



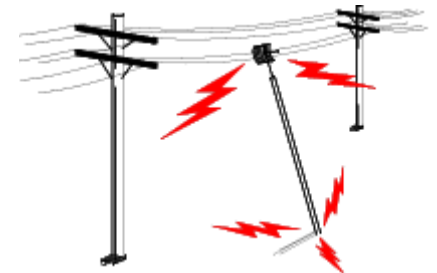
## OUTDOOR INSTALLATION WARNING

### IMPORTANT SAFETY PRECAUTIONS:

**LIVES MAY BE AT RISK!** Carefully observe these instructions and any special instructions that are included with the equipment you are installing.

**IMPORTANT:** Look over the site before beginning any installation, and anticipate possible hazards, especially these:

**CONTACTING POWER LINES CAN BE LETHAL.** Make sure no power lines are anywhere where possible contact can be made. Antennas, masts, towers, guy wires or cables may lean or fall and contact these lines. People may be injured or killed if they are touching or holding any part of equipment when it contacts electric lines. Make sure there is **NO** possibility that equipment or personnel can come in contact directly or indirectly with power lines.



Assume all overhead lines are power lines.

The horizontal distance from a tower, mast or antenna to the nearest power line should be at least twice the total length of the mast/antenna combination. This will ensure that the mast will not contact power if it falls either during installation or later.

### TO AVOID FALLING, USE SAFE PROCEDURES WHEN WORKING AT HEIGHTS ABOVE GROUND.

- Select equipment locations that will allow safe, simple equipment installation.
- Don't work alone. A friend or co-worker can save your life if an accident happens.
- Use approved non-conducting ladders and other safety equipment. Make sure all equipment is in good repair.
- If a tower or mast begins falling, don't attempt to catch it. Stand back and let it fall.
- If anything such as a wire or mast does come in contact with a power line, **DON'T TOUCH IT OR ATTEMPT TO MOVE IT.** Instead, save your life by calling the power company.
- Don't attempt to erect antennas or towers on windy days.

**MAKE SURE ALL TOWERS AND MASTS ARE SECURELY GROUNDED, AND ELECTRICAL CABLES CONNECTED TO ANTENNAS HAVE LIGHTNING ARRESTORS.** This will help prevent fire damage or human injury in case of lightning, static build-up, or short circuit within equipment connected to the antenna.

- The base of the antenna mast or tower must be connected directly to the building protective ground or to one or more approved grounding rods, using 1 OAWG ground wire and corrosion-resistant connectors.
- Refer to the National Electrical Code for grounding details.
- Lightning arrestors for antenna feed coaxial cables are available from HyperLink Technologies, Inc.

### IF A PERSON COMES IN CONTACT WITH ELECTRICAL POWER, AND CANNOT MOVE:

- **DON'T TOUCH THAT PERSON, OR YOU MAY BE ELECTROCUTED.**
- Use a non-conductive dry board, stick or rope to push or drag them so they no longer are in contact with electrical power.
- Once they are no longer contacting electrical power, administer CPR if you are certified, and make sure that emergency medical aid has been requested.

## User Manual

**Model HA2401-XI-325**

**FCC ID: MYF-XI-325**

**IC: 2837A- XI325**

### **Interference Statement**

This device complies with Part 15 of the FCC Rules and with RSS-210 of Industry Canada. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

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

The term "IC:" before the radio certification number only signifies that Industry Canada technical specifications were met.

**NOTE: This system must be installed by experienced professional installers who are familiar with radio frequency (RF) equipment operation as well as local building and safety codes. Failure to do so may void the Product Warranty, as well as expose the end-user to legal and/or financial liabilities.**

### **Information to the user**

NOTE: 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. If not installed and used in accordance with the instructions, it 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 and correct the interference by one or more of the following measures:

Reorient or relocate the receiving antenna.

Increase the distance between the equipment and the 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/TV technician for help.

