

# TVP-221H

## 4-Port VoIP Gateway Quick Installation Guide

Version 07.25.05



**TRENDnet**<sup>®</sup>  
TRENDware, USA  
**What's Next in Networking**

# Table of Contents

|   |    |
|---|----|
| English .....   | 1  |
| 1. Prepare for Installation .....                         | 1  |
| 2. Install Hardware .....                                 | 2  |
| 3. Configure the computer's TCP/IP Settings .....         | 3  |
| 4. Configuration .....                                    | 4  |
| 5. Internet Access Directly Under Cable/ ADSL Modem ..... | 5  |
| 6. Connection through Telnet .....                        | 9  |
| 7. Connection through Console .....                       | 10 |
| 8. Dynamic DNS (Domain Name Server) .....                 | 12 |
| 9. Configured under (NAT) router .....                    | 14 |
| 10. Web Browser Dial Plan Sample .....                    | 16 |

# English QIG

## 1. Prepare for Installation

Thank you for purchasing the TVP-221H. This VoIP Gateway will allow you to integrate your existing analog / PBX phone system for Internet telephony.

This guide will help you setup and configure your VoIP Gateway. Following the installation instructions should be quick and easy. If you run into problems, please refer to the detailed installation procedures on the CD User's Guide. If you need further technical support, please visit [www.TRENDNET.com](http://www.TRENDNET.com) or call by phone.

### Verify Package Contents

Please make sure you have everything in the box:



### Verify Equipment

Before installing the TVP-221H VoIP Gateway you should have:

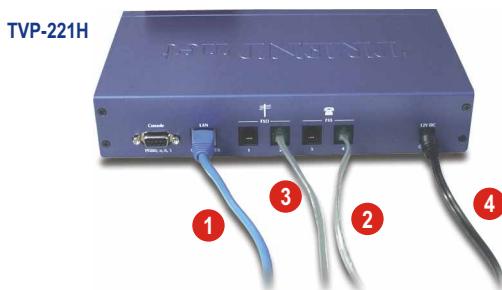
1. A working DSL Internet connection with Static IP or Dynamic IP with DDNS
2. Cable / DSL Modem
3. Bandwidth Router (Optional Cable/ ADSL Router)
4. A computer with wired network card installed.
5. TCP/IP protocol installed on each wired computer.
6. A Web Browser such as Internet Explorer (5.0 or higher) or Netscape Navigator (4.7 or higher).

## 2. Install Hardware

1. For configuration, connect a RJ-45 network cable from the TVP-221H's LAN port to a PC. Once configuration is complete, disconnect PC and reconnect directly to Cable / DSL modem. (Please see User Manual for more information on configuration under a router including Port Forwarding)
2. Connect Analog Phones/ Fax machine using RJ11 to FXS port(s).

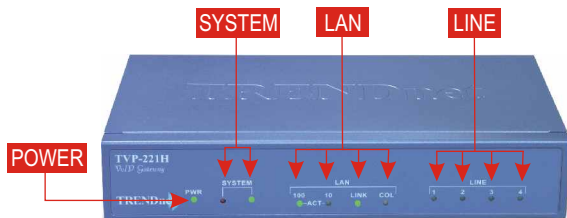
**WARNING:** Never connect a Trunk Line / PSTN line to a FXS Port. This will result In permanent damage to the FXS port.

3. Connect FXO port(s) using RJ 11 Cable to PBX system or PSTN line.
4. Power on your TVP-221H.



### Verify Hardware Installation

Make sure the following Gateway LEDs are on: Power, System (blinking), LAN (100Mb/s or 10Mb/s), LINK



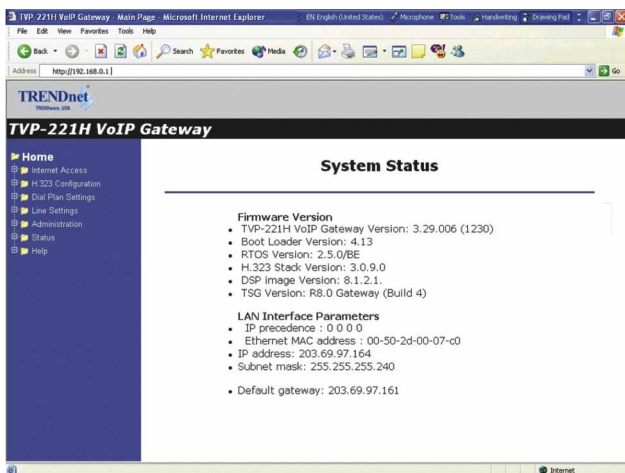
## 3. Configure the computer's TCP/IP Settings

To verify that your computer can communicate with your VoIP Gateway, you need to configure the TCP/IP settings in your PC Operating System (OS). Set up the PC with an IP address in the "192.168.0.x" IP domain, for example, "192.168.0.2" with subnet mask address "255.255.255.0". Detailed setup procedures for Windows OS computers can be found in the User Manual on the CD provided. If you are running any other OS please see your system documentation for configuration information.

