6201-WA-MNET to 6201-WA-MNET

ProLinx Wireless

High Speed Wireless Modbus TCP/IP Gateway

Setup Guide

June 27, 2007

Please Read This Notice

Successful application of this module requires a reasonable working knowledge of the ProLinx Module, its connected devices, and the application in which the combination is to be used. For this reason, it is important that those responsible for implementation satisfy themselves that the combination will meet the needs of the application without exposing personnel or equipment to unsafe or inappropriate working conditions.

This manual is provided to assist the user. Every attempt has been made to assure that the information provided is accurate and a true reflection of the product's installation requirements. In order to assure a complete understanding of the operation of the product, the user should read all applicable documentation on the operation of the connected devices.

Under no conditions will ProSoft Technology be responsible or liable for indirect or consequential damages resulting from the use or application of the product.

Information in this manual is subject to change without notice and does not represent a commitment on the part of ProSoft Technology Improvements and/or changes in this manual or the product may be made at any time. These changes will be made periodically to correct technical inaccuracies or typographical errors.

Important Installation Instructions

Power, input and output wiring must be in accordance with Class I, Division 2 wiring methods – Article 501-4 (b) of the National Electrical Code, NFPA 70 and in accordance with the authority having jurisdiction. The following warnings must be heeded:

a WARNING – EXPLOSION HAZARD – SUBSTITUTION OF COMPONENTS MAY IMPAIR SUITABILITY FOR CLASS I, DIV. 2;

b WARNING – EXPLOSION HAZARD – WHEN IN HAZARDOUS LOCATIONS, TURN OFF POWER BEFORE REPLACING OR WIRING MODULES, and

c WARNING – EXPLOSION HAZARD – DO NOT DISCONNECT EQUIPMENT UNLESS POWER HAS BEEN SWITCHED OFF OR THE AREA IS KNOWN TO BE NONHAZARDOUS.

d "THIS DEVICE SHALL BE POWERED BY CLASS 2 OUTPUTS ONLY."

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6201-WA-MNET Setup Guide
June 27, 2007
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Contents

1 Introduction

In This Chapter

This manual is intended to guide you through the setup and configuration of your ProLinx Wireless MNET Client and Server devices.

Important: This Setup Guide shows you how to set up a simple Modbus TCP/IP wireless network between a ProLinx Wireless MNET Client and a ProLinx Wireless MNET Server. This guide should be used as a starting point only.

In all likelihood, the requirements of your particular application will involve additional configuration and development. For detailed information on the MNET Client, MNET Server and ProLinx Wireless protocols, please refer to the following Driver Manuals, on your ProSoft Solutions CD-ROM:

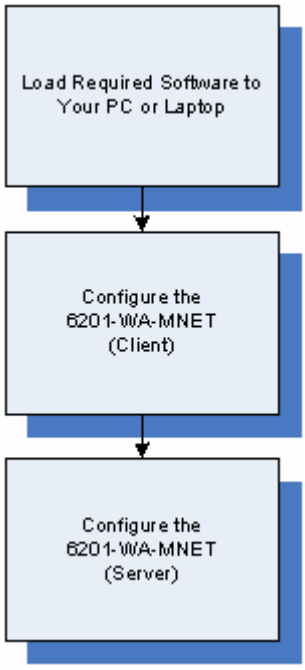
- MNET Driver Manual
- PWP Driver Manual

For general information on installing and configuring ProLinx modules, please refer to the ProLinx Reference Guide, also on your ProSoft Solutions CD-ROM.

1.1 Before You Begin

The insert included with your modules describes a sample SINGLE-REMOTE SITE SAMPLE application. It is important that you read through the insert and perform any required steps.

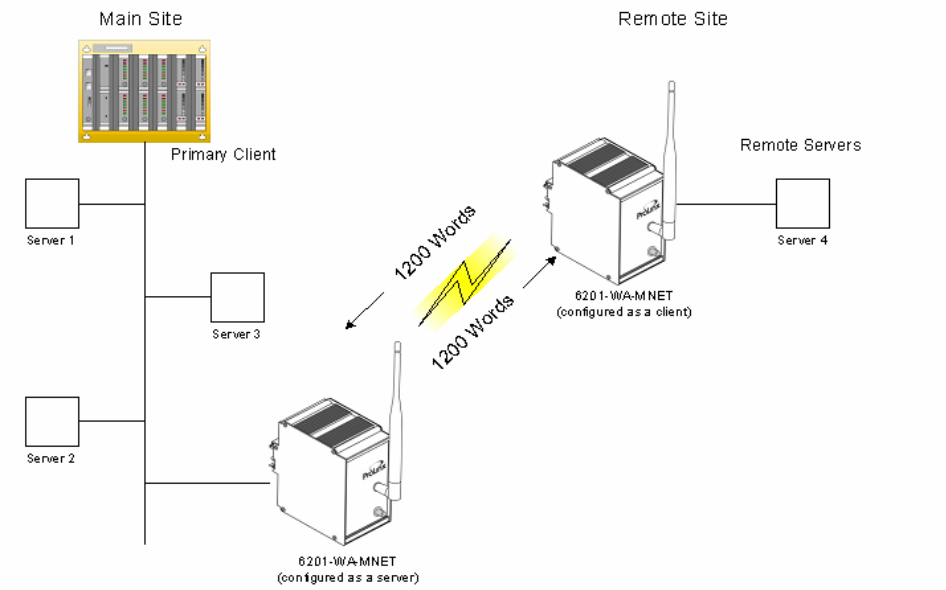
Setting up the MNET network is relatively simple using the sample files included on the ProLinx Solutions CD. The flow diagram illustrates the high-level steps used to configure each module.



The default configuration file contains separate configurations for each module. You can use the sample files to get started or you can create the configuration files from scratch. The easiest way to begin is to use the sample configurations. Once you understand how they are created, setting up your network is easy.

1.2 Using the Sample ProSoft Configuration Builder Files

The sample application uses two 6201-WA-MNET modules to establish wireless communications between a Primary Client at a main site and a Server located at a remote site. One MNET module is configured as a Client. The remote Server is attached to this Client. The second module is configured as a Server at the same site as the Primary Client. The following diagram illustrates this application.



In this example, the following is assumed:

- A third-party primary Client needs to communicate with 4 Servers
- One of the Servers is remote
- The application uses two ProLinx 6201-WA-MNET modules to establish communication between the primary Client and the remote Server
- The module's radio communication parameters are preset and configured to pass up to 1200 words in either direction
- One MNET (Server) is connected to the Primary Client
- One MNET (Client) is connected to the remote Server

You can use this guide in one of two ways. First, you can use it as a learning tool to see how the PCB files make the sample application work. You can also follow along with the example and modify the configuration files as you go along.

Whether you are configuring your modules on the fly or just reading through to understand how to use the sample application, there are steps that you must perform even if you are not yet configuring any modules to suit your own application.

1.3 About Transmission Casts

The sample uses a UNICAST transmission type. UNICAST means that you set up Produce and Consume Commands that transfer or receive data between two individual modules. For example, a Produce command can specify that this data is only produced to one particular consuming module based on the consuming modules IP address.

In addition to UNICAST, you also have the flexibility of using MULTICAST (data sent to multiple modules in a MULTICAST Group List but only picked up by the module within that list with a Consume command that has the matching Exchange ID and the IP address of the module multicasting the command), and BROADCAST which sends data out to all modules. With BROADCAST, each module receives the transmission whether it be two modules or 50 modules. Each module receiving the BROADCAST has to check every message to determine if it is intended for the module or not. This can decrease performance times since the module may be checking hundreds of messages that are not intended for it.

Use MULTICAST to limit the modules that should receive the message. For example, five modules may be part of a MULTICAST Group, yet there may be 15 modules on the network. Only five of the 15 modules on the network will be configured to handle certain types of commands while the remaining 10 that are not in the MULTICAST group will ignore the messages not intended for them.

2 Load the Required Software

In This Chapter

There is one application (ProSoft Configuration Builder) and one file (PPF) that you must download from the ProLinx Solutions CD to your PC or Laptop whether you are using the sample configuration or are modifying the configuration to suit the needs of your application. This section describes how to get everything you need loaded to your PC. **You must perform these steps regardless of whether you are configuring your modules now or just reading about the sample applications.**

2.1 Install ProSoft Configuration Builder (PCB)

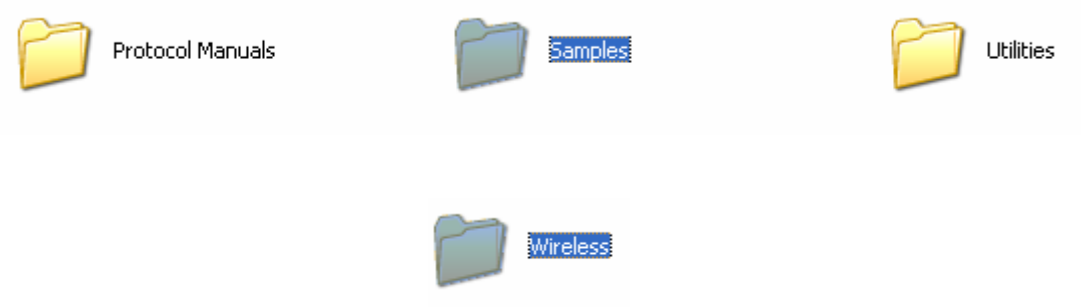
ProSoft Configuration Builder helps you configure the module for your application.

