

# **Internet Telephony PBX System**

## **IPX-300 Series**

### **Quick Installation Guide**

## Overview

PLANET IPX-300/IPX-300W IP PBX telephony systems ("IP PBX" in the following term) are designed and optimized for the small business in daily communications. It can support up to 100 user registrations and easy to install and manage a fully working system with the convenience and cost advantages. The future IP PBX telephony system offers all of the essential features of telephony which is required by small business users for their telecommunication/data needs.

The IP PBX series are 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 a built-in IEEE 802.11b/g wireless AP / CPE, the Wi-Fi IP PBX (IPX-300W) offers wireless connectivity via 54Mbps data transmissions. Users may integrate PLANET IP Phone VIP-154T series, VIP-155PT/ 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.

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## ***Document Objectives***

This guide provides physical installation, LAN/WAN IP configurations, and Internet access establishment information for the IP PBX.

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## ***Document Organization***

This guide is organized as follows:

- Preparation before beginning administration on IP PBX
- Administration interface
- LAN/WAN Interface quick configurations

# Preparation before beginning administration on IP PBX

## Physical Installation

IPX-300: Internet Telephony PBX System

IPX-300W: Wi-Fi Internet Telephony PBX System



Figure 1. Front Panel of IPX-300



Figure 2. Front Panel of IPX-300W

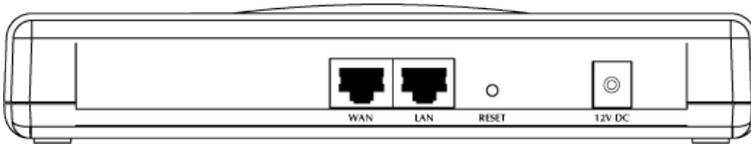


Figure 3. Rear Panel of IPX-300

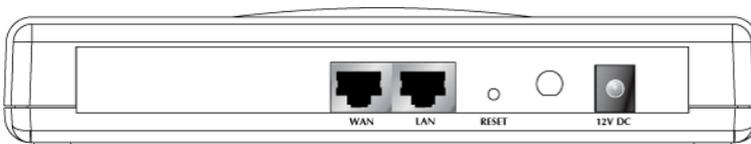


Figure 4. Rear Panel of IPX-300W

## Administration Interface

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 one of these 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.

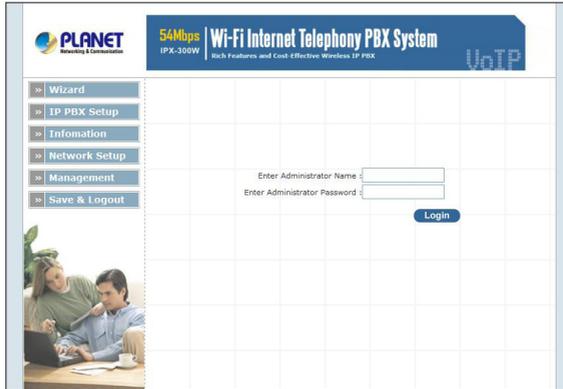


Figure5. Input prompt



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 for Quick Setup of the IP PBX, after finishing the authentication, please click "Wizard" to enter quick start:

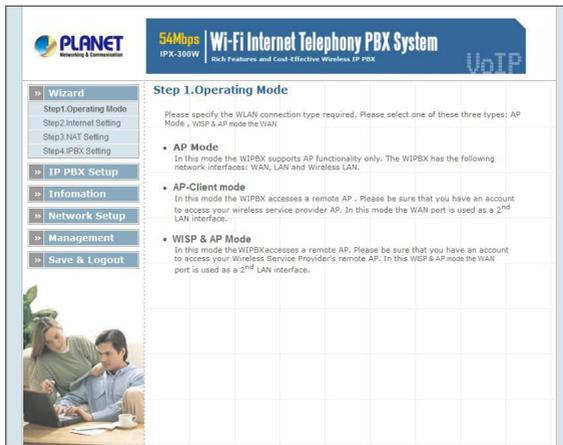


Figure 6. Wizard-Operating Mode settings

## Step1. Operation Mode (For IPX-300W)

For most users, Internet access is the primary application. The IP PBX supports the WAN, LAN and WLAN interface for Internet access and remote access. When you click "Operation Mode" from within the Wizard Setup, the following setup page will be show.

