

Quick Installation Guide

Multiband Dual Radio V3



Package Contents:

- Multiband Dual Radio v3
- Mounting Bracket (Include: 2 stainless & steel U-Bolt, 1 Bracket and 4 screw nuts)
- 100-240VAC – 48VDC, 350 mA PoE Injector
- Power Cable
- RJ45 Waterproof Connector System
- CD-ROM



1 . Hardware Installation

Warnings

- Do not work on the system or connect or disconnect cables during periods of lightning activity.
- **NETKROM shall not be liable for incidental or consequential damages resulting from the furnishing, performance, or use of this manual.**
- Do not locate the antenna near overhead power lines or other electric light or power circuits, or where it can come into contact with such circuits. When installing the antenna, take extreme care not to come into contact with such circuits, as they may cause serious injury or death.
- Only trained and qualified personnel should be allowed to install, replace, or service this equipment.
- To meet regulatory restrictions, the radio and the external antenna must be professionally installed. The network administrator or other IT professional responsible for installing and configuring the unit must be a suitable professional installer. Following installation, access to the unit should be password protected by the network administrator to maintain regulatory compliance.
- The Multiband Dual Radio and PoE injector can be damaged by incorrect power application. Read and carefully follow the installation instructions before connecting the system to its power source.

Package contents

Take a moment to ensure you have all of the following parts in your Outdoor Waterproof Unit installation kit before you begin installing the product. If any parts are missing, please contact your local vendor or contact us, please see the contact information in [Section 6](#).



Setup Requirements

Before starting, please verify that the following is available:

- CAT5/5e or FTP Outdoor Ethernet cable (from the Multiband Dual Radio to PoE Injector)
- At least one computer is installed with the NNMS and a wired or wireless network interface adapter
- TCP/IP protocol is installed and IP address parameters are properly configured on all your network's nodes

Important!

- Configure and verify the Multiband Dual Radio operations first before you mount the unit in a remote location.
- You may need to install a lightning arrestor to protect your Multiband Dual Radio from lightning.
- For choosing the best location for your Multiband Dual Radio choose an elevated location where trees, buildings and large steel structures will not obstruct the antenna signals and which offers maximum line-of-sight propagation with the users.
- Select an appropriate antenna to improve range and/or coverage. The Multiband Dual Radio also lets you fine-tune parameters such as the transmit power to achieve the best results.

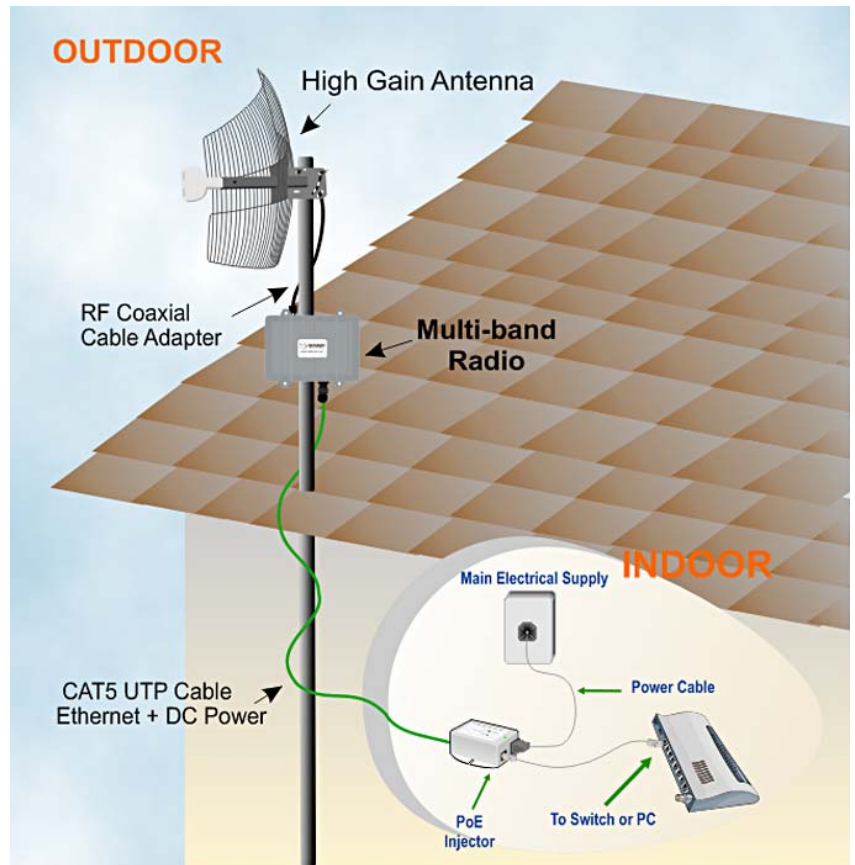


Dual Radio Installation

Step 1:

Connect your UTP or FTP Outdoor cat.5 Ethernet cable with waterproof connector to the RJ-45 connector on the Multiband Dual Radio. Then connect the other end of the cable to the PoE injector.

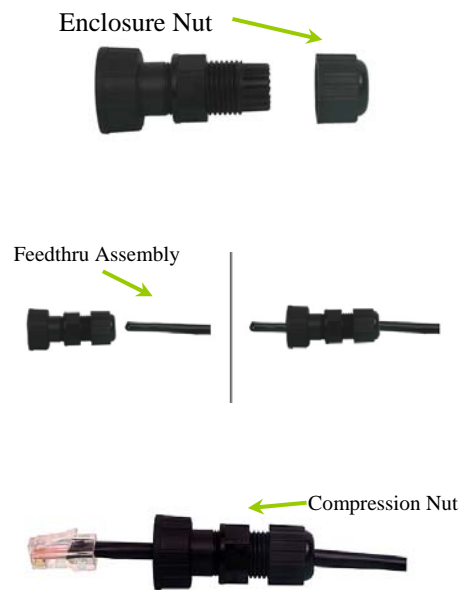
For the Netkrom PoE, the recommended length of the RJ45 Category 5 cable is up to 260 feet or 80 meters.