1 Insert the ProLinx Solutions CD into the CD-ROM drive on your PC or Laptop. The ProLinx Solutions splash page appears:

2 Select Install Configuration Tool.
3 Follow the prompts to install ProSoft Configuration Builder to your hard disk.

2.2 Copy the Sample Application File

1 From the ProLinx Solutions splash screen, click **Product Documentation**.
2 Choose **Samples** → **Wireless**.



3 Copy the **PROLINX WIRELESS SAMPLE.PPF** file to a location on your PC or Laptop.

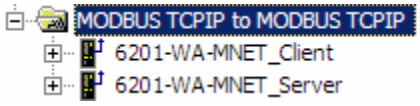
3 Configure the MNET Client Module

In This Chapter

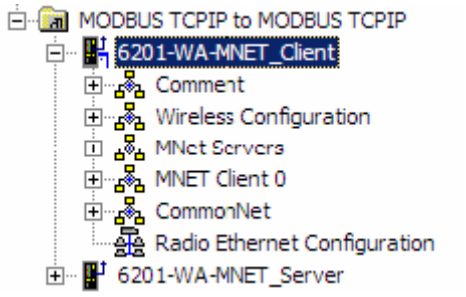
Based on the sample application, the remote Server is connected to a 6201-WA-MNET configured as a Client. The goal here is to begin to establish communications between the two MNET modules. The default configuration is designed to pass 1200 words between each module. Each module is configured separately.

Configuration is accomplished using ProSoft Configuration Builder (PCB). The default configuration file is **PROLINX WIRELESS SAMPLE.PPF**.

1. Start PCB.
2. Select **File** → **Open**.
3. Navigate to the location where you copied the **PROLINX WIRELESS SAMPLE.PPF** file and select this file.
4. Expand the **MODBUS TCPIP to MODBUS TCPIP** folder.



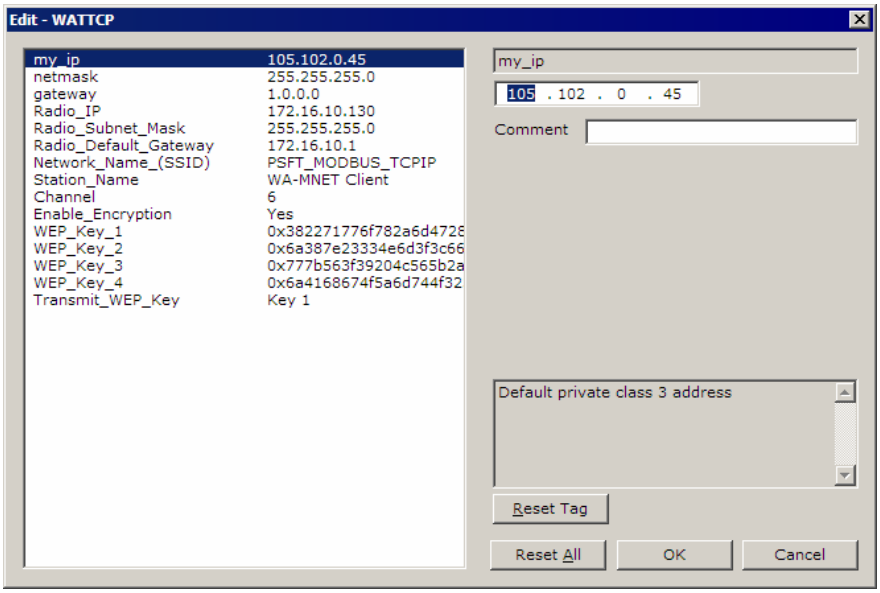
5. Expand the **6201-WA-MNET_Client** module selection.



3.1 Complete the ProSoft Configuration Builder Sections

3.1.1 Radio Ethernet Configuration

1 Double-click the Radio Ethernet Configuration icon.



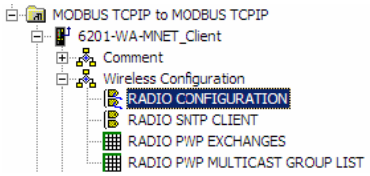
Every Modbus TCP/IP module is set up with the defaults shown in the example. You may have to modify values such as the Radio Default Gateway, the Network Name (SSID), and the Station Name to suit the needs of your network. The Station Name may be modified when using more than one Modbus TCP/IP module.

Note: All modules must have the same Subnet Mask, Default Gateway, and Network Name (SSID) if they are all located on the same network. Only the fourth octet in the Radio_IP address must be different for each module. Please refer to ***Default Module Configuration Assignments*** (page 37) for a list of pre-assigned ProSoft product IP addresses.

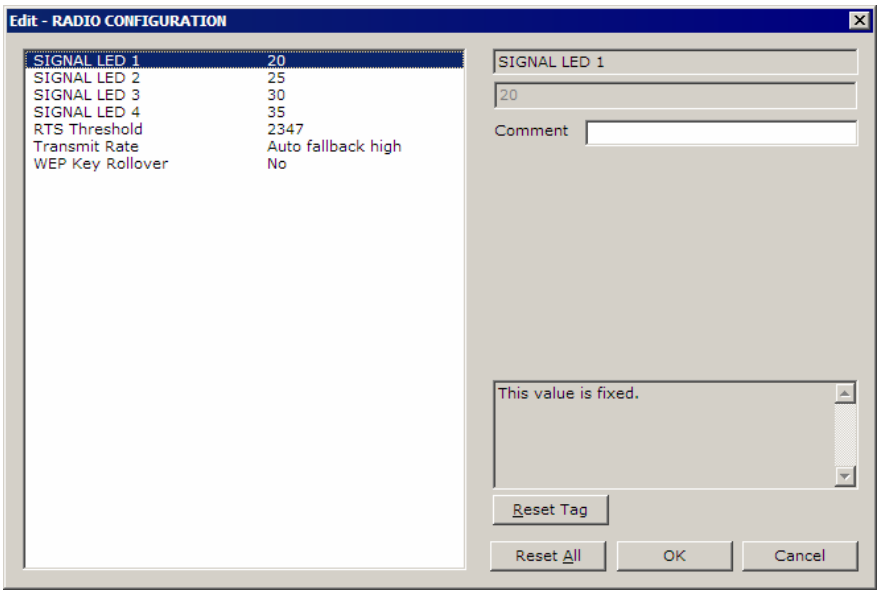
The PWP Driver Manual located on the ProLinx Solutions CD contains a description of the remaining parameters. If you are making changes, be sure to save your changes before moving on to the next step.

3.1.2 Radio Configuration (Client)

Expand the Wireless Configuration section



and double-click on the RADIO CONFIGURATION icon.



The default Signal LED 1 through 4 parameter values are fixed and cannot be modified. If you need to change the values for the remaining parameters in this dialog box, make sure to save your changes before moving on to the next step. As you select each parameter, the help text area in the lower right area of the dialog box displays information to help you make your selections.

RTS Threshold

60 to 2347

RTS/CTS handshake threshold byte count in milliseconds. Less than 60 will interfere with control packets.

Transmit Rate

This parameter defines the data rate(s) for transmission of directed messages. Possible values are outlined in the following table.

Value	Definition
1	Fixed 1 Mbit (1)
2	Fixed 2 Mbit (2)
3	Auto fallback high (11, 5.5, 2, 1)

Value	Definition
4	Fixed medium rate (5.5)
5	Fixed high rate (11)
6	Auto fallback standard (2, 1)
7	Auto fallback medium (5.5, 2, 1)

Important: For Multicast mode, use transmit rates of 1 or 2 for best results.

WEP Key Rollover

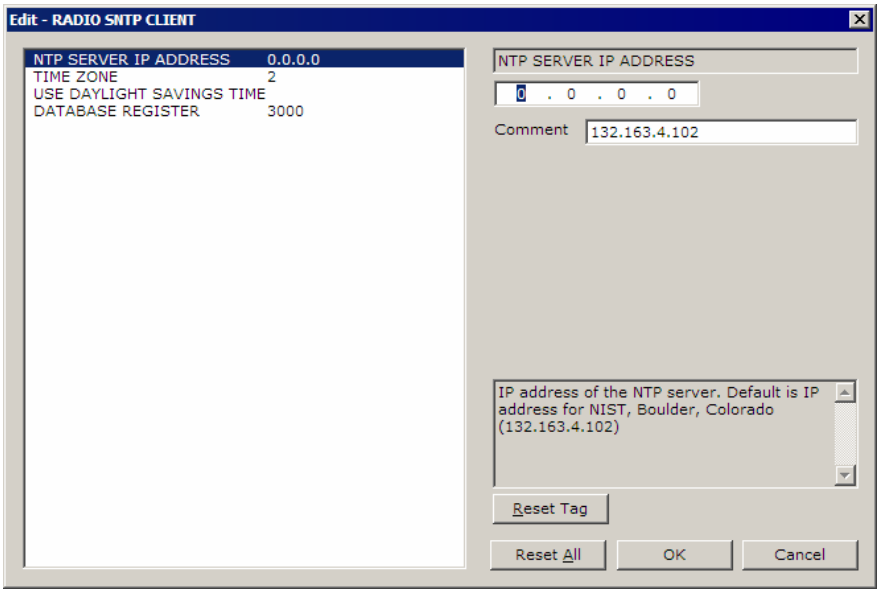
Yes or No

WEP (Wireless Encryption Protocol) is an encryption method that allows devices on a wireless network to transmit data securely.

This parameter interacts with the WATTCP file parameter "Enable Encryption", and the values for WEP Keys 1 through 4. When the WEP Key Rollover parameter is enabled, the module will randomly change the WEP key.

3.1.3 Radio SNTP Client

Double-click on the RADIO SNTP CLIENT icon.



This section is used to synchronize the time using a centralized atomic clock. This feature is only usable if your modules are communicating through an access point such as a RadioLinx Industrial Hotspot. The values in this window should be left with the default values. As you select each parameter, the help window on the screen displays information to help you make your selections. The PWP Driver Manual describes each of these parameters.

3.1.4 Radio PWP Exchanges

This is the area where you set up data exchange between the MNET modules. Communication is accomplished using Producer and Consumer commands. Using these commands, you specify the IP address of the receiving (Consumer) and sending (Producer) module as well as the database locations to produce data and receive data.

In the sample application, the modules are set up to send 1200 words back and forth between the each MNET module. Each module contains a database and both modules are capable of producing or consuming data. This is accomplished using ProSoft Wireless Protocol (PWP) commands. In the sample, we are sending all 1200 words and receiving 1200 words back. We are actually sending only 50 words of data from and to the user's main and remote sites.

