Sagemcom

Router
User's Guide

Model F@st™2864

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Contents

Chapter 1

Introduction

Congratulations on the purchase of the Sagemcom Router. The Sagemcom Router (Router) is a powerful yet simple communication device for connecting your computer or local area network (LAN) to the Internet. This manual covers the Sagemcom model F@st™2864 Router.

Sagemcom F@st™2864

Features of the Sagemcom Router

Your Router provides high-speed Internet and corporate network access to homes, networked home offices, and small offices. In addition, if you are working from a branch office, the Router provides a fast and effective means of communicating over a remote LAN with the main office. The Router can also be used to connect the corporate LAN to the Internet over the WAN.

Router Features

- **Interfaces**
    - Four RJ45 10/100/1000 BaseT Ethernet LAN ports
    - One RJ45 10/100/1000 BaseT Ethernet WAN port
    - One RJ-11 VDSL2/ADSL/2/2+ Interface
    - One HPNA 3.1 LAN or WAN coax interface
    - Two USB 2.0 host ports (supports storage devices and printers)
    - One Wireless 802.11 b/g/n access point

- **Wireless Features**
    - 802.11 b/g/n with 2x3 radio configuration using internal antennas
    - Utilizes 2.4GHz radio band
    - Multiple SSIDs
    - WPS (WiFi Protected Setup)
    - WMMTM, WMMTM PowerSave
    - Wireless Security:
        - Wi-Fi Protected Access (WPATM, WPA2TM)
        - WEP64/128
        - TKIP encryption
        - MAC Address Filtering

Security Features

- **Password-protected Configuration**
  Password protection prevents unauthorized users from modifying the Router's configuration settings.

- **NAT Protection**
  Network Address Port Translation (NAPT) and a secure firewall to protect your data while your computer is connected to the Internet.

- **Stateful Inspection Firewall**
  All incoming data packets are monitored and all incoming server requests are filtered, thus protecting your network from malicious attacks from external sources.

- **Attack Protection System**
  Attacks can flood your Internet connection with invalid data packets and connection requests, using so much bandwidth and so many resources that Internet access becomes unavailable. The Router incorporates protection against these types of attacks as well as other common hacker attacks.

- **Virtual Private Network**
  Virtual Private Network allows remote users to establish a secure connection to a corporate network by setting pass-through of the three most commonly used VPN protocols: PPTP, L2TP, and IPSec.

Remote Configuration & Management

- **TR-069/TR-098 Remote Management**
  Standards based TR-069/TR-098 allow the F@st™2864 to be remotely managed by the ISP.

- **UPnP Support**
  Universal Plug and Play (UPnP) allows automatic discovery and configuration of the Sagemcom Router. UPnP is supported by Windows XP and later operating systems.

Advanced Router Functions

- **DMZ**
  One computer on your local network can be configured to allow unrestricted two-way communication with servers or individual users on the Internet. This provides the ability to run programs that are incompatible with firewalls.

- **Port Forwarding**
  Port Forwarding provides flexibility by allowing you to change internal IP addresses without affecting outside access to your network.

Minimum System Requirements

At a minimum, your computer must be equipped with the following to successfully install the Router. Your Internet Service Provider (ISP) may have additional requirements for use of their service.

To successfully install the Router, your computer must be equipped with:

- A network interface card (NIC) that supports Ethernet 10/100/1000Base-T full-/half-duplex.

- An operating system that supports TCP/IP.

- Microsoft Internet Explorer or Mozilla Firefox Web browser.

General Safety Guidelines

When using the Sagemcom Router, observe the following safety guidelines:

- Never install telephone wiring during a storm.

- Avoid using a telephone (other than a cordless type) during an electrical storm. There may be a remote risk of electric shock from lightning.

- Do not use this product near water and avoid contact with moisture. For example, do not use near a bathtub, wash bowl, kitchen sink, laundry tub, in a wet basement, or near a swimming pool. Care should be taken so that liquids are not spilled on this equipment.

- This equipment is for indoor use only, do not place or install in an outdoor location.

- Never insert objects into the vents of this equipment as this can result in the risk of electrical shock or fire.

- This equipment should only be operated from the type of power supply indicated on the marking label.

- Do not overload wall outlets or extension cords. Doing so can result in the risk of fire or electrical shock.

- Avoid blocking any vent openings or exhaust exits on this equipment. Do not place equipment in a built-in installation such as a cabinet that may impede the flow of air through the ventilation openings.

- The equipment should be situated away from heat sources such as radiators, heat registers, stoves, or other heat producing appliances and equipment.

- Care should be taken to ensure that the power cord is routed, so it is not likely to be walked on or pinched by items placed upon or next to it.

- Unplug this equipment before cleaning. Do not use liquid cleaners or aerosol cleaners. Use a damp cloth for cleaning only.

- This equipment is not user serviceable and is to be serviced by qualified personnel only. Do not disassemble this equipment. If service is required, disconnect all power and phones lines from the equipment and consult qualified service personnel.

- To disconnect this equipment from AC power, unplug the power supply from the AC wall socket.

- Do not use a telephone to report a gas leak in the vicinity of the leak.

Chapter 2

Physical Installation

This chapter covers the physical installation of the Sagemcom Router.
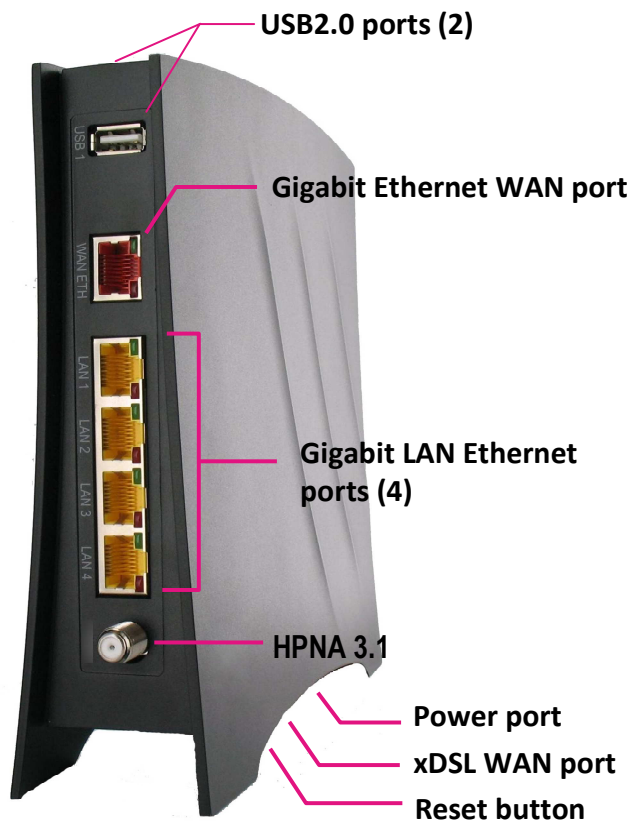
Minimum System Requirements

- DSL or FTTH service and an Internet access account from an Internet Service Provider (ISP).

