

# PLEASE READ

This manual is from the manufacturer—**GoTo Connect may not support some features discussed in this document.**

Please see our online documentation for a complete list of supported features.

Thanks for choosing us!



## LINKSYS / SIPURA SPA-1xxx/2xxx/3xxx CONFIGURATION GUIDE

### Minimum Requirements

- Active Freshtel Internet Phone account
  - <http://www.freshtel.net>
- Broadband Internet Connection
  - 256/64 kbps minimum
- Broadband Modem/Router
  - Must have an Ethernet port to connect to the Linksys.
- Analogue Telephone with RJ-11 line (Desktop or Cordless)

## Before You Begin

Please note that all information in this guide is applicable to the SPA-1000, SPA-2000 and SPA-3000 range. These include the SPA-2000, SPA-2100, SPA-3000 and SPA-3102.

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

If you are using the Freshtel Internet Softphone on your PC with the same Freshtel number that you wish to use in your Linksys, we advise you to uninstall or disable the Freshtel softphone. 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.

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 Linksys.

## Initial Setup

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

If you require more advice, please refer to our help documents on our website at <http://www.freshtel.net/help> or contact Customer Care at [info@freshtel.net](mailto:info@freshtel.net).

## SPA-1xxx/2xxx/3xxx Configuration

Using your telephone handset obtains the IP address of the ATA:

1. Dial \*\*\*\* to enter the Linksys Configuration Menu
2. Dial 110# to get the IP address of the Linksys
3. Write down the IP address of the Linksys.
4. For some models, you may then need to dial 7932#, then 1#, then 1 to enable the web server of the Linksys ATA.

Enter the IP address of the Linksys in your browser's address bar to access the configuration menu.



Figure 1.1

If you are experiencing difficulty trying to connect to the device at this point, try step #4 above. If you still have problems after this please refer to the user guide or contact Linksys Technical Support for further assistance.

## VoIP Configuration

Once you have logged into the Configuration Center, click the **ADMIN LOGIN** link on the top right hand side of the page. Next, click the **ADVANCED** link next to it.

If you have a Linksys ATA with a built-in router, such as the SPA-3102, you will then need to click the **VOICE** tab at the top of the page.

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

## SIP Set-up

Info System SIP Regional **Line 1** Line 2 User 1 User 2 [User Login](#) [basic](#) | [advanced](#)

Line Enable:

SIP Settings

SIP Port:

Proxy and Registration

Proxy:  Register:

Make Call Without Reg:  Register Expires:

Ans Call Without Reg:

Subscriber Information

Display Name:  User ID:

Password:  Use Auth ID:

Auth ID:

Figure 1.2

Audio Configuration

Preferred Codec:  Silence Supp Enable:

Use Pref Codec Only:  FAX CED Detect Enable:

DTMF Tx Method:

Figure 1.3

Note: All other settings should be left as default.

1. Click on the **LINE 1** tab
2. Enter the following:
 

a. <b>LINE ENABLE:</b>	Yes
b. <b>SIP PORT:</b>	5060
c. <b>PROXY:</b>	sip.freshtel.net
d. <b>MAKE CALL WITHOUT REG:</b>	Yes
e. <b>ANS CALL WITHOUT REG:</b>	Yes
f. <b>REGISTER:</b>	Yes
g. <b>REGISTER EXPIRES:</b>	3600
h. <b>DISPLAY NAME:</b>	Your FRESHTEL Number (e.g. 81118111)
i. <b>PASSWORD:</b>	Your FRESHTEL Password
j. <b>USER ID:</b>	Your FRESHTEL Number
k. <b>USE AUTH ID:</b>	No
l. <b>PREFERRED CODEC:</b>	G729a
m. <b>USE PREF CODEC ONLY:</b>	No
n. <b>DTMF TX METHOD:</b>	Auto
o. <b>SILENCE SUPP ENABLE:</b>	No
p. <b>FAX CED DETECT ENABLE:</b>	Yes
q. <b>NAT MAPPING ENABLE</b>	Yes
3. Click on **SUBMIT ALL CHANGES**

