Table of Contents

2 **Warranty Information**

3 **Certifications**

4 **What You Need to Get Started**

Package Contents

Product Description

Quick Start Installation

11 **How the Broadband Booster Works**

Broadband Booster Overview

Which Applications will Benefit Most from the Broadband Booster

Introducing *StreamEngine* Technology

16 **Accessing the Advanced Configuration Menu**

Information/Status Menu

Advanced Configuration Menu

Administration Menu

Setting the Username and Password

23 **Tips and Frequently Asked Questions**

26 **Service and Support**

LIMITED WARRANTY

Hawking Technology guarantees that every HBB1 Broadband Booster is free from physical defects in material and workmanship under normal use for two (2) years from the date of purchase. If the product proves defective during this two-year warranty period, call Hawking Customer Service in order to obtain a Return Authorization number. The warranty is for repair or replacement only. Hawking Technology does not issue any refunds. BE SURE TO HAVE YOUR PROOF OF PURCHASE. RETURN REQUESTS CANNOT BE PROCESSED WITHOUT PROOF OF PURCHASE. When returning a product, mark the Return Authorization number clearly on the outside of the package and include your original proof of purchase.

IN NO EVENT SHALL HAWKING TECHNOLOGY'S LIABILITY EXCEED THE PRICE PAID FOR THE PRODUCT FROM DIRECT, INDIRECT, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES RESULTING FROM THE USE OF THE PRODUCT, ITS ACCOMPANYING SOFTWARE OR ITS DOCUMENTATION. Hawking Technology makes no warranty or representation, expressed, implied or statutory, with respect to its products or the contents or use of this documentation and all accompanying software, and specifically disclaims its quality, performance, merchantability, or fitness for any particular purpose. Hawking Technology reserves the right to revise or update its products, software, or documentation without obligation to notify any individual or entity. Please direct all inquiries to: techsupport@hawkingtech.com.

FCC WARNING

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 radiated 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 one or more of the following measures:

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

Changes or modifications not expressly approved by the party responsible for compliance could void the user‘s authority to operate the equipment.

CE MARK WARNING

This is a Class B product. In a domestic environment, this product may cause radio interference, in which case the user may be required to take adequate measures.

Congratulations on purchasing the Broadband Booster

The following section will guide you though the initial setup of your HBB1.

Getting Started

HBB1

Broadband Booster

Eliminate the Lag

This Manual Will Guide You Through the Initial Setup of your Product

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What You Will Need To Get Started:

- A Home or Work Network with the Following Components:
  - Broadband Modem (Cable/DSL/T1-3)
  - Router (Wireless or Wired)
  - One Ethernet Cable

Check Your Package Contents:

HBB1
Broadband Booster

Power Extension Cable
Allows for only one power outlet slot to be used.

Power Adapter

3 Ft Ethernet Cable

Quick Start

Setting Up the Broadband Booster in Your Network

Product Description

LED and Port Descriptions

Router Connection Port
- Attaches the Broadband Booster to the network router.

Internet Connection Port
- Attaches the Broadband Booster to your broadband modem

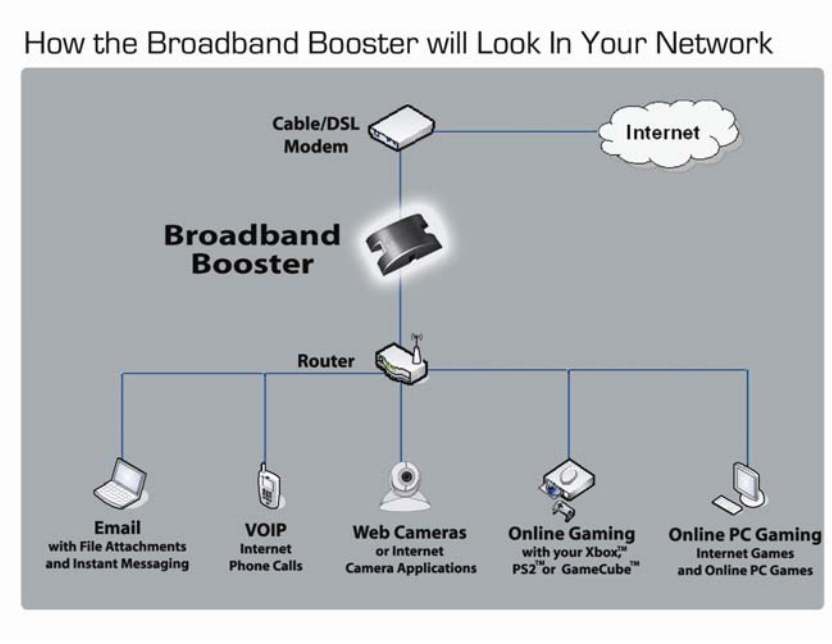
LED Descriptions:

Power - Lights up when the Power Adapter is attached to the Booster and the unit is active.

