

# Quick Start Guide

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## **XTend™ 1 Watt Module Development Kit**

Range Test Setup  
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Contact MaxStream



Create a Long Range Wireless Link In Minutes.

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MD0016

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**WARNING:** When operating with 1 Watt power output, transmitting in close proximity of other modules can damage module front ends. Observe a minimum separation distance of 2' (0.6 m) between modules.

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## Range Test Setup

This Quick Start Guide provides OEMs and integrators with an introduction to some of the module's most important features. This guide provides step-by-step instruction on how to setup a wireless link and test the module's ability to transport data over varying ranges and conditions.

### Requirements for Range Test

- 2 OEM RF Modules
- 2 Interface Boards
- Accessories (Loopback adapter, RS-232 cable, 2 antennas, 2 power supplies)
- 1 PC (Windows 98 SE, 2000 or XP) loaded with X-CTU Software

### 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 on 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 module assembly
- Range Test - Test module's range under varying conditions
- Terminal - Read/Set module parameters and monitor data communications
- Modem Configuration - Read/Set module parameters

### Hardware Setup

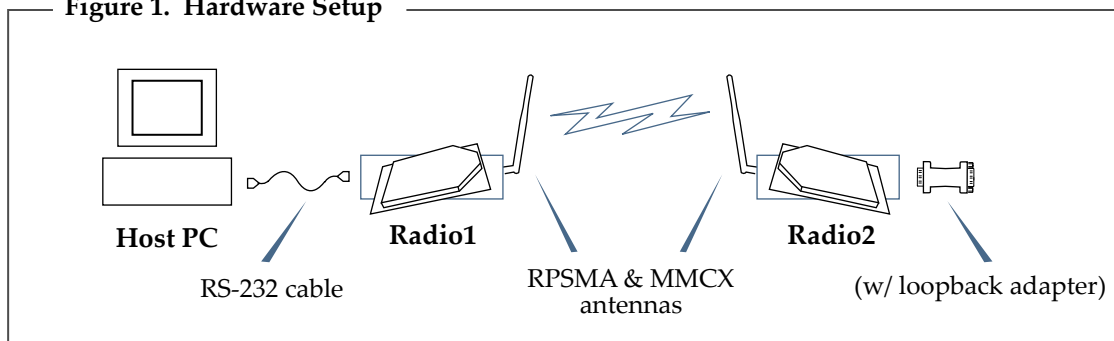
The XTend Development Kit includes a pair of module assemblies. A module assembly is an XTend OEM RF Module mounted to an RS-232/485 interface board. Module assemblies will be referred to as "Radio1" and "Radio2".

1. Set both DIP Switches to RS-232, point-to-point modes. Switches 1 and 5 are ON (up) and the remaining four switches are OFF (down).



2. Connect the included RS-232 cable to the female DB-9 connector of Radio1 and the male DB-9 connector of a PC.
3. Attach the serial loopback adapter to the female DB-9 connector of Radio2.
4. Attach an RPSMA antenna to one module and an MMCX antenna to the other.
5. Power Radio1 & Radio2 through interface board power connectors.

Figure 1. Hardware Setup



## Range Test Execution

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

- Setup a PC Serial Com Port for communications with the XTend OEM RF Module [step 2 of "Range Test"].
- Determine OEM RF module's range [steps 1-7 of "Range Test"].

### Range Test

1. Launch the X-CTU Software: (*Start --> Programs --> MaxStream --> X-CTU*)
- ② Under the "PC Settings" tab [Figure 2], select the PC serial com port from the list that will be used to connect to Radio1.
- ③ Select the baud rate that matches the RF data rate of Radio1. Use default values for remaining fields [Figure 2].
4. Select the "Range Test" tab [Figure 3].
- ⑤ (Optional) Check the box in the "RSSI" section to enable its display.
- ⑥ Click the "Start" button to begin the range test.
7. Move Radio2 (with loopback adapter) away from Radio1 to determine the maximum range of the wireless link.