# 4. Configuration

The TVP-221H comes with a default IP address, LAN side IP is “192.168.0.1”. You may use any PC to connect to the LAN port of TVP-221H, and then follow the steps below:

1. Start your WEB browser. In the address field, Type in the following address **http://192.168.0.1**.
2. The pop-up screen should appear and prompt for user name and password. If you forget your user password, please see section 7 Connection through Console. The default values are:  
User name: **admin** (all lower case)  
Password: **123**
3. The following TVP-221H VoIP Gateway Graphical User Interface main page should appear. If connection fails, check cable connections between the PC and TVP-221H.



## 5. Internet Access Directly Under Cable/ ADSL Modem

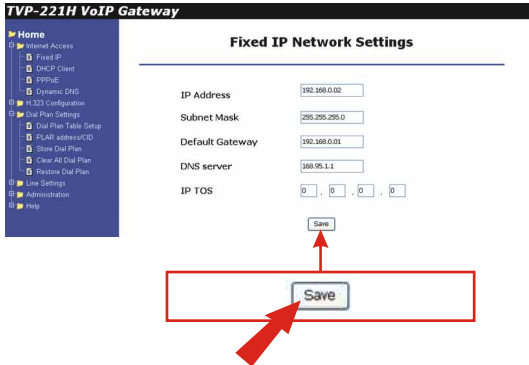
The following set-up information is designed to help you set-up your gateway to connect to the Internet. The set-up is different depending upon the type of Internet Connection you have with your ISP (Fixed IP, PPPoE, DHCP). If you're not sure what type of connection you have, please contact your Internet Service Provider and collect the required information. Below is a table that outlines the basic data you will require from your ISP.

| Connection Type          | Data required   |
|--------------------------|---|
| <b>Fixed IP (Static)</b> | Fixed IP Address, Subnet Mask, Default Gateway and Primary DNS (Secondary DNS is optional).                     |
| <b>PPPoE</b>             | Login name and password (Service Name is optional)  |
| <b>DHCP</b>              | Usually, none. If your ISP requires Hostname, Domain name, or MAC (physical) address, please contact Trendware. |

After setting up Internet Access you will be able to Remotely Manage the Gateway using the WAN IP. By default the Web Access and Telnet Access management are enabled. Both of these methods provide access over the Internet so they do pose a potential security risk. It is recommended that once configuration is complete, Telnet access is disabled for security reasons. It is also recommended that the administration password is updated. In the event that you should forget the password see section 7 Connection through Console.

## Static or Fixed IP Cable Connection

1. From the Navigation Bar on the left side of the screen, Click on the **Internet Access** Option. From the Internet Access sub-menu, Select **Fixed IP**. The Fixed IP Configuration page will appear.
2. Enter all field information as provided by your ISP and Click **Save**.



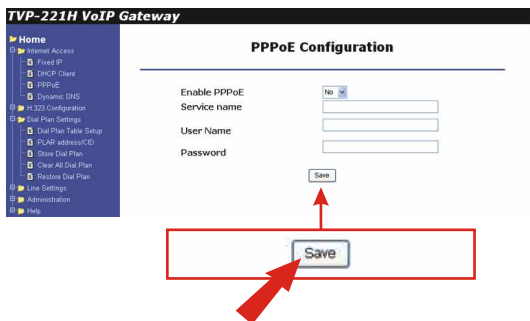
**NOTE:** If the website does not appear, please verify that the information is entered correctly. Also call your ISP and verify your connection type. If you still can not establish Internet Access, please reference the trouble shooting section of your user manual.

3. **Reboot** the TVP-221H system in order for the changes to take effect. From a PC using a different WAN IP for Internet Access, Launch your web browser, (Internet Explorer or Netscape Navigator) Type the **Gateways WAN IP**, <http://xxx.xxx.xxx> into the address bar, and hit the **Enter** key. If the web interface dialogue box appears prompting you for a username and password, the Gateway is properly configured for Internet Access.



## PPPoE DSL Connection

1. Click on the **Internet Access** option on the left-hand side of the screen and Select **PPPoE**. The WAN PPPoE configuration page will appear.
2. Enter PPPoE User Name and Password as provided by your ISP, and Click **Save**.



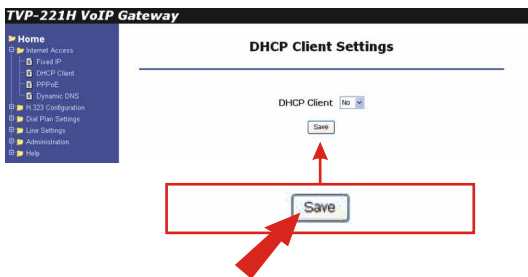
3. **Reboot** the TVP-221H system in order for the changes to take effect. From a PC using a different WAN IP for Internet Access, Launch your web browser, (Internet Explorer or Netscape Navigator) Type the **Gateways WAN IP**, <http://xxx.xxx.xxx> into the address bar, and hit the **Enter** key. If the web interface dialogue box appears prompting you for a username and password, the Gateway is properly configured for Internet Access.

**NOTE:** If the website does not appear, please verify that the information is entered correctly. Also call your ISP and verify your connection type. If you still can not establish Internet Access, please reference the trouble shooting section of your user manual.