- Network cables for the device you intend to connect to the Router. Use standard CAT5E Ethernet cables with RJ45 connectors.

- TCP/IP network protocol must be installed on all computers.

Note: Your configuration may vary slightly from the instructions and illustrations in this chapter. Refer to your service provider's documentation, or contact them with questions regarding your specific configuration.
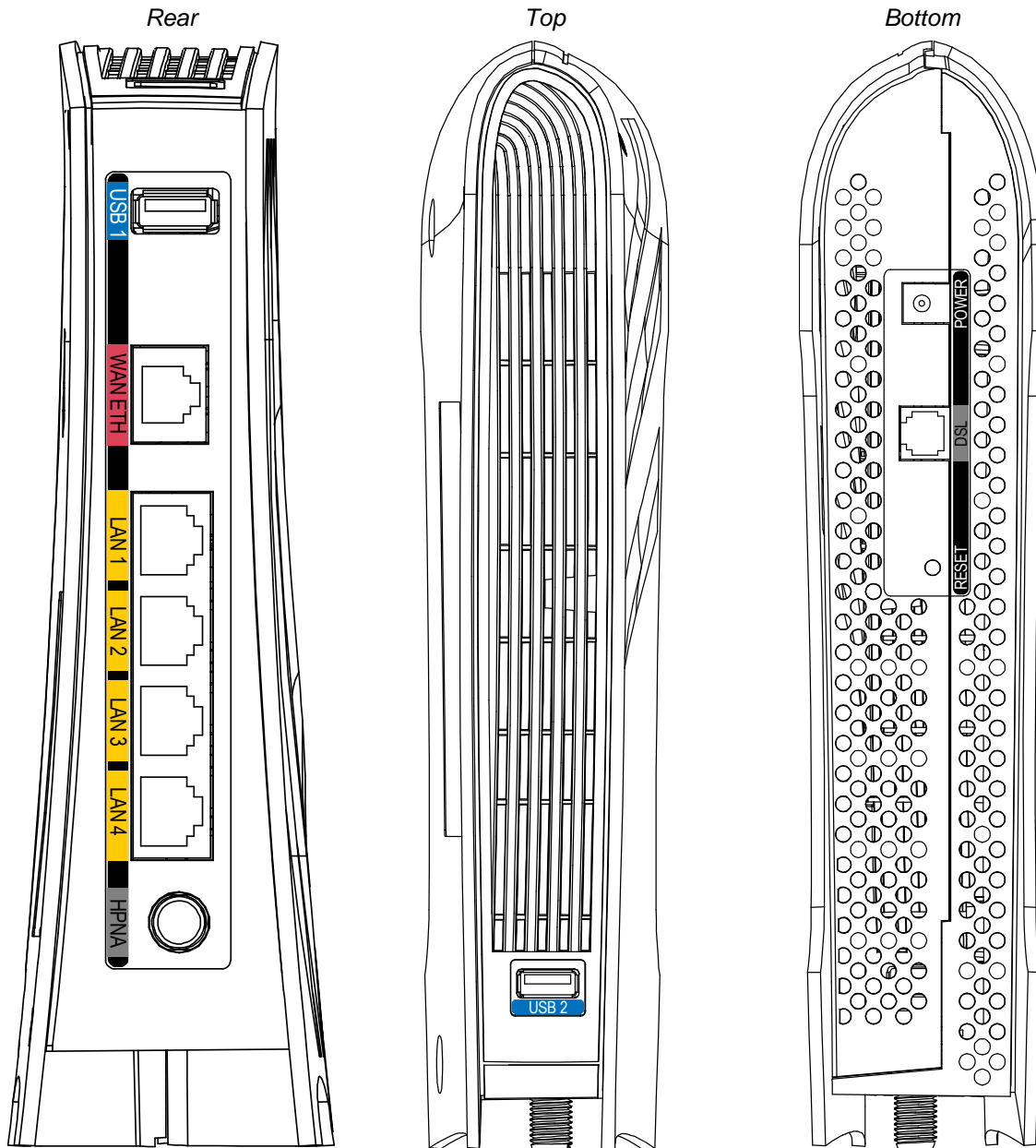
Router Construction

Connectors

The following figures show the F@st™2864 connectors from different perspectives. Note that the Ethernet connectors contain yellow (10/100Mbps) and green (1000Mbps) LEDs.


USB2.0 ports (2)

Gigabit Ethernet WAN port

Gigabit LAN Ethernet ports (4)

HPNA 3.1

Power port

xDSL WAN port

Reset button

The figures below show the connectors and labeling on the rear, top and bottom of the F@st™2864.

Rear	*Top*	*Bottom*

USB 1
WAN ETH
LAN 1
LAN 2
LAN 3
LAN 4
HPNA

USB 2

POWER
DSL
RESET

LEDs / Push Buttons

The figures below show the LEDs and push buttons from the side and front of the F@st™2864.

