

Intuicom®

EB-3 PLUS™

**HIGH-SPEED IP/ETHERNET
DATALINK**

Quick Start Guide

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FCC Notification

This device complies with part 15 of the FCC rules. 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. This device must be operated as supplied by Intuicom, Inc. Any changes or modifications made to the device without the express written approval of Intuicom, Inc. may void the user's authority to operate the device.

CAUTION: The model number FIP1-900N3B-E has a maximum transmitted output power of 871mW. It is recommended that the transmit antenna be kept at least 23 cm away from nearby persons to satisfy FCC RF exposure requirements.

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 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.

Note: Whenever any Intuicom, Inc. module is placed inside an enclosure a label must be placed on the outside of that enclosure which includes the module's FCC ID.

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1 Overview

This guide provides the necessary steps for creation of a simple wireless network with two EB-3 Plus radios and two computers when neither computer is connected to the Internet. When Complete the network will look like the illustration below:



The steps for configuring a network are:

- Collecting Materials
- IP Addresses configuration
- Wireless network configuration
- Wireless network test

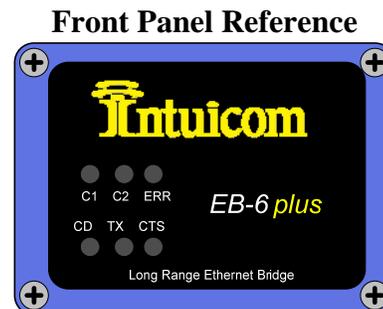
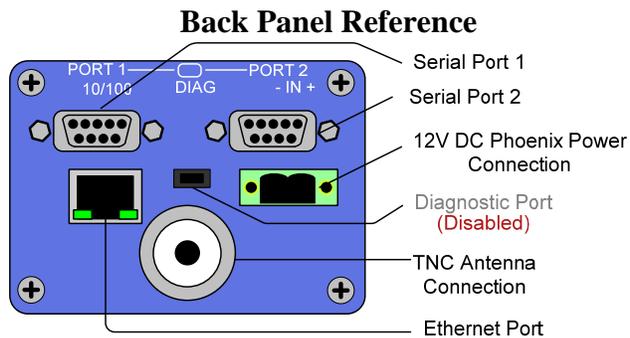
2 Collecting Materials

Materials Included:

- Two EB-3 Plus radios
- Two AC/DC converters
- Two CAT5 Ethernet cables
- Two TNC to N-Type antenna cable adapters
- Intuicom CD included with EB-3 Plus

Additional Materials Needed for Setup:

- Two PCs running Windows 98 or later.
- Web Browser (Internet Explorer 6 Recommended)
- Microsoft .Net version 1.1 Service Pack 1 or later



3 Documenting the Network

You will need to choose one radio to be the Gateway and one to be the Endpoint and document their serial numbers in the blanks below, which radio is which does not matter.

Gateway Serial Number _____

Endpoint Serial Number _____

Configuration of the network is a two step process. First the IP Address configuration must be done for both computers and both EB-3 Plus's. Second the wireless network configuration must be done.

You will need to assign a static IP Address for each computer if they do not already have one. An example assignment table of IP Addresses is given below (the gateway address in this network is ignored and has no negative impact):

