b>NTP Server 1</b>        | Default is "pool.ntp.org", NTP Server address.  |
| <b>NTP Server 2</b>        | Default is empty.   |

Table 5-3. Date/Time-NTP time description

## Ping Test

This useful diagnostic utility can be used to check if a computer is on the Internet. It sends ping packets and listens for replies from the specific host. Enter in a host name or the IP address that you want to ping (Packet Internet Groper) and click Ping. *Example:* www.yahoo.com or 209.131.36.158



Figure 5-4. Ping test settings

|                         |                            |
|-------------------------|----------------------------|
| <b>Ping Destination</b> | Assign a legal IP address. |
|-------------------------|----------------------------|

Table 5-4. Ping test description

## Save & Restore

All settings can be saving to a local file. Pervious device configuration can also be restored by upload a local file back to the device.

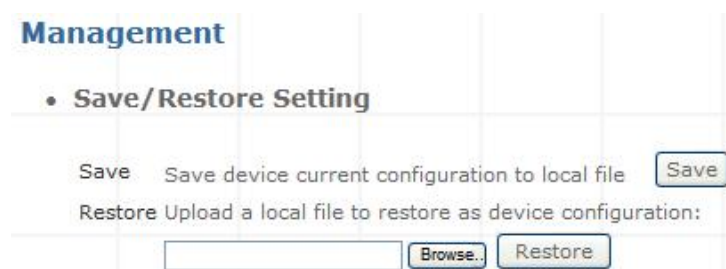


Figure 5-5. Save/Restore settings

## Factory Default

This function is used to restore all the parameters back to factory default setting. You can use the Save/Restore Setting to check the factory default configuration, after you click on the Set button.

### Management

- **Factory Default Setting**

Set device configuration to Factory default setting:

**Submit**

Figure 5-6. Factory default settings

## Firmware Update

You can upgrade the firmware of the device using this tool. Make sure that the firmware you want to use is saved on the local hard drive of your computer. Click on Browse to search the local hard drive for the firmware to be used for the update. Upgrading the firmware will not change any of your system settings but it is recommended that you save your system settings before doing a firmware upgrade.



The screenshot shows a web interface for firmware updates. At the top, the title 'Firmware Update' is displayed in blue. Below the title, there is a label 'Firmware File' followed by a text input field. To the right of the input field are two buttons: 'Browse...' and 'Upload'.

Figure 5-7. Firmware update settings

---

|                      |   |
|----------------------|---|
| <b>Firmware Name</b> | Select that you want to upgrade Firmware version. |
|----------------------|---|

---

Table 5-5. Firmware update description

## System Information

**System Information** page indicates the current setup-status of the device, it includes LAN, WAN, (Status and MAC Address), Host Name / System Date time / Machines Life time and system firmware information. The information and options on this page will vary according to your WAN setting (Static IP, DHCP, or PPPoE).

-If your WAN connection is set up for *Dynamic IP address*, the page will display “Release” and “Renew” buttons. Use “Release” to disconnect from your ISP and use “Renew” to connect to your ISP.

-If your WAN connection is set up for *PPPoE*, the page will display “Connect” and “Disconnect” buttons. Use "Disconnect" to drop the PPPoE connection and use "Connect" to establish the PPPoE connection




| System Information    |   |
|-----------------------|---|
| <b>• System</b>       |   |
| Firmware Version      | IPX - 1.1.1                                       |
| Host Name             | IP.PBX  |
| Date & Time           | Tue Jan 2 04:35:41 CST 2007                       |
| Life Time             | 04:35:42 up 20:35, load average: 0.05, 0.02, 0.00 |
| Mode                  | NAT   |
| <b>• WAN</b>          |   |
| WAN Type              | Static IP   |
| IP Address            | 172.16.0.1  |
| Subnet Mask           | 255.255.0.0                                       |
| Default Gateway       | 172.16.0.254                                      |
| MTU                   | 1500  |
| DNS 1 (Primary)       | 168.95.1.1  |
| DNS 2 (Secondary)     | 168.95.192.1                                      |
| <b>• LAN</b>          |   |
| IP Address            | 192.168.1.1                                       |
| Subnet Mask           | 255.255.255.0                                     |
| DHCP Server Function  | Enabled   |
| <b>• Physical MAC</b> |   |
| WAN                   | 00:0F:FD:50:00:00                                 |
| LAN                   | 00:0F:FD:50:00:01                                 |

Figure 6-1. System Information

## PBX Extension Status

This page displays the information of Extension/Users Registration status.

### • Extension Status

 Register OK! 
  Talk on the Telephone ! 
  Register Unknown!



















| Num | Status  | Num | Status  | Num | Status  |
|-----|---|-----|---|-----|---|
| 106 |  | 105 |  | 104 |  |
| 103 |  | 102 |  | 101 |  |
| 464 |  | 463 |  | 462 |  |
| 461 |  | 460 |  | 459 |  |
| 458 |  | 457 |  | 456 |  |
| 455 |  | 454 |  | 453 |  |

Figure 6-2. Extension Status



**Register OK**

SIP device is connected to IPPBX



**Talk on the telephone**

The connection from/to the other end of SIP device is established.



**Register Unknown**



Sip device is not connected to IPPBX

Table 6-1. Extension Status description

## PBX Trunk Status

This page displays the information of Service Provider Registration status.

### • Service Provider Status

 Register OK! 
  Register Unknown!



| Num     | Status  | Num    | Status   | Num | Status |
|---------|---|--------|--|-----|--------|
| 0395413 |  | 288929 |  |     |        |

Figure 6-3. Service Provider Status



**Register OK**

SIP Trunk is registered



**Register Unknown**

SIP Trunk is not registered

Table 6-2. Service Provider Status description

## Call Detail Record

**Call Detail Record (CDR)** contains the call history of the extensions when calls was made or received.

Recorded information include: Source Number, Destination Number, Start Time, Answer Time, End Time, Duration Time and Status.

