

Billion 64xx - 74xx Configuration Guide



Minimum Requirements

- Active Freshtel Internet Phone account (<http://www.freshtel.net>)
- Broadband internet connection (256/64 kbps minimum, ADSL required for 74xx series)
- Broadband modem (for Billion 64xx only)
- Analogue Telephone with RJ-11 line (desktop or cordless)

Before You Begin

This guide will allow you to set up any Billion 74xx series VoIP modem/router or 64xx series VoIP router for use with Freshtel. These include the Billion 7401, 7402, 7404 and 6404 models.

We strongly recommend you ensure that the latest firmware update for this device has been downloaded and installed. For further information, visit the manufacturer's website at <http://www.billion.com.au>

If you are using the Firefly softphone on your PC with the same Freshtel number that you wish to use in your Billion, we advise you to uninstall or disable Firefly. Your Freshtel account can only be active at one point on our network at any one time, and having two identical active accounts will cause conflicts. Similarly, only register your Freshtel account on one line of the Billion, and not both lines.

If you do not yet have a Freshtel account, you should go to our website at <http://www.freshtel.net> and register a new account before starting to configure the Billion.

Initial Setup

Before configuration, please refer to the Billion user guide for further information on how to connect the device to your network.

If you require more advice, please contact your ISP for assistance with your ADSL connection or contact Freshtel Customer Care via Firefly on 81118111, or our landline number 1300 373 748 (1300 FRESHTEL).

Billion Configuration

Using your Internet Browser, type `http://192.168.1.254`, then press Enter to access the Billion's configuration webpage.

