

# Quick Start Guide

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## **XBee-PRO PKG-R™ RS-232 RF Modem**

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Create a long range wireless data link in minutes!

## Introduction

This Quick Start Guide provides step-by-step instruction on how to setup a wireless link and test the RF modem's ability to transport data over varying ranges and conditions.

## Range Test Setup

### Requirements for Range Test

- One pair of XBee-PRO RS-232 RF Modems
- One PC (Windows 98 SE, 2000 or XP) with an available serial port (male DB-9).  
To complete the range test, X-CTU Software must be installed to the PC [refer to instructions below].
- Accessories (RS-232 cable, serial loopback adapter, two power supplies)

### Install X-CTU Software

Double-click "setup\_X-CTU.exe" file and follow prompts of the installation screens. This file is located on the MaxStream CD and under the 'Software' section of the following web page: [www.maxstream.net/helpdesk/download.php](http://www.maxstream.net/helpdesk/download.php)

The X-CTU Software interface is divided into the four following tabs:

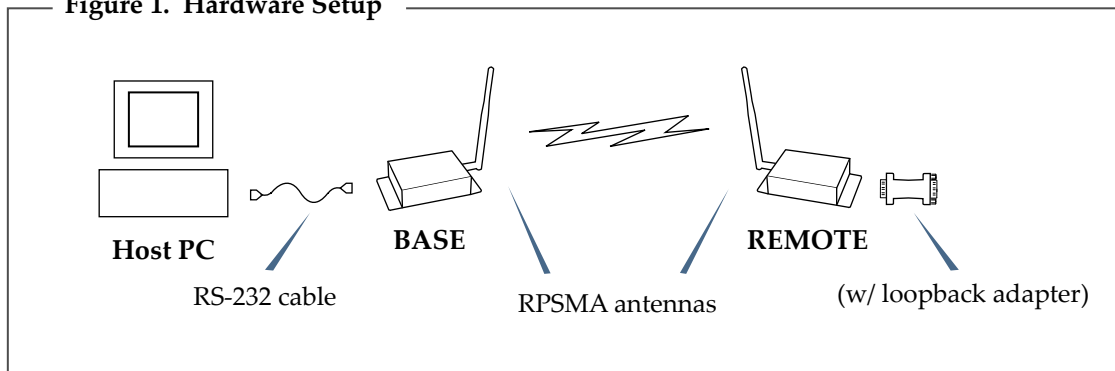
- PC Settings - Setup PC serial com ports to interface with the RF modem
- Range Test - Test range of wireless links under varying conditions
- Terminal - Read/Set RF modem parameters and monitor data communications
- Modem Configuration - Read/Set RF modem parameters

### Hardware Setup

The XBee-PRO RF Modems will be referred to as "BASE" and "REMOTE".

1. Connect the included RS-232 cable to the serial port (female DB-9) of the BASE RF modem and the serial port (male DB-9) of the PC.
2. Attach the serial loopback adapter to the serial port (female DB-9) of the REMOTE (Serial loopback adapter configures REMOTE to function as a repeater by looping data back into the RF modem for retransmission. [Figure 1])
3. Attach RPSMA antennas to each RF modem.
4. Power the BASE & REMOTE through their respective power connectors.

**Figure 1. Hardware Setup**



## Range Test Completion

Use the "PC Settings" and "Range Test" tabs of the X-CTU Software to:

- Setup a PC Serial Com Port for communications with the BASE RF modem
- Determine the range capabilities of the XBee-PRO RF Modems

### Range Test

1. Launch the X-CTU Software: (Start --> Programs --> MaxStream --> X-CTU)
- ② Under the "PC Settings" tab [Figure 3], select the PC com port from the dropdown list that will be used to connect to the BASE RF modem.
3. Select the "Range Test" tab. [Figure 4]
- ④ (Optional) Check the "RSSI" checkbox to enable its display.
- ⑤ Click the 'Start' button to begin the range test.
6. Move the REMOTE (with loopback connector) away from the BASE to find the maximum range of the wireless link.

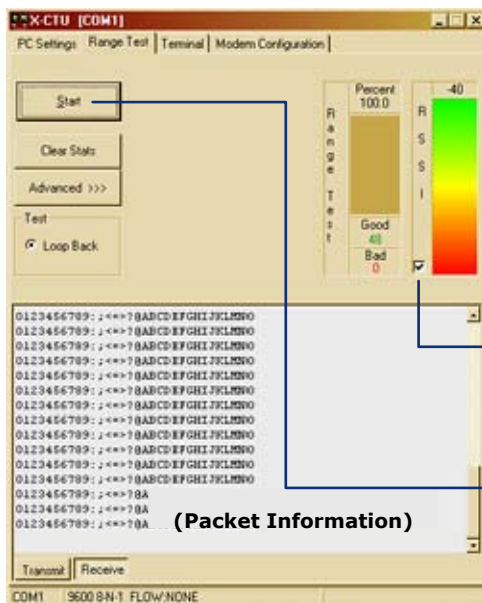
Figure 3. PC Settings tab

NOTE: Failure to enter AT Command Mode is most commonly due to baud rate mismatch. Ensure the 'Baud' setting on the "PC Settings" tab matches the interface data rate of the modem (BD parameter = 9600 bps by default).

② PC Com Port



Figure 4. Range Test tab



④ RSSI checkbox  
RSSI stands for "Received Signal Strength Indicator"

⑤ Start/(Stop) button

## Addressing Information

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### Unicast / Point-to-point Mode by default

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By default, XBee-PRO RF modems are configured to operate in Unicast Mode with a Source Address (MY parameter = 0) and Destination Address (DH = 0 and DL = 0). Under this default configuration, the RF modems will communicate in Unicast/Point-to-point Mode and retries are enabled [refer to product manual for more information]. This configuration only supports point-to-point communications.

For one RF modem to communicate to many modems, the modems must be configured to operate in Broadcast Mode. Broadcast Mode is enabled by setting the Destination Addresses as follows:

DH = 0x00000000

DL = 0x0000FFFF.

In Broadcast Mode, retries are disabled.

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**Contact MaxStream** (Office hours are 8am – 5pm U.S. Mountain Standard Time)

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