- Call Detail Record

<< [1] >>

| Source No | Destination No | Start Time             | Answer Time            | End Time               | Duration Time | Status   |
|-----------|----------------|------------------------|------------------------|------------------------|---------------|----------|
| 200       | 100            | 2007-11-28<br>14:23:51 | 2007-11-28<br>14:23:51 | 2007-11-28<br>14:24:16 | 25            | ANSWERED |
| 100       | out            | 2007-11-28<br>14:24:41 | 2007-11-28<br>14:24:42 | 2007-11-28<br>14:24:47 | 6             | ANSWERED |
| 2010      | s              | 2007-11-28<br>14:24:42 | 2007-11-28<br>14:24:42 | 2007-11-28<br>14:24:47 | 5             | ANSWERED |
| 100       | out            | 2007-11-28<br>14:24:52 | 2007-11-28<br>14:24:57 | 2007-11-28<br>14:24:58 | 6             | ANSWERED |
| 431       | 100            | 2007-11-28<br>14:29:06 | 2007-11-28<br>14:29:07 | 2007-11-28<br>14:29:11 | 5             | ANSWERED |
| 431       | 100            | 2007-11-28<br>14:30:12 | 2007-11-28<br>14:30:14 | 2007-11-28<br>14:30:26 | 14            | ANSWERED |

Figure 6-4. Call Detail Record

Press << to go to the Next page; Press >> to go to the Previous page

|                       |   |
|-----------------------|---|
| <b>Source No</b>      | Caller's ID   |
| <b>Destination No</b> | ID of destination extension / user                                    |
| <b>Start Time</b>     | The date/time when the call initiated                                 |
| <b>Answer Time</b>    | The date/time when the call answered                                  |
| <b>End Time</b>       | The date/time when the call terminated                                |
| <b>Duration Time</b>  | Duration of the call, in seconds, from Start Time to End Time.        |
| <b>Status</b>         | 4 status available (1) Answered; (2) No Answer; (3) Busy; (4) Failed. |

Table 6-3. Call Detail Record description

### Note

- IPPBX / WIPPBX have save Maximum 500 Records to the memory. If you press Reset bottom or reboot the system, the record will be erased.

# Appendix A

## How to use Call Parking function

The followings are the Call Park function settings, and all of VoIP devices (ATA, GW and IP Phone) were registered with Wi-Fi IP PBX.

- **Extension to Dial for Parking Calls: 700**
- **Extensions to park calls on :701-720**

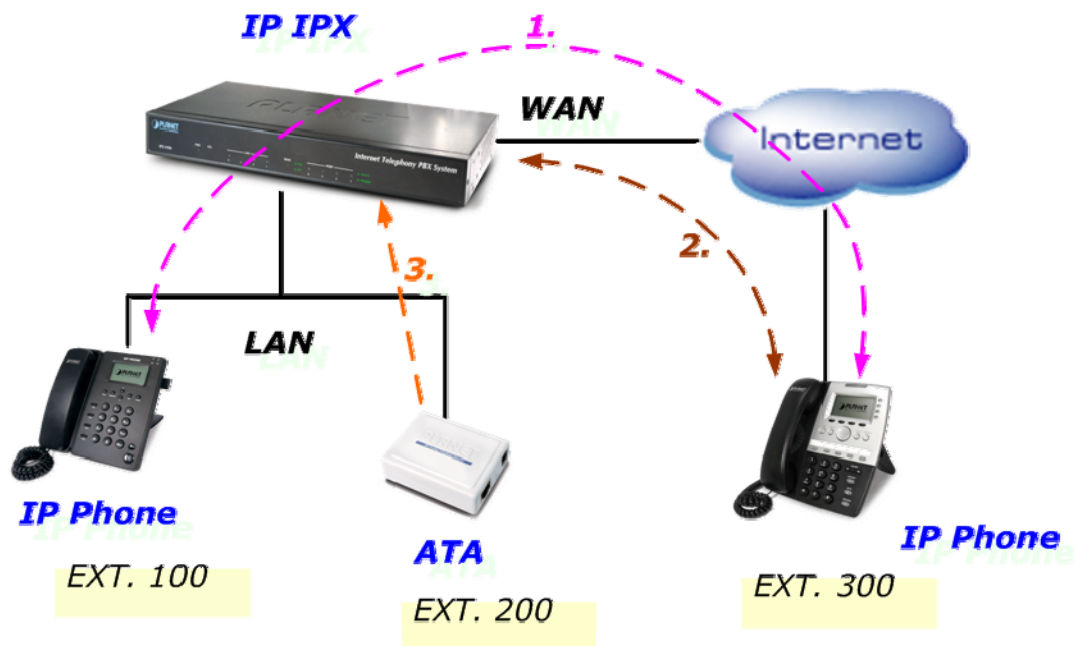


Figure A-1. Call Parking sample scenario

1. Ext.100 and Ext.300 are talking.
2. Ext.300 press Transfer button and dial "700#" to carry out the Call Parking function, and the voice guide will tell Ext.300 a retrieve number (ex:701) to set parking call (At this moment, the remote extension will hear the holding music.)
3. Ext.200 dial retrieve number (ex:701) to pick up call.
4. Ext.100 are talking with Ext.200



# Appendix B

## How to use Call Pickup function

The followings are the Call Pickup function settings, and all of VoIP devices (ATA, GW and IP Phone) were registered with IP PBX.

