



VDSL2/GigE

# Wireless 11n Gateway

Model #: T1200H, T2200H

## User Manual

Ver 1.0

*Solutions for the Digital Life™*

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# Introduction

# 1

Thank you for choosing the VDSL2/GigE Wireless 11n Gateway. With its powerful wireless N radio, gigabit Ethernet switch, and WAN port, as well as its dual-core processor and support for HPNA, the Gateway will propel you to new speeds as you traverse the Internet. We are sure the Gateway will provide you with years of hassle-free performance.



## Minimum System Requirements

- Active ADSL2+ service
- Computer with a 10 Mbps or 10/100/1000 Mbps Ethernet connection
- Microsoft Windows 2000, XP, Vista; Mac OS 7.1+, 8.0+, 9.0+, OS X+

## VDSL2/GigE Wireless 11n Gateway

- Internet Explorer 4.0 or higher (5.x+ recommended) or Netscape Navigator 4.0 or higher (4.7+ recommended)
- TCP/IP network protocol installed on each computer

### Features

- Gigabit Ethernet (WAN and LAN)
- VDSL 2 access technology (backward compatible to ASDL2+/ASDL2)
- HPNA coax support
- Optional Java Virtual Machine and Java Runtime software
- TR-069 support with remote management
- TR-064 local management
- 64-, 128-, and 256-bit WEP/WPA/WPA2 wireless LAN security
- IEEE 802.3 Ethernet standard compliance
- Four 10/100/1000 Base-T Ethernet ports (LAN)
- One 10/100/1000 Base-T Ethernet ports (WAN)
- DHCP server option
- MAC address cloning
- QoS support, including diffserv and random early detection
- PPPoE support
- External Radius support
- Web-based configuration support
- FTP firmware upgradeable
- Web download support
- 802.11b/g/n support

- WPS support
- Advanced firewall
- ALG

### Getting to Know the Gateway

This section contains a quick description of the Gateway's lights, ports, etc. The Gateway has several indicator lights (LEDs) and a button on its front panel, and a series of ports and switches on its rear panel.

#### Front Panel

The front panel of the Gateway features 11 LEDs: Power, DSL, Internet, WAN Ethernet, Internet, Ethernet (4), Wireless, USB, and WPS Push Button.

##### *Power*

The Power LED displays the Gateway's current status. If the Power LED glows steadily green, the Gateway is receiving power and fully operational. When the Power LED is rapidly flashing, the Gateway is initializing. If the Power LED is glowing red when the Power cord is plugged in, the Gateway has suffered a critical error and technical support should be contacted. If the Power LED is flashing red, the Gateway is performing a firmware update.

##### *DSL*

The DSL LED illuminates when the Gateway is connected to an ADSL line. If the DSL LED is flashing, the Gateway is in training for DSL service.

##### *Internet*

When the Internet LED glows steadily, the Gateway is connected to the DSL provider. When it flashes, data traffic is passing across the Gateway.

### ***WAN Ethernet***

When the WAN Ethernet LED glows steadily, the Gateway is connected to an Ethernet WAN. When it flashes, it signifies that data traffic is traveling across the connection.

### ***LAN Ethernet***

The LAN Ethernet LEDs illuminate when the Gateway is connected to another device via one of its LAN Ethernet ports. When one of the LAN Ethernet LEDs flashes, data traffic is passing across the corresponding connection.

### ***HPNA***

The HPNA LED illuminates when the Gateway is connected to another device via its HPNA port. When it flashes, data traffic is passing across the connection.

### ***USB***

The USB LED illuminates when a USB device is connected via the Gateway's USB port. This port is not currently operational, but may be enabled in a future firmware update.

### ***Wireless***

The Wireless LED illuminates when the Gateway is connected wirelessly, assuming the Gateway's Wireless feature is turned on.

### ***WPS Button***

The WPS button activates WPS (WiFi Protected Setup) on the Gateway. To use WPS, press the WPS button on the Gateway, then, within two minutes, press the WPS button on a device you wish to connect to the Gateway's wireless network. The device will automatically join the Gateway's wireless network. Repeat for other wireless devices.

### **Rear Panel**

The rear panel of the Gateway features 8 ports (Phone, HPNA, LAN Ethernet, WAN Ethernet, USB, and Power), as well as a Reset button.

#### ***DSL Port (Single on T1200H; Dual on T2200H)***

The DSL port is used to connect the Gateway to a DSL line connection.

#### ***HPNA Port***

The HPNA port is used to connect the Gateway to an HPNA connection via coaxial cable.

#### ***LAN Ethernet Ports (4)***

The LAN Ethernet ports are used to connect computers to the Gateway via Ethernet cable. The Ethernet ports are 10/100/1000 Mbps auto-sensing ports, and either a straight-through or crossover Ethernet cable can be used when connecting to the ports.

#### ***WAN Ethernet Port***

The WAN Ethernet port is used to connect the Gateway to a WAN via an Ethernet cable.

#### ***USB Port***

The USB port is used to connect the Gateway to a USB device. This port is not currently operational, but may be enabled in a future firmware update.

#### ***Reset Button***

Depressing the Reset button for 5 seconds will restore the Gateway's factory default settings. The reset process will start after releasing the button.

## VDSL2/GigE Wireless 11n Gateway

### ***Power Port***

The Power port is used to connect the Power cord to the Gateway.

**WARNING!** Do not unplug the Power cord from the Gateway during the reset process. Doing so may result in permanent damage to the Gateway.

# Using the Home Screen

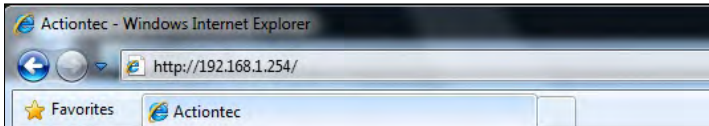
# 2

This chapter gives a short overview of the Home screen of the Gateway's firmware, including explanations of the Home screen's sections and links.

## Accessing the Home Screen

To access the Home screen:

1. Open a Web browser. In the "Address" text box, type:  
**http://192.168.1.254**  
then press **Enter** on the keyboard.



# VDSL2/GigE Wireless 11n Gateway

- The Gateway's Home screen appears.

The screenshot shows the Gateway's Home screen with a green header bar containing five navigation icons: Home, Status, Wireless Setup, Firewall, and Advanced Setup. Below the header, the main content area is divided into several sections:

- Summary:** Displays Internet Service Provider (Disconnected), Wireless (Enabled), System Up Time (0d, 0h, 7m), DSL Link Up Time (N/A), Current Time (N/A), Product Info (ModelID: T2200H, SerialID: N/A, MAC Address: N/A, Firmware Version: T2200H-31.128L.02g, Language: Auto-detect), and a login section with Username and Password fields, a [Forgot Password?](#) link, and a **Login** button.
- WAN Connection Status:** Shows WAN Type (DSL), Dynamic/Static (Dynamic), Modem IP Address (N/A), Subnet Mask (N/A), Default Gateway (N/A), Lease Time Remaining (N/A), DNS Address #1 (N/A), and DNS Address #2 (N/A).
- Wireless:** Shows SSID (TELU0154), Security (Enabled), and Security Type (WPA2-AES).
- Home Network:** Shows a table with columns for device status and IP address. One device is listed as 'Connected' with IP 192.168.1.1.
- Firewall:** Shows UPnP Setting (Enabled), Firewall (NAT Only), and Blocking/Filtering (Disabled).
- Diagnostics - Login Required:** Lists various diagnostic tools: Ping, Traceroute, Wireless Reset, Device Reboot, Factory Reset, DHCP Release/Renew, HPNA Diagnostics, and User's Manual.

- Enter the username "admin" and the password (printed on the label located on the bottom of the Gateway) in the Username and Password text boxes at the top right side of the screen, then click **Login**.

This close-up shows the login section of the Gateway's Home screen. It features the heading "Log in to make changes to the modem's settings." followed by two text input fields labeled "Username:" and "Password:". Below the "Password:" field is a [Forgot Password?](#) link and a green **Login** button.



## Chapter 2 Home Screen

4. You can now access all of the Home screen's options.

The screenshot displays the Home screen of a gateway's firmware. At the top is a green 'Icon Bar' with five icons: Home (house), Status (heart rate), Wireless Setup (Wi-Fi), Firewall (flame), and Advanced Setup (wrench). Below the icons is a 'Summary' section with three columns: 'Internet Service Provider' (Disconnected), 'Product Info' (Model#: T2200H, Serial#: N/A, MAC Address: N/A, Firmware Version: T2200H-31.128L.02g, Language: Auto-detect), and 'Log in to make changes to the modem's settings.' (Username: [input], Password: [input], Forgot Password?, Login). Below the summary are three main sections: 'WAN Connection Status' (WAN Type: DSL, Dynamic/Static: Dynamic, Modem IP Address: N/A, Subnet Mask: N/A, Default Gateway: N/A, Lease Time Remaining: N/A, DNS Address #1: N/A, DNS Address #2: N/A), 'Home Network' (Unknown, Connected 192.168.1.1), and 'Firewall' (UPnP Setting: Enabled, Firewall: NAT Only, Blocking/Filtering: Disabled). A 'Diagnostics - Login Required' section lists: Ping, Traceroute, Wireless Reset, Device Reboot, Factory Reset, DHCP Release/Renew, HPNA Diagnostics, and User's Manual.

### Icon Bar

At the top of the Home screen is the Icon Bar. Here, you can quickly access the other four main sections of the Gateway's firmware by clicking on the appropriate icon: Status (see chapter 6 for more details); Wireless Setup (see chapter 3 for more details), Firewall (see chapter 4 for more details); and Advanced Setup (see chapter 5 for more details). Clicking Home in any other firmware screen generates the Home screen.



## General Information

The next section of the Home screen is the General Information section.

Summary	Product Info	Log in to make changes to the modem's settings.
Internet Service Provider: <b>Disconnected</b>	Model#: T2200H	Username: <input type="text"/>
Wireless: <b>Enabled</b> <b>0 Client Connected</b>	Serial#: N/A	Password: <input type="text"/>
System Up Time: <b>0d, 0h, 7m</b>	MAC Address: N/A	<a href="#">Forgot Password?</a> <input type="button" value="Login"/>
DSL Link Up Time: <b>N/A</b>	Firmware Version: T2200H-31.128L.02g	
Current Time: <b>N/A</b>	Language: <input type="text" value="Auto-detect"/>	

This section is divided into three subsections: Summary, Product Info, and Login Status.

### Summary

The Summary subsection contains four status lines. Broadband displays the status of the Gateway's broadband connection (connected or disconnected). Wireless displays the status of the Gateway's wireless network (enabled or disabled), and also whether any wireless devices are connected to the network. System Up Time displays the length of time the Gateway has gone between reboots. DSL Link Up Time displays how long the DSL link has been active.

### Product Info

The Summary subsection contains four information lines. Model# displays the model number of the Gateway. Serial# displays the serial number of the Gateway. MAC Address displays the Gateway's MAC address. Firmware Version displays the Gateway's firmware version number.

### Login Status

The Login Status subsection displays whether you have logged into the Gateway's firmware. If not, enter your user name and password in the appropriate text boxes. If you are logged in, you can log out by clicking **Log Out**.

### Connection Status

This subsection of the Home screen displays the status of various parameters regarding the Gateway's wired and wireless networks.

<b>WAN Connection Status</b>	
WAN Type:	DSL
Dynamic/Static:	Dynamic
Modem IP Address:	N/A
Subnet Mask:	N/A
Default Gateway:	N/A
Lease Time Remaining:	N/A
DNS Address #1:	N/A
DNS Address #2:	N/A
<b>Wireless</b>	
SSID:	TELUS0154
Security:	Enabled
Security Type:	WPA2-AES

This section contains two subsections: WAN Connection Status and Wireless.

