



## **WA-PDPM WA-PDPS**

**ProLinX Wireless**

PROFIBUS Master and Slave

### **Setup Guide**

May 16, 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.

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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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# Contents

<b>PLEASE READ THIS NOTICE</b> .....	<b>2</b>
<b>Important Installation Instructions</b> .....	<b>2</b>
<b>Your Feedback Please</b> .....	<b>3</b>
<b>1 INTRODUCTION</b> .....	<b>7</b>
<b>1.1 About the PROFIBUS Protocol</b> .....	<b>7</b>
<b>1.2 Before You Begin</b> .....	<b>8</b>
<b>1.3 Using the Sample PCB Files</b> .....	<b>9</b>
<b>2 INSTALL THE CONFIG TOOLS AND APPLICATIONS</b> .....	<b>11</b>
<b>(PCB AND SYCON)</b> .....	<b>11</b>
<b>Install ProSoft Configuration Builder (PCB)</b> .....	<b>12</b>
<b>2.1 Install SyCon Configuration Software</b> .....	<b>12</b>
<b>2.2 Copy the Sample Application Files</b> .....	<b>13</b>
<b>2.3 Copy the ProLinx GSD files</b> .....	<b>14</b>
<b>3 ADD SLAVE DEVICES TO THE PDPM</b> .....	<b>15</b>
<b>3.1 Identify Data Mapping Requirements</b> .....	<b>15</b>
<b>3.2 Map Remote Slave Devices to the PDPM Database</b> .....	<b>15</b>
<b>3.3 Save and Transfer the Configuration File to the Module</b> .....	<b>20</b>
<b>4 CONFIGURE THE PDPM MODULE</b> .....	<b>21</b>
<b>4.1 Complete the .PPF File Sections</b> .....	<b>22</b>
<b>4.1.1 PDPM WATTCP File</b> .....	<b>22</b>
<b>4.1.2 PDPM RADIO CONFIGURATION</b> .....	<b>23</b>
<b>4.1.3 RADIO PWP EXCHANGES (PDPM)</b> .....	<b>24</b>
<b>4.1.4 RADIO PWP MULTICAST GROUP LIST (PDPM)</b> .....	<b>28</b>
<b>4.1.5 PDPM</b> .....	<b>28</b>
<b>5 CONFIGURE THE PDPS MODULE</b> .....	<b>29</b>
<b>5.1 Complete the .PPF File Sections</b> .....	<b>30</b>
<b>5.1.1 PDPS WATTCP Section</b> .....	<b>30</b>
<b>5.1.2 PDPS RADIO CONFIGURATION</b> .....	<b>31</b>
<b>5.1.3 RADIO SNTP CLIENT</b> .....	<b>32</b>
<b>5.1.4 RADIO PWP EXCHANGES</b> .....	<b>32</b>
<b>5.1.5 RADIO PWP MULTICAST GROUP LIST</b> .....	<b>34</b>
<b>5.1.6 PDPS</b> .....	<b>35</b>
<b>5.2 Save and Download the Configuration File to the PDPS</b> .....	<b>36</b>
<b>6 CONFIGURE THE PDPS IN THE PRIMARY MASTER</b> .....	<b>39</b>
<b>(SINGLE-REMOTE SITE SAMPLE)</b> .....	<b>39</b>
<b>7 MULTI-REMOTE SITE SAMPLE APPLICATION</b> .....	<b>41</b>
<b>7.1 Map Slave Devices to the PDPM Database (MULTI- REMOTE SITE SAMPLE)</b> .....	<b>44</b>
<b>7.1.1 Sample SyCon File for Slaves 4 and 5</b> .....	<b>44</b>

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7.1.2	Sample SyCon File for Slave 6 .....	46
<b>7.2</b>	<b>Save and Download the File to the 6104-WA-PDPM.....</b>	<b>47</b>
<b>7.3</b>	<b>Review the PDPM Module Sample Application Files .....</b>	<b>49</b>
7.3.1	WATTCP Section .....	49
7.3.2	PDPM Radio Configuration .....	50
7.3.3	Radio PWP MULTICAST Group List.....	53
7.3.4	PDPM Section .....	53
7.3.5	Save and Download the File to the 6104-WA-PDPM.....	54
<b>7.4</b>	<b>Review the Sample PDPS Configuration.....</b>	<b>55</b>
7.4.1	PDPS WATTCP Section .....	56
7.4.2	PDPS RADIO CONFIGURATION Section.....	57
7.4.3	PDPS RADIO SNTP CLIENT Section.....	58
7.4.4	PDPS RADIO PWP EXCHANGES .....	58
7.4.5	PDPS RADIO PWP MULTICAST GROUP LIST.....	60
7.4.6	PDPS Section.....	61
<b>7.5</b>	<b>Save and Download the Configuration File to the PDPS.....</b>	<b>63</b>
<b>8</b>	<b>CONFIGURE THE PDPS IN THE PRIMARY MASTER (MULTI-REMOTE SITE SAMPLE)...</b>	<b>65</b>
<b>SUPPORT, SERVICE &amp; WARRANTY.....</b>		<b>67</b>
<b>Module Service and Repair .....</b>		<b>67</b>
<b>General Warranty Policy – Terms and Conditions .....</b>		<b>68</b>
<b>Limitation of Liability.....</b>		<b>69</b>
<b>RMA Procedures .....</b>		<b>69</b>
<b>INDEX.....</b>		<b>71</b>

# 1 Introduction

## *In This Chapter*

- About the PROFIBUS Protocol ..... 6
- Before You Begin ..... 7
- Using the Sample PCB Files ..... 8

This manual is intended to guide you through the setup and configuration of your ProLinx Wireless PROFIBUS Master and Slave devices.

**Important:** This Setup Guide shows you how to set up a simple PROFIBUS wireless network between a ProLinx Wireless PROFIBUS Master and a ProLinx Wireless PROFIBUS Slave. 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 PROFIBUS Master, PROFIBUS Slave and ProLinx Wireless protocols, please refer to the following Driver Manuals, on your ProSoft Solutions CD-ROM:

- PDPM Driver Manual
- PDPS 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 About the PROFIBUS Protocol

PROFIBUS (Process Field Bus) is a widely-used, open-standards protocol created by a consortium of European factory automation suppliers in 1989.

PROFIBUS is a master/slave protocol. The master establishes a connection to the remote slave. When the connection is established, the master sends the PROFIBUS commands to the slave. The PDPM module works as a master only.

The module uses an internal database to pass data and commands between the processor and the client and server devices on the PROFIBUS network.

PROFIBUS supports a variety of network types. The network type supported by the 6104-WA-PDPM 6105-WA-PDPS module is PROFIBUS DP (Device Bus), which is designed for remote I/O systems, motor control centers, and variable speed drives.

## 1.2 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.

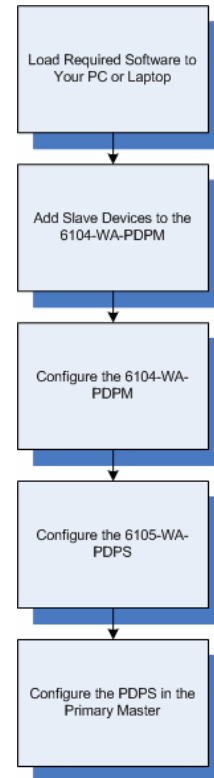
All modules (PDPS and PDPM) contain a default configuration file designed to provide communications directly out of the box. That is, if you are using a single PDPM and a single PDPS module, there is no need for further configuration. Both modules will communicate and pass data directly out of the box.

Default parameters make this possible. Modules are configured as pairs with static IP addresses already assigned and configured. In addition, a default gateway, SSID, station name, and channel are pre-assigned as well.

Setting up the PROFIBUS network is relatively simple using the sample files included with each module. The following diagram illustrates the high-level steps used to configure each module.

The default configuration file contains separate configurations for each module. In addition, the same file also includes configuration samples for a single PDPS talking to a single PDPM (Single-Remote Site Sample), and well as a single PDPS talking to multiple PDPMs (MULTI-REMOTE SITE SAMPLE).

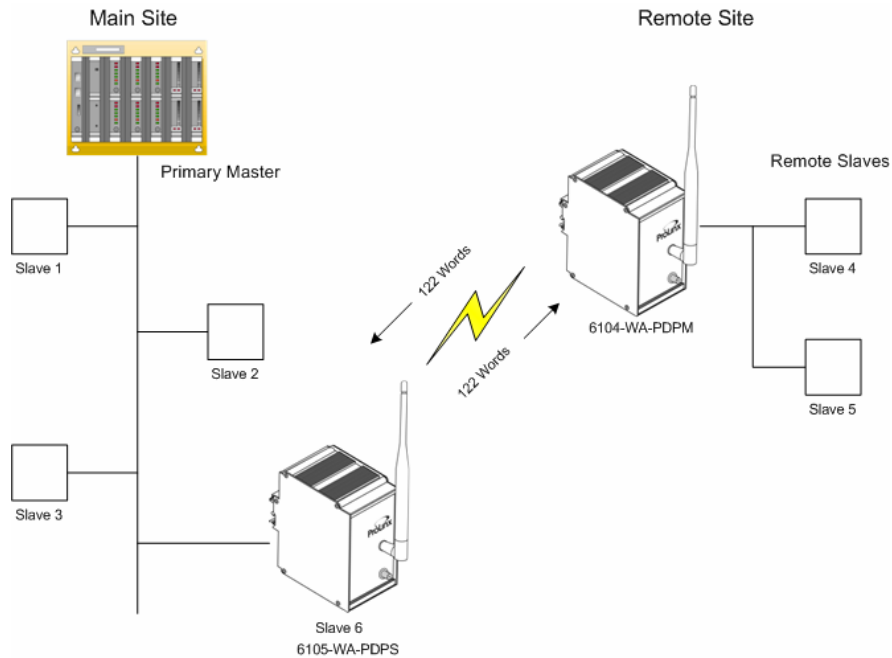
You will use SyCon Configuration software to configure the PROFIBUS network and ProSoft Configuration Builder (PCB) to set up your modules. You can use the sample files to get started or you can create the configuration files from scratch. The easiest way to begin is to use the sample configurations. Once you understand, how they are created, setting up your network is easy.





### 1.3 Using the Sample PCB Files

The Single-Remote Site sample shows a single 6104-WA-PDPM module and a single 6105-WA-PDPS module. This default configuration is ideal for network installations where a third-party primary master at a main site wants to communicate with remote slaves at another site. The following diagram illustrates the sample Single-Remote Site Sample scenario.



- In this example, the following is assumed:
- A third-party primary master needs to communicate with five slaves
- Two of the slaves are remote
- The application uses a ProLinx 6104-WA-PDPM and a 6105-WA PDPS to establish communication between the primary master and the remote slaves
- The module's radio communication parameters are preset and configured to pass up to 122 words in either direction
- The PDPS is connected to the primary master
- The PDPM is connected to the remote slaves

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 and SyCon master configuration files make the sample applications work. You can also follow along with the example and modify the configuration files as you go along. Whether you have a Single-Remote Site application or a Multi-Remote Site application, you should read through the Single-Remote Site application example to get a thorough understanding of the configuration process.

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.



## 2 Install the Config Tools and Applications (PCB and SyCon)

### *In This Chapter*

- Install ProSoft Configuration Builder (PCB)..... 10
- Copy the Sample Application Files..... 11
- Copy the ProLinx GSD files. .... 12


There are two applications and two files that you must download from the ProLinx Solutions CD to your PC or Laptop whether you are using the default 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.**

## Install ProSoft Configuration Builder (PCB)

**Note:** We recommend that you remove any previous versions of PCB prior to installing this version.

1. ProSoft Configuration Builder helps you configure your module for your application. 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 PCB to your hard disk.

## 2.1 Install SyCon Configuration Software

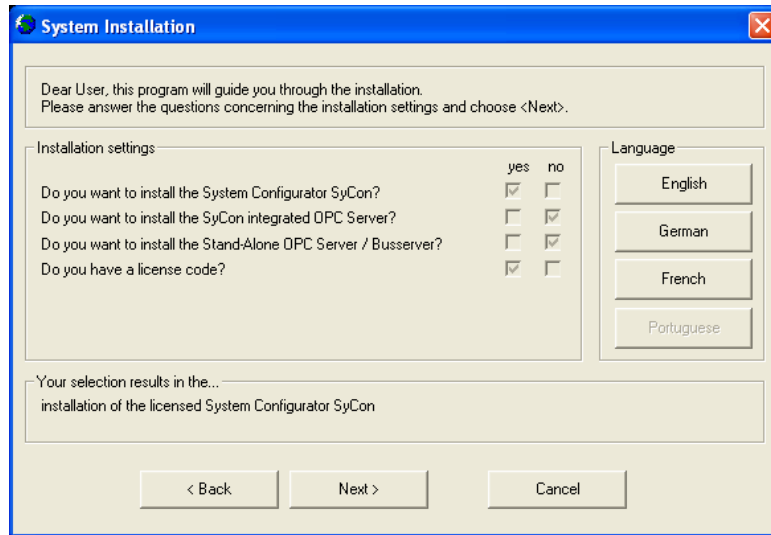
**Important:** If you already have a version of SyCon Configuration software installed, we suggest that you install this version on a different PC or Laptop to prevent corruption of an existing installation of SyCon.

You will use SyCon Configuration Software too add PROFIBUS devices to the network. This software is located on the ProLinx Solutions CD.

- 1 From the ProLinx Solutions splash screen, select  **Product Documentation**.
- 2 Select **Utilities** → **SyCon** → **SyCon**, then double-click **Setup**.



- 3 Make selections on the *Program Installation* window as shown:




- 4 Click **Next**.

**Note:** You do not have to install SyCon Integrated OPC Server or Stand-Alone OPC Server/Busserver.

- 5 Accept the license agreement and click **Next** to get to the Program Registration page.  
 6 Fill in each field in this window. The License Code is located in the **SyCon** folder on the CD in the **LIC\_044.txt** file.  
 7 Click **OK** and follow the prompts to complete the install.


## 2.2 Copy the Sample Application Files

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



- 3 Copy the files **PROLIX WIRELESS SAMPLE.PPF** and **610x-SAMPLE.PD** to a location on your PC or Laptop.

### 2.3 Copy the ProLinux GSD files.

- 1 From the ProLinux Solutions splash screen, click  **Product Documentation**.
- 2 Choose **Utilities** → **PDPS\_GSD** → **ProLinux\_PDPS**.



- 3 Copy the files from this folder to a location on your PC or Laptop. You will need these files when you configure the PDPS module in the Primary Master.

## 3 Add Slave Devices to the PDPM

### *In This Chapter*

- Identify Data Mapping Requirements ..... 13
- Map Remote Slave Devices to the PDPM Database ..... 13
- Save and Transfer the Configuration File to the Module ..... 18

The first step in the configuration process is to add slave devices to the 6104-WA-PDPM module.

### 3.1 Identify Data Mapping Requirements

Before setting up either of the modules, you need to understand how data will be mapped from the slaves to the PDPM. In the sample, two slaves are located at a remote site (Slave 4 and Slave 5). Both of these slaves are on the same network as the 6104-WA-PDPM.

Each slave is configured to send one word as input and one word as output:

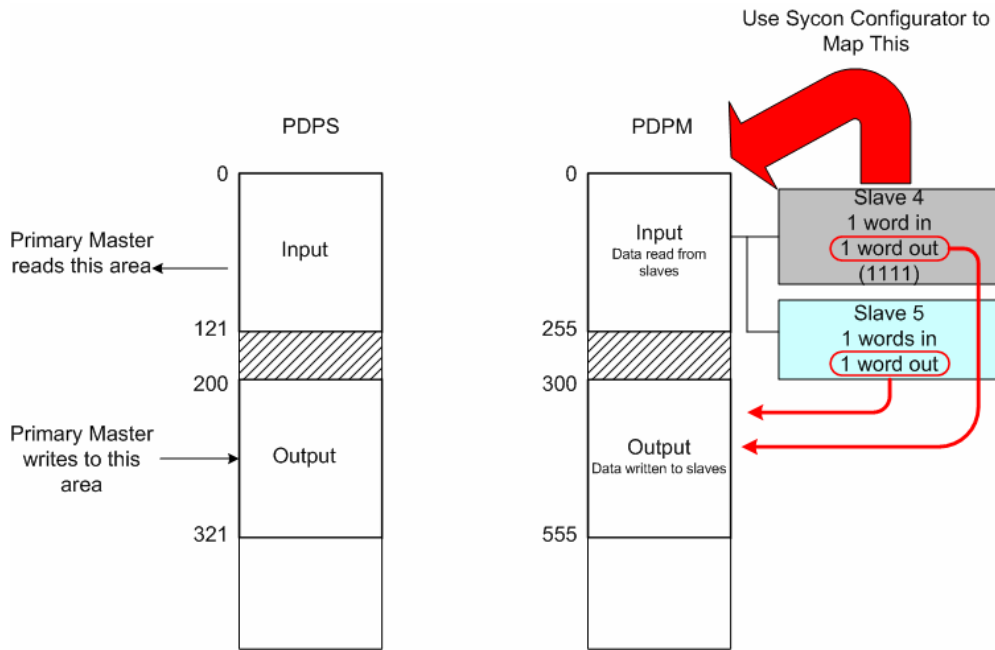
Slave 4:	1111 (IN)	3333 (OUT)
Slave 5:	2222 (IN)	4444 (OUT)

The data will be automatically mapped to the input and output areas of the 6104-WA-PDPM module database. The overall PROFIBUS network node capacity can be calculated based on the number of required cyclic bytes for the slave units. The slave becomes hard wired to an existing PROFIBUS network controlled by a third party master. The available number of PDPS slave cyclic data is 244 bytes Input and 244 bytes Output data (maximum 400 I/O bytes). For example, if each remote PROFIBUS third party slave connected to the PDPM master gateway consumed 6 Input/Output bytes each, a total of 40 slaves can be configured. The remote wireless PDPM master allows up to 512 bytes input and 512 bytes output cyclic data. Multiple PDPS slave units could be used to accommodate larger PROFIBUS networks.