- **Pickup Extension: \*8**

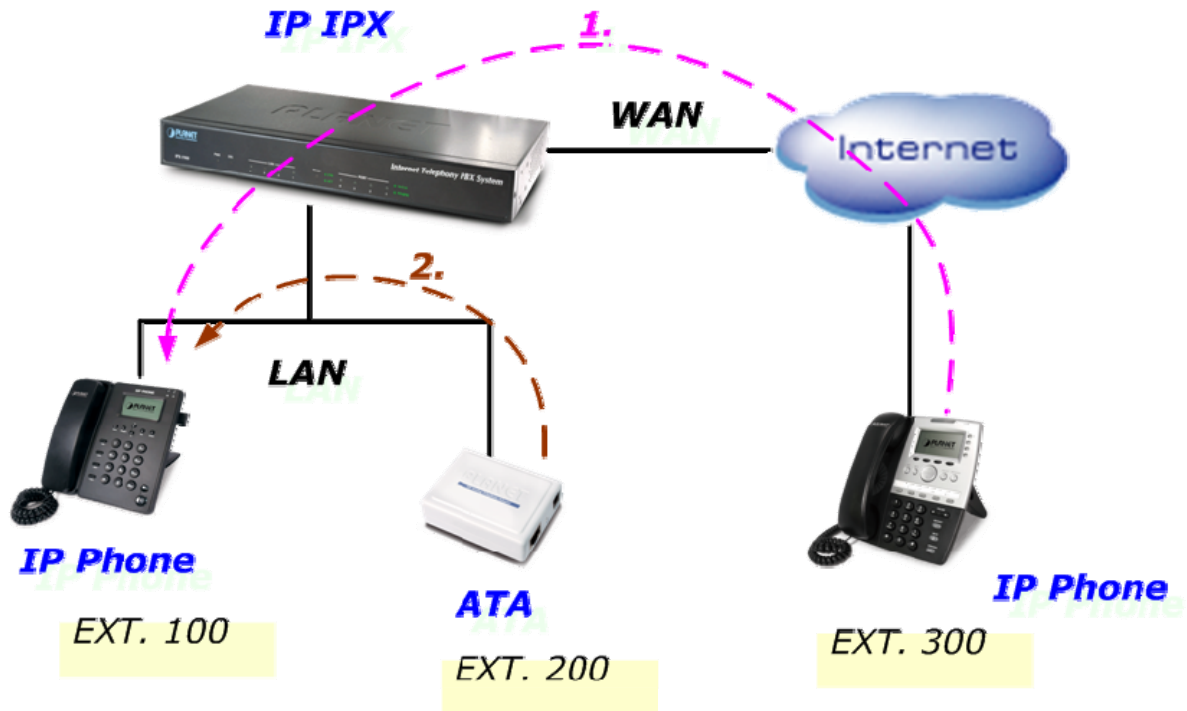


Figure B-1. Call Pickup sample scenario

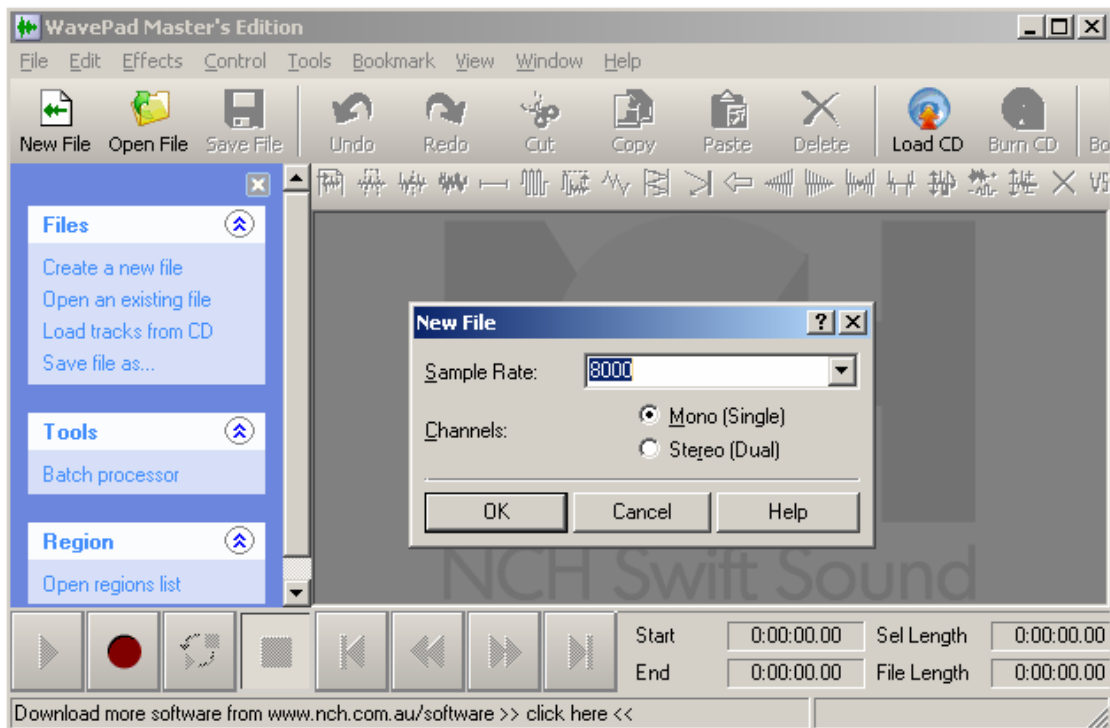
1. Ext.300 call to Ext.100, and Ext.100 is ringing.
2. Ext.200 dial “\*8#” to pickup the call for Ext.100, and Ext.200 is talking with Ext.300.

# Appendix C

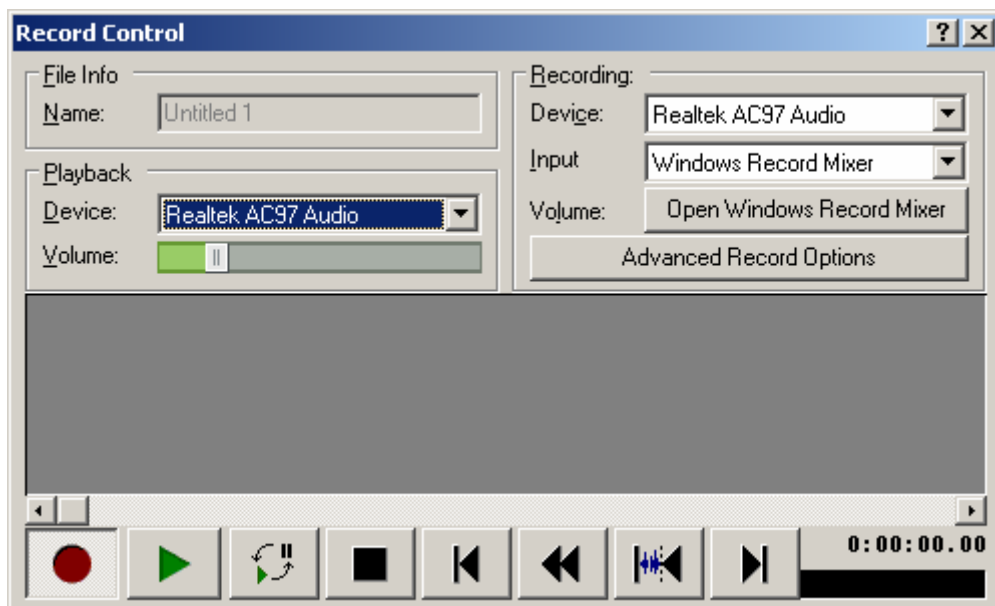
## Record Sound Sample

This sample for how to record sound, as gsm format file for ipbx series use.

- A) Visit to [www.nch.com.au](http://www.nch.com.au) sound home-page, to download Wavepad v3.05 (for windows) sound tools install your pc.
- B) In this screen, create a **new file**, Input **8000Hz** and select **mono (Single)** channel then press ok to finish.