#### WAN Connection Status

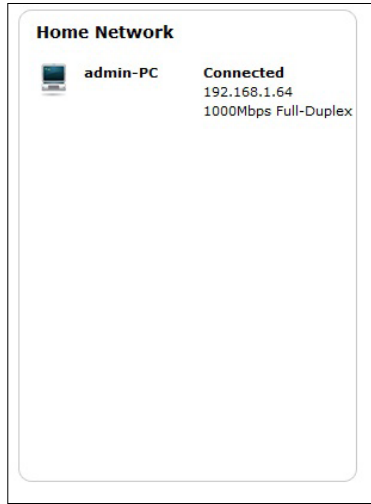
The WAN Connection Status subsection contains a number of status lines that pertain to the Gateway's WAN (Internet) connection: WAN Type, Dynamic/Static (type of IP address used), Modem IP Address, Subnet Mask, Default Gateway, Lease Time Remaining, DNS Address #1, and DNS Address #2.

#### Wireless

The Summary subsection contains three information lines. SSID displays the name of the Gateway's wireless network. Security displays whether the wireless network has security enable. Security Type displays the type of security enabled.

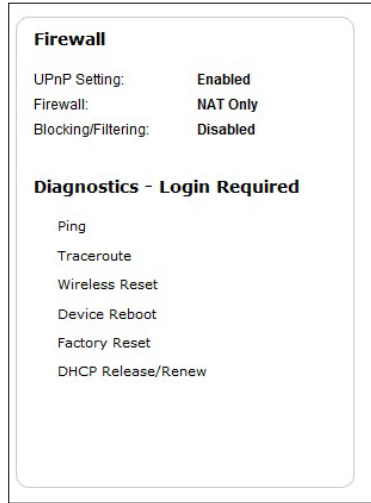
## Home Network

This section of the Home screen details the devices connected to the Gateway's networks (either wired or wireless). Information provided includes the device's IP address and the speed of the connection.



### Firewall/Diagnostics

This subsection of the Home screen displays the status of various parameters regarding the Gateway's firewall, as well as list of diagnostics tests.



This section contains two subsections: Firewall and Diagnostics.

#### Firewall

The Firewall subsection contains a number of status lines that pertain to the Gateway's firewall security: UPnP Setting, Firewall (type of firewall used), and Blocking/Filtering. For more information about the Gateway's firewall settings, see chapter 4 of this manual.

#### Diagnostics

The Diagnostics subsection contains six links to commonly used diagnostics tools: Ping; Traceroute ; Wireless Reset; Device Reboot; Factory Reset; and DHCP Release/Renew.

# Configuring Wireless Settings

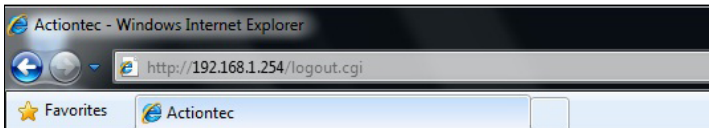
# 3

This chapter explains the options provided in the Wireless section of the Gateway's firmware, including setting up wireless security and WPS.

## Accessing Wireless Settings

To access the Wireless screens:

1. Open a Web browser. In the "Address" text box, type:  
**http://192.168.1.254**  
then press **Enter** on the keyboard.



## Chapter 3 Wireless Settings

- The Gateway's Home screen appears. Enter your user name and password, then click the Wireless Setup icon from the row of icons at the top of the screen.

The screenshot shows the Gateway's Home screen with a green header bar containing five icons: Home, Status, Wireless Setup, Firewall, and Advanced Setup. Below the header, there are three main sections: Summary, Product Info, and a login area. The Summary section displays connection status (Disconnected), system time (0d, 0h, 7m), and current time (N/A). Product Info shows Model# T2200H, Serial#, MAC Address, Firmware Version (T2200H-31.128L\_02g), and Language (Auto-detect). The login area prompts for Username and Password, with a Login button and a link to Forget Password? Below these are three panels: WAN Connection Status (DSL, Dynamic, N/A), Home Network (Unknown, Connected 192.168.1.1), and Firewall (UPnP Setting: Enabled, Firewall: NAT Only, Blocking/Filtering: Disabled). A Diagnostics - Login Required section lists various tools like Ping, Traceroute, and Factory Reset.

- The Wireless Settings screen appears, with various options listed in the menu on the left side of the screen.

The screenshot shows the Wireless Settings screen. On the left is a menu with the following options: Basic Settings (selected), Advanced Settings, WPS, MAC Address Control, and WDS. The main area is titled Basic Settings and contains the following configuration options: Wireless Radio (radio button selected for Enable), Select SSID (dropdown menu showing TELUS0154), SSID State (radio button selected for Enable), SSID Guest (radio button selected for Disable), SSID Broadcast (radio button selected for Enable), SSID Name (text field showing TELUS0154), Security (dropdown menu showing WPA / WPA2), WPA Type (dropdown menu showing WPA2-Personal), Encryption Type (dropdown menu showing AES), and Security Key Type (radio button selected for Use Default Key/Passphrase).

## Basic Settings

Click **Basic Settings** from any Wireless screen to generate the Basic Settings screen. This screen displays a series of settings relating to the core functionality of the Gateway's wireless capabilities.

### Basic Settings

Basic Settings is used to enable or disable the wireless radio or change wireless security settings.

<b>Wireless Radio</b>	<input checked="" type="radio"/> Enable <input type="radio"/> Disable
<b>Select SSID</b>	TELU50154 <input type="text"/>
<b>SSID State</b>	<input checked="" type="radio"/> Enable <input type="radio"/> Disable
<b>SSID Guest</b>	<input type="radio"/> Enable <input checked="" type="radio"/> Disable
<b>SSID Broadcast</b>	<input checked="" type="radio"/> Enable <input type="radio"/> Disable
<b>SSID Name</b>	TELU50154 <input type="text"/>
<b>Security</b>	WPA / WPA2 <input type="text"/>
<b>WPA Type</b>	WPA2-Personal <input type="text"/>
<b>Encryption Type</b>	AES <input type="text"/>
<b>Security Key Type</b>	<input checked="" type="radio"/> Use Default Key/Passphrase z6k5yyduz3 <input type="radio"/> Use Custom Key/Passphrase <input type="text"/>

## Wireless Radio

Click in the Enable radio button to activate the Gateway's wireless radio. Clicking in the Disable radio button turns off the wireless radio.

## Select SSID

Select an ISP-configured SSID (wireless network name) from the drop-down list.

## SSID State

Enable or disable this option, which activates the Gateway's ability to use multiple SSIDs, by clicking in the appropriate radio button.



### SSID Guest

Enable or disable this option, which activates the Gateway's ability to host a guest SSID, by clicking in the appropriate radio button. Setting up a guest SSID allows the user to provide a separate network on the Gateway that can access the Internet, but does not allow access to devices (printers, other computers, etc.) connected to the Gateway's main network. Guest SSID networks are usually created to allow temporary access to the Internet to one-time users.

### SSID Broadcast

Click in the Enable radio button to activate SSID broadcasting, which allows any computer searching for available wireless networks to detect this network (however, if this network is protected with some form of wireless security, they will not be able to join the network unless they know the security password). Clicking in the Disable radio button turns off SSID broadcasting.

### SSID Name

If applicable, enter the name of the Gateway's wireless network in this text box.

### Security

There are four choices available in this drop-down list:

#### WPA/WPA2

This form of wireless security is the default setting on the Gateway. When selected, you can select the WPA Type (WPA or WPA2-Personal, WPA Personal, or WPA2-Personal), Encryption Type (AES, TKP, or Both), and whether to use the Gateway's automatically generated default key/passphrase, or create one of your own, then click **Apply** to save your changes.

Security	WPA / WPA2
WPA Type	WPA2-Personal
Encryption Type	AES
Security Key Type	<input checked="" type="radio"/> Use Default Key/Passphrase z6k5yyduz3 <input type="radio"/> Use Custom Key/Passphrase
	<input type="text"/>

## WEP

WEP stands for Wired Equivalent Privacy. To use WEP, select it from the Security drop-down list, then select the Authentication Type (Open or Shared). Finally, select whether to use the Gateway's automatically generated default key/passphrase, or create one of your own (the more keys used, the stronger the security), then click **Apply** to save your changes.

The screenshot shows the WEP configuration interface. The Security dropdown is set to WEP. The Authentication Type dropdown is set to Open. Under Security Key Type, the radio button for 'Use Default Key/Passphrase' is selected, showing a green key ID: f55f2cbff8353e9c69c76373e. The radio button for 'Use Custom Key/Passphrase' is unselected. Below, four keys are listed: Key 1, Key 2, Key 3, and Key 4. Each key has a text input field containing a hexadecimal string, a '128 Bits' dropdown menu, and a '0 Digits left' indicator. A green 'Apply' button is at the bottom left.

## WEP + 802.1x

802.1x WEP is a robust security protocol that uses port control with dynamically changing encryption keys automatically updated over the network. 802.1x WEP uses a RADIUS (Remote Authentication Dial-in Service) server for authentication purposes. This server must be physically connected to the Gateway. Also, the user must enable the RADIUS client embedded in the Gateway.

The screenshot shows the WEP + 802.1x configuration interface. The Security dropdown is set to WEP + 802.1X. Below are four fields: Radius IP Address (0.0.0.0), Radius Port (1812), Radius Key (empty), and Group Key Interval (3600). A green 'Apply' button is at the bottom left.

1. Enter the RADIUS server IP address in the Radius Server IP text box.
2. Enter the RADIUS server's port number in the Radius Port text box.

## Chapter 3 Wireless Settings

3. Enter the RADIUS server's shared secret in the Radius Key text box.
4. Enter the group key interval in the Group Key Interval text box.
5. Click **Apply** to save your changes.

### Off

Selecting **Off** from the Security drop-down list leaves the Gateway's wireless network completely open, allowing anyone to join the network.

## Advanced Settings

Click Advanced Settings from any Wireless screen to generate the Advanced Settings screen.

### Advanced Settings

The modem supports high-speed wireless devices using the 802.11b/g/n protocol. Enable and tune 802.11b/g/n parameters as appropriate.

<b>Compatibility Mode</b>	Compatible Mode (802.11b, 802.11g, and 802.11n) ▾
<b>Channel Width</b>	20 MHz ▾
<b>Control Channel</b>	None (20 MHz channel width only) ▾
<b>MSDU Aggregation</b>	MSDU Aggregation Disabled ▾
<b>MPDU Aggregation</b>	MPDU Aggregation Enabled ▾
<b>WMM</b>	<input checked="" type="radio"/> Enable <input type="radio"/> Disable
<b>WMM Power Save</b>	<input checked="" type="radio"/> Enable <input type="radio"/> Disable
<b>Channel</b>	Auto Detect ▾ <span>Re-scan</span> Current Channel: 11
<b>Wireless Power Level</b>	100% ▾

Apply

These settings should only be adjusted by experienced technical users who are extremely familiar with wireless networking concepts. After making any changes in this screen, click **Apply** to save them.

### **Compatibility Mode**

Allows you to modify the Gateway's wireless network to allow certain devices to join, based on the device's compatibility. Choices include Compatible Mode (802.11b, 802.11g, and 802.11n), Balanced Mode (802.11g + n only), Performance Mode (802.11n only), Legacy Mode (802.11 b + g only), 802.11g only, and 802.11b only.

### **Maximum Spatial Streams**

Spatial streams boost the efficiency of the wireless network, resulting in higher speeds across the network. However, the more spatial streams you use, the less stable the wireless network connections. Choices include Auto (adjusts spatial streams automatically), 1, and 2.