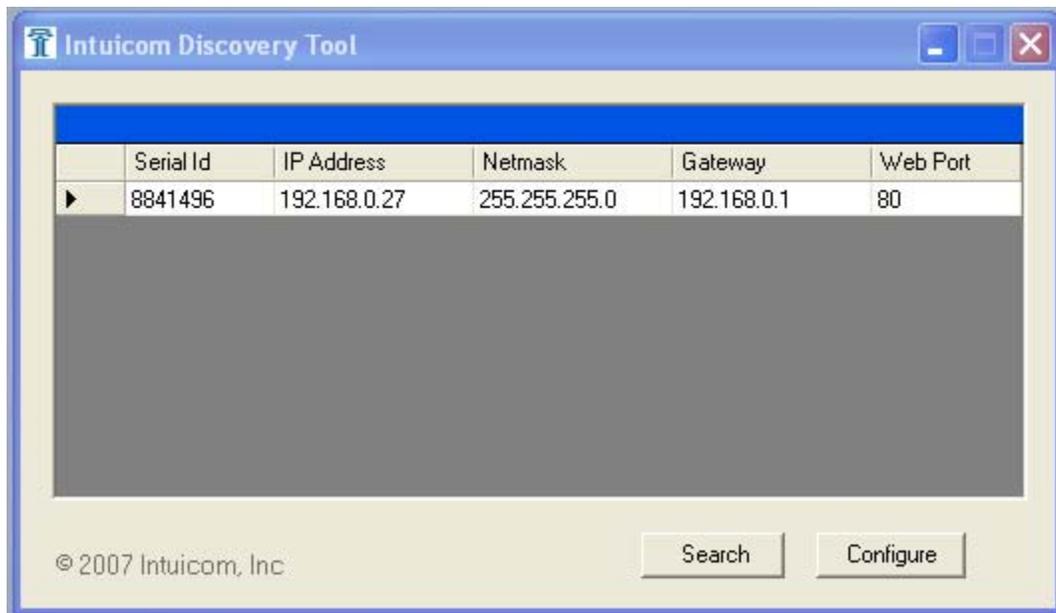
	IP Address	Subnet Mask	Gateway
Laptop A	192.168.0.11	255.255.255.0	200.200.200.200
Laptop B	192.168.0.12	255.255.255.0	200.200.200.200
EB-3 Plus Gateway	192.168.0.51	255.255.255.0	200.200.200.200
EB-3 Plus Endpoint	192.168.0.52	255.255.255.0	200.200.200.200

Assign IP Address to each computer, if you do not know how consult your Network Administrator.

4 Using Discovery Tool to Configure IP

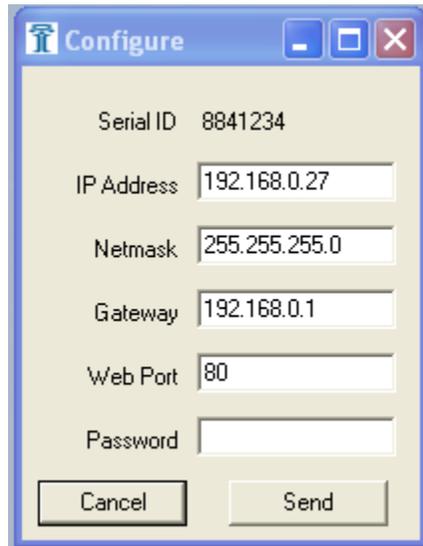
Included on the EB-3 Plus CD is a Windows program named DiscoveryTool.exe. This program will find any EB-3 Plus's that are attached to your local area network via Ethernet and any additional EB-3 Plus's that have established wireless links. The IP address of your computer and the EB-3 Plus's do not need to be known or properly configured to use the discovery tool.

1. Copy the DiscoveryTool.exe file to a convenient place such as your Desktop.
2. Start the Discovery Tool.
3. Power on your EB-3 Plus, after approximately 15 seconds it will appear within the Discovery Tool similar to what's displayed below



4. To configure an EB-3 Plus, select the appropriate row and click Configure.

5. In the following dialog enter the IP, Netmask, and Gateway information that you recorded from Table 1 in a similar fashion as displayed below. You need to supply the correct password in order to change the settings. You cannot change the password using the Discovery Tool, only the EB-3 Plus Maintenance web page allows this. The default password is “admin” (the same password needed for the EB-3 Plus web page).