### 3.2 Map Remote Slave Devices to the PDPM Database

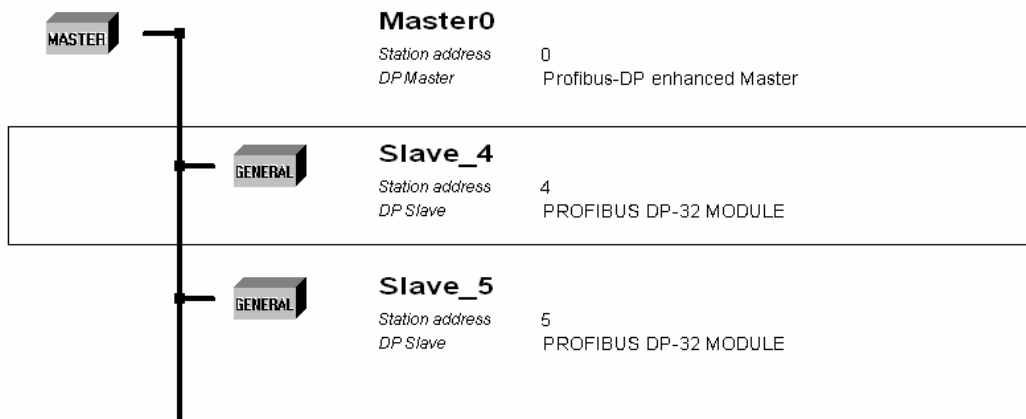
There are two files that were used to create the Single-Remote Site application; **PROLINX WIRELESS SAMPLE.PPF** and **610x-SAMPLE.PB**.

The 610x-SAMPLE.PB file is created first. This file maps the slaves to the PDPM module. The following diagram illustrates the first step in the process.



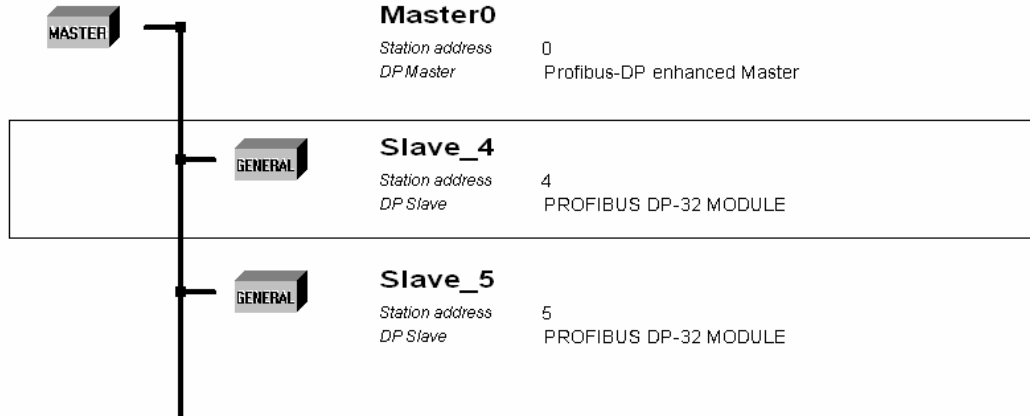
- 1 Start SyCon
- 2 Choose **Start** → **Programs** → **SyCon System Configuration** → **SyCon**.
- 3 Choose **File** → **Open**.
- 4 Navigate to the location where you stored the sample files and choose **610x-SAMPLE.PB**.

**Note:** Since this sample is already preconfigured, the Master and Slaves have already been defined. You will want to modify this configuration in order to add your own slaves and database addressing. The *ProLinx PDPM Driver Manual* contains step-by-step instructions on how to use SyCon to define slaves on your PROFIBUS network.





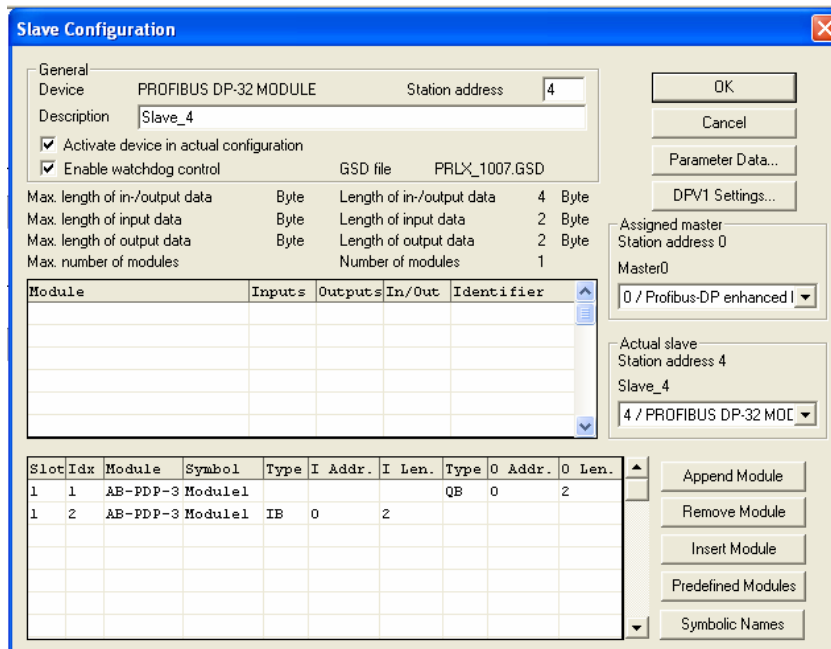
The master is defined as a PDPM module. Slaves have been defined as PROFIBUS DP-32 modules.



- 5 Double-click on *Slave\_4*.
- 6 The Description has been set to a unique description identifying that slave device. In this case, the slave was saved as Slave 4.
- 7 Data inputs and outputs are then selected for each slave device.

**Note:** In some cases, you will have to select data inputs and outputs from a list depending on the device and GSD file. In the case of our sample, the GSD file sets the inputs and outputs automatically. For example, the slave devices used only allow 2 bytes input and 2 bytes output.

- 8 Click **OK**.

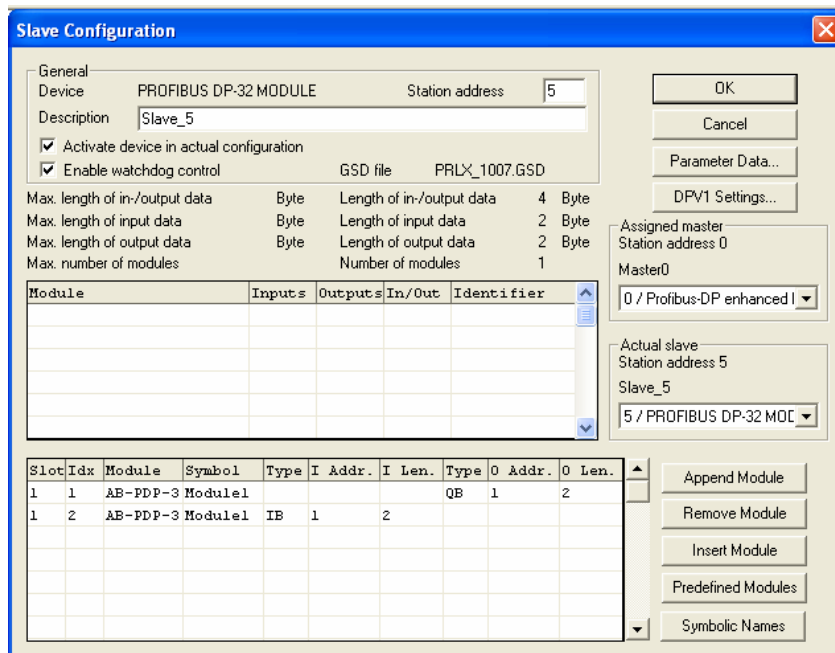


This Slave Configuration window shows the input and output data mapping. In this case, the slave uses bytes and shows the Input Address beginning at 0 and the Input Length at 2 (indicating 2 bytes).

The Output Address begins at 0 and the Output Length is also set to 2 (2 bytes).

**Note:** Input and Output addresses begin at 0. This address is actually an offset based on the storage locations defined within the ProLinX database of the wireless master. Therefore, an input address of 0 is stored in the module database at register 0, while an output address of 0 is stored in the module database at address 300. Output address 1 is stored in the module at address 301 and so on.

This process is repeated for each slave connected to the PDPM (based on input/output requirements). SyCon automatically updates the address locations when you save the configuration. For example, Slave 4 has a beginning input address of 0 and ends at address 2. This means that Slave 4 uses the first two input registers of the PDPM for input data and the first two output registers for output data.

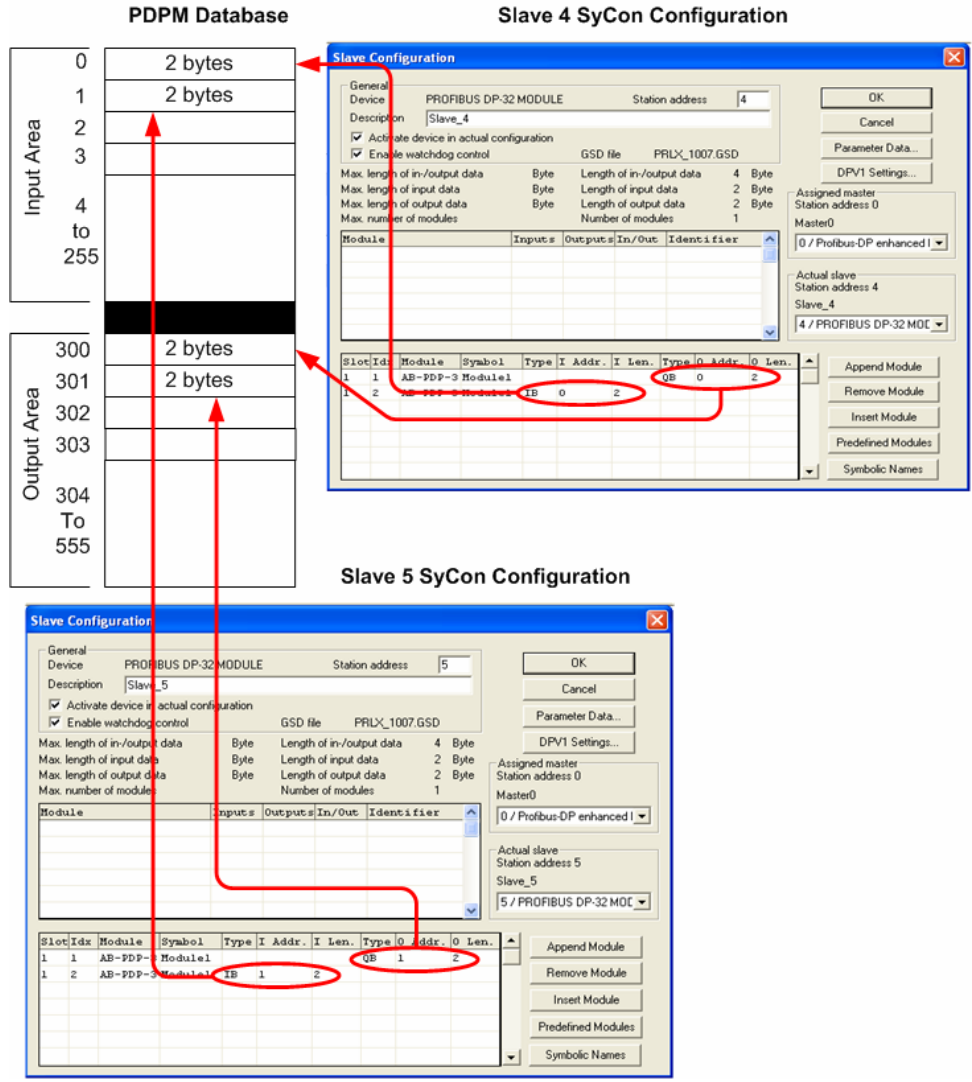


This example shows Slave 5. Slave 5 is designed to pass two bytes of data as input and two bytes of data as output. Notice that the Input Address (I Addr.) begins at register 1 and that the data is 2 bytes (I Len.) in length (1 word).

With this step completed, Slave 4 is configured to pass 2 bytes of input data into input register 0 and 2 bytes of data into output register 0 (address 300 offset). Slave 4 is passing 2 bytes of data into input register 1 and received data from output register 1 (address 301 offset). You would repeat the process for each slave connected to the PDPM.

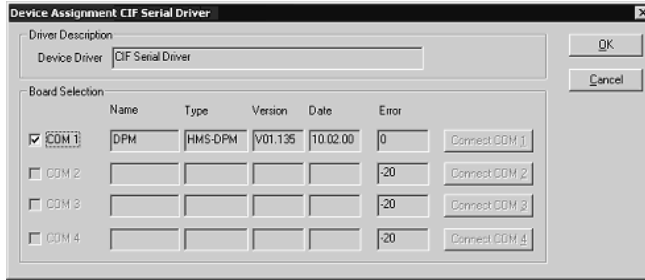
**Note:** Database registers are not sequentially set up until you save the configuration. That is, as you are setting up each slave connected to the PDPM, the register offsets are not immediately apparent until the file is saved.

The following diagram illustrates the result of this configuration:



### 3.3 Save and Transfer the Configuration File to the Module

- 1 Click on the Master device in the project screen to select it. From the Online menu, select Download. The Device Assignment CIF Serial Driver dialog will appear. Click the Connect button for the COM port your module is attached to. For this example we are using COM 1. The COM check box on the far left of the dialog should become active. Check this check box and click OK.



- 2 A dialog will appear that warns of interrupting communications, and asks if you want to continue with the download. Click Yes.
- 3 A download progress dialog will appear, showing the current progress. When this dialog finishes successfully it will disappear.



- 4 At this point, save your project again and close SyCon.

## 4 Configure the PDPM Module

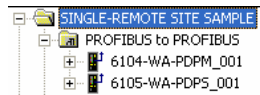
### *In This Chapter*

- Complete the .PPF File Sections ..... 20

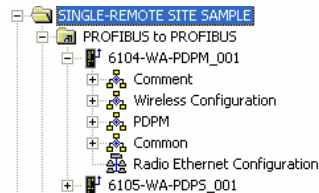
With database mapping completed, the PDPM and PDPS modules must be configured. The goal here is to establish communications between each module. The default configuration is designed to pass 122 words between each module. Each module is configured separately.

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

- 1 Start PCB.
- 2 Select **File** → **Open**.
- 3 Navigate to the location where you copied the **PROLIX WIRELESS SAMPLE.PPF** file and select this file.
- 4 Expand the **SINGLE-REMOTE SITE SAMPLE** section, and then expand the **PROFIBUS to PROFIBUS** selection.




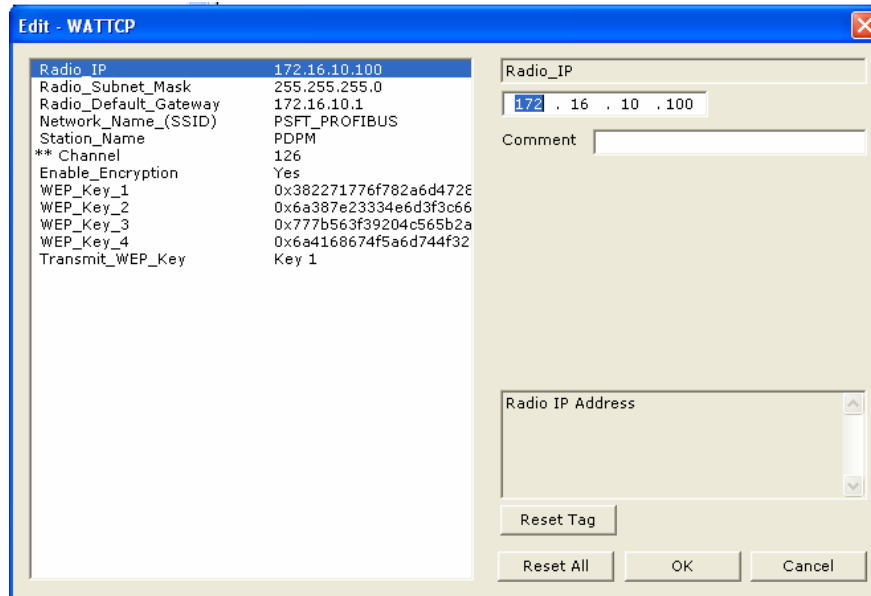
- 5 Expand the 6104-WA-PDPM module selection.



## 4.1 Complete the .PPF File Sections

### 4.1.1 PDPM WATTCP File

- 1 Double-click the  Radio Ethernet Configuration selection.



This section is identical for all 6104-WA-PDPM modules shipped from the factory. If you are using the Single-Remote Site Sample application, these values should work right out of the box. The default Radio IP address is set to **172.16.10.100**. See the **Multi-Remote Site Sample** section for information on adding additional PDPM modules.

Every PDPM 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 if using more than one PDPM.