4. Setup DDNS Client (See section 8 on DDNS Client).

## DHCP Connection

1. Click on the **Internet Access** option on the left-hand side of the screen and Select **DHCP**. The WAN PPPoE configuration page will appear.
2. Enable DHCP (If your ISP requires more information including Hostname, Domain Name and / or WAN MAC Address, please notify your System Integrator or Trendware Customer Service)
3. Click **Save**.



4. **Reboot** the TVP-221H system in order for the changes to take effect.
5. From a PC using a different WAN IP for Internet Access, Launch your web browser, (Internet Explorer or Netscape Navigator) Type the **Gateways WAN IP**, <http://xxx.xxx.xxx> into the address bar, and hit the **Enter** key. If the web interface dialogue box appears prompting you for a username and password, the Gateway is properly configured for Internet Access.

**NOTE:** If the website does not appear, please verify that the information is entered correctly. Also call your ISP and verify your connection type. If you still can not establish Internet Access, please reference the trouble shooting section of your user manual.

6. Setup DDNS Client (See section 8 on DDNS Client).

**NOTE:** This quick guide covers only the most common situations. Please refer to the User Guide (CD) for more information on configuration under a router including Port forwarding and DMZ configuration. For console / telnet configuration, please reference the Advanced User Guide (CD) for more detailed information.

## 6. Connection through Telnet

To use Telnet, Internet Access must have been previously setup so that the gateway is visible on the Internet (See User Guide for More Information). Alternatively, you can use Telnet to locally access the TVP-221H, if you are under a router or switch and the TVP-221H and your computer are in the same network segment.

To access the TVP-221H Gateway from a remote location / or from the same LAN Segment using Telnet, perform the following tasks:

| Task  | Prompt    | Type                  |
|---|-----------|-----------------------|
| Open the windows command prompt and enter the telnet command followed by the IP address of the TVP-221H Gateway you want to access.   | None      | telnet<br>xxx.xxx.xxx |
| When the TVP-221H Gateway prompts you to <b>Login</b> , enter the user name "admin"   | Login:    | admin                 |
| When the TVP-221H Gateway prompts you for the <b>Password</b> , enter the password. The default password is "123" but it is recommended that the password be changed for security considerations. The password can be changed from the Web UI Administration / Password submenu page.   | Password: | 123                   |
| Type in "ping xxx.xxx.xxx", where xxx.xxx.xxx is your ISP provided DNS Server IP or any known Public Internet Address. The following dialogue confirms Internet Access<br><br><b>Console&gt;ping 168.95.1.1</b><br><b>ping &lt;168.95.1.1&gt;: 56 data bytes</b><br><b>168.95.1.1 is alive</b><br><br>If the ping times out, you do not have Internet Access or the Public IP Address you pinged is incorrect. Try another IP Address. If you confirm that you do not have Internet Access, please refer to the trouble shooting section of the User Manual or consult your ISP to make sure your Internet Access Data is correct and accurately entered into the TVP-221H. | Console>  | ping<br>xxx.xxx.xxx   |

## 7. Connection through Console

The console port uses a DB-9 RS-232 connector. The supplied straight through RS-232 cable connects the console port of the TVP-221H to a console PC or terminal.

| Task   | Prompt  | Type                             |
|--|---|----------------------------------|
| Connect RS-232 Cable to TVP-221H RS-232 console port a your computer that you will use as a configuring terminal   |   |                                  |
| Open HyperTerminal and enter the following Input Parameters when prompted:   | Baud rate<br>Number of data bit<br>Parity check<br>Number of stop bit<br>Flow control | 19,200<br>8<br>None<br>1<br>None |
| When HyperTerminal Screen appears type "123"   |   | 123                              |
| <p>In the event that you forget your administration password, you can gain console access to the TVP using the super password. The super password is the last six digits of your MAC address located on the bottom of your TVP (00-50-2d-xx-xx-xx). At the Console prompt enter the super password without hyphens. The password is all lower case. After gaining access, at the console prompt type in</p> <p><b>net set user_pw &lt;pw&gt; &lt;pw&gt;</b></p> <p>If entry of new password is successful, the console will list "OK, USER Password Changed". You will now be able to gain Web Access from a PC in the same local segment using the TVP-221H IP Address (Only applicable if GW and a PC are setup under a router in the same LAN Segment). If Web and/ or Telnet Access are enabled, you will also be able to remotely access the TVP-224HR by entering http:// followed by the WAN IP or domain name.</p> |   |                                  |