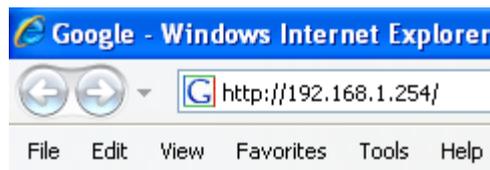


Figure 1.1

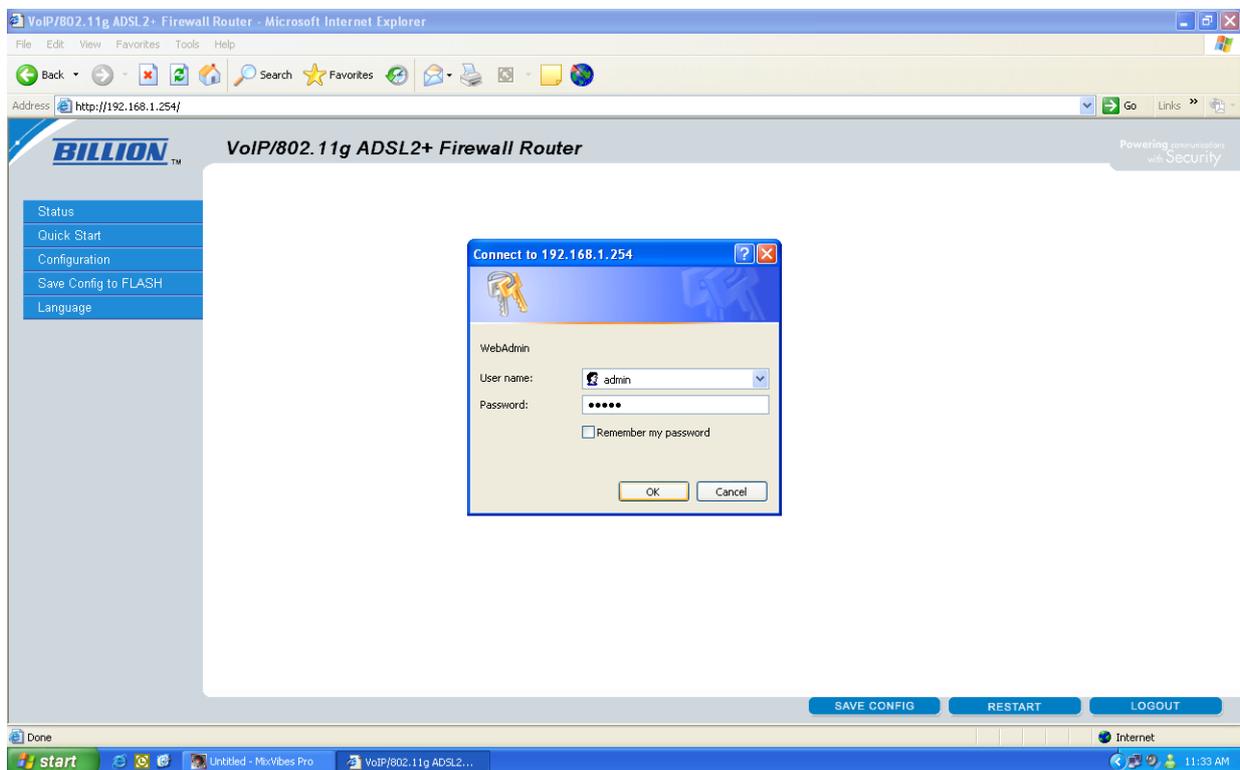


Figure 1.2

You should see a pop-up window requesting you to enter your Username and Password (making sure you type them in lower case letters):

The default login is:

Username: *admin*
Password: *admin*

If you are experiencing difficulty trying to connect to the device at this point, please refer to the Billion user guide or contact Billion Technical Support for further assistance.

ATA/Router Setup

This section applies to Billion 64xx series VoIP routers only, such as the Billion 6404VGP. If you have a Billion ADSL Modem/Router, such as the Billion 7401, 7402 or 7404VGP, move on to the next page.

VoIP/802.11g Broadband Firewall Router

ATA/Router Mode	
Connection	
Device Type	<input type="radio"/> Analog Terminal Adapter(ATA) <input checked="" type="radio"/> VoIP Router
WAN Type	Obtain an IP Address Automatically <input type="button" value="v"/>

Figure 1.3

It is advisable to only have one router in your home network to avoid routing conflicts. If you have a Billion 6404 connected to another router or modem/router, you may wish to set the Billion 6404 to operate in Analog Terminal Adapter (ATA) mode, rather than operating in VoIP router mode.

If you are unsure whether your Billion 6404 is connected to another router, please contact Freshtel Customer Care via Firefly on 81118111, or our landline number 1300 373 748 (1300 FRESHTEL).

VoIP Configuration

For more information regarding each property and option, please refer to the Billion user manual.

SIP Setup

BILLION™ VoIP/802.11a ADSL2+ Firewall Router

VoIP Wizard

Voice QoS

DSCP Marking: Premium

Setting for Phone Port 1 [Select Profile](#)

SIP Service Provider: Freshtel / Firefly

Phone Number: 8xxxxxxx

Authentication Username: 8xxxxxxx (If empty, same as Phone Number.)

Authentication Password: *****

Setting for Phone Port 2 [Select Profile](#) Same as Phone Port 1

SIP Service Provider: FWD

Phone Number:

Authentication Username: (If empty, same as Phone Number.)

Authentication Password:

Caution! The VoIP configuration will take effect only when you apply the changes, save configuration and restart the device.

[VoIP User-defined Profiles](#)

Figure 1.4

1. Click on **Configuration**
2. Click on **VoIP**
3. Click on **Wizard**
4. Voice QoS
 - a. **DSCP Marking** *Premium*
5. **Phone Port 1**
 - a. **SIP Service Provider** *Freshtel/Firefly*
 - b. **Phone Number** *Your Freshtel Number*
 - c. **Authentication Username** *Your Freshtel Number*
 - d. **Authentication Password** *Your Freshtel Password*
6. Click **Apply**

Do not set up Phone Port 2 or select the 'Same As Port 1' checkbox unless you have two separate Freshtel accounts. Each Freshtel account can only be active at one point on our network at any one time, and setting up two identical accounts in your Billion will cause conflicts.

General Setup

The screenshot shows the configuration interface for a BILLION VoIP/802.11q ADSL2+ Firewall Router. The left sidebar contains navigation options: Status, Quick Start, Configuration, LAN, WAN, System, Firewall, VoIP, Wizard, General Settings, Phone Port, PSTN Dial Plan, VoIP Dial Plan, Ring & Tone, QoS, Virtual Server, Time Schedule, Advanced, Save Config to FLASH, and Language. The main content area is titled 'General Settings' and is divided into three sections: 'SIP Device Parameters', 'Setting for Phone Port 1', and 'Setting for Phone Port 2'. Each section has a 'Sync Now' button. At the bottom, there are buttons for 'SAVE CONFIG', 'RESTART', and 'LOGOUT'. A warning note at the bottom of the configuration area states: 'Please note: VoIP configuration changes will only take effect when you use apply changes and select Sync Now for the relevant line, or when you apply changes, save configuration and restart the device.'