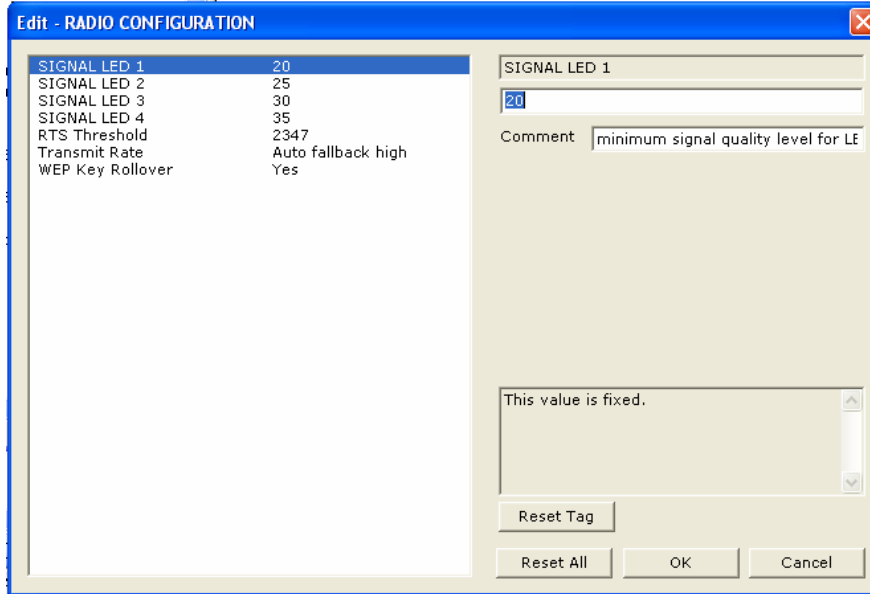
**Note:** All modules must have the same Subnet Mask, Default Gateway, and Network Name (SSID) if they are all located on the same network. Please refer to the appendix for a list of pre-assigned ProSoft product IP addresses.

If you are making changes, be sure to save your changes before moving on to the next step.

## 4.1.2 PDPM RADIO CONFIGURATION

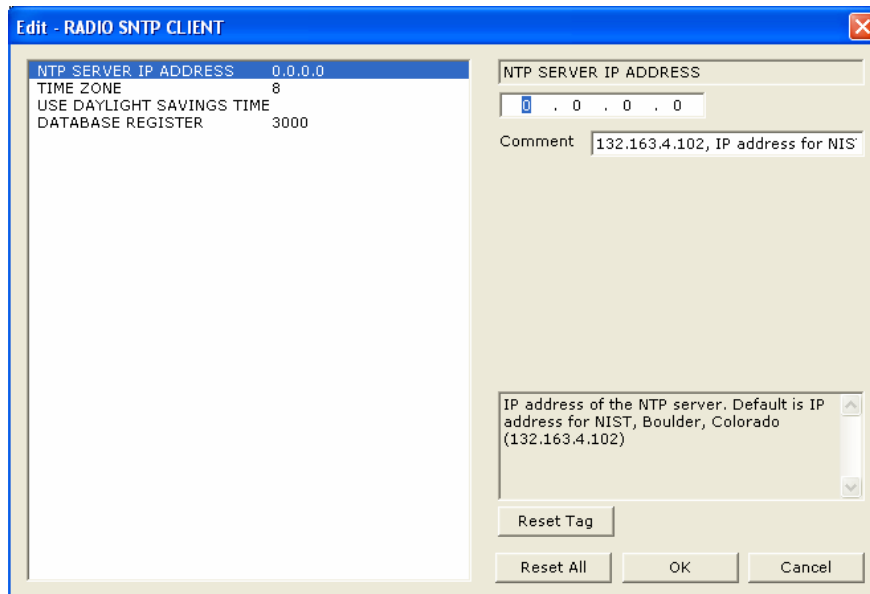
Expand the Wireless Configuration section and double-click on the

 RADIO CONFIGURATION icon.



All of the values are default values and should work fine “as is”. If you need to change values in the window, make sure to your changes before moving on to the next step. As you select each parameter, the help window on the screen displays information to help you make your selections.

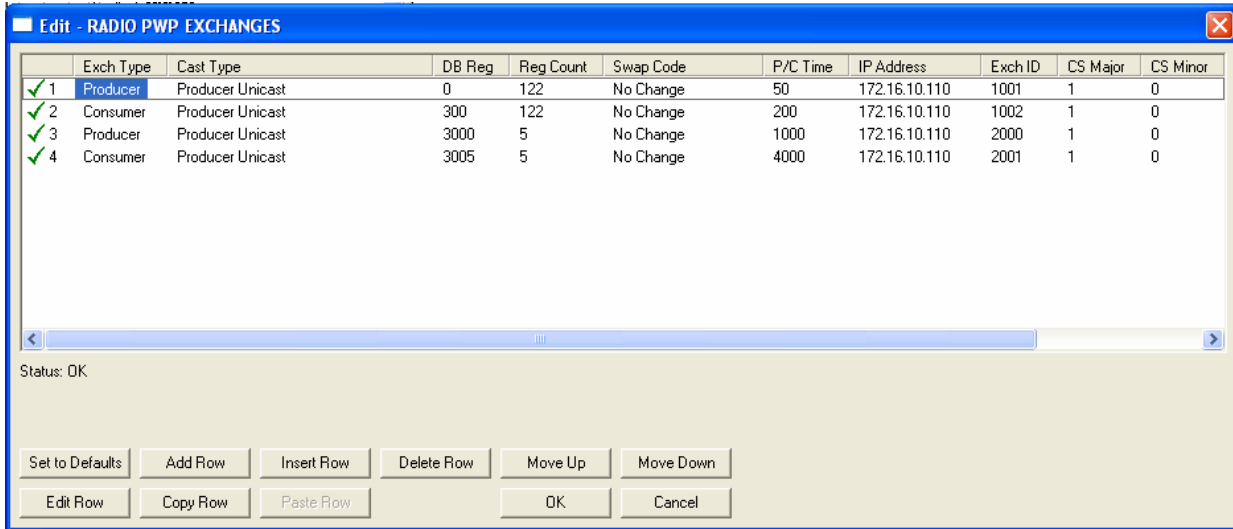
RADIO SNTP CLIENT Double-click on the  RADIO SNTP CLIENT icon.



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.

### 4.1.3 RADIO PWP EXCHANGES (PDPM)

Double-click the  icon.



This is the area where you set up data exchange between the PDPM and the PDPS. 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 SINGLE-REMOTE SITE SAMPLE application, the modules are set up to send 122 words back and forth between the PDPM and the PDPS 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 122 words and receiving 122 words back even though we are actually sending only two words of data (1 word input from Slave 4 and 1 word input from Slave 5).



This is accomplished using a single Produce command and a single Consume command.

	Exch Type	Cast Type	DB Reg	Reg Count	Swap Code	P/C Time	IP Address	Exch ID	CS Major	CS Minor
✓ 1	Producer	Producer Unicast	0	122	No Change	50	172.16.10.110	1001	1	0

**Producer Command Narrative**

- ① Send data using Unicast mode... ② to IP Address 172.16.10.110. ③ Send 122 registers... ④ beginning at input register 0.
- ⑤ Do not set a swap code.
- ⑥ Send the data every 50 ms.
- ⑦ Use an Exchange ID of 1001

**Note:** IP address 172.16.10.110 is the 6105-WA-PDPS

	Exch Type	Cast Type	DB Reg	Reg Count	Swap Code	P/C Time	IP Address	Exch ID	CS Major	CS Minor
✓ 1	Producer	Producer Unicast	0	122	No Change	50	172.16.10.110	1001	1	0
✓ 2	Consumer	Producer Unicast	300	122	No Change	200	172.16.10.110	1002	1	0

**Consumer Command Narrative**

- ① If the Exchange ID is 1002... ② Receive data from 172.16.10.110 ③ Receive 122 registers... ④ into output registers starting at 300.
- ⑤ Do not set a swap code.
- ⑥ Check for data every 200 ms.

**Note:** IP address 172.16.10.110 is the 6105-WA-PDPS

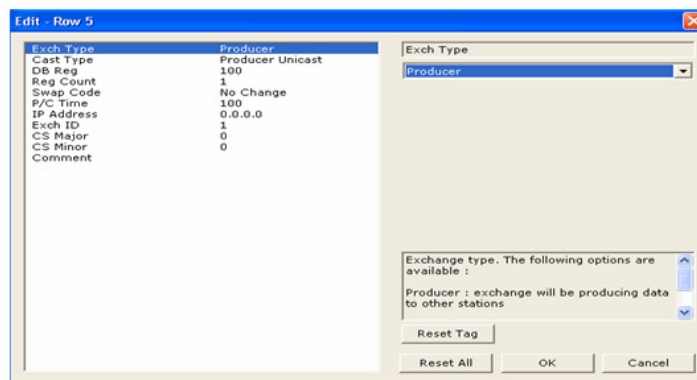
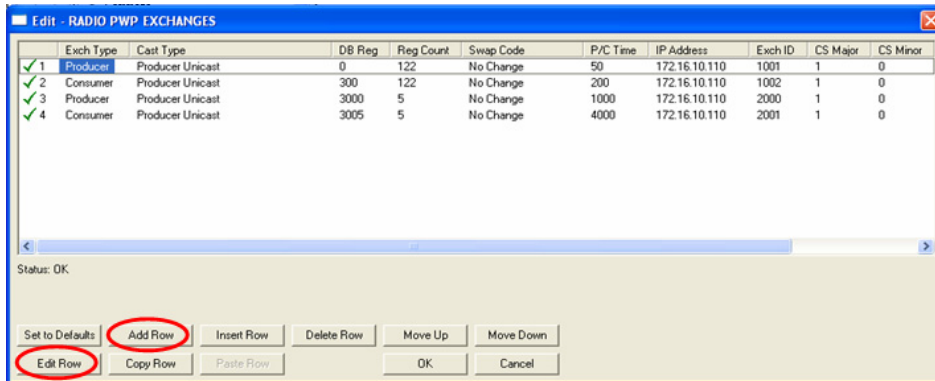
In order for these commands to work, the 6105-WA-PDPS must also be configured to consume data being produced by the PDPM into the appropriate database registers and as well as be set up to produce data to allow the PDPM to consume. Setting up the corresponding PDPS configuration is discussed later in this chapter.

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

How it's Done

- 1 Double-click on the  icon.
- 2 Click the Add button. PCB 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.

### About Transmission Casts

The SINGLE-REMOTE SITE SAMPLE uses a UNICAST transmission type. UNICAST means that you set up Produce and Consume Commands that transfer or receive data to or from a single module (IP Address). 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 more multiple modules in a MULTICAST Group List but only picked up by the module within that list with the appropriate matching Exchange ID), 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.

Using MULTICAST limits the modules that may be the intended recipients of 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 may be configured to handle certain types of commands while the remaining 10 will have one specific function that will never change. MULTICAST would be used to only send data to the five modules in the MULTICAST Group rather than sending it to all 15 modules when we already know that the 10 non-members of the group will ever have a need to receive the MULTICAST data.

#### **4.1.4 RADIO PWP MULTICAST GROUP LIST (PDPM)**

This section does not contain any data in the sample application since UNICAST transmission is used. The Multi-Remote Site Sample application uses MULTICAST transmission and is discussed in the *Multi-Remote Site Sample* section of this guide.

#### **4.1.5 PDPM**

The sample configuration file does not require that any default values or commands be changed in either the **PROFIBUS MASTER** or **PROFIBUS MASTER COMMANDS** sections. Refer to the *PDPM Driver Manual* for information on setting these values for your application.

The 6104-WA-PDPM is now configured to receive data from the attached slave devices and is also ready to send the data to the 6105-WA-PDPS.

## 5 Configure the PDPS Module

### *In This Chapter*

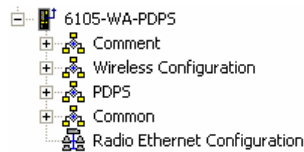
- Complete the .PPF File Sections ..... 28
- Save and Download the Configuration File to the PDPS ..... 34

The 6105-WA-PDPS module is configured to send and receive 122 words of data to and from the 6104-WA-PDPM.

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


**Note:** If you are already in PCB and have the sample file open, skip steps 1 – 3.

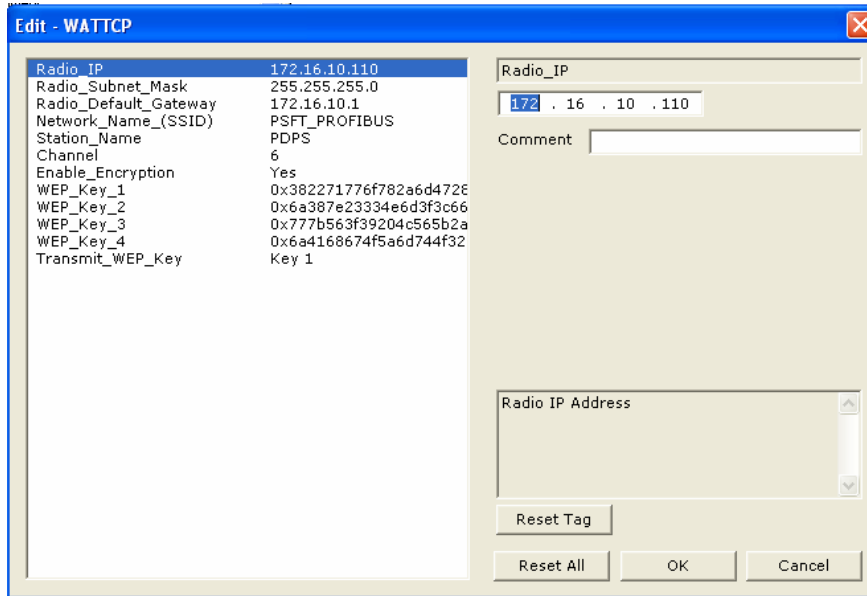
- 1 If it is not already running, start PCB.
- 2 Select **File** → **Open**.
- 3 Navigate to the location where you copied the **PROLINX WIRELESS SAMPLE.PPF** file and select this file.
- 4 Expand the 6105-WA-PDPS module selection.



## 5.1 Complete the .PPF File Sections

### 5.1.1 PDPS WATTCP Section

Double click on the  Radio Ethernet Configuration selection.



This section is identical for all 6105-WA-PDPS modules shipped from the factory. If you are using the Single-Remote Site Sample application, these values should work right out of the box.

The default radio IP address is set to **172.16.10.110**. For the sample application, these values are fine and you do not have to touch them. However, 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.

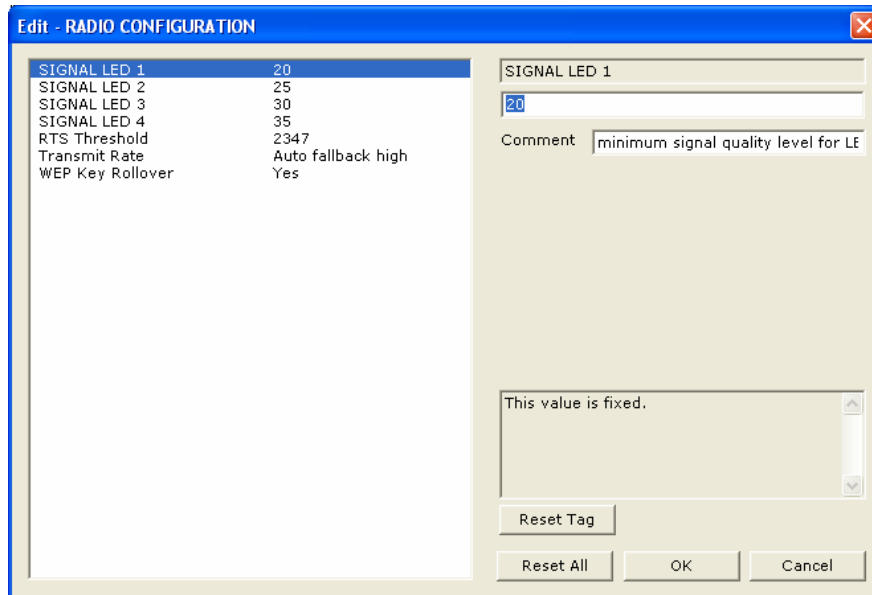
**Note:** All modules must have the same Subnet Mask, Default Gateway, and Network Name (SSID) if they are all located on the same network.

If you are making changes, be sure to save your changes before moving on to the next step.

### 5.1.2 PDPS RADIO CONFIGURATION


Expand the Wireless Configuration section and double-click on the

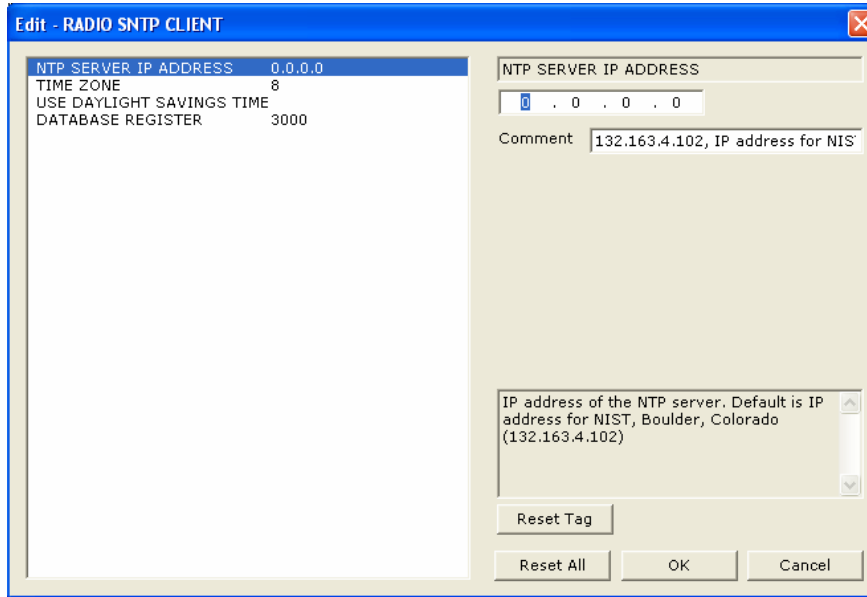
 RADIO CONFIGURATION icon.



