

User's Manual



SIP Public Announcement Adapter with PoE

▶ VPA-100



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CE Mark Warning

This is a class B device. In a domestic environment, this product may cause radio interference, in which case the user may be required to take adequate measures.

Energy Saving Note of the Device

This power required device does not support Standby mode operation. For energy saving, please remove the DC-plug or push the hardware Power Switch to OFF position to disconnect the device from the power circuit.

Without removing the DC-plug or switching off the device, the device will still consume power from the power circuit. In view of Saving the Energy and reducing the unnecessary power consumption, it is strongly suggested to switch off or remove the DC-plug from the device if this device is not intended to be active.

WEEE Warning



To avoid the potential effects on the environment and human health as a result of the presence of hazardous substances in electrical and electronic equipment, end users of electrical and electronic equipment should understand the meaning of the crossed-out wheeled bin symbol. Do not dispose of WEEE as unsorted municipal waste and have to collect such WEEE separately.

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Revision

User's Manual of PLANET Internet Telephony Paging System

Model: VPA-100

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TABLE OF CONTENTS

Chapter 1. Introduction	5
1.1 Overview	5
1.2 Features.....	7
1.3 Specifications	8
1.4 Hardware Description	10
1.5 Package Contents.....	12
Chapter 2. Installation Procedure	13
2.1 Configuring the Installation	13
2.1.1 Physical Introduction	13
2.1.2 Hardware Installation.....	15
2.2 Web Login.....	16
Chapter 3. Basic Configuration.....	17
3.1 System Information	17
3.2 Network Configuration	17
3.3 SIP Registration	18
3.3.1 SIP Basic Configuration.....	18
3.3.2 SIP Advanced Configuration	19
3.3.3 SIP Voice Codec	20
3.4 Volume Settings.....	20
3.5 Port Function.....	21
3.5.1 Port Name Configuration	21
3.5.2 Port Active	21
3.6 Planet DDNS Function.....	22
3.7 System Management.....	22
3.7.1 Change Login Password of Web	22
3.7.2 Firmware Upgrade.....	23
3.7.3 Restore to Factory Default.....	23
3.7.4 Reboot.....	24
Chapter 4. Frequently Asked Questions List.....	25

Chapter 1. Introduction

1.1 Overview

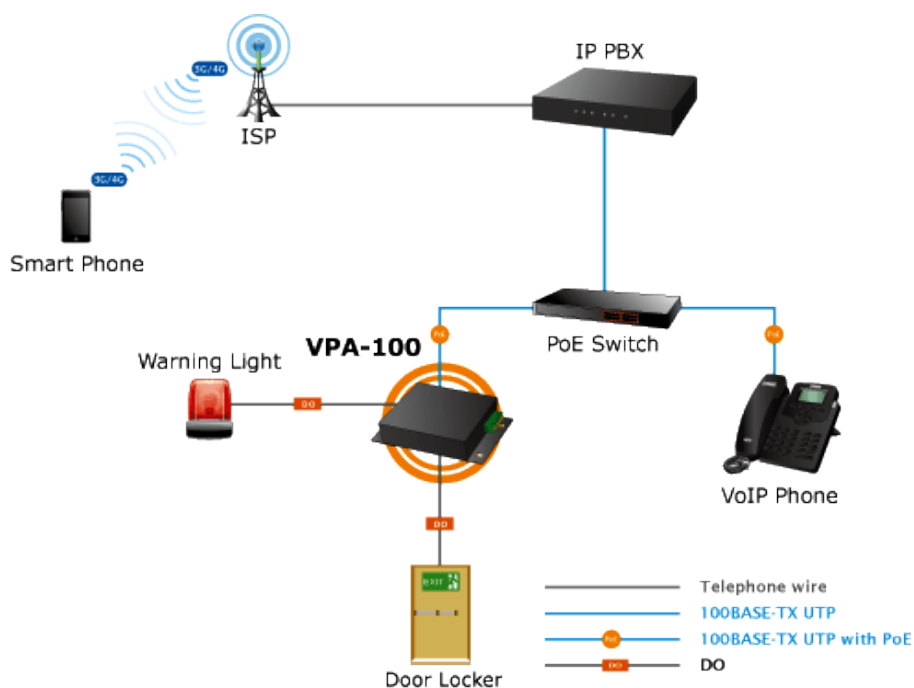
New Audio Control System

PLANET VPA-100 audio control system comes with the existing IP PBX to provide unidirectional and bidirectional audio for broadcasting. An announcement can be made via the VPA-100, simply by making a call from an IP phone in the handset, headset, or hands-free mode. Its efficient 3.5-watt amplifier provides loud speaker coverage for the entire room or floor space.