The image shows a 'Configure' dialog box with the following fields and values:

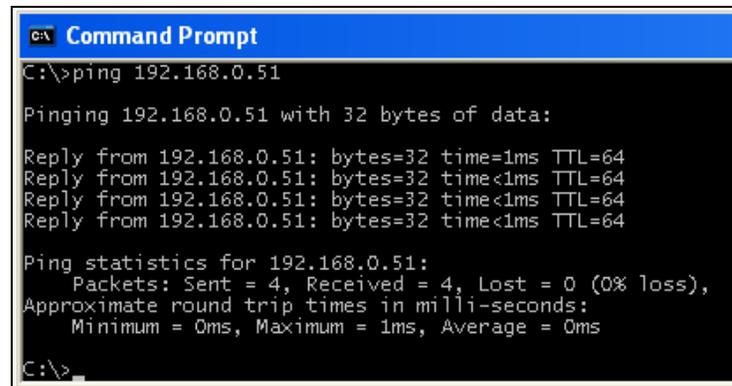
Field	Value
Serial ID	8841234
IP Address	192.168.0.27
Netmask	255.255.255.0
Gateway	192.168.0.1
Web Port	80
Password	

Buttons: Cancel, Send

6. Click the Send button to update the EB-3 Plus’s configuration. The Discovery Tool will describe in detail the rest of the update process and ask you to confirm to proceed.
7. The EB-3 Plus will initially disappear from the Discovery Tool list. Once configuration is complete it should reappear on the list (this takes approximately 20 seconds). If it does not click on the Search button to once again discover it.

5 Testing IP Configuration

1. From a command prompt ping the IP Address of the radio
2. If the radio had an assigned IP Address 192.168.0.51 you would see something like the following



```
C:\> Command Prompt
C:\>ping 192.168.0.51

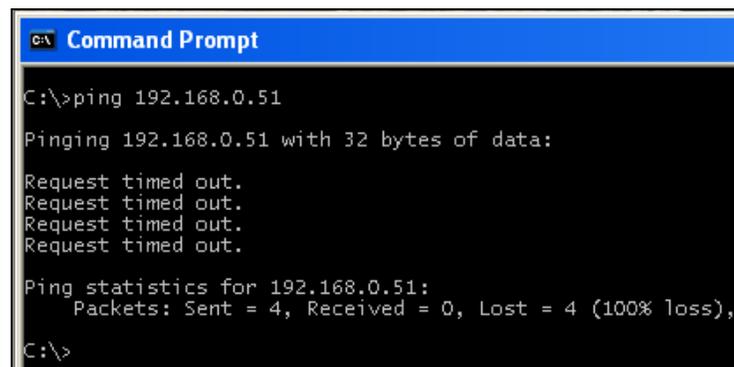
Pinging 192.168.0.51 with 32 bytes of data:

Reply from 192.168.0.51: bytes=32 time=1ms TTL=64
Reply from 192.168.0.51: bytes=32 time<1ms TTL=64
Reply from 192.168.0.51: bytes=32 time<1ms TTL=64
Reply from 192.168.0.51: bytes=32 time<1ms TTL=64

Ping statistics for 192.168.0.51:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 0ms, Maximum = 1ms, Average = 0ms

C:\>
```