Side   *Front*
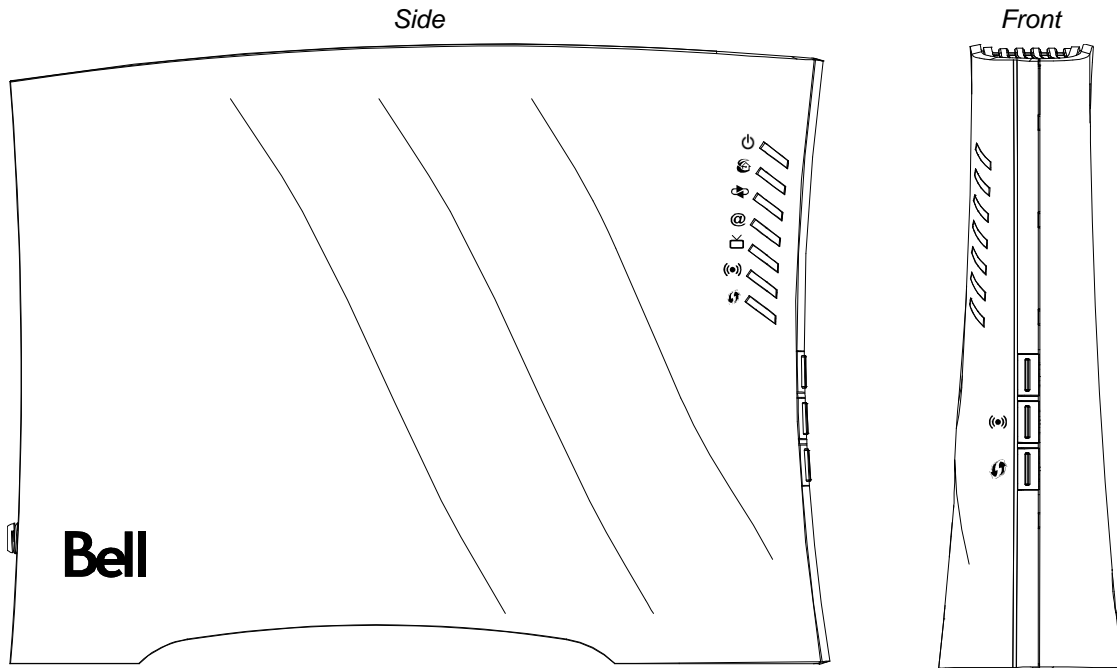
The figure below defines the icons for the LEDs and push buttons on the F@st™2864.

F@st™2864 – Front Panel LED and Button Labelling

LEDs			Buttons		
1st LED	⏻	Power			
2nd LED		HPNA	1st Button	N/A	N/A
3rd LED		WAN	2nd Button	((•))	Wireless
4th LED	@	Internet	3rd Button		WPS
5th LED		TV			
6th LED	((•))	Wireless			
7th LED		WPS			

Note that the rear Ethernet connectors contain yellow (10/100Mbps) and green (1000Mbps) LEDs.

Hardware Installation

You may position the Sagemcom Router at any convenient location in your office or home. No special wiring or cooling requirements are needed; however, you shall comply with the safety guidelines specified in the General Safety Guidelines section.

Basic Installation Procedure

1. Optionally, wall mount Router.
2. Install line filters if necessary.
3. Connect the cables.
4. Configure the Router via the Web-based management interface.

Wall Mounting Router (Optional)

While many users place their F@st™2864 Router on their desk, it can be optionally wall mounted.

1. The unit is wall mounted with the top of the unit (has USB2 connector) facing up.
2. Ensure that the wall you use is smooth, flat, dry, and sturdy.
3. The unit is mounted using two M3x20 screws (20mm length and 3mm in diameter).
4. Install the two screws 140 mm (5.5 inches) apart approximately 50 mm (2.0 inches) below the desired top of the Router per the following figure.
5. Screw the screws into the wall leaving their heads extending approximately 3.5 to 4.0 mm (0.15 inch) from the wall surface.
6. Carefully align the screw heads in the keyholes on the back of the Router and gently push the unit onto the wall moving it downward to secure it in the narrow portion of the keyhole slots.
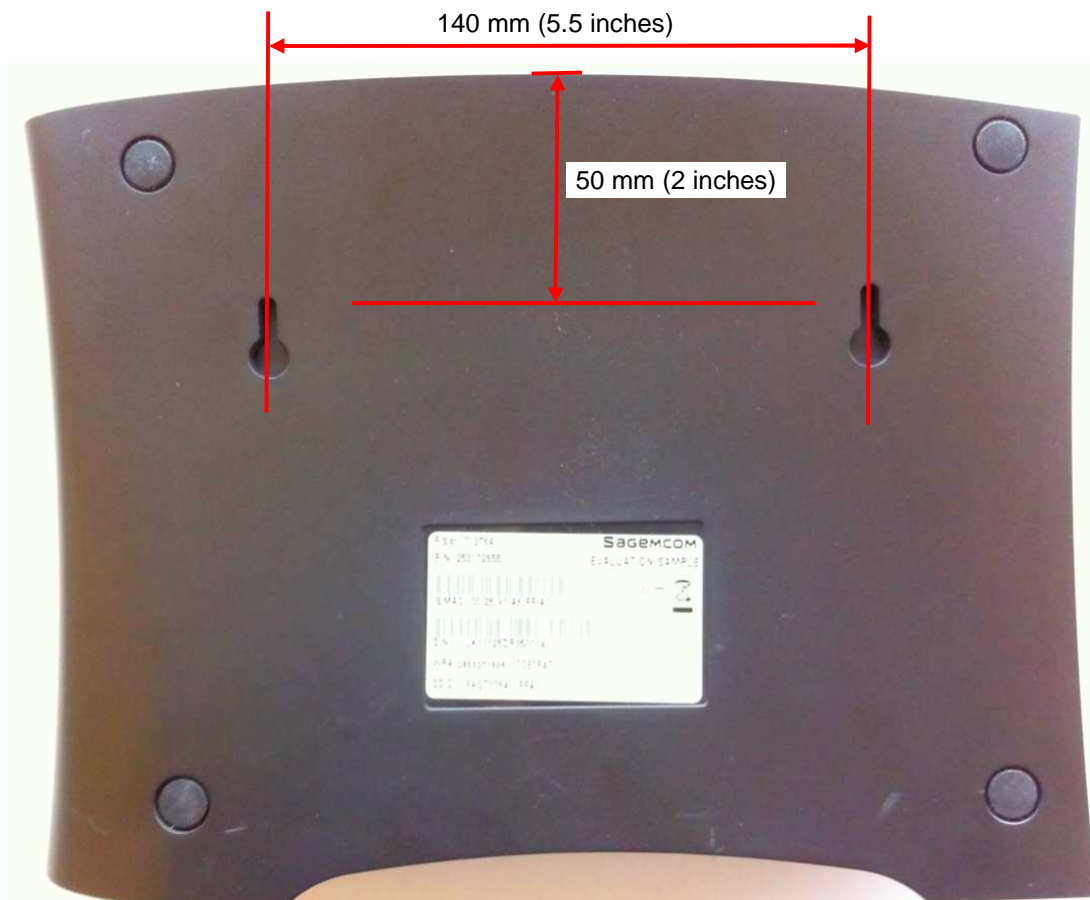
Installing Line Filters

Because DSL shares your telephone line, you may need to separate the two signals so they do not interfere with each other. A line filter (may be included with some models) prevents DSL traffic from disrupting the voice signal on the telephone line, and vice versa. Follow the procedures below to install line filters on any device (telephones, fax machines, caller ID boxes) that shares the same telephone line with your DSL. (Note, this section may not apply to you. Consult your provider if you are unsure.)