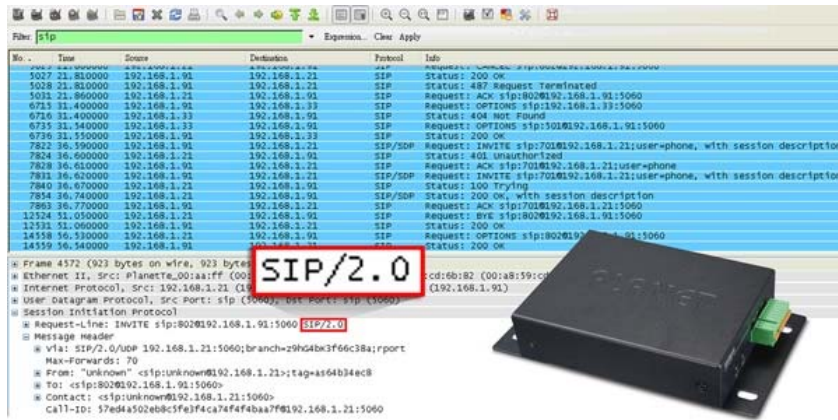
User-friendly Control

The VPA-100 provides four programmable output ports to control power on or power off. It usually controls them via web. When an IP phone is dialed to the VPA-100, the user can also control these ports via keypad of the IP phone. It allows the user to control these devices anytime, anywhere.



Standard Compliance

Compliant with the Session Initiation Protocol 2.0 (RFC 3261), the VPA-100 is able to function with PLANET or any third-party SIP 2.0 compliant VoIP products.

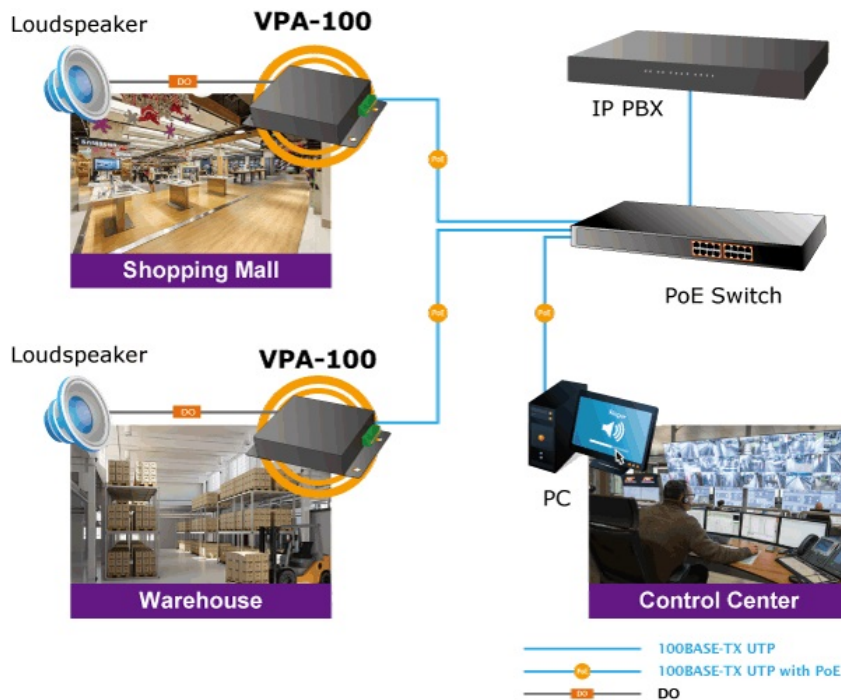


Adjustable to Suit User's Application

The VPA-100 can be powered via a power adapter or power over Ethernet cable, meaning the user can select either of the available power sources for his convenience. The volume of output, speaker input and handset input via web UI can be adjusted to make the announcement in the environment just right. It can be set up in all facilities, such as rooms, hallways, office floors, and more.

Full VoIP Communication

Several VPA-100 units can be connected to each other over a 100-meter cabling via a PoE switch. They can also be optionally installed on walls or ceilings. If the IP PBX supports paging and intercom, one IP phone can make calls to many VPA-100 units at the same time.



1.2 Features

➤ **Highlights**

- Supports SIP 2.0 (RFC 3261)
- IEEE 802.3af Power over Ethernet compliant
- Dual power supply (DC 5V/DC 3.3V)
- Four programmable output ports
- Audio output for position: 3.5mm audio interface and loud speaker

➤ **Advantageous Applications**

- Echo cancellation
- Full duplex and speaker mode
- Noise suppression
- Adaptive jitter buffer
- Extra LAN port available for connection to a device for network expansion

➤ **SIP Applications**

- Auto answer
- Paging and intercom
- Voice algorithms: G.711 A-law and μ -law; G.722/G.722.1/G.722.2, G.723, G.726, G.729, iLBC

➤ **Call Control Features**

- Volume adjustment
- Audio output mode: speaker and handset
- Incoming ring
- Full-duplex

➤ **Network Features**

- Static IP and DHCP client on WAN
- Main DNS server

➤ **Maintenance and Management**

- Integrated web server provides web-based administration and configuration
- Firmware upgrade via HTTP