1.- Remove the thin enclosure nut from the feedthru assembly. This can be discarded. Loosen the compression nut completely

2.- Insert the RJ45 connector thru the feedthru assembly

3.- Tighten the compression nut loosely feedthru assembly



4.- Screw the entire feedthru assembly into the RJ45-ECS housing which is already mounted in the enclosure. There should be a rubber gasket between the two assemblies. Tighten the feedthru assembly to create a seal.

5.- The final step is to tighten the compression nut until the gaskets are tight around the Cat5 cable. Always push the cable toward the connector while tightening to ensure good strain relief of cable to connector.

Step 2:

Connect the external antenna to the N Female connector of the Multiband Dual Radio.

Screw in the Coaxial cable connector correctly into the antenna connector (N-Female) located on the MB-ROMB case.

Make sure the former line is properly done and cover the N connectors with an insulating tape.



Step 3

From the PoE injector connect one cat.5 Ethernet cable to the radio and another cat.5 cable to a switch or PC.

Note:

The Cat.5 cable used between the Ethernet port of the PoE injector labeled with a WARNING message and the Multiband Dual Radio must be straight-through.

The Cat.5 cable used between the Ethernet port of the PoE injector labeled “Switch Hub” and the switch can be straight-through or crossover.

The Cat.5 cable used between the Ethernet port of the PoE injector labeled “Switch Hub” and a PC must be crossover.

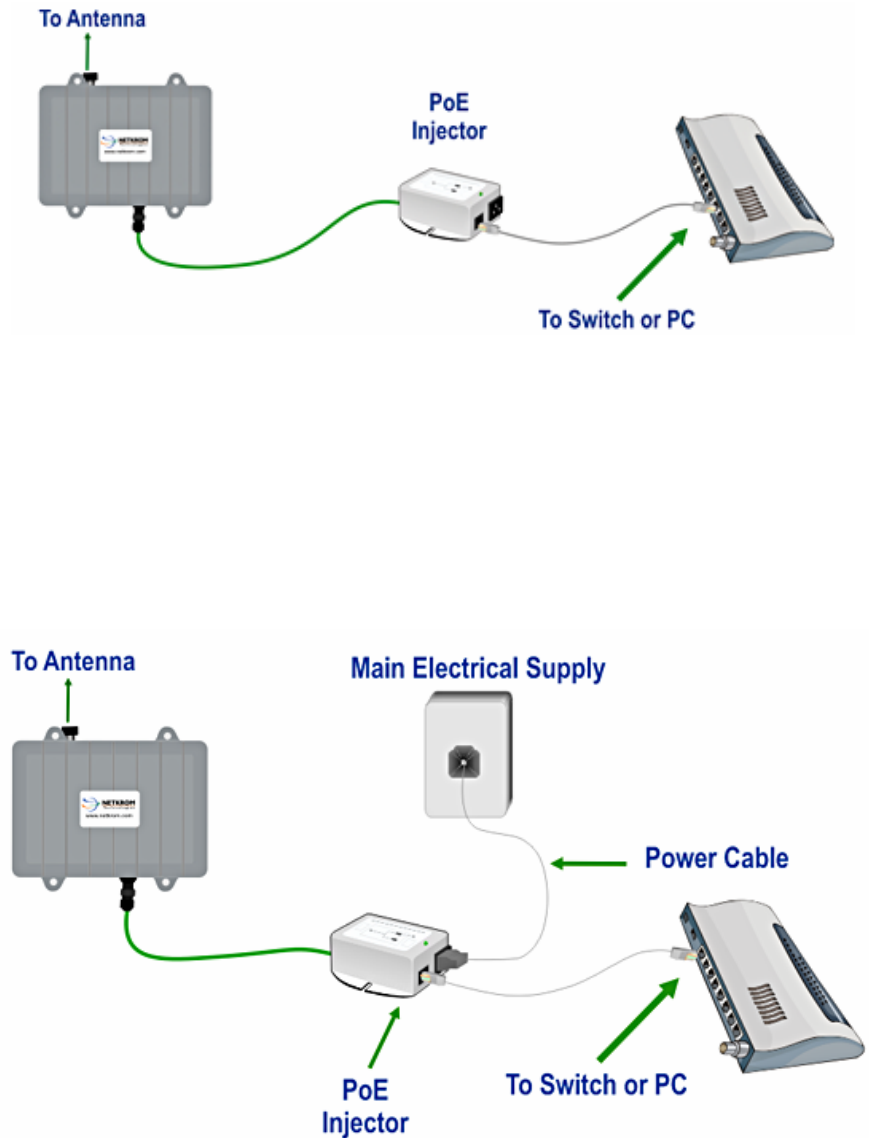
Connect the power cable supplied in the Netkrom PoE kit to the main electrical supply and the power plug into the socket of the injector.

Now, turn on your power supply. Notice that the POWER LED has lighted up.

This indicates that the access point is receiving power through the Netkrom PoE Injector and that connection between your access point and your network has been established.

Note:

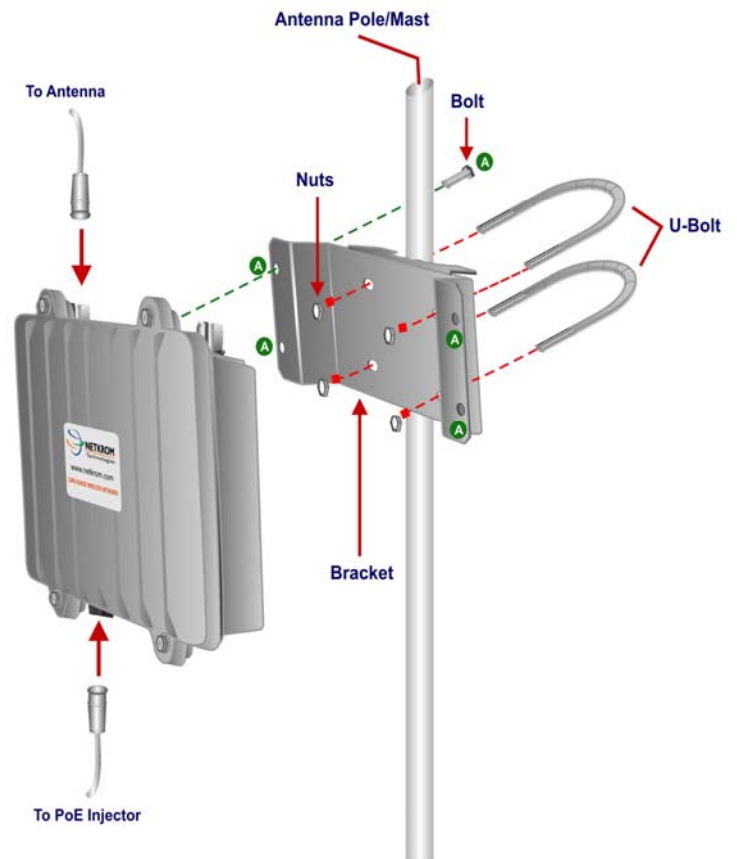
Please use the power adapter provided in the package. Using a power adapter with a different voltage rating will damage this product.



Mounting Dual Radio

Multiband Dual Radio v3 device can be mounted on the pole or tower as shown in following:

1. - Mount the bracket to the pole with the U-bolts.
2. - Attach the radio to the bracket which was mounted on the pole with the supplied nuts and U-bolts.
3. - Tighten the U-bolts and nuts with hand tools.



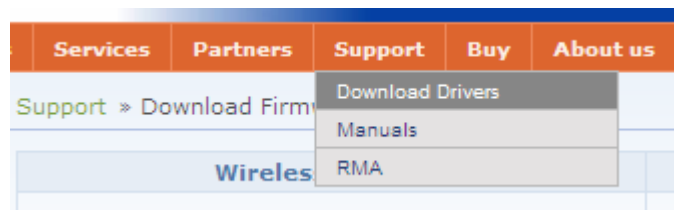
2. NETKROM NMS

NETKROM Network Management System (NMS) is a java based graphical user interface application, running on any operating system, providing ability to manage the wireless device remotely over the IP network. Its main purpose is to serve as a network tool for administrating and monitoring the wireless device. The NMS allows the user to setup all important hardware and software parameters of the device according to the user's requirements. Moreover, it has the ability to display information for data flow, device status, and event logging.

Installing The NMS

Step 1

Please visit <http://www.netkrom.com> and click on tab Support and click on Download Drivers. Download the latest version of the Netkrom Network Manager.



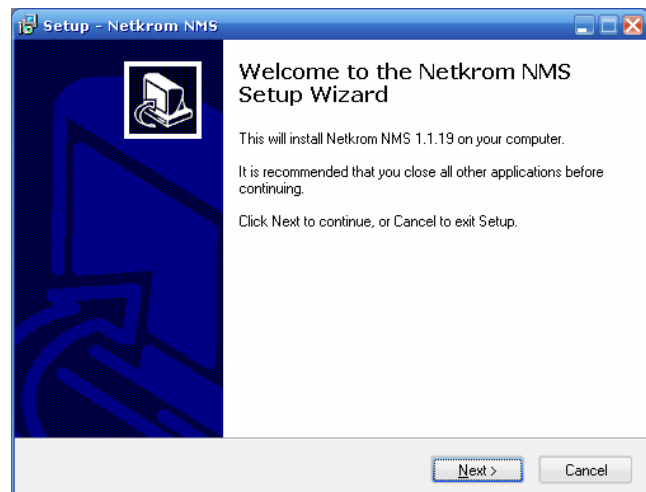
Step 2

After the download is completed, run the NMS installer.



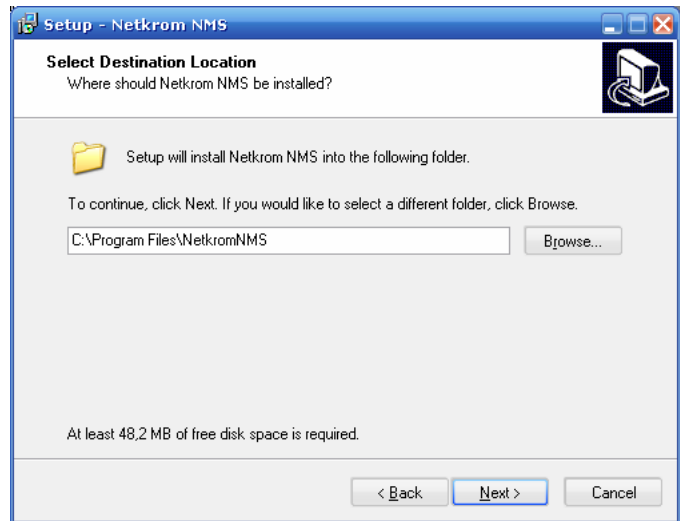
Step 3

Follow the wizard installation instructions.



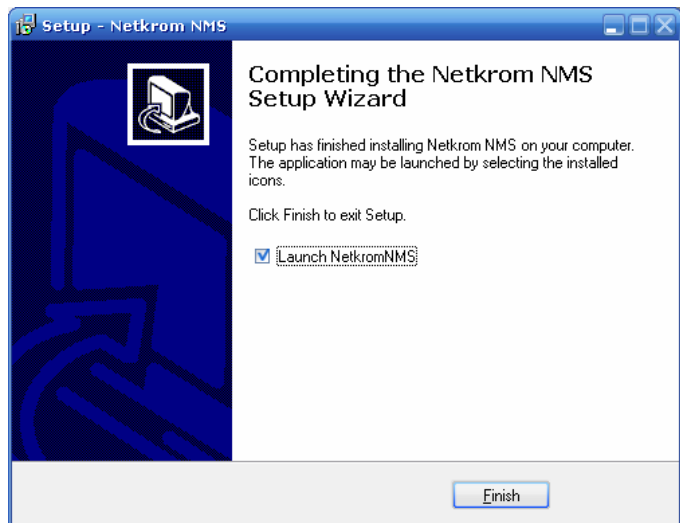
Step 4

Please select the folder the NMS application will be installed and press the next button.