3. If the IP Address of the radio was not properly set or the Ethernet cable was disconnected at any place you would see the following instead:



```
C:\> Command Prompt
C:\>ping 192.168.0.51

Pinging 192.168.0.51 with 32 bytes of data:

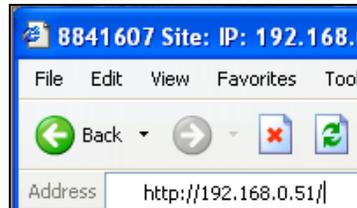
Request timed out.
Request timed out.
Request timed out.
Request timed out.

Ping statistics for 192.168.0.51:
    Packets: Sent = 4, Received = 0, Lost = 4 (100% loss),

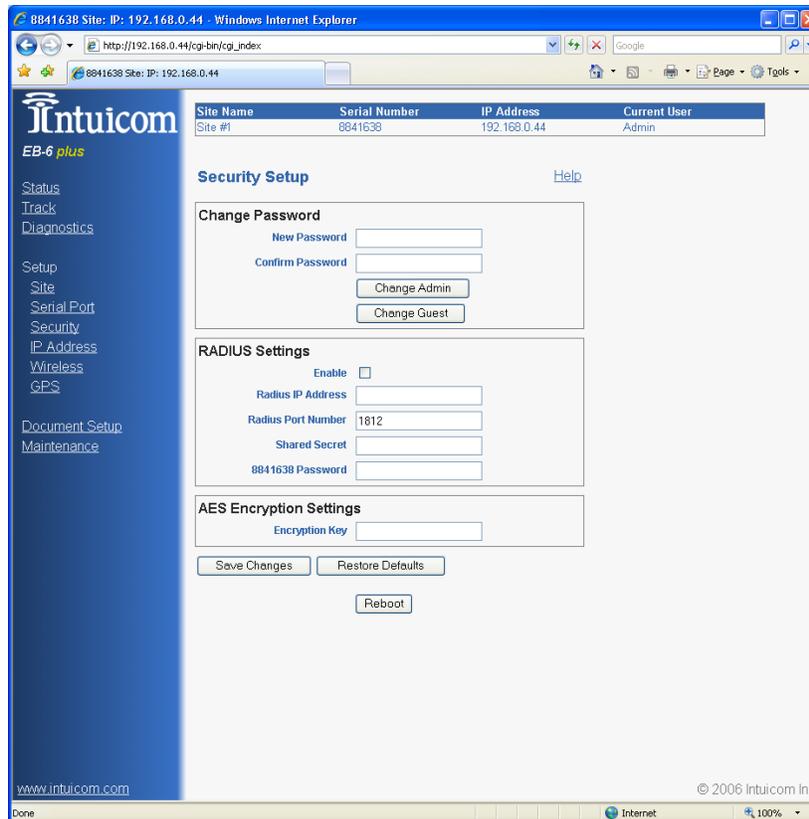
C:\>
```

6 EB-3 Plus Gateway Configuration

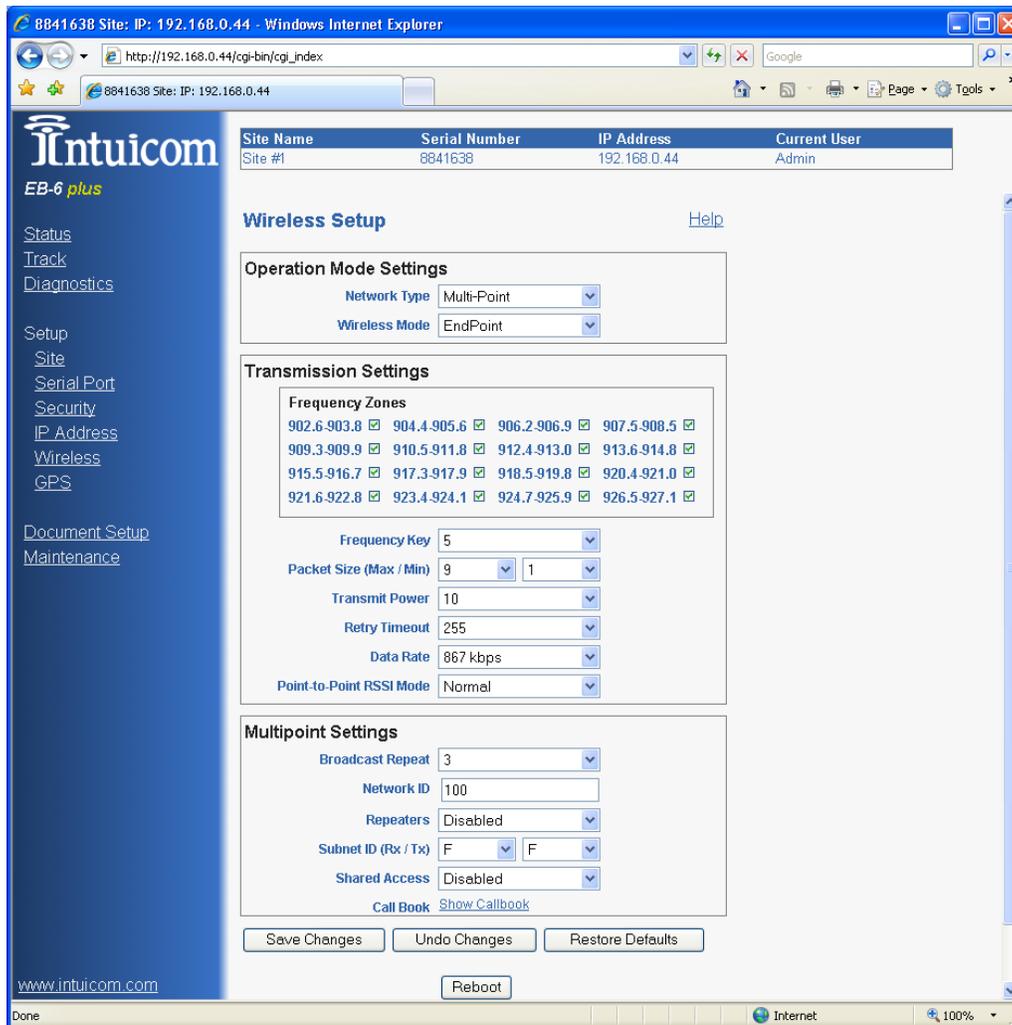
1. Connect the CAT5 Ethernet cable to the Gateway EB-3 Plus and Laptop A.
2. Power the Gateway EB-3 Plus and wait for LED's C1, C2, and ERR to not be green.
3. In your web browser's address bar enter the IP Address of the Gateway EB-3 Plus.