1.3 Specifications

Product	VPA-100 SIP Public Announcement Adapter with PoE
Hardware	
Physical Interfaces	<p>Two 10/100BASE-TX RJ45 Ethernet port</p> <ul style="list-style-type: none"> ■ LAN1: Connects to internet and provides PoE PD function (IEEE 802.3af/at) ■ LAN2: Connects to other devices for network expansion <p>Microphone/speaker: 3.5mm connector</p> <p>Terminal block for loud speaker, power supply, ground and output ports</p> <p>5VDC power supply: Max. 200mA</p> <p>3.3VDC power supply: Max. 500mA</p> <p>Port 1-4 output voltage/current: 3.3V/8mA</p> <p>Reset button</p>
Voice	<p>Microphone: 3.5mm standard interface</p> <p>Speaker: 3.5mm standard interface (Mono)</p> <p>Loud speaker: SPK+, SPK- (Max. 26db)</p>
Power Requirements	<p>5V DC, 1A</p> <p>IEEE 802.3af PoE class 3</p> <p>Max. 2W</p>
Weight	344g
Dimensions (W x D x H)	117 x 84 x 31 mm
Protocols and Standard	
Voice Flood Control	<p>Protocol: UDP</p> <p>Voice algorithms:</p> <ul style="list-style-type: none"> - G.711 A-law and μ-law - G.722/G.722.1/G.722.2 - G.723 - G.726 - G.729 - iLBC <p>Echo cancellation noise suppression (ECN)</p> <p>Adaptive jitter buffer</p>
Features	
Telephony Features	<p>One voice line</p> <p>Auto answer</p> <p>Volume adjustment: output, handset input and speaker input</p> <p>Full-duplex</p> <p>Incoming ring</p> <p>Audio output mode: speaker and handset</p>

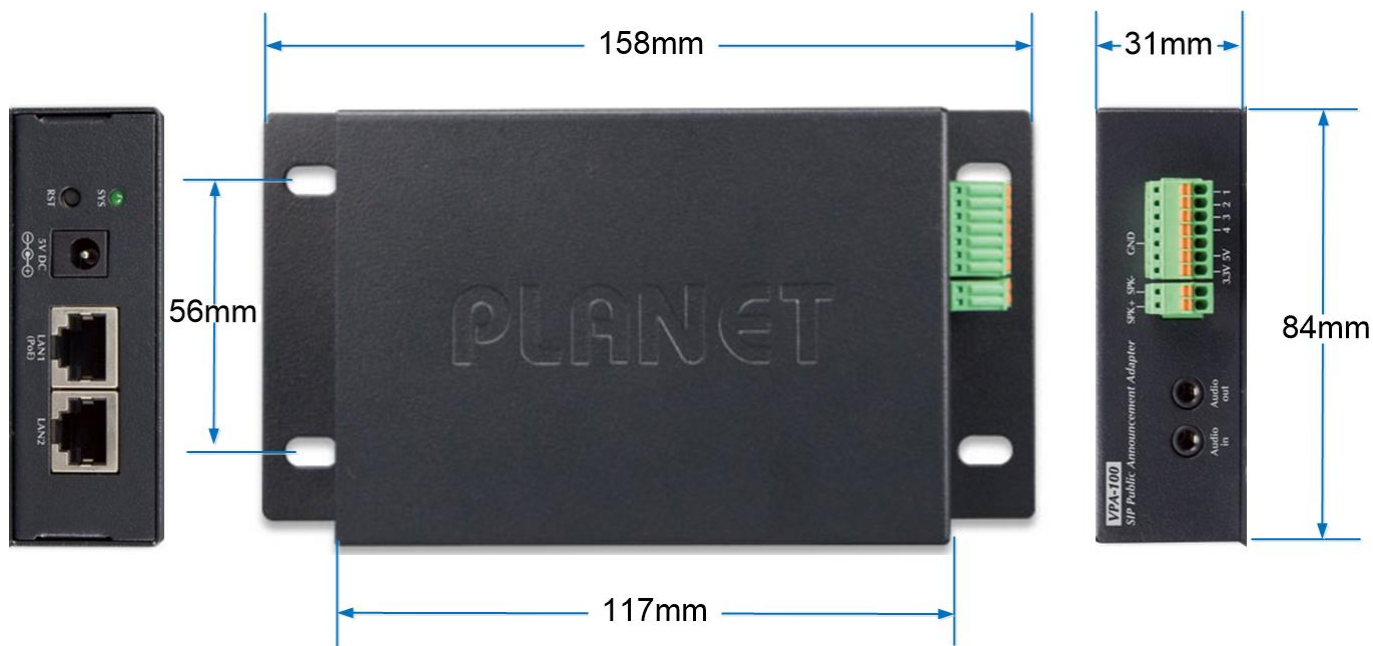
Environment	
Operating Temperature	0 ~ 40 degrees C
Operating Humidity	10 ~ 95% (non-condensing)
Emission	CE, FCC