There are two types of filters to connect between the telephone and the wall plate:

- *In-line filter:* For use with standard desktop telephones.
- *Wall-mount filter:* For use with wall-mounted telephones.

DSL performance may be significantly degraded if the line filters are not installed in the correct direction, as illustrated below.
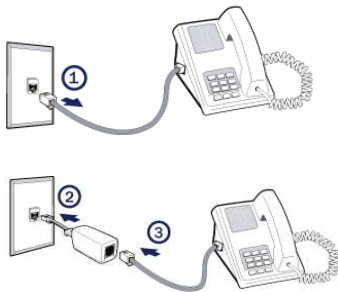
In-Line Filter

For each device sharing the same telephone line:

1. Unplug the device's cord from the telephone jack.

2. Plug the filter into the telephone jack.

3. Plug the telephone cord (or other device cord) into the filter.

Wall-Mount Filter

For a wall-mounted telephone, install a wall mount filter:

1. Remove the telephone.

2. Connect the wall mount filter to the wall plate.

3. Reconnect the telephone.

Connecting Cables

The Router provides multiple LAN Ethernet ports to connect to your computer(s). Follow the step-by-step instructions below for installation.

Ethernet Installation

To connect the Sagemcom Router via the Ethernet interface, your computer must have an Ethernet adapter (also called a network interface card, or "NIC") installed.

If your computer does not have this adapter, install it before proceeding further. Refer to your Ethernet adapter documentation for complete installation instructions.
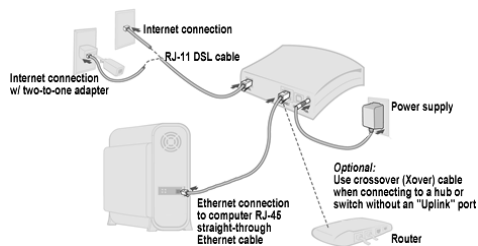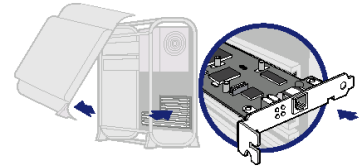
Connect the Ethernet cable(s)

1) With your computer powered off, connect the Ethernet cable to an Ethernet port (1-4) on the Router.

2) Connect the other end of the Ethernet cable to the Ethernet port on your computer.

Connect the DSL cable

1) For DSL ISP service, connect the DSL cable (resembles a telephone cord) to the DSL port on the Router.

2) Plug the other end of the DSL cable into the phone jack.

Coax Installation
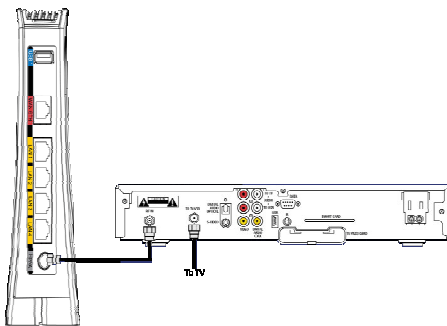
Connect the HPNA coax cable

1) With your set top box (STB) powered off, connect the coax cable to the coax connector on the Router.

2) Connect the other end of the coax cable to the coax connector on your STB.

Connect the power

1) Connect the power adapter to the bottom of the Router.

2) Plug the power adapter into the electrical wall outlet.

3) Power on all connected computers, STB, and other attached devices.

Chapter 3

Sagemcom Router Setup

This chapter provides details for the Router setup processes.

This chapter describes the steps to set up the Sagemcom Router configuration using the Router GUI. Additional configuration may also be required on the Router, depending on which features and functions of the Sagemcom Router you wish to use.

Before Configuring the Router

Before attempting to configure the Router, please ensure that:

- Your computer can establish a physical connection to the Router. The computer and the Router must be directly connected using a LAN Ethernet port on the Router.

- The Sagemcom Router is installed correctly and powered on.

- The network settings on each computer are correctly configured.

From this point on, you will perform all configuration of the Sagemcom Router from your computer using the Web browser-based setup program.

Connecting to the Router

The Sagemcom Router contains an HTTP server that allows you to connect to the Router and configure it from your Web browser (e.g., Microsoft Internet Explorer or Mozilla Firefox).

To establish a connection from your computer to the Router:

1. Open your Internet Explorer or Firefox Web browser.

2. In the **Address** bar, enter the default router IP address: **http://home** (or http://192.168.2.1) and press **Enter**. This displays the "Home" page shown below.