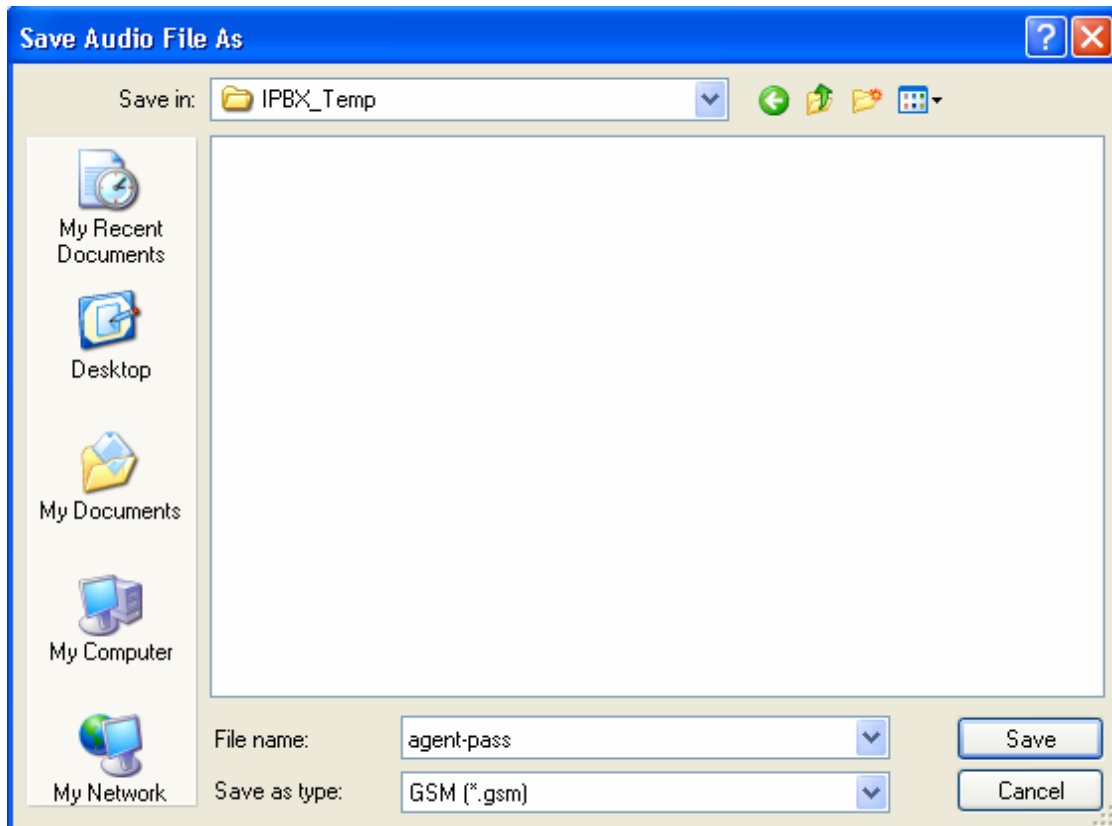


- C) Press **F5** Select your recording sound device and record channel or recording volume level.



D) Press  Start recording

E) Save the current file as WAV or gsm format to finish.



### ➤ Convert Wav to G729 format Example

- A) Visit to [www.voiceage.com](http://www.voiceage.com) home-page, to download Open G729 encoder sound tools uncompress to your pc.
- B) Convert WAV format file to g729 format file.



# Appendix D

## Record Voice Guide Process

IPX-1900 provides **Record Voice Menu by Phone** function. Please register your VoIP devices to Wi-Fi IP PBX at first, and then check the Record voice code from **“IP PBX Setup -> record Voice Menu”** page.

| • Record Voice Menu                   |                                   |        |
|---------------------------------------|-----------------------------------|--------|
| Record voice                          | <input type="text" value="*9"/>   | Ex:*9  |
| Play voice                            | <input type="text" value="*10"/>  | Ex:*10 |
| Default voice                         | <input type="text" value="*11"/>  | Ex:*11 |
| Password                              | <input type="text" value="1234"/> |        |
| <input type="button" value="Submit"/> |                                   |        |

Figure C-1. Record voice menu settings

VoIP devices dial **\*9** to entry the Record Voice Menu, then refer to the following record processes to record the Voice Menu.

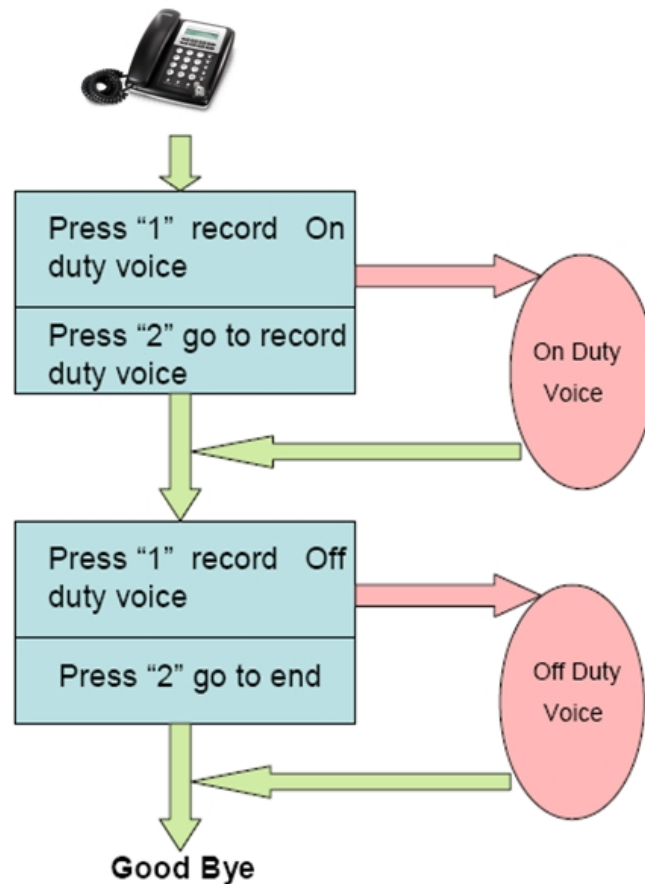


Figure C-2. Voice record processes

# Appendix E

## Voice Communication Samples

The chapter shows you the concept and command to help you configure your IP PBX System through sample configuration. And provide several ways to make calls to desired destination in IP PBX. In this section, we'll lead you step by step to establish your first voice communication via web browsers operations.

### IP Phone register to IPX-1900

In the following samples, we'll introduce IP Phone register to IP PBX applications.

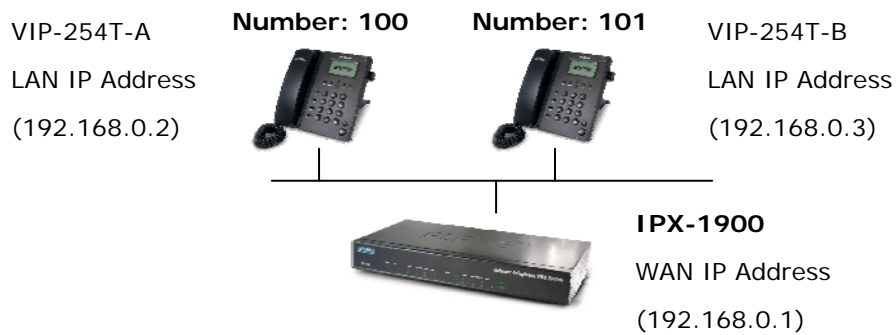


Figure D-1. Topology of instruction example

#### ➤ Machine Configuration:

##### STEP 1:

Browse to "IP PBX Setup → User Extensions Setup" configuration menu.



Figure D-3. User extension setting of IP PBX

**STEP 2:**

Click the “Add” button to create extension account ext.100 and ext.101.