All of the values are default values and should work fine “as is”. If you need to change values in the window, make sure to save your changes before moving on to the next step. As you select each parameter, the help window on the screen displays information to help you make your selections.

### 5.1.3 RADIO SNTP CLIENT

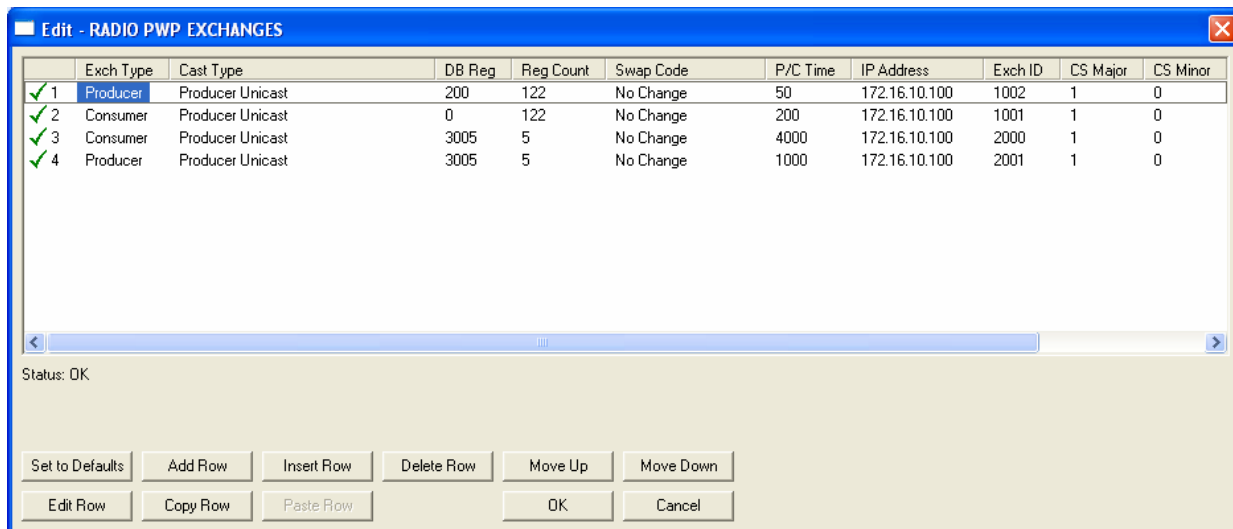
Double-click on the  icon.



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.

### 5.1.4 RADIO PWP EXCHANGES

Double-click on the  icon.





The commands in this section correspond to commands set up in the 6104-WA-PDPM module. For example, the PDPM module has a Produce command to send data to the PDPS. The PDPS should have a corresponding Consume command to match up with the PDPM produce command in order to use the PDPM produced data.

If you remember the example in the **PDPM** section, the Produce command is as follows.

```
✓ 1 Producer Producer Unicast 0 122 No Change 50 172.16.10.110 1001 1 0
```

This command states:

*Send 122 words of data beginning at data register 0 to 172.16.10.110 (the PDPS) using an exchange ID of 1001. Send data every 50 ms using UNICAST.*

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

```
✓ 2 Consumer Producer Unicast 0 122 No Change 200 172.16.10.100 1001 1 0
```

This command states:

*If the Exchange ID transmitted from 172.16.10.100 (the PDPM) is 1001, receive 122 words of data and place them in 122 registers beginning at database register 0. Check for data every 200 ms.*

Referring to the PDPM PWP section, the **PDPM** also had a Consume command. This command is as follows:

```
✓ 2 Consumer Producer Unicast 300 122 No Change 200 172.16.10.110 1002 1 0
```

This command states:

*If the Exchange ID transmitted from 172.16.10.110 (the PDPS) is 1002, receive 122 words of data and place them in 122 registers beginning at database register 300. Check for data every 200 ms.*

We now need to build the Produce command on the **PDPS** to correspond with the Consume command on the PDPM. The corresponding command looks like this:

```
✓ 1 Producer Producer Unicast 200 122 No Change 50 172.16.10.100 1002 1 0
```

This command states:

*Send 122 words of data beginning at data register 200 to 172.16.10.100 (the PDPM) using an exchange ID of 1002. Send data every 50 ms using UNICAST.*

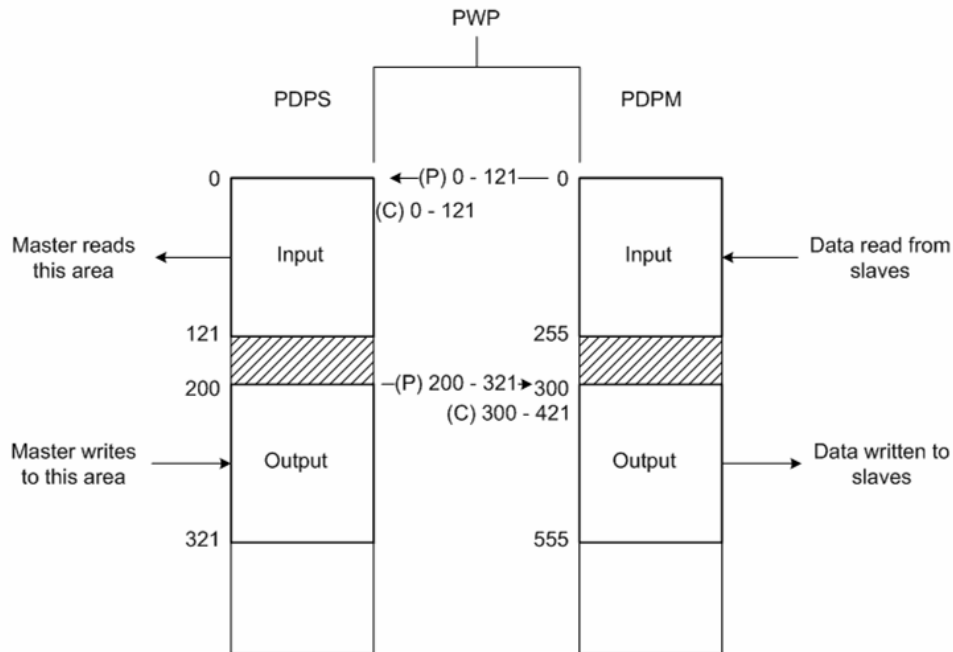
Both the PDPS and the PDPM have corresponding Produce and Consume commands. The following diagram illustrates the sample application:

**PDPM PWP Exchanges Section**

	Exch Type	Cast Type	DB Reg	Reg Count	Swap Code	P/C Time	IP Address	Exch ID	CS Major	CS Minor
✓ 1	Producer	Producer Unicast	0	122	No Change	50	172.16.10.110	1001	1	0
✓ 2	Consumer	Producer Unicast	300	122	No Change	200	172.16.10.110	1002	1	0

**PDPS PWP Exchanges Section**

	Exch Type	Cast Type	DB Reg	Reg Count	Swap Code	P/C Time	IP Address	Exch ID	CS Major	CS Minor
✓ 1	Producer	Producer Unicast	200	100	No Change	50	172.16.10.100	1002	1	0
✓ 2	Consumer	Producer Unicast	0	100	No Change	200	172.16.10.100	1001	1	0




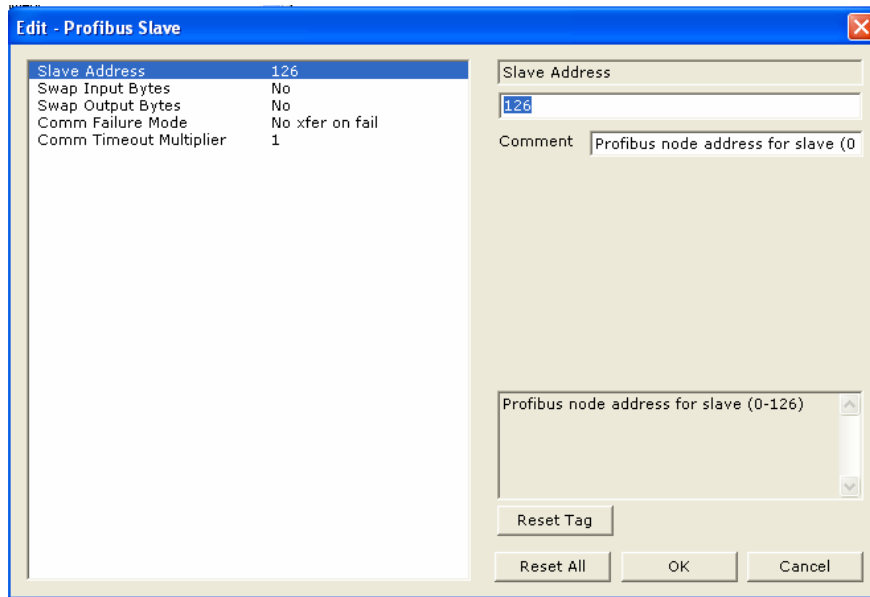
Both modules send 122 words between each other even though in our sample application, the slaves connected to the PDPM are only sending one word each. This allows you to have the ability to connect additional slaves to a single device up to the capacity of the PDPS database. In addition, this has been done to use the maximum PDPS/PDPM exchange data with only one PWP transmission packet. Each PWP packet can transmit up to 700 words.

**5.1.5 RADIO PWP MULTICAST GROUP LIST**

This section does not contain any data for the sample application. The sample application uses UNICAST transmission (Single-Remote Site Sample) and therefore there is no need to enter IPs of other devices in this section. The Multi-Remote Site Sample application uses MULTICAST transmission and is discussed in the Multi-Remote Site Sample section of this guide.

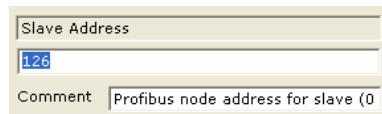
### 5.1.6 PDPS

Double-click on the  Profibus Slave icon.



The Single-Remote Site Sample application requires that the Slave Address of the PDPS be set to an appropriate value. In the sample application, there are three slave devices at the main site where the primary master is located. There are two slaves located at the remote site. Slave addresses are numbered 1 – 5. The 6105-WA-PDPS must also be assigned a Slave Address.

- 1 In this case, the PDPS is assigned Slave Address 6 since it is actually the 6th slave on the network. By default, the PDPS module is assigned a value of 126. This is actually an invalid value but in this case, it is used to prevent collisions with other devices on the same network when the device is installed. You must change and save this value.
- 2 Select **Slave Address**.
- 3 Change the Slave Address Value from 126 to the appropriate slave node number for your network.

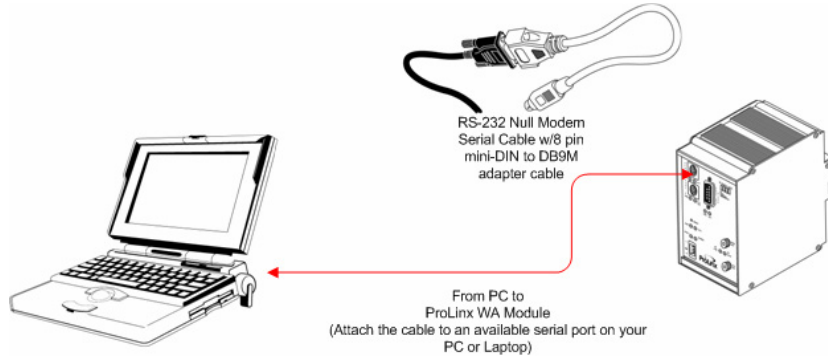


- 4 Click **OK** to save changes.

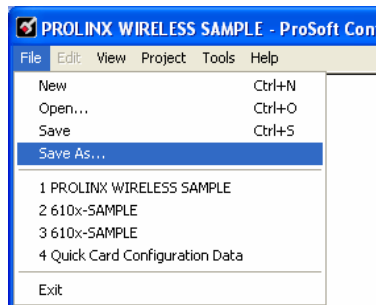
The default values do not have to be changed for this application. However, refer to the *PDPS Driver Manual* for information on each of the remaining parameters.

## 5.2 Save and Download the Configuration File to the PDPS

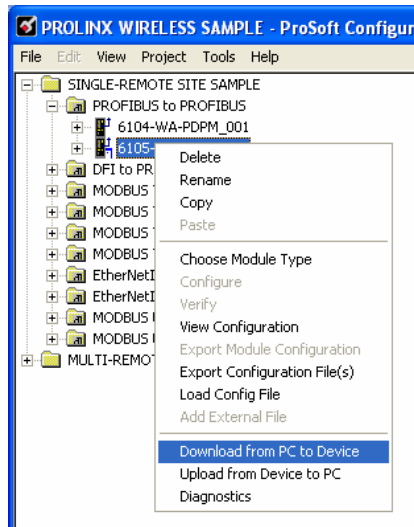
- 1 Connect your PC or Laptop to the DEBUG port of the **6105-WA-PDPS** module. Apply power to the module if you have not already done so.



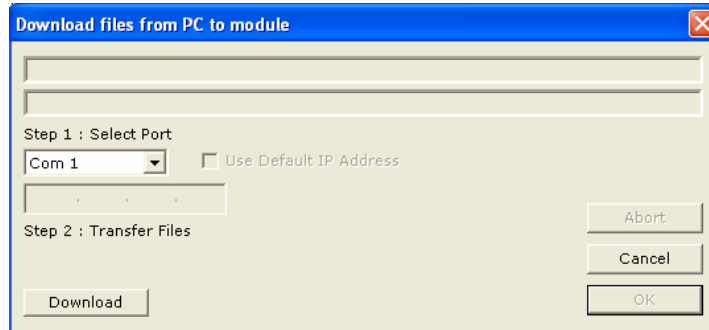
- 2 Choose **File** → **Save As...** and save the .PPF file to a location on your hard drive.



- 3 Right-click on 6105-WA-PDPS and select **Download from PC to Device**.



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

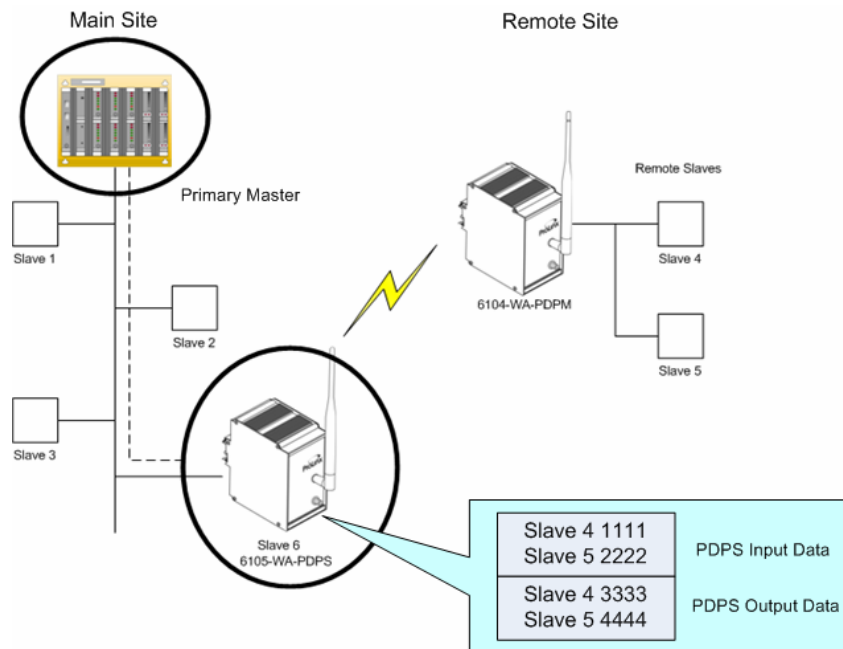


- 5 When the download completes, click **OK**.



## 6 Configure the PDPS in the Primary Master (Single-Remote Site Sample)

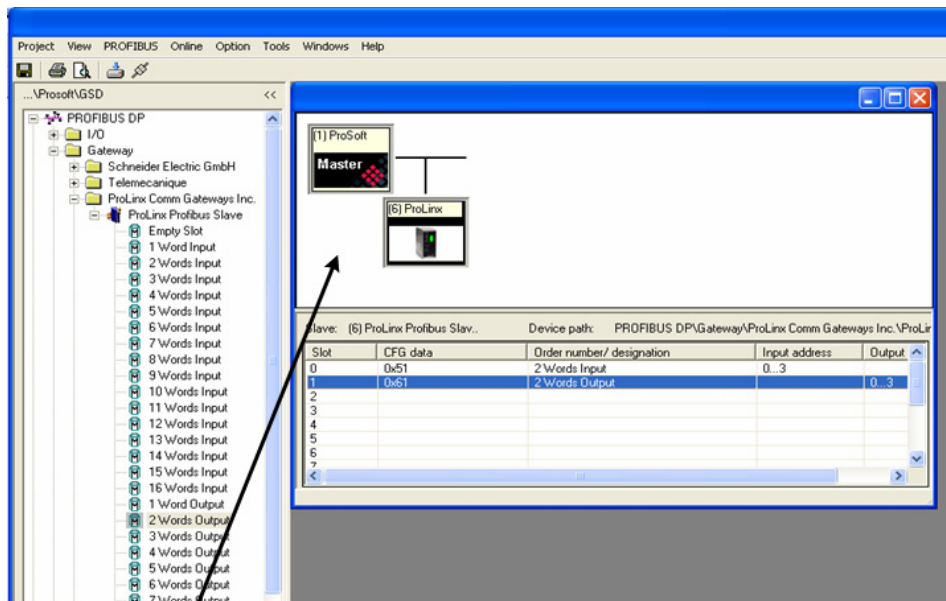
The Primary Master at the main site requires communication with the 6105-WA-PDPS module. The example establishes an input of two words and an output of two words (one in/one out for Slave 4 and Slave 5).