1.4 Hardware Description

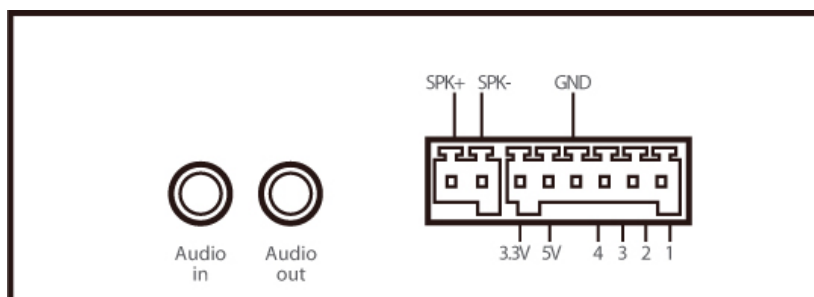
Dimensions

Dimensions (W x D x H)	117 × 84 × 31 mm
Net Weight	344g (without package)

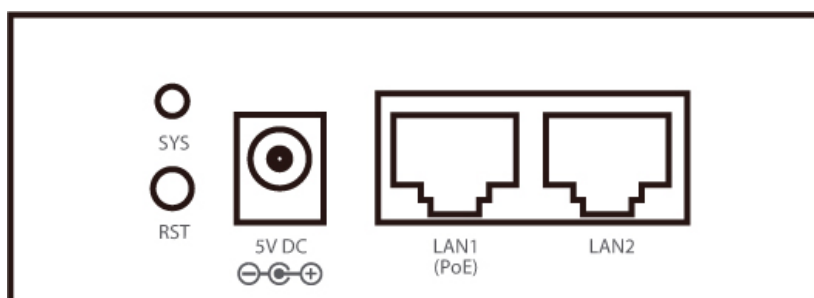
Drawing



Front Panel



Rear Panel



Interface Descriptions

Interface		Description
1	5V DC	Power port
2	LAN1	Connects to internet and provides PoE function
3	LAN2	Connects other devices for network expansion
4	Audio in	Connects to microphone
5	Audio out	Connects to speaker
6	SPK+	Connects to "+" loud speaker
7	SPK-	Connects to "-" loud speaker
8	3.3V	Power supply for devices, max. 500mA
9	5V	Power supply for devices, max. 200mA
10	GND	Ground
11	1, 2, 3, 4	Output port, output current 8mA. When any IP phone is dialed to VPA-100, press 1* to enable/disable port1 output. For other ports, press 2* for port2, 3* for port3 and 4* for port4.

LED/button Descriptions

Interface		Description
1	SYS	This LED flashing when power on 40~50 seconds.
2	RST	Press button 10 seconds continuously to reset default

1.5 Package Contents

Thank you for purchasing PLANET Internet Telephony Paging system, VPA-100. This Quick Installation Guide will introduce how to finish the basic setting of connecting the web management interface and the Internet. Open the box of the Internet Telephony Paging system and carefully unpack it. The box should contain the following items:

- Internet Telephony Paging System Unit x 1
- Quick Installation Guide x 1

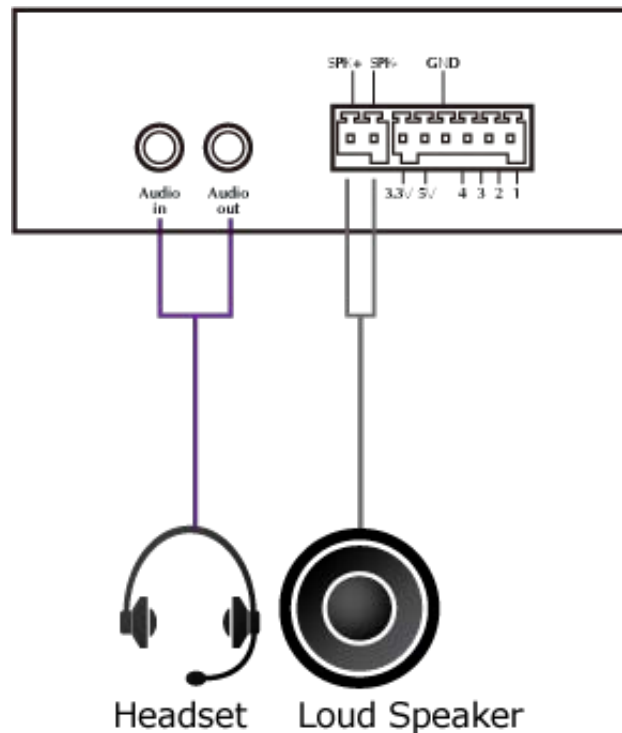
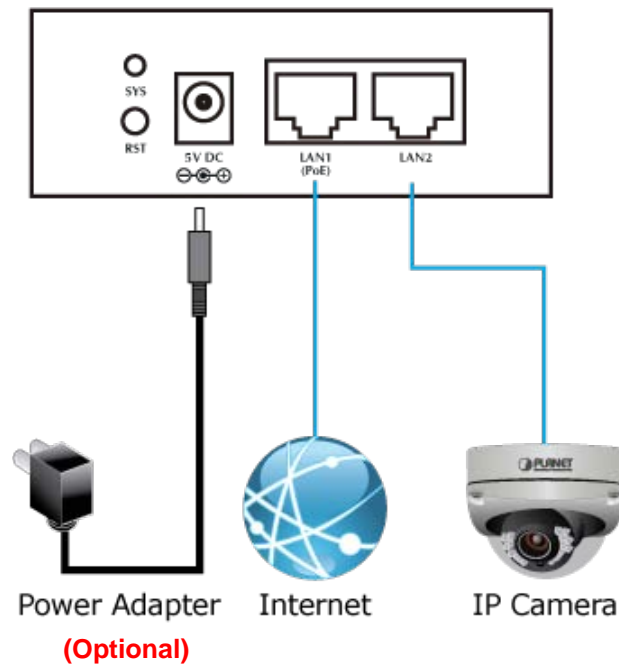
If any of the above items are damaged or missing, please contact your dealer immediately.