### **Channel Width**

Choices include 20 Mhz and 40 Mhz.

### **Control Channel**

Choices include None (20 Mhz channel width only), Lower, and Upper.

### **MSDU Aggregation, MPDU Aggregation**

Enable or disable these options by selecting the appropriate choice from the drop-down lists. They should only be changed if requested by your ISP.

### **WMM, WMM Power Save**

Enable or disable these options by clicking in the appropriate radio buttons.

### Channel

Select the channel at which the Gateway's wireless network operates. Choices include channels 1 through 11, and Auto Detect, which allows devices on the network to automatically detect the channel.

### Wireless Power Level

Adjust the power of the Gateway's wireless network signal by selecting a percentage from 10% to 100% from the drop-down list

### WPS

Click **WPS** in any Wireless screen to generate the WPS (Wi-Fi Protected Setup) screen. WPS provides a simple method of setting up a wireless network by automatically sharing the network key between the Gateway and other wireless devices.

#### WPS (Wi-Fi Protected Setup)

WPS provides an easy and secure way to establish a wireless network by sharing the wireless key between the modem and wireless client.

**1. Set the WPS state.**

WPS:  Enable  Disable

AP PIN:  Enable  Disable

**2. Click Apply to save changes.**

**Connecting a device with WPS AP PIN**

Current WPS AP PIN: **01843538**

Click Generate PIN to generate a new AP PIN:

Click Restore Default PIN to restore the default AP PIN.:

**Connecting a device with WPS PBC or End Device PIN**

Push Button Configuration (PBC)

End Device PIN:

Insert End Device PIN:

Connect must be clicked within 120 seconds on client WPS device.

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To set up WPS:

1. Enable WPS by clicking in the Enable radio button.
2. Click **Apply** to save your changes.
3. If connecting a device to the wireless network with a WPS AP PIN, write down the PIN displayed after Current WPS AP Pin, then enter the PIN in the device's WPS AP PIN configuration.
4. If connecting a device to the wireless network with PBC (Push Button Configuration), click **Connect**, then press the PBC-compatible button on the device within two minutes.
5. If the connecting device uses the End Device PIN method, enter the PIN in the appropriate text box, then enter in the device's End Device PIN configuration.

### Wireless MAC Authentication

Click **MAC address control** in any Wireless screen to generate the Wireless MAC Authentication screen. MAC addresses are alphanumeric designations provided to every networkable device that act as unique identifiers. Using MAC addresses, you can allow or deny access to the Gateway's wireless network to the wireless devices of your choice.

#### Wireless MAC Authentication

Limit access to the modem by using the MAC address of specific wireless devices.

- Select SSID from the pull down menu.**  
SSID:
- Set MAC authentication state.**  
Mac Authentication:  Enable  Disable
- Select Allow device list or Deny device list.**  
 Allow device list      Denies all devices except those added in step 4.  
 Deny device list      Allows all devices except those added in step 4.
- Enter the MAC address of the wireless LAN device.**  
Select MAC Address:       Manually Add MAC Address:   
Manually Enter MAC:  or   
(Sample MAC Address: 00:12:0E:00:41:00)
- Click Apply to save changes.**

**MAC Authentication Device List**

DEVICE NAME	IP ADDRESS	MAC ADDRESS	ACCESS	EDIT
No Entries Defined				

To set up wireless MAC authentication:

1. Select the SSID from the SSID drop-down menu.
2. Turn on the MAC authentication by clicking in the Enable radio button next to MAC Authentication.
3. To allow or delete certain devices from the Gateway's wireless network, click in the appropriate radio button (Allow device list or Deny device list).
4. Enter the device's MAC address by either selecting it from the Select MAC

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Address drop-down list, or manually entering it in the Manually Add MAC Address text box.

5. Click **Apply** to save your changes.
6. Repeat steps 1-5 to add more devices.

## Wireless Distribution System

Click **WDS** in any Wireless screen to generate the WDS Wireless Distribution System screen. This screen allows the user to set up a network of access points via a wireless connection.

### WDS Wireless Distribution System

WDS allows the wireless interconnection of access points via a wireless connection.

**1. Set the WDS main base station state.**

WDS Main Base Station:  Enable  Disable

**2. Enter the MAC address of the remote base station.**

Select Device:

Manually Add MAC Address:

**3. Enter a remote base station name.**

Remote Station Name:

**4. Set the remote base station type.**

Remote Station Type:  AP Client Station  Repeater

**5. Click Apply to save your changes.**

**WDS Remote Station List**

Station Name	MAC Address	Type	Signal	SNR	Noise	Signal Strength	Edit
No Entries Defined							

To set up WDS:

1. Turn on WDS by clicking in the Enable radio button next to WDS Main Base Station.
2. Select an access point (remote base station) from the drop-down menu next to Select Device, or enter the device's MAC address in the Manually Add MAC Address text box.
3. Select the type of base station being configured (client station or repeater).



## **Chapter 3 Wireless Settings**

- 4.** Click **Apply** to save your changes.
- 5.** Repeat steps 2-4 for additional base stations.

The list of configured base stations will appear at the bottom of the screen, under WDS Remote Station List.

# Configuring Firewall Settings

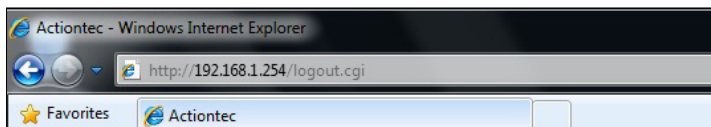
# 4

This chapter will explain the options provided in the Firewall section of the Gateway's firmware, including various firewall options, port forwarding, and DMZ hosting.

## Accessing Firewall Settings

To access the Firewall screens:

1. Open a Web browser. In the Address text box, type:  
**http://192.168.1.254**  
then press **Enter** on the keyboard.



## Chapter 4 Firewall

- The Gateway's Home screen appears. Enter your user name and password, then click Firewall from the row of icons at the top of the screen.

**Home**      **Status**      **Wireless Setup**      **Firewall**      **Advanced Setup**

**Summary**      **Product Info**      **Log in to make changes to the modem's settings.**

Internet Service Provider: **Disconnected**      Model#: T2200H  
Wireless: **Enabled**      Serial#: N/A  
**0 Client Connected**      MAC Address: N/A  
System Up Time: **0d, 0h, 7m**      Firmware Version: T2200H-31.128L.02g  
DSL Link Up Time: N/A      Language: **Auto-detect**      [Forgot Password?](#)      **Login**  
Current Time: N/A

**WAN Connection Status**

WAN Type: DSL  
Dynamic/Static: Dynamic  
Modem IP Address: N/A  
Subnet Mask: N/A  
Default Gateway: N/A  
Lease Time Remaining: N/A  
DNS Address #1: N/A  
DNS Address #2: N/A

**Wireless**

SSID: TELUS0154  
Security: Enabled  
Security Type: WPA2-AES

**Home Network**

**Unknown**      **Connected**  
192.168.1.1

**Firewall**

UPnP Setting: Enabled  
Firewall: **NAT Only**  
Blocking/Filtering: Disabled

**Diagnostics - Login Required**

Ping  
Traceroute  
Wireless Reset  
Device Reboot  
Factory Reset  
DHCP Release/Renew  
HPNA Diagnostics  
User's Manual

- The Firewall screen appears, with various firewall options listed in the menu on the left side of the screen.

**Firewall**

- ▶ **Firewall**
- ▶ IPv6 Firewall
- ▶ Port Forwarding
- ▶ Applications
- ▶ DMZ Hosting
- ▶ IPv6 DMZ Hosting
- ▶ UPnP

The default firewall security firewall is activated, security

**1. Select the WAN PING pings from WAN side.**

WAN PING block mode:  Off

**2. Select IP addressing**

Apply rule to:

**3. Set the Firewall Security**

## Firewall

Click **Firewall** from any Firewall screen to generate the Firewall screen. This screen allows you to configure the firewall settings of the Gateway. If you make changes in this screen, click **Apply** at the bottom of the screen to save them.

### Firewall

The default firewall security level is set to NAT Only. Activating the firewall is optional. When the firewall is activated, security is enhanced, but some network functionality will be lost.

**1. Select the WAN PING block mode. When enabled, the modem will not respond to all pings from WAN side.**

WAN PING block mode:  Enable  Disable

**2. Select IP addressing type.**

Apply rule to:

**3. Set the Firewall Security Level.**

NAT Only  
 Low  
 Medium  
 High

**4. Set the firewall table below. (optional)**

Note: If a check appears in a box, that service is allowed.

Service	Service Type	Service Port	Traffic In	Traffic Out
DirectX	Multimedia Control	2300-2400, 47824, 2300-2400 UDP, 8073 UDP	<input type="checkbox"/>	<input checked="" type="checkbox"/>
DNS	DNS	53	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
FTP	File Transfer	20, 21	<input type="checkbox"/>	<input checked="" type="checkbox"/>
FTPS	Secure File Transfer	990	<input type="checkbox"/>	<input checked="" type="checkbox"/>
H323	Video	1720	<input type="checkbox"/>	<input checked="" type="checkbox"/>
HTTP	Web Service	80	<input type="checkbox"/>	<input checked="" type="checkbox"/>
HTTPS	Secure Web Service	443	<input type="checkbox"/>	<input checked="" type="checkbox"/>
ICMP Echo Request	Web Service	N/A	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
ICMP Echo Reply	Web Service	N/A	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

## WAN Ping Block Mode

Click in the Enable radio button next to WAN PING block mode to activate the WAN Ping Block Mode. This will block all pings originating from the WAN (i.e., the Internet) side of the network. Clicking Disable turns off the block mode.

## IP Addressing Type

This option is non-configurable and always set to All Dynamic IP Addresses.

### Firewall Security Level

Select the level of firewall security level here, by clicking in the appropriate radio button. None provides no firewall security, while Low, Medium, and High provide different levels of security, as displayed in the Firewall table in the lower part of the screen. Additionally, after choosing a level of firewall security, you can manually allow (by clicking in a check box to generate a check mark) or deny (by clicking in a check box to delete a check mark) selected Internet services listed in the Firewall table.

### IPv6 Firewall

Click **IPv6 Firewall** from any Firewall screen to generate the IPv6 Firewall screen. This screen allows you to configure the IPv6 firewall settings of the Gateway, and functions identically to the standard Firewall screen.

### IPv6 Firewall

Activating the firewall is optional. When the firewall is activated, security is enhanced, but some network functionality may be lost.

**1. Select the stealth mode state. When stealth mode is enabled, the modem will not respond to unsolicited WAN traffic, including pings..**

Stealth Mode:  Enable  Disable

**2. Select the IP address or IP addressing type to which the firewall rules will apply.**

Addressing Type:

**3. Set the Firewall Security Level.**

Security Level:

[CreateRule](#)

**4. Set the firewall table, below. Services checked are allowed. (optional)**

Service	Service Type	Service Port	Traffic In	Traffic Out
DirectX	Multimedia Control	2300 through 2400, 47624, 2300 through 2400 UDP, 8073 UDP	<input type="checkbox"/>	<input checked="" type="checkbox"/>
DNS	DNS	53	<input type="checkbox"/>	<input checked="" type="checkbox"/>
FTP	File Transfer	20, 21	<input type="checkbox"/>	<input checked="" type="checkbox"/>
FTPS	Secure File Transfer	990	<input type="checkbox"/>	<input checked="" type="checkbox"/>
H323	Video	1720	<input type="checkbox"/>	<input checked="" type="checkbox"/>
HTTP	Web Services	80	<input type="checkbox"/>	<input type="checkbox"/>

## Port Forwarding

Activating Port Forwarding allows the network to be exposed to the Internet in certain limited and controlled ways, enabling some applications to work from the local network (game, voice, and chat applications, for example), as well as allowing Internet access to servers in the local network. Click **Port Forwarding** from any Firewall screen to generate the Port Forwarding screen. This screen allows you to configure the port forwarding settings of the Gateway. If you make changes in this screen, click **Apply** at the bottom of the screen to save them.