Three WLAN modes of operation are available for Internet Access:

### AP Mode:

In this mode the IP PBX supports AP functionality only. The IP PBX has the following network interfaces: WAN, LAN and Wireless LAN.

### AP-Client Mode:

In this mode the IP PBX accesses a remote AP. Please be sure that you have an account to access your wireless service provider AP. In this mode the WAN interface is used a 2nd LAN interface.

### WISP & AP Mode:

The IP PBX must access remote AP. Please be sure that have account to access from remote AP. In this WISP & AP mode the network interface will change from WAN port to LAN port and all of network access will through by remote AP.

## Step2. Internet Setting (AP Mode)

### WAN Setting

NAT Mode	Network Address Translation (NAT) serves connecting multiple computers to the Internet using one IP address.
Bridge Mode	Bridge mode serves to connect a local area network (LAN / Wireless) to another local area network that uses the same protocol.
WAN Port IP Assignment	Three methods are available for Internet Access. Static IP / DHCP / PPPoE type for your select. You should refer to "Network Setting" in user menu.

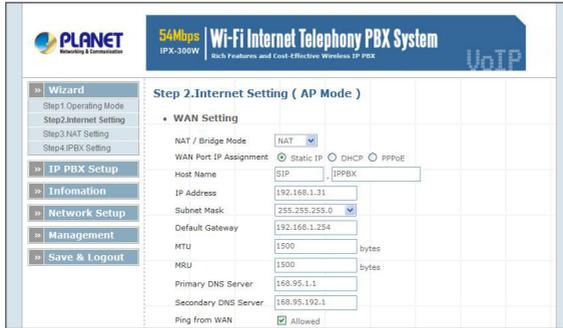


Figure 7. Wizard-Internet settings

### AP Setting (For IPX-300W)

For configuring correctly the WLAN port in client mode, the below instructions will provide a quick start. It is advised if possible to use the simplest network settings for first try.

For making sure the IP PBX is connecting to your wireless router (AP). You need to set up the following: SSID, Frequency Channel, Authentication method and Encryption parameters (Type/Encryption length/Keys.)

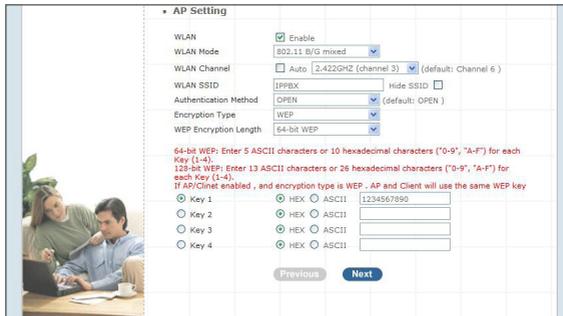


Figure 8. Wizard-AP settings

### Step3. NAT Setting

#### LAN IP Setting

LAN IP Address	Private IP address for connecting to a local private network. (Default: 192.168.0.1)
Subnet Mask	Subnet mask for the local private network (Default: 255.255.255.0)

DHCP Server	Enable to open LAN port DHCP server
Assigned DHCP IP Address	DHCP server range from start IP to end IP
DHCP IP Lease Time	Client to ask DHCP server refresh time, range from 60 to 86400 seconds