Figure 2. PC Settings tab

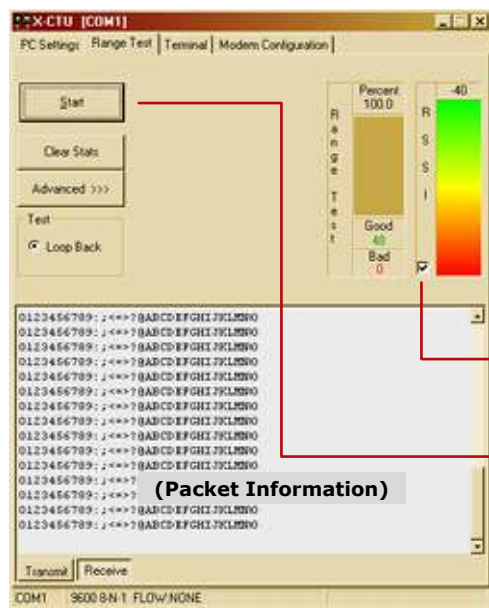
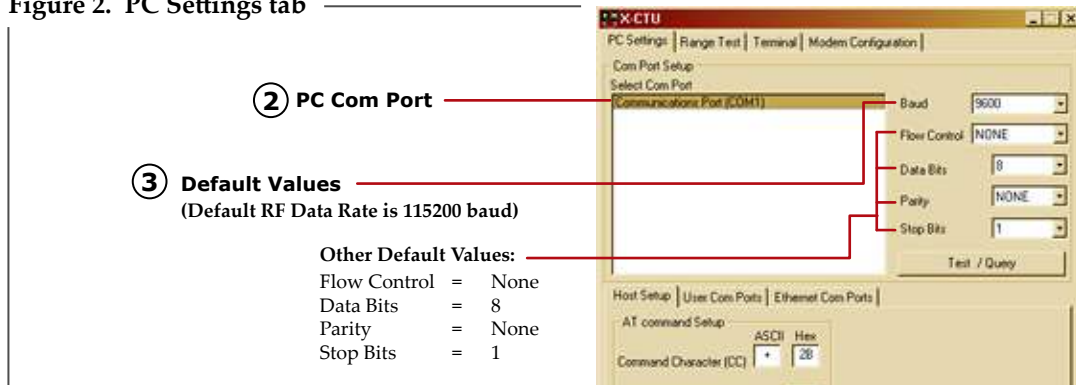


Figure 3. Range Test tab

## Tips and Suggestions

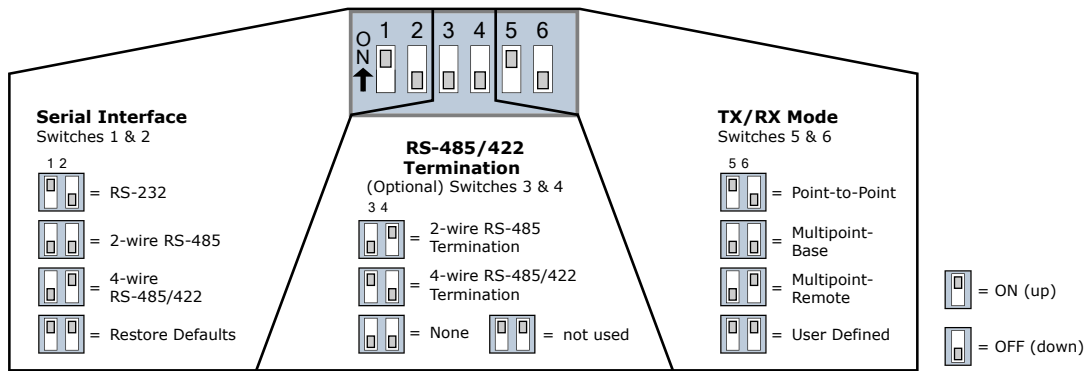
Out-of-box, the XTend OEM RF Module is configured to provide immediate wireless links between devices. The module's default configuration supports a wide range of RF communications.

If the module must be configured to support specific needs of a data system, several programming options are available.

### Using the MaxStream Interface Board DIP Switch

When a module assembly is powered on, commands are sent to the module according to the positions of the DIP switch [unless switches 5 and 6 are ON (up)]. The DIP Switch allows a software-independent method of configuring the following commonly-used module settings:

Figure 4. DIP Switch Settings (Settings applied only when powering on)



### Restoring Module Defaults

If the XTend Module is not responding or cannot enter into Command Mode, try restoring the module to its original default parameter values.

**To Restore Defaults** (Interface Board DIP Switch Method):

1. Set switches 1 & 2 of the DIP Switch to their ON (up) positions and the remaining four switches to their OFF (down) positions.
2. Turn off, then on again, the power supplying the XTIB-R interface board.

### Other Configuration Options

Using the interface board DIP Switch to configure the module is one of several ways to configure module parameters. Other programming options are available, such as using the X-CTU Software "Terminal" and "Modem Configuration" tabs. Binary programming is also supported.

Refer to the XTend OEM RF Module product manual for more information about the available configuration options.

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

Phone: (801) 765-9885, Live Chat: [www.maxstream.net](http://www.maxstream.net), E-Mail: [rf-xperts@maxstream.net](mailto:rf-xperts@maxstream.net)