### Port Forwarding

Enter ports or port ranges required to forward Internet applications to a LAN device below.

**1. Set the LAN/WAN port and IP information.**

Select LAN Device:

LAN IP Address:

External (WAN) Start Port:

External (WAN) End Port:

Internal (LAN) Start Port:

Internal (LAN) End Port:

Protocol:

**2. Click Apply to save changes.**

**Applied Port Forwarding Rules**

LAN START/ END PORT	PROTOCOL	LAN IP ADDRESS	WAN START/END PORT	MODIFY	REMOVE
No Entries Defined					

To set up port forwarding:

1. Select the LAN device from the Select LAN Device drop-down menu.
2. Enter the LAN IP address in the LAN IP Address text box.
3. Enter the external start port number in the External (WAN) Start Port text box.
4. Enter the external end port number in the External (WAN) End Port text box.
5. Enter the internal starting port number in the Internal (LAN) Start Port text box.

6. Select a protocol from the Protocol drop-down list box
7. Enter the LAN IP address in the LAN IP Address text box.
8. If applicable, enter the remote port and IP information
9. Click **Apply** to save your changes.

The list of forwarded ports will be displayed in the Applied Port Forwarding Rules at the bottom of the screen.

## Applications

Click **Applications** from any Firewall screen to generate the Applications screen. This screen is an extension of the port forwarding screen, allowing you to quickly and easily set up commonly-used applications that require port forwarding

### Applications

Applications forwards ports to the selected LAN device by application name.

**1. Select Device.**

Select Device:  Enter IP Address:   
Manually enter the IP address

**2. Select the application category, then the application to forward.**

Application Category:  All

Applications:  Alien vs Predator

**3. Click Apply to save changes.**

**Forwarded Applications List:**

DEVICE NAME	IP ADDRESS	APPLICATION FORWARDED	EDIT
No Entries Defined			

To set up a forwarded application:

1. Select a networked device by selecting it from Select Device drop-down list, or enter its IP address in the Enter IP Address text box.
2. Select the application's category from the Application Category drop-down list, or select All to see all the applications provided.

3. Select the application from the Applications drop-down list.
4. If desired, view the rule by clicking the View Rule button. A new screen appears, listing the application's port forwarding details. Click **Back** to return to the Applications screen.
5. Click **Apply** to save your changes.
6. Repeat steps 1-5 to configure additional applications.

The list of forwarded applications will be displayed in the Forwarded Applications List at the bottom of the screen.

## DMZ Hosting

Click **DMZ Hosting** from any Firewall screen to generate the DMZ Hosting screen. The DMZ (De-Militarized Zone) host feature allows one device on the network to operate outside the firewall to use an Internet service that otherwise would be blocked, or to expose a networked device to all services without restriction or security.

### DMZ Hosting

DMZ hosting enables a LAN device to use the modem WAN IP address as its own. DMZ places the LAN device outside the firewall.

**WARNING!** Using a device in DMZ mode creates a security risk by opening the computer to outside intrusion.

**1. Set the DMZ state.**

DMZ:  Enable  Disable

**2. Select a Device.**

Select Device:  Enter IP Address:

**3. Click "Apply" to save your changes.**

**DMZ Hosted Device**

DEVICE NAME	IP ADDRESS	EDIT
No Entries Defined		

**Caution!** A DMZ host is not protected by the firewall and may be vulnerable to attack. Designating a DMZ host may also put other computers in the local network at risk. When designating a DMZ host, consider the security implications and protect it if necessary.



To designate a local computer as a DMZ host:

1. Click in the Enable radio button to activate DMZ hosting.
2. Select a networked device by selecting it from Select Device drop-down list, or enter its IP address in the “Enter IP Address” text box.
3. Click **Apply** to save your changes.

The DMZ host will be displayed in the DMZ Hosted Device table at the bottom of the screen. Only one device at a time on the Gateway’s network can be designated as a DMZ host.

### IPv6 DMZ Hosting

Click **IPv6 DMZ Hosting** from any Firewall screen to generate the IPv6 DMZ Hosting screen. The DMZ (De-Militarized Zone) host feature allows one device on the network to operate outside the firewall to use an Internet service that otherwise would be blocked, or to expose a networked device to all services without restriction or security.

### IPv6 DMZ Hosting

DMZ hosting enables a LAN device to use the modem’s WAN IP address as its own. DMZ places the LAN device outside the firewall.

**WARNING!** Using a device in DMZ mode creates a security risk by exposing the device to outside intrusion.

**1. Enter an IPv6 Address.**

Enter The last 64 bits of Ipv6 Address:

**2. Click Apply to save changes.**

IPv6 DMZ Hosted Device	
IP ADDRESS	EDIT
No Entries Defined	

To set up IPv6 DMZ hosting:

1. Enter the last 64 bits of the IPv6 address in the appropriate text box.
2. Click **Apply**.

The DMZ host will be displayed in the IPv6 DMZ Hosted Device table at the bottom of the screen. Only one device at a time on the Gateway's network can be designated as a DMZ host.

### UPnP

Click **UPnP** from any Firewall screen to generate the UPnP screen. UPnP (Universal Plug and Play) allows all supported devices on the Gateway's network to discover and interface with each other without additional configuration. To enable UPnP on the Gateway's network, click in the Enable radio button, then click **Apply**.

**UPnP**

Follow the steps below to enable or disable UPnP (Universal Plug and Play).

**1. Set the UPnP state.**

UPnP:  Enable  Disable

**2. Click Apply to save changes.**

# Configuring Advanced Setup

# 5

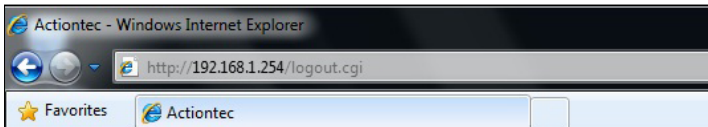
This chapter will explain the options provided in the Advanced Setup section of the Gateway's firmware, including services blocking, restoring the Gateway to factory default settings, and performing a ping test.

**Important!** These settings should be configured by an experienced network technician only. Improper configuration can result in the Gateway operating poorly or not at all.

## Accessing Advanced Setup

To access the Advanced Setup screens:

1. Open a Web browser. In the Address text box, type:  
**http://192.168.1.254**  
then press **Enter** on the keyboard.



## VDSL2/GigE Wireless 11n Gateway

- The Gateway's Home screen appears. Enter your user name and password, then click Advanced Setup from the row of icons at the top of the screen.

**Home**      **Status**      **Wireless Setup**      **Firewall**      **Advanced Setup**

**Summary**

Internet Service Provider: **Disconnected**  
Wireless: **Enabled**  
System Up Time: **0d, 0h, 7m**  
DSL Link Up Time: **N/A**  
Current Time: **N/A**

**Product Info**

Model#: **T2200H**  
Serial#: **N/A**  
MAC Address: **N/A**  
Firmware Version: **T2200H-31.128L.02g**  
Language: **Auto-detect**

**Log in to make changes to the modem's settings.**

Username:   
Password:   
[Forgot Password?](#)      **Login**

**WAN Connection Status**

WAN Type: **DSL**  
Dynamic/Static: **Dynamic**  
Modem IP Address: **N/A**  
Subnet Mask: **N/A**  
Default Gateway: **N/A**  
Lease Time Remaining: **N/A**  
DNS Address #1: **N/A**  
DNS Address #2: **N/A**

**Wireless**

SSID: **TELUS0154**  
Security: **Enabled**  
Security Type: **WPA2-AES**

**Home Network**

**Unknown**      **Connected**  
192.168.1.1

**Firewall**

UPnP Setting: **Enabled**  
Firewall: **NAT Only**  
Blocking/Filtering: **Disabled**

**Diagnostics - Login Required**

Ping  
Traceroute  
Wireless Reset  
Device Reboot  
Factory Reset  
DHCP Release/Renew  
HPNA Diagnostics  
User's Manual

- A Warning screen appears, informing the user that the settings in the Advanced Setup are for experienced network professionals only. Click **Yes**. The Advanced Setup screen appears, with various options listed in the menu on the left side of the screen.

**Blocking/Filtering**

- ▶ **Services Blocking**
- ▶ Website Blocking
- ▶ Scheduling Access

**DSL Bonding Settings**

**IP Address**

- ▶ WAN IP Addressing
- ▶ IPv6 WAN Settings
- ▶ LAN IP Settings
- ▶ IPv6 LAN Settings
- ▶ DHCP Reservation
- ▶ Dynamic DNS
- ▶ DNS Host Mapping
- ▶ Port Bridging

**HPNA LAN**

**Services Blocking**

Services blocking allows the modem to block internet services.

**1. Select Device.**

Select Device:  Enter IP Address:

**2. Select service to block.**

Web  FTP  Newsgroups  E-mail  IM

**3. Click Apply to save changes.**

**Apply**      **Service Block**

## Services Blocking

Services blocking is used to prevent a device on the Gateway's network from accessing particular services available on the Internet, such as receiving email or downloading files from FTP sites. To set up services blocking on a networked device:

1. Click **Services Blocking** from the menu on the left side of any Advanced Setup screen. The Services Blocking screen appears.

**Services Blocking**

Services blocking allows the modem to block internet services to a specific computer on the network.

**1. Select Device.**

Select Device:  Enter IP Address:

**2. Select service to block.**

Web  FTP  Newsgroups  E-mail  IM

**3. Click Apply to save changes.**

**Service Blocking List**

DEVICE NAME	IP ADDRESS	Service Blocked	EDIT
No Entries Defined			

2. Select the device on which you wish to block services from the Select Device drop-down list, or enter the device's IP address in the Enter IP Address text box.
3. Select a service, or multiple services, to block by clicking in the appropriate check box below Select service to block.
4. Click **Apply** to save your changes.
5. Repeat steps 1-4 to block services on another device on the Gateway's network.

The devices that are blocked from accessing services are listed at the bottom of the screen.

### Website Blocking

Website blocking is used to prevent all devices on the Gateway's network from accessing particular web sites on the Internet. To set up web site blocking on the Gateway's network:

1. Click **Website Blocking** from the menu on the left side of any Advanced Setup screen. The Website Blocking screen appears.



The screenshot shows the 'Website Blocking' configuration page. At the top, it says 'Website Blocking'. Below that, it says 'Website Blocking' again. Then, it says '1. To block a specific website, enter the website address (such as www.abcd.com) in the text box below.' There is a text box labeled 'Website Address:'. Below that, it says '2. Click Apply to save changes.' There is a green 'Apply' button. Below the button, it says 'Blocked Websites'. At the bottom, it says 'Website Blocked' and 'EDIT'. Below 'Website Blocked', it says 'No Entries Defined'.

2. Enter the web site address of the web site to be blocked in the Website Address text box.
3. Click **Apply** to save your changes.
4. Repeat steps 1-3 to block other web sites from being accessed on the Gateway's network.

The web sites blocked from being accessed on the Gateway's network are listed at the bottom of the screen.

### Scheduling Access

Scheduling access is used to allow a device on the Gateway's network to access the Internet at certain times of the day, or certain days of the week, only. During times not configured in the Scheduling Access screen, the device will not be able to access the Internet. To set up scheduling access on a networked device:

1. Click **Scheduling Access** from the menu on the left side of any Advanced Setup screen. The Scheduling Access screen appears.