In order for the Primary Master to communicate with remote slaves 4 and 5, the PDPS must be configured using the configuration software designed for use with the Primary Master. You must now use your Primary Master configuration software to establish this communication.

You will need the ProLinx GSD files previously downloaded from the ProLinx Solutions CD.

The following example provides a preview of how to set up the PDPS input and output words using software designed for that purpose.



2 Words Input = Slave 4 (1111) and Slave 5 (2222)  
2 Words Output = Slave 4 (3333) and Slave 5 (4444)

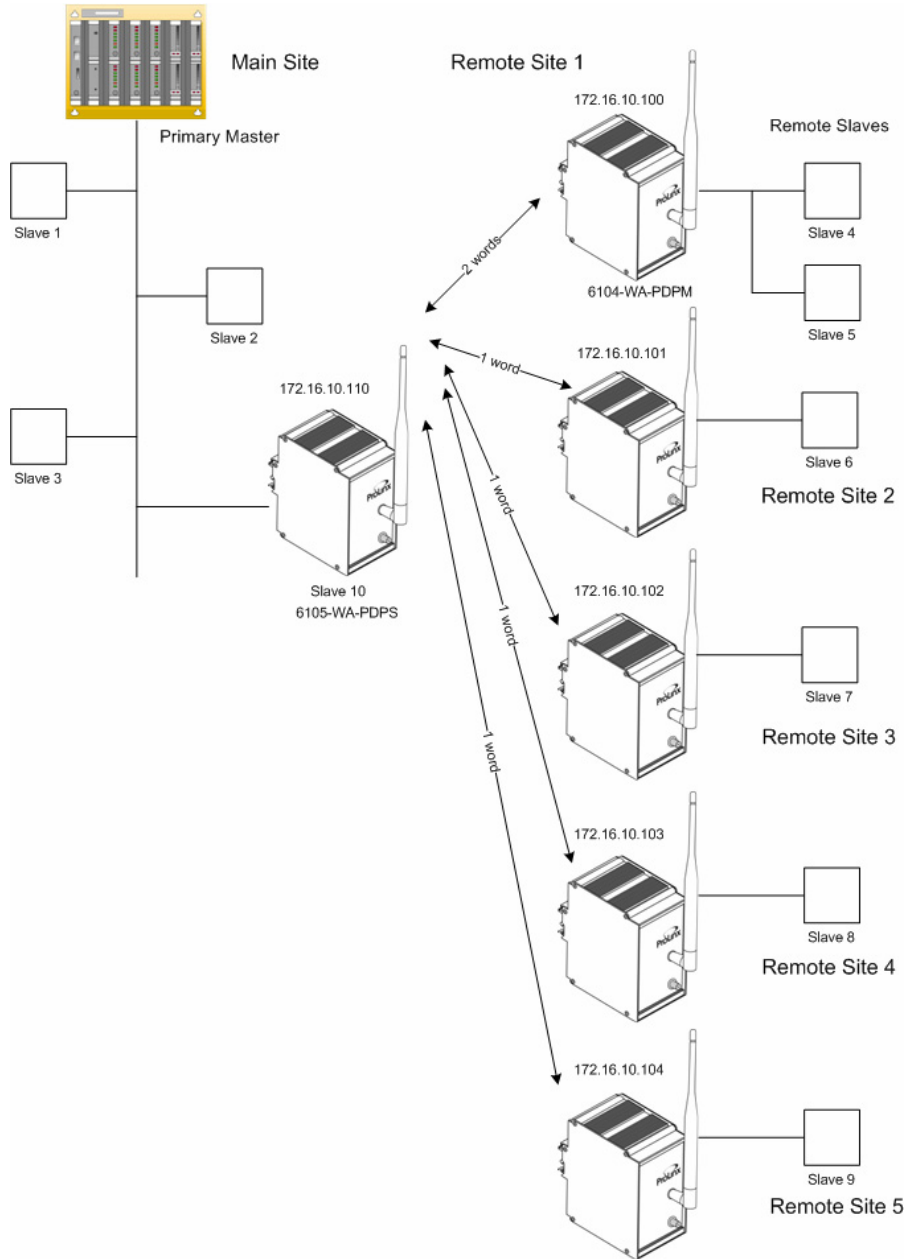


## 7 MULTI-REMOTE SITE SAMPLE Application

### *In This Chapter*

- Map Slave Devices to the PDPM Database (MULTI- REMOTE SITE SAMPLE) ..... 41
- Save and Download the File to the 6104-WA-PDPM ..... 44
- Review the PDPM Module Sample Application Files ..... 46
- Review the Sample PDPS Configuration ..... 52
- Save and Download the Configuration File to the PDPS ..... 60

The MULTI-REMOTE SITE SAMPLE shows a single 6105-WA-PDPS and five 6104-WA-PDPM modules. In the sample configuration, a third party primary master wants to communicate with 9 slaves. Six of the slaves are remote.



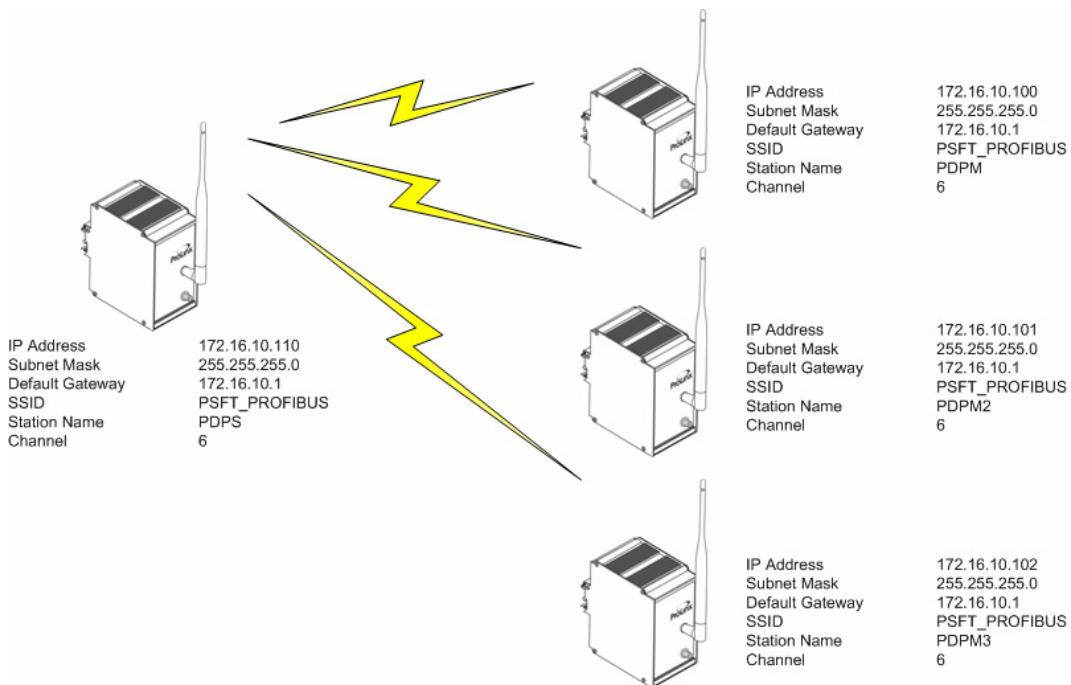
- In this example, the following is assumed:
- A third-party primary master (located at the main site) needs to communicate with 13 slaves
- Ten of the slaves are remote
- The application uses five ProLinx 6104-WA-PDPM modules and a single 6105-WA PDPS to establish communication between the primary master and the remote slaves
- The module's radio communication parameters are preset and configured to pass 20 words per module in either direction
- The PDPS is connected to the primary master
- The PDPMs are connected to the remote slaves

- Each of the five PDPM modules have two attached slaves
- Each of the slaves produces 10 words input and 10 words output.

This application is set up the same way as the SINGLE-REMOTE SITE SAMPLE application. The differences being that you now have multiple PDPM modules connected to multiple slave devices at different sites. All ProLinX modules are configured with default information. All PDPM modules are configured with the IP address 172.16.10.100. All PDPS modules are pre-configured with the IP address 172.16.10.110.

If you are adding PDPM modules, you can use IP addresses 172.16.10.101, 102, 103, 104, 105, 106, 107, 108, and 109 (see Table of IP Addresses in the Appendix). Leave your first original master with address 100. Do the same if you are adding additional PDPS modules (i.e., 172.16.10.111, 112, 113, 114 etc.).

For example:



All additional modules should have the same Subnet Mask, Default Gateway, SSID, and Channel. You will also have to set up database allocations as well as PWP commands for any additional modules.

As stated earlier, the process is the same as the Single-Remote Site Sample application, but now you have to configure more slave devices and PDPM devices. Database mapping is also done the same way, but you need to know what the database limitations are and how the data is mapped.

Use the same steps to set up your Multi-Remote Site Sample network.

## 7.1 Map Slave Devices to the PDPM Database (MULTI- REMOTE SITE SAMPLE)

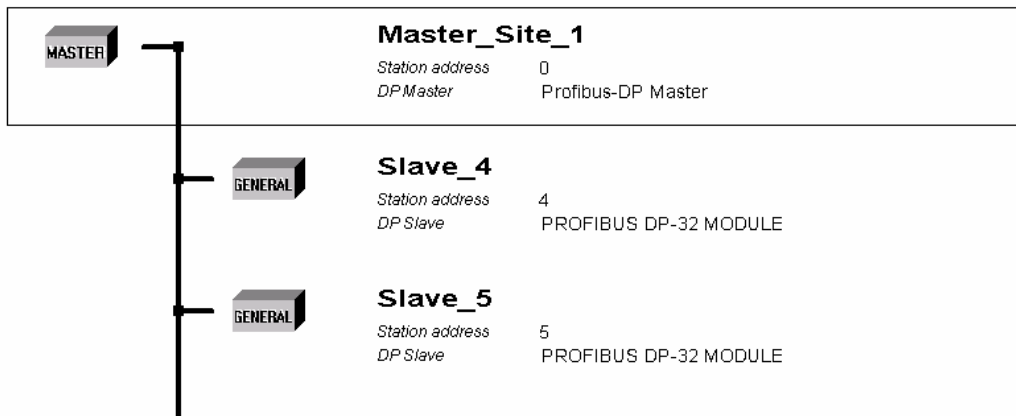
The procedure for mapping slave devices to the PDPM database is identical to the procedure described in the Single-Remote Site Sample application. The difference being that you have to consider database size and device requirements. In the Multi-Remote Site Sample application, two slaves were connected to a single 6104-WA-PDPM. In this case, we have one PDPM with two slaves and the remaining PDPM modules are connected to a single slave each passing one word in and one word out.

Regardless, all are set up the same way. There are five SyCon samples associated with each of the five 6104-WA-PDPM modules. The first PB file is associated with the first PDPM and maps Slaves 4 and 5. The remaining files pertain to each of the slaves connected to the remaining PDPM modules.

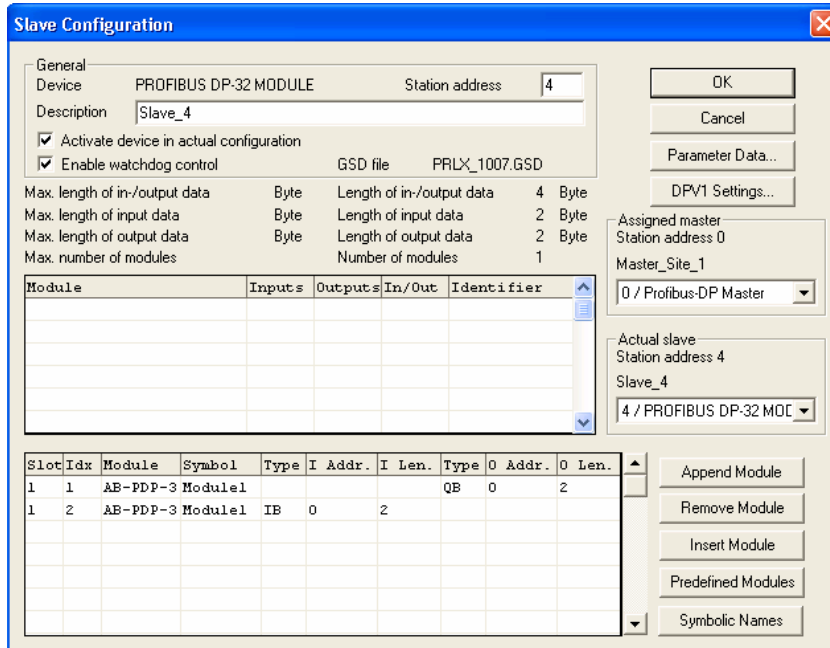
**Note:** Before mapping the slaves, please refer back to the data mapping discussion to make sure you have an understanding of the PDPM and PDPS database structure.

### 7.1.1 Sample SyCon File for Slaves 4 and 5

Slaves 4 and 5 are connected to the PDPM module with IP Address 172.16.10.100. The following shows an example of this configuration:



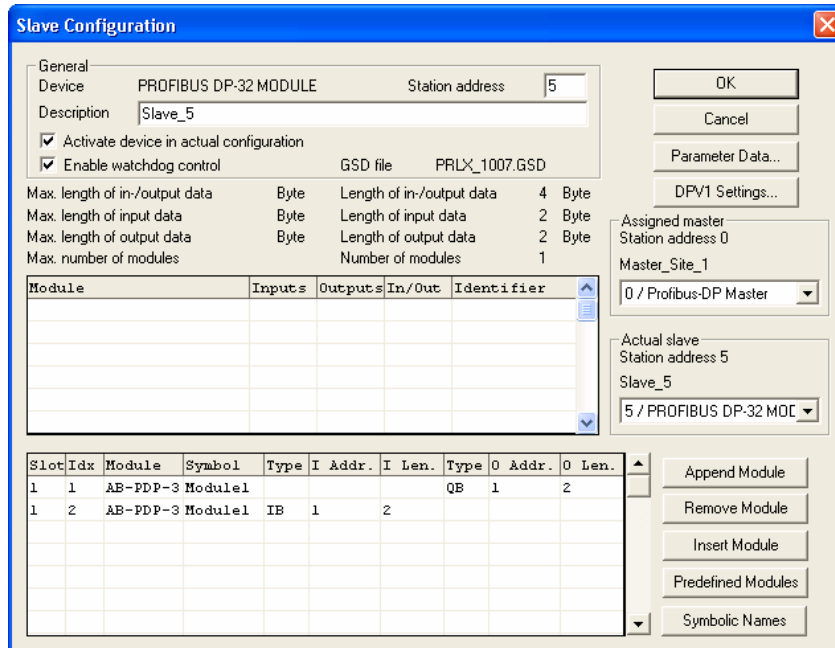
The following example shows how Slave 4 is configured:



Notice in this example that Slave 4 is sending two input bytes (1 word) beginning at register 0 of the PDPM input area. There are two output bytes (1 word) beginning at register 0 in the PDPM output area.

Slot	Idx	Module	Symbol	Type	I Addr.	I Len.	Type	O Addr.	O Len.
1	1	AB-PDP-3 Module1					QB	0	2
1	2	AB-PDP-3 Module1	IB		0	2			

The following example shows how Slave 5 is configured:

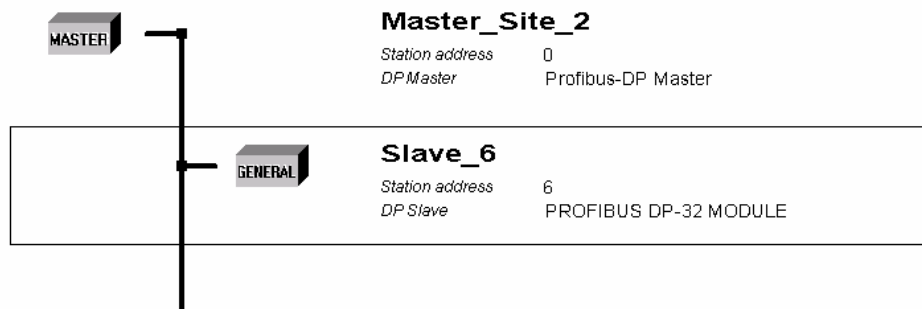


In this example, Slave 5 (connected to the same PDPM) is also sending 2 bytes input (1 word) and 2 bytes output (1 word). Notice that the Input address has changed to 1. This is because Slave 4's data is set up to go into register 0 and Slave 5's data is configured to go into the next register which in the case is register 1.