**Any changes or modifications of equipment not expressly approved by the manufacturer could void the user's authority to operate the equipment and the company's warranty.**

**NOTE: Certain high gain antennas are intended for point-to-point or point-to-multipoint applications only. These antennas are clearly identified in the table contained in this manual. Note that +36 dBi may only be exceeded for point-to-point applications as given in 15.247(b). It is the installers responsibility that when using these antennas to ensure that the system is used exclusively for point-to-point operations, and that the antenna may not be co-located with other intentional radiators transmitting the same information". The device and its antenna and must not be co-located or operating in conjunction with any other antenna or transmitter.**

**The table contained in this manual identifies which antennas are considered "fixed" and which are "mobile". When this device is installed as a fixed-mount application there is a minimum required separation distance of 100 cm between the antenna and all persons during normal operation. All mobile antennas must be mounted at a minimum distance of 20 cm from users.**

### Router Installation:

Conduct a Site Survey to determine the best location for the system. Once located, install the Router in an appropriate location. Follow the Router mounting instructions for specific mounting details.

Open the access cover by depressing the two tabs. Slide the PC Card into the PC Card Slot and plug in the pigtail cable as shown. Then replace the access cover:



Connect the Pigtail Cable between the PC Card and the Amplifier/DC Injector input.

### Install the Antenna

**NOTE: The antenna system shall be installed ONLY by experienced antenna installers who are familiar with local building and safety codes, and wherever necessary have been licensed by appropriate government regulatory bodies. Failure to do so may void the Product Warranty, as well as expose the end-user to legal and/or financial liabilities. Hyperlink Technologies, its agents, resellers or distributors, are not liable for injury, damage, or violation of government regulations that may arise from failing to comply with the guidelines described in this document.**

Mount the antenna according to the specific installation instructions for the model you are installing. When choosing the antenna site you must observe the following exposure limits:

**The table contained in Appendix B of this manual identifies which antennas are considered “fixed” and which are “mobile”. When this device is installed as a fixed-mount application there is a minimum required separation distance of one 100 cm between the antenna and all persons during normal operation. All mobile antennas must be mounted at a minimum distance of 20 cm from users.**

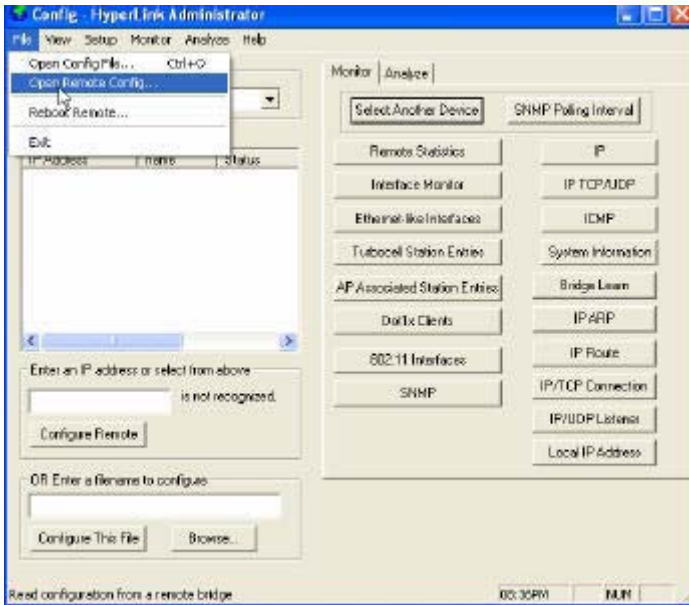
Once the antenna is installed connect the antenna to the amplifier using the antenna cable.

## Configuring the Wireless Router

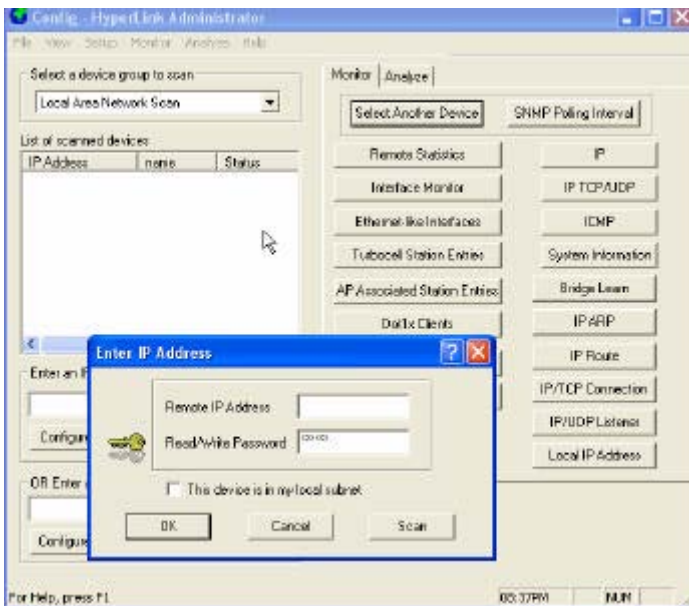
Connect to Unit with a cross-over cable to your PC or through a Switch (HUB) with straight cables. Apply power to the Router unit. Check the diagnostic lights to ensure proper connection. You should now be ready to configure the Router.