| Task  | Prompt             | Type                         |
|---|--------------------|------------------------------|
| <p>When the TVP-221H is directly connected to the ADSL / Cable Modem and remote access to the TVP-221H is not possible because you do not have a second line for Internet Access, it becomes difficult to verify that the TVP-221H has established Internet Access. In order to confirm Internet Access, at the console prompt:</p> <p>Console&gt;<br/> <b>Enter</b> ping xxx.xxx.xxx.xxx</p> <p>The following dialogue indicates that Internet Access is successful. (xxx.xxx.xxx.xxx is a known public IP)</p> <p><b>ping (xxx.xxx.xxx.xxx): 56 data bytes<br/> xxx.xxx.xxx.xxx is alive</b></p> <p>If the ping times out, you do not have Internet Access or the Public IP Address you used is incorrect. Please try another Public IP address. If you confirm that you do not have Internet Access, please refer to the trouble shooting section of the User Manual or consult your ISP to make sure your Internet Access Data is correct and accurately entered into the TVP-221H.</p> | <p>Console&gt;</p> | <p>ping<br/> xxx.xxx.xxx</p> |
| <p>The following commands enable / disable web and telnet access respectively.</p> <p><b>Net set http &lt;on/off&gt;<br/> Net set telnet &lt;on/off&gt;</b></p>   | <p>Console&gt;</p> | <p>on / off</p>              |
| <p>To reset to Factory Default settings, please perform the following commands to:</p> <p>Erase all 'port', 'codec' &amp; 'h323' configuration<br/> <b>config erase</b></p> <p>Then access dial plan edit mode by entering<br/> <b>atpm req</b></p> <p>Purge the dial plan from the database<br/> <b>atpm purge all</b></p> <p>Store the changes<br/> <b>atpm store</b></p> <p>Reset the network configuration to default<br/> <b>net set fac_default</b></p> <p>Key in "yes" to re-boot.</p>   |                    |                              |

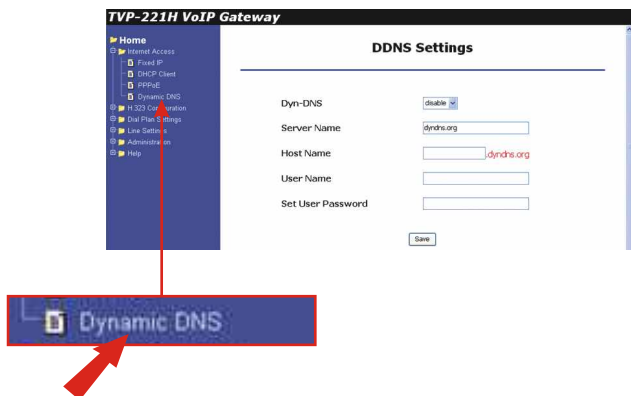
## 8. Dynamic DNS (Domain Name Server)

This free service is a very useful feature when directly connecting your TVP-221H to your ADSL / Cable modem or under a router which has enabled virtual servers or DMZ. It allows Internet users to connect to the TVP-221H using a URL, rather than an IP Address. This also solves the problem of having a dynamic IP address. With a dynamic IP address, your IP address may change whenever you connect to the Internet, making it difficult for others to find / connect to the TVP-221H. With DDNS, your IP may change but your Domain Name is Static.

### The Service works as follows:

1. You must register for the service at [www.dyndns.org](http://www.dyndns.org) using the [dyndns.org](http://dyndns.org) domain. This is the only Dynamic DNS service currently supported.
2. After registration, follow the Service Provider's procedure to request a Domain Name, and have it allocated to you.

Select Internet on the main menu, then DDNS submenu, to see a screen like the following:



3. Enable Dyn-DNS. Please be sure to enter the data correctly. For instance, if you registered johnsmith.dyndns.org, please make sure that "dyndns.org" is in the Server Name Field and "johnsmith" is in the Host Name Field. Please also enter "User Name" and "Password".
4. Click **Save**.
5. The TVP-221H will then automatically ensure that your current IP Address is recorded and updated at the DDNS server. If the DDNS Service provides software to perform this "IP address update"; you should disable the "Update" function, or not use the software at all.
6. From the Internet, users will be able to connect to your TVP-221H using your Domain name, shown on this screen.

## 9. Configured under (NAT) router

A major consideration in NAT VoIP communication is that the DMZ function (or Virtual Servers / Port Forwarding) and DDNS Client of the NAT routers have to function correctly. If they do not, it will result in one-way communication. You will have to configure your router with the DDNS service if you do not have a Static or Fixed WAN IP. See Section 8 for more information.

### **TVP-221H under NAT using Fixed IP**

Before connecting your TVP221H to your router, first make sure that your router has Internet access and that the TVP-221H fixed IP has been entered into the router. By default, the TVP-221H's IP is 192.168.0.1, so make sure the routers LAN IP is in the same segment and doesn't share the same IP as the TVP-221H (eg. 192.168.0.2). Please also make sure that the Routers DHCP Start and Finish IP pool does not conflict with TVP-221H. See Internet Access / Fixed IP for more information.

Fixed IP: 192.168.0.1

Subnet Mask 255.255.255.0

Default Gateway is the routers LAN IP: eg. 192.168.0.2

DNS Server IP: 168.95.1.1 or as recommended by your ISP

### **TVP-221H under NAT using DHCP Client**

Alternatively, you could enable your router's DHCP Server and configure the TVP-221H to be a DHCP client. (See Internet Access / DHCP for more information)

### **DMZ or Virtual Server (Port Forwarding)**

Next, enable your routers DMZ allowing complete access of the TVP-221H (IP 192.168.0.1). To the Internet.