SIP Device Parameters	
SIP	<input checked="" type="radio"/> Enable <input type="radio"/> Disable
Silence Suppression (VAD)	<input type="radio"/> Enable <input checked="" type="radio"/> Disable
Echo Cancellation	<input checked="" type="radio"/> Enable <input type="radio"/> Disable
RTP Port	5100
Region	Australia
Voice QoS	Premium

Setting for Phone Port 1	
Registrar Address(or Hostname)	sip.freshtel.net
Registrar Port	5060
Expire	3600 seconds
User Domain/Realm	(if empty, it is the same as Registrar Address.)
Outbound Proxy Address	(if empty, it is the same as Registrar Address.)
Outbound Proxy Port	5060

Setting for Phone Port 2	
Registrar Address(or Hostname)	
Registrar Port	5060
Expire	3600 seconds
User Domain/Realm	(if empty, it is the same as Registrar Address.)
Outbound Proxy Address	(if empty, it is the same as Registrar Address.)
Outbound Proxy Port	5060

Figure 1.5

1. Click on **General Settings**
2. Under **Sip Device Parameters**
 - a. **SIP** *Enable*
 - b. **Silence Suppression (VAD)** *Disable*
 - c. **Echo Cancellation** *Enable*
 - d. **RTP Port** *5100*
 - e. **Region** *Australia*
 - f. **Voice QoS** *Premium*
3. Setting for **Phone Port 1**
 - a. **Registrar Address** *sip.freshtel.net*
 - b. **Registrar Port** *5060*
 - c. **Expire** *3600*
 - d. **User Domain/Realm** *(leave blank)*
 - e. **Outbound Proxy Address** *(leave blank)*
 - f. **Outbound Proxy Port** *5060*