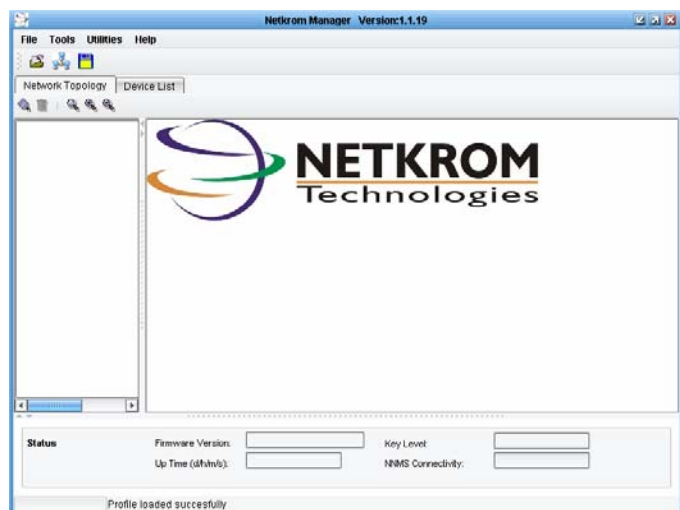
Step 5

Finally, the installation process has finished



Step 6

Now you can run the Netkrom NMS on your system.



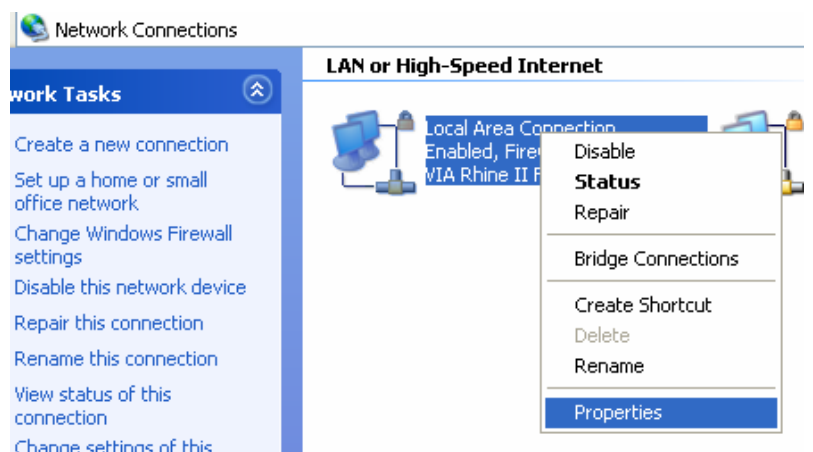
3. PC Configuration

Now you need to establish connection between your PC and the Multiband Dual Radio. You need to use the Netkrom NMS application to configure the radio, by default the Multiband Dual Radio has the IP address 192.168.1.3. Therefore, your PC must be in the same network segment as the Multiband Dual Radio is to get Ethernet connectivity.

Step 1

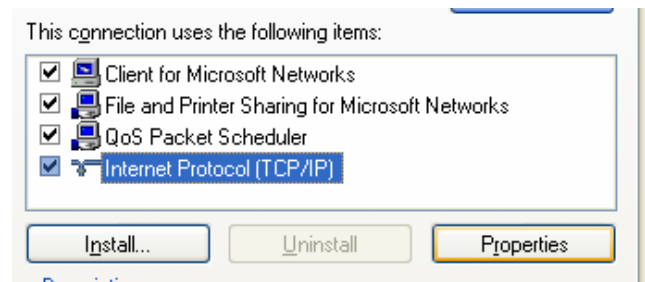
Go to Start button then go to My Network Places and finally click on Network Connections.

Right-Click over your network adapter and select Properties.



Step 2

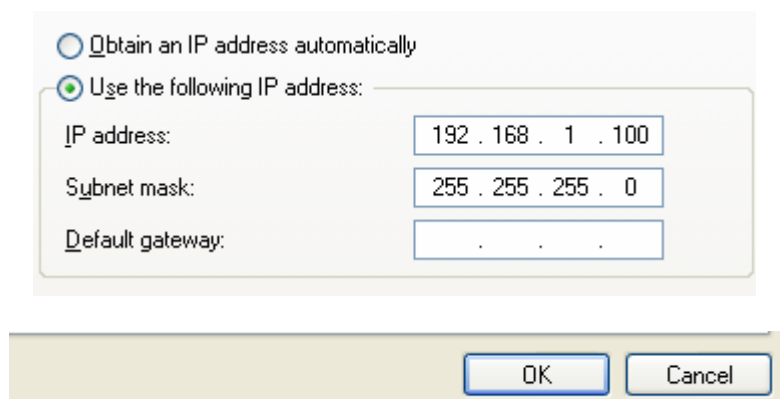
Select the Internet Protocol Option and then click in Properties.



Step 3

Now configure the IP Address of your network adapter with an IP in the same IP Network of your Multiband Dual Radios as it is shown in the picture, you don't need to assign any gateway address.

Then click in OK button and Close button.



4. Common Configurations

Find below typical and basic configurations using our units. For advanced features please refer to the user manual.