Two Produce commands and two Consume commands are used to make this happen Each command sends (or receives) 600 words of data. The following example shows both produce commands from the sample application.

✓ 3	Producer	Producer Unicast	1200	600	No Change	100	172.16.10.131	1002	1	0
✓ 4	Producer	Producer Unicast	1800	600	No Change	100	172.16.10.131	1003	1	0

Producer Command Narrative for the First Command:

1 Send data using Unicast Mode
2 Send the data to IP Address 172.16.10.131.
3 Send 600 registers beginning at DB Register 1200.
4 Do not set a Swap Code.
5 Send the data every 100 milliseconds (producer commands must be 1/4 of consumer commands).
6 Use an Exchange ID of 1002.

Producer Command Narrative for the Second Command:

1 Send data using Unicast Mode
2 Send the data to IP Address 172.16.10.131.
3 Send 600 registers beginning at DB Register 1800.
4 Do not set a Swap Code.
5 Send the data every 100 milliseconds.
6 Use an Exchange ID of 1003.

Note: IP Address 172.16.10.131 is the other 6201-WA-MNET module that will be configured as an MNET Server.

The Consume commands perform the same function for data coming into the module from the MNET Server once configured.

	Exch Type	Cast Type	DB Reg	Reg Count	Swap Code	P/C Time	IP Address	Exch ID	CS Major	CS Minor
✓ 1	Consumer	Producer Unicast	0	600	No Change	400	172.16.10.131	1000	1	0
✓ 2	Consumer	Producer Unicast	600	600	No Change	400	172.16.10.131	1001	1	0

Consumer Command Narrative for the First Command:

Consume data using Unicast Mode.

1 Consume this data only from IP Address 172.16.10.131.
2 Consume 600 words and store them beginning at DB register 0.
3 Do not use a Swap Code.
4 Consume data within 400 milliseconds.
5 Only consume data with an Exchange ID of 1000.

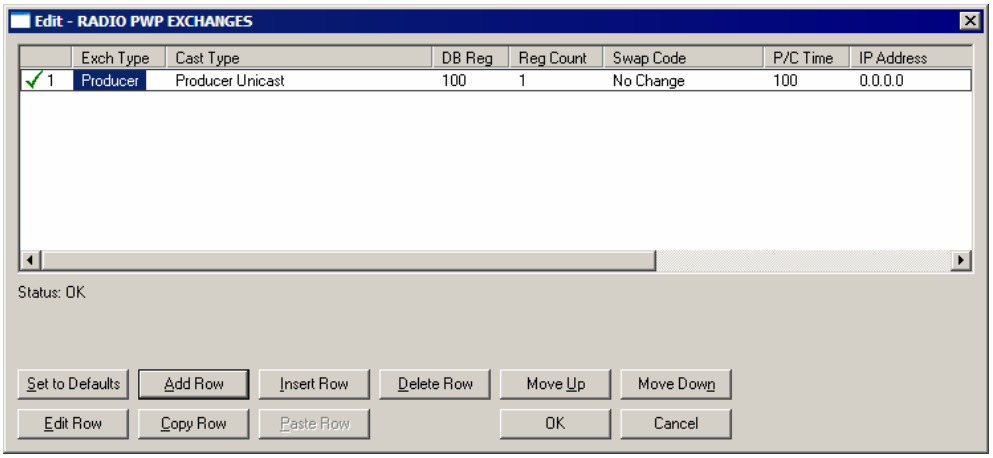
The second line does exactly the same thing for another 600 words. However it consumes this data into database registers beginning a register 600 and uses an Exchange ID of 1001.

In order for these commands to work, the 6201-WA-MNET (to be configured as the Server module) must also be configured to consume data being produced by the 6201-WA-MNET (configured as a Client) into the appropriate database registers and as well as be set up to produce data to allow the MNET Client to consume. Setting up the corresponding MNET Server configuration is discussed later in this guide.

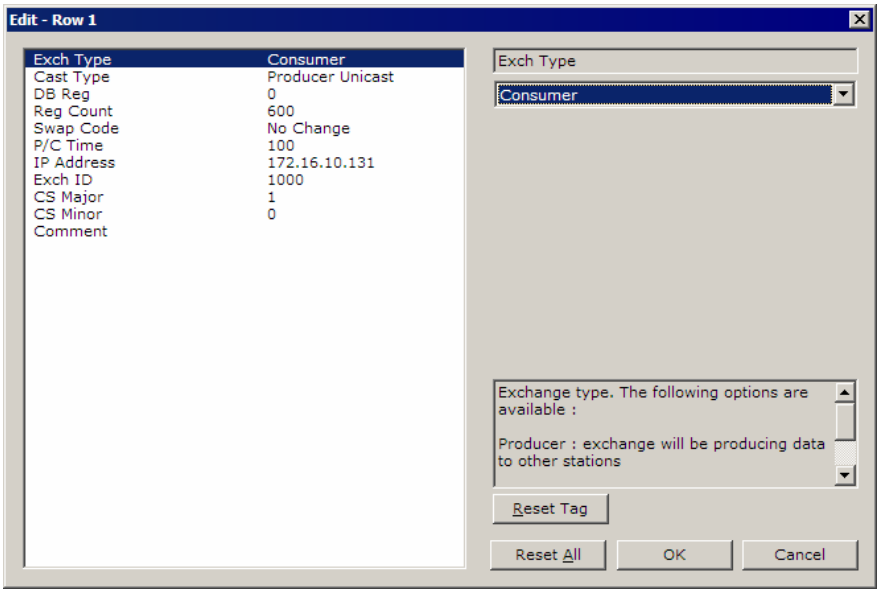
Note: The sample configuration file also shows an additional Produce and Consume command. These commands are designed to pass a time value from the MNET Client to the MNET Server module and then loop back from the MNET Server to the MNET Client. These commands are included for testing and radio communication verification purposes only and are not necessarily required for your application.

How it's Done

1 Double-click on the RADIO PWP EXCHANGES icon.
2 Click the Add button. ProSoft Configuration Builder adds a default row.



3 Click the Edit button. The Edit window appears.



4 Define each element of the command by selecting the element, then select or enter the desired values.

5 Choose OK when done.

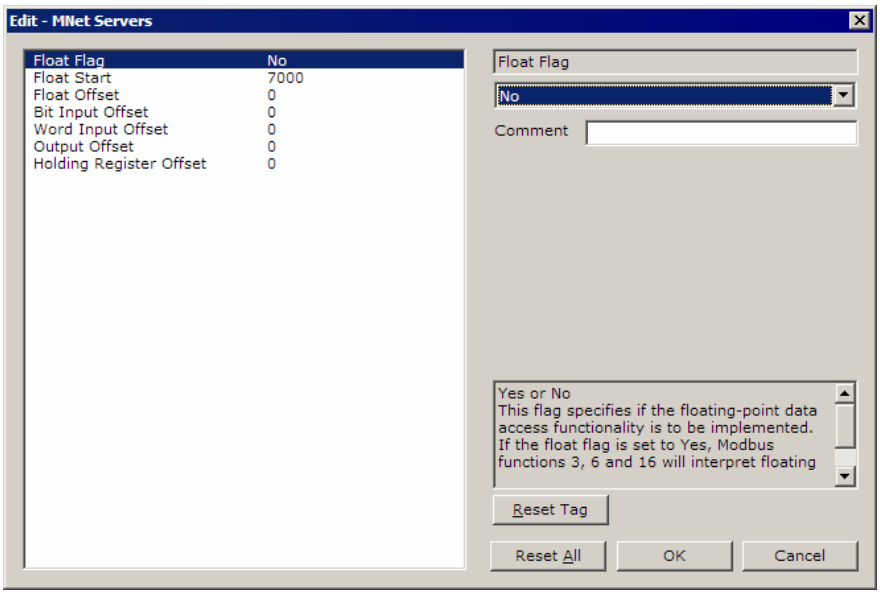
Note: In addition to the help on the dialog, the PWP Driver Manual located on the ProLinx Solutions CD provides descriptions of each parameter.

3.1.5 Radio PWP Multicast Group List

This section does not contain any data for the sample application. The sample application uses UNICAST transmission and therefore there is no need to enter IPs of other devices in this section. The ProLinx PWP Driver Manual describes this section in detail.

3.1.6 MNET Servers

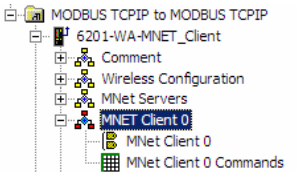
The parameter values in this section have no effect when the MNET module is being configured as a client.



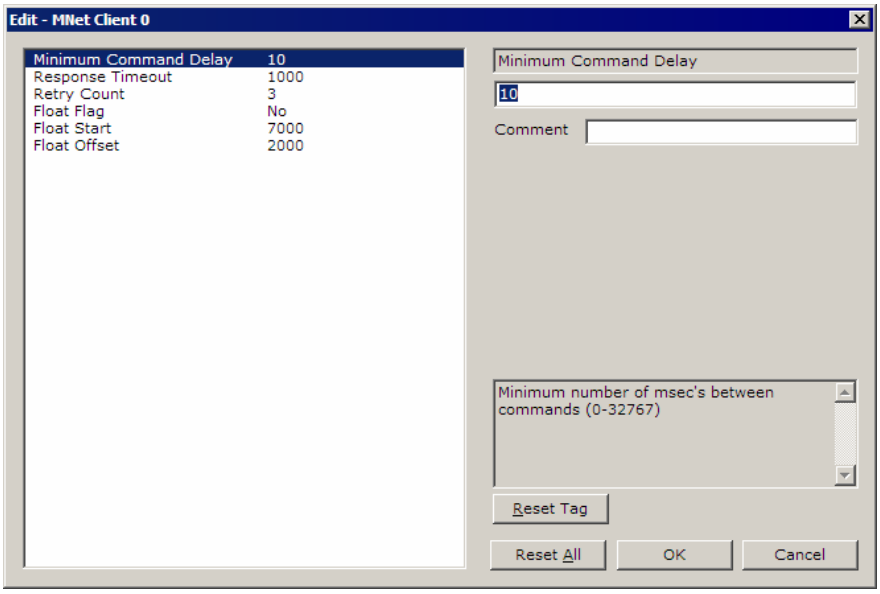
3.1.7 MNET Client 0

The sample configuration file requires that the module currently being configured be configured as a Client. This was done in the MNET Client 0 section.