### Launch the Network Configurator Utility

Click on File, Open Remote Config



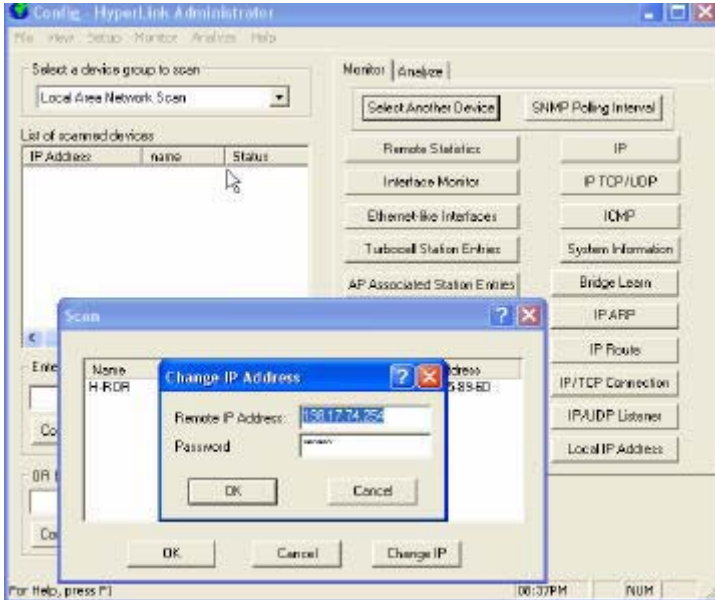
### Click on Scan to locate the Device



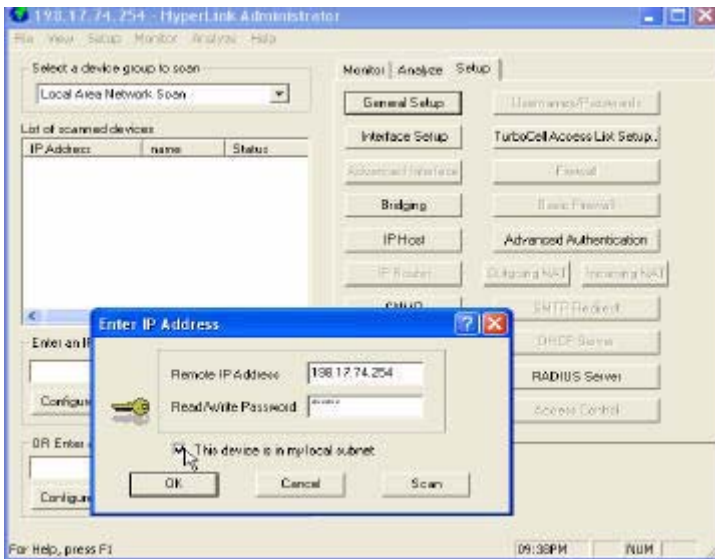
Select the Router to configure by Clicking on Name and Click on Change IP Button to change to IP on your local subnet (similar to the configuration PC).

### Setting the Password

The default password is “public”. Once you have accessed the security settings change the password. Click OK to accept changes.



Select – This device is in my local subnet Click OK.