**NOTE:** By Default, the TVP-221H Web Access and Telnet Access management features are enabled. It is strongly recommended that the administrative password is updated once configuration is done. If you should forget your password, please see Section 7 Connection through Console.



Alternatively, Virtual servers (Port Forwarding) could be enabled on your router to allow the TVP-221H to freely communicate over the Internet with other devices. To do this you will have to open the following ports:

| Port               | Protocol | Service or Purpose                            |
|--------------------|----------|---|
| 24                 | Both     | Telnet Access                                 |
| 80                 | Both     | HTML for Web User Interface Access            |
| 1719               | TCP      | For use when used with a (RAS) Gate Keeper    |
| 1720               | TCP      | For signaling used for call setup & signaling |
| 30,000 thru 30,100 | UDP      | For Voice Packets                             |

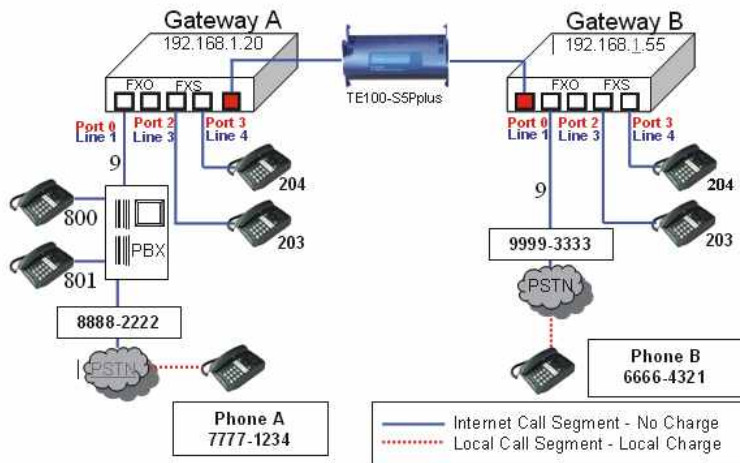
# 10. Web Browser Dial Plan Sample

This section describes how to use a web browser to build a dial plan in the VoIP Gateway. We suggest the following when developing your dial plan:

Draw an application diagram to illustrate / clarify application including:

1. Local gateway: IP setup
2. Local gateway: local telephone number setup
3. Local gateway: remote gateway IP & remote telephone number setup

**Note:** The Diagram below of Gateway A & B could be any combination of either the TVP-224HR (connected to switch by WAN port) or the TVP-221H (Connected by LAN port). The switch that joins these two gateways serves the purpose of initial lab configuration. Under this configuration, both TVP Gateway (To also be referred to as GW) must be in the same IP segment. Once the dial plans have been entered and tested, the switch would be replaced by the public Internet and the gateways would then have to be updated with the field application Internet Access Settings (eg. Public IP Address, Subnet Mask and Gateway IP Address). In addition, all remote destinations in the dial plan must be updated with the actual application / field IP Addresses.



**NOTE:** This diagram serves the purpose of illustrating the possible analog phone / PBX / PSTN integration / applications of the Gateway. However, disconnect cadence provided by your phone company for your PSTN line and disconnect cadence provided by your PBX may require additional matching with the gateway. This will require the assistance of your PBX supplier and /or Systems Integrator. Please also see User's Guide for additional information.

### **Scenario description: Two gateways connected by a switch**

There are two gateways connected by a switch. They are generically labeled "Gateway" but could be any combination of either the TVP-224HR (connected to switch by WAN port) or TVP-221H (Connected by LAN port). Theoretically, GW A is in Taiwan (Local Area Code have 2 digits) and GW B is in the US (Local Area Codes have 3 digits).

### **Gateway A, 4 ports, is configured as follows:**

1. Gateway A IP: 192.168.1.20, mask IP: 255.255.255.0, gateway IP 0.0.0.0 (virtual IP)
2. FXS Port 2 has a telephone set connected, its phone number is "203"
3. FXS Port 3 has a telephone set connected, its phone number is "204"
4. FXO Port 0 is connected to PBX. There are two telephone sets connected to the PBX. Their extension numbers are "800" and "801".
5. FXO Port 0 is registered as number "9" and it is connected to PBX
6. PBX has an external line to PSTN. Dialing "9" connects you PBX, where "9" is dialed to connect to PSTN.
7. The PSTN number to reach the PBX is "8888-2222".
8. Telephone A's number is "7777-1234" and belongs to the local PSTN

### **Gateway B, 4 ports, is configured as follows:**

1. Gateway B IP: 192.168.1.55, mask IP: 255.255.255.0, gateway IP 0.0.0.0 (virtual IP)
2. FXS Port 2 has an analog telephone set connected, its phone number is “203”
3. FXS Port 3 has an analog telephone set connected, its phone number is “204”
4. FXO Port 0 is registered as number “9”. Dialing “9” connects you to the outside line.
5. FXO Port 0 is connected to PSTN line “9999-3333”.
6. Telephone B's number is “6666-4321” and belongs to the local PSTN.