Chapter 2. Installation Procedure

2.1 Configuring the Installation

2.1.1 Physical Introduction

The VPA-100 provides LAN2 for network expansion.



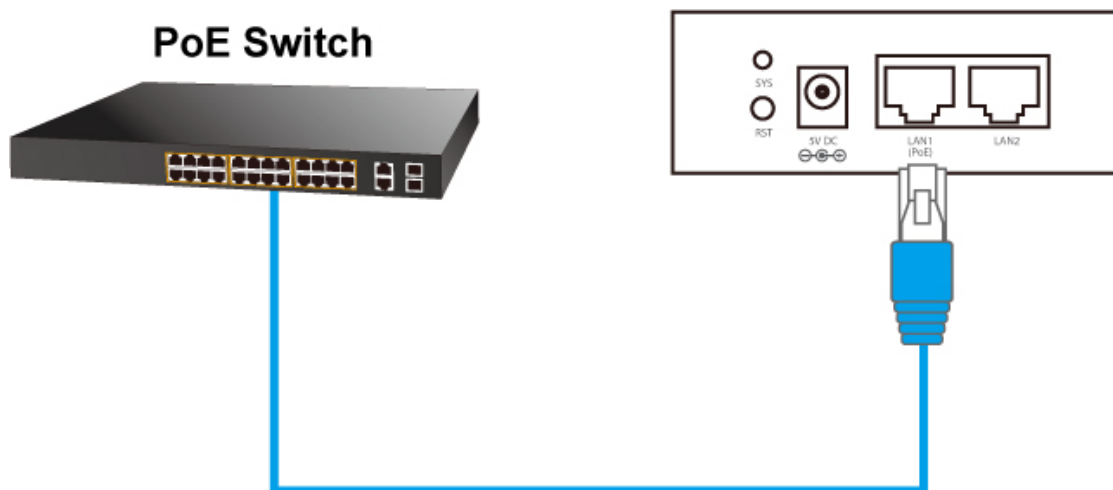
See below the descriptions of other interfaces

Interface		Description
1	SYS	The LED will start flashing after powering on for 40-50 seconds.
2	RST	Press button for 10 seconds continuously to reset to default.
3	5V DC	Power port
4	LAN1	Connects to internet and provides PoE function
5	LAN2	Connects other devices for network expansion
6	Audio in	Connects to microphone
7	Audio out	Connects to speaker
8	SPK+	Connects to "+" loud speaker
9	SPK-	Connects to "-" loud speaker
10	3.3V	Power supply for devices, max. 500mA
11	5V	Power supply for devices, max. 200mA
12	GND	Ground
13	1, 2, 3, 4	Output port, output current 8mA. When any IP phone is dialed to VPA-100, press 1* to enable/disable port1 output. For other ports, press 2* for port2, 3* for port3 and 4* for port4.

2.1.2 Hardware Installation

Step 1. Connecting Power via PoE Interface and Network

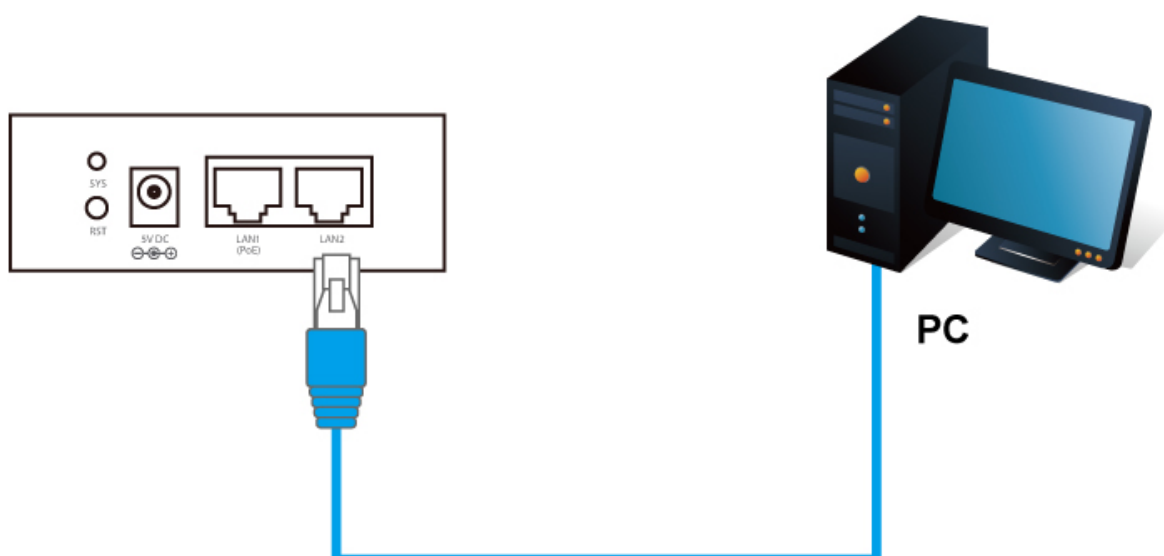
The VPA-100 can be configured without external power if connected to an IEEE 802.3af PSE device such as 802.3af PoE injector/hub or 802.3af PoE switch.