Router - Blinks when data traffic is detected between the Router and the Broadband Booster

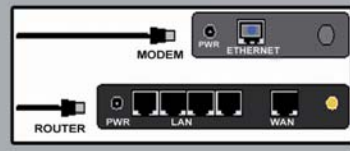
Internet - Blinks when data traffic is detected between the Cable/DSL Modem and the Braodband Booster

Boost - Lights up when the Braodband Booster is actively boosting data traffic out of your network.



The Broadband Booster is placed in-between your Cable or DSL Modem and your network Router.

1 Disconnect the power from your existing home router and broadband modem



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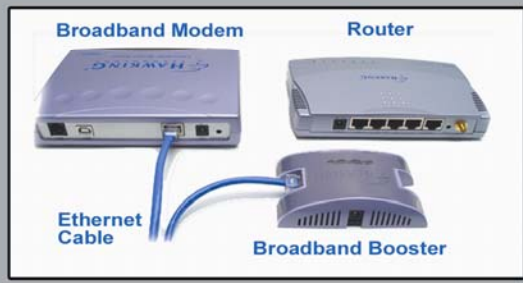
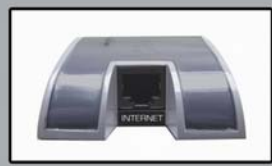
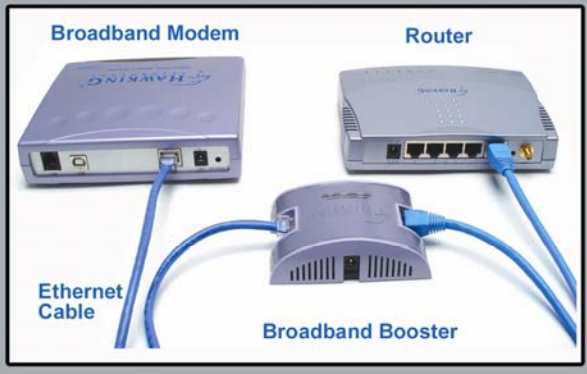


Remove the Ethernet cable that connects your broadband modem to your router.



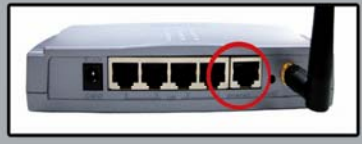
Connect the HBB1 to your broadband modem by reconnecting the Ethernet cable to the "INTERNET" port of the Broadband Booster.

3



Use the included Ethernet Cable to connect the "ROUTER" port of the Broadband Booster to the "WAN or INTERNET" port on the Router.

ROUTER port on the Broadband Booster



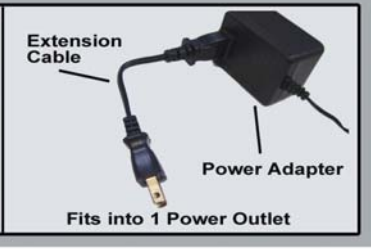
INTERNET or WAN Port on the Router

Note* The WAN port on Routers may vary from different brands. If you are not sure the location or name the one on your router, check the users manual.

4

After the Broadband Booster has been connected between your router and your broadband modem, reconnect the power to all units, EXCEPT the Broadband Booster.

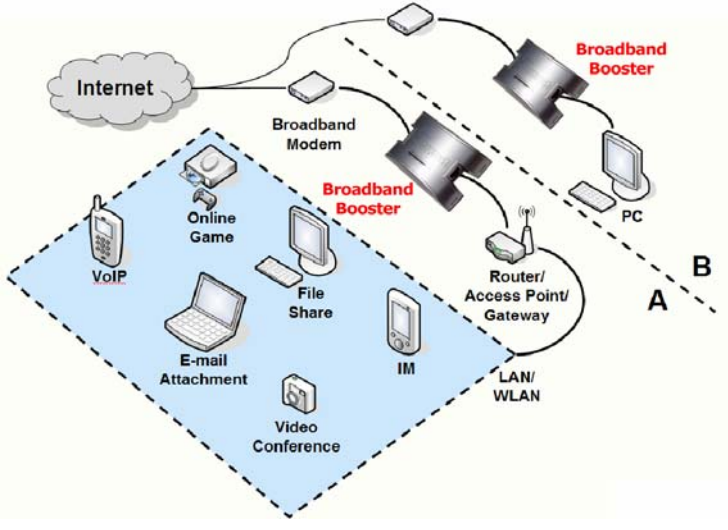
5 Plug the power adapter of the Broadband Booster into the power connector on the back of the unit. You may choose to use the Power Extension Cable to free up one outlet on your wall or power strip. When this is done, power on the Broadband Booster.