## DIAL PLAN Set-up

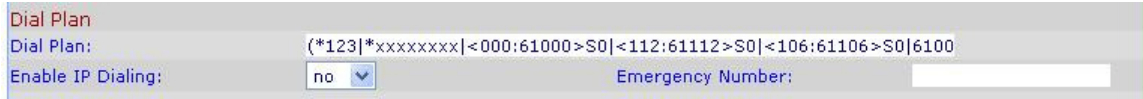


Figure 1.4

1. Click on the **LINE 1** tab
2. Enter the following:

### **DIAL PLAN:**

#### **Dial Plan (Australia only -- user has no local call prefix set)**

(\*123|\*xxxxxxxx|<000:61000>S0|<112:61112>S0|<106:61106>S0|61000S0|61112S0|61106S0|0[2378][2-9]xxxxxxxx|0[4569]xxxxxxxx|611300xxxxxxxx|611800xxxxxxxx|6113xxxx|6118xxxx|[1-9]x.)

#### **Dial Plan (Australia only -- user has local call prefix set)**

(\*123|\*xxxxxxxx|000S0<:@gw0>|112S0<:@gw0>|106S0<:@gw0>|001[0-9]x.|0[4569]xxxxxxxx|0[2378][2-9]xxxxxxxx|[2-9]xxxxxxxx|1300xxxxxxxx|1800xxxxxxxx|13xxxx|18xxxx|1[4-79]x.)

If you do not know whether you have Local Call Prefix set, refer to the page titled 'Setting Local Call Prefix On Your Account' later in this document.

3. Click on **SUBMIT ALL CHANGES**



## STUN Set-up

NAT Support Parameters			
Handle VIA received:	yes	Handle VIA rport:	yes
Insert VIA received:	yes	Insert VIA rport:	yes
Substitute VIA Addr:	no	Send Resp To Src Port:	no
STUN Enable:	no	STUN Test Enable:	no
STUN Server:		EXT IP:	
EXT RTP Port Min:		NAT Keep Alive Intvl:	15

[Undo All Changes](#)
[Submit All Changes](#)