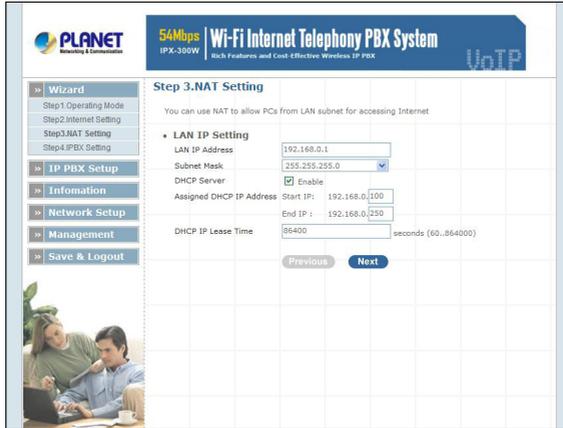


Figure 9. Wizard-NAT settings

## Step4. IPPBX Setup

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

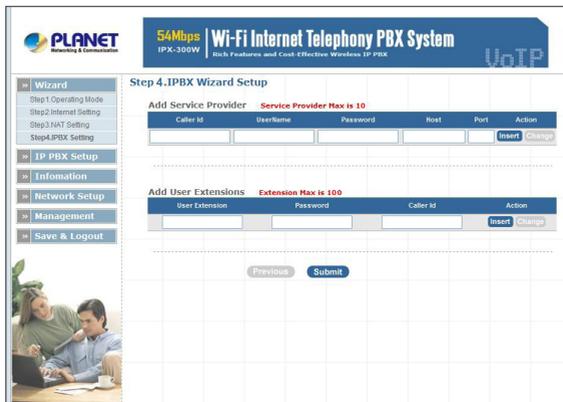


Figure 10. Wizard-IP PBX settings

## Service Provider:

Caller ID	Service provider name
Username	Input Provider name
Password	Input Provider password
Host	Input Providers server address
Port	Providers server port

## User Extensions:

User Extension	Input Extension number
Password	Input Extension password
Caller Id	Input Extension caller id

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.

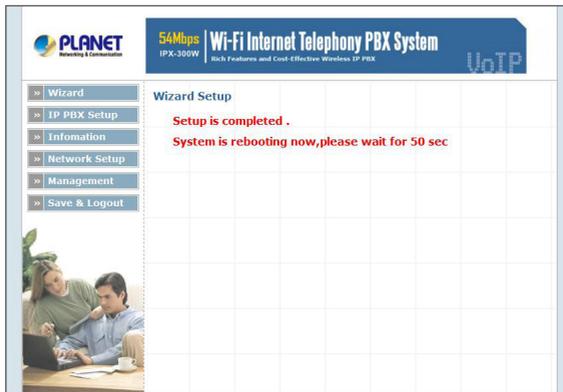


Figure 11. Wizard-Rebooting

## 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 and Wi-Fi Phone register to IP PBX

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

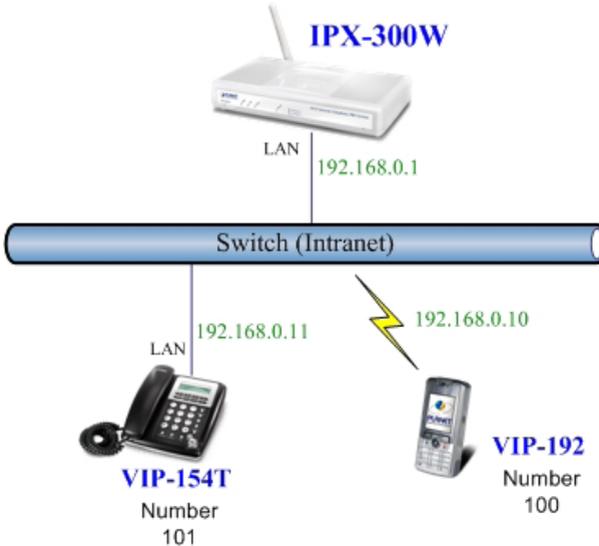


Figure 12. Topology of instruction example

### Machine configuration:

STEP 1: Please log in IP PBX via web browser and browse to “**Network Setup** → **WLAN Setting**” configuration menu. Enable the WLAN and setup the related configuration. The sample configuration screen is shown below:

• WLAN Setting	
WLAN	<input checked="" type="checkbox"/> Enable
W-LAN Role	AP Only
WLAN Mode	802.11 B/G mixed
W-LAN Channel	<input type="checkbox"/> Auto 2.422GHZ (channel 3) (default: Channel 10)
WLAN SSID	IPPBX <input type="checkbox"/> Hide SSID
Authentication Method	OPEN (default: OPEN)
Encryption Type	WEP
WEP Encryption Length	64-bit WEP
<small>64-bit WEP: Enter 5 ASCII characters or 10 hexadecimal characters ("0-9", "A-F") for each Key (1-4). 128-bit WEP: Enter 13 ASCII characters or 26 hexadecimal characters ("0-9", "A-F") for each Key (1-4). If AP/Client enabled, and encryption type is WEP, AP and Client will use the same WEP key</small>	
<input checked="" type="radio"/> Key 1	<input checked="" type="radio"/> HEX <input type="radio"/> ASCII <input type="text" value="1234567890"/>
<input type="radio"/> Key 2	<input checked="" type="radio"/> HEX <input type="radio"/> ASCII <input type="text"/>
<input type="radio"/> Key 3	<input checked="" type="radio"/> HEX <input type="radio"/> ASCII <input type="text"/>
<input type="radio"/> Key 4	<input checked="" type="radio"/> HEX <input type="radio"/> ASCII <input type="text"/>