6 Once powered, the Broadband Booster will do a diagnostic test to scan the network and automatically configure itself to optimize performance for your network. This boot up process takes no longer than 5 seconds. When the sequence is complete the Booster LEDs will blink steadily and the unit will begin boosting overall network performance..

How The Broadband Booster Works

Introducing Stream Engine Technology



The Broadband Booster sits between the broadband modem and router. It optimizes networks for interactive applications used by A) multiple users, and B) individual users.

Overview

The Hawking Broadband Booster is a new class of product: a network upgrade that solves problems with using time-sensitive applications on broadband internet connections. It improves the playability of online games, maintains VoIP call quality, and

enhances the quality of streaming video without any configuration required by the user.

Target Applications

High speed internet connections are making interactive applications such as online games, VoIP, file and application sharing, and video conferencing more popular. These new technologies work very well, but people run into problems when they try to use more than one application at the same time. Here are some examples of when this can happen:

- A hard-core gamer notices his online first-person shooting game starts to “lag” or behave erratically when others in the house surf the web or do e-mail.
- A manager of a small office subscribes to a VoIP service to reduce long-distance phone bills. She is frustrated when her calls break up when someone else in the office sends an e-mail attachment.
- A father uses a web cam to monitor his children at home with the babysitter. He has to remember to turn off the file sharing application on his home computer before leaving in the morning. When it is on, the video from the web cam gets disrupted.
- A manager with a single home computer wants to run a late-night training session for her worldwide sales force from home. The internet connection has plenty of bandwidth, but it can’t seem to handle both sharing the presentation and the VoIP call both reliably and at the same time.

Simply put, the *Broadband Booster* is an easily-installed device that provides broadband users with a superior experience of the internet.

Simple Installation and Automatic Operation

The *Broadband Booster* plugs in directly between the broadband modem and a computer, router, gateway, or access point, with a single Ethernet port for each device. It requires no configuration by the user, and has clear status lights to show it is working correctly. In most cases, the settings of the modem and router do not need to be changed to work with the Broadband Booster. This is great for home or small office environments that do not have dedicated IT staff.

StreamEngine Technology

StreamEngine Technology combines a number of QoS techniques. These include automatic classification, prioritization, and "shaping" of the traffic on the uplink, among others.
The Broadband Booster monitors streams of traffic on a packet-by-packet basis and continually refines their priority to ensure the accuracy of the classification. The system decides if there are streams, such as VoIP, that are sensitive to jitter or latency. The Broadband Booster automatically adjusts the streams of data to let through the high-priority packets. This means that a high-priority

VoIP packet does not have to wait for large FTP packets to be sent before leaving the modem.
Assuming that all of the data streams are correctly prioritized, the user can still run into problems. Many people believe that the delays they see while using online applications is caused by the internet itself. However, most latency and jitter is actually caused by the behavior of the modem on the user's home network. The maximum throughput of the router's WAN port is usually much larger than the throughput of the modem's uplink. Modems are designed to handle this by using a very large buffer that stores the packets sent by the fast WAN port of the router before they can be transmitted by the modem to the ISP. Once a packet is stored in the modem's packet buffer, the priority of the packet cannot be changed. This is shown in Figure 2. If the router sends more packets to the modem than the buffer can hold, these packets may be lost.

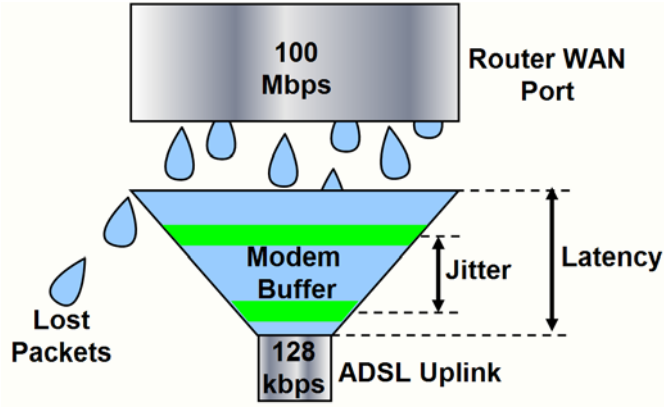


Figure 2: Broadband modem rate adaptation buffer and its effect on QoS

How to Measure the Performance Benefits?