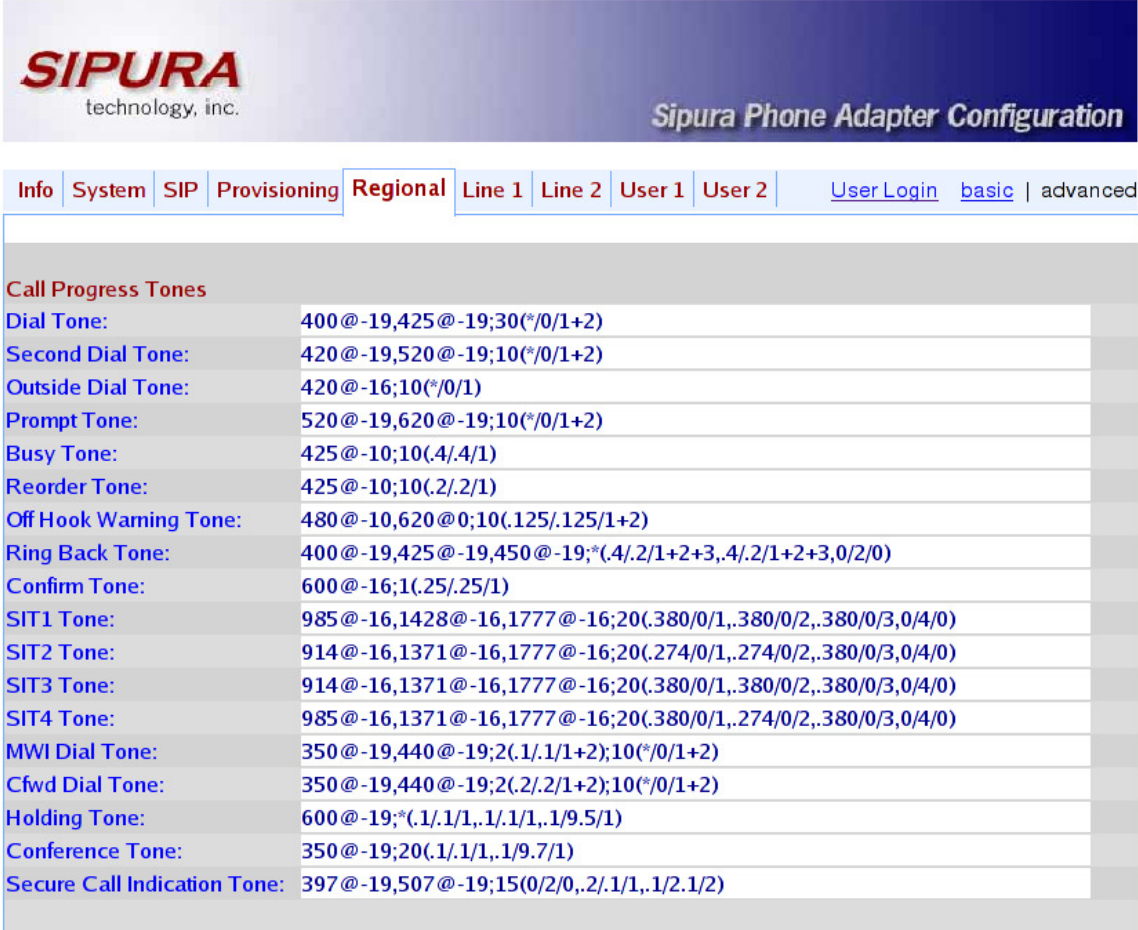
[User Login](#)
[basic](#) | [advanced](#)

Figure 1.5

1. Click on the **SIP** tab
2. Enter the following:
 

a. <b>Handle VIA Received:</b>	Yes
b. <b>Insert VIA Received:</b>	Yes
c. <b>Handle VIA rport:</b>	Yes
d. <b>Insert VIA rport:</b>	Yes
e. <b>STUN ENABLE:</b>	No
3. Click on **SUBMIT ALL CHANGES**

## Call Progress Tones



**SIPURA**  
technology, inc.

**Sipura Phone Adapter Configuration**

Info System SIP Provisioning **Regional** Line 1 Line 2 User 1 User 2 [User Login](#) [basic](#) | [advanced](#)

**Call Progress Tones**

Dial Tone:	400@-19,425@-19;30(*0/1+2)
Second Dial Tone:	420@-19,520@-19;10(*0/1+2)
Outside Dial Tone:	420@-16;10(*0/1)
Prompt Tone:	520@-19,620@-19;10(*0/1+2)
Busy Tone:	425@-10;10(.4/.4/1)
Reorder Tone:	425@-10;10(.2/.2/1)
Off Hook Warning Tone:	480@-10,620@0;10(.125/.125/1+2)
Ring Back Tone:	400@-19,425@-19,450@-19;*(.4/.2/1+2+3,.4/.2/1+2+3,0/2/0)
Confirm Tone:	600@-16;1(.25/.25/1)
SIT1 Tone:	985@-16,1428@-16,1777@-16;20(.380/0/1,.380/0/2,.380/0/3,0/4/0)
SIT2 Tone:	914@-16,1371@-16,1777@-16;20(.274/0/1,.274/0/2,.380/0/3,0/4/0)
SIT3 Tone:	914@-16,1371@-16,1777@-16;20(.380/0/1,.380/0/2,.380/0/3,0/4/0)
SIT4 Tone:	985@-16,1371@-16,1777@-16;20(.380/0/1,.274/0/2,.380/0/3,0/4/0)
MWI Dial Tone:	350@-19,440@-19;2(.1/.1/1+2);10(*0/1+2)
Cfwd Dial Tone:	350@-19,440@-19;2(.2/.2/1+2);10(*0/1+2)
Holding Tone:	600@-19;*(.1/.1/1,.1/.1/1,.1/9.5/1)
Conference Tone:	350@-19;20(.1/.1/1,.1/9.7/1)
Secure Call Indication Tone:	397@-19,507@-19;15(0/2/0,.2/.1/1,.1/2.1/2)

