



Application Note #5458

Diagnostics over Ethernet

December 5, 2005

Diagnostics information can be sent from an Ethernet Point-to-MultiPoint Master over an Ethernet LAN to computers running either FreeWave CommControl or Diag 2.1x. This enables the user to diagnose potential network conditions from a physical location removed from the Master location.

Radio Setup—HyperTerminal

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FreeWave1 - HyperTerminal
File Edit View Call Transfer Help
[Icons]

(Esc) Exit to Main Menu
Enter Choice b
Enter 1 to 129 Enable Diagnostics, 0 To Disable 129
MULTIPOINT PARAMETERS

(0) Number Repeaters 1
(1) Master Packet Repeat 2
(2) Max Slave Retry 9
(3) Retry Odds 9
(4) DTR Connect 0
(5) Repeater Frequency 0
(6) Network ID 1880
(7) Reserved
(8) MultiMasterSync 0
(9) 1 PPS Enable/Delay 255
(A) Slave/Repeater 0
(B) Diagnostics 129
(C) SubNet ID Disabled
(D) Radio ID Not Set
(Esc) Exit to Main Menu

Enter Choice _
```

From the Main Menu,
-Select Multipoint Parameters (Menu 5).
-Set Diagnostics (Option B) to **129**.
-Press **Esc** to return to the Main Menu.

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FreeWave1 - HyperTerminal
File Edit View Call Transfer Help
[Icons]

Ethernet/IP Radio Setup

(0) Ethernet Mode 1
(1) Half/Full Duplex 0
(2) Slave IP Stack 1
(3) Slave UDP Mode 0
(4) IP Address 192.168.1.1
(5) Port Address 0-4131
(6) IP Address 2 255.255.255.255
(7) Port Address 2 65535
(8) MAC Filter 0

Enter Choice _
```

From the Main Menu,
-Select Modem Mode (Menu 0).
-Select Ethernet Sub-Menu (Option F).
-Assign a valid IP address.
-Confirm port **4131**.
-Press **Esc** three times to return the Radio to Service



Radio Setup—EZ Config

The screenshot shows the 'EZ Config Version 2.3' application window with the 'Port Settings' tab selected. The 'Main' radio button is selected, and 'COM1' is chosen from the dropdown. The 'High Speed' checkbox is unchecked. The 'Program Radio' and 'Read From Radio' buttons are visible. The 'Serial Number' and 'FW Version' are both 'Unknown'. The 'Transmission Characteristics' tab is also visible, showing 'Set Operation Mode' selected. The 'Modem Mode' is set to '[2] Point to MultiPoint Master'. The 'Ethernet Options' section has 'Ethernet Mode' set to 'ON', 'Slave IP Stack' set to 'ON', and 'Slave UDP Mode' set to '0'. The 'Local IP Address And Port Address' field shows '192 . 168 . 1 . 1' and '4131'. The 'Power ON Reply IP Address And Port Number' field shows '255 . 255 . 255 . 255' and '4131'. The 'Duplex' is set to 'Full'.

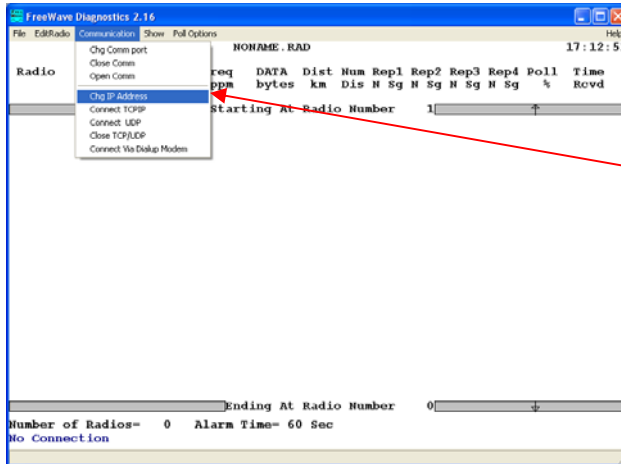
-Assign a valid IP address.