Figure 13. WLAN Setting of IPX-300W

STEP 2: Browse to **"IP PBX Setup → User Extensions Setup"** configuration menu.



Figure 14. User extension setting of IP PBX

STEP 3: Click the **"Add"** button to create extension account ext.100 and ext.101.

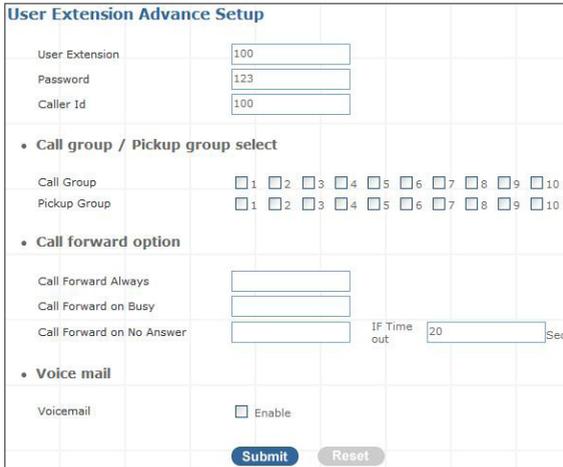


Figure 15. Add extension setting of IP PBX

STEP 4: Please log in VIP-154T 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:

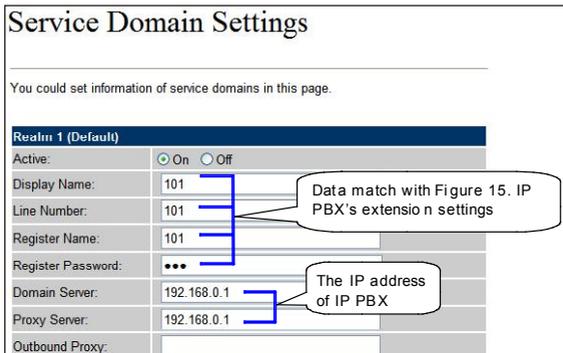


Figure 16. Web page of VIP-154T

STEP 5: Please take VIP-192 and setup the wireless network to connect with IP PBX (IPX-300W) by keypad menu method. Then log in VIP-192 via web browser and browser to **“SIP Settings”** configuration menu. Insert the Register and Outbound Proxy IP Address information.

SIP Phone Setting	
SIP Phone Port Number	5060 [1024 - 65535]
Registrar Server	
Registrar Server Domain Name/IP Address	192.168.0.1
Registrar Server Port Number	5060 [1024 - 65535]
Authentication Expire Time	3600 sec. (Default: 3600 sec.) [60 - 9999]
Outbound Proxy Server	
Outbound Proxy Domain Name/IP Address	192.168.0.1
Outbound Proxy Port Number	5060 [1024 - 65535]

Figure 17. SIP settings of VIP-192

Then browse to **“SIP Account Settings”** configuration menu and fill in the account/ password information. The sample configuration screen is shown below:

SIP Account Setting	
Default Account	Account 1
Account 1 Setting	
Account Active	<input type="radio"/> Disable <input checked="" type="radio"/> Enable
Display Name	100
SIP User Name	100
Authentication User Name	100
Authentication Password	•••
Register Status	Register

Figure 18. SIP account settings of VIP-192

STEP 6: 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					
<input checked="" type="radio"/> Register OK! <input checked="" type="checkbox"/> Talk on the Telephone! <input checked="" type="checkbox"/> Register Unknown!					
Num	Status	Num	Status	Num	Status
100	<input checked="" type="radio"/>	101	<input checked="" type="radio"/>		

Figure 19. Extension status

### Test the scenario:

1. VIP-154T pick up the telephone
2. Dial the number: 100 (VIP-192) shall be able to connect to the VIP-192

3. Then the VIP-192 should ring. Please repeat the same dialing steps on VIP-192 to establish the first voice communication from VIP-154T