People can benefit most from a **Broadband Booster** under the following conditions:

Their internet connection has a narrow uplink, such as with an ADSL or cable modem.

They are using interactive applications like online games, VoIP, video conferencing, or application sharing.

There are other network applications that run while they are using interactive applications. These might include sending e-mail attachments, file sharing, or even other VoIP calls or online games.

Some people are familiar with measuring the quality of their internet connection by pinging a remote server. There are several problems with doing this. First of all, ping times measure round-trip latency from the client to the server, and back again. Online games are most affected by one-way delay from the client to the server. Second, QoS features may handle ping packets differently than packets from time-sensitive applications. For these reasons, ping times may not match the delays actually seen by an online game, for example.

To see realtime performance benefits, Hawking recommends the user to run two internet applications (i.e. uploading a file to an FTP server while playing Quake 3 – Online game) with and without the Broadband Booster. You will notice that with the Broadband Booster both applications will run seemlessly.

Advanced Configuration Menu

Configuring Advanced Features in Your Broadband Booster

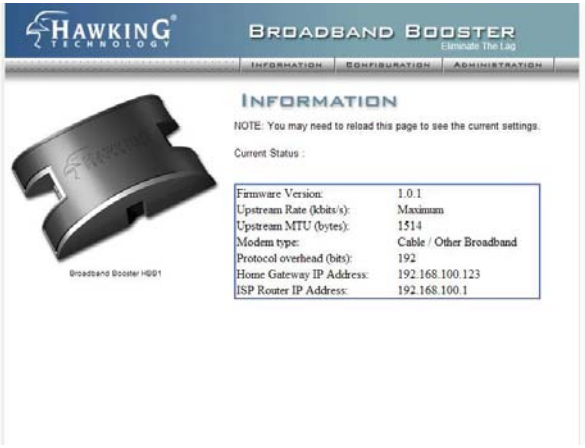
The GUI (Graphical User Interface) allows you to do manually adjust the control features within the Broadband Booster. You can view information regarding the status of the device, change the login password as well as upgrade the firmware.

To access the GUI you will need to open a web-browser from a computer that is connected to the “boosted” network. In the address bar type in the following address:

http://192.168.229.61/

Hit **Enter** to access the page

There will be a box that loads prompting you for your user name and password. If this is the first time accessing the Configuration Menu click ENTER to get passed the prompt. You will be able to enter a new user name and password within the Configuration Menu.