#### Scheduling Access

Schedule Rules allows the modem to set a specific time period during which a computer on the network can access the Internet.

**1. Select Device.**

Select Device:  Enter MAC Address:

**2. Select the days of the week to allow Internet access.**

A checked box signifies access allowed.

SUN  MON  TUE  WED  THU  FRI  SAT

**3. Select the time of day range from the drop-down list.**

From:  To:

**4. Click Add to create device schedule.**

**Device Access Restriction List**

Device Name	MAC Address	Allowed Days	Allowed Time	Edit
No Entries Defined				

2. Select the device on which you want to scheduled Internet access from the Select Device drop-down list, or enter the device's MAC address in the Enter MAC Address text box.
3. Select the days of the week during which you want to allow Internet access by clicking in the appropriate check box below "Select the days of the week...".
4. If applicable, set the time range during which you want to allow Internet access. This time range will apply only to the days you activated in step 3.

5. Click **Add** to create a schedule access.
6. Repeat steps 1-5 to create multiple access schedules for other devices on the Gateway's network.

The devices that are configured with an access schedule are listed at the bottom of the screen.

### DSL Bonding Settings (T2200H only)

DSL bonding allows devices the Gateway to use one or both of its DSL lines in bonded mode. When bonding is disabled, the Gateway only uses a single DSL line. To configure DSL bonding, click on **DSL Bonding Settings** in any Advanced screen. The DSL Bonding Settings screen will appear. There are three options for DSL bonding: Auto, Single, and Bonding. Click in the appropriate button to activate.

#### DSL Bonding Settings

When DSL Bonding is enabled, the modem supports the use of 1 or 2 DSL lines in bonded mode.  
When DSL Bonding is disabled, the modem supports only a single DSL line for the inner RJ-11 port.  
Any changes to the DSL Bonding Settings will trigger a reboot.

**1. Configure DSL Bonding.**

Auto     Single     Bonding

**2. Click Apply to save your changes and reboot.**



### WAN IP Addressing

The WAN IP Address screen allows you to manually set up the WAN IP address of the Gateway. To do this:

1. Click **WAN IP Address** from the menu on the left side of any Advanced Configuration screen. The WAN IP Address screen appears.

**WAN IP Address**

WAN IP Addressing sets the protocol used by your ISP for Internet access.

1. **Current WAN interface is DSL.**
2. **Select the ISP protocol below.**
  - PPPoE
  - RFC 1483 via DHCP
  - RFC 1483 via Static IP
3. **If your ISP Provider requires Host Name/Domain Name, enter it here.**

Host Name:

Domain Name:
4. **Select the DNS type.**
  - Dynamic DNS Addresses (Default)
  - Static DNS AddressesPrimary DNS:   
Secondary DNS:
5. **Configure IGMP Proxy.**
  - Enable
  - Disable
6. **Click Apply to save changes.**

2. Select the type of connection the ISP uses.

**Note:** Some DSL providers use PPPoE to establish communication with an end user. Other types of broadband Internet connections (such as fixed point wireless) may use either DHCP or static IP address. If unsure which connection is present, check with Telus before continuing.

3. If using PPPoA or PPPoE was selected in step 1, enter the user name and password in the appropriate text boxes. If the ISP requires no user name or password, click in the “My ISP does not require a username and password” check box.

4. Select the IP type. If Single Static IP Address was selected, enter the IP address in the “Single Static IP” text box. If “Block of Static IP Addresses (Unnumbered Mode)” was selected, enter the designated gateway IP address and subnet mask address in the “Modem Address” and “Subnet Mask” text boxes, respectively. Also, “VIP Mode” can be activated by clicking in the appropriate check box. VIP mode works in concert with unnumbered mode and allows computers not assigned a static IP to receive a DHCP LAN side private IP address.
5. Select the DNS type. If static DNS address was selected, enter the primary DNS address and, optionally, the secondary DNS address in the appropriate text boxes.
6. If applicable, enter a different MTU value in the MTU text box.
7. Enable or disable IGMP proxy by clicking in the appropriate radio button.

When finished in this screen, click **Apply** to activate any changes made.

## IPv6 LAN Settings

IPv6 LAN Settings allows the user to configure the IPv6 LAN settings on the Gateway. To configure:

1. Click **IPv6 LAN Settings** from the menu on the left side of any Advanced Setup screen. The IPv6 screen appears.

### IPv6 LAN Settings

IPv6 is the next generation of IP addressing.

**1. Set the IPv6 LAN connection type.**

LAN Connection Type:

**2. Set the IPv6 LAN addressing values.**

Prefix Length:

Link-Local Address: fe80::aa39:44ff:fef6:e748

ULA Support:  Enable  Disable

Subnet Number:

Router Advertisement Lifetime:  Minute(s) (0 - 150)

**3. Click Apply to save changes.**

2. Select the LAN connection type from the drop-down menu.

3. If applicable, enable EULA support, and enter the subnet number and router advertisement lifetime values in the appropriate text boxes.
4. Click **Apply** to save changes.

### DHCP Reservation

DHCP reservation allows devices on the Gateway's network to be permanently associated with a particular IP address. To set up DHCP reservation on a networked device:

1. Click **DHCP Reservation** from the menu on the left side of any Advanced Setup screen. The DHCP Reservation screen appears.

#### DHCP Reservation

DHCP reservation leases a permanent DHCP allocated address to a client.

**1. Select MAC Address, or manually enter a MAC address.**

Select MAC Address:

Manually Add MAC Address:

**2. Select an IP address to associate with a MAC address.**

IP Address:

Manually Add IP Address:

**3. Click Apply to save changes.**

DHCP Reservation List

Device Name	MAC Address	IP Address	EDIT
No Entries Defined			

2. Select the MAC address of the device on which you want to reserve a permanent DHCP address from the Select MAC Address drop-down list, or enter the device's MAC address in the Manually Add MAC Address text box.
3. Select the IP address you want to permanently associate with the device chosen in step 2 from the IP Address drop-down list, or enter an IP address in the Manually Add IP Address text box.

## VDSL2/GigE Wireless 11n Gateway

4. Click **Apply** to save changes.
5. Repeat steps 1-4 to reserve IP addresses for other devices on the Gateway's network.

The devices with DHCP reserved IP addresses are listed at the bottom of the screen.

### LAN IP and DHCP Settings

The LAN IP and DHCP Settings screen allows you to change the Gateway's default LAN IP address, and adjust the DHCP settings. To change the LAN IP:

1. Click **LAN IP Settings** from the menu on the left side of any Advanced Configuration screen. The LAN IP and DHCP Settings screen appears.

#### LAN IP And DHCP Settings

Actiontec recommends that you keep the current default LAN IP address of the modem. Any changes made to the LAN IP address will reset some of the other settings on the modem. Do not proceed without understanding the technical impact of changing these settings.

**1. To make changes, enter the new IP address or Subnet Mask of the modem in the field below.**

Modem IP Address:

Modem Subnet Mask:

**2. Click Apply and Reboot to save your changes.**

The modem will automatically assign an IP address to each device in your network.

**1. Set the IP addressing values.**

Beginning IP Address:

Ending IP Address:

Subnet Mask:

**2. Set the DHCP server lease time.**

DHCP Server Lease Time:  Day(s)  Hours  Minutes

**3. Set the DNS values.**

DNS Server 1:

DNS relay performed by Gateway (Default)

2. Enter the new modem IP address and modem subnet mask in the appropriate text boxes.

## Chapter 5 Advanced Setup

3. Click **Apply and Reboot**. The Gateway reboots with the new settings.

To change the Gateway's DHCP settings:

1. Click **Enable** to activate the Gateway's DHCP server.
2. Enter the DHCP server's beginning IP address, ending IP address, and subnet mask address in the appropriate text boxes.
3. Enter the DHCP server's lease time period by entering the days, hours, and minutes in the appropriate text boxes.
4. Set the DNS values by selecting Dynamic or Static (clicking in the appropriate radio button), then, if needed enter the IP addresses for DNS server 1 and 2.
5. Click **Apply** to save your changes.

### IPv6 WAN Settings

To set up the Gateway's IPv6 WAN settings:

1. Click **IPv6 WAN Settings** from the menu on the left side of any Advanced Setup screen. The IPv6 WAN Settings screen appears.

#### IPv6 WAN Settings

IPv6 is the next generation of IP addressing.

1. Set the IPv6 state.  
IPv6:  Enable  Disable
2. Select the WAN IPv6 connection protocol.  
WAN IPv6 IP Protocol:  ▾
3. Set the IPv6 addressing values.  
DHCPv4 6rd Option Code:  Yes  No  
6rd MTU Size:  (1280 - 1480)
4. Set the WAN IPv6 DNS Server.  
IPv6 DNS Type:  Default Servers  Custom Servers
5. Click **Apply** to save changes.

2. Click in the button next to Enable to activate.
3. Select the WAN IPv6 connection protocol from the drop-down list.
4. If applicable, activate DHCP 6rd Option Code and enter the 6rd MTU size in the text box.
5. Click **Apply** to save change.

### Dynamic DNS

Dynamic DNS creates a dynamic IP address that is aliased to a static hostname, allowing a computer on the network to be more easily accessible from the Internet. Typically, when connecting to the Internet, the service provider assigns an unused IP address from a pool of IP addresses, and this address is used only for the duration of a specific connection. Dynamically assigning addresses extends the usable pool of available IP addresses, while maintaining a constant domain name. This allows the user to access a device (a camera, for example) from a remote location, since the device will always have the same IP address.

When using Dynamic DNS, each time the IP address provided by the ISP changes, the DNS database changes accordingly to reflect the change. In this way, even though the IP address of the computer changes often, its domain name remains constant and accessible.

To configure Dynamic DNS:

1. Click **Dynamic DNS** from the menu on the left side of any Advanced Configuration screen. The Dynamic DNS screen appears.

### Dynamic DNS

Dynamic DNS associates the WAN IP address of your modem with a host name. Dynamic DNS automatically updates DNS servers upon WAN IP address change.

**1. Set the dynamic DNS state.**

Dynamic DNS State:  Enable  Disable

**2. Select the dynamic DNS provider.**

Dynamic DNS provider:

**3. Enter your username and password.**

Username:

Password:

**4. Enter the dynamic DNS host name.**

Hostname:

**5. Click Apply to save changes.**

2. Select the Gateway's Dynamic DNS account provider from the drop-down list.
3. Enter the Dynamic DNS username and password in the appropriate text boxes.
4. Enter the full Dynamic DNS domain in Dynamic DNS provider text box, or select one from the drop-down list.
5. Click **Apply**.

## DNS Host Mapping

DNS Host Mapping creates a static host name for the specified IP address. WAN and LAN addresses are supported. To set up DNS host mapping:

1. Click **DNS Host Mapping** from the menu on the left side of any Advanced Setup screen. The DNS Host Mapping screen appears.

### DNS Host Mapping

DNS host mapping creates a static host name for the specified IP address. WAN and LAN IP addresses are supported.

1. Enter the DNS host name.  
DNS Host Name:
2. Enter the IP address.  
IP Address:
3. Click **Apply** to save changes.

#### DNS Host Mapping List

DEVICE NAME	IP ADDRESS	DNS NAME	EDIT
No Entries Defined			

2. Enter the DNS host name in the appropriate text box.
3. Enter the IP address in the appropriate text box.
4. Click **Apply** to save changes.



## Port Bridging

Click **Port Bridging** from any Advanced Configuration screen to generate the Port1 Bridge screen. This screen allows you to enable port bridging. Click in the Enable radio button to activate, then click **Apply**.