**User Extension Advance Setup**

User Extension: 100  
Password: 123  
Caller Id: 100

• Call group / Pickup group select

Call Group:  1  2  3  4  5  6  7  8  9  10  
Pickup Group:  1  2  3  4  5  6  7  8  9  10

• Call forward option

Call Forward Always:   
Call Forward on Busy:   
Call Forward on No Answer:  IF Time out: 20 Sec

• Voice mail

Voicemail:  Enable

Submit Reset

Figure D-4. Add extension setting of IP PBX

**STEP 3:**

Please log in VIP-254T\_B and browser to “SIP setting → Domain Service” configuration menu. Insert the account/password information then save and reboot machine. The sample configuration screen is shown below:

## Service Domain Settings

You could set information of service domains in this page.

**Realm 1 (Default)**

Active:  On  Off

Display Name: 101  
Line Number: 101  
Register Name: 101  
Register Password: ●●●  
Domain Server: 192.168.0.1  
Proxy Server: 192.168.0.1  
Outbound Proxy:

Data match with Figure D-3. IP PBX's extension settings

The IP address of IP PBX

Figure D-5. Web page of VIP-154T

**STEP 4:**

Repeat the same configuration steps on VIP-254T-A, and check the machine registration status, make sure the registrations are completed.

**STEP 5:**

After both of devices have registered to IP PBX successfully, it could browse to “**Information -> PBX Extension Status**” page to show the registration status:

**Information**

- **Extension Status**

Register OK!  Talk on the Telephone!  Register Unknown!

| Num | Status                              | Num | Status                              | Num | Status |
|-----|-------------------------------------|-----|-------------------------------------|-----|--------|
| 100 | <input checked="" type="checkbox"/> | 101 | <input checked="" type="checkbox"/> |     |        |

Figure D-8. Extension status

➤ **Test the Scenario:**

1. VIP-254T\_B pick up the telephone
2. Dial the number: 100 shall be able to connect to the VIP-254T\_A
3. Then the VIP-254\_A should ring. Please repeat the same dialing steps on VIP-254\_B to establish the first voice communication from VIP-254T\_A

**IP Phone make off-Net calls via Gateway**

In the following samples, we'll introduce VIP-154T and VIP-192 makes off-Net Calls (PSTN calls) via VIP-480FO applications.

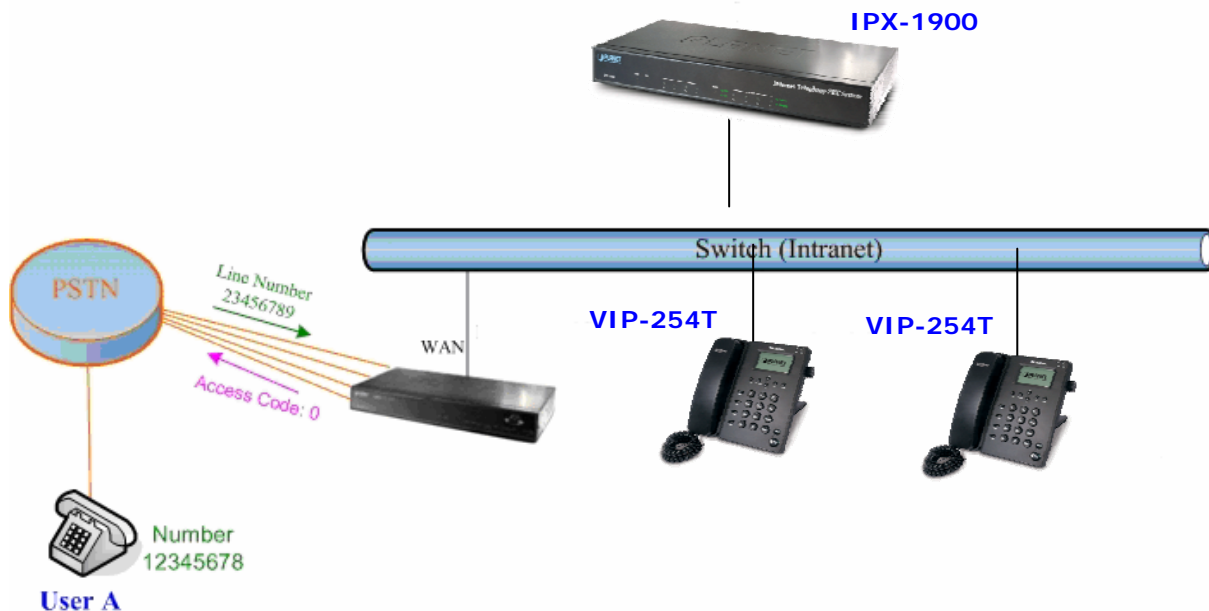


Figure D-9. Installation example with VIP-480FO

➤ **Machine Configuration:**

**STEP 1:**

Please refer to the first sample and let VIP-154T and VIP-192 register to IP PBX.

**STEP 2:**

Please log in IP PBX via web browser and browse to “**IP PBX Setup → User Extensions Setup**” configuration menu to add four accounts for VIP-480FO using.

• **User Extensions Setting**

Add New User Extensions

**Extensions List** Extension Max is 300

| User Extension | Password | Caller Id | Action   |
|----------------|----------|-----------|--|
| 100            | 123      | 100       | <input type="button" value="Advance"/> <input type="button" value="Delete"/> |
| 101            | 123      | 101       | <input type="button" value="Advance"/> <input type="button" value="Delete"/> |
| 200            | 123      | 200       | <input type="button" value="Advance"/> <input type="button" value="Delete"/> |
| 201            | 123      | 201       | <input type="button" value="Advance"/> <input type="button" value="Delete"/> |
| 202            | 123      | 202       | <input type="button" value="Advance"/> <input type="button" value="Delete"/> |
| 203            | 123      | 203       | <input type="button" value="Advance"/> <input type="button" value="Delete"/> |

Figure D-10. Add accounts for VIP-480FO

**STEP 3:**

Browse to “**IP PBX Setup → Attendant Extension**” configuration menu. Assign an attendant number which inexistence extension in Extension List and the sample configuration screen is shown below:

• **Attendant Extension**

Attendant Extension Number 1

Attendant Extension Number 2

Attendant Extension Number 3

Attendant Extension Number 4

Attendant Extension Number 5

Attendant Extension Number 6

Attendant Extension Number 7

Attendant Extension Number 8

Attendant Extension Number 9

Attendant Extension Number 10

Figure D-11. Assign an attendant number

Pressing the “**Submit**” button for activate the configuration.



**STEP 4:**

Browse to “IP PBX Setup → Trunk Management → Gateway Trunk” configuration menu. Fill in the IP address of VIP-480FO for connecting with VIP-480FO by peer-to-peer mode, and press the “Insert” button for activate the configuration.

• Gateway Trunk Setting

Add Gateway trunk Gateway trunk Max is 10

| IP  | Port                              | Action  |
|---|-----------------------------------|---|
| <input type="text" value="192.168.0.12"/> | <input type="text" value="5060"/> | <input type="button" value="Insert"/> <input type="button" value="Change"/> |

Figure D-12. Add a Gateway trunk for connecting with VIP-480FO

**STEP 5:**

Browse to “IP PBX Setup → Trunk Management → Trunk Group” configuration menu. Add a Trunk Group for making off-Net calls via VIP-480FO.