### **Gateway A - IP setup:**

1. Navigate to Internet Access / Fixed IP Menu
2. Type in IP Address: 192.168.1.20, Subnet Mask: 255.255.255.0 and Default IP Gateway Address: 0.0.0.0 in the related fields.
3. Click on “**Save**”.
4. Click on “**Reboot**”.

### **Gateway B IP Setup:**

5. Navigate to Internet Access / Fixed IP Menu.
6. Type in IP Address: 192.168.1.55, Subnet Mask: 255.255.255.0 and Default IP Gateway Address: 0.0.0.0 in the related fields.
7. Click on “**Save**”.
8. Click on “**Reboot**”.

### **Gateway A: Dial Plan Setup**

FXS Ports to Analog Phones - Gateway A has two phones on the FXS ports. Telephone number 203 on Port 2 and 204 on Port 3. These numbers are part of the default dial plan and do not have to be entered. We can skip the local Dial Plan setup including Telephone Address, hunt group and destination for phones 203 and 204.

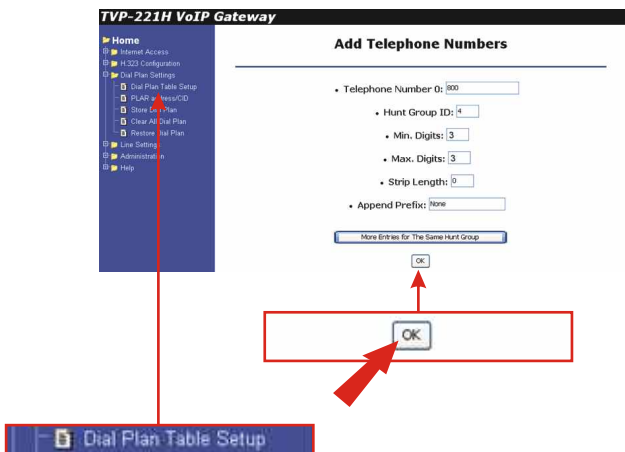
## How to Enter the Dial Plan

The Dial plan consists of three tables that include the Telephone Table, Hunt Group (eg. Customer Service may have multiple phones that the GW must search through for an open line), and Destination Table (Both Local and Remote). The dial plan has to be entered into all Gateways so that the local gateway knows how to process calls, sending them to its local ports or to remote gateways for further processing.

The following screen shots show an example for entering a dial plan for a single number. This example should give you the necessary insight as to how to enter the rest of the Dial Plan. If you still have difficulty understanding the dial plan and entering data, please reference the User Manual for more examples.

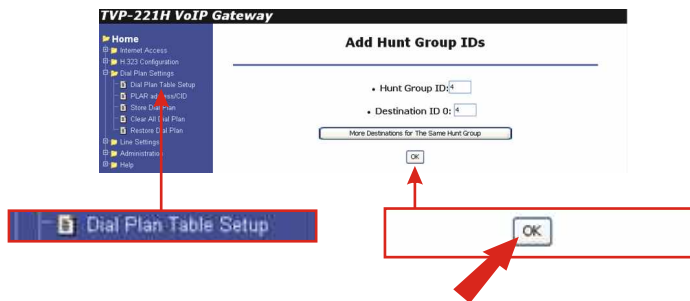
### Telephone Number Table

1. From the Navigation Menu on the left side, Select **Dial Plan Table Setup**.
2. From the window, please Select **<Add> <Telephone>**.
3. The following window will appear. Please Enter Data as shown.
4. Click on **OK**.



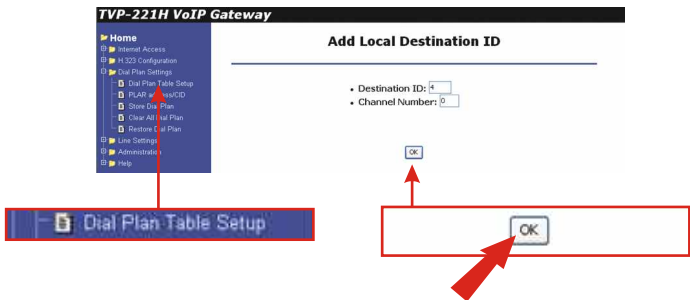
## Hunt Group Table

1. From the Navigation Menu on the left side, Select **Dial Plan Table Setup**.
2. From the window, please Select **<Add> <HuntGroup>**.
3. The following window will appear. Please Enter Data as shown.
4. Click on **OK**.



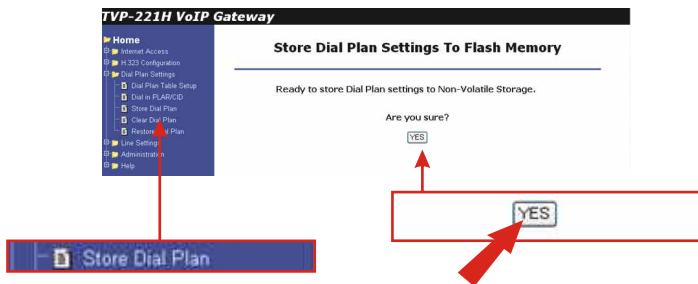
## Destination ID Table

1. From the Navigation Menu on the left side, Select **Dial Plan Table Setup**.
2. From the window, please Select **<Add> <Local\_Destination\_Channel>**.
3. The following window will appear. Please Enter Data as shown.
4. Click on **OK**.