4. When prompted, Enter “**admin**” for user name and “**admin**” for password.
5. Change the admin password to something other than the default:
 - a. Click the **Security** link in the left column
 - b. Enter a new password and confirm it in the Change Password box
 - c. Click Change Admin



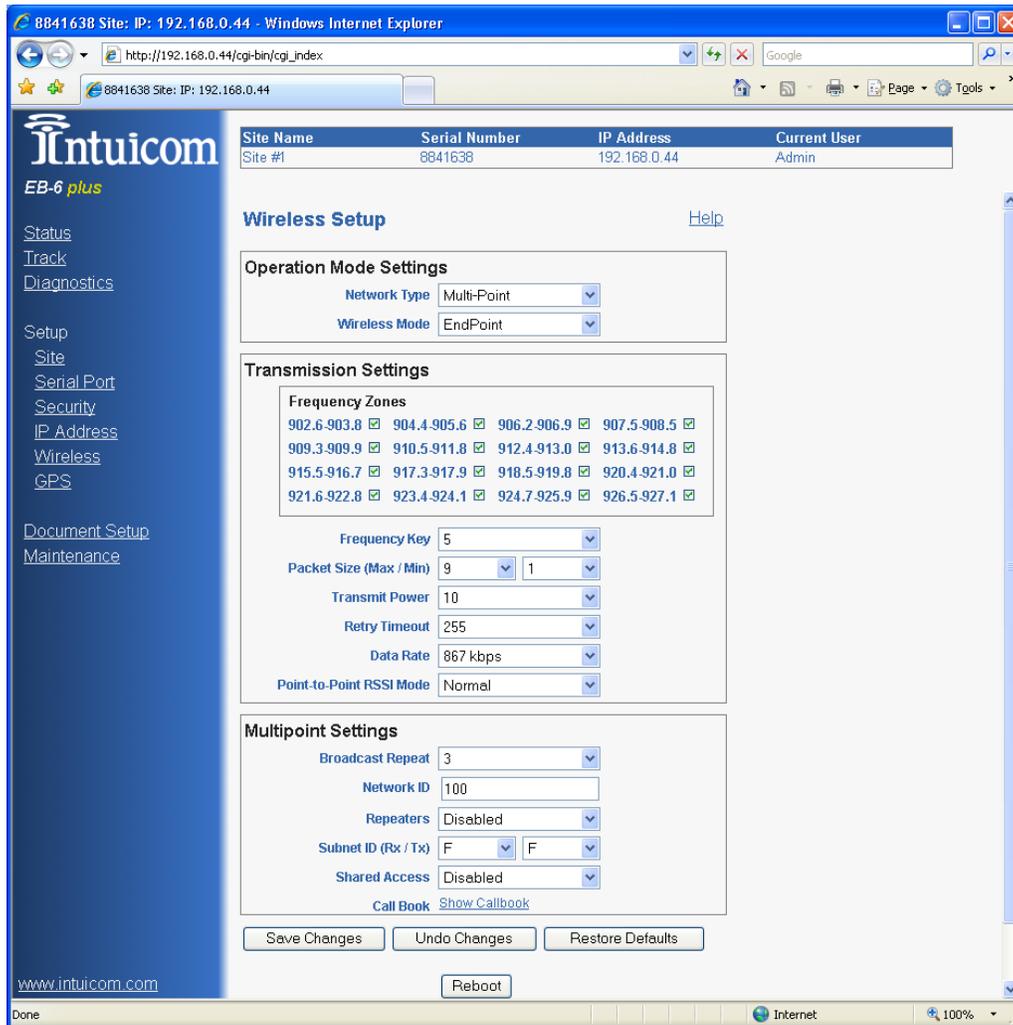
6. Change the wireless settings to make this radio the Gateway
 - a. Click the Wireless web browser link
 - b. Set Network Type to Multi-Point
 - c. Set Radio Mode to Gateway
 - d. Set Network ID to 100
 - e. Click Save Changes
 - f. Click Reboot