1 Expand the MNET Client 0 section.



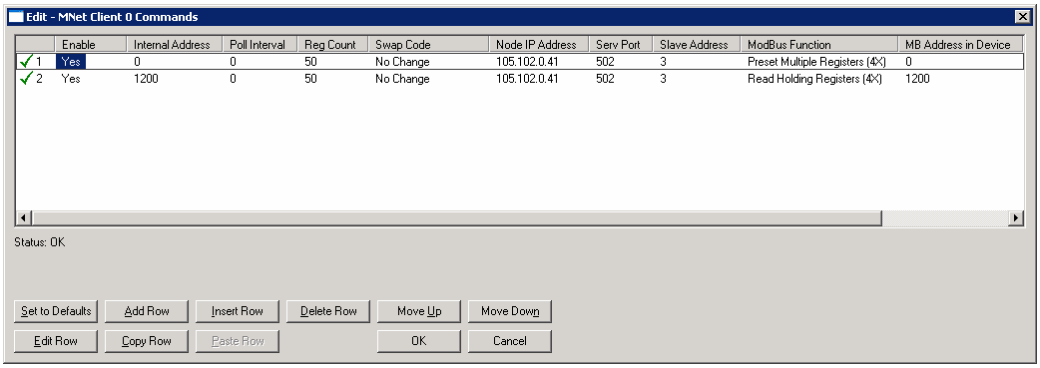
2 Double-click on the MNET Client 0 icon.



The remaining parameters are set to ensure that the MNET module can communicate with the Server. Refer to the MNET Driver Manual located on the ProLinx Solutions CD for detailed information on each of these parameters.

3.1.8 MNET Client 0 Commands

Double-click on the MNet Client 0 Commands icon.



In the sample application, there is one Server device connected to the MNET Client module. The commands in this example show how the data is being written by the MNET Client to the server device, and how the MNET Client is reading the data from the MNET Server device.

Line 1

In this command line, the Client continuously writes 50 words as fast as possible from the Client's internal address 0 into the Server's register location 0, IP address 105.102.0.41, port 502, slave address 3.

Line 2

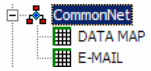
In this command line, the client continuously reads 50 words as fast as possible from the Server's register location 1200, IP address 105.102.0.41, port 502, slave address 3, and stores the data into the Client's internal address 1200.

How it's Done

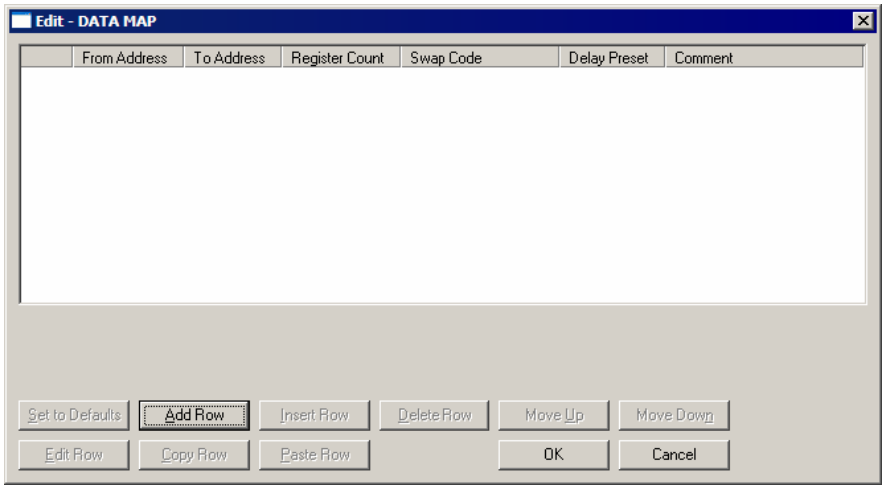
The sample has the two commands already set up. You can use these commands and modify them to your needs by clicking the **Edit Row** button after selecting the command. You can also add new commands by clicking the **Add Row** button, and then clicking the **Edit Row** button.

3.1.9 CommonNet

Expand the CommonNet section.

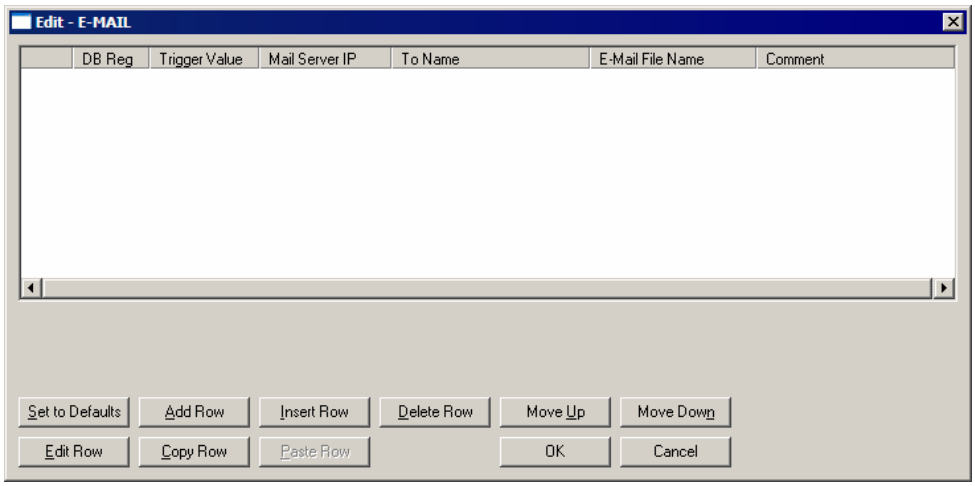


Double-click on the DATA MAP icon.



This section does not require any editing for the sample application. Refer to the MNET Driver Manual located on the ProLinx Solutions CD for information on setting up data mapping for your application.

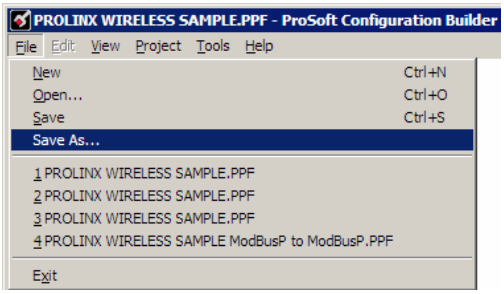
Double-click on the E-MAIL icon.



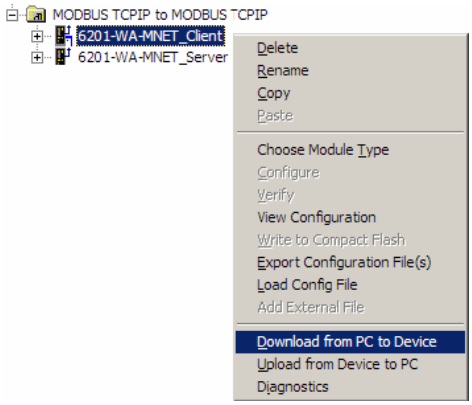
This section does not require any editing for the sample application. Refer to the MNET Driver Manual located on the ProLinx Solutions CD for information on setting up data mapping for your application.

3.2 Save and Download the Configuration File to the 6201-WA-MNET Client

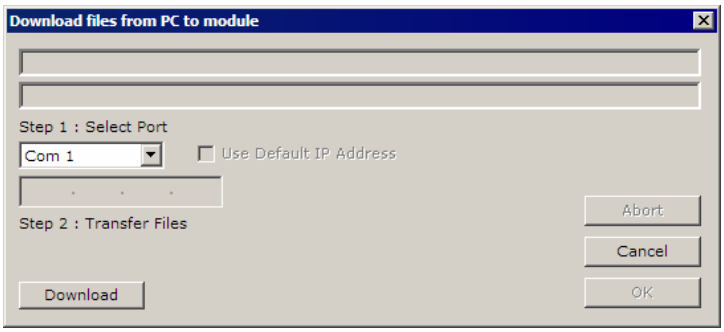
1. Ensure that your PC or Laptop is still connected to the DEBUG port of the **6201-WA-MNET Client** module. Apply power to the module if you have not already done so.
2. Choose **File** → **Save As…** and save the .PPF file to a location on your hard drive.



3 Right-click on 6201-WA-MNET Client and select **Download from PC to Device**.



4 Select the appropriate COM port and click the **Download** button.



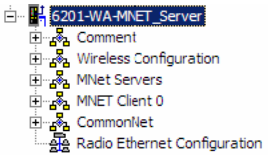
5 The download is complete when the OK button becomes active. When the download is completed, click the **OK** button.

4 Configure the MNET Server Module

In This Chapter

Configuring this module as a Server is done the same way as the Client with a few exceptions outlined in this section.