3. The default login User ID and Password are "admin" and "admin".
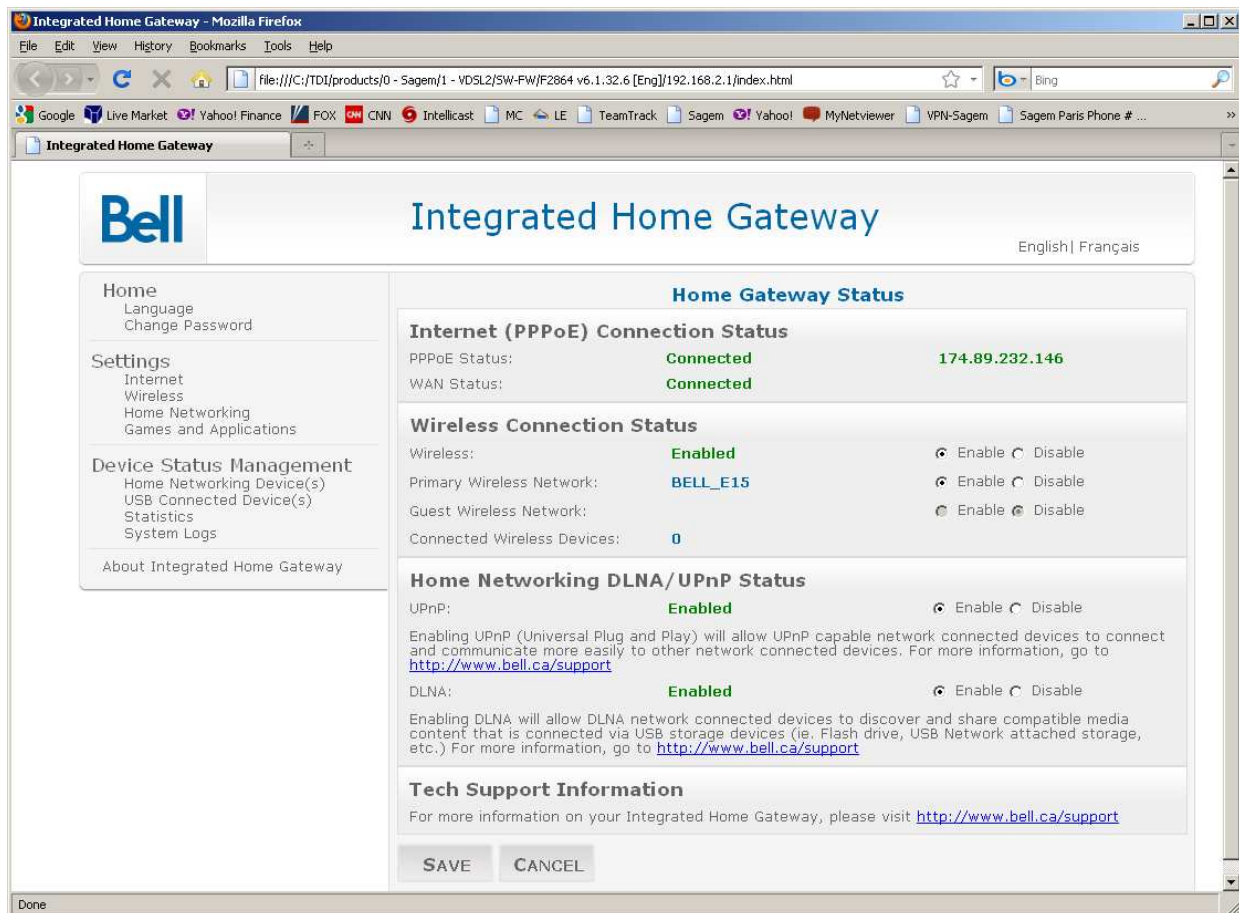
Configuring PPPoE Connection

Before accessing the internet, you must configure PPPoE (Point-to-Point over Ethernet) with the credentials supplied by your ISP using the "Internet" window shown below. After entering your *User ID* and *Password*, click "Save" to store your PPPoE credentials in the router.
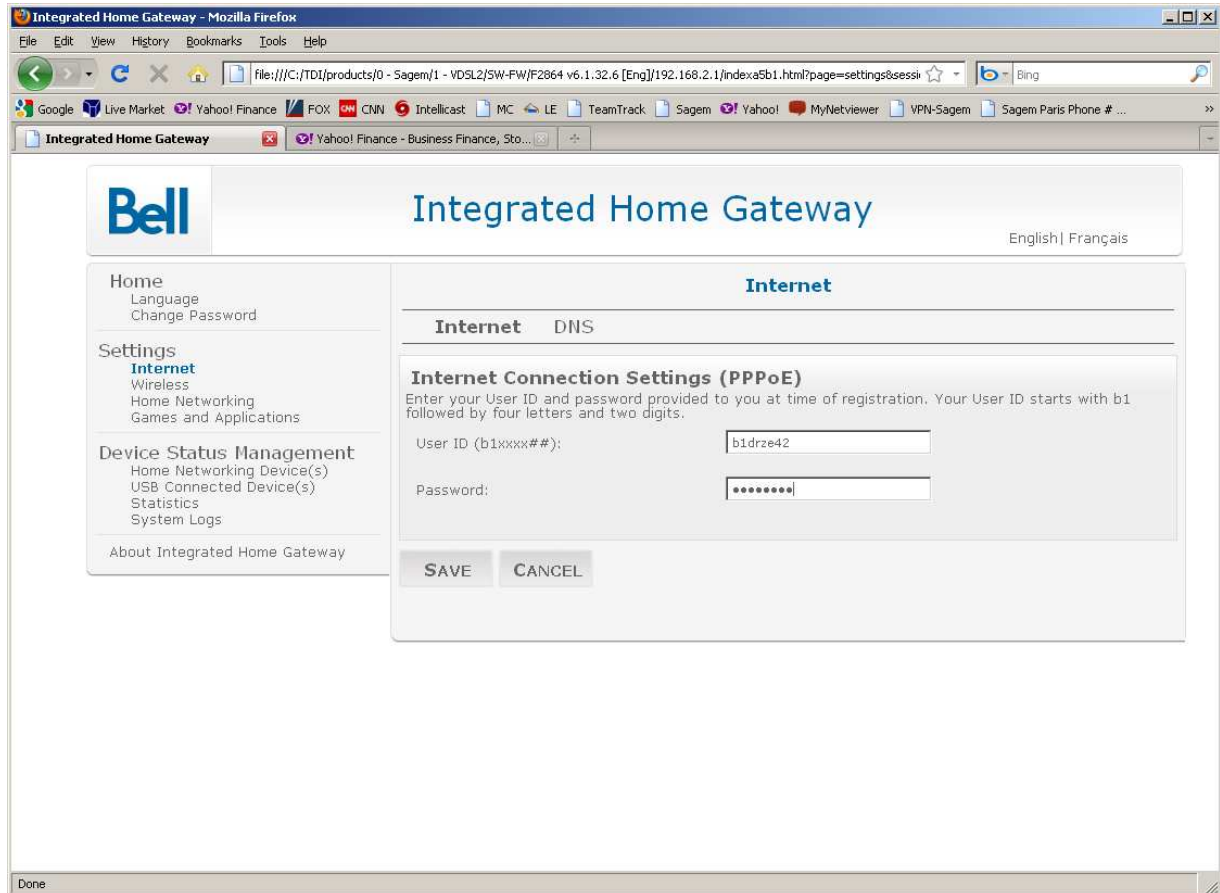
Changing the User Name and Password