**Port1 Bridge**

**1. Set the Port1Bridge state.**

Port1 Bridge:  Enable  Disable

**2. Click Apply to save changes.**

## HPNA Settings

Click **HPNA Settings** from any Advanced Configuration screen to generate the HPNA Settings screen. This screen allows you to enable HPNA (Home Phoneline Networking Alliance) networking. Click in the Enable radio button to activate, then click **Apply**.

**HPNA Setting**

HPNA settings change the modem's HPNA connection parameters to work with your selected parameters.

**1. Set the HPNA state.**

HPNA:  Enable  Disable

**2. Click Apply to save changes.**

### Admin Password

To change the password that allow access to the Gateway's firmware screens:

1. Click **Admin Password** from the menu on the left side of any Advanced Setup screen. The Admin Password screen appears.

**Admin Password**

A strong password prevents outsiders from accessing the modem's web interface.  
You will need to enter this password every time you access the modem's web interface.

**1. Enter the old and new passwords.**

Username:            admin

Old Password:     

New Password:    

Confirm your password:

**2. Click Apply to save changes.**

2. Enter the old password in the Old Password text box.
3. Enter a new password in the Admin Password text box.
4. Reenter the new password in the Confirm Your Password text box.
5. Click **Apply** to save your changes.

### Storage Service

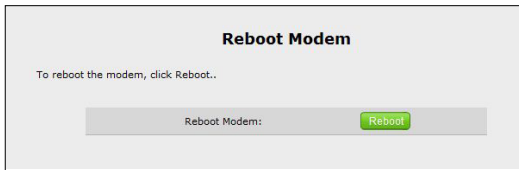
Click **Storage Service** to access the Storage Service screen. This screen lists the storage devices connected to the Gateway, and displays information (type of file system, total and used space) about the devices.



### Rebooting the Gateway

To reboot the Gateway:

1. Click **Reboot** from the menu on the left side of any Advanced Setup screen. The Reboot Modem screen appears.



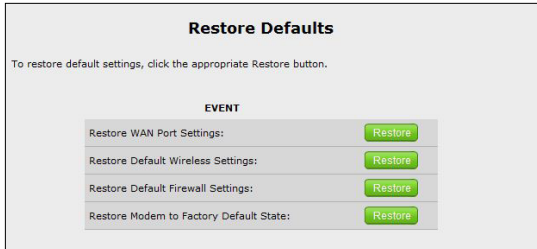
2. Click **Reboot** to reboot the Gateway. This may take up to one minute.

To reenter the Gateway's firmware after restarting the Gateway, click the web browser's Refresh button.

### Restoring Factory Default Settings

If the Gateway's factory default settings need to be restored (to build a new network from the beginning, for example), use the following procedure:

1. Click **Restore Defaults** in any Advanced Setup screen. The Restore Defaults screen appears.



2. If you want to restore only the Gateway's default WAN port settings, click **Restore** across from Restore WAN port Settings. The Gateway's current WAN port settings will be deleted, and the factory default WAN port settings restored.
3. If you want to restore only the Gateway's default wireless settings, click **Restore** across from Restore Default Wireless Settings. The Gateway's current wireless settings will be deleted, and the factory default wireless settings restored.
4. If you want to restore only the Gateway's default firewall settings, click **Restore** across from Restore Default Firewall Settings. The Gateway's current firewall settings will be deleted, and the factory default firewall settings restored.
5. If you want to restore all the Gateway's default settings, click **Restore** across from Restore Modem to Factory Default Settings. All of the Gateway's current settings (including wireless and firwall settings) will be deleted, and the factory default settings restored.

**Note:** All of the Gateway's settings and parameters will be restored to their default values after performing the Restore Factory Default procedure.

## Speed Test

Selecting **Speed Test** from any Advanced Settings screen generates the Speed Test screen. Enter a website URL in the appropriate text box, then click **Test**. The connection's speed results will be displayed.

### Speed Test

1. Click "Test" to begin the speed test.

URL:

Speed Test Results	
Test	Results
Train Rate Downstream:	N/A
Train Rate Upstream:	N/A
Test Status:	NO TEST IN PROGRESS
Average Downstream:	N/A
Average Upstream:	N/A
Ping Time:	N/A
MTU Size:	N/A
MSS Size:	N/A
TCP Connection:	Yes
RWIN Size:	87380
Do Not Fragment Bit:	Enabled

## Ping Test

Selecting **Ping Test** from any Advanced Setup screen generates the Ping Test screen, which is used to check whether the Gateway is properly connected to the Internet. Follow the on-screen instructions to perform the test. The results will be displayed at the bottom of the screen.

### IPv6 Ping Test

Test the Modem's Internet connectivity to a specific host using the Ping Test, below.

**1. Insert a URL or IP address below.**

URL or IP:

**2. Select the interface.**

Interface Name:

**3. Select the packet size.**

Packet size (bytes):

**4. Select test.**

#### Ping test results

Reply From	Bytes	Time	TTL
N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A

#### Ping Statistics

Packets Sent	Packets Received	Packet Loss	Round Trip Minimum	Round Trip Maximum	Round Trip Average
N/A	N/A	N/A	N/A	N/A	N/A

### TCP Dump Debug

Selecting **TCP Dump Debug** from any Advanced Setup screen generates the TCP Dump Debug screen, which is used to debug the Gateway's TCP (transmission control protocol) dump. Follow the on-screen instructions to perform the test. This test is intended for use by experienced technicians only. The results will be displayed at the bottom of the screen.

#### TCPDump Debug

TCPDump the pcap to the inserted USB flash, meanwhile ,CFE config and Some other wireless config files will also be copied to USB flash.

**1.Select the interface to debug.**

TCPDump Interface:

**2.Select the packet size to dump**

Packet Size:

**3.Select the filename of dump file stored in the USB Flash**

File Name:

**4.Select the duration of Dump**

TCPDump Timeout (Seconds):

**Test Status**  
No USB Flash is inserted  
No TCPDump is in Progress

## Iperf Test

Selecting **Iperf Test** from any Advanced Setup screen generates the Iperf Test screen, which is used to check the throughput of the Gateway's network using TCP and UDP streams. It is intended for use by experienced technicians only. Follow the on-screen instructions to perform the test. The results will be displayed at the bottom of the screen.

### Iperf Test

Test your network situation for interface, below.

**Select iperf Mode.**

Client

**Select port to listen or connect to.**

port:

**Select Report interval**

report interval:  Seconds

**Select protocol**

Protocol:

window size:  Bytes

**Select transmit options**

Transmit Bytes  Bytes

Transmit Time  Seconds

**Host.**

URL or IP:

**Select test.**



## IPv6 Ping Test

Selecting **IPv6 Ping Test** from any Advanced Setup screen generates the IPv6 Ping Test screen, which is used to check whether the Gateway is properly connected to the Internet via IPv6. Follow the on-screen instructions to perform the test. The results will be displayed at the bottom of the screen.

### IPv6 Ping Test

Test the Modem's Internet connectivity to a specific host using the Ping Test, below.

- 1. Insert a URL or IP address below.**  
URL or IP:
- 2. Select the interface.**  
Interface Name:
- 3. Select the packet size.**  
Packet size (bytes):
- 4. Select test.**

#### Ping test results

Reply From	Bytes	Time
N/A	N/A	N/A
N/A	N/A	N/A
N/A	N/A	N/A
N/A	N/A	N/A

#### Ping Statistics

Packets Sent	Packets Received	Packet Loss	Round Trip Minimum	Round Trip Maximum	Round Trip Average
N/A	N/A	N/A	N/A	N/A	N/A

## Traceroute

Selecting **Traceroute** from any Advanced Setup screen generates the Traceroute screen, which is used to determine the route taken by packets across a network. Follow the on-screen instructions to perform the test. The results will be displayed at the bottom of the screen.

### Traceroute

Traceroute is used to determine the route taken by packets across a network.

**1. Insert a URL or IP Address below.**

URL or IP:

**2. Select test.**

Test

**Test Status**  
No Test in Progress

**Traceroute Results:**

Hop	Time 1	Time 2	Time 3	Host / IP Address
NA	NA	NA	NA	NA
NA	NA	NA	NA	NA
NA	NA	NA	NA	NA
NA	NA	NA	NA	NA
NA	NA	NA	NA	NA

## IPv6 Traceroute

Selecting **IPv6 Traceroute** from any Advanced Setup screen generates the IPv6 Traceroute screen, which is used to determine the route taken by packets across a network via IPv6. Follow the on-screen instructions to perform the test. The results will be displayed at the bottom of the screen.

### IPv6 Traceroute

Traceroute is used to determine the route taken by packets across a network.

**1. Enter a URL or IP address in the text box, below.**

URL or IP:

**2. Select test.**

**Traceroute Results**

Hop	Time 1	Time 2	Time 3	Host / IP Address
N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A

## Time Zone

To set the correct time zone on the Gateway:

1. Click **Time Zone** from the left side of any Advanced Setup screen. The Time Zone screen appears.

### Time Zone

**1. Please select your Time Zone ( Current Time: January 01 12:11 A.M. )**

(GMT - 8:00) Pacific Time

(GMT - 7:00) Mountain Time

(GMT - 6:00) Central Time

(GMT - 5:00) Eastern Time

Day Light Saving

**2. Click Apply to save changes.**

2. Click in the appropriate radio button for your time zone.
3. If daylight saving is currently in effect, click in the Day Light Saving check box to activate
4. Click **Apply** to save your settings.

### Language Settings

Selecting **Language** from any Advanced Setup screen generates the Language screen, which is used to change the language of the Gateway's GUI. Select a language from the drop-down menu, then click **Apply**.

**Language Settings**

1. Select your preferred language

Auto-detect

2. Click **Apply** to save changes.

## HPNA Diagnostics

Selecting **HPNA Diagnostics** from any Advanced Setup screen generates the HPNA Diagnostics screen, which is used to test the Gateway's HPNA (Home Phoneline Networking Alliance) connections. Follow the on-screen instructions to perform the test. It is intended for use by experienced technicians only. The results will be displayed at the bottom of the screen.

### HPNA Diagnostic

**Diagnostic Status**  
No HPNA Diagnostic in Progress...

**Diagnostic Results**

ID	MAC	Version	Hardware	Pin	Mas	Link	Syn
01	a8:38:44:f7:e7:48	CG3210H.1.9.4	Coax.12-44 #1.0	UCV1-S-4-27111005	1	0	1

**Diag HPNA netinfo (default): you must select the number of package(s):**  
10000

**Click Test to begin.**

**Diag HPNA devinfo (default). Click Test to begin.**

**Diag HPNA getchan (default). Click Test to begin.**

**Diag HPNA netper log: click Test, or click View for details.**

**User defined command and input command. Click Test to begin.**

### DNS Cache

Selecting **DNS Cache** from any Advanced Setup screen generates the DNS Cache screen, which is used to enable/disable the Gateway's DNS (domain name system) cache. It is intended for use by experienced technicians only. Click **Apply** to save changes.

#### DNS Cache

The modem provides DNS Caching ability. In most cases, DNS Caching allows a DNS Server to respond more quickly to multiple queries for the same domain or host.

Note: Although DNS Caching can resolve an Internet request more quickly, it also poses risks, such as DNS Poisoning.

**1. Select Disable or Enable DNS Cache.**

Disable (Recommended)

Enable

**2. Click Apply to save changes.**

### IGMP Settings

Selecting **IGMP Settings** from any Advanced Setup screen generates the IGMP Configuration screen, which is used to control the Gateway's IGMP (Internet Group Management Protocol) settings. Follow the on-screen instructions to perform the test. It is intended for use by experienced technicians only. Click **Apply** to save changes.