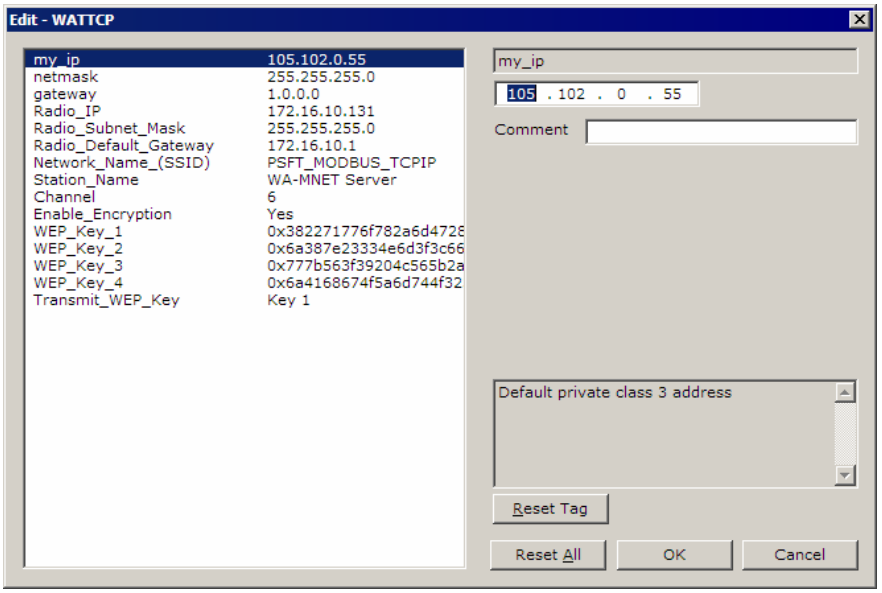
1. Remove the cable from the Debug port of the MNET Client module and plug it into the Debug port of the MNET module to be configured as a Server.
2. With PCB open, expand the 6201-WA-MNET_Server module selection.



4.1 Complete the PCB Sections for the Server

4.1.1 Radio Ethernet Configuration

1. Double click on the Radio Ethernet Configuration selection.



In the sample application, this radio's IP address is set to **172.16.10.131**. In our sample application, the MNET Client IP address is set to 172.16.10.130, so here we used the next IP address in the range which happens to be 131. When you

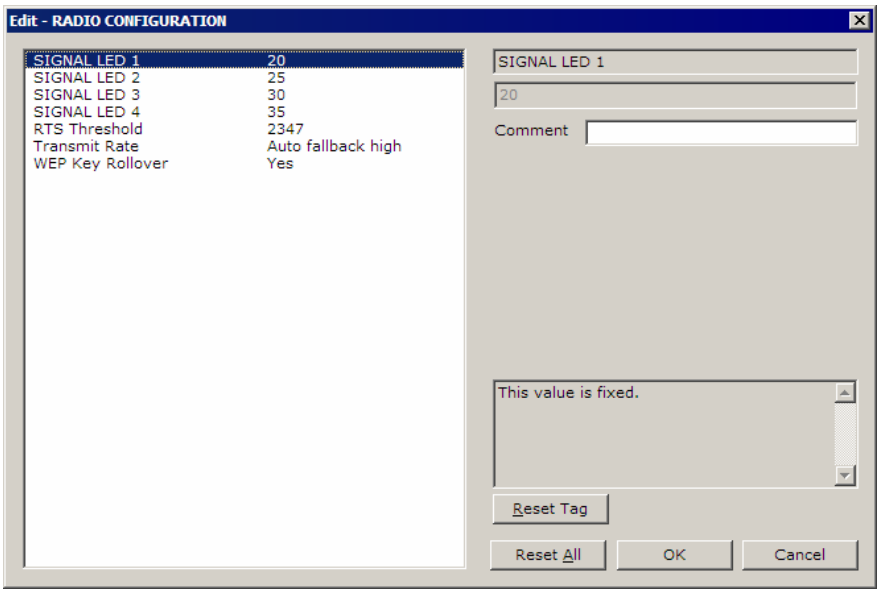
build your own application, you will have to modify the Radio Default Gateway, Network Name (SSID), and Station Name to suit your needs.

Note: All modules must have the same Subnet Mask, Default Gateway, and Network Name (SSID) if they are all located on the same network.

The PWP Driver Manual located on the ProLinx Solutions CD describes each parameter. If you are making changes, be sure to save your changes before moving on to the next step.

4.1.2 Radio Configuration (Server)

Expand the Wireless Configuration section and double-click on the RADIO CONFIGURATION icon.



The default Signal LED 1 through 4 parameter values are fixed and cannot be modified. If you need to change the values for the remaining parameters in this dialog box, make sure to save your changes before moving on to the next step. As you select each parameter, the help text area in the lower right area of the dialog box displays information to help you make your selections.

RTS Threshold

60 to 2347

RTS/CTS handshake threshold byte count in milliseconds. Less than 60 will interfere with control packets.

Transmit Rate

This parameter defines the data rate(s) for transmission of directed messages. Possible values are outlined in the following table.

Value	Definition
1	Fixed 1 Mbit (1)
2	Fixed 2 Mbit (2)
3	Auto fallback high (11, 5.5, 2, 1)
4	Fixed medium rate (5.5)
5	Fixed high rate (11)
6	Auto fallback standard (2, 1)
7	Auto fallback medium (5.5, 2, 1)

Important: For Multicast mode, use transmit rates of 1 or 2 for best results.

WEP Key Rollover

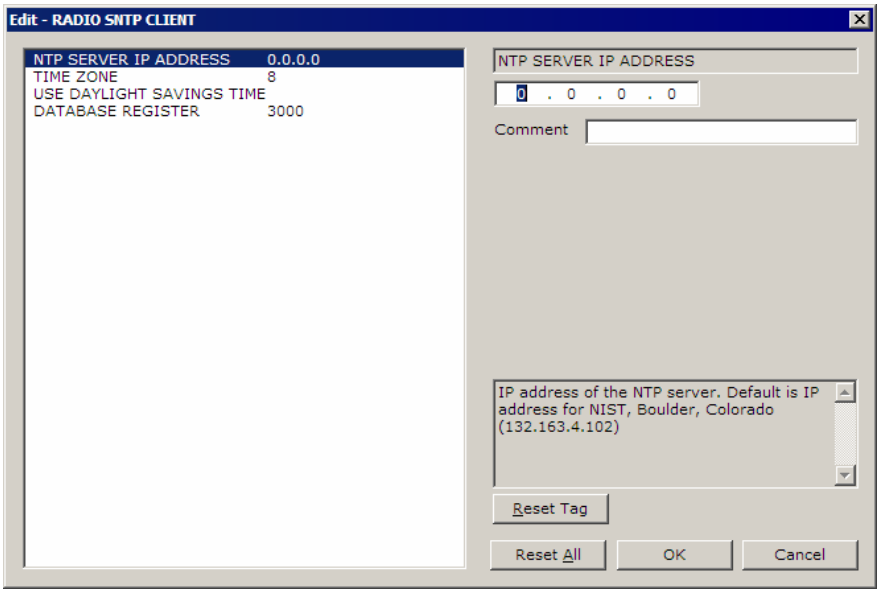
Yes or No

WEP (Wireless Encryption Protocol) is an encryption method that allows devices on a wireless network to transmit data securely.

This parameter interacts with the WATTCP file parameter "Enable Encryption", and the values for WEP Keys 1 through 4. When the WEP Key Rollover parameter is enabled, the module will randomly change the WEP key.

4.1.3 Radio SNTP Client

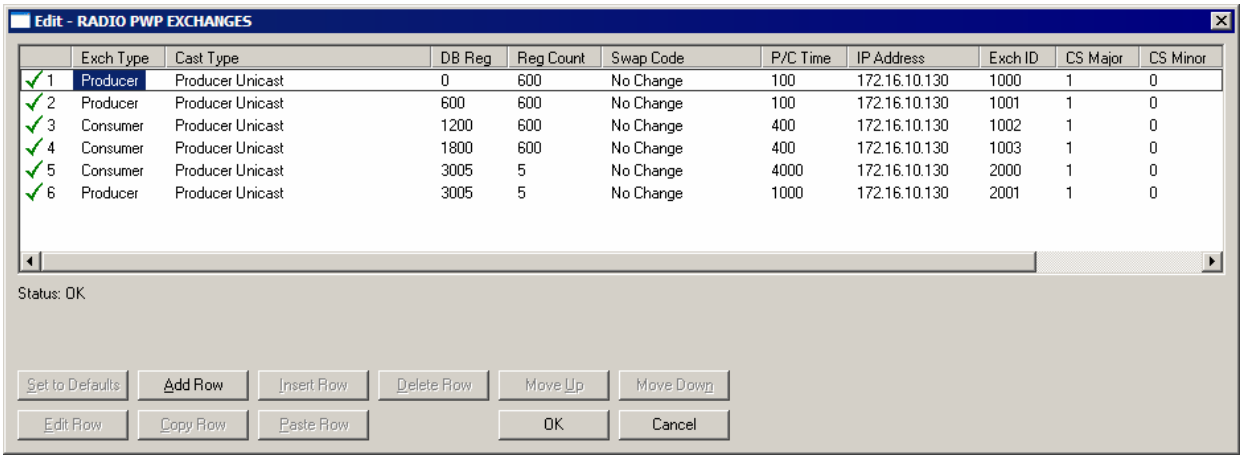
Double-click on the RADIO SNTP CLIENT icon.



This section is used to synchronize the time using a centralized atomic clock. This feature is only usable if your modules are communicating through an access point such as a RadioLinx Industrial Hotspot. The values in this window should be left with the default values. As you select each parameter, the help window on the screen displays information to help you make your selections. The PWP Driver Manual located on the ProLinx Solutions CD describes each parameter in detail.

4.1.4 Radio PWP Exchanges

Double-click on the RADIO PWP EXCHANGES icon.



The commands in this section correspond to commands set up in the MNET Client module. For example, the MNET Client module has a Produce command to send data to the MNET Server. The MNET Server must have a corresponding Consume command to match up with the MNET Client Produce command in order to accept the MNET Client produced data.

If you remember the example in the **MNET Client** section, the first Produce command (on line 3) is as follows.

This command states:

Send 600 words of data beginning at data register 1200 to 172.16.10.131 (the MNET Server) using an exchange ID of 1002. Send data within 100 ms using UNICAST.

We now need to build the Consume command on the **MNET Server** in order to accept the data. The corresponding Consume command on the MNET Server looks like this:

This command states:

Receive 600 words of data with each exchange ID = 1002 from IP: 172.16.10.130 and place them in 600 registers beginning at database register 1200. Receive data within 400 ms using UNICAST.

The second Consume command is set up the same way. It must correspond to the second Produce command in order to accept the data coming from it.