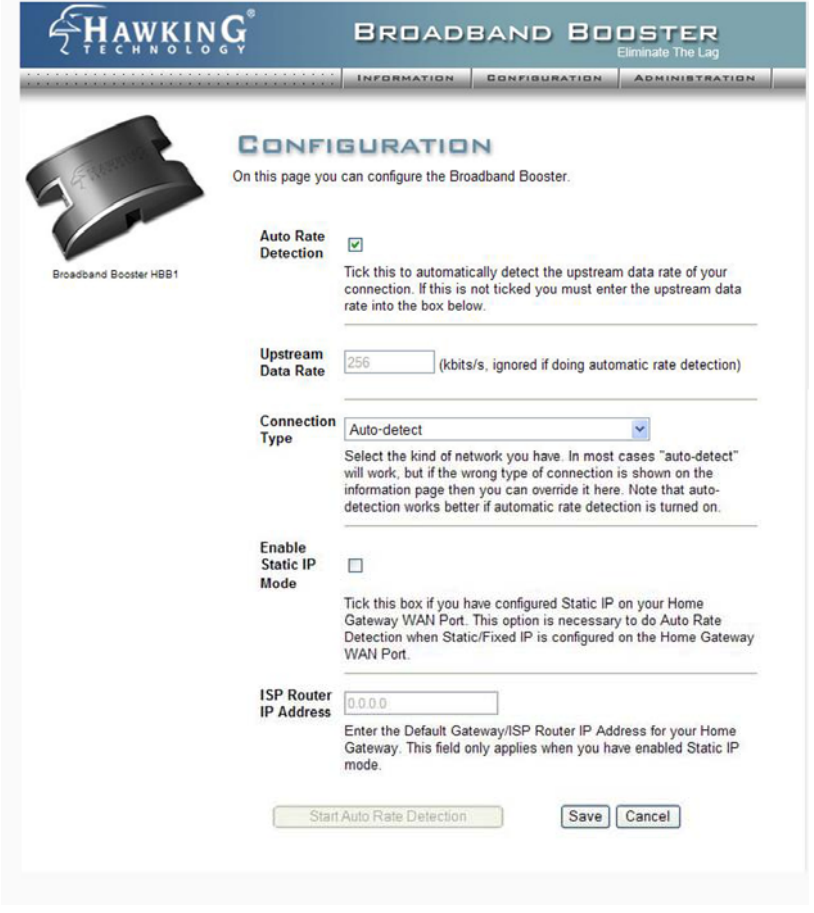


The **Information Page** will gives you information regarding the current settings of your Broadband Booster.

Firmware Version: Current firmware version on the HBB1
Upstream Rate: Speed setting for upstream rate
Upstream MTU:
Modem Type: Shows which type of broadband connection your network using.
Protocol Overhead:
Home Gateway IP Address: Displays the IP address of your broadband modem.
ISP Router IP Address: Displays the IP address of your network router.

Configuration Menu

To access the Configuration Menu click on the “Configuration” tab on the navigation bar at the top of the browser.



Auto Rate Detection: This allows the Broadband Booster to automatically detect your networks upstream data rate and speed. It is recommended that you use the Auto Rate Detection feature unless you are an advanced user or if you feel that your detected data rate is incorrect.

Upstream Data Rate: If the Auto Rate Detection feature is not used, then the Upstream Data Rate must be manually entered. The units used are kbits/s. Please check with your local ISP for the correct number to be used here.

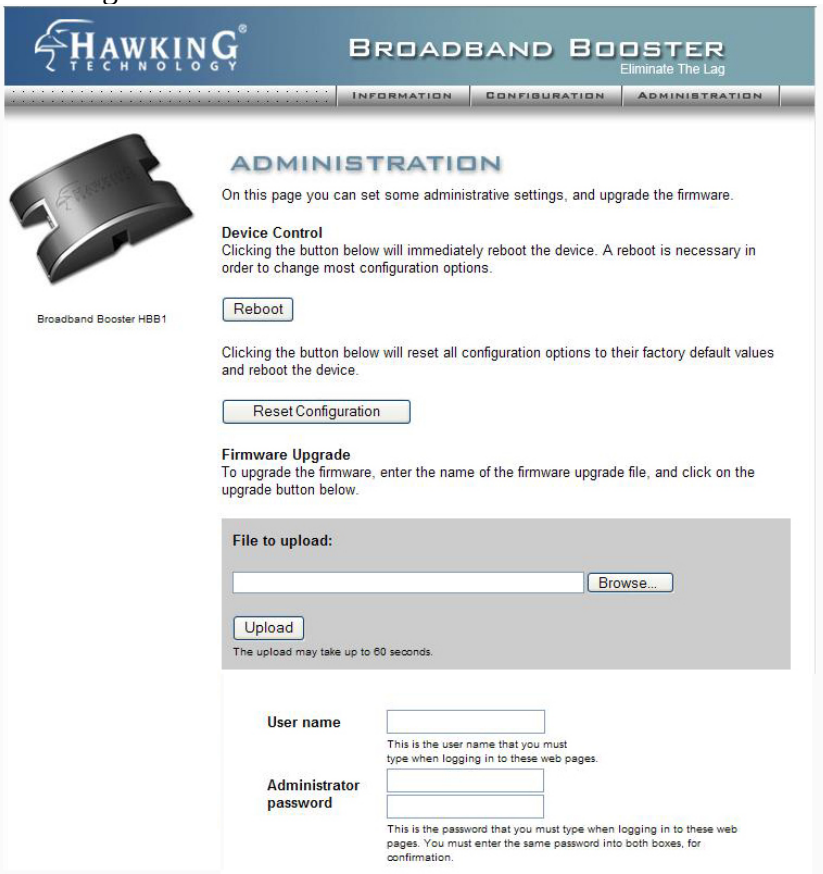
Connection Type: Allows for manual or automatic selection of your broadband connection type. It is recommended that this feature be left on "Auto-detect" unless you are an advanced user or the detected connection type is incorrect. If you have a connection other than Cable modem or DSL please select Cable Modem as your connection type.

Enable IP Static Mode: For broadband connections that use fixed IP assignments for home/work networks you may have to manually enter the IP address for you router's WAN port. If you are uncertain whether your network uses IP Static settings please check with your internet service provider or your network administrator.