1. Use of any non-standard PoE injector could damage the device.
2. Be reminded to power either from AC adapter (optional) or PoE switch.

Step 2. Computer Network Setup

Set your computer's IP address to **172.16.0.x**, where x is a number between 2 to 254 (except 1 which is being used for the camera by default). If you don't know how to do this, please ask your network administrator.



2.2 Web Login

Step 1. Connect a computer to a LAN2 port on the VPA-100. Your PC must be set up to the same domain of 172.16.0.X as that of the VPA-100.

Step 2. Start a web browser. To use the user interface, you need a PC with Internet Explorer (version 10 and higher), Firefox, or Safari (for Mac).

Step 3. Enter the default IP address of the VPA-100: <http://172.16.0.1> in the URL address box.

Step 4. Enter the default user name **admin** and the default password **123**, and then click Login to enter Web-based user interface.

(Default IP)

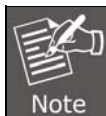
Default LAN IP: <https://172.16.0.1>

Default User Name: **admin**

Default Password: **123**



Figure 2-1. Login page of the VPA-100



For security reason, please change and memorize the new password after this first setup.

Chapter 3. Basic Configuration

3.1 System Information

If user name and password are right, the following page will be displayed:

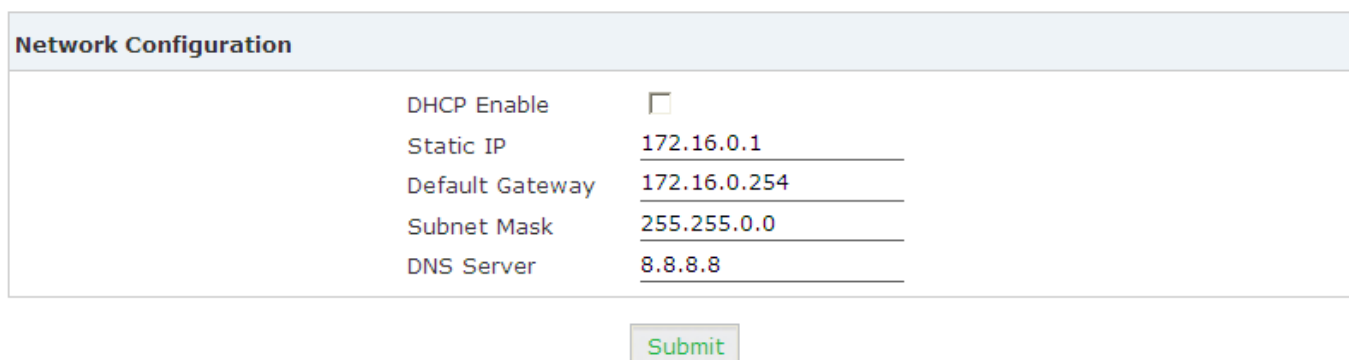


The screenshot shows the PLANET VPA-100 web interface. The header includes the PLANET logo and the title "SIP Public Announcement Adapter with PoE VPA-100". A left sidebar contains navigation links: Device Information (selected), Network Information, SIP Configuration, Volume, Port Function, Planet DDNS, and Administration. The main content area is titled "Device Information" and displays the following details:

MAC Address:	00:30:4F:09:03:DB
IP Address:	172.16.0.1
Firmware Version:	1.0.11
Model:	VPA-100
SIP Extension:	100
SIP Register Status:	Unregistered

3.2 Network Configuration

Step 1. Click **【Network Configuration】** to show the following display. You can set a static IP address for the VPA-100 or alternatively a dynamic IP address by enabling DHCP. When DHCP is enabled, it will take dynamic assigned IP address and “Static IP” cannot be modified. After configuration, click the **【Submit】** button.



The screenshot shows the "Network Configuration" page. It contains the following settings:

DHCP Enable	<input type="checkbox"/>
Static IP	<u>172.16.0.1</u>
Default Gateway	<u>172.16.0.254</u>
Subnet Mask	<u>255.255.0.0</u>
DNS Server	<u>8.8.8.8</u>

Below the configuration fields is a green "Submit" button.

Step 2. After completing configuration, click **【Submit】** to display the following window. You must choose **【Continue】** to make additional changes, or **【Apply Now】** to apply changes to the device.

Click 'Continue' to make additional changes.