Referring to the MNET Client PWP Exchanges section, the **MNET Client** also had two Consume commands. These commands are as follows:

✓ 1	Consumer	Producer Unicast	0	600	No Change	400	172.16.10.131	1000	1	0
✓ 2	Consumer	Producer Unicast	600	600	No Change	400	172.16.10.131	1001	1	0

This first command states:

Receive 600 words of data with exchange ID = 1002 from IP 172.16.10.130, and place them in 600 registers beginning at database register 0. This command will wait up to 400 milliseconds for the data.

The second Consume command is set up the same way. It must correspond to the second Produce command from the MNET Server in order to accept the data coming from it.

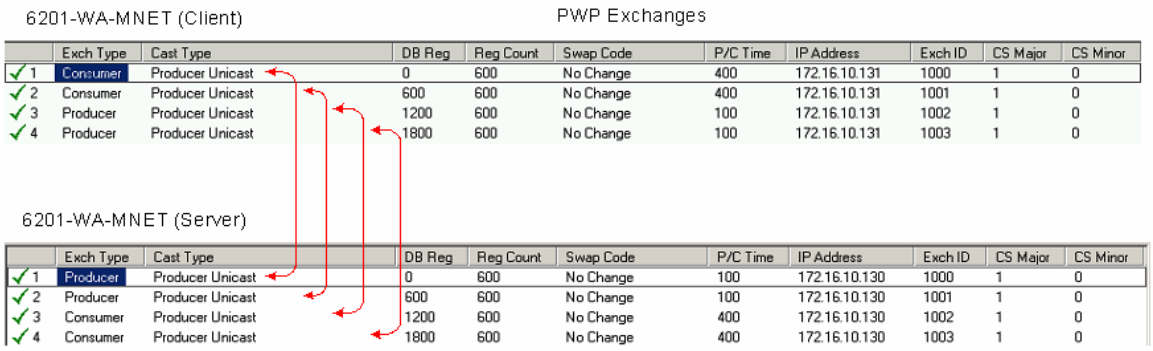
We now need to build the first Produce commands on the **MNET Server** to correspond with the first Consume commands on the MNET Client. The corresponding command looks like this:

✓ 1	Producer	Producer Unicast	0	600	No Change	100	172.16.10.130	1000	1	0

This command states:

Send 600 words of data beginning at data register 0 to 172.16.10.130 (the MNET Client) using an exchange ID of 1000. Send data every 100 ms using UNICAST.

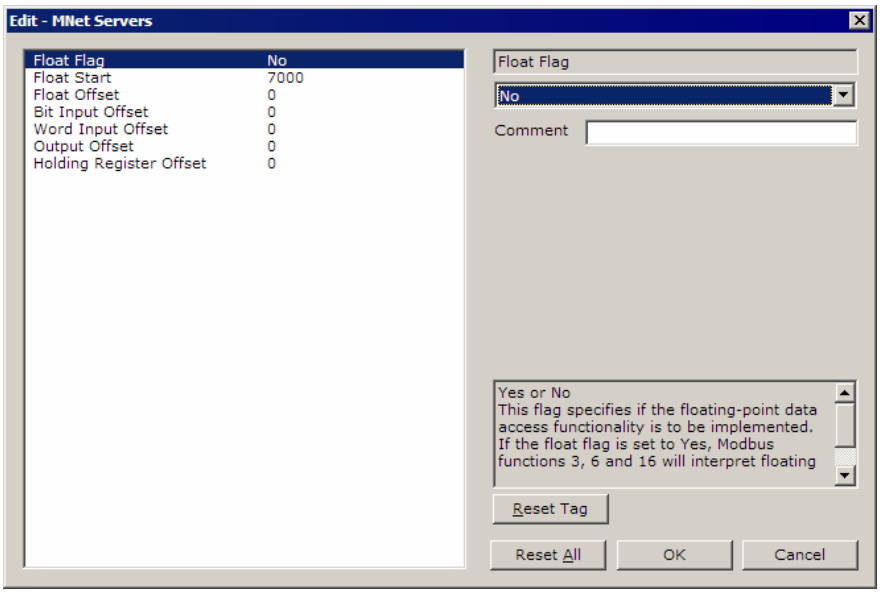
Both the MNET Server and the MNET Client have corresponding Produce and Consume commands. The following diagram illustrates the sample application:



4.1.5 Radio PWP Multicast Group List

This section does not contain any data for the sample application. The sample application uses UNICAST transmission and therefore there is no need to enter IPs of other devices in this section. The ProLinx PWP Driver Manual describes this section in detail.

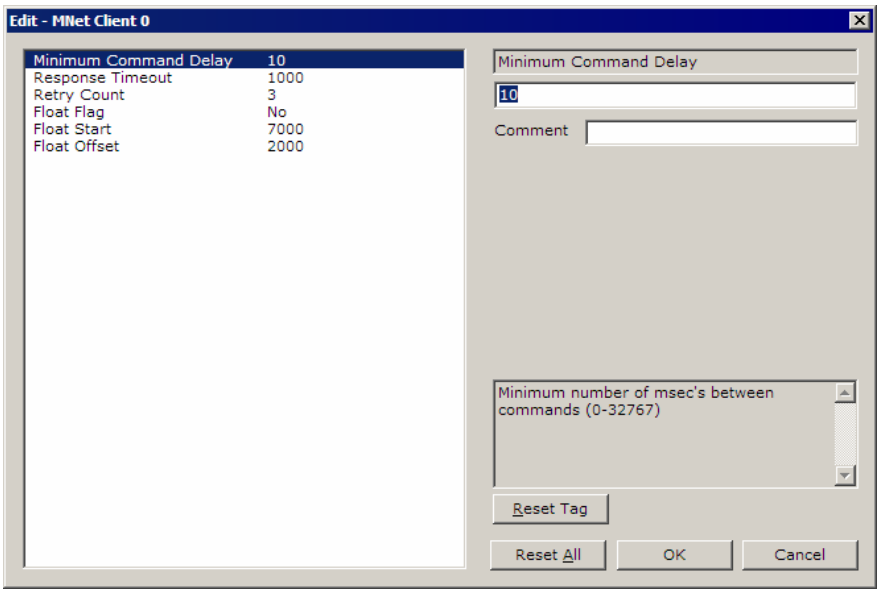
4.1.6 MNET Servers



The default values do not have to be changed for this application. However, refer to the MNET Driver Manual for information on each of the remaining parameters.

4.1.7 MNET Client 0

Expand the MNET Client 0 folder and double-click on the  icon.



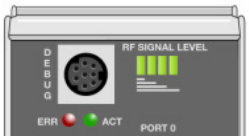
The default values do not have to be changed for this application. However, refer to the MNET Driver Manual for information on each of the remaining parameters.

4.1.8 MNET Client 0 Commands

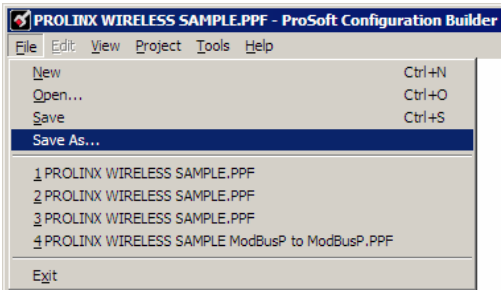
A 6201-WA-MNET module configured as a Server cannot issue commands and therefore, this section is commented out.

4.2 Save and Download the File to the 6201-WA-MNET Server

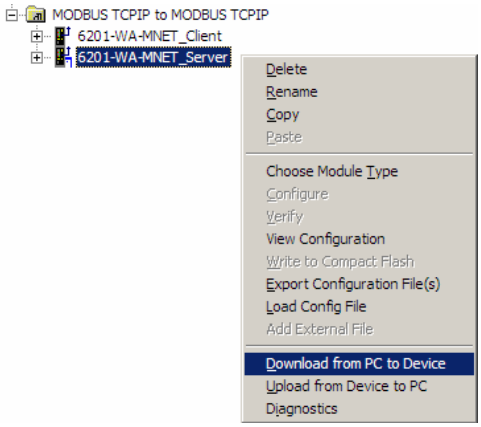
1 Connect your PC or Laptop to the DEBUG port of the 6201-WA-MNET **Server** module. Apply power to the module if you have not already done so.



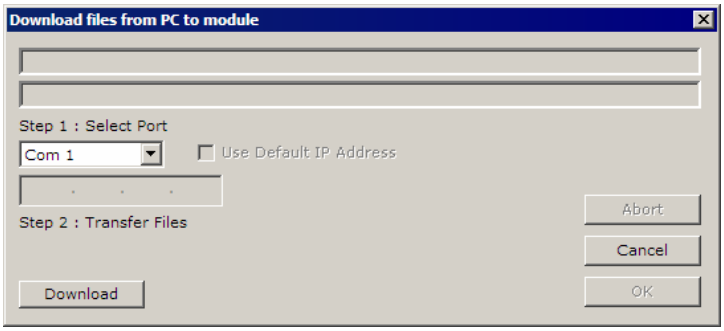
2 Choose **File** → **Save As…** and save the .PPF file to a location on your hard drive.



3 Right-click on 6201-WA-MNET_Server and select **Download from PC to Device**.



4 Select the appropriate COM port and click the **Download** button.



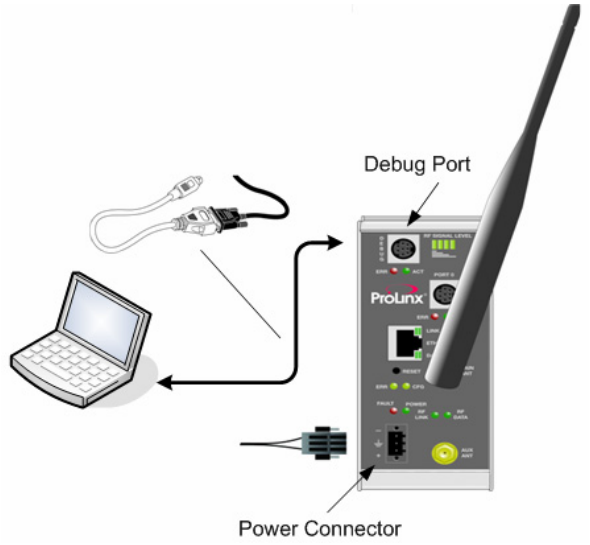
The download is complete when the OK button becomes active. When the download is complete, click **OK**.