## Store Dial Plan

1. Continue entering the Gateway A Dial Plan as laid out in the tables below (Telephone Table, Hunt Group Table and Destination Table) following the above procedures.
2. After you have entered the Dial Plan, make sure you **Store Dial Plan** to flash memory. From the Navigation Bar on the left side, Click on **Store Dial Plan**.
3. The following screen will appear on the right side. Click on **YES**.



## Gateway B: Dial Plan Setup

1. Enter Gateway B Dial Plan into Gateway B as shown in the tables below (Telephone Table, Hunt Group Table and Destination Table) following the above procedures.
2. After entering all the information listed in the tables below, DO NOT navigate away from Dial Plan Settings. Click Store Dial Plan, and click YES to save your dial plan to Flash Memory.

## Gateway A and Gateway B dial plan setting

### Gateway A Table Number Table

| Phone # | Hunt Group ID | Min. Digits | Max. Digits | Prefix strip | Prefix Address | Function  | Comment   |
|---------|---------------|-------------|-------------|--------------|----------------|---|---|
| 203     | 2             | 3           | 3           | 3            | None           | Dialing "203" calls phone on FXS Port 2   |   |
| 204     | 3             | 3           | 3           | 3            | None           | Dialing "204" calls phone on FXS Port 3   |   |
| 800     | 4             | 3           | 3           | 0            | None           | Dialing "800" calls PBX on FXO Port 0, which then dials "800".  | This is an example only. Please substitute your ext# on PBX if applicable |
| 801     | 5             | 3           | 3           | 0            | None           | Dialing "801" calls PBX on FXO Port 0, which then dials "801".  | This is an example only. Please substitute your ext# on PBX if applicable |
| 9       | 6             | 1           | 1           | 0            | None           | Dialing "9" from local phone on FXS Port connects you FXO Port 0 PBX, where "9" is dialed for outside line.   | For PBX on FXO use only   |
| 01      | 7             | 10          | 12          | 2            | "9"            | After receiving "01" + 8 to 10 digits (2 Digit Taiwan Area Code) from GW B, "01" is stripped, prefix address "9" is dialed to PBX on FXO Port 0 for outside line and then, remaining 8 to 10 digits are dialed. | For PBX on FXO use only   |
| 22      | 22            | 5           | 5           | 2            | None           | "22" is stripped and remaining 3 digits are sent to GW B.   | Remote Zone # used to make calls to remote GW B FXS (Internal Ext)        |
| 02      | 22            | 10          | 13          | 0            | None           | "02" + 8 to 11 digits (3 Digit US Area Code) are sent to GW B.  | Remote Zone # used to make calls to remote GW B FXO (Externa -PBX / PSTN) |



## Gateway A - Hunt Group Table

| Hunt Group ID | Hunt Type | # of Dest ID(s) | Dest. ID(s) |
|---------------|-----------|-----------------|-------------|
| 2             | 2         | 1               | 2           |
| 3             | 2         | 1               | 3           |
| 4             | 2         | 1               | 4           |
| 5             | 2         | 1               | 4           |
| 6             | 2         | 1               | 4           |
| 7             | 2         | 1               | 4           |
| 22            | 2         | 1               | 22          |

## Gateway A - Destination Table

| Dest ID | Mode   | Destination                  |
|---------|--------|------------------------------|
| 2       | Local  | Port = 2                     |
| 3       | Local  | Port = 3                     |
| 4       | Local  | Port = 0                     |
| 22      | Remote | Dest = 192.168.1.55/1720 TCP |

**NOTE:** The above destination table has both local destinations and remote destinations. When the gateways are taken out of this initial testing environment, and implemented in the field, the Internet access settings will have to be updated. In addition, the above remote destination IP will have to be updated to the field IP address.

## Gateway B - Telephone Number Table

| Phone # | Hunt Group ID | Min. Digits | Max. Digits | Prefix strip | Prefix Address | Function  | Comment   |
|---------|---------------|-------------|-------------|--------------|----------------|---|---|
| 203     | 2             | 3           | 3           | 3            | None           | Dialing "203" calls phone on Port 2   |   |
| 204     | 3             | 3           | 3           | 3            | None           | Dialing "204" calls phone on Port 3   |   |
| 9       | 4             | 1           | 1           | 1            | None           | Dialing "9" from local phone on FXS Port gets you a dial tone on FXO Port 0 for outside line.               | Assumes that Telephone line is attached to Port 0 / Line 1                |
| 02      | 5             | 10          | 13          | 2            | None           | "02" is stripped, and the remaining 8 to 11 digits (3 Digit US Area Code) are dialed out on Port 0 to PSTN. | Assumes that Telephone line is attached to Port 0 / Line 1                |
| 11      | 11            | 51          | 5           | 2            | None           | "11" is stripped and remaining 3 digits are sent to GW A.   | Remote Zone # used to make calls to remote GW A FXS (Internal Ext)        |
| 01      | 11            | 10          | 12          | 0            | None           | "01" + 8 to 10 digits (2 Digit Taiwan Area Code) are sent to GW B.  | Remote Zone # used to make calls to remote GW A FXO (External-PBX / PSTN) |