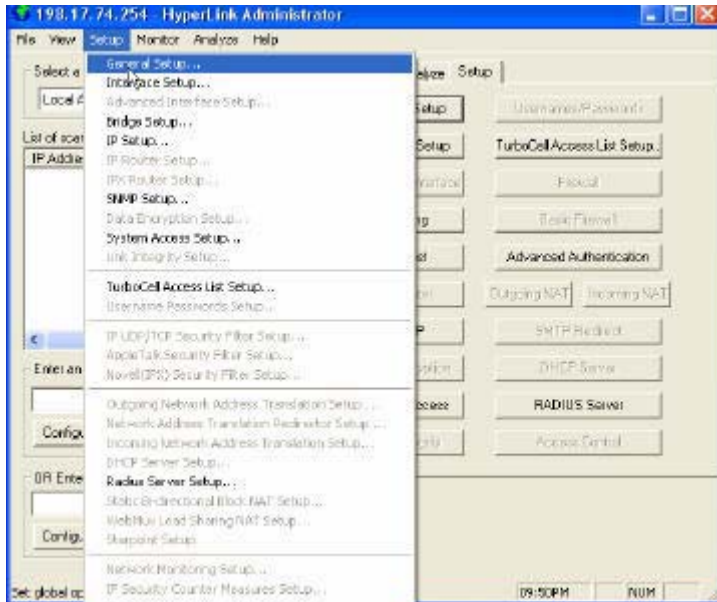


Once the screen pops up that Configuration has been Read- Click OK



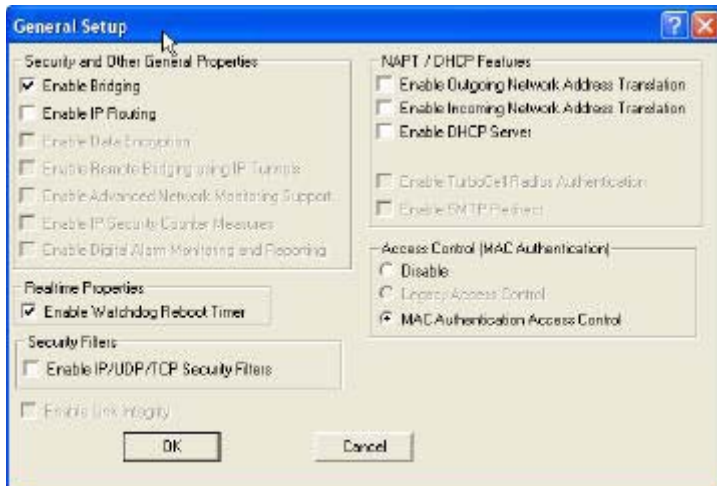
## Configure Router Parameters

Click on Setup – General Setup or Click Setup Tab on the right of Window and General Setup



### For Basic Bridging, the default parameters should be OK:

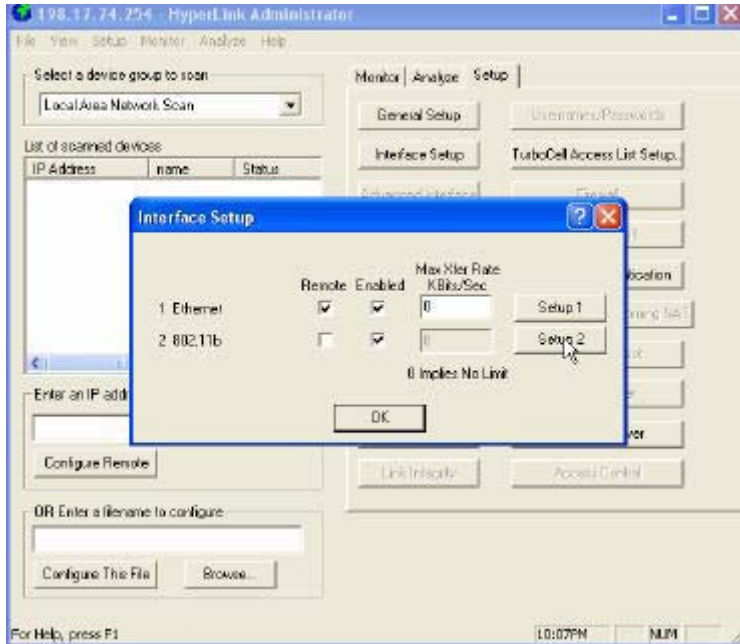
Enable Bridging, Enable Watchdog Reboot Timer (unit will reboot if there is not activity for long period of time) and MAC Authentication (security)



Click on OK to accept these parameters.