• Trunk Group Setting

Add New Grop Name

Group Name List Trunk Group Max is 10

| Group Name | Group Number | Number            | Action  |
|------------|--------------|-------------------|---|
| VIP-480FO  | 0            | 192.168.0.12:5060 | <input type="button" value="Edit"/> <input type="button" value="Delete"/> |

Figure D-13. Add Trunk Group number for grabbing the FXO ports of VIP-480FO

**STEP 6:**

Please log in VIP-480FO via web browser and browse to “Advance Setup → VoIP Setup → VoIP Basic” configuration menu. Insert the account/password information and set up the hunting function. The sample configuration screen is shown below:

Port Number / Password Setting(MAX 20 digit) :

| No. | Number                           | Reg                                 | Account                          | Password                         | Register Status | Reason |
|-----|----------------------------------|-------------------------------------|----------------------------------|----------------------------------|-----------------|--------|
| 1   | <input type="text" value="200"/> | <input checked="" type="checkbox"/> | <input type="text" value="200"/> | <input type="text" value="..."/> | Success         | OK     |
| 2   | <input type="text" value="201"/> | <input checked="" type="checkbox"/> | <input type="text" value="201"/> | <input type="text" value="..."/> | Success         | OK     |
| 3   | <input type="text" value="202"/> | <input checked="" type="checkbox"/> | <input type="text" value="202"/> | <input type="text" value="..."/> | Success         | OK     |
| 4   | <input type="text" value="203"/> | <input checked="" type="checkbox"/> | <input type="text" value="203"/> | <input type="text" value="..."/> | Success         | OK     |

Figure D-14. Set up the number of FXO ports of VIP-480FO

**SIP Hunting Table :**

| No. | Hunting Member   |
|-----|--|
| 1   | <input type="checkbox"/> Port 1 <input checked="" type="checkbox"/> Port 2 <input checked="" type="checkbox"/> Port 3 <input checked="" type="checkbox"/> Port 4 |
| 2   | <input checked="" type="checkbox"/> Port 1 <input type="checkbox"/> Port 2 <input checked="" type="checkbox"/> Port 3 <input checked="" type="checkbox"/> Port 4 |
| 3   | <input checked="" type="checkbox"/> Port 1 <input checked="" type="checkbox"/> Port 2 <input type="checkbox"/> Port 3 <input checked="" type="checkbox"/> Port 4 |
| 4   | <input checked="" type="checkbox"/> Port 1 <input checked="" type="checkbox"/> Port 2 <input checked="" type="checkbox"/> Port 3 <input type="checkbox"/> Port 4 |

Figure D-15. Set up the Hunting Member of FXO ports

**SIP Proxy Setting :**

|                            |   |
|----------------------------|---|
| Domain/Realm               | 192.168.0.1   |
| SIP Proxy Server           | 192.168.0.1/5060<br><input type="checkbox"/> use <b>net2phone</b>     |
| Register Interval(seconds) | 900   |
| SIP Authentication         | <input checked="" type="radio"/> Enable <input type="radio"/> Disable |
| Outbound Proxy Server      | 0.0.0.0   |

Figure D-16. Set up the Proxy Server IP address for register to IPX-1900

**STEP 7:**

Browse to **“Dialing Plan”** configuration menu. Add an Incoming Dial Plan (no.1x) for redirect the PSTN outgoing calls to FXO ports.

**Incoming Dial Plan: (maximun 50 entries, maximun length of prefix digits is 16 digit, maximun length of number is 20 digit):**

| Item | Incoming no.         | Length of Number                            | Delete Length        | Prefix no.           | Destination telephone port | Operation  |
|------|----------------------|---|----------------------|----------------------|----------------------------|------------|
| 1    | 1x                   | 2 ~ 20                                      | 0                    | None                 | 1                          |            |
|      | <input type="text"/> | <input type="text"/> ~ <input type="text"/> | <input type="text"/> | <input type="text"/> | <input type="text"/>       | <b>ADD</b> |

**DELETE** Inbound Dial Plan From  To

Figure D-17. Add an incoming dial plan

**STEP 8:**

Browse to **“Port Status”** configuration menu. Fill in the auto attendant number **555** to all of ports. (Where 555 is the auto-attendant number of IP PBX)

Hot Line Number Setting (Hotline Setting)

|                                 |   |
|---------------------------------|---|
| Hotline Delay                   | <input checked="" type="radio"/> Disable <input type="radio"/> Enable |
| Hotline Delay Time(Max. 20 sec) | 3 sec   |
| Port 1 number                   | 555   |
| Port 2 number                   | 555   |
| Port 3 number                   | 555   |
| Port 4 number                   | 555   |

Apply

Figure D-18. Hot Line to auto-attendant of IPX-1900

**STEP 8:**

After all of devices have registered to IP PBX successfully, the **Extension Status** page will show the registration status:

• Extension Status

Register OK! 
  Talk on the Telephone ! 
  Register Unknown!

| Num | Status                           | Num | Status                           | Num | Status                           |
|-----|----------------------------------|-----|----------------------------------|-----|----------------------------------|
| 203 | <input checked="" type="radio"/> | 202 | <input checked="" type="radio"/> | 201 | <input checked="" type="radio"/> |
| 200 | <input checked="" type="radio"/> | 101 | <input checked="" type="radio"/> | 100 | <input checked="" type="radio"/> |

Figure D-19. Extension status page with Phone and Gateway registered

➤ **Test the Scenario:**

1. VIP-154T pick up the telephone
2. Dial the number: 0 will hear the dial tone, and dial the number: 12345678. This call will hunt the FXO port of VIP-480FO and shall be able connect to the User A.
3. Then the telephone of User A will ringing, User A can pick up the handset and talk with VIP-154T.
4. Both VIP-154T and User A hang up the calls.
5. User A pick up the telephone and dial the number: 23456789 should be able to connect to the Auto Attendant System of IP PBX.
6. The User A will hear the prompts, and dial the extension number: 100 shall be able connect to the VIP-192.
7. Then the VIP-192 should ringing, and it to pick up the call then talk with User A.

## IP Phone make external SIP Proxy calls via SIP Trunk

In the following samples, we'll introduce VIP-154T and VIP-192 makes SIP Proxy calls via SIP Trunk applications.