For security purposes, your ISP recommends changing the default password. To change the *User ID* and *Password* from "admin" and "admin" use the "Change Password" page. You will need to enter the current *Password* before entering the new *Password* two times. Click "Save" to store your login credentials.
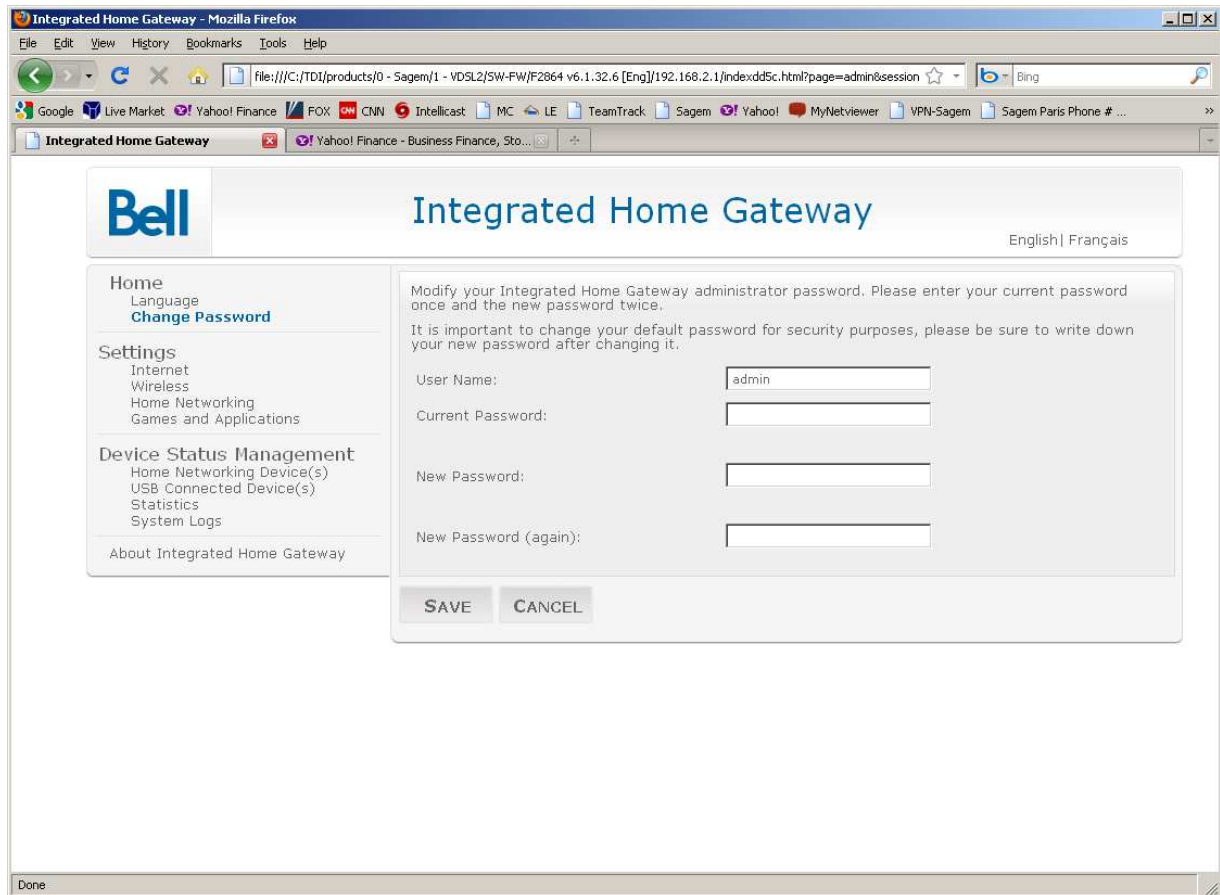
Configuring your Wireless Settings

To set up your wireless parameters use the "Wireless" page. By factory default the parameters for the "Primary Wireless Settings" are preconfigured. The user can modify the primary SSID settings and/or set up the Guest SSID settings with this page. The Primary Wireless SSID must be enabled in order to enable the Guest Wireless SSID. Click "Save" to store your wireless settings.
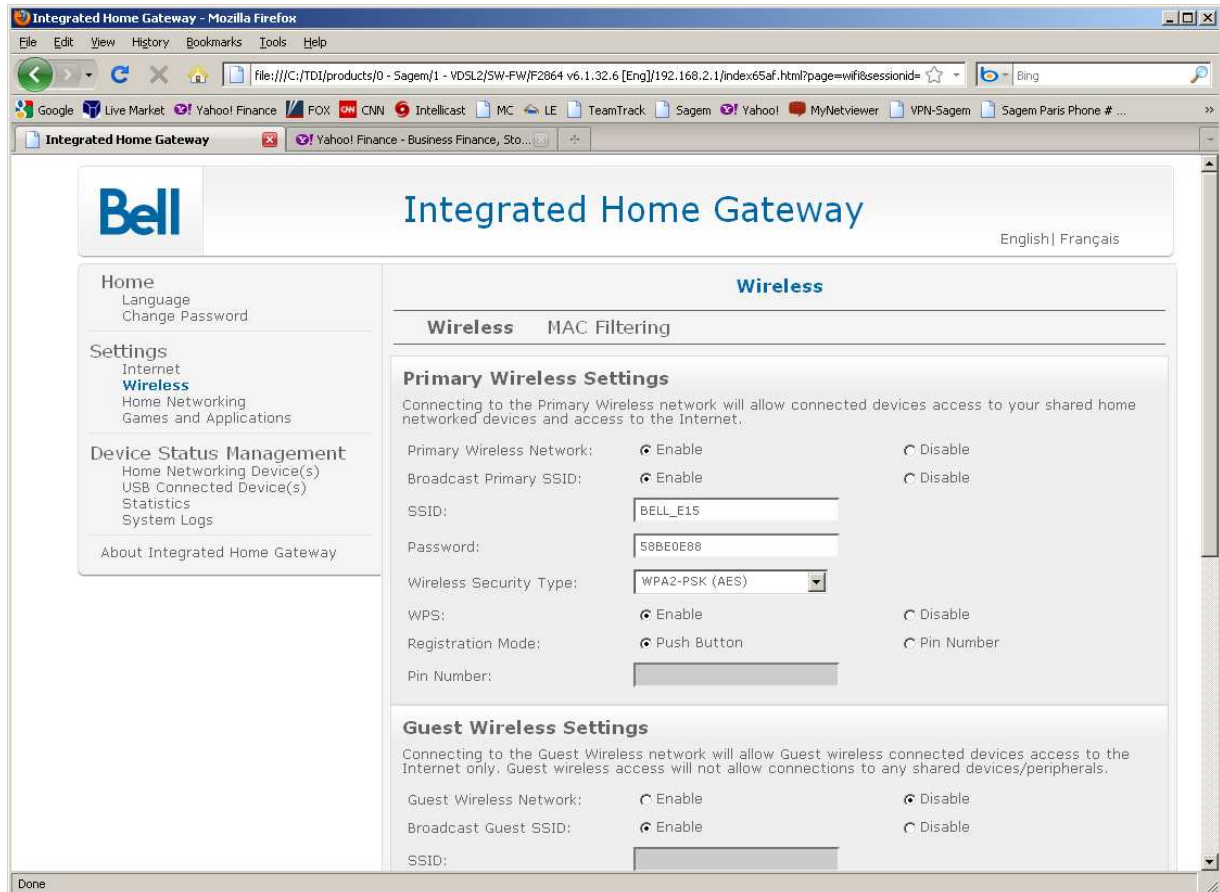
Chapter 4