General Setup - Advanced

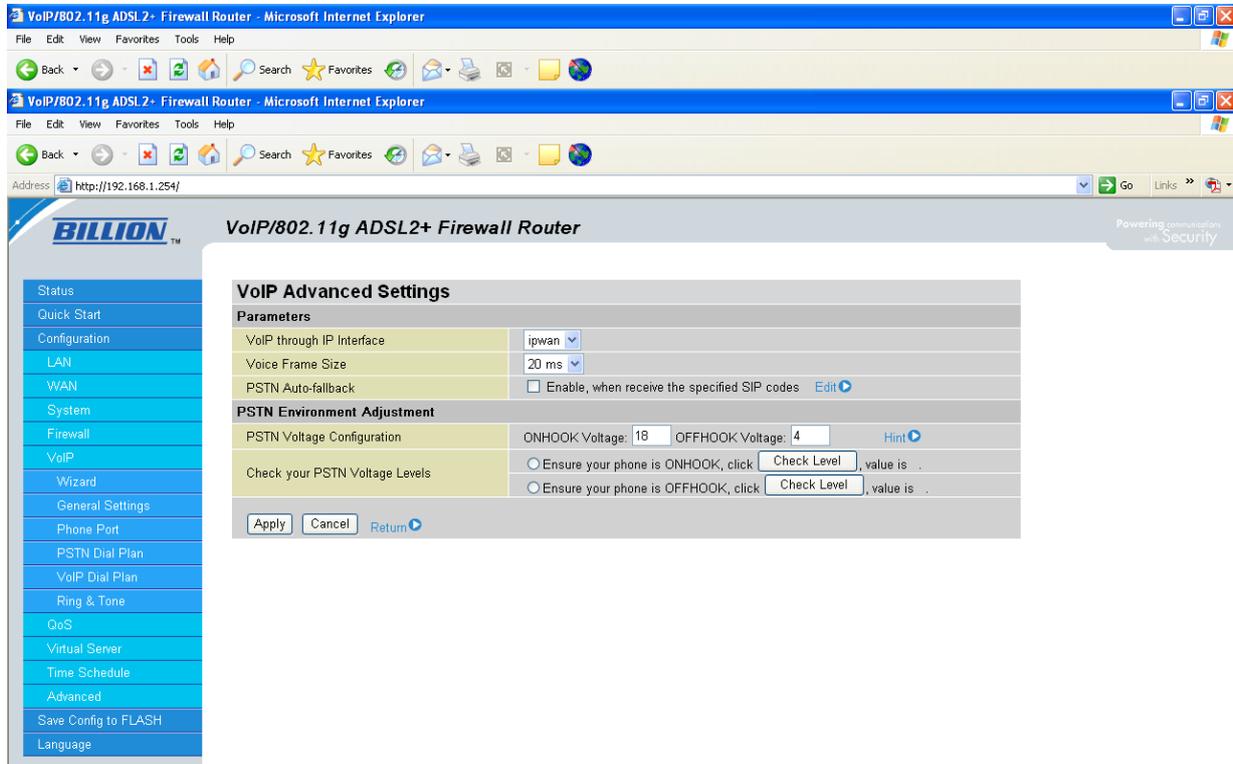


Figure 1.6

1. Click **Advanced** (next to SIP Device Parameters)
2. **Parameters**
 - a. **VoIP through IP Interface** *ipwan*
 - b. **Voice Frame Size** *20ms*

You may wish to increase Voice Frame Size to 30ms if you have a slower Broadband connection.

Phone Port

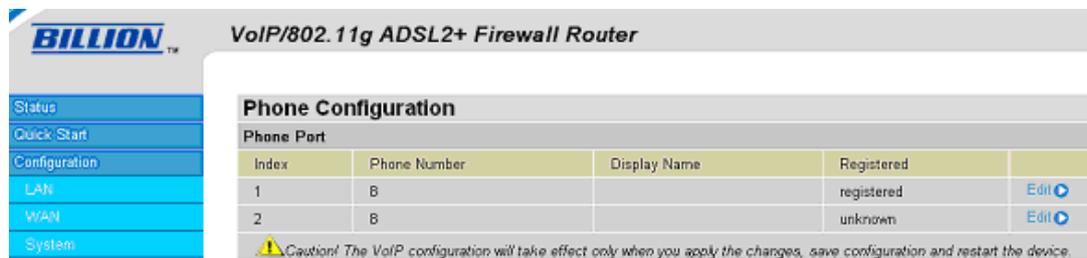


Figure 1.7

1. Click on **Phone Port**
2. Click on **Edit** (for relevant account)

VoIP/802.11g Broadband Firewall Router

Phone Port 1	
Login Account Configuration	
Phone Number	88817687
Authentication Username	88817687
Authentication Password	*****
Confirm Password	*****
Display Name	
Codec Preference	
Priority 1	G.729
Priority 2	PCMU (G.711 u-Law)
Priority 3	PCMA (G.711 A-Law)
Priority 4	Non-used
DTMF Method	RFC 2833

Figure 1.8

3. Under **Login Account Configuration**
 - a. **Phone Number** *Your Freshtel Number*
 - b. **Authentication Username** *Your Freshtel Number*
 - c. **Authentication Password** *Your Freshtel Password*
 - d. **Confirm Password** *Your Freshtel Password*
 - e. **Display Name** *Your Freshtel Number*
4. **Codec Preference**
 - a. **Priority 1** *G.729*
 - b. **Priority 2** *PCMU (G.711 u-Law)*
 - c. **Priority 3** *PCMU (G.711 a-Law)*
 - d. **DTMF Method** *RFC2833*

VoIP Dial Plan

VoIP/802.11g Broadband Firewall Router

VoIP Dial Plan Configuration		
VoIP Dial Plan		
Port	Dial Plan	
1	(x.T)##S *69S *[28]0S *74x.#S *90x.TS x##S *xxxT *xxxxT *xxxxxxxxT)	Edit
2	(x.T)##S *69S *[28]0S *74x.#S *90x.TS x##S)	Edit

Figure 1.9

1. Select **Port 1**, and click **Edit**.

VoIP/802.11g Broadband Firewall Router

VoIP Dial Plan 1

Parameters

Special Digit Sequences

- *69 Return Call
- *20 enable 'Don't Disturb' / *80 disable 'Don't Disturb'
- *90x. Blind Call Transfer
- x# Speed Dial (x: 2..9)
- ## Redial
- *74<x><number># Set the number of Speed Dial Code <x> (x: 2..9)
- Phone number +#(pound key).Immediate Call Out Service

[Apply](#) [Test](#)