7 EB-3 Plus Endpoint Configuration

1. Connect the CAT5 Ethernet cable to the Endpoint EB-3 Plus and Laptop B.
2. Power the Endpoint EB-3 Plus and wait for LED's C1, C2, and ERR to not be green.
3. In your web browser's address bar enter the IP Address of the Endpoint EB-3 Plus.
4. When prompted, Enter "admin" for user name and "admin" for password.
5. Change the admin password to something other than the default:
 - a. Click the Maintenance link
 - b. Enter a new password and confirm it in the Change Password box
 - c. Click Change Admin

6. Change the wireless settings to make this radio the Gateway
 - a. Click the Wireless web browser link
 - b. Set Network Type to Multi-Point
 - c. Set Radio Mode to Endpoint
 - d. Set Network ID to 100
 - e. Click Save Changes
 - f. Click Reboot



8841638 Site: IP: 192.168.0.44 - Windows Internet Explorer

http://192.168.0.44/cgi-bin/cgi_index

8841638 Site: IP: 192.168.0.44

Intuicom
EB-6 plus

Status
Track
Diagnostics

Setup
Site
Serial Port
Security
IP Address
Wireless
GPS

Document Setup
Maintenance

www.intuicom.com

Site Name	Serial Number	IP Address	Current User
Site #1	8841638	192.168.0.44	Admin

Wireless Setup [Help](#)

Operation Mode Settings

Network Type: Multi-Point
Wireless Mode: EndPoint

Transmission Settings

Frequency Zones

902.6-903.8	904.4-905.6	906.2-906.9	907.5-908.5
909.3-909.9	910.5-911.8	912.4-913.0	913.6-914.8
915.5-916.7	917.3-917.9	918.5-919.8	920.4-921.0
921.6-922.8	923.4-924.1	924.7-925.9	926.5-927.1

Frequency Key: 5
Packet Size (Max / Min): 9 / 1
Transmit Power: 10
Retry Timeout: 255
Data Rate: 867 kbps
Point-to-Point RSSI Mode: Normal

Multipoint Settings

Broadcast Repeat: 3
Network ID: 100
Repeaters: Disabled
Subnet ID (Rx / Tx): F / F
Shared Access: Disabled

Call Book: [Show Callbook](#)