Monitoring Router Health

4

This chapter describes how to monitor the health of the Router.

The Router health options listed below are used to gauge the Router's health.

Home Networking Devices   Shows the home networking devices connected to your Router

Statistics   Shows the Ethernet and Wireless Statistics

System Log   Shows the System Log

Home Networking Devices

As shown below, the F@st™2864 GUI displays the home network connections.
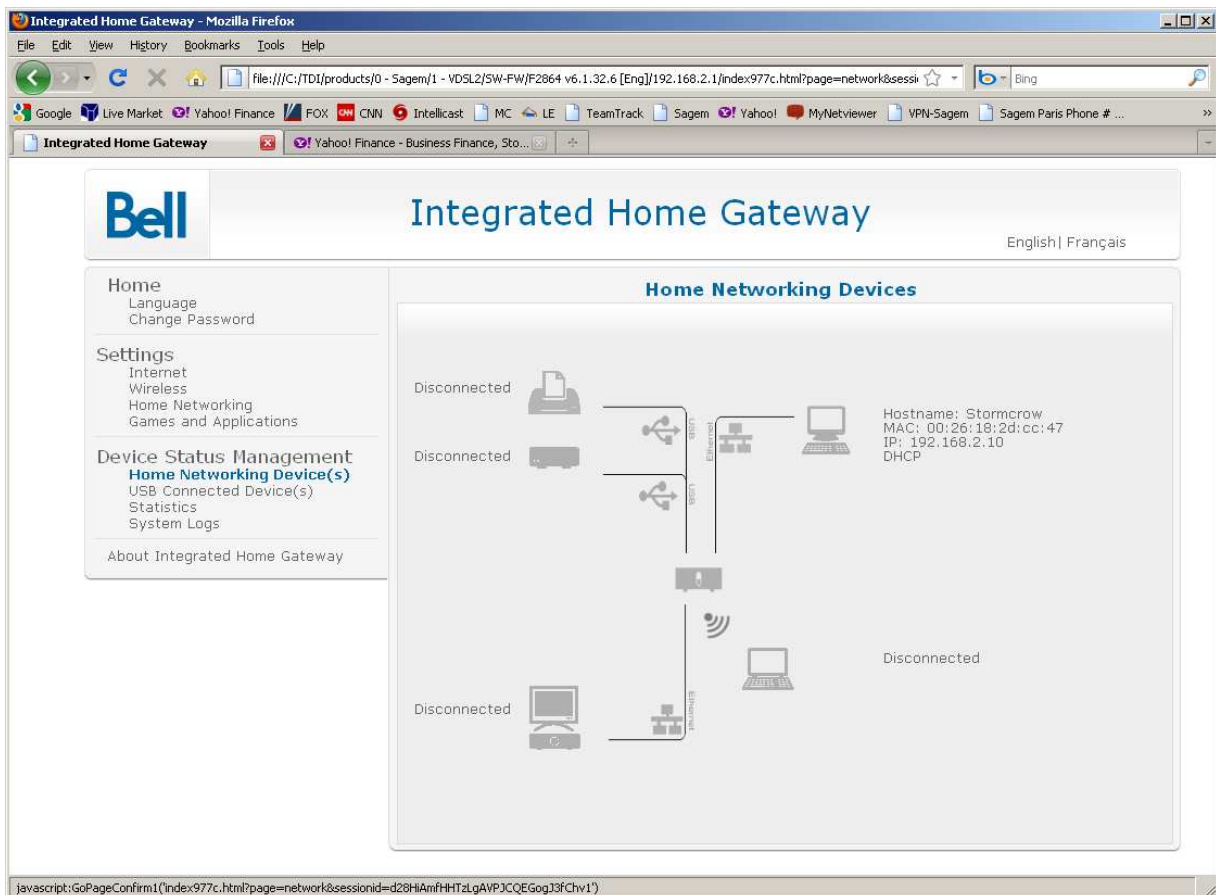
Statistics

As shown below, the F@st™2864 GUI supports Ethernet and Wireless statistics.