Click 'Apply Now' to apply changes to iSpeaker.

Continue

Apply Now

3.3 SIP Registration

3.3.1 SIP Basic Configuration

Click **【SIP Configuration】** and navigate to **【SIP Basic Configuration】**. Here you can configure the Server Address, SIP Extension, Autoanswer, Audio Output Mode (Default Speaker), etc.

After configuration is completed, please click **“Submit”**.

Device Information Network Information ▶ SIP Configuration Volume Port Function Planet DDNS Administration	SIP Basic Advanced Codecs		
	SIP Basic Configuration		
	Server Address	192.168.1.201	
	Proxy Address	192.168.1.201	
	SIP Extension	506	
	Password	●●●●●●	
	Autoanswer(sec.)	0	
	Incoming Ring	<input type="checkbox"/>	
Audio Output Mode	Speaker		
			<input type="button" value="Submit"/>

SIP Basic Configuration

Item	Description
Server Address	IP Address of IP PBX
Proxy Address	Proxy address of SIP proxy. Normally the proxy server and IP PBX are the same and therefore the IP address is the same.
SIP Extension	Registered SIP extension number provided by IP PBX
Password	Password of registered extension provided by IP PBX
Autoanswer	The time of Auto answer (by second). Default is 1; if set as off, there is no auto answer.
Incoming Ring	This option is to allow ringing if there is any incoming call.
Audio Output Mode	Output mode of audio (Speaker or Handset). Default is Speaker .

3.3.2 SIP Advanced Configuration

Click **【Advanced】** and go to SIP Advanced Configuration. You can change the configuration based on your requirements, which include Local SIP Port and RTP/RTCP DSCP. After modification, please click **“Submit”**.

SIP Basic	Advanced	Codecs
SIP Advanced Configuration		
	Local SIP Port	<u>5060</u>
	T1 Timer(msec.)	<u>500</u>
	RTP Base Port	<u>8000</u>
	RTCP Base Port	<u>8001</u>
	Echo Canceller	<input checked="" type="checkbox"/>
	Noise Suppression	<input checked="" type="checkbox"/>
	Adaptive Jitter Buffer	<input checked="" type="checkbox"/>
	SIP DSCP(Hex)	<u>b8</u>
	RTP DSCP(Hex)	<u>68</u>
<input type="button" value="Submit"/>		

SIP Advanced Configuration

Item	Description
Local SIP Port	Local SIP Port. Default is 5060 .
T1 Timer	Timer for sending SIP message (by second). Default is 500 ms.
RTP Base Port	RTP base port of voice data. Default is 8000 .
RTCP Base Port	RTCP base port for voice data. Default is 8001 .
Echo Canceller	Set echo cancellation. Default is enabled .
Noise Suppression	Set noise suppression. Default is enabled .
Adaptive Jitter Buffer	Set adaptive jitter buffer when receiving/sending SIP voice. Default is enabled .
SIP DSCP (Hex)	Set the hex value of SIP DSCP(Differentiated Services Code Point) . Default is b8 .
RTP DSCP (Hex)	Set hex value of RTP DSC. Default is 68 .

3.3.3 SIP Voice Codec

Click **【Codecs】** to configure the priority order of SIP codecs. After configuration, click **【Submit】** .

SIP Basic	Advanced	Codecs
Codecs Configuration		
Priority	Codec	
1.	PCM μ -Law <input type="button" value="v"/>	
2.	PCM A-Law <input type="button" value="v"/>	
3.	G.722 <input type="button" value="v"/>	
4.	G.722.1 24Kb/s <input type="button" value="v"/>	
5.	G.722.1 32Kb/s <input type="button" value="v"/>	
6.	G.722.2 <input type="button" value="v"/>	
7.	G.723 6.3Kb/s <input type="button" value="v"/>	
8.	G.726 16Kb/s <input type="button" value="v"/>	
9.	G.726 24Kb/s <input type="button" value="v"/>	
10.	G.726 32Kb/s <input type="button" value="v"/>	
11.	G.726 40Kb/s <input type="button" value="v"/>	
12.	G.729 <input type="button" value="v"/>	
13.	iLBC 20ms <input type="button" value="v"/>	
14.	iLBC 30ms <input type="button" value="v"/>	

3.4 Volume Settings

Click **【Volume】** to set the output volume and input volume. Output volume is for speaker and “Audio out”; Speaker Input Volume and Handset Input Volume are for “Audio in”. After configuration, please click **【Apply Now】** .

Volume Configuration		
Output Volume	6	(1-9)
Speaker Input Volume	5	(1-9)
Handset Input Volume	7	(1-9)

3.5 Port Function

3.5.1 Port Name Configuration

Click **【Port Function】** to go to Port Name Configuration and define the name from Port 1 to Port 4. After configuration, please click **【Submit】** .

Device Information	Port Name	Port Active
Network Information	Port Name Configuration	
SIP Configuration	Input must be numbers or letters	
Volume	Port 1 Name	_____
Port Function	Port 2 Name	_____
Planet DDNS	Port 3 Name	_____
Administration	Port 4 Name	_____
	<input type="button" value="Submit"/>	


3.5.2 Port Active

Click **【Port Active】** to apply the function of Port 1 to Port 4. Enable the Port function by ticking the check box.