### IGMP Configuration

**IGMP Snooping**

IGMP Snooping Enable:

Standard Mode

Blocking Mode

**IGMP Protocol**

Default Version:

Query Interval:

Query Response Interval:

Last Member Query Interval:

Robustness Value:

Maximum Multicast Groups:

Maximum Multicast Data Sources (for IGMPv3):

Maximum Multicast Group Members:

Fast Leave Enable:

LAN to LAN (Intra LAN) Multicast Enable:

### Upgrade History

Selecting **Upgrade History** from any Advanced Setup screen generates the Upgrade History screen, which displays the Gateway's firmware upgrade history.

### Upgrade History

Provides upgrade history data for the modem.

**Upgrade History**

Date	Time	Type	Status	Firmware Version
No Upgrade Entries				

## SIP ALG

Selecting **SIP ALG** from any Advanced Setup screen generates the SIP ALG screen, which is used to enable/disable the Gateway's SIP ALG (application-level gateway) setting. It is intended for use by experienced technicians only. Click **Apply** to save changes.

**SIP ALG**

SIP ALG enables or disables the ability to pass SIP sessions to the LAN.

**1. Select Disable or Enable SIP ALG.**

Disable

Enable (Recommended)

**2. Click Apply to save changes.**

## Tool Box

Selecting **Tool Box** from any Advanced Setup screen generates the Tool Box screen, which includes advanced troubleshooting tools. It is intended for use by experienced technicians only. Click **Apply** to save changes.

**Tool Box**

Tool Box provides troubleshooting tools for the modem. Do not enable the Tool Box features unless qualified network technician.

**1. Set the traffic type to mirror.**

Traffic Type:  ▼

**2. Select the port to be mirrored.**

Traffic Type:  ▼

**3. Click Apply to save changes.**



## DLNA

Selecting **DLNA** from any Advanced Setup screen generates the DLNA screen, which is used to enable/disable the Gateway's DLNA (Digital Living Network Alliance) settings. It is intended for use by experienced technicians only. Click **Apply** to save changes.

**DLNA**

1. Set the DLNA Server state.

DLNA:  Enable  Disable

Media Library Path:

2. Click Apply to save changes.

## xDSL Diagnostics

Selecting **xDSL Diagnostics** from any Advanced Setup screen generates the xDSL Diagnostics screen, which is used to enable diagnostics on all of the Gateway's DSL (digital subscriber lines) connections. It is intended for use by experienced technicians only. Click **Apply** to save changes.

**xDSL diagnostics**

Diagnostics Type:

# Viewing the Gateway's Status

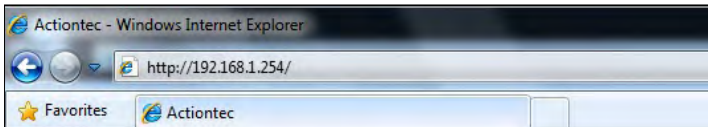
# 6

This chapter gives an overview of the various Status tables provided by the Gateway, which allow you check on various parameters, including xDSL connections, WAN Ethernet connection, and wireless status.

## Accessing Status Tables

To access the Status screens:

1. Open a web browser. In the Address text box, type:  
**http://192.168.1.254**  
then press **Enter** on the keyboard.



## Chapter 6 Status

- The Gateway's Home screen appears. Enter your user name and password, then click **Status** from the row of icons at the top of the screen.

**Home**      **Status**      **Wireless Setup**      **Firewall**      **Advanced Setup**

**Summary**

Internet Service Provider: **Disconnected**  
 Wireless: **Enabled**  
 System Up Time: **0d, 0h, 7m**  
 DSL Link Up Time: **N/A**  
 Current Time: **N/A**

**Product Info**

Model#: **T2200H**  
 Serial#: **N/A**  
 MAC Address: **N/A**  
 Firmware Version: **T2200H-31.128L.02g**  
 Language: **Auto-detect**

**Log in to make changes to the modem's settings.**

Username:   
 Password:   
[Forgot Password?](#)     

**WAN Connection Status**

WAN Type: **DSL**  
 Dynamic/Static: **Dynamic**  
 Modem IP Address: **N/A**  
 Subnet Mask: **N/A**  
 Default Gateway: **N/A**  
 Lease Time Remaining: **N/A**  
 DNS Address #1: **N/A**  
 DNS Address #2: **N/A**

**Wireless**

SSID: **TELUS0154**  
 Security: **Enabled**  
 Security Type: **WPA2-AES**

**Home Network**

**Unknown**      **Connected**  
 192.168.1.1

**Firewall**

UPnP Setting: **Enabled**  
 Firewall: **NAT Only**  
 Blocking/Filtering: **Disabled**

**Diagnostics - Login Required**

Ping  
 Traceroute  
 Wireless Reset  
 Device Reboot  
 Factory Reset  
 DHCP Release/Renew  
 HPNA Diagnostics  
 User's Manual

- The Status screen appears, with various options for checking the Gateway's status listed in the menu on the left side of the screen.

**Internet Services**

- ▶ **Connection Status**
  - ▶ Line 1 Status
  - ▶ Line 2 Status
  - ▶ WAN Ethernet Status
  - ▶ Routing Table
  - ▶ Firewall Status

**LAN Services**

- ▶ NAT Table
- ▶ Wireless Status
- ▶ Modem Utilization
- ▶ LAN Status
- ▶ HPNA Status

**System Monitor**

- ▶ ARP table
- ▶ Interface Statistics
- ▶ Multicast Statistics
- ▶ System Log

**Connection Status**

Parameter	Value	Status
Broadband:		<b>D</b>
Internet Service Provider (ISP):		<b>D</b>
Firmware Version:		<b>T</b>
Model Number:		<b>T</b>
Serial Number:		<b>C</b>
WAN MAC Address:		<b>N</b>
Downstream Rate:		<b>0</b>
Upstream Rate:		<b>0</b>
ISP Protocol:		<b>L</b>
Encapsulation:		<b>L</b>
Modem IP Address:		<b>N</b>
Lease Time Remaining:		<b>N</b>
DNS Address #1:		<b>N</b>
DNS Address #2:		<b>N</b>

## Connection Status

Click **Connection Status** from any Status screen to generate the Connection Status screen. This table displays various parameters regarding the Internet connection of the Gateway, including broadband and ISP connection status, upstream rate, least time remaining, and DNS addresses. The only user-configurable option in the screen is the Release/Renew button, which, when clicked, releases and renews the Gateway's IP address.

Connection Status	
Parameter	Status
Broadband:	Disconnected
Internet Service Provider (ISP):	Disconnected
Firmware Version:	T2200H-31.128L.02g
Model Number:	T2200H
Serial Number:	CVJA3110700154
WAN MAC Address:	N/A
Downstream Rate:	0Kbps
Upstream Rate:	0Kbps
ISP Protocol:	1483 via DHCP
Encapsulation:	LLC
Modem IP Address:	N/A <input type="button" value="Release/Renew"/>
Lease Time Remaining:	N/A
DNS Address #1:	N/A
DNS Address #2:	N/A
IPv6 Prefix of Delegated:	N/A
IPv6 WAN Status:	N/A
IPv6 WAN Address:	N/A
IPv6 WAN Link Local Address:	N/A
IPv6 LAN Link Local Address:	fe80::aa39:44ff:fe6:e748
IPv6 Unique Local Address:	N/A
IPv6 DNS Address 1:	N/A
IPv6 DNS Address 2:	N/A

## Line 1/Line 2 Status

Click **Line 1 Status** from any Status screen to generate the Line 1 Status screen. This table displays various parameters relating to the Line 1 connection of the Gateway, including VPI, downstream speed, and attenuation. There are no user-configurable options in this screen, but there is a Clear button at the bottom of the screen (not shown) that resets all of the statistics back to zero, at which time the statistics will begin accumulating again.

The Line 2 Status screen is identical to the Line 1 screen, and displays parameters for the Line 2 connection of the Gateway.

Line 1 Status	
<b>Connection</b>	<b>Status</b>
Telus Broadband:	Disconnected
Internet Service Provider:	Disconnected
<b>PPP Parameter</b>	<b>Status</b>
User Name:	N/A
PPP Type:	N/A
LCP State:	DOWN
IPCP State:	DOWN
Authentication Failures:	0
Session Time:	0 Days, 00H:00M:00S
Packets Sent:	N/A
Packets Received:	N/A
Modem Uptime:	0 Days, 00H:00M:00S
PPP Mode:	N/A
<b>DSL Link</b>	<b>Status</b>
Broadband Mode Setting:	MULTIMODE
Broadband Negotiated Mode:	Not Trained
DSL Link Uptime:	0 Days, 0H:0M:0S
Retrains:	N/A
Retrains in Last 24 Hours:	N/A
Loss of Power Link Failures:	N/A
Loss of Signal Link Failure:	N/A
Loss of Margin Link Failure:	N/A
Link Train Errors:	N/A
Unavailable Seconds:	N/A

## WAN Ethernet Status

Click **WAN Ethernet Status** from any Status screen to generate the WAN Ethernet Status screen. This table displays various parameters relating to the WAN Ethernet connection of the Gateway, including subnet mask, default gateway, and sent packets. There are no user-configurable options in this screen.

WAN Ethernet Status	
Parameter	Status
Broadband:	Disconnected
Internet Service Provider:	Disconnected
MAC Address:	N/A
IP Address:	N/A
Subnet Mask:	N/A
Default Gateway:	N/A
Lease Time Remaining:	N/A
DNS Server:	N/A
Received Packets:	0
Sent Packets:	0
Time Span:	0 Days, 0H:0M:0S

## Routing Table

Click **Routing Table** from any Status screen to generate the Routing Table screen. This screen displays the Gateway's routing table. There are no user-configurable options in this screen.

Routing Table			
Valid	Destination	Netmask	Gateway
YES	192.168.1.0	255.255.255.0	0.0.0.0

IPv6 Routing Table			
Valid	Destination	Netmask	Gateway
YES	fe80::	04	::
YES	fe80::	04	::
YES	fe80::	04	::
YES	fe80::	04	::
YES	fe80::	04	::

### Firewall Status

Click **Firewall Status** from any Status screen to generate the Firewall Status screen. This table displays the status of the Gateway's firewall. There are no user-configurable options in this screen. For more details, see chapter 4, Configuring Firewall Settings.

Firewall Status		
The list below displays all firewall settings modified from the factory default settings.		
Firewall Feature	LAN IP	Applied Rule
Applications	N/A	Default Feature Setting
Port Forwarding	N/A	Default Feature Setting
DMZ Hosting	N/A	Default Feature Setting
Firewall Settings	N/A	Default Feature Setting
NAT	N/A	NAT Enabled
UPnP	N/A	No UPnP Rules Defined

### NAT Table

Click **NAT Table** from any Status screen to generate the NAT Table screen. This screen displays the Gateway's NAT table. There are no user-configurable options in this screen.

NAT Table					
Protocol	Timeout	Source IP	Source Port	Destination IP	Destination Port
No Entries Defined					

## Wireless Status

Click **Wireless Status** from any Status screen to generate the Wireless Status screen. This table displays the Gateway's wireless network statistics, including wireless security type, wireless mode, and packets received. If the Gateway is set to use multiple SSIDs, select the SSID from the drop-down list at the top of the screen. The selected SSID's status will be displayed on the lower part of the screen.

### Wireless Status

**Select SSID**

SSID:  ▼

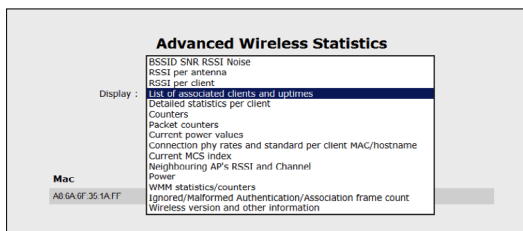
For wireless status, select SSID from drop-down list.