### Gateway B - Hunt Group Table

| Hunt Group ID | Hunt Type | # of Dest ID(s) | Dest. ID(s) |
|---------------|-----------|-----------------|-------------|
| 2             | 2         | 1               | 2           |
| 3             | 2         | 1               | 3           |
| 4             | 2         | 1               | 4           |
| 5             | 2         | 1               | 4           |
| 11            | 2         | 1               | 11          |

### Gateway B - Destination Table

| Dest ID | Mode  | Destination                  |
|---------|-------|------------------------------|
| 2       | Local | Port = 2                     |
| 3       | Local | Port = 3                     |
| 4       | Local | Port = 0                     |
| 11      | H.323 | Dest = 192.168.1.20/1720 TCP |

**NOTE:** The above destination table has both local destinations and remote destinations. When the gateways are taken out of this initial testing environment, and implemented in the field, the Internet access settings will have to be updated. In addition, the above remote destination IP will have to be updated to the field IP address.

## Case 1: Making a call between Gateway A and Gateway B

Gateway B phone 203 calls to Gateway A phone 203

| Caller Operation at GW B         | Equipment Operation                                  | Receiver Operation at GW A |
|----------------------------------|--|----------------------------|
| Pick up phone 203 (204)          | 1. GW dial tone is heard.<br>2. GW B Line 3 LED "ON" |                            |
| Dial 11203 (11204, 11800, 11801) | 1. Du Du is heard.<br>2. VoIP call processing        |                            |
| Ring back tone is heard          | 1. GW A Line 3 LED "ON"                              | Phone 203 rings            |
|                                  |  | Pick up phone 203          |
| VoIP Conversation                |  | VoIP Conversation          |

The above process is the same for Gateway B phone 203 and 204 calls to Gateway A phone 201, 800 and 801.

## Case 2: Gateway Phone to PSTN Phone

Gateway B phone 203 calls to PSTN phone A number 77771234

| Caller Operation at GW B | Equipment Operation                                     | Receiver Operation at GW A    |
|--------------------------|---|-------------------------------|
| Pick up phone 203        | 1. GW dial tone is heard.<br>2. GW B Line 3 LED "ON"    |                               |
| Dial 01-7777-1234        | 1. Du Du is heard.<br>2. VoIP call processing           |                               |
| Ring back tone is heard  | 1. GW A Line 1 LED "ON"<br>2. GW A is connected to PSTN |                               |
| Ring back tone is heard  | 1. PSTN call processing                                 | Phone 77771234 is ringing     |
|                          |   | Receiver on 77771234 picks up |
| VoIP Conversation        |   | VoIP Conversation             |

The above dialing process is the same for phones 203, 204 to any GW A local PSTN phone number.

### Case 3: PSTN Phone to Gateway Phone

Phone A number (03)77771234 calls to Gateway B phone 203

| Caller Operation at Phone A | Equipment Operation                                     | Receiver Operation at GW B phone 301 |
|-----------------------------|---|--------------------------------------|
| Pick up phone A             | 1. PSTN dial tone is heard.                             |                                      |
| Dial 88882222               | 1. Call being processed.<br>2. PBX plays voice greeting |                                      |
| Dial 22203 (22204)          | 1. Du Du is heard.<br>2. VoIP call processing           |                                      |
| Ring back tone is heard     |   |                                      |
|                             | 1. GW A Line 2 LED "ON"                                 | Phone 203 is ringing                 |
|                             | 1. GW A Line 2 LED "ON"                                 | Receiver picks up phone 203          |
| VoIP Conversation           |   | VoIP Conversation                    |

The above dialing process is the same for any calls made from GW A local PSTN to remote phone numbers 203 & 204.

**NOTE:** Case Tables 1-3 show the possible analog phone / PBX / PSTN integration / applications of the Gateway. Disconnect cadence provided by your phone company for your PSTN line and disconnect cadence provided by your PBX may require additional matching with the gateway. This will require the assistance of your PBX supplier and/ or Systems Integrator. Please also see User's Guide for additional information.

## Certifications

This equipment has been tested and found to comply with FCC and CE Rules. Operation is subject to the following two conditions:

- (1) This device may not cause harmful interference.
- (2) This device must accept any interference received.  
Including interference that may cause undesired operation.

**NOTE:** THE MANUFACTURER IS NOT RESPONSIBLE FOR ANY RADIO OR TV INTERFERENCE CAUSED BY UNAUTHORIZED MODIFICATIONS TO THIS EQUIPMENT. SUCH MODIFICATIONS COULD VOID THE USER'S AUTHORITY TO OPERATE THE EQUIPMENT.





## Product Warranty Registration

Please take a moment to register your product online.  
Go to TRENDware's website at <http://www.TRENDNET.com>

## TRENDnet Technical Support

### US/Canada Support Center

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