Port Name	Port Active
Port Function Active	
Port 1 Active	<input type="checkbox"/>
Port 2 Active	<input type="checkbox"/>
Port 3 Active	<input type="checkbox"/>
Port 4 Active	<input type="checkbox"/>
<input type="button" value="Submit"/>	

The VPA-100 also controls Port1 to Port via DTMF. Press **1*** to enable/disable port1 output when another user dials a call to the VPA-100. And for other ports, press **2*** for port2, **3*** for port3 and **4*** for port4.

This function is used in Handset mode only.

 Note	Device Information	SIP Basic	Advanced	Codecs
	Network Information	SIP Basic Configuration		
	SIP Configuration	Server Address	172.16.0.254	
	Volume	Proxy Address	172.16.0.254	
	Port Function	SIP Extension	100	
	Planet DDNS	Password	●●●	
	Administration	Autoanswer(sec.)	0 <input type="button" value="v"/>	
	Incoming Ring	<input type="checkbox"/>		
	Audio Output Mode	Handset <input type="button" value="v"/>		

3.6 Planet DDNS Function

The VPA-100 provides **DDNS** (Dynamic Domain Name System) for user for free.

Your Internet Service Provider (ISP) provides you with at least one IP address which is used to connect to the Internet. The address you get may be static, meaning it never changes, or dynamic, meaning it's likely to change periodically. Just how often it changes, depending on your ISP. A dynamic IP address complicates remote access since you may not know what your current WAN IP address is when you want to access your network over the Internet. The solution to the dynamic IP address problem comes in the form of a dynamic DNS service.

The Internet uses DNS servers to look up domain names and translates them into IP addresses. Domain names are just easy to remember aliases for IP addresses. A dynamic DNS service is unique because it provides a means of updating your IP address so that your listing will remain current when your IP address changes.

Device Information	DDNS Configuration	
Network Information	Enable DDNS	<input type="checkbox"/>
SIP Configuration	Enable Easy DDNS	<input checked="" type="checkbox"/>
Volume	Service	easyplanet
Port Function	DDNS Server	_____.planetddns.com
Planet DDNS	Account	_____
Administration	Password	_____
	<input type="button" value="Submit"/>	
	DDNS Log	
	Disabled	

3.7 System Management


3.7.1 Change Login Password of Web

Click **[Administration]** → **[Change Password]** , input new password and confirm, and then submit to make it effective.

Device Information	Change Password	Firmware Upgrade	Factory Default	Reboot
Network Information	Change Password			
SIP Configuration	New Password _____			
Volume	Confirm Password _____			
Port Function	<input type="button" value="Submit"/>			
Planet DDNS				
Administration				

3.7.2 Firmware Upgrade

Click **Administration** → **Firmware Upgrade** to upgrade the firmware. Press the browse button to select the available firmware and then click the Upgrade button to upload the file to the VPA-100.

 Note	Please DO NOT power off or reboot the device during the upgrade; the system will reboot automatically after firmware upgrade completes successfully.
---	--

Change Password	Firmware Upgrade	Factory Default	Reboot
Firmware Upgrade			
<p>New Firmware: <input type="text"/> <input type="button" value="Browse..."/></p> <p style="text-align: center;"><input type="button" value="Upgrade"/></p> <p>This page allows you to upgrade the firmware.</p> <p>It may take about 10minutes to complete firmware upgrade.</p> <p style="color: red;">Please do not turn off the power during the upgrade process!</p>			

3.7.3 Restore to Factory Default

Click **Administration** → **Factory Default** , and then click the “Restore to Factory Default” button. The system will be reset after 3~5 seconds; all settings will be cleared and reset to factory default.

Change Password	Firmware Upgrade	Factory Default	Reboot
Factory Default			
<p>Click 'Restore To Factory Default' to restore all default settings. Warning: This will erase all user configurations.</p> <p style="text-align: center;"><input type="button" value="Restore To Factory Default"/></p>			

3.7.4 Reboot

Click **Administration** → **Reboot** and click the **Reboot** button; the system will reboot after 3~5 seconds.

Change Password	Firmware Upgrade	Factory Default	Reboot
-----------------	------------------	-----------------	--------

Reboot VPA-100

Click "Reboot" button to restart the VPA-100

Reboot

Chapter 4. Frequently Asked Questions List

Q1: Why was SYS LED not flashing when VPA-100 was powered on?

A1: This LED begins flashing after powering on 40-50 seconds. The booting of system needs a bit of time.

Q2: I forgot the password of VPA-100; how to get it again.

A2: Press the RST button for 10 seconds continuously to reset to default. The default IP, username and password are 172.16.0.1, admin and 123, respectively.

Q3: Why couldn't port1 output be disabled after pressing 1*?

A3: Because VPA-100 detects key via DMTF, the interval time of two keys needs over 0.5 second.