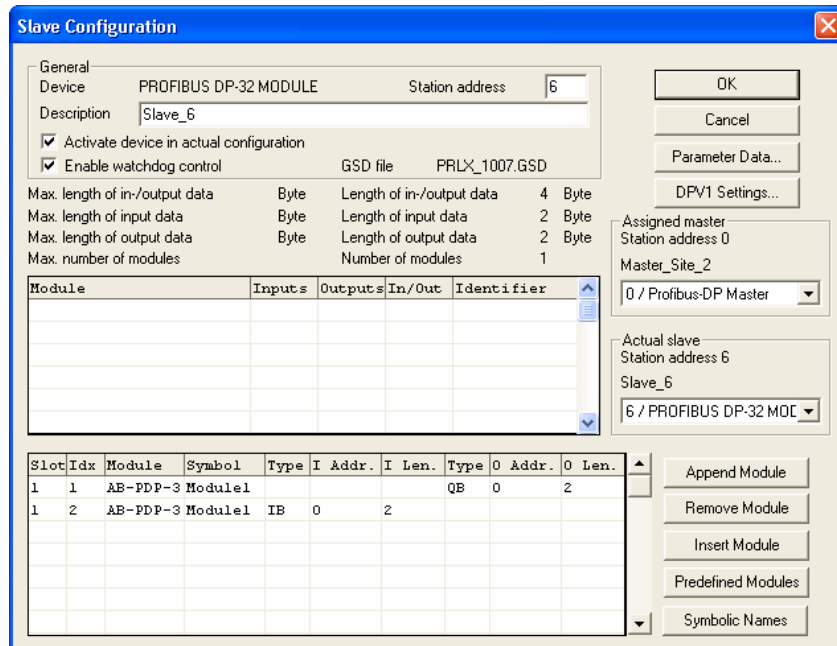
Slot	Idx	Module	Symbol	Type	I Addr.	I Len.	Type	O Addr.	O Len.
1	1	AB-PDP-3 Module1					QB	1	2
1	2	AB-PDP-3 Module1	IB		1	2			

### 7.1.2 Sample SyCon File for Slave 6

In the sample Multi-Remote Site Sample application, Slave 6 is attached to a 6104-WA-PDPM with the IP address 172.16.10.101. There is only one slave attached to this PDPM. The following shows the sample configuration for this slave:



The following shows how Slave 6 is configured:



Since Slave 6 is connected to a different PDPM module, the configuration is exactly the same since Slave 6 is passing one word in and one word out (2 bytes). The input word is being placed into register 0 of the PDPM's input area and the output word is being placed into register 0 of the PDPM's output area.

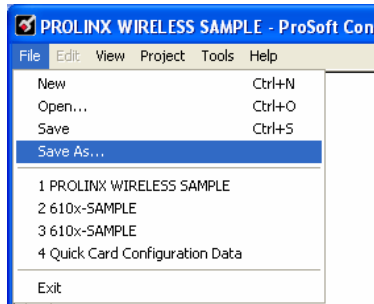
Slaves 7 through 9 are configured exactly the same way as Slave 6. Each of these slaves are separately connected to a PDPM and each pass 1 word input and output. Once each slave is configured, the file is saved to the PDPM module.

## 7.2 Save and Download the File to the 6104-WA-PDPM

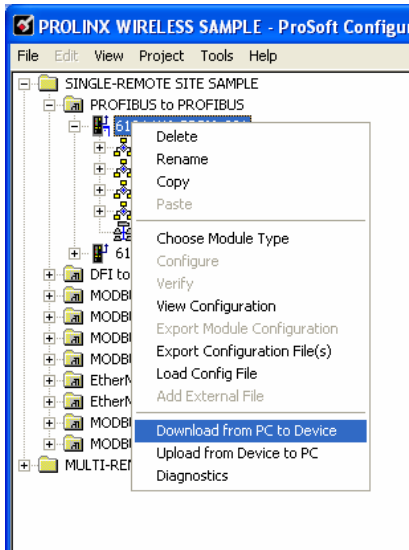
- 1 Connect your PC or Laptop to the DEBUG port of the **6104-WA-PDPM** module. Apply power to the module if you have not already done so.



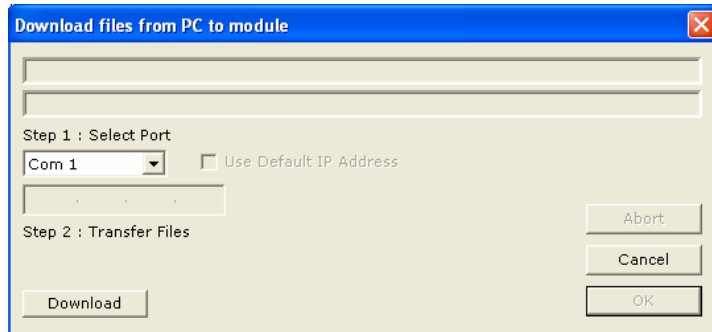
- 2 Choose **File** → **Save As...** and save the .PPF file to a location on your hard drive.



- 3 Right-click on 6104-WA-PDPM and select **Download from PC to Device**.



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



- 5 When the download completes, click **OK**.



### 7.3 Review the PDPM Module Sample Application Files

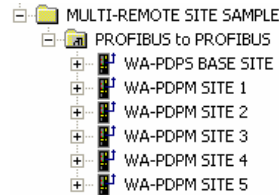
The MULTI-REMOTE SITE SAMPLE is configured to allow communications between the PDPM and PDPS modules. In this application, we have a single PDPS module and five PDPM modules at a remote site. Each PDPM module is configured separately.

- 1 Start PCB.
- 2 Select File → Open.
- 3 Navigate to the location on your PC or Laptop where you stored the PROLINX WIRELESS SAMPLE.PPF and select this file.

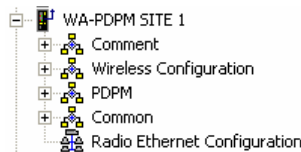
#### 7.3.1 WATTCP Section

As stated earlier, all PDPM modules have a default IP address of 172.16.10.100. If you are adding more PDPM modules to the same network, you must change the IP address of the other PDPM modules in increments of 1. For example, your first PDPM module remains at 172.16.10.100. Your second module would be changed to 172.16.10.101, your third module to 172.16.10.102 and so on. You can add PDPM modules up to address 109.

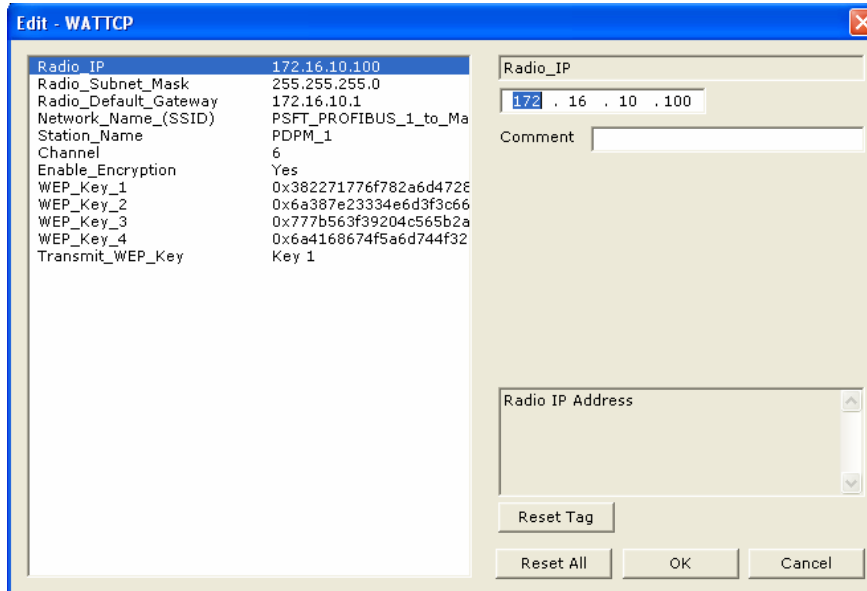
- 1 This needs to be done first since you will need to know what other addresses are on the network. In the sample application, this has already been done for you.
- 2 Click on the MULTI-REMOTE SITE SAMPLE folder, and then click on PROFIBUS to PROFIBUS.



- 3 Expand the WA-PDPM SITE 1 selection.



Double-click on the  Radio Ethernet Configuration icon.



The sample defaults are shown in this window. Since this is the first PDPM module in the network, it has an IP address of 172.16.10.100. All other fields have been given default values. For example, the Station Name has been given a default name of PDPM\_1. You can change these values to suit the needs of your network.

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

### 7.3.2 PDPM Radio Configuration

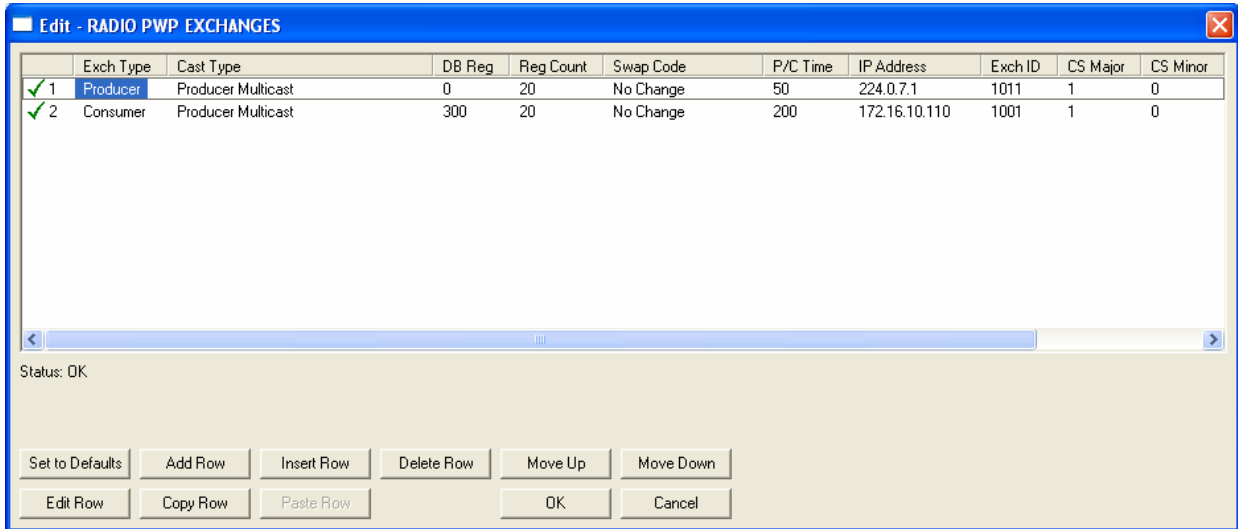
Double-click on the  RADIO CONFIGURATION icon.

These are default values and should work fine “as is”. If you need to change these values, refer to the *PDPM Driver Manual* for more information.

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. If you want to synchronize your module’s clock through an access point, change the values are required. The help portion of the window describes each parameter as the parameter is selected. This applies to all PDPM modules on your network.

Radio PWP Exchanges Double-click the  RADIO PWP EXCHANGES icon.



This example is slightly different from the SINGLE REMOTE SITE SAMPLE application in that it sends its data using MULTICAST instead of UNITCAST. However, the remainder of the command works the same way as the SINGLE REMOTE SITE SAMPLE application.

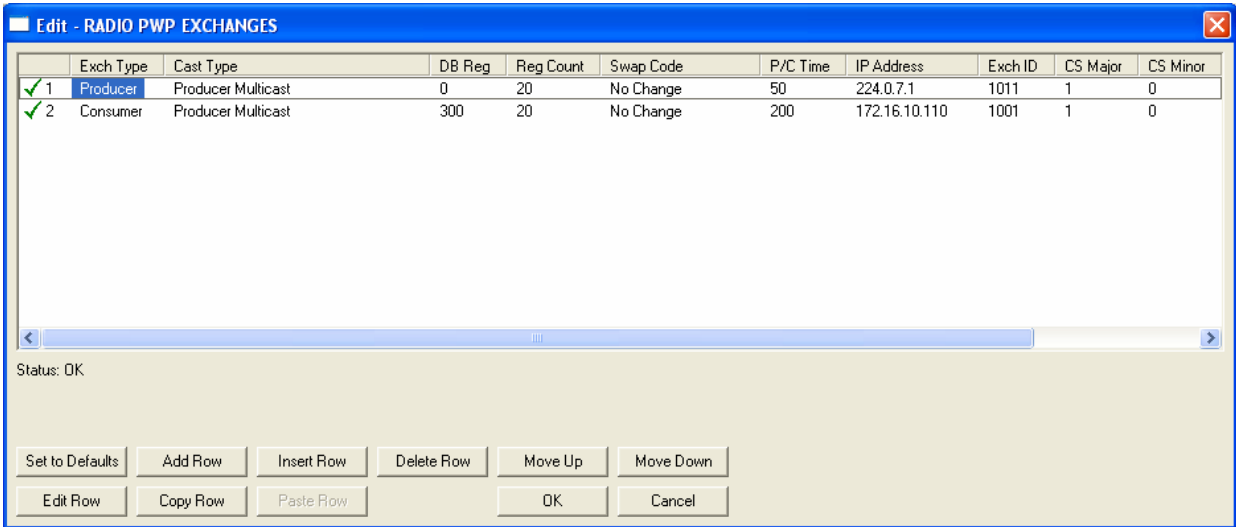
In this case, instead of sending the data to a specific PDPS IP Address, it sends data out to one or a number of PDPS modules. All PDPS modules are capable of receiving the data, but only those configured to recognize the Exchange ID will actually accept the data. The PDPS on the receiving end must have a Consume command that contains and matches the exchange ID in the Produce command.

In this sample application, the IP Address is set to a MULTICAST Address. This address must also be specified in the **MULTICAST Address Group List** section of the PPF file. MULTICAST in this case is better than using BROADCAST since it limits the number of modules that have to check the messages being send out of the air.

In this example, this PDPM module is producing 20 words of data beginning at register 0 every 50 ms. It is producing this data using MULTICAST with an exchange ID of 1011. In our sample, this particular PDPM module has slaves 4 and 5 attached to it. Each of the slaves are sending one word. You can also see from the Consume command configured with this PDPM module that it only consumes data from 172.16.10.110, which in this case happens to be the PDPS connected to the Primary Master at the main site.

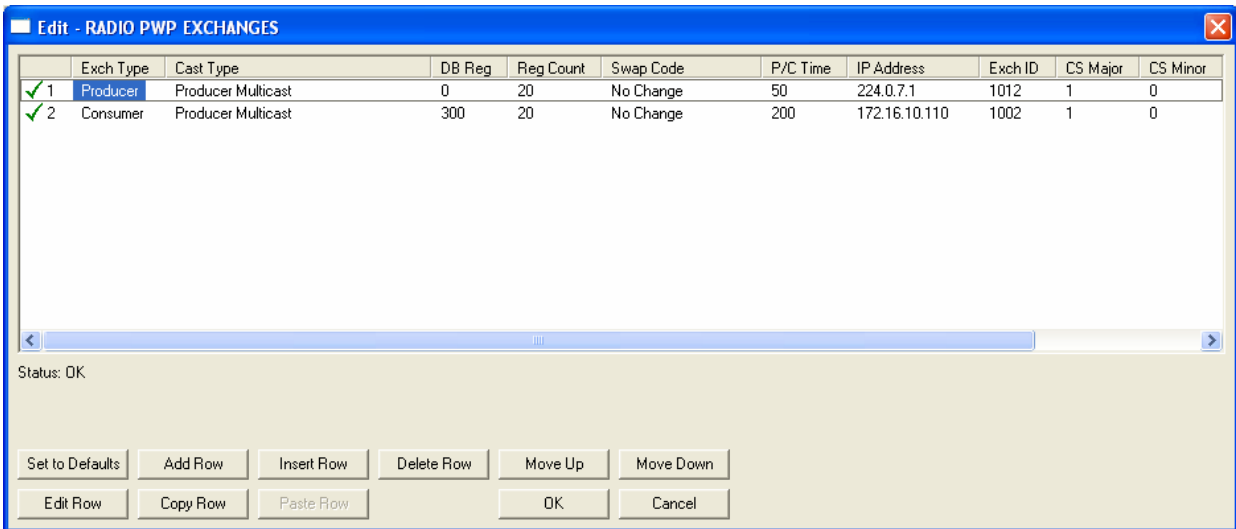
In order for this Producer command to work, a PDPS connected to a Primary Master at the Main Site must have a Consume command configured in order to identify and accept this data.

The following example shows this:



The selected Consume command in the PDPS PCB sample file shows the corresponding command for data produced in the first PDPM module. This command indicates that it should consume data from 172.16.10.100 (PDPM Remote Site 1) with an Exchange ID of 1011. It will consume the 20 words of data from the PDPM and place it in its database beginning at register 0.

The next PDPM module in the network is configured as 172.16.10.101. Its commands are identical to 172.16.10.100 (Remote Site 1) with the exception that the Exchange ID used is 1012.