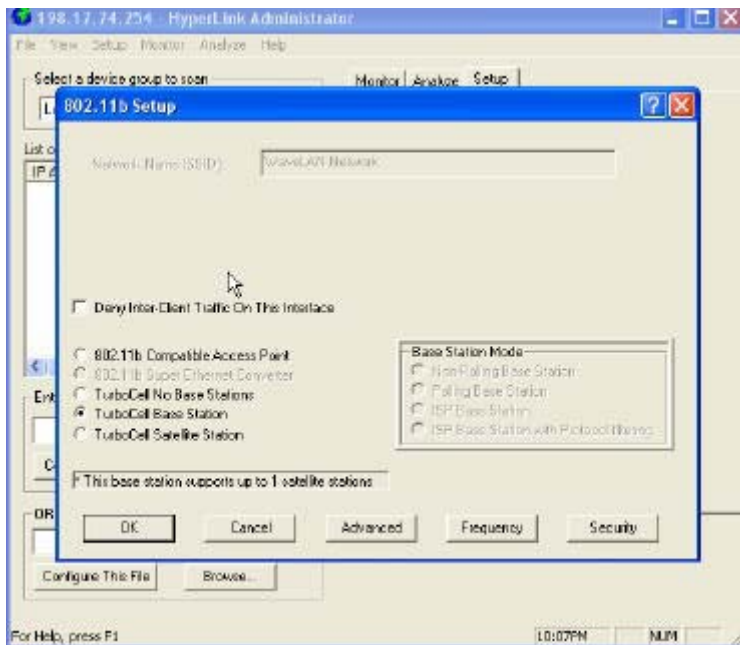
**Interface Setup**

Click on Setup – Interface Setup or the Tab on the right – Interface Setup. The Ethernet port by default is select as Remote and Enable. Click on Setup 2 (802.11b radio interface)

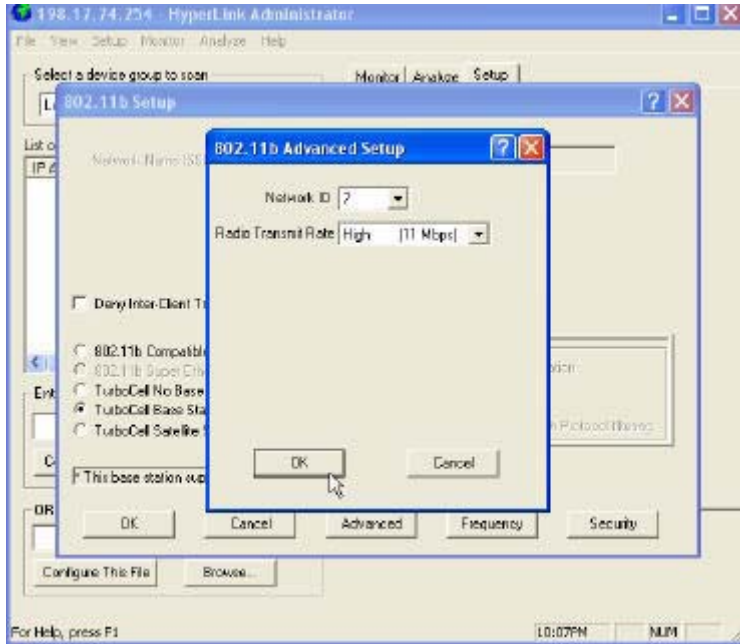


**Select the function of unit** – One must be Base Station (does the polling) and second unit must be Satellite Station (responds to polling).

In a multipoint application, there is one Base Station and all the remotes must be configured as Satellite Stations.

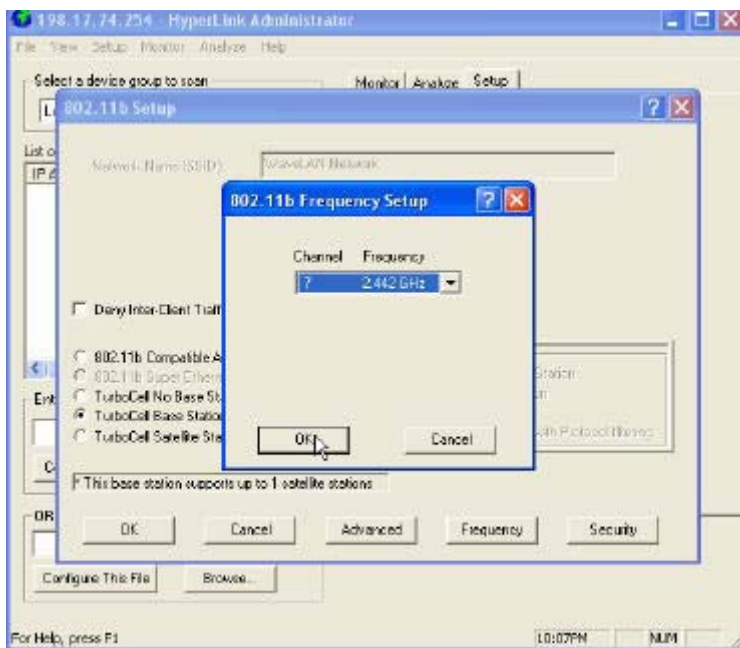


Click on **Advanced**, Select a network ID and the maximum modulation rate you want the radio to operate (higher speeds of 11 Mbps require better signal quality.) Click on OK to accept changes