Figure 1.6

1. Click on the **REGIONAL** tab
2. Enter the following:
  - Dial tone: 400@-19,425@-19,450@-19;10(\*0/1+2+3)
  - Busy Tone: 425@-19;10(.375/.375/1)
  - Reorder Tone: 425@-19,425@-29;60(.375/.375/1,.375/.375/2)
  - Ringback Tone: 400@-19,425@-19,450@19;\*(.4/.2/1+2+3,.4/2/1+2+3)
  - MWI Dial Tone: 400@-19,425@-19,450@19;2(.1/.1/1+2);10(\*0/1+2)
  - Ring1 Cadence: 60(.4/.2,.4/2)



Distinctive Ring Patterns			
Ring1 Cadence:	60(1.5/3.4)	Ring2 Cadence:	60(.3/2,1/2,.3/4)
Ring3 Cadence:	60(1.5/3.4,.4/.2,.4/2,.4/2,	Ring4 Cadence:	60(.4/2,.3/2,.8/4)
Ring5 Cadence:	60(.2/.2,.2/.2,.2/2,1/4)	Ring6 Cadence:	60(.2/4,.2/4,.2/4)
Ring7 Cadence:	60(.4/.2,.4/2,.4/4)	Ring8 Cadence:	60(0.25/9.75)
Distinctive Call Waiting Tone Patterns			
CWT1 Cadence:	30(.3/9.7)	CWT2 Cadence:	30(.1/1, .1/9.7)
CWT3 Cadence:	30(.1/1, .3/1, .1/9.3)	CWT4 Cadence:	30(.1/1,.1/1,.1/9.5)
CWT5 Cadence:	30(.3/1,.1/1,.3/9.1)	CWT6 Cadence:	30(.1/1,.3/2,.3/9.1)
CWT7 Cadence:	30(.3/1,.3/1,.1/9.1)	CWT8 Cadence:	30(.2/2,.2/4.4)
Distinctive Ring/CWT Pattern Names			
Ring1 Name:	Bellcore-r1	Ring2 Name:	Bellcore-r2
Ring3 Name:	Bellcore-r3	Ring4 Name:	Bellcore-r4
Ring5 Name:	Bellcore-r5	Ring6 Name:	Bellcore-r6
Ring7 Name:	Bellcore-r7	Ring8 Name:	Bellcore-r8
Ring and Call Waiting Tone Spec			
Ring Waveform:	<div><div>Sinusoid</div></div>	Ring Frequency:	25
Ring Voltage:	70	CWT Frequency:	440@-10
Control Timer Values (sec)			
Hook Flash Timer Min:	.07	Hook Flash Timer Max:	.13
Callee On Hook Delay:	0	Reorder Delay:	5
Call Back Expires:	1800	Call Back Retry Intvl:	30
Call Back Delay:	.5	VMWI Refresh Intvl:	30
Interdigit Long Timer:	10	Interdigit Short Timer:	3
CPC Delay:	2	CPC Duration:	0

Figure 1.7

## Control Timer Values

- a. **HOOK FLASH TIMER MIN:** *0.07*
- b. **HOOK FLASH TIMER MAX:** *0.13*

## Distinctive Call Waiting Tone Patterns

- c. **CWT8 CADENCE:**  $30(.2/.2,.2/4.4)$

### Distinctive Ring Patterns

- d. RING 1 CADENCE:
- 60(1.5/3.4)
- e. RING 3 CADENCE:
- 60(1.5/3.4,.4/.2,.4/2,.4/.2,.4/2,.4/.2,.4/2,.4/.2,.4/2,.4/.2,.4/2,.4/.  
2,.4/2,.4/.2,.4/2,.4/.2,.4/2,.4/.2,.4/2,.4/2)