Getting Started

In order to start configuring your MB-ROMB you need to create a new node:

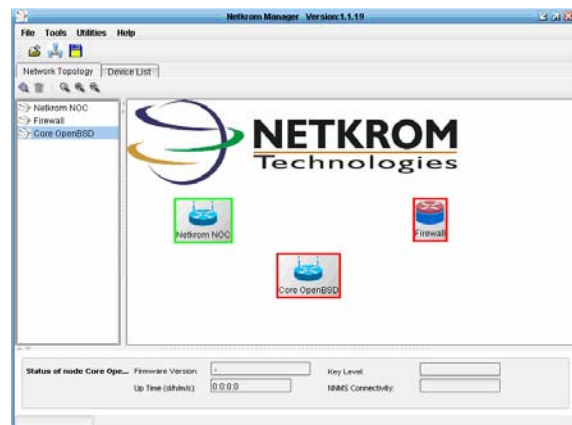
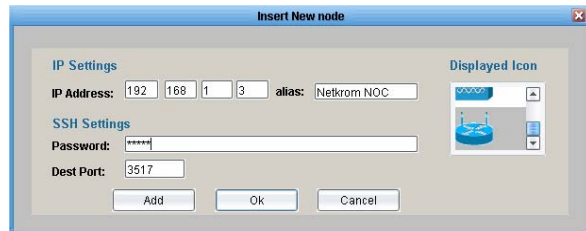
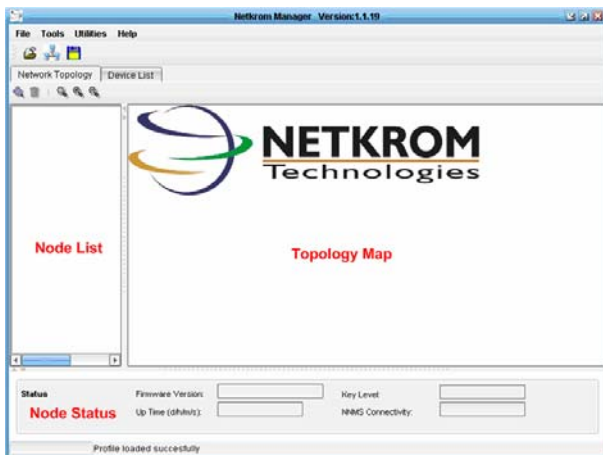
Right click anywhere in the topology map, and then click the Insert new node button.

The default IP address of the radio is: **192.168.1.3**, the default password of the radio is: **admin**, use any alias.

Make sure you have configured in your PC an IP address like 192.168.1.x with netmask 255.255.255.0 and be able to ping the IP address 192.168.1.3. Click the Add button. The icon will appear in the topology map.

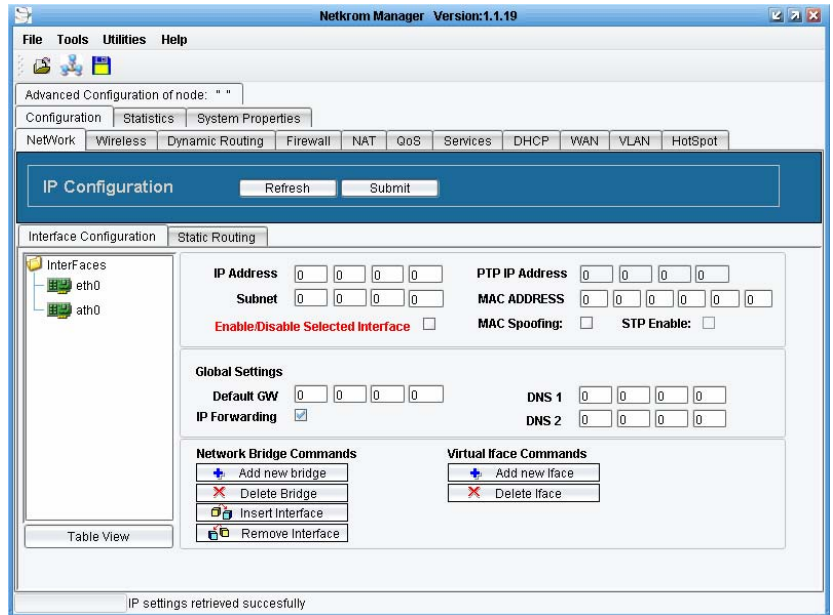
If the newly inserted node has successfully responded to a network probe, a green outline appears around the icon. A red outline indicates the node is not responding.

You can manage and configure a variety of operating parameters of network nodes from the Node Shortcut Menu, which can be accessed by giving a right click any node in the topology map and select the Advance Node Configuration option.

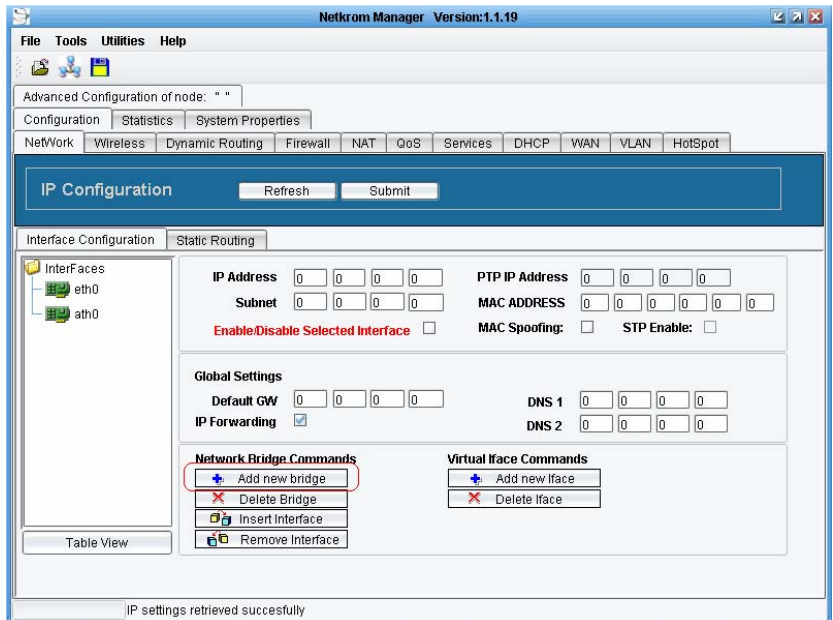


Wireless Bridge Setup

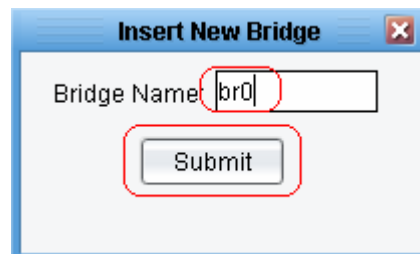
By default the Multiband Dual Radio is a router, if you want the Multiband Dual Radio to work as bridge please read this chapter. As soon as you manage to connect to your Multiband Radio you can start configuring it. Check the picture of the NMS user interface.