**Configure the Operating Frequency**

Click on Frequency, Select a Channel. Select an authorized frequency channel based upon the specific antenna used from the table in Appendix B. Click on OK to accept changes

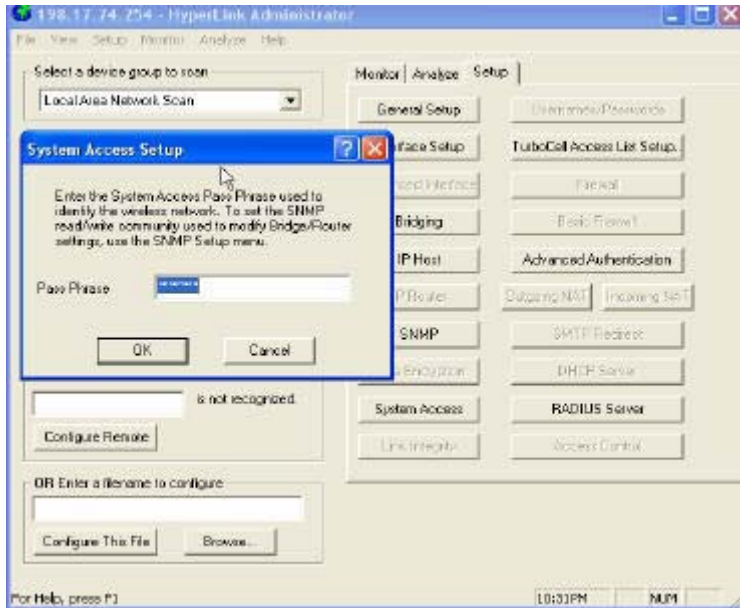


**Security Settings**

You could Click next on Security and select encryption at this time (Not required for basic configuration, implies 15-20% lower performance).

Click on OK to accept changes and return to Main Menu.

13. Click on Setup – System Access setup (or the Tab), select same Pass Phrase for all the units on your system. Click OK to accept changes.



With this configuration, you should be able to communicate between the 2 units. You could select TurboCell Access List to improve security (MAC address of unit allowed to communicate and Bandwidth Control)

### Saving the Configuration Settings

Please save your configuration changes, File , Save Config



Accept Yes to Save to the Unit with the IP you have assigned, it would take few seconds and Unit will Reboot.



### Appendix A: Minimum Separation Distance (cm)

Antenna Model	Gain (dBi)	Amplifier Power Rating (dB)							Card Alone
		29.6	29	28	27	26	20	16	15.5
HG2401U	1	9.6	8.9	8.0	7.1	6.3	3.2	2.0	2.1
HG2402RD	2	10.7	10.0	8.9	8.0	7.1	3.6	2.2	2.4
HG2403RD	3	12.0	11.2	10.0	8.9	8.0	4.0	2.5	2.4
HG2403UR	3	12.0	11.2	10.0	8.9	8.0	4.0	2.5	2.4
HG2404CU	3	12.0	11.2	10.0	8.9	8.0	4.0	2.5	3.0
HGV-2404U	4	13.5	12.6	11.2	10.0	8.9	4.5	2.8	3.0
HG2405RD	5	15.1	14.1	12.6	11.2	10.0	5.0	3.2	3.0
RE05E	5	15.1	14.1	12.6	11.2	10.0	5.0	3.2	3.0
RE05U	5	15.1	14.1	12.6	11.2	10.0	5.0	3.2	3.0
HG2405	5	15.1	14.1	12.6	11.2	10.0	5.0	3.2	-
HGV-2406U	6	17.0	15.9	14.1	12.6	11.2	5.6	3.6	-
HG2406U	6	17.0	15.9	14.1	12.6	11.2	5.6	3.6	-
HG2407U	7	N/A	17.8	15.9	14.1	12.6	6.3	4.0	-
HG2408U	8	N/A	20.0	17.8	15.9	14.1	7.1	4.5	-
HG2409U	8.5	N/A	N/A	18.9	16.8	15.0	7.5	4.7	-
HGV-2409U	8.5	N/A	N/A	18.9	16.8	15.0	7.5	4.7	-
HG2410U	10	N/A	N/A	22.4	20.0	17.8	8.9	5.6	-
HG2412U	12	N/A	N/A	N/A	25.1	22.4	11.2	7.1	-
HG2415U-PRO	15	N/A	N/A	N/A	N/A	31.7	15.9	10.0	-

