



CARDINAL®

2XX-WIFI
WiPort Option Card
Installation Manual

For 200 Series Indicators

STATIC ELECTRICITY PRECAUTION



CAUTION! This device contains static sensitive circuit cards and components. Improper handling of these devices or printed circuit cards can result in damage to or destruction of the component or card. Such actual and/or consequential damage IS NOT covered under warranty and is the responsibility of the device owner. Electronic components must be handled only by qualified electronic technicians who follow the guidelines listed below:



ATTENTION! ALWAYS use a properly grounded wrist strap when handling, removing or installing electronic circuit cards or components. Make certain that the wrist strap ground lead is securely attached to an adequate ground. If you are uncertain of the quality of the ground, you should consult a licensed electrician.

ALWAYS handle printed circuit card assemblies by the outermost edges. NEVER touch the components, component leads or connectors.



ALWAYS observe warning labels on static protective bags and packaging and NEVER remove the card or component from the packaging until ready for use.

ALWAYS store and transport electronic printed circuit cards and components in anti-static protective bags or packaging.

FCC COMPLIANCE STATEMENT

This equipment generates, uses and can radiate radio frequency and if not installed and used in accordance with the instruction manual, may cause interference to radio communications. It has been tested and found to comply with the limits for a Class A computing device pursuant to Subpart J of Part 15 of FCC rules, which are designed to provide reasonable protection against such interference when operated in a commercial environment. Operation of this equipment in a residential area may cause interference in which case the user will be responsible to take whatever measures necessary to correct the interference.

You may find the booklet "How to Identify and Resolve Radio TV Interference Problems" prepared by the Federal Communications Commission helpful. It is available from the U.S. Government Printing Office, Washington, D.C. 20402, Stock No. 001-000-00315-4.

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While every precaution has been taken in the preparation of this manual, the Seller assumes no responsibility for errors or omissions. Neither is any liability assumed for damages resulting from use of the information contained herein. All instructions and diagrams have been checked for accuracy and ease of application; however, success and safety in working with tools depend to a great extent upon the individual accuracy, skill and caution. For this reason the Seller is not able to guarantee the result of any procedure contained herein. Nor can they assume responsibility for any damage to property or injury to persons occasioned from the procedures. Persons engaging the procedures do so entirely at their own risk.

SERIAL NUMBER _____
DATE OF PURCHASE _____
PURCHASED FROM _____

RETAIN THIS INFORMATION FOR FUTURE USE

INSTALLATION

Mounting the 2XX-WIFI Board (Models 205/210 & 220)

NOTE! Should your indicator come with the 2XX-WIFI board already installed, the following information describing the mounting of the board does not apply. Proceed to the Card Setup section.



ATTENTION! OBSERVE PRECAUTIONS FOR HANDLING ELECTROSTATIC SENSITIVE DEVICES

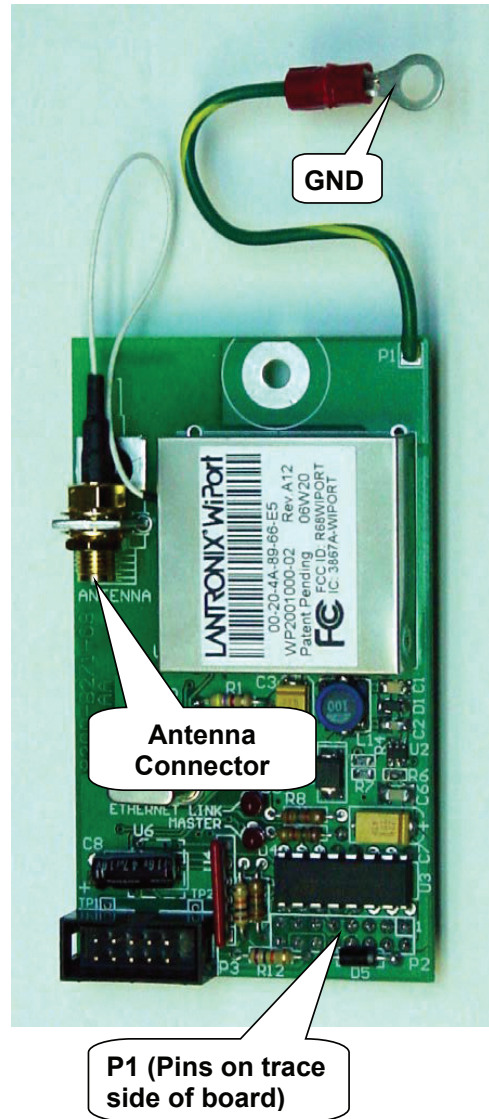
1. Make sure the power to the indicator is OFF. Unplug the AC power cord and/or remove the battery.
2. Loosen the gland connector where the AC power cord enters the indicator.
3. Remove the acorn nuts securing the back panel to the main housing.
4. Lift the back panel from the main housing, taking care not to stretch the cable and wires between the panel and main housing. Lay the back panel on the workbench next to the indicator.
5. On the 205/210, locate the threaded mounting stud (below J2) and connector P5 on the main board.