ISP Router IP Address: If you have enabled IP Static Mode, you may enter in the IP address of your ISP Router here.

Administration Menu

To access the Administration Menu select “Administration” from the navigation bar.



Device Control: Any changes that have been made in the configuration menu will need a system reboot first before they become active. To manually reboot the device select the "Reboot" button.

Resetting Configurations: To reset the settings to the factory default settings select the "Reset Configurations" button. This tool is used in case configurations have been manually made that hinder the device from working properly.

Upgrading the Firmware: In the case that a new firmware is available, you may upgrade the device's firmware using this tool. Simply download the "bin" file in a local directory, select browse and find the firmware file you wish to upgrade the Broadband Booster with.

Changing the User Name and Password: To change the default login information you must enter in your desired user name and password.

Note- Resetting the Password: If you forget your selected user name or password you may manually reset the username and password to factory settings by following the steps below:

1) Disconnect the power to the Broadband Booster
2) Wait 5 seconds and plug the power back in.

3) Once the power is on you will have 3 minutes to access the login page through your web browser by entering the IP address into the URL bar: **http://192.168.229.61/**
4) There will be no password or username required to login during the 3 minute time window. Hit enter to login.
5) Click on the Administration Menu tab to re-enter a new username and password.

Note: If no login information is entered during the 3 minute window, the Broadband Booster will revert back to the original username and password settings prior to rebooting.

The manual password reset feature does not reset any other previously configured settings. It only adjusts the login username and password settings.

You may attempt this reset sequence as often as you like to access the Configuration menu.

Tips and Frequently Asked Questions

Broadband Booster FAQ and Miscellaneous Information

Frequently Asked Questions

When can I see the greatest benefit from using a Broadband Booster?

The Broadband Booster will improve your experience the most if you have a broadband connection with a typical uplink data rate, and you use multiple applications, with at least one of them being time sensitive.

Can I set my own prioritization requirements and adjust the QoS settings?

The *StreamEngine* automatic prioritization algorithms will optimally prioritize and shape the traffic in nearly any user environment without configuration by the user. The Broadband Booster is designed to work with minimal user setup, and so includes only a basic user interface.

Is the Broadband Booster compatible with Xbox Live and other online console gaming networks?

Yes, the Broadband Booster has been designed to optimize online gaming whether it be from Xbox™, PSP™, Playstation™ or other gaming consoles.

Does the Broadband Booster support specific settings for specific online computer games?
Yes, the Broadband Booster has support for a very long list of the most popular online games. Many games can be prioritized using the same settings as other computer games so you will never have to worry about your online game being compatible with the Broadband Booster

Does the Broadband Booster work with Peer to Peer applications such as Kazaa and Bitorrent?
Yes, peer to peer network applications will benefit from the Broadband Booster. The HBB1 will optimize your P2P experience so there is no lag in your entire network that may be caused by P2P uploading.

How does the Broadband Booster help with video(web cams) and audio streaming (VoIP)?
The Broadband Booster eliminates video frames from dropping due to your network traffic. This results in smoother video transmissions for a better overall picture. For VoIP and voice streaming, the Broadband Booster ensures the best quality voice transmission for a clear reception similar to standard phone lines.

What do I do If I have forgotten my login information for the web configuration menu?
If you forget your selected user name or password you may manually reset the device to factory settings by following the steps below:

1) Disconnect the power to the Broadband Booster
2) Wait 5 seconds and plug the power back in.
3) Once the power is on you will have 3 minutes to access the login page through your web browser by entering the IP address into the URL bar: **http://192.168.229.61/**
4) There will be no password or username required to login during the 3 minute time window. Hit enter to login.
5) Click on the Administration Menu tab to re-enter a new username and password.

Note: If no login information is entered during the 3 minute window, the Broadband Booster will revert back to the original settings prior to rebooting.

The manual password reset feature does not reset any other previously configured settings. It only adjusts the login username and password settings.

Hawking Product Service and Support

Customer Service and Technical Assitance Information

If you are having trouble installing or configuring the Broadband Booster please contact Hawking Technologies Technical Support department using one of the following methods:

Hawking Technical Support

Email: Techsupport@hawkingtech.com

Toll Free: 800-756-7832

Web: http://www.hawkingtech.com/servicesupport.php

RMA Information (For Warranty Issues)

Web: http://www.hawkingtech.com/rma.php

Thank You for Choosing Hawking Technologies.