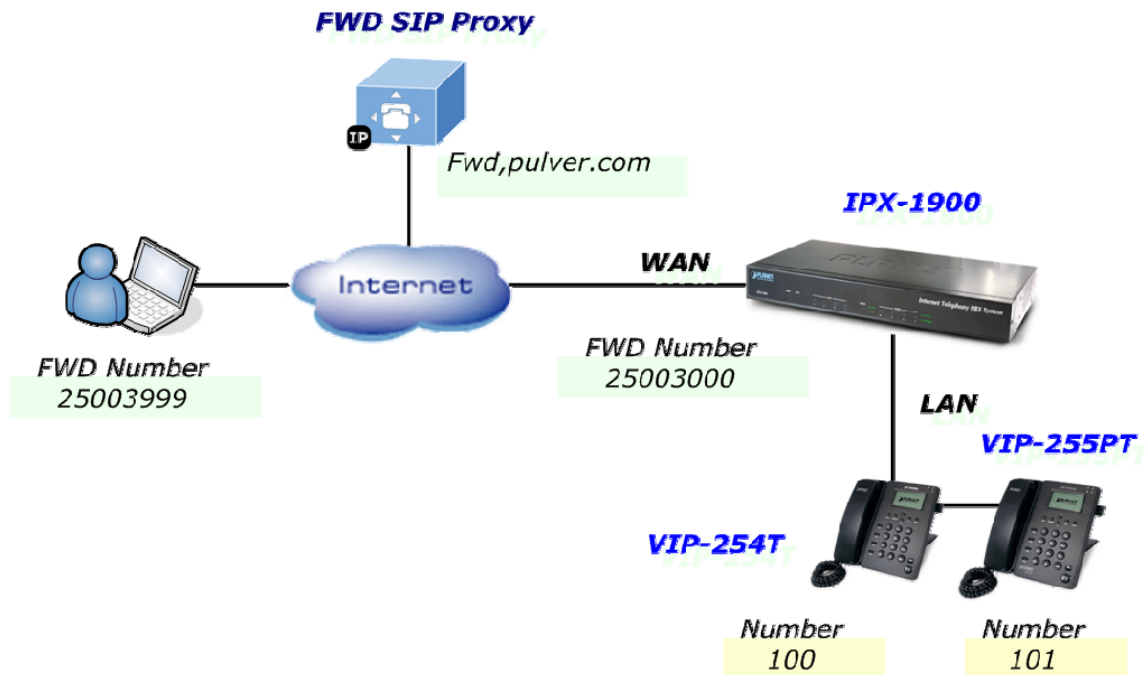


Figure D-20. Installation example with FWD SIP Prxy

### ➤ Machine Configuration:

#### STEP 1:

Please refer to the first sample and let VIP-254T and VIP-255PT register to IP PBX.

#### STEP 2:

Browse to “IP PBX Setup → Trunk Management → SIP Trunk” configuration menu. Add a new Service Provider account for registering to FWD SIP Proxy.

• **Server Providers Setting**

Add New Service Providers

**Providers List** Service Provider Max is 10

| Caller Id | Username | Password | Proxy          | Port | Action   |
|-----------|----------|----------|----------------|------|--|
| 25003000  | 25003000 | 123      | fwd.pulver.com | 5060 | <input type="button" value="Advance"/> <input type="button" value="Delete"/> |

Figure D-21. Add a Service Provider account

### STEP 3:

Browse to “IP PBX Setup → Trunk Management → Trunk Group” configuration menu. Add a Trunk Group for making external SIP Proxy calls.

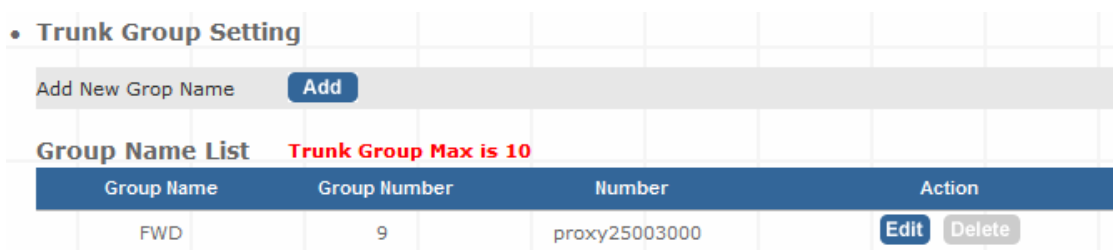


Figure D-22. Add Trunk Group number

### STEP 4:

After the SIP Trunk has registered to FWD SIP Proxy successfully, the **Service Provider Status** page will show the registration status:

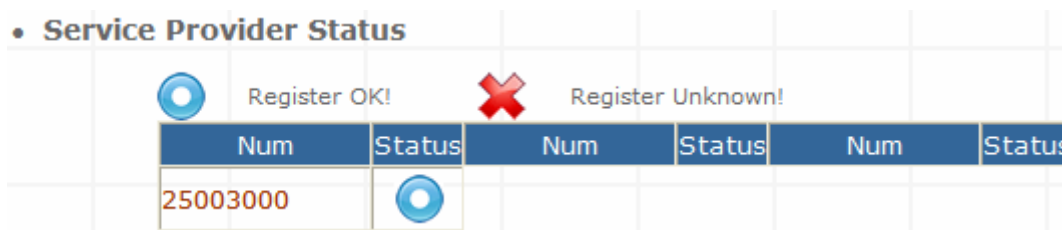


Figure D-23. Service Provider status page

### ➤ Test the Scenario:

1. VIP-154T pick up the telephone
2. Dial the number: **9** will hear the dial tone, and dial the number: 25003999. This call shall be able connect to the User B.
3. Then the softphone of User B will ringing, User B can answer the call and talk with VIP-154T.
4. Both VIP-154T and User B hang up the calls.
5. User B pick up and dial the number: 25003000 should be able to connect to the Auto Attendant System of IP PBX.
6. The User B will hear the prompts, and dial the extension number: 100 shall be able connect to the VIP-254T.
7. Then the VIP-254T should ringing, and it to pick up the call then talk with User B.

# Appendix F

## IPX-1900 Series Specifications

|                        |   |
|------------------------|---|
| Product                | Internet Telephony PBX System   |
| Model                  | IPX-1900  |
| Hardware               |   |
| LAN                    | 1 RJ-45 (10/100Base-TX, Auto-Sensing/Switching)   |
| WAN                    | 1 RJ-45 (10/100Base-TX, Auto-Sensing/Switching)   |
| Standards and Protocol |   |
| Call control           | SIP 2.0 (RFC3261) , SDP (RFC 2327), Symmetric RTP   |
| Registration           | Max. 300 nodes / SIP IP phones/ ATA / FXO gateways  |
| Calls                  | Max. 60 concurrent calls  |
| Voice CODEC Support    | G.723, G.726, G.729, G.711, GSM, iLBC   |
| Voice Processing       | DTMF detection and generation<br>In-Band and Out-of-Band (RFC 2833), (SIP INFO)<br>Supports password authentication using MD5 digest  |
| PBX features           | Auto Attendant (AA)<br>Interactive Voice Response (IVR)<br>Records IVR via IP Phone<br>Voicemail Support (VM)<br>Voicemail Send to E-mail<br>Call Detailed Record (CDR)<br>User Management via Web Browsers<br>Web Firmware Upgrade<br>Backup and Restore Configuration file<br>Call/Pickup Group<br>Displays 300 Registered User's Status: Unregistered / Registered / On-Call<br>Displays 60 Registered Trunk's Status: Unregistered / Registered<br>Fax Support using G.711 Pass-Through or T.38** |
| Call features          | Caller ID<br>Call Group<br>Call Hold<br>Call Waiting<br>Call Transfer<br>Call Forward (Always, Busy, No Answer)<br>Call Pickup<br>Call Park<br>Call Resume<br>Music on Hold<br>Three-way conference with feature phones (VIP-254T series, VIP-255PT, 351PT and ATA series: VIP-156/ 157/ 158 / 161W)  |