On the 220, locate the threaded spacer (near P3) and connector P4 on the main board.

6. To install the 2XX-WIFI board, carefully align the connector P1 (pins on trace side of 2XX-WIFI board) with connector P5 on the 205/210 main board (P4 on the 220 main board).
7. On the 205/210, align the hole in the 2XX-WIFI board with the threaded mounting stud (below J2) on the main board. Apply even downward pressure to the end of the 2XX-WIFI board with P1. Using the lock washer and hex nut supplied with the 2XX-WIFI board, secure the board to the 205/210 main board.

On the 220, align the hole in the 2XX-WIFI board with the threaded spacer (near P3) on the main board. Apply even downward pressure to the end of the 2XX-WIFI board with P1. Using the lock washer and screw supplied with the 2XX-WIFI board, secure the board to the 220 main board.

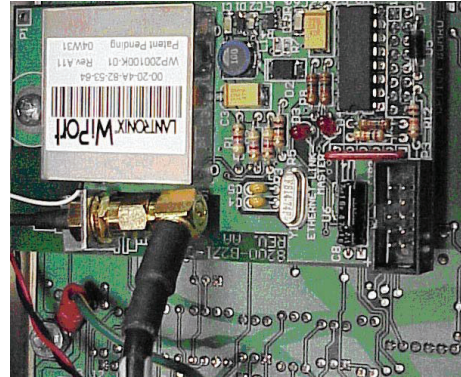
8. To attach the ground wire, remove a 6-32 nut and washer from the corner of the controller board.
9. Connect the ground wire from the 2XX-WIFI board by placing the ring terminal over the 6-32 threaded stud.
10. Reinstall the washer and 6-32 nut and tighten.



INSTALLATION, Cont.

Antenna Cable Installation

1. Loosen an unused cable gland connector for the cable.
2. Remove the nut and washer from the straight end of the antenna coaxial cable and set aside.
3. From the inside of the rear panel, insert the straight end of the cable through the gland connector and out of the enclosure.
4. Attach the right-angle end of the cable to the antenna jack on the 2XX-WIFI card.



Re-Installing The Rear Panel

After all terminations and connections have been made, remove the excess cable from the instrument enclosure and securely tighten each of the cable gland connectors. Do not over-tighten these connectors but make certain they are snug. **DO NOT USE TOOLS!** Finger-tighten only! Insure any unused gland connectors are plugged.

Make certain no cables or wires are exposed between the main housing and rear panel then place the rear panel onto the main housing. Secure with the acorn nuts removed earlier.



NOTE! Follow a diagonal pattern when tightening the acorn nuts.

Antenna Bracket and Antenna Installation

1. Choose the location on the back of the enclosure to mount the antenna bracket.
2. Remove the acorn nut at that location.
3. Place the bracket over the threaded stud.
4. Secure the bracket with the acorn nut removed in step 2.
5. Insert the threaded straight end of the antenna coaxial cable through the hole in the antenna bracket.
6. Secure the cable to the bracket with the washer and nut removed in step 2 of the Antenna Cable Installation section above.

INDICATOR SETUP

Setting up the 2XX-WIFI module on a 220 indicator:

1. Unplug the indicator.
2. Install the 2XX-WIFI module on the 220 main board. The antenna and extension cable and brackets do not matter at this point, just that the module is installed into the option card slot correctly and securely fastened to the 220 main board.
3. Install a serial cable on the 220 main board on serial port 1. Connector P10 slots 7, 8, and 10. See 220 Quick Setup Guide (QSG).
4. Plug in indicator and see that the MASTER led, or the LINK led, or both on the 2XX-WIFI module light up indicating that the option card has been installed correctly (they don't really mean anything at this point, just that they light up).
 - a. If the MASTER led does not light go back to step 1, and check to see if the module has been installed correctly.
5. Establish communication with the 220 on port 1 using some serial program like HyperTerm, TeraTerm, etc.
 - a. Make sure the indicator baud rate and the PC baud rate match. See 220 QSG for serial settings.
 - b. Make sure Port 1 continuous output is OFF/NO. See 220 QSG.
 - c. Ensure correct serial settings by sending ENQ (0x05, Cntrl-e) from the PC and receive weight back from the indicator -- OR -- by pressing ENTER at the PC and receiving a '?' character back from the indicator.
6. Once step 5 is completed leave the serial program running on the PC with the serial cable still connected.
7. Press the CAL button on the 220 until OPTION CARD is displayed
8. Press the **ENTER** key on the indicator
9. The user will be prompted with WIPORT?NO.
10. Press the **1/YES** key on the indicator
11. Press the **ENTER** key on the indicator
12. The indicator will prompt WIPORTCONFIG.
13. After a few seconds (no more than 10) the indicator will show the information as shown in the example on the next page.

INDICATOR SETUP, Cont.

```
Tera Term - COM1 VT
File Edit Setup Control Window Help
ECH      enabled

*** Channel 1Auto increment source port disab Mode : 00

*** Channel 2
Ba- 600s
High CPU performance: disabled
Monitor Mode @ bootup : enabled
HTTP Port Number : rver: 0.0.0.0
Unit :
Doer input: disabled
  Channel: 1: X
Message :
Priority: L
Migger 2
Serial trigger input: dt2: X
Trigger input3: X
Messagerval : 0 s

- Trigger 3
Seput1: X
Trigger input2: X
Trigs
Re-notification interval @astructure
Country: US
Securitared
Data rate: up to 11 Mbps
Power management: disabled

Change Setup:
 0 Server
 1 Channel 1
 2 Channel 2
 3 E-mail
 4 WLAN
 5 Expert
 6 Security
 7 Factory defaults
 8 Exit without save
 9 Save and exit
Your choice ?
```

14. At this point the 2XX-WIFI module can be setup. Refer to the information found in the 2XX-WIFI Module Setup section.

2XX-WIFI MODULE SETUP

Before operation may begin the 2XX-WIFI module must be setup. To facilitate control over Cardinal indicators on a wireless network, we have included instructions for the simplest setup **or** for more detailed instructions, refer to the WiPort User Guide” (WUG) pages 32 – 58 on the 2XX-WIFI DeviceInstaller Programs and Documentation CD (8200-M521-O1) for details.

The simplest setup would be:

- a. Select '0 Server' at the prompt
- b. Set an IP or all zeros if using DHCP
- c. Set the Gateway IP if needed
- d. Set the Netmask if needed
- e. *Change the telnet password if needed
- f. *Change the DHCP device name if needed
- g. You will now be back at the Figure 1 menu.
- h. Select '4 WLAN' at the prompt
- i. Select Y to Enable WLAN
- j. **Set Topology (Will more than likely be 0/Infrastructure)
- k. **Set Network Name (SSID)
- l. **Set Security level if WEP or something else is used
- m. **Set Authentication (Usually 1/shared)
- n. **Set Encryption type
- o. Display current key: this will display the current WEP key if any
- p. **Change Key: this will allow the user to set a new WEP key
- q. **Data Rate (usually 6)
- r. Set Power Management to N
- s. You will now be back at the Figure 1 menu
- t. Press 9
- u. Press ENTER
- v. Now you should be able to find your WiPort module using DeviceInstaller.

***NOTE!** Don't do this unless you have read and understand what the WUG has to say about this option.

****NOTE!** Consult the network administrator if you do not know what value to enter here.

*** * * * IMPORTANT * * * ***

If changing settings on either of the channels of the wiport module (options 1 and 2 of example on previous page)

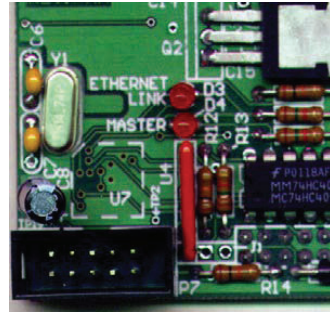
DO NOT CHANGE THE BAUD RATE FROM 9600!

STATUS LED'S

The 2XX-WIFI contains two LED's to indicate the communication status of the WIFI connection.

ETHERNET LINK (D3) - This LED will illuminate when the 2XX-WIFI has been successfully connected to a network and flicker when data is being transmitted or received over the wireless network.

MASTER (D4) - This LED will flash with every communication between the 2XX-WIFI and the indicator. If the MASTER LED is not flashing, then communications between the 2XX-WIFI and the indicator has failed.



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