

Quick Start Guide

XStream-PKG-E™ Ethernet RF Modem

Introduction
Com Port Communications
Range Test
Optional Configurations



Create a long range wireless link in minutes!

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MD0013

Introduction

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

Requirements for Range Test

- 1 PKG-E (Ethernet) RF Modem
- 1 PKG-R (RS-232) RF Modem
- 1 PC (Windows 98 SE, 2000 or XP) loaded with the following software:
 - X-CTU
 - Com Port Redirector
- Accessories (Loopback adapter, CAT5 cable, 2 RPSMA antennas, 2 power supplies)

Software Installation #1: X-CTU

Double-click the 'setup_X-CTU.exe' file, then follow installation screen prompts. File is located on the MaxStream CD and under the 'Software' section of the following web page: www.maxstream.net/helpdesk/download.php

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

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

Software Installation #2: Com Port Redirector

Double-click the 'setup_ComPortRedirector.exe' file, follow installation screen prompts, then re-start the PC. File is located on the MaxStream CD and under the 'Software' section of the following web page: www.maxstream.net/helpdesk/download.php

The Ethernet Com Port Redirector must be installed to activate the 'Ethernet Com Ports' sub-tab of the X-CTU "PC Settings" tab. If this software is not installed, the features under the 'Ethernet Com Ports' sub-tab are grayed and cannot be used.

The 'Ethernet Com Ports' sub-tab enables users to discover Ethernet RF Modems on a TCP/IP network and setup serial com port communications.

Com Port Communications

The X-CTU and Com Port Redirector software applications combine to facilitate data communications through a PC's Ethernet and com ports. A com port is not required for communicating to the Ethernet RF Modem, but is recommended as means of configuring and testing the modems.

Ethernet RF Modem Discovery

The X-CTU Software can be used to search a local network and display Ethernet RF Modems found.

Discover Ethernet RF Modem, redirect com port & assign IP address:

1. Launch X-CTU Software and select the "PC Settings" tab; then select the 'Ethernet Com Ports' sub-tab [Figure 1].
--> After the Ethernet Com Port Redirector is installed (& PC is re-booted), a "Setup Com Port" dialog box will appear the first time the 'Ethernet Com Ports' sub-tab is selected.
2. Select 'OK' button.
--> All discovered Ethernet RF Modems will be displayed in a new "Assign IP Address" dialog box.
3. Highlight one of the discovered Ethernet RF Modems (Modem's IP and hardware address are listed in the '... discovered Ethernet Modem' section).
4. Select 'OK' button.
--> Newly assigned Ethernet Modem is listed under the 'Ethernet Com Ports' sub-tab and the first available com port is assigned to it.
5. Select 'Apply' button [Figure 1]. (Even though the Ethernet RF Modem appears in the 'Ethernet Com Port' list, the new com port cannot be used until changes are applied and the PC is re-booted.)
6. Re-boot the PC; then re-launch the X-CTU Software. The com port can now be used for Ethernet RF Modem communications.

Figure 1. PC Settings tab of the X-CTU Software

List of Com Ports

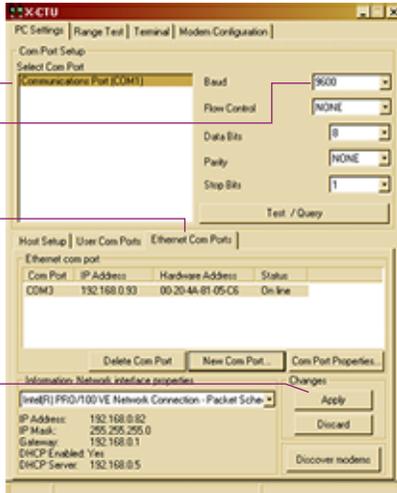
Baud Rate dropdown list
Refer to the XStream RF Modem part number to determine its fixed RF data rate (baud):

X09-009...	=	9600 bps
X09-019...	=	19200
X24-009...	=	9600
X24-019...	=	19200

Remaining Default Values:
Flow Control = None
Data Bits = 8
Parity = None
Stop Bits = 1

Ethernet Com Ports sub-tab

Apply button



The screenshot shows the X-CTU software interface. The top window is titled "X-CTU" and has tabs for "PC Settings", "Range Test", "Terminal", and "Modem Configuration". The "PC Settings" tab is active, and the "Ethernet Com Ports" sub-tab is selected. The "Com Port Setup" section shows a list of com ports with "Communications Port (COM1)" selected. To the right, there are dropdown menus for "Baud" (set to 9600), "Flow Control" (set to NONE), "Data Bits" (set to 8), "Parity" (set to NONE), and "Stop Bits" (set to 1). Below this is a "Test / Query" button. The "Host Setup" section has tabs for "User Com Ports" and "Ethernet Com Ports". The "Ethernet Com Ports" tab shows a table with columns "Com Port", "IP Address", "Hardware Address", and "Status". One entry is visible: "COM1", "192.168.0.93", "00:20:4A:01:05:06", and "On line". Below the table are buttons for "Delete Com Port", "New Com Port", and "Com Port Properties...". At the bottom, there is an "Apply" button and a "Discover modems" button. The bottom window shows network interface properties for "Intel(R) PRO/100 VE Network Connection - Packet Scheduler Filtered".