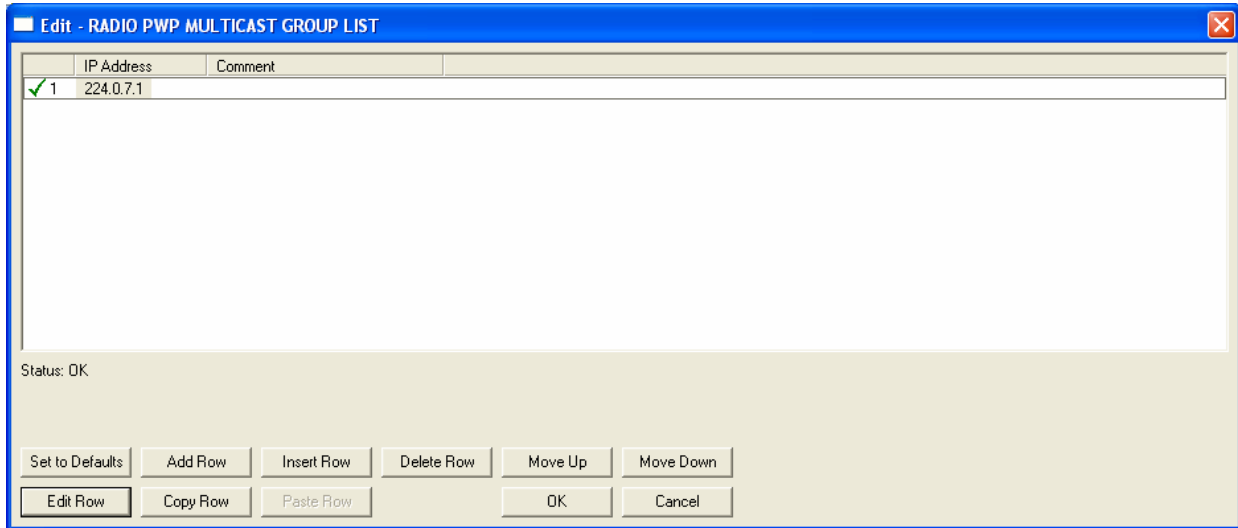
The PDPS also has a Consume command for this module and this Exchange ID.

This Consume command accepts 20 words from 172.16.10.101 (PDPS at the Main Site) and places them in its database beginning at register 20.

All of the remaining PDPM modules Produce commands are set up the same way as the two that were just discussed. The difference will be the Exchange ID. The PDPS has a corresponding Consume command that checks the IP Address and Exchange ID, and then places the data in the appropriate database register.

### 7.3.3 **Radio PWP MULTICAST Group List**

Double-click on the  RADIO PWP MULTICAST GROUP LIST icon.



Using the sample MULTI-REMOTE Site Sample application, all of the PDPM modules must have the MULTICAST Address specified in the RADIO PWP MULTICAST GROUP LIST. This is a listing of all MULTICAST Addresses being used on the network. In this case, 224.0.7.1 is the MULTICAST Address being used. This address is also specified in the PDPS RADIO PWP MULTICAST GROUP LIST.

### 7.3.4 **PDPM Section**

The sample configuration file does not require that any default values or commands be changed in either the PROFIBUS MASTER or PROFIBUS MASTER COMMANDS sections. Refer to the PDPM Driver Manual for more information on setting PROFIBUS parameters.

Each module must be configured separately and the PPF file must be saved and downloaded to each module.

#### **What's Next?**

The previous sections apply to all of the PDPM modules on your network. Keep the following considerations in mind:

- All PDPM modules on the network must have a different IP Address [WATTCP Section]

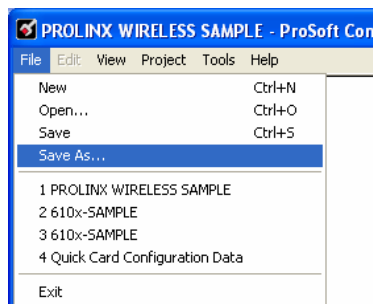
- All PDPM modules on the network must have the same Radio Subnet Mask, Radio Default Gateway, Network Name (SSID), and Channel.
- If using MULTICAST, all modules on the network must have a MULTICAST Address specified in the RADIO PWP MULTICAST GROUP LIST section
- There must be a corresponding Consume command in the PDPS for each Produce command from a PDPM
- There must be a corresponding Produce command in the PDPS for each Consume command in the PDPM

### 7.3.5 **Save and Download the File to the 6104-WA-PDPM**

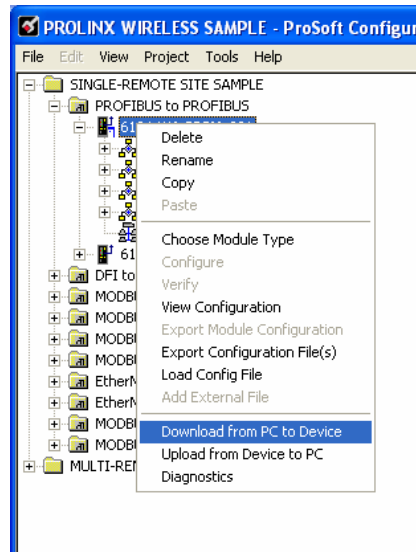
- 1 Connect your PC or Laptop to the DEBUG port of the **6104-WA-PDPM** module. Apply power to the module if you have not already done so.



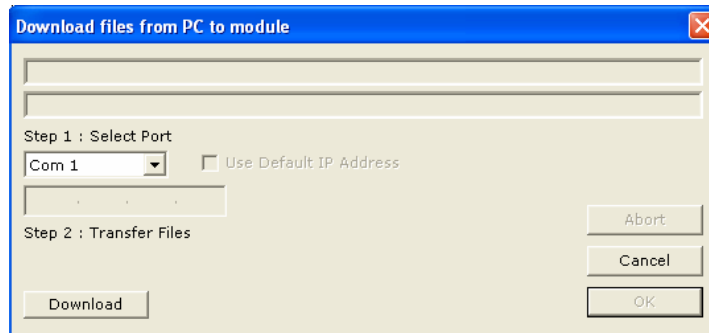
- 2 Choose **File** → **Save As...** and save the .PPF file to a location on your hard drive.



- 3 Right-click on 6104-WA-PDPM and select **Download from PC to Device**.



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



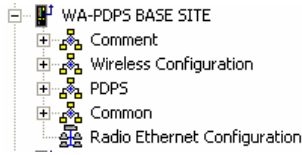
- 5 When the download completes, click **OK**.  
The next section describes how to set up the 6105-WA-PDPS in the sample application.

## 7.4 Review the Sample PDPS Configuration

The MULTI-REMOTE SITE SAMPLE application has one PDPS module connected to the Primary Master at the main site. This module consumes data from all five PDPM modules on the network. The maximum amount of data that can be consumed by the PDPS is 122 words in or the PDPS can produce a maximum of 122 words out. The PDPS cannot exceed 200 words total. Therefore, if the remote sites are sending 122 words IN, the PDPS can only produce 78 words OUT. In the sample, each of the five modules are sending 20 words IN. Since the limit on TOTAL words is 200, the sample application allows 100 words IN and 100 words OUT.

The PDPS module is configured the using PCB using the default configuration file 610x-SAMPLE.PPF.

Expand the Multi-Remote Site Sample section, and then expand the WA-PDPS BASE SITE module section.

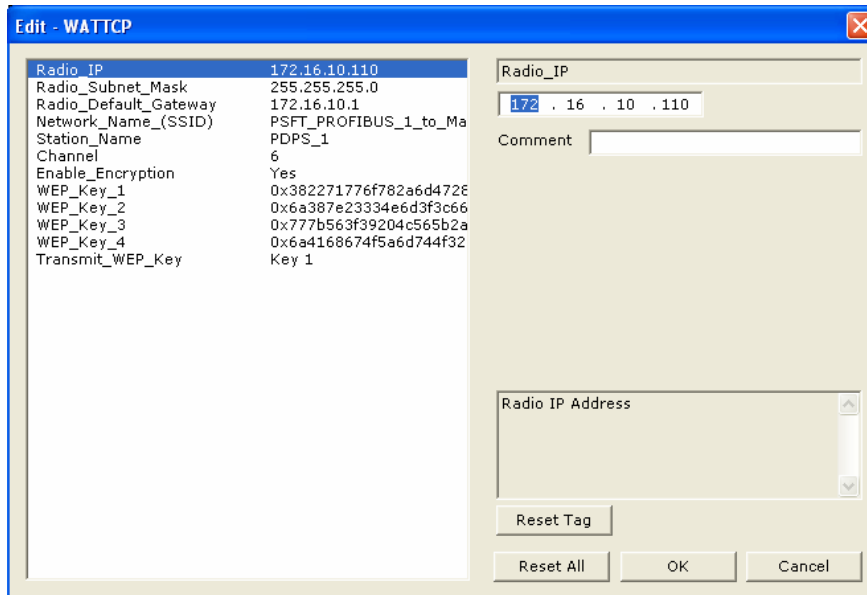


The values used in each section of this file are similar to those of the PDPM. However, the PDPS does have some additional configuration requirements since the module itself has different requirements and serves a different purpose.

### 7.4.1 PDPS WATTCP Section

This section is modified the same way as any other module and contains all of the same values as the same section for PDPM modules already discussed.

To view this section, double-click on the  Radio Ethernet Configuration icon.



By default, all PDPS modules are configured with an IP Address of 172.16.10.110. You increase the value as you add more modules. For example, if you were adding a second PDPS module to your network, its IP address would be 172.16.10.111. Adding a third module would make the address 172.16.10.112 and so on. If you make changes to the IP address, this new IP address will be required to be changed in all PDPM Consume commands.

When you build your own application, you will have to modify the Radio Subnet Mask, Radio Default Gateway, Network Name (SSID), and Channel. If you make changes to the default PPF file, make sure to save your changes before moving on to the next step.

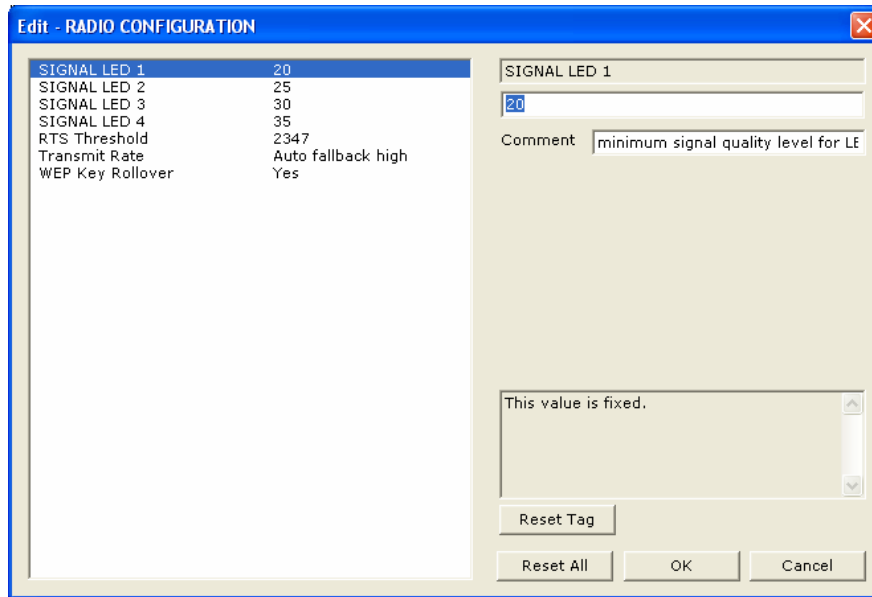


Any of these changes are made in the Radio Ethernet Configuration section.

### 7.4.2 PDPS RADIO CONFIGURATION Section


Expand the Wireless Configuration section and double-click on the

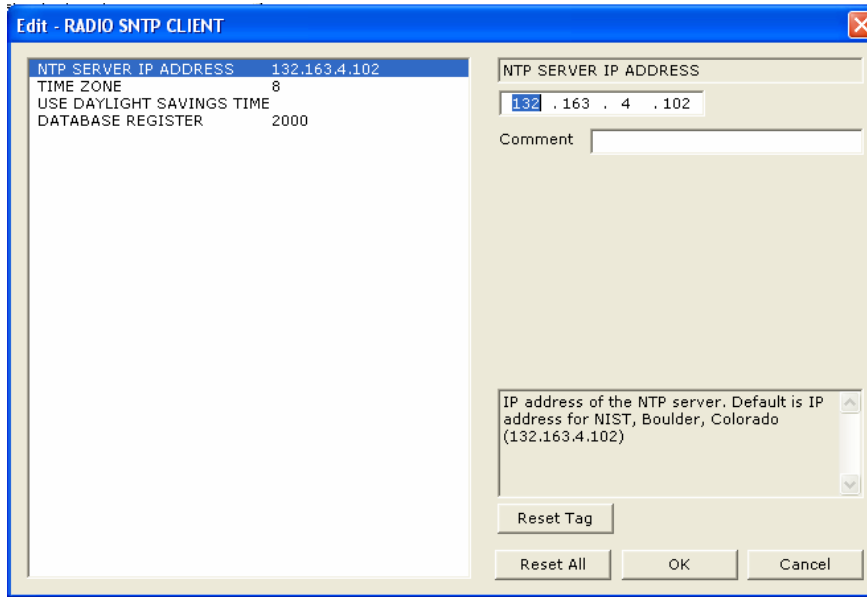
 RADIO CONFIGURATION icon.



All of the values in this section typically do not require modification. If you need to make changes, the help portion of the window provides information on each parameter as they are selected.

### 7.4.3 PDPS RADIO SNTP CLIENT Section

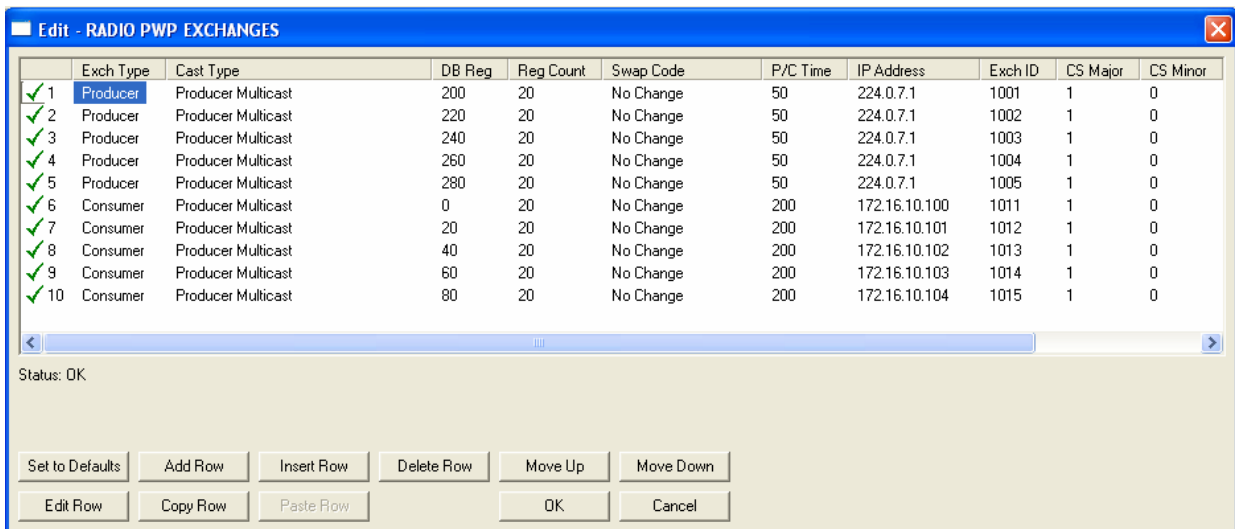
Double-click on the  RADIO SNTP CLIENT icon.



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. If you want to use this feature, set the parameters as required. The help portion of the window provides information on each parameter as they are selected.

### 7.4.4 PDPS RADIO PWP EXCHANGES

Double-click on the  RADIO PWP EXCHANGES icon.



This example looks quite different from the SINGLE-REMOTE SITE SAMPLE application since it is now set up for MULTICAST transmission and is also set up to consume data from more than one PDPM. As stated earlier, the PDPS file must have a corresponding Consume command for any Producer command being transmitted by a PDPM.

**Remote PDPM Module Produce Commands**

PDPM 172.16.10.100										
✓ 1	Producer	Producer Multicast	0	20	No Change	50	224.0.7.1	1011	1	0
PDPM 172.16.10.101										
✓ 1	Producer	Producer Multicast	0	20	No Change	50	224.0.7.1	1012	1	0
PDPM 172.16.10.102										
✓ 1	Producer	Producer Multicast	0	20	No Change	50	224.0.7.1	1013	1	0
PDPM 172.16.10.103										
✓ 1	Producer	Producer Multicast	0	20	No Change	50	224.0.7.1	1014	1	0
PDPM 172.16.10.104										
✓ 1	Producer	Producer Multicast	0	20	No Change	50	224.0.7.1	1015	1	0

**Main Site PDPS Module Consume Commands**

✓ 6	Consumer	Producer Multicast	0	20	No Change	200	172.16.10.100	1011	1	0
✓ 7	Consumer	Producer Multicast	20	20	No Change	200	172.16.10.101	1012	1	0
✓ 8	Consumer	Producer Multicast	40	20	No Change	200	172.16.10.102	1013	1	0
✓ 9	Consumer	Producer Multicast	60	20	No Change	200	172.16.10.103	1014	1	0
✓ 10	Consumer	Producer Multicast	80	20	No Change	200	172.16.10.104	1015	1	0

The same holds true for Producer commands on the PDPS. Each of the PDPM modules are set up to consume data and therefore the PDPM must have corresponding Produce commands.

The following example shows the Producer commands set up in the PDPS sample application:

✓ 1	Producer	Producer Multicast	200	20	No Change	50	224.0.7.1	1001	1	0
✓ 2	Producer	Producer Multicast	220	20	No Change	50	224.0.7.1	1002	1	0
✓ 3	Producer	Producer Multicast	240	20	No Change	50	224.0.7.1	1003	1	0
✓ 4	Producer	Producer Multicast	260	20	No Change	50	224.0.7.1	1004	1	0
✓ 5	Producer	Producer Multicast	280	20	No Change	50	224.0.7.1	1005	1	0

Each of these commands are set up for MULTICAST. That is, the commands are sent to all five PDPM modules. However only the module with the corresponding Exchange ID will accept the command and store the data.