Save Changes Undo Changes Restore Defaults

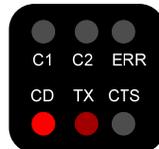
Reboot

Done Internet 100%

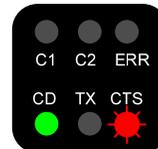
8 Verify Wireless Connection

1. After the radios have completed booting verify the LED status lights are the following:

EB-3 Plus Gateway LED's



EB-3 Plus Endpoint LED's



(CTS flashing)

2. The Endpoint's CTS light may flash depending on the strength of its wireless link, the strongest link is indicated by a solid red CTS light, a weaker link will have a flickering CTS light..
3. Ping Laptop B's IP Address from Laptop A.
4. Ping Laptop A's IP Address from Laptop B.
5. Access the EB-3 Plus Gateway web interface from Laptop B.
6. Access the EB-3 Plus Endpoint web interface from Laptop A.

9 Troubleshooting

The Endpoint ERR light is either green or red.

Attempt to correct this by power cycling the Endpoint.

If power cycling does not yield a working wireless link then it is likely a problem with the wireless configuration.

Restore the defaults of your wireless settings on both radios and then configure only:

- Network type
- Radio Mode
- Network ID

Contact Intuicom for additional assistance: support@intuicom.com, 303-449-4330

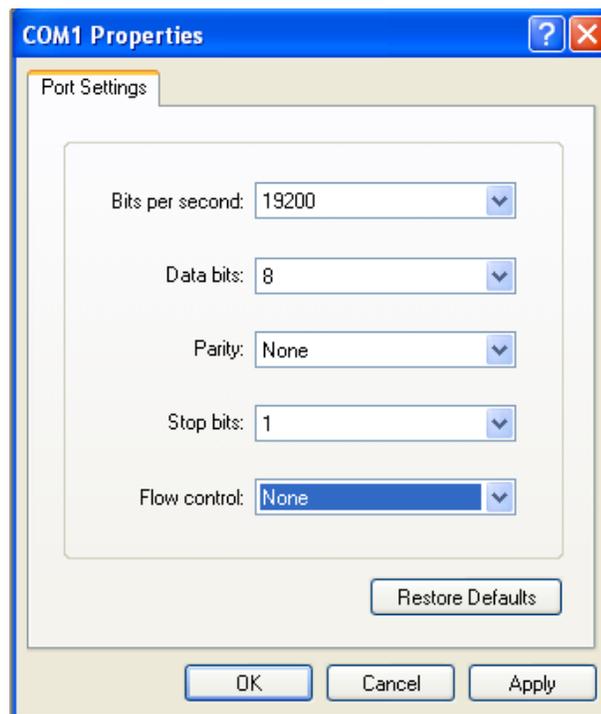
10 Appendix A – Configure IP with Serial Console

Additional Materials Needed:

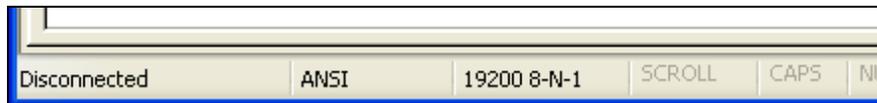
- DB9 RS-232 Serial Cable (USB to RS232 adapter for PCs without any com ports)
- HyperTerminal (Included on Windows)

Establish Serial Communications

1. EB-3 Plus IP Address assignment can also be done via the radio's PORT 1 serial interface. The Diagnostic Port is disabled.
2. Unplug power from the EB-3 Plus
3. Attach the RS-232 cable to your PC and to PORT 1 of the EB-3 Plus
4. Start HyperTerminal on your PC
5. (From the Start menu navigate to All Programs ->Accessories->Communications)
6. Enter EB-3 Plus for your HyperTerminal connection name.
7. Choose the correct com port your RS-232 cable is attached to and click OK.
8. Click OK on the Port Settings dialog.
9. Choose Disconnect from the Call menu.
10. Choose Properties from the File menu
11. Click the Configure button from the "Connect To" tab.
12. Change the Port Settings as displayed below:



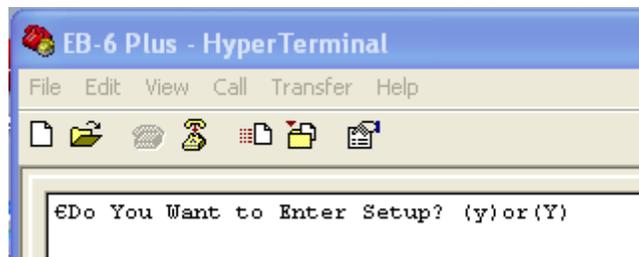
13. Click the “Settings” tab and set Emulation to ANSI
14. Click OK
15. Verify that HyperTerminal’s bottom status bar looks like:



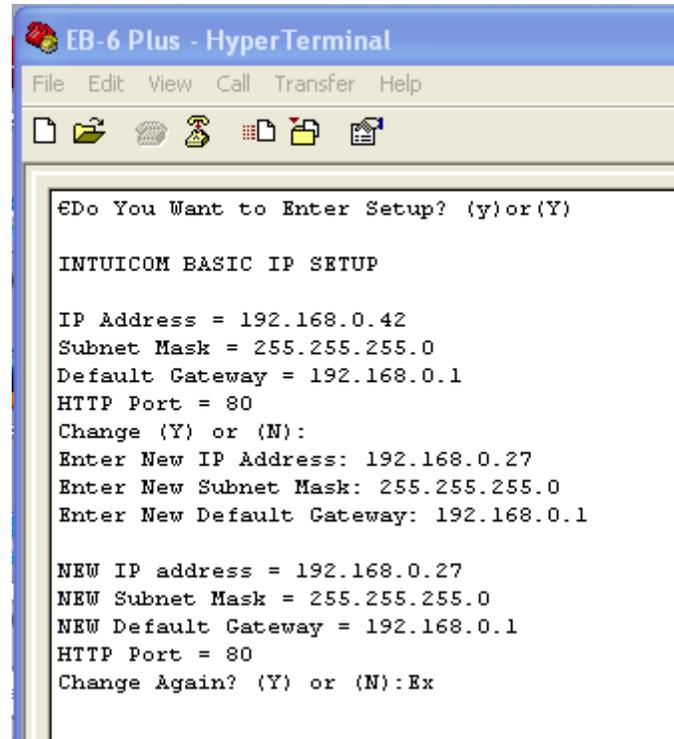
16. Choose Call from the Call menu
17. Make sure Caps Lock is off for your keyboard

Configuring IP Address

4. When prompted as displayed below to enter setup type either ‘y’ or ‘Y’ (Note, if you are not prompted then recheck your serial settings and connections):



5. Enter the IP address, Subnet Mask, and Default Gateway assigned to the radio from Table 1 in a similar fashion as displayed below



```
EB-6 Plus - HyperTerminal
File Edit View Call Transfer Help
[Icons]
eDo You Want to Enter Setup? (y)or{Y}

INTUICOM BASIC IP SETUP

IP Address = 192.168.0.42
Subnet Mask = 255.255.255.0
Default Gateway = 192.168.0.1
HTTP Port = 80
Change (Y) or (N):
Enter New IP Address: 192.168.0.27
Enter New Subnet Mask: 255.255.255.0
Enter New Default Gateway: 192.168.0.1

NEW IP address = 192.168.0.27
NEW Subnet Mask = 255.255.255.0
NEW Default Gateway = 192.168.0.1
HTTP Port = 80
Change Again? (Y) or (N):Ex
```

6. Verify the IP Address settings are correct. If not, correct the settings by typing Y when prompted to change again and reentering them, otherwise press N to commit the changes.
7. Connect the CAT5 Ethernet cable from your computer to the radio.
8. Disconnect the serial cable from both the PC and the EB-3 Plus.
9. Follow the steps outlined earlier in the manual to test the IP address and perform Gateway and Endpoint configuration.