System Logs

The "System Logs" window displays a record of the F@st™2864 system activity.
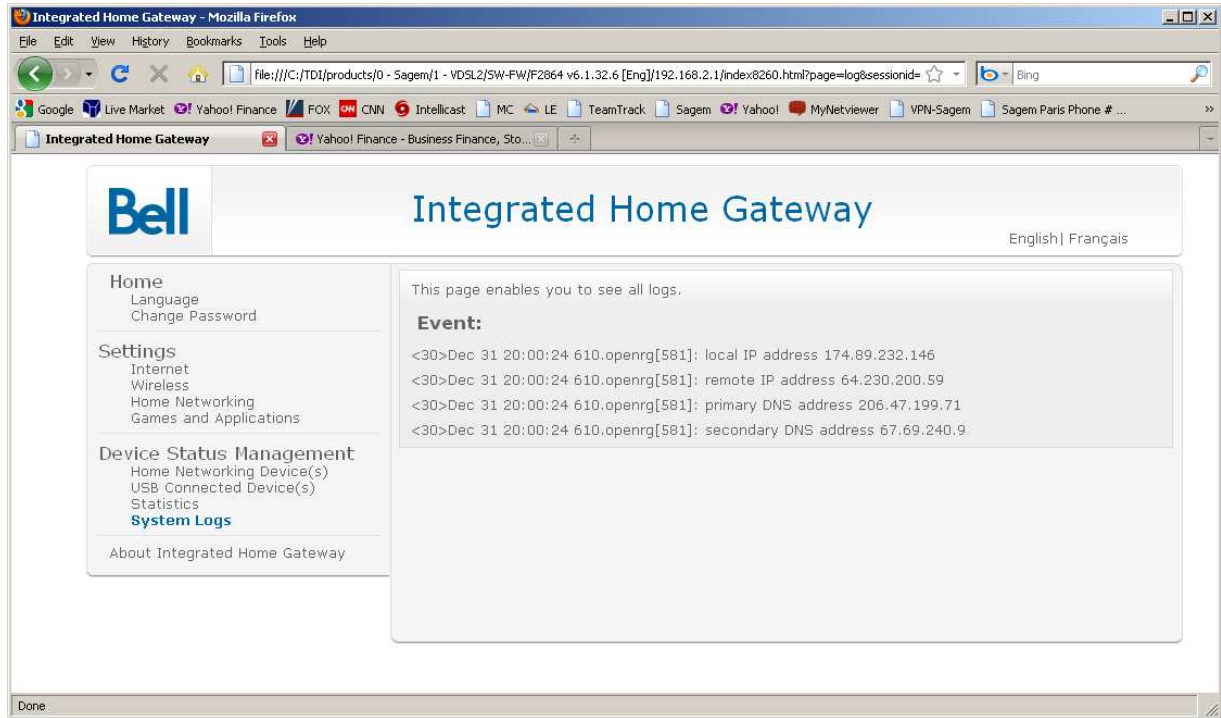
Chapter 5

Troubleshooting

5

Connection problems usually occur when the router's software configuration contains incomplete or incorrect information. This troubleshooting section can help you identify and solve some of these issues.

Basic Troubleshooting Steps

Before contacting Technical Support, you should attempt to resolve the issue by following these steps:

1. Check the LEDs on the front and rear panel to diagnose the possible problem.

2. Check specific issues addressed in this chapter, and follow the instructions for resolving the problem.

3. Reboot the router by removing and then reinserting the power adapter into the electrical wall outlet. Your previous settings will be retained.

4. Reset the router to factory settings only as a last resort. You will lose any settings you have configured.

Interpreting the LED Display

The LED indicators on the front and rear of the router give you a visual clue to the router's activity. When the router is configured and working correctly and its power is cycled, the seven front panel LEDs each briefly turn on/off in a "walking" pattern sequencing from the bottom to the top and back to the bottom. The following table shows the possible states indicated by the LEDs. If the LEDs indicate a problem, refer to the "Resolving Specific Issues" section later in this chapter.

LED	Icon	Description
Power	⏻	• Off: power is Off • Solid green: power On / normal operation • Flashing green: during POST • Flashing red: during firmware update • Solid red: for failed POST
HPNA		• Off: no HPNA physical layer link • Solid blue: HPNA connectivity and no traffic passing • Flashing blue: HPNA connectivity and traffic passing • Solid red: HPNA test fails

WAN		• Ethernet WAN:
		  • Off: no Ethernet link
		  • Solid green: 10BASE-T/100BASE-T Ethernet connectivity or when passing traffic
		  • Solid blue: 1000BASE-T Ethernet connectivity or when passing traffic
		  • Flashing when there is Ethernet connectivity and traffic passing
		• DSL WAN:
		  • Off: no DSL physically layer link
		  • Blinking green: DSL is synchronizing / training
		  • Solid green: DSL layer connectivity has been established

Internet	@	• Off: no IP connection • Solid red: not connected to Internet • Solid blue: connected to Internet • Flickering blue: IP level traffic
TV		• Off: no IP connection • Solid red: no DNS resolution • Solid blue: connected/successful DNS • Flickering blue: IP level traffic
Wireless	((•))	• Off: Wi-Fi is disabled • Solid blue: WiFi enabled or WiFi connectivity with one or more clients and no traffic passing • Flashing blue: WiFi connectivity with one or more clients and traffic passing
WPS		• Off: WPS is disabled in the GUI • Solid green: WPS is enabled in the GUI and no active WPS authentication is occurring • Flashing green: WPS button pushed and the RG is actively awaiting a client to connect
LAN Ethernet	N/A	• Off: no Ethernet link • Solid yellow: 10BASE-T/100BASE-T Ethernet connectivity or when passing traffic • Solid green: 1000BASE-T Ethernet connectivity or when passing traffic • Flashing when there is Ethernet connectivity and traffic passing

Resolving Specific Issues

Power **LED Not Lit**

If the Power LED is not lit, it is not connecting to the power source. Verify that the power cord is firmly plugged into the bottom panel of the router and that the other end is plugged into an active AC wall or power-strip outlet.

WAN **LED Not Lit**

If the WAN LED is not lit, it is not detecting a valid signal from the Central Office (CO). Depending on your type of service (DSL or FTTH), verify that the DSL or Ethernet WAN cable is plugged into the correct router port and the router power cord is plugged into the electrical outlet. If the cables are secure, you should contact your Service Provider.

Ethernet **LED Not Lit**

This indicates that there is no Ethernet link detected. Check the Ethernet cable connection from the computer to the router. If you have used the wrong cable, the LED on the Ethernet (NIC) card in your computer will not be lit either.

POST Failure (red Power LED)

POST is the router's "power-on self-test." When you power on or reboot the router, the Power LED flashes green indicating an active POST; it either fails POST or it comes fully up and is ready to run.

- If the initial POST diagnostic tests fail, the Power LED will turns solid red, indicating a POST failure, and locks the router. You will need to contact Technical Support to resolve this issue.

- If POST passes, the router continues through the rest of its initialization and the Power LED changes to solid green.

Contacting Technical Support

If you still cannot resolve the issue after following the recommended troubleshooting procedures, first contact your ISP. If the problem persists, contact Sagemcom Technical Support at the following number.

Telephone: (972) 674-4100

Fax: (972) 386-7432