|   |   |
|---|---|
| Internet Sharing  |   |
| Protocol  | TCP/IP, UDP/RTP/RTCP, HTTP, ICMP, ARP, NAT, DHCP, PPPoE, DNS  |
| Advanced Function   | NAT/Bridge mode, DHCP server, Static Route, DMZ, Virtual Server, Port Trigger, Packet / URL Filter, UPnP, DDNS, SNMP, Ping test |
| Network and Configuration   |   |
| Connection Type   | Static IP, PPPoE, DHCP  |
| Management  | HTTP Web Browser  |
| LED Indications   | System: 1, PWR<br>WAN: 1, LNK/ACT<br>LAN: 4, LNK/ACT<br>Line: 4, In-Use/Ringing   |
| Environment   |   |
| Dimension (W x D x H)   | 340 x 159 x 40 mm   |
| Operating Temperature   | 0~40 degree C, 0~90% humidity   |
| Power Requirement   | 12V DC  |
| EMC/EMI   | CE, FCC Class B   |
| Remark: T.38 support is dependent on fax machine, SIP provider and network / transport resilience |   |

# Appendix G

## IPX-1900 Module Card Specifications

### IPX-19FO Card Technical Specifications

| Signaling                           | Loop Start / DTMF  |
|-------------------------------------|--|
| No. of channels                     | 2  |
| Interface Connectors                | 2 RJ-11 2-pin modular jacks  |
| AC Impedance Selection              | 600 $\Omega$ /900 $\Omega$ / Global Impedance / Sixteen Impedance for selection. |
| Receive Frequency Response          | Low -3 dBFS Corner, FILT = 0 , 5 Hz<br>Low -3 dBFS Corner, FILT = 1, 200 Hz      |
| Return Loss                         | $\geq$ 25 dB , 300–3.4 kHz, all ac terminations                                  |
| digital gain/attenuation adjustment | -16.5 to 13.5 dB   |
| Tranhybrid Balance                  | $\geq$ 20 dB, 300–3.4 kHz, all ac terminations                                   |
| Polarity Reversal Detection         | Support Battery Reversal Detection   |

### IPX-19FS Card Technical Specifications

| Signaling                        | Loop Start / DTMF                        |
|----------------------------------|--|
| No. of channels                  | 2  |
| Interface Connectors             | 2 RJ-11 2-pin modular jacks              |
| Line Impedance                   | 600 $\Omega$<br>900 $\Omega$             |
| Return Loss                      | Min 30db, 200 Hz to 3.4 kHz              |
| Gain/Attenuation                 | Digital Programmable from mute~6db       |
| Metallic to Longitudinal Balance | Min. 40 db, 200 Hz to 3.4 kHz            |
| DC Loop Current Accuracy         | 29mA nominal                             |
| Ring Voltage                     | 44Vrms Nominal                           |
| Ringing Tone                     | 16.667Hz, 20Hz /30Hz / 40Hz/ 50Hz / 60Hz |
| REN                              | 5  |
| Pulse metering                   | 12k/16k hz                               |

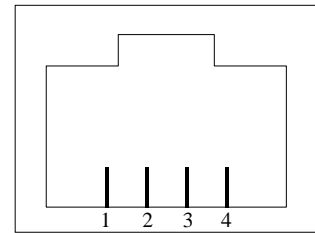
Note: The IPX-19SL module card signaling same as IPX-19FO/FS specifications.



## FXO Port Pin Assignments

The FXO Telephony Interface has 2 RJ-11C/W modular jacks. The following diagram and table show the assignments of the pin for the R-J11 port.

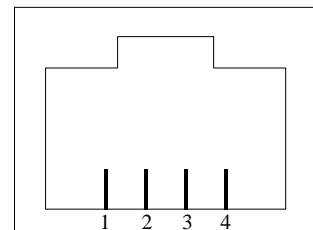
| RJ-11 pin | Signal |
|-----------|--------|
| 1         |        |
| 2         | Tip    |
| 3         | Ring   |
| 4         |        |



## FXS Port Pin Assignments

The FXS Telephony Interface has 4 RJ-11C/W modular jacks. The following diagram and table show the assignments of the pin for the RJ-11 port.

| RJ-11 pin | Signal        |
|-----------|---------------|
| 1         | Not connected |
| 2         | Tip           |
| 3         | Ring          |
| 4         | Not connected |



## EC Declaration of Conformity

For the following equipment:

\*Type of Product : Internet Telephony PBX system

\*Model Number : IPX-1900

\* Produced by:

Manufacturer's Name : **Planet Technology Corp.**

Manufacturer's Address: 11F, No 96, Min Chuan Road  
Hsin Tien, Taipei, Taiwan, R. O.C.

is herewith confirmed to comply with the requirements set out in the Council Directive on the Approximation of the Laws of the Member States relating to 1999/5/EC R&TTE.

For the evaluation regarding the R&TTE, the following standards were applied:

Emission

EN 55022: 1998+A1: 2000+A2: 2003 EN 55024: 1998+A1: 2001+A2: 2003

EN 61000-3-2: 2000+A2: 2005 IEC 61000-4-2 Edition 1.2: 2001-04

EN 61000-3-3: 1995 + A1: 2001 IEC 61000-4-3: 2002+A1: 2002

IEC 61000-4-4: 2004

IEC 61000-4-5 Edition 1.1: 2001-04

IEC 61000-4-6 Edition 2.1: 2004-11

IEC 61000-4-8 Edition 1.1: 2001-03

IEC 61000-4-11 Second Edition: 2004-03

AS/NZS CISPR 22: 2004

Responsible for marking this declaration if the:

Manufacturer  Authorized representative established within the EU

Authorized representative established within the EU (if applicable):

Company Name: Planet Technology Corp.

Company Address: 11F, No.96, Min Chuan Road, Hsin Tien, Taipei, Taiwan, R.O.C

Person responsible for making this declaration

Name, Surname Jonas Yang

Position / Title : Product Manager

Taiwan

Place

July 07, 2008

Date



Legal Signature

**PLANET TECHNOLOGY CORPORATION**

e-mail: sales@planet.com.tw http://www.planet.com.tw

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