## Miscellaneous

Miscellaneous			
Set Local Date (mm/dd):		Set Local Time (HH/mm):	
Time Zone:	GMT+10:00	FXS Port Impedance:	220+820  120nF
FXS Port Input Gain:	-3	FXS Port Output Gain:	-3
DTMF Playback Level:	-16	DTMF Playback Length:	.1
Detect ABCD:	yes	Playback ABCD:	yes
Caller ID Method:	Bellcore(N.Amer,China)	FXS Port Power Limit:	3
Undo All Changes		Submit All Changes	

Figure 1.8

- f. **TIME ZONE:** *GMT+10:00 (or relevant to your area)*
- g. **FXS PORT IMPEDANCE:** *220+820||120nF*

3. Click on **SUBMIT ALL CHANGES**

## PSTN Line Settings

If you have a Linksys ATA with a FXO port for connecting a PSTN line, such as a SPA3000 or a SPA3102, you will now need to click on the PSTN Line tab. Otherwise, you may skip this step.

## PSTN Disconnection Detection

1. Click on the PSTN LINE tab.

PSTN Disconnect Detection			
Detect CPC:	yes	Detect Polarity Reversal:	yes
Detect PSTN Long Silence:	no	Detect VoIP Long Silence:	no
PSTN Long Silence Duration:	30	VoIP Long Silence Duration:	30
PSTN Silence Threshold:	medium	Min CPC Duration:	0.2
Detect Disconnect Tone:	yes		
Disconnect Tone:	425@-30,425@-30;1(.375/.375/1+2)		

Figure 1.9

- a. **DISCONNECT TONE:** 425@-30,425@-30;1(.375/.375/1+2)

## International Control

International Control			
FXO Port Impedance:	220+820  120nF	Ring Frequency Min:	10
SPA To PSTN Gain:	0	Ring Frequency Max:	100
PSTN To SPA Gain:	3	Ring Validation Time:	256 ms
Tip/Ring Voltage Adjust:	3.5 V	Ring Indication Delay:	512 ms
Operational Loop Current Min:	10 mA	Ring Timeout:	640 ms
On-Hook Speed:	26 ms (Australia)	Ring Threshold:	13.5-16.5 Vrms
Current Limiting Enable:	no	Ringer Impedance:	High (Normal)
Line-In-Use Voltage:	30		

Figure 1.10

- b. **FXO PORT IMPEDANCE:** 220+820//120nf
- c. **PSTN TO SPA GAIN:** 3
- d. **ON-HOOK SPEED:** 26ms (Australia)

2. Click on the SUBMIT ALL CHANGES button.

### Extra Information

If you ever need to reset the device to its factory defaults, perform the following with your handset:

1. Dial "\*\*\*\*"
2. Dial "**73738#**"
3. Dial "**1**" (to confirm)

Please note – this should only be done if you need to erase all the settings you've entered!