Parameter	Status
Radio:	Enabled
SSID:	Enabled
Security:	Enabled
SSID:	<b>TELUS0154</b>
Channel Selection:	Auto
Channel:	11
Wireless Security Type:	WPA2 PSK
SSID Broadcast:	Enabled
MAC Authentication:	Disabled
Wireless Mode:	Compatible Mode (802.11b, 802.11g, and 802.11n)
WPS State:	Enabled
WPS Type:	PBC, AP PIN, End Device PIN
WMM QoS:	Enabled
WMM Power Save:	Enabled
Wireless Packets Sent:	0
Wireless Packets Received:	0

Advanced Wireless Statistics
Modem Status Wireless Monitor

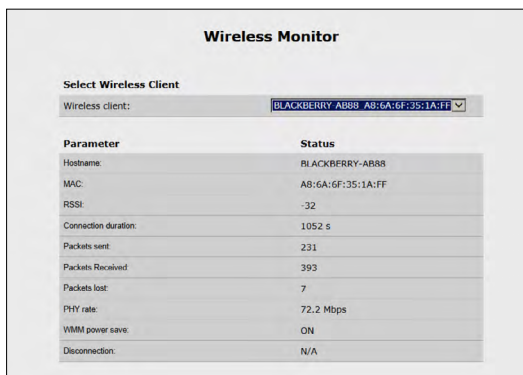


### Advanced Wireless Statistics



Clicking on the “Advanced Wireless Statistics” button at the bottom of the Wireless Status screen generates the “Advanced Wireless Statistics” screen. From here, the user can select from a list of fifteen metrics concerning the Gateway, including packet counters, WMM statistics/counters, and detailed statistics per client. To display any one of the metrics, click on its name, and a new screen will appear.

### Modemstatus Wireless Monitor




Clicking on the “Modemstatus Wireless Monitor” button at the bottom of the Wireless Status screen generates the “Wireless Monitor” screen. From here, the user can view real-time statistics specific to clients connected to the Gateway’s wireless network. To view, select a client from the “Wireless Client” drop-down list. Its statistics will appear in the lower section of the screen.

## Modem Utilization

Click **Modem Utilizations** from any Status screen to generate the Modem Utilization screen. This table displays the Gateway's modem statistics, including wireless memory used, LAN TCP settings, and, at the bottom of the screen, a LAN device session log. There are no user-configurable options in this screen.

Modem Utilization	
Parameter	Status
Total Memory:	128MB RAM
Memory Used:	40%
Memory Status:	OK
Recommended Action:	NONE
Maximum Number of Sessions:	8192
LAN TCP Sessions:	1
LAN UDP Sessions:	4
Modem Sessions:	5
Total Open Sessions:	10
Session Status:	OK
Recommended Action:	NONE

LAN Device Session Log		
Device Name	IP Address	No. Of Open Session
 admin-PC	192.168.1.64	5

## LAN Status

Click **LAN Status** from any Status screen to generate the LAN Status screen. This table displays the Gateway's LAN (local network) statistics, including Ethernet connections, HPNA link status, and various networked device details. There are no user-configurable options in this screen.

LAN Status						
Interface	Port	Connection Speed	Packets Sent	Packets Received		
Ethernet	1	100M	1002	1205		
Ethernet	2	DISCONNECTED	N/A	N/A		
Ethernet	3	DISCONNECTED	N/A	N/A		
Ethernet	4	DISCONNECTED	N/A	N/A		
USB	1	DISCONNECTED	N/A	N/A		
<b>HPNA Parameter:</b>		<b>Status</b>				
HPNA Link Status:		NO SIGNAL				
Packets Sent:		0				
Packets Received:		0				
Interface	Hostname	MAC Address	IP Address	Port	Connection Speed	Lease Time Remaining
Ethernet	admin-PC	00:50:bf:d3:3f:8b	192.168.1.04	1	100Mbps	23H 46M 4S

## ARP Table

Click **ARP Table** from any Status screen to generate the ARP Table screen. This table displays the Gateway's address resolution protocol (ARP) information. There are no user-configurable options in this screen.

ARP Table						
IP Address	HW Type	Flags	HW Address	Mask	Device	
192.168.1.04	0x1	0x2	00:50:bf:d3:3f:8b	*	br0	

## Interface Statistics

Click **Interface Statistics** from any Status screen to generate the Estimated Interface Statistics screen. This table displays the Gateway's various interface statistics, including number of packets and bytes, by connection type. There are no user-configurable options in this screen.

Estimated Interface Statistics											
Interface	Connect Speed (Mbps)	Packets				Bytes (MB)		Bytes (MB) since Reset			
		Tx	Rx	Tx Errors	Rx Errors	Tx	Rx	dropped	Tx	Rx	dropped
EWAN	Disconnected	0	0	0	0	0	0	0	0	0	0
XDSL	Disconnected	0	0	0	0	0	0	0	0	0	0
Eth LAN#1	100M	1060	1274	0	0	0	0	0	0	0	0
Eth LAN#2	Disconnected	0	0	0	0	0	0	0	0	0	0
Eth LAN#3	Disconnected	0	0	0	0	0	0	0	0	0	0
Eth LAN#4	Disconnected	0	0	0	0	0	0	0	0	0	0
HPiA	Disconnected	193	478	0	0	116436	134088	0	116436	134088	0
WiFi	Auto	0	0	0	0	0	0	0	0	0	0

## Multicast Statistics

Click **Multicast Statistics** from any Status screen to generate the Estimated Interface Statistics screen. This table displays the Gateway's multicast statistics, including number of joined clients and time out values, by channel. There are no user-configurable options in this screen.

Multicast Statistics							
Channel	Joined Clients			Time Out Value			
	Host	IP		Days	Hour(s)	Minutes	Seconds
0.0.0.2	255.255.255.255	255.255.255.255		0	0	0	0

## System Log

Click **System** from any Status screen to generate the System Log screen. The Gateway's system log displays all system events that occur while the Gateway is in operation. A firewall log can be activated from this screen as well (to activate, click **Enable**, then **Apply**).

### System Log

**1. Set the Firewall Log state.**

Display firewall logs:  Enable  Disable

**2. Click Apply to save changes.**

Apply

TIME	SYSTEM	ACTION
1970-01-01T12:00:30 (GMT-08:00)	System Event	500 chip=87a46190, CS=0, chip->ctrl->CS(0)=0
1970-01-01T12:00:30 (GMT-08:00)	System Event	-->brommand_default_bbt
1970-01-01T12:00:30 (GMT-08:00)	System Event	brommand_default_bbt: bbt_id = bbt_main_desc
1970-01-01T12:00:30 (GMT-08:00)	System Event	brommand_scan 99
1970-01-01T12:00:30 (GMT-08:00)	System Event	PCI: Enabling device 0000:00:0a:0 (0000 -> 0002)
1970-01-01T12:00:30 (GMT-08:00)	System Event	eha_hsd 0000:00:0a:0: Enabling legacy PCI PM
1970-01-01T12:00:30 (GMT-08:00)	System Event	PCI: Enabling device 0000:00:09:0 (0000 -> 0002)
1970-01-01T12:00:30 (GMT-08:00)	System Event	bromboard: brom_board_init entry
1970-01-01T12:00:30 (GMT-08:00)	System Event	SES: Button Interrupt Dxt1 is enabled
1970-01-01T12:00:30 (GMT-08:00)	System Event	sesBtm_mapIntr: is_sesBtm_irq_shared=0, sesBtm_irq=1
1970-01-01T12:00:30 (GMT-08:00)	System Event	SES: LED GPIO Dn802b is enabled
1970-01-01T12:00:30 (GMT-08:00)	System Event	PCIe: No device found - Powering down
1970-01-01T12:00:30 (GMT-08:00)	System Event	brom_board_init: isShared=0, rstToDRH_irq=0
1970-01-01T12:00:30 (GMT-08:00)	System Event	Total # RxBds=1448
1970-01-01T12:00:30 (GMT-08:00)	System Event	bomPktDmaBds_init: Broadcom Packet DMA BDs initialized
1970-01-01T12:00:30 (GMT-08:00)	System Event	bomPktDma_init: Broadcom Packet DMA Library initialized
1970-01-01T12:00:30 (GMT-08:00)	System Event	bomnetml: Broadcom BCM316800 ATM/PTM Network Device v0.5.Nov 12 2013; 14:50:46
1970-01-01T12:00:30 (GMT-08:00)	System Event	IPSEC SPU: SUCCEEDED
1970-01-01T12:00:30 (GMT-08:00)	System Event	GACT probability NOT on

# Specifications



## General

### Model Number(s)

T1200H, T2200H (VDSL2/GigE Wireless 11n Gateway)

### Standards

IEEE 802.3 (10BaseT)  
IEEE 802.3u (100BaseTX)  
IEEE 802.11 b, g, n (Wireless)  
G.dmt  
G.lite  
t1.413  
RFC 1483, 2364, 2516

### Protocol

**LAN** - CSMA/CD  
**WAN** - PPP, DHCP, Static IP

### WAN

VDSL2 interface

### LAN

10/100/1000 RJ-45 switched ports

### Speed

**LAN Ethernet:** 10/100/1000 Mbps auto-sensing  
**Wireless:** 802.11n 300 Mbps optimal (see Wireless Operating Range for details)

### Cabling Type

**Ethernet 10BaseT:** UTP/STP Category 3 or 5  
**Ethernet100BaseTX:** UTP/STP Category 5

## **Wireless Operating Range**

### **Indoors**

Up to 91M (300 ft.) @ 300 Mbps

### **Outdoors**

Up to 457M (1500 ft.) @ 300 Mbps

### **Topology**

Star (Ethernet)

## **LED Indicators**

Power, DSL, Internet, Ethernet (WAN/LAN), Ethernet (4), HPNA, USB, Wireless, and WPS Push Button

## **Environmental**

### **Power**

External, 10V DC, 1.6 A

### **Certifications**

FCC Class B, FCC Class C (part 15, 68), CE Mark Commercial, UL

### **Operating Temperature**

0° C to 40° C (32°F to 104°F)

### **Storage Temperature**

-20°C to 70°C (-4°F to 158°F)

### **Operating Humidity**

10% to 85% non-condensing

### **Storage Humidity**

5% to 90% non-condensing

# Notices

## Regulatory Compliance Notices

### Class B Equipment

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by implementing one or more of the following measures:

- Reorient or relocate the receiving antenna;
- Increase the separation between the equipment and receiver;
- Connect the equipment to an outlet on a circuit different from that to which the receiver is connected;
- Consult the dealer or an experienced radio or television technician for help.

### Modifications

The FCC requires the user to be notified that any changes or modifications made to this device that are not expressly approved by Actiontec Electronics, Inc., may void the user's authority to operate the equipment.



## Notices

Declaration of conformity for products marked with the FCC logo – United States only.

This device complies with Part 15 of the FCC 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 unwanted operation.

**Note:** To comply with FCC RF exposure compliance requirements, the antenna used for this transmitter must be installed to provide a separation distance of at least 20 cm from all persons and must not be co-located or operating in conjunction with any other antenna or transmitter.

For questions regarding your product or the FCC declaration, contact:

Actiontec Electronics, Inc.  
760 North Mary Ave.  
Sunnyvale, CA 94086  
United States  
Tel: (408) 752-7700  
Fax: (408) 541-9005

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Return the product to:  
(In the United States)  
Actiontec Electronics, Inc.  
760 North Mary Avenue  
Sunnyvale, CA 94085

## VDSL2/GigE Wireless 11n Gateway

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