Note: Once the configuration is downloaded to the module, the Port 0 Err LED may be flashing. This is common behavior since a Modbus device is not directly connected to Port 0 on the MNET Server.

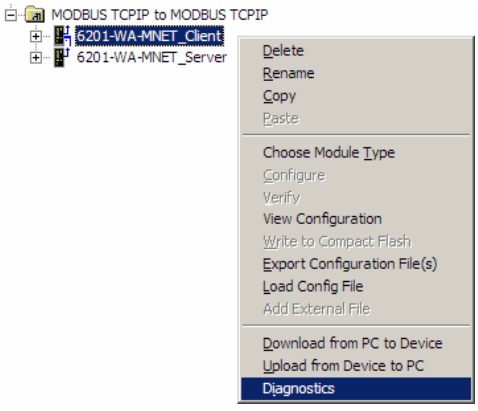
5 Verify Data Exchange

Run Diagnostics Using ProSoft Configuration Builder

1 Move the connector from the Debug Port on the MNET Server module and plug it into the Debug Port of the MNET Client module. Ensure that power is applied to both modules.



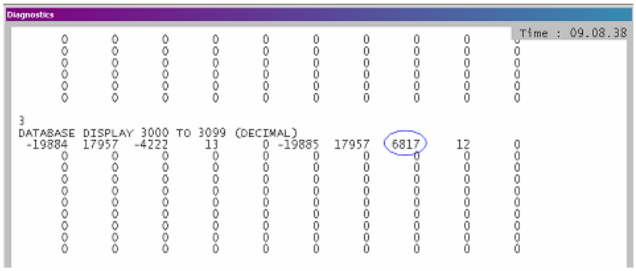
2 Right-click on 6201 WA-MNET_Client and select Diagnostics.



3 Select the appropriate Com port

4 Press "?" to display the Diagnostic menu.

5 Press “D” to display the Database menu.
6 Press “3” to show database registers beginning at 3000.
7 Press the “S” key to refresh the database values. The circled values in the example should change each time you press the “S” key indicating that data is being passed between modules. If these values do not change, contact ProSoft Technical Support.



The data shown represents clock values originating from the 6201-WA-MNET Client. The values are stored in 10 registers beginning with register 3000. The clock values are being passed wirelessly to the 6201-WA-MNET ServerThe 6201-WA-MNET Server module is taking this data and passing it back to the 6201-WA-MNET Client and placing it into 5 registers beginning at register 3005.

6 Default Module Configuration Assignments

In This Chapter

6.1 IP Addresses

IP Address are assigned in ranges to each of the WA modules. This information is used in the Radio Ethernet Configuration section of the configuration file. The following table shows the range assignments and the default value pre-configured in the module:

Module	IP Address Range	Address Set in the Module (Default)
6105-WA-PDPM	172.16.10.100 – 172.16.10.109	172.16.10.100
6104-WA-PDPS	172.16.10.110 – 172.16.10.119	172.16.10.110
6201-WA-MCM	172.16.10.120 – 172.16.10.129	172.16.10.120
6201-WA-MNET	172.16.10.130 – 172.16.10.139	172.16.10.130
6201-WA-DFCM	172.16.10.140 – 172.16.10.149	172.16.10.140
6201-WA-DFNT	172.16.10.150 – 172.16.10.159	172.16.10.150
6201-WA-ASCII	172.16.10.160 – 172.16.10.169	172.16.10.160
6201-WA-104S	172.16.10.170 – 172.16.10.179	172.16.10.170
6201-WA-DEM	172.16.10.180 – 172.16.10.189	172.16.10.180
6201-WA-RIO	172.16.10.190 – 172.16.10.199	172.16.10.190
6303-WA-MBP	172.16.10.200 – 172.16.10.209	172.16.10.200

The purpose for reserving up to 10 IP addresses per module is for addressing and establishing radio communications between modules of the same model number (for example 6201-WA-MNET to 6201-WA-MNET).

6.2 WATTCP Parameters

The following default parameters are applicable to all WA modules:

Radio_Subnet_Mask : 255.255.255.0

Radio_Default_Gateway: 172.16.10.1

7 Support, Service & Extended Warranty

In This Chapter

Be sure and read the full Warranty that can be found on our web site at www.prosoft-technology.com for *details and other terms and conditions. The content in this summary is subject to change without notice. The content is current at date of publication.*

ProSoft Technology, Inc. strives to provide meaningful support to its customers. Should any questions or problems arise, please feel free to contact us at:

Internet	Web Site: http://www.prosoft-technology.com/support
	E-mail address: support@prosoft-technology.com

Those of us at ProSoft Technology, Inc. want to provide the best and quickest support possible, so before calling please have the following information available. You may wish to fax this information to us prior to calling.

1. Product Version Number
2. System architecture
3. Network details

In the case of hardware, we will also need the following information:

1. Module configuration and contents of file
2. Module Operation
3. Configuration/Debug status information
4. LED patterns
5. Information about the processor and user data files as viewed through the development software and LED patterns on the processor
6. Details about the networked devices interfaced, if any

For technical support calls within the United States, an after-hours answering system allows pager access to one of our qualified technical and/or application support engineers at any time to answer your questions.

7.1 How to Contact Us: Sales and Support

All ProSoft Technology Products are backed with full technical support. Contact our worldwide Technical Support team and Customer Service representatives directly by phone or email:

USA / Latin America (excluding Brasil) (Office in California)

+1(661) 716-5100
+1(661) 716-5101 (Fax)
1675 Chester Avenue, 4th Floor
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+1.661.716.5100, support@prosoft-technology.com
Languages spoken include: English, Spanish

Asia Pacific (office in Malaysia)

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+603.7724.2090 (Fax)
C210, Damansara Intan,
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+603.7724.2080, asiapc@prosoft-technology.com
Languages spoken include: Chinese, Japanese, English

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Languages spoken include: Chinese, English

Europe / Middle East / Africa (office in Toulouse, France)

+33 (0) 5.34.36.87.20
+33 (0) 5.61.78.40.52 (Fax)
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17, rue des Briquetiers
F-31700 Blagnac
France
+33 (0) 5.34.36.87.20. support. EMEA@prosoft-technology.com
Languages spoken include: French, English

Brasil (office in Sao Paulo)

+55-11-5084-5178
+55-11-5083-3776 (Fax)
Rua Vergueiro, 2949 - sala 182 - Edifício Vergueiro Work Center
Vila Mariana - São Paulo
Cep: 04101-300 – Brasil
+55-11-5084-5178, eduardo@prosoft-technology.com
Languages spoken include: Portuguese, English

7.2 Return Material Authorization (RMA) Policies and Conditions

The following RMA Policies and Conditions apply to any returned product. These RMA Policies are subject to change by ProSoft without notice. For warranty information, see Section C below entitled "Limited Warranty". In the event of any inconsistency between the RMA Policies and the Warranty, the Warranty shall govern.

7.2.1 All Product Returns

1 In order to return a Product for repair, exchange or otherwise, the Customer must obtain a Returned Material Authorization (RMA) number from ProSoft and comply with ProSoft shipping instructions.

2 In the event that the Customer experiences a problem with the Product for any reason, Customer should contact ProSoft Technical Support at one of the telephone numbers listed above in Section A. A Technical Support Engineer will request several tests in an attempt to isolate the problem. If after these tests are completed, the Product is found to be the source of the problem, ProSoft will issue an RMA.

3 All returned Products must be shipped freight prepaid, in the original shipping container or equivalent, to the location specified by ProSoft, and be accompanied by proof of purchase. The RMA number is to be prominently marked on the outside of the shipping box. Customer agrees to insure the Product or assume the risk of loss or damage in transit. Products shipped to ProSoft without an RMA number will be returned to the Customer, freight collect. Contact ProSoft Technical Support for further information.

4 Out of warranty returns are not allowed on RadioLinx accessories such as antennas, cables, and brackets.

The following policy applies for Non-Warranty Credit Returns:

a 10% Restocking Fee if Factory Seal is *not* broken

b 20% Restocking Fee if Factory Seal is broken

ProSoft retains the right, in its absolute and sole discretion, to reject any non-warranty returns for credit if the return is not requested within three (3) months after shipment of the Product to Customer, if the Customer fails to comply with ProSoft's shipping instructions, or if the Customer fails to return the Product to ProSoft within six (6) months after Product was originally shipped.

7.3 Procedures for Return of Units Under Warranty:

1 A Technical Support Engineer must pre-approve all product returns.

2 Module is repaired or replaced after a Return Material Authorization Number is entered and a replacement order is generated.

3 Credit for the warranted item is issued within 10 business days after receipt of product and evaluation of the defect has been performed by ProSoft. The credit will only be issued provided the product is returned with a valid Return Material Authorization Number and in accordance with ProSoft's shipping instructions.

a) If no defect is found, a credit is issued.

b) If a defect is found and is determined to be customer generated or if the defect is otherwise not covered by ProSoft's Warranty, or if the module is not repairable, a credit is not issued and payment of the replacement module is due.

7.4 Procedures for Return of Units Out of Warranty:

1. Customer sends unit in for evaluation.
2. If no defect is found, Customer will be charged the equivalent of US $100 plus shipping, duties and taxes that may apply. A new Purchase Order will be required for this evaluation fee.
   If the unit is repaired the charge to the Customer will be 30%* of the list price plus any shipping, duties and taxes that may apply. A new Purchase Order will be required for a product repair.
3. For an immediate exchange, a new module may be purchased and sent to Customer while repair work is being performed. Credit for purchase of the new module will be issued when the new module is returned in accordance with ProSoft's shipping instructions and subject to ProSoft's policy on non-warranty returns. This is in addition to charges for repair of the old module and any associated charges to Customer.
4. If, upon contacting ProSoft Customer Service, the Customer is informed that unit is believed to be unrepairable, the Customer may choose to send unit in for evaluation to determine if the repair can be made. Customer will pay shipping, duties and taxes that may apply. If unit cannot be repaired, the Customer may purchase a new unit.