## IP Phone and Wi-Fi 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.

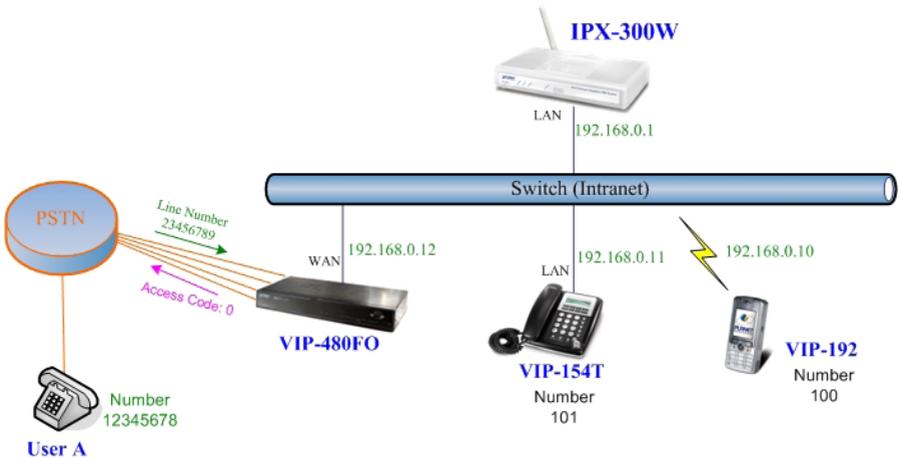


Figure 20. Installation example with VIP-480FO

### 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				<input type="button" value="Add"/>
Extensions List		Extension Max is 100		
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 21. 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	555
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	

**Submit** **Reset**

Figure 22. Assign an attendant number

Pressing the **"Submit"** button for activate the configuration.

STEP 4: Browse to **"IP PBX Setup → Dialing Rules"** configuration menu. Add a dialing rule for making off-Net calls via VIP-480FO, and press the **"Insert"** button for activate the configuration.

**Dialing Rules**

Outgoing Prefix No:  Ex: 9 **Change**

**Max Rule is 100**

Phone NO.	Delete Length	Prefix NO.	Dest. IP/DNS	Port	Action
<input type="text" value="0"/>	<input type="text"/>	<input type="text"/>	192.168.0.12	5060	<b>Insert</b> <b>Change</b>

Figure 23. Add dialing rule for grab the FXO ports of VIP-480FO

STEP 5: Please log in VIP-480FO via web browser and browse to **"Advance Set-up → 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 24. Set up the number of FXO ports of VIP-480FO

SIP Hunting Table :	
No.	Hunting Member
1	<input checked="" 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 checked="" 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 checked="" 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 25. 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 <input type="checkbox"/> use net2phone
Register Interval(seconds)	900
SIP Authentication	<input checked="" type="radio"/> Enable <input type="radio"/> Disable
Outbound Proxy Server	0.0.0.0

Figure 26. Set up the Proxy Server IP address for register to IP PBX

STEP 6: Browse to **"Dialing Plan"** configuration menu. Add an Incoming Dial Plan (no.0) for redirect the PSTN outgoing calls to FXO ports.

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

Figure 27. Add an incoming dial plan

STEP 7: Browse to **"Port Status"** configuration menu. Fill in the auto attendant number 555 to all of ports. (Where 555 is the autoattendant 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)	<input type="text" value="3"/> sec
Port 1 number	<input type="text" value="555"/>
Port 2 number	<input type="text" value="555"/>
Port 3 number	<input type="text" value="555"/>
Port 4 number	<input type="text" value="555"/>
<input type="button" value="Apply"/>	

Figure 28. Hot Line to auto-attendant of IP PBX

STEP8: 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	Register OK!	202	Register OK!	201	Register OK!
200	Register OK!	101	Register OK!	100	Register OK!

Figure 29. Extension status page with Phone and Gateway registered

### Test the scenario:

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

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## ***Quick reference in CD-ROM guide***

This guide is used to help you startup your Wizard settings. It is also recommended to check the user manual CD-ROM for more details likes the "IP PBX Setup", and how to set the device back to default value.

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