Dial Plan Rules List

Rule Name	
x.T	Delete
*xxxT	Delete
*xxxxT	Delete
*xxxxxxT	Delete

[Add](#)

Figure 1.10

2. Click on **VoIP Dial Plan**
3. Click **Edit** for Port 1
4. **Parameters**
 - a. **Enable Speed Dial**
 - b. **Enable Redial**
 - c. **Disable Return Call**
 - d. **Disable Don't Disturb**
 - e. **Disable Blind Call Transfer**
 - f. **Disable Set The Number Of Speed Dial Code**
 - g. **Disable Phone Number +#**
5. Click on **Apply**

Create Rule	
Parameters	
Prefix Processing	<input type="radio"/> Prepend <input type="text"/> unconditionally
	<input type="radio"/> If prefix is <input type="text"/> , delete it
	<input type="radio"/> If prefix is <input type="text"/> , replace with <input type="text"/>
	<input checked="" type="radio"/> No prefix
Main Digit Sequence	<input type="text" value="*xxxxxxxxT"/> @ <input type="text" value="Current Profile"/>
<input type="button" value="Apply"/> <input type="button" value="Return"/>	
Digit Sequence Example:	
x.	Any digit number between 0 and 9 in variable length. Maximum length is 16.
xxx	Any 3 digit number only between 0 and 9. Total length is 3. No period needed (.)
xxxx.	Any number between 0 and 9 with variable length but no shorter than 3 digits. Maximum Length is 16.
123x.	Any number (0-9) starting with 123. Maximum length is 16.
{124}x.	Any number (0-9) starting with 1 or 2 or 4. Maximum length is 16.
{1-3}x.	Any number(0-9) starting with number 1 to 3. Maximum length is 16.
9{4-6}8x.	Any number (0-9) starting with 9, the second number between 4-6, and third number 8. Maximum length is 16.

Figure 1.11

6. **Main Digit Sequence**
 - a. *xxxxxxx @ **Current Profile**
7. Click **Apply**
8. Click on **Add**
9. **Main Digit Sequence**
 - a. *xxx @ **Current Profile**
9. Click **Apply**
10. Click on **Add**
11. **Main Digit Sequence**
 - a. *xxxx @ **Current Profile**
12. Click **Apply**
13. Click on **Add**
14. Click **Save Settings**

Ring & Tone Configuration

1. Click on **Ring & Tone**
2. Country Specific Ring & Tone
 - a. **Region** *Australia*
3. Click on **Apply**
4. Click on **Save Settings**
5. Click on **Restart Router**. Select **Current Settings** when prompted. Your Billion will restart, and you Freshtel account will be set up.

Making Your Call

Please refer to the following examples for making calls via your handset using the Billion.

Examples

FRESHTEL Number:

1. *8000 1234

Landline Number:

1. 61 3 9123 4567, or
2. 03 9123 4567, or
3. 9123 4567 (with local prefix set to relevant state)

Mobile Number:

1. 61 412 345 678 (Drop the First Zero)
2. 0412 345 678 (works with and without local prefix set)

National Numbers:

1. 1300 number:
 - a. 61 1300 123 456, or
 - b. 1300 123 456 (with local prefix set to relevant state)
2. 1800 number:
 - a. 61 1800 123 456, or
 - b. 1800 123 456
3. 13 number:
 - a. 61 13 12 34, or
 - b. 13 12 34

International Numbers:

1. (Country Code) (Area Code) (Number)
 - a. Example: 44 708 12345678

Setting Local Call Prefix on Your Account

1. Log into your account at <http://www.freshtel.net>
2. Click on **My Details**

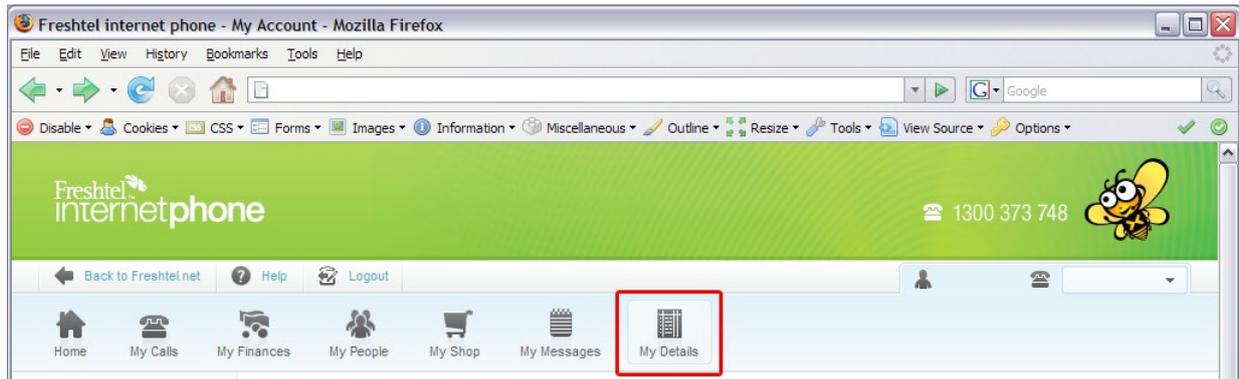


Figure 1.12

3. Click on **Update my personal details**

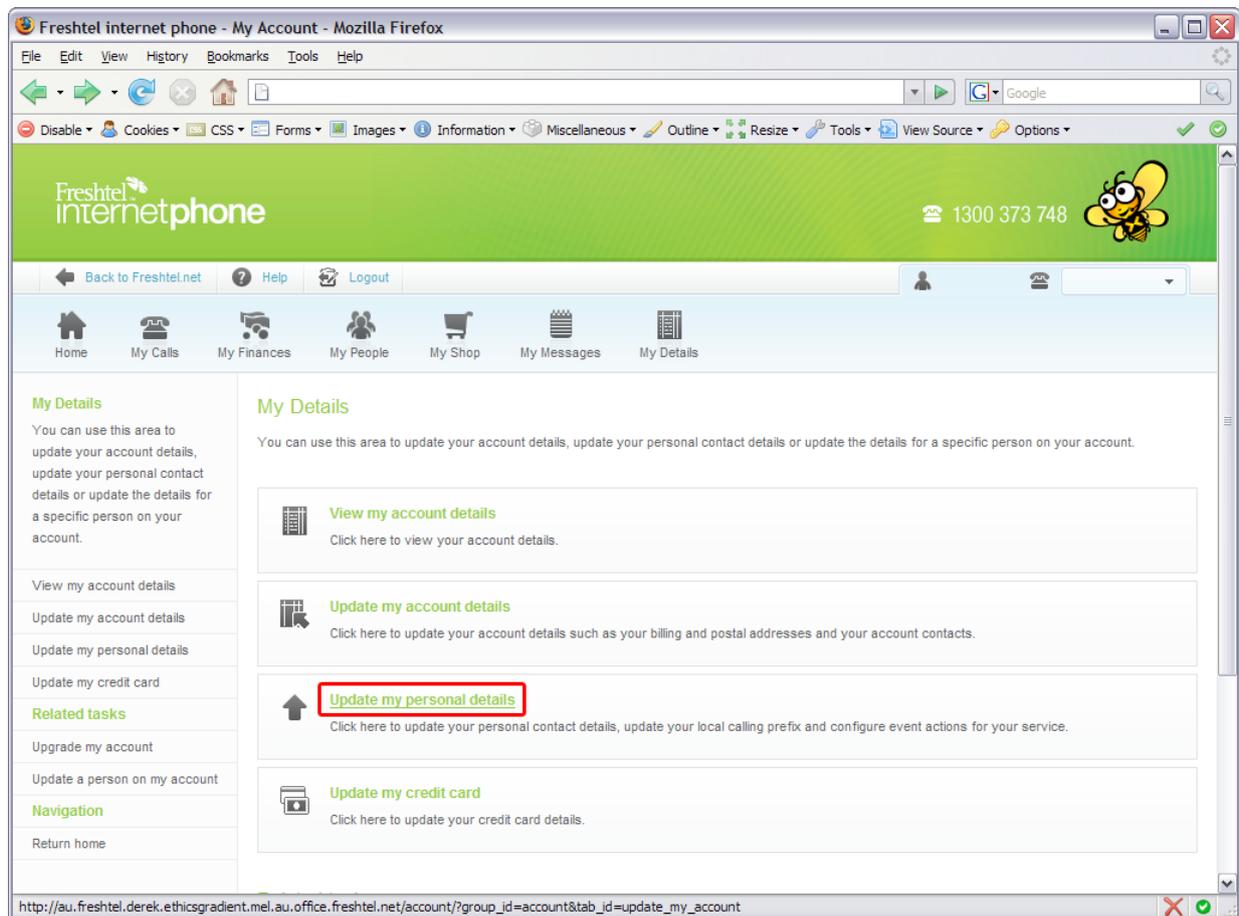


Figure 1.13

4. Scroll down to the **Prefix** section, and select from one of the following options
 - a. **Not Specified** *No Prefix set*
 - b. **NSW, ACT** *02*
 - c. **Queensland** *07*
 - d. **SA, WA, NT** *08*
 - e. **Victoria, Tasmania** *03*

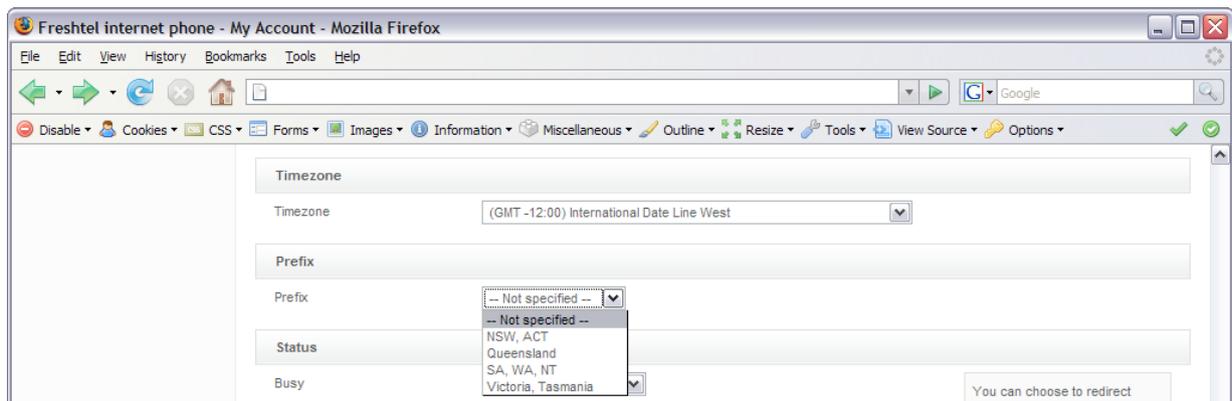


Figure 1.14

5. Click on **Update My Details**

Glossary

- **BIT** - Binary Digit - Bits are widely used as a measurement for network transmission. One hundred megabits per second means that 100 million pulses are transmitted per second.
- **Broadband** – Internet Connection that has a connection speed greater than 256kbps downstream and 64kbps upstream.
- **Broadband Router** - A device that provides access to the Internet for multiple computers, typically including a network switch with four or more Ethernet ports for wired connections to desktop and laptop computers.
- **BYTE** – Binary Table - Another form of measurement to determine size and speed. 1 byte is equivalent to 8 Bits, so for an internet connection of 256/64kbps (kilobits per second, kilo meaning 100 units), it is roughly equivalent to 25 Kilobytes per second (download rate) and 6 kilobytes per second (upload rate).
- **Ethernet** – A type of cable which is used to interconnect network devices to allow communication between them over the medium.
- **Firefly** – Freshtel Internet Telephone Software
- **Freshtel** – VoIP Internet Telephone Company
- **Kbps** – Kilobits Per Second is the measurement used to determine the bandwidth speed of an internet connection.
- **Mbps** – Megabits Per Second – A unit of measurement used to show the capacity and/or rate of speed for a particular medium in megabits.
- **MBps** – Megabytes Per Second - A unit of measurement used to show the capacity and/or rate of speed for a particular medium in megabytes.
- **NAT**- Network Address Translation maintains and controls the separation of a public IP address to one or more private IP addresses. Commonly used for internet connection sharing via a router.
- **USB** – Universal Serial Bus – A “Plug-and-Play” medium used to interconnect different types of USB compatible devices to each other either via USB 1.1 (at 12Mbps maximum transfer rate), or Hi-Speed USB 2.0 (at 480Mbps maximum transfer rate).
- **Wireless Broadband** – Same as broadband, however is a medium transmitted through radio waves set at a certain radio frequency.
- **Windows XP** – Microsoft’s current Operating System platform for PC based systems.