Configurations in **BLACK** Can be used in either **MOBILE OR FIXED MOUNTED** Installations

Configurations in **RED** can only be used in **FIXED MOUNTED** Installations

Configurations with N/A are not permissible, via. FCC 15.247(b)(4)(i)

Appendix B

Note: XXX stands for the amplifier power rating labeled in mW (see below)

**FCC / IC Compliant Configurations - Channels of Operation**

Antenna Model	Antenna Type	Gain (dBi)	Amplifier Power Rating										Card Alone
			1000	800	630	500	400	100	40	(mW) - as labeled (dBm)			
HG2401U	1	1	29.6	29	28	27	26	20	16	15.5	15.5	15.5	15.5
HG2402RD	2	2	6	6	6	6	6	6	6	6	6	6	1-11
HG2403RD	3	3	6	6	6	6	6	6	6	6	6	6	1-11
HG2403UR	3	3	6	6	6	6	6	6	6	6	6	6	1-11
HG2404CU	4	4	6	6	6	6	6	6	6	6	6	6	1-11
HGV-2404U	4	4	6	6	6	6	6	6	6	6	6	6	1-11
HG2405RD	5	5	6	6	6	6	6	6	6	6	6	6	1-11
RE05E	5	5	6	6	6	6	6	6	6	6	6	6	1-11
RE05U	5	5	6	6	6	6	6	6	6	6	6	6	1-11
HG2405	5	5	6	6	6	6	6	6	6	6	6	6	-
HGV-2406U	6	6	6	6	6	6	6	6	6	6	6	6	-
HG2406U	6	6	6	6	6	6	6	6	6	6	6	6	-
HG2407U	7	7	N/A	6	6	6	6	6	6	6	6	6	-
HG2408U	8	8	N/A	6	6	6	6	6	6	6	6	6	-
HG2409U	8.5	8.5	N/A	N/A	6	6	6	6	6	6	6	6	-
HGV-2409U	8.5	8.5	N/A	N/A	6	6	6	6	6	6	6	6	-
HG2410U	10	10	N/A	N/A	6	6	6	6	6	6	6	6	-
HG2412U	12	12	N/A	N/A	N/A	6	6	6	6	6	6	6	-
HG2415U-PRO	15	15	N/A	N/A	N/A	N/A	N/A	6	6	6	6	6	-

**Configurations in BLACK can be used in either MOBILE OR FIXED MOUNTED Installations (FILTER REQUIRED)**  
**Configurations in BLUE can be used in either MOBILE OR FIXED MOUNTED Installations (NO FILTER REQUIRED)**  
**Configurations in RED can only be used in FIXED MOUNTED Installations (FILTER REQUIRED)**

Configurations with N/A are NOT PERMISSIBLE, via FCC 15.247(b)(4)(i)

Configurations with "-" are NOT PERMISSIBLE as they do not meet the FCC Part 15 restricted band limits

Channel	Frequency (MHz)
1	2412
2	2417
3	2422
4	2427
5	2432
6	2437
7	2442
8	2447
9	2452
10	2457
11	2462

### Important Information

Your wireless system has been installed and configured by an RF professional to comply with FCC Part 15 regulations. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the installation and configuration manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the end user will be required to correct the interference at their own expense.

Modifications to this system including changing the antenna, power setting or transmit channel may result in a non-compliant system, and should only be undertaken by professional installers after reading the Installation Guide for this system.

For further information contact:

Hyperlink Technologies  
Technical Support Dept.  
1201 Clint Moore Road  
Boca Raton, FL 33487  
Email: support@hyperlinktech.com

### SAFETY NOTICE

**This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment when installed as directed. When this device is installed as a fixed-mount application there is a minimum required separation distance of one (1) meter between the antenna and all persons during normal operation. For mobile mounted antennas, the required separation distance is a minimum of twenty (20) cm between the antenna and all persons during normal use.**

Installer: Please post this notice in a prominent location near the transmitter.