## Making Your Call

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

### 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 ACCOUNT**

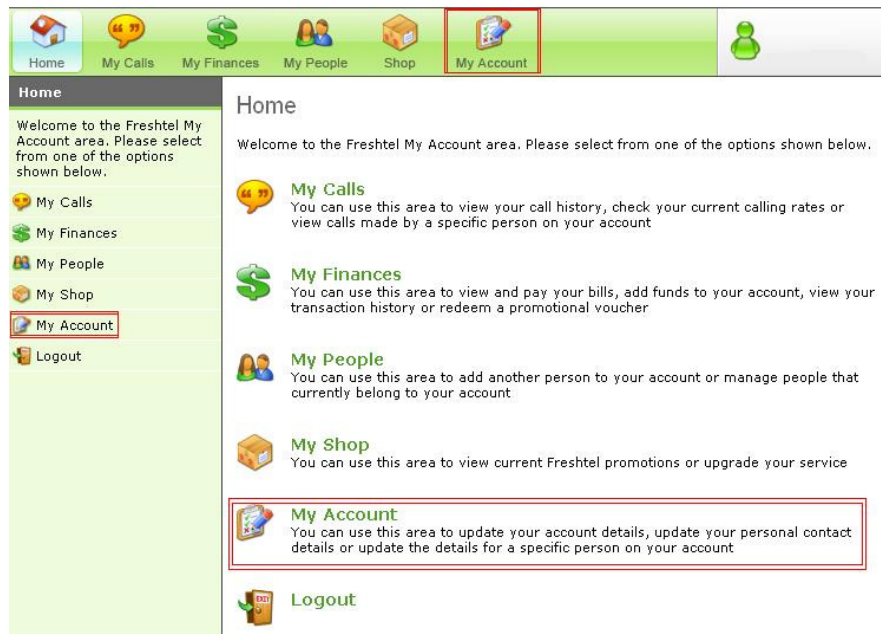


Figure 1.11

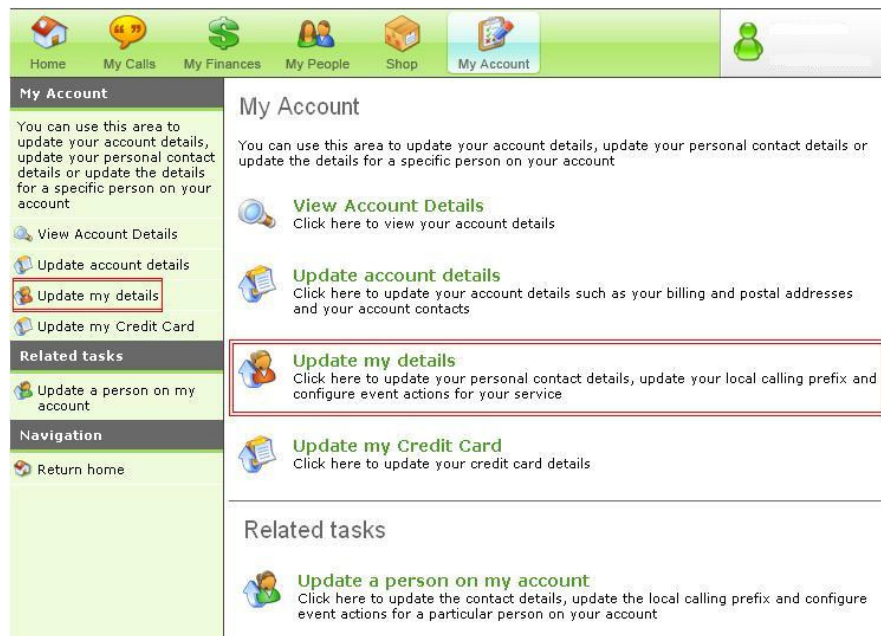


Figure 1.12



3. Click on **UPDATE MY DETAILS**

**Timezone**

Timezone

**Prefix**

Prefix

**Status**

Busy

No Answer

Offline

**Voicestream Directory**

Would you like to publish your Voicestream directory details?

Figure 1.13

3. Scroll down to the **PREFIX** section, and select from one of the following options
- |                         |                            |
|-------------------------|----------------------------|
| a. "Not Specified"      | <i>No Prefix to be set</i> |
| b. "NSW, ACT"           | <i>02</i>                  |
| c. "Queensland"         | <i>07</i>                  |
| d. "SA, WA, NT"         | <i>08</i>                  |
| e. "Victoria, Tasmania" | <i>03</i>                  |
4. Click on **UPDATE MY DETAILS**

## Definitions

- **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.
- **FRESHTEL** – Freshtel Internet Telephone
- **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.