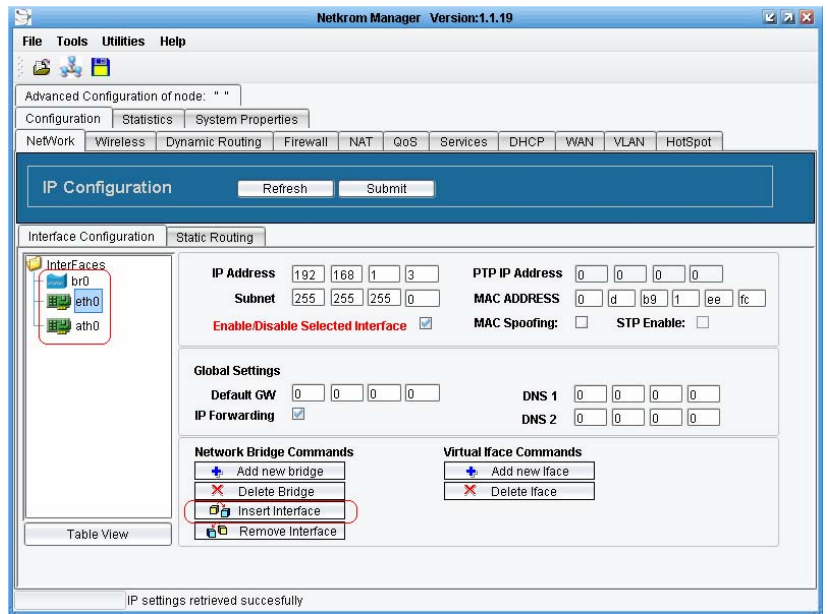
Create a new bridge clicking in the **Add new bridge** button.



Now assign a name for the bridge interface.



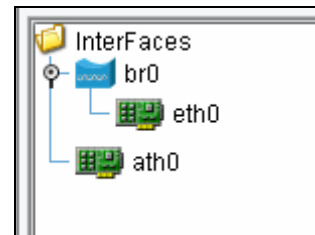
Now you need to insert the interface into the Bridge interface, select interface eth0 and click in the **Insert Interface** button.



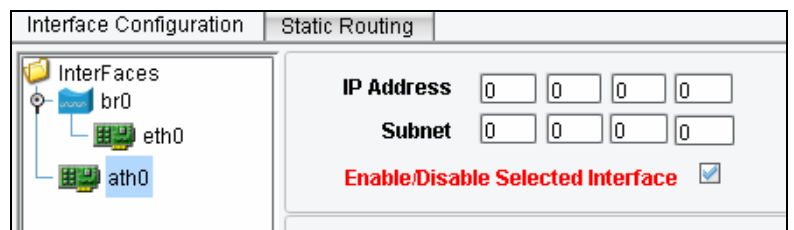
Now you need to select the bridge interface, select br0 and click in the **submit** button.



In the interfaces field you can see the eth0 interface underneath the br0 interface.

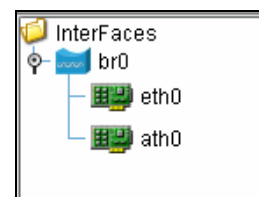


By default the wireless interface (ath0) is disabled, you need to enable the interface to be operational, select the ath0 interface and check the box **Enable/Disable Selected Interface**.



Finally, you have eth0 and ath0 underneath the bridge which means the multiband radio is a bridge.

Click in the **Submit** button and then in **Save Node Configuration** to save the changes.

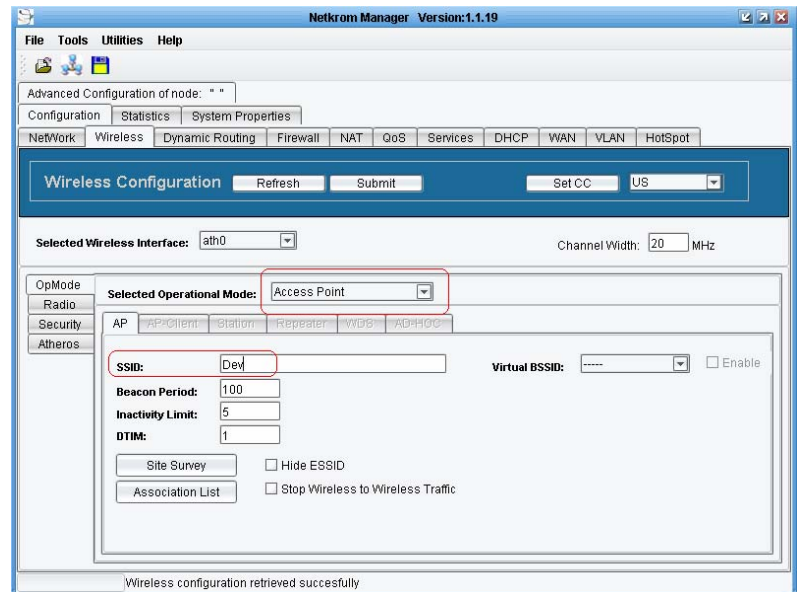
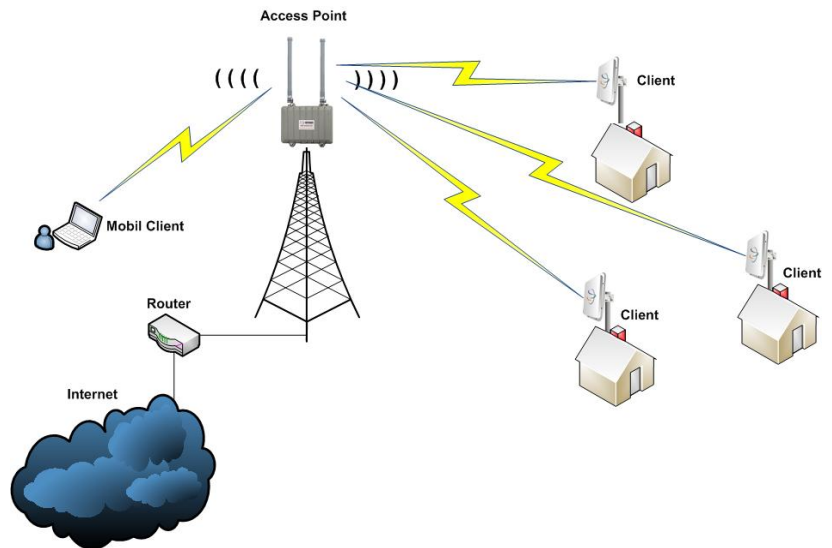