-Confirm port **4131**

The screenshot shows the 'EZ Config Version 2.3' application window with the 'MultiPoint Parameters' tab selected. The 'Set Operation Mode' is 'Transmission Characteristics'. The 'Master Packet Repeat' is set to '2', 'Max Slave Retry' is '9', 'Retry Odds' is '9', 'DTR Connect' is '0', 'Network ID' is '1880', '1 PPS Enable Delay' is '255', 'Diagnostics' is '129', and 'Radio ID' is 'Not Set'. The 'Repeater Frequency' is set to 'On', 'Multi-Master Sync' is 'Off', and 'Slave/Repeater' is 'Off'. The 'Subnet ID' is set to 'F' for both Rx and Tx. The 'FreeWave' logo is visible in the background.

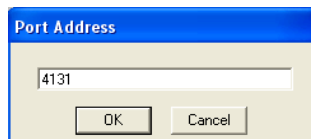
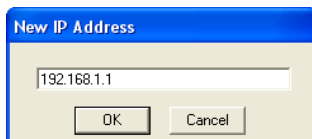
-Set Diagnostics to **129**

Diagnostics 2.1x

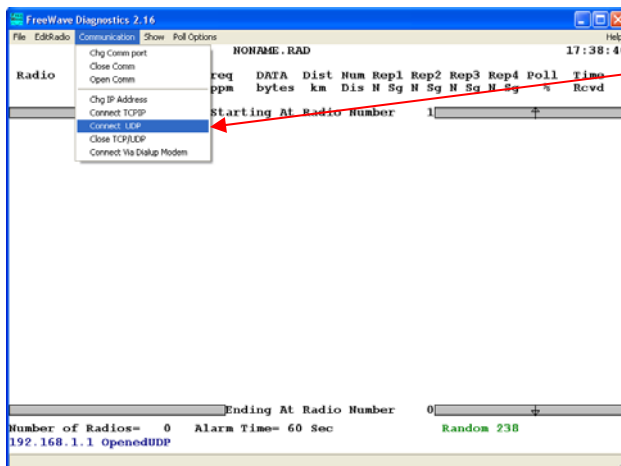


With the Master radio connected to the wired ethernet network, launch FreeWave Diagnostics version 2.1x.

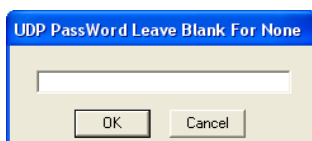
Under the Communication drop down menu, select “Chg IP Address”.



Enter the IP Address and Port Number (4131) from the Master radio.

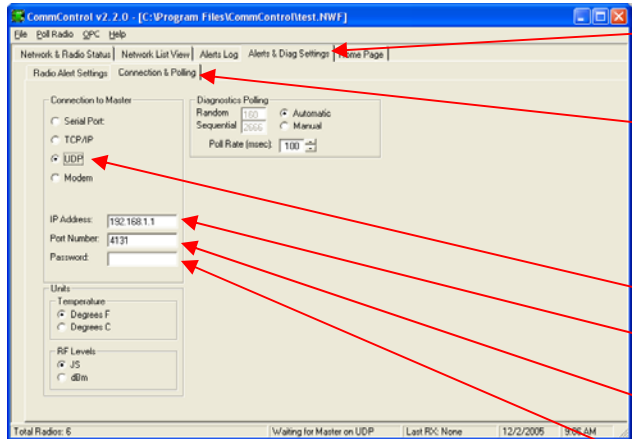


After you have set the IP Address and Port, Select “Connect UDP” from the Communications drop down Menu



The UDP password will be the same password that was used in Menu 8. If this password was not set, click “OK”. Before setting the password, consult the User’s Manual.

FreeWave CommControl



Select the **Alerts and Diag Settings** Tab

Select the **Connection & Polling** sub-Tab

In the **Connection to Master** menu,
Select **UDP**

-Enter the IP Address of the Master.

-Enter the Port Number of the Master (4131).

-Enter the password of the Master, if applicable.

****NOTE:** In some versions of CommControl, diagnostics information will not be displayed unless a password is entered. In these cases hold down the ALT key and enter 255. Release ALT key. Repeat for a total of 4 times.