7.4.1 Un-repairable Units:

- 3150-All
- 3750
- 3600-All
- 3700
- 3170-All
- 3250
- 1560 can be repaired, if defect is the power supply
- 1550 can be repaired, if defect is the power supply
- 3350
- 3300
- 1500-All

*** 30% of list price is an estimated repair cost only. The actual cost of repairs will be determined when the module is received by ProSoft and evaluated for needed repairs.**

Purchasing Warranty Extension:

As detailed below in ProSoft's Warranty, the standard Warranty Period is one year (or in the case of RadioLinx modules, three years) from the date of delivery. The Warranty Period may be extended for an additional charge, as follows:

- Additional 1 year = 10% of list price
- Additional 2 years = 20% of list price
- Additional 3 years = 30% of list price

7.5 LIMITED WARRANTY

This Limited Warranty ("Warranty") governs all sales of hardware, software and other products (collectively, "Product") manufactured and/or offered for sale by ProSoft, and all related services provided by ProSoft, including maintenance, repair, warranty exchange, and service programs (collectively, "Services"). By purchasing or using the Product or Services, the individual or entity purchasing or using the Product or Services ("Customer") agrees to all of the terms and provisions (collectively, the "Terms") of this Limited Warranty. All sales of software or other intellectual property are, in addition, subject to any license agreement accompanying such software or other intellectual property.

7.5.1 What Is Covered By This Warranty

a *Warranty On New Products*: ProSoft warrants, to the original purchaser only, that the Product that is the subject of the sale will (1) conform to and perform in accordance with published specifications prepared, approved, and issued by ProSoft, and (2) will be free from defects in material or workmanship; provided these warranties only cover Product that is sold as new. This Warranty expires one year (or in the case of RadioLinx modules, three years) from the date of shipment (the "Warranty Period"). If the Customer discovers within the Warranty Period a failure of the Product to conform to specifications, or a defect in material or workmanship of the Product, the Customer must promptly notify ProSoft by fax, email or telephone. In no event may that notification be received by ProSoft later than 15 months (or in the case of RadioLinx modules, 39 months) from the date of delivery. Within a reasonable time after notification, ProSoft will correct any failure of the Product to conform to specifications or any defect in material or workmanship of the Product, with either new or used replacement parts. Such repair, including both parts and labor, will be performed at ProSoft's expense. All warranty service will be performed at service centers designated by ProSoft. If ProSoft is unable to repair the Product to conform to this Warranty after a reasonable number of attempts, ProSoft will provide, at its option, one of the following: a replacement product, a full refund of the purchase price or a credit in the amount of the purchase price. All replaced product and parts become the property of ProSoft. These remedies are the Customer's only remedies for breach of warranty.

b *Warranty On Services*: Material and labor used by ProSoft to repair a verified malfunction or defect are warranted on the terms specified above for new Product, provided said warranty will be for the period remaining on the original new equipment warranty or, if the original warranty is no longer in effect, for a period of 90 days from the date of repair.

c The Warranty Period for RadioLinx accessories (such as antennas, cables, brackets, etc.) are the same as for RadioLinx modules, that is, three years from the date of shipment.

7.5.2 What Is Not Covered By This Warranty

a ProSoft makes no representation or warranty, expressed or implied, that the operation of software purchased from ProSoft will be uninterrupted or error free or that the functions contained in the software will meet or satisfy the purchaser's intended use or requirements; the Customer assumes complete responsibility for decisions made or actions taken based on information obtained using ProSoft software.

b With the exception of RadioLinx accessories referenced in paragraph 1(c) this Warranty does not cover any product, components, or parts not manufactured by ProSoft.

c This Warranty also does not cover the failure of the Product to perform specified functions, or any other non-conformance, defects, losses or damages caused by or attributable to any of the following: (i) shipping; (ii) improper installation or other failure of Customer to adhere to ProSoft's specifications or instructions; (iii) unauthorized repair or maintenance; (iv) attachments, equipment, options, parts, software, or user-created programming (including, but not limited to, programs developed with any IEC 61131-3 programming languages, or "C") not furnished by ProSoft; (v) use of the Product for purposes other than those for which it was designed; (vi) any other abuse, misapplication, neglect or misuse by the Customer; (vii) accident, improper testing or causes external to the Product such as, but not limited to, exposure to extremes of temperature or humidity, power failure or power surges outside of the limits indicated on the product specifications; or (viii) disasters such as fire, flood, earthquake, wind or lightning.

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7.5.3 DISCLAIMER REGARDING HIGH RISK ACTIVITIES

PRODUCT MANUFACTURED OR SUPPLIED BY PROSOFT IS NOT FAULT TOLERANT AND IS NOT DESIGNED, MANUFACTURED OR INTENDED FOR USE IN HAZARDOUS ENVIRONMENTS REQUIRING FAIL-SAFE PERFORMANCE (INCLUDING, WITHOUT LIMITATION, THE OPERATION OF NUCLEAR FACILITIES, AIRCRAFT NAVIGATION OF COMMUNICATION SYSTEMS, AIR TRAFFIC CONTROL, DIRECT LIFE SUPPORT MACHINES OR WEAPONS SYSTEMS), IN WHICH THE FAILURE OF THE PRODUCT COULD LEAD DIRECTLY OR INDIRECTLY TO DEATH, PERSONAL INJURY, OR SEVERE PHYSICAL OR ENVIRONMENTAL DAMAGE (COLLECTIVELY, "HIGH RISK ACTIVITIES"). PROSOFT SPECIFICALLY DISCLAIMS ANY EXPRESS OR IMPLIED WARRANTY OF FITNESS FOR HIGH RISK ACTIVITIES.

7.5.4 DISCLAIMER OF ALL OTHER WARRANTIES

THE WARRANTIES SET FORTH IN PARAGRAPH 1 ABOVE ARE IN LIEU OF ALL OTHER WARRANTIES, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE.

*7.5.5 LIMITATION OF REMEDIES***

IN NO EVENT WILL PROSOFT (OR ITS DEALER) BE LIABLE FOR ANY SPECIAL, INCIDENTAL, OR CONSEQUENTIAL DAMAGES BASED ON BREACH OF WARRANTY, BREACH OF CONTRACT, NEGLIGENCE, STRICT TORT, OR ANY OTHER LEGAL THEORY. DAMAGES THAT PROSOFT AND ITS DEALER WILL NOT BE RESPONSIBLE FOR INCLUDE, BUT ARE NOT LIMITED TO: LOSS OF PROFITS; LOSS OF SAVINGS OR REVENUE; LOSS OF USE OF THE PRODUCT OR ANY ASSOCIATED EQUIPMENT; LOSS OF DATA; COST OF CAPITAL; COST OF ANY SUBSTITUTE EQUIPMENT, FACILITIES, OR SERVICES; DOWNTIME; THE CLAIMS OF THIRD PARTIES, INCLUDING CUSTOMERS OF THE PURCHASER; AND INJURY TO PROPERTY.

** Some areas do not allow time limitations on an implied warranty, or allow the exclusion or limitation of incidental or consequential damages. In such areas the above limitations may not apply. This Warranty gives you specific legal rights, and you may also have other rights which vary from place to place.

7.5.6 Time Limit for Bringing Suit

Any action for breach of warranty must be commenced within 15 months (or in the case of RadioLinx modules, 39 months) following shipment of the Product.

7.5.7 No Other Warranties

Unless modified in writing and signed by both parties, this Warranty is understood to be the complete and exclusive agreement between the parties, suspending all oral or written prior agreements and all other communications between the parties relating to the subject matter of this Warranty, including statements made by salesperson. No employee of ProSoft or any other party is authorized to make any warranty in addition to those made in this Warranty. The Customer is warned, therefore, to check this Warranty carefully to see that it correctly reflects those terms that are important to the Customer.

7.5.8 Intellectual Property

a Any documentation included with Product purchased from ProSoft is protected by copyright and may not be photocopied or reproduced in any form without prior written consent from ProSoft.

b ProSoft's technical specifications and documentation that are included with the Product are subject to editing and modification without notice.

c Transfer of title shall not operate to convey to Customer any right to make, or have made, any Product supplied by ProSoft.

d Customer is granted no right or license to use any software or other intellectual property in any manner or for any purpose not expressly permitted by any license agreement accompanying such software or other intellectual property.

e Customer agrees that it shall not, and shall not authorize others to, copy software provided by ProSoft (except as expressly permitted in any license agreement accompanying such software); transfer software to a third party separately from the Product; modify, alter, translate, decode, decompile, disassemble, reverse-engineer or otherwise attempt to derive the source code of the software or create derivative works based on the software; export the software or underlying technology in contravention of applicable US and international export laws and regulations; or use the software other than as authorized in connection with use of Product.

7.5.9 Additional Restrictions Relating To Software And Other Intellectual Property

In addition to complying with the Terms of this Warranty, Customers purchasing software or other intellectual property shall comply with any license agreement accompanying such software or other intellectual property. Failure to do so may void this Warranty with respect to such software and/or other intellectual property.

7.5.10 Allocation of risks

This Warranty allocates the risk of product failure between ProSoft and the Customer. This allocation is recognized by both parties and is reflected in the price of the goods. The Customer acknowledges that it has read this Warranty, understands it, and is bound by its Terms.

7.5.11 Controlling Law and Severability

This Warranty shall be governed by and construed in accordance with the laws of the United States and the domestic laws of the State of California, without reference to its conflicts of law provisions. If for any reason a court of competent jurisdiction finds any provisions of this Warranty, or a portion thereof, to be unenforceable, that provision shall be enforced to the maximum extent permissible and the remainder of this Warranty shall remain in full force and effect. Any cause of action with respect to the Product or Services must be instituted in a court of competent jurisdiction in the State of California.

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