Wireless Access Point Setup

Select **Access Point** mode from the selected operational mode drop down Menu. Insert a SSID string in the SSID box as it is shown and click the Submit button.

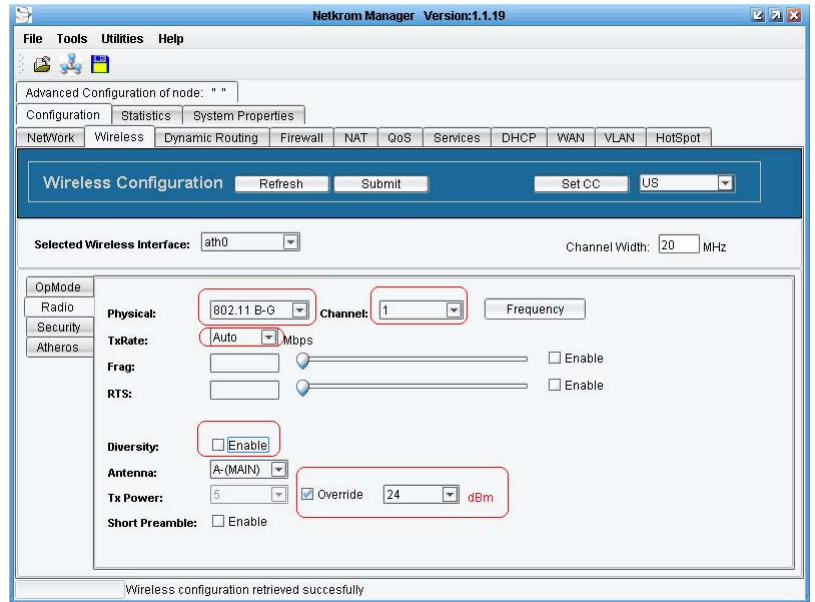
If you want to specify radio parameters go to **Radio** panel and there you can select the wi-fi standard you will use, for example 802.11a/b/g. Additionally, you can assign the channel and transmission rate.

You can change the output tx power of your multiband radio, we recommend to select the **Override** option, assign 24 dBm and disable the **Diversity** option as it is shown on the right side.



In order to take effect the changes made in the configuration, click on **Submit** button and then in **save configuration**.

In this operation mode, you can connect any wifi client to the Access Point, CPE, Access Point Client, Laptops, Wireless VoIP Phones,etc.



Wireless Point to Point & Point to Multi-Point Setup

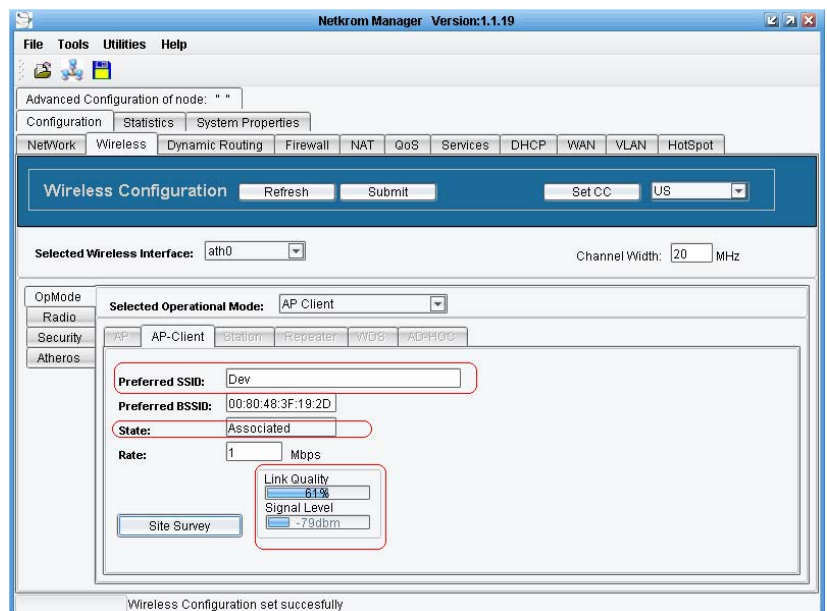
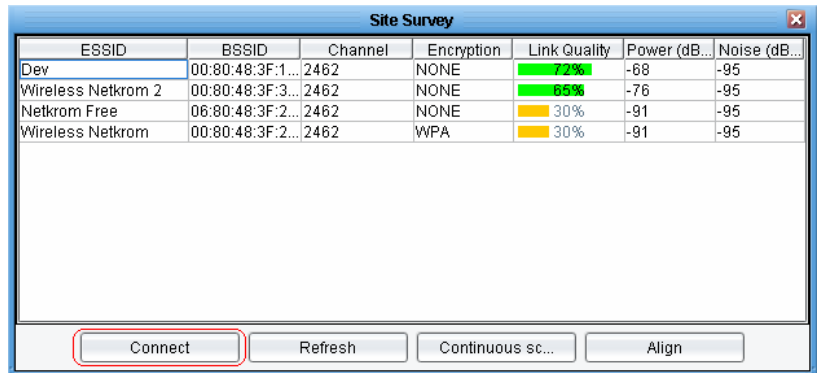
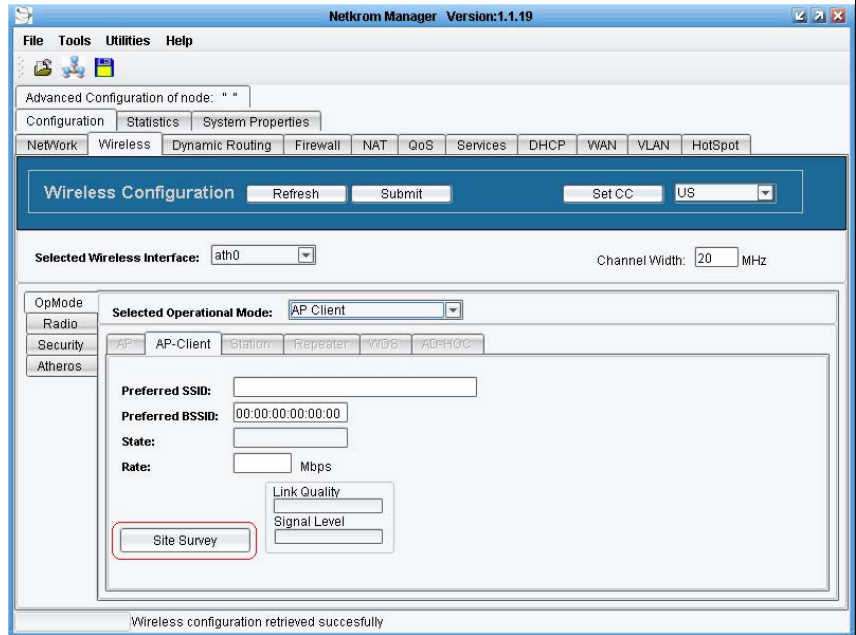
For this example you need 2 or more multiband radios or other wifi wireless devices, if you want a bridge network follow the Wireless Bridge Setup example and create the wireless bridges. Configure the 1st device to operate in Access Point Mode, please read the previous chapter.