For example, Command #3:


✓ 3	Producer	Producer Multicast	240	20	No Change	50	224.0.7.1	1003	1	0
-----	----------	--------------------	-----	----	-----------	----	-----------	------	---	---

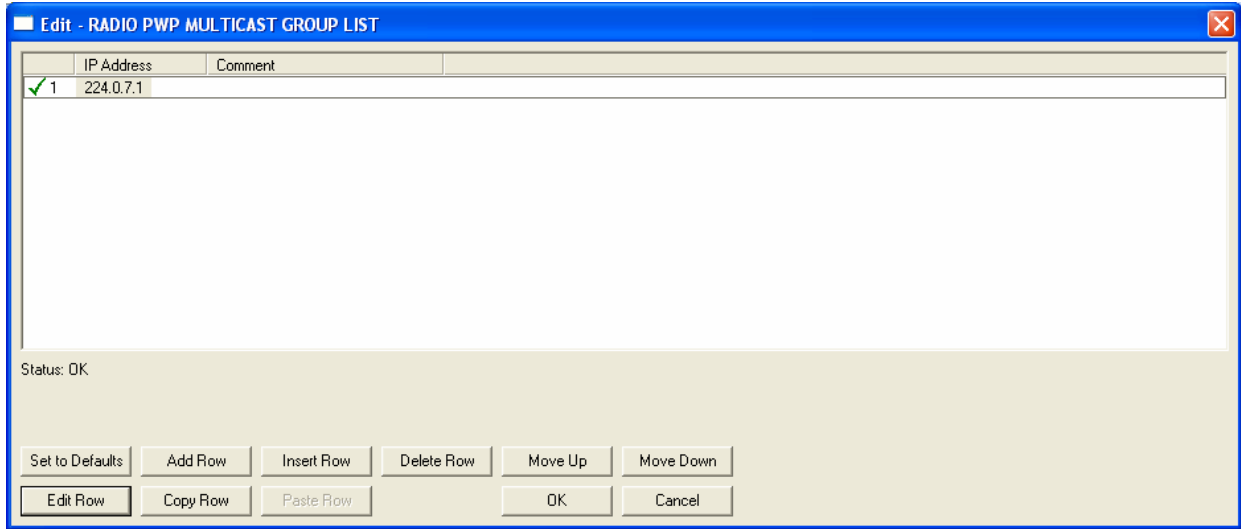
This command is sent to all 5 PDPM modules. Each of the five modules check for the Exchange ID of 1003. Only 172.16.10.102 contains a consume command with an Exchange ID of 1003 and therefore only this module accepts the data

and stores it in the appropriate database location. The following is an example of the Consume command in 172.16.10.102.

✓ 2	Consumer	Producer Multicast	300	20	No Change	200	172.16.10.110	1003	1	0
-----	----------	--------------------	-----	----	-----------	-----	---------------	------	---	---


### 7.4.5 PDPS RADIO PWP MULTICAST GROUP LIST

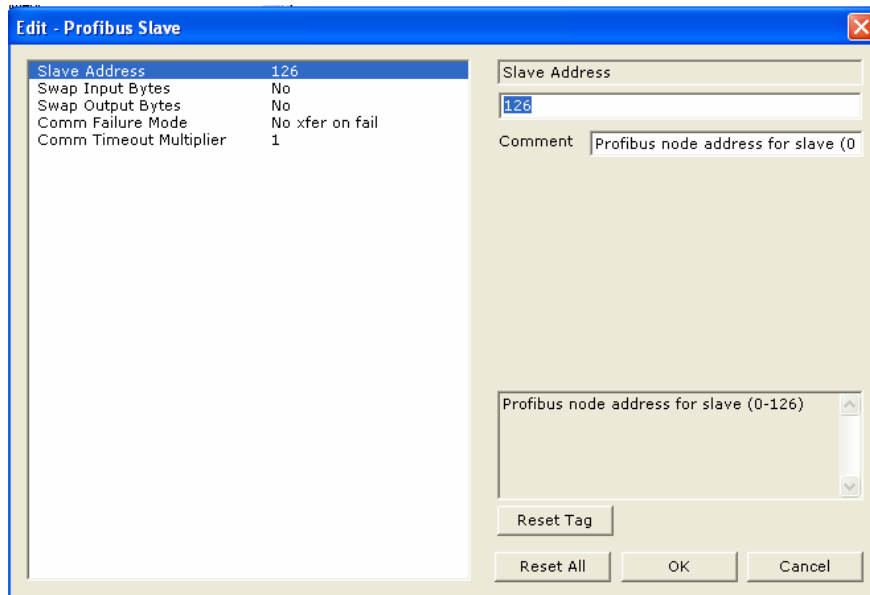
Double-click the  RADIO PWP MULTICAST GROUP LIST icon.



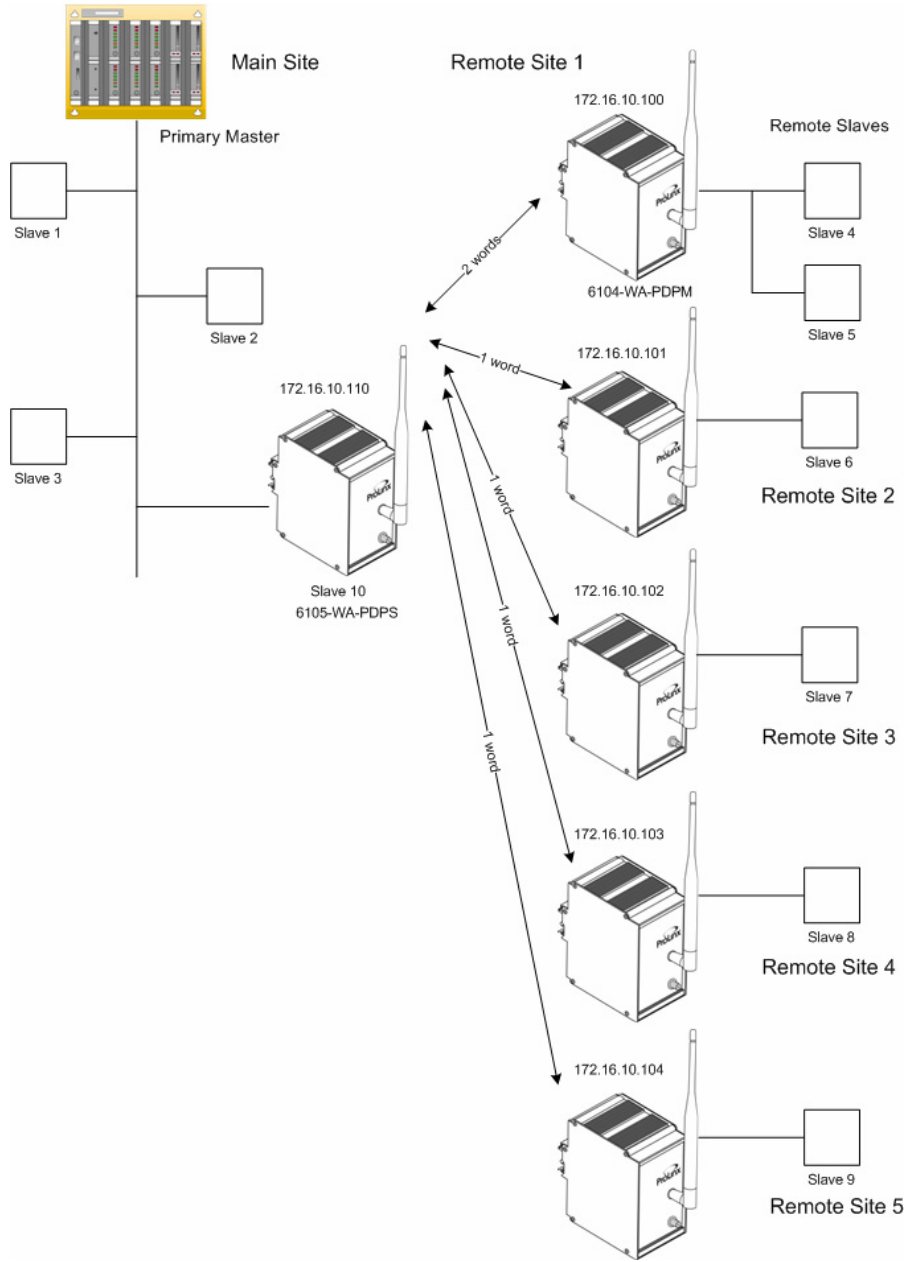
Since this application is using MULTICAST, the MULTICAST address must appear in this section as well as the same sections of the other modules on the network. 224.0.7.1 is the default MULTICAST address configured for the sample applications.

### 7.4.6 PDPS Section

Double-click on the  Profibus Slave icon.



The MULTI-REMOTE SITE SAMPLE requires that the Slave Address of the PDPS be set to an appropriate value. In the sample application, there are 3 slave devices at the main site where the primary master is located. There are 6 slaves located at the remote sites. Slave addresses are numbered 1 – 9. The 6105-WA-PDPS must also be assigned a Slave Address.



- 1 In this case, the PDPS is assigned Slave Address 10 since it is actually the 10th slave on the network. By default, the PDPS module is assigned a value of 126. This is actually an invalid value but in this case, it is used to prevent collisions with other devices on the same network when the device is installed. You must change and save this value.

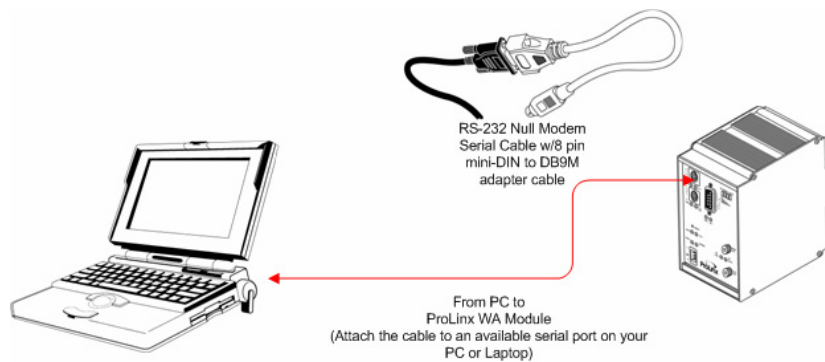
- 2 Select **Slave Address**.
- 3 Change the Slave Address Value from 126 to the appropriate slave node number for your network (in this example – 10).

Slave Address	
126	
Comment	Profibus node address for slave (0

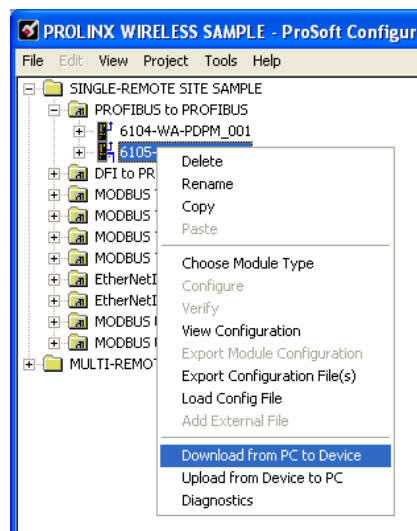
- 4 Click **OK** to save changes.
- The remaining default values do not have to be changed for this application. However, refer to the *PDPS Driver Manual* located on the CD for information on each of the remaining PROFIBUS Slave parameters.

## 7.5 Save and Download the Configuration File to the PDPS

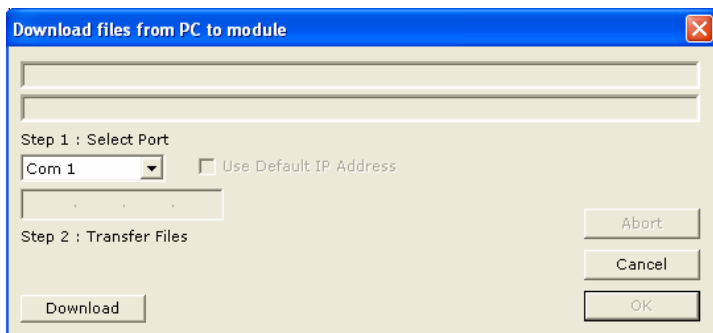
- 1 Connect your PC or Laptop to the Debug port of the **6105-WA-PDPS** module. Apply power to the module if you have not already done so.



- 2 Choose **File** → **Save**.
- 3 Right-click on 6105-WA-PDPS and select **Download from PC to Device**.



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



- 5 When the download completes, click **OK**.



## **8 Configure the PDPS in the Primary Master (Multi-Remote Site Sample)**

The Primary Master requires communication with the 6105-WA-PDPS module. In order for the Primary Master to communicate with remote slaves 4 through 10, the PDPS module must be configured using the Primary Master configuration software. Refer to the section entitled; *Configure the PDPS in the Primary Master (Single-Remote Site Sample)* for information on using your own configuration software to perform this task.

You'll need the ProLinX module GSD files which were downloaded to your PC or Laptop earlier in the process.



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<b>Internet</b>	Web Site: <a href="http://www.prosoft-technology.com/support">http://www.prosoft-technology.com/support</a> E-mail address: <a href="mailto:support@prosoft-technology.com">support@prosoft-technology.com</a>
<b>Phone</b>	+1 (661) 716-5100 +1 (661) 716-5101 (Fax)
<b>Postal Mail</b>	ProSoft Technology, Inc. 1675 Chester Avenue, Fourth Floor Bakersfield, CA 93301

Before calling for support, please prepare yourself for the call. In order to provide the best and quickest support possible, we will most likely ask for the following information:

- 1 Product Version Number
- 2 System architecture
- 3 Module configuration and contents of configuration file
- 4 Module Operation
  - Configuration/Debug status information
  - LED patterns
- 5 Information about the processor and user data files as viewed through the processor configuration software and LED patterns on the processor
- 6 Details about the serial devices interfaced

An after-hours answering system allows pager access to one of our qualified technical and/or application support engineers at any time to answer the questions that are important to you.

### Module Service and Repair

The WA-PDPM WA-PDPS device is an electronic product, designed and manufactured to function under somewhat adverse conditions. As with any product, through age, misapplication, or any one of many possible problems the device may require repair.

When purchased from ProSoft Technology, Inc., the device has a 1 year parts and labor warranty (3 years for RadioLinx) according to the limits specified in the warranty. Replacement and/or returns should be directed to the distributor from whom the product was purchased. If you must return the device for repair, obtain an RMA (Returned Material Authorization) number from ProSoft Technology, Inc. Please call the factory for this number, and print the number prominently on the outside of the shipping carton used to return the device.

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If the product is received within the warranty period ProSoft will repair or replace the defective product at our option and cost.

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In the event that repairs are required for any reason, contact ProSoft Technical Support at +1 661.716.5100. A Technical Support Engineer will ask you to perform several tests in an attempt to diagnose the problem. Simply calling and asking for a RMA without following our diagnostic instructions or suggestions will lead to the return request being denied. If, after these tests are completed, the module is found to be defective, we will provide the necessary RMA number with instructions on returning the module for repair.



# Index

## A

About the PROFIBUS Protocol • 7  
About Transmission Casts • 27  
Add Slave Devices to the PDPM • 15

## B

Before You Begin • 8

## C

Complete the .PPF File Sections • 22, 30  
Configure the PDPM Module • 21  
Configure the PDPS in the Primary Master  
(Multi-Remote Site Sample) • 65  
Configure the PDPS in the Primary Master  
(Single-Remote Site Sample) • 39  
Configure the PDPS Module • 29  
Copy the ProLinx GSD files. • 14  
Copy the Sample Application Files • 13

## H

How it's Done • 25

## I

Identify Data Mapping Requirements • 15  
Important Installation Instructions • 2  
Install ProSoft Configuration Builder (PCB) •  
12  
Introduction • 7

## L

Load the Required Software • 11

## M

Map Remote Slave Devices to the PDPM  
Database • 15  
Map Slave Devices to the PDPM Database  
(MULTI- REMOTE SITE SAMPLE) • 44  
MULTI-REMOTE SITE SAMPLE Application  
• 41

## P

PDPM • 28  
PDPM Radio Configuration • 50

PDPM RADIO CONFIGURATION • 23  
PDPM Section • 53  
PDPM WATTCP File • 22  
PDPS • 35  
PDPS RADIO CONFIGURATION • 31  
PDPS RADIO CONFIGURATION Section •  
57  
PDPS RADIO PWP EXCHANGES • 58  
PDPS RADIO PWP MULTICAST GROUP  
LIST • 60  
PDPS RADIO SNTP CLIENT Section • 58  
PDPS Section • 61  
PDPS WATTCP Section • 30, 56  
Please Read This Notice • 2

## R

Radio PWP Exchanges • 51  
RADIO PWP EXCHANGES • 32  
RADIO PWP EXCHANGES (PDPM) • 24  
Radio PWP MULTICAST Group List • 53  
RADIO PWP MULTICAST GROUP LIST •  
34  
RADIO PWP MULTICAST GROUP LIST  
(PDPM) • 28  
Radio SNTP Client • 50  
RADIO SNTP CLIENT • 23, 32  
Review the PDPM Module Sample  
Application Files • 49  
Review the Sample PDPS Configuration • 55

## S

Sample SyCon File for Slave 6 • 46  
Sample SyCon File for Slaves 4 and 5 • 44  
Save and Download the Configuration File to  
the PDPS • 36, 63  
Save and Download the File to the 6104-  
WA-PDPM • 47, 54  
Save and Transfer the Configuration File to  
the Module • 20  
Support, Service & Warranty • 67

## U

Using the Sample PCB Files • 9

## W

WATTCP Section • 49

## Y

Your Feedback Please • 3