Configure the client device to operate in Access Point Client Mode or Station Mode and perform a Site Survey.

Select **AP Client** from the Selected Operational Mode Drop Down Menu. Click the Site Survey button

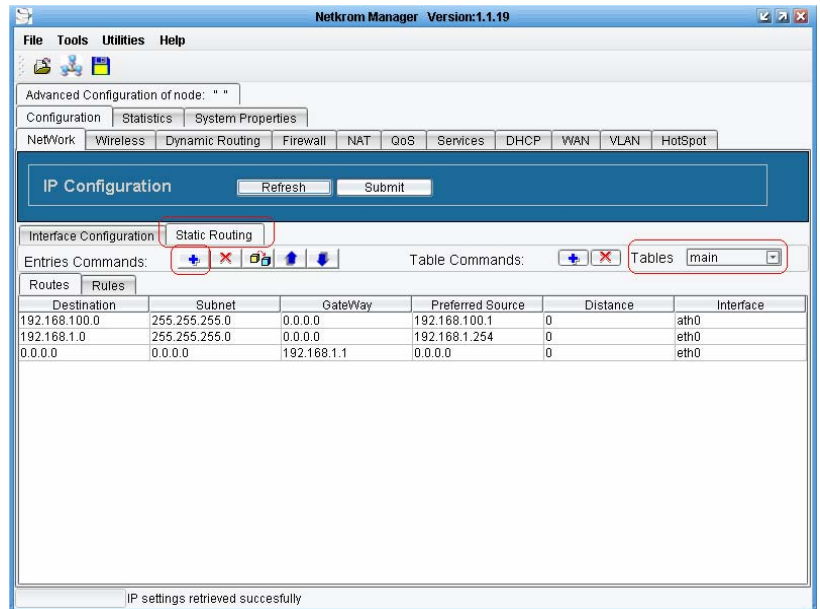
Connect with the desired Access Point. Select the desired ESSID from the Site Survey Pop-up Menu. Click the **Connect** button

As soon as the devices get connected, the connection status bar informs you about the link quality and the Signal Level.



Static IP Routing (No Bridge Mode)

To configure **Static IP Routing**, select the **Static Routing** tab, located under **Network** tab. In the **Static Routing** tab you can select the **Routes** tab or the **Rules** tab.



If you want to add static routes just click on the add symbol as shown.



In the Destination box, type the destination network or destination host address, in the Subnet box, type the netmask for the destination net. (255.255.255.255 for a host destination and 0.0.0.0 for the default route), in the Default Gateway box, type the gateway address (if required), In the Interface drop down list, select the interface to which packets for this route will be sent. To accept your settings, click the Insert New Route dialog Submit button, then click the IP Configuration pane Submit button to complete the process.

The 'Insert New Route' dialog box contains the following fields:

- Destination:** 192 | 168 | 60 | 0
- Subnet:** 255 | 255 | 255 | 0
- Default Gateway:** 10 | 0 | 0 | 2
- Preferred Source:** 0 | 0 | 0 | 0
- Distance:** 0
- Interface:** ath0

Submit

5. Advanced Configuration

1. - **Configuring VLANs:** Please go to page 43 of User Manual.
2. - **Advanced Routing Configuration:** Please go to page 46 of User Manual.
3. - **Advanced Wireless Configuration:** Please go to page 64 of User Manual.
4. - **Wireless Security Settings:** Please go to page 67 of User Manual.
5. - **Configuring Atheros Advanced Capabilities:** Please go to page 71 of User Manual.
6. - **Dynamic Routing:** Please go to page 78 of User Manual.
7. - **Firewall and NAT:** Please go to page 82 of User Manual.
8. - **DHCP Server, Client, Relay:** Please go to page 96 of User Manual.
9. - **Quality of Service:** Please go to page 108 of User Manual.
10. - **Hotspot:** Please go to page 130 of User Manual.

6. Congratulations

With these basics steps you can enjoy your wireless link without problems, please for more information about the capabilities and advance configuration of our product please see the user manual.

Contact Information

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