Assign Static IP Address (Optional)

If an Ethernet RF Modem resides on a DHCP network, it may become necessary to reconfigure a mapped com port any time an IP address is re-assigned by the DHCP server. Dynamic addressing is supported, but setting a static IP address can simplify the application. Follow the instructions in the Ethernet RF Modem product manual to explicitly assign a static IP to an Ethernet RF Modem.

Range Test

Once the Ethernet RF Modem has been setup for com port communications, a wireless link between devices can be created for the transportation of data.

Hardware Setup

Using the components listed on page one of this quick start guide, assemble the hardware needed for the range test.

1. Connect a PKG-E (Ethernet) RF Modem and a PC to active Ethernet ports of the same local network using standard CAT5 cables [Figure 2].
2. Attach serial loopback adapter to the DB-9 serial connector of the PKG-R (RS-232) RF Modem. The adapter configures the PKG-R RF Modem to function as a repeater by looping serial data back into the modem for retransmission.
3. Configure the PKG-R RF Modem for RS-232 operation using the built-in DIP Switch. Dip Switch 1 should be ON (up) and the remaining switches should be OFF (down).
4. Attach RPSMA antennas to both RF Modems.
5. Power both RF Modems with power supplies (included w/ accessory packages).

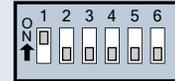
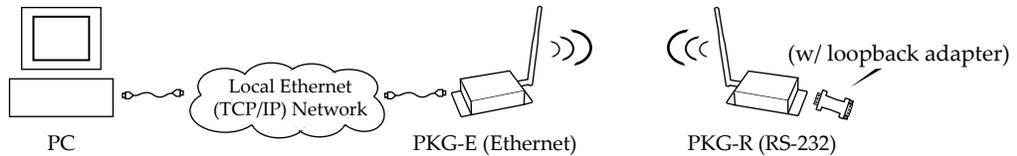


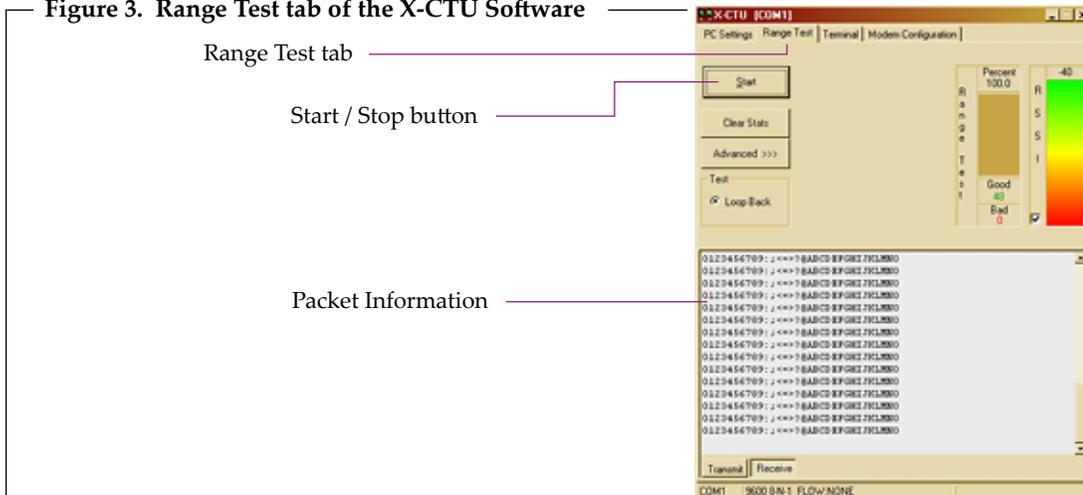
Figure 2. Hardware Setup for Range Test



Run Range Test

1. Highlight the PC com port that was setup in the Ethernet RF Modem Discovery section [Figure 1 - 'Com Port Setup' section of the "PC Settings" tab].
Select the PC com port baud rate from the 'Baud' dropdown list that matches the throughput data rate of the RF modems [Figure 1].
2. Select the "Range Test" tab [Figure 3].
3. Select the 'Start' button to begin range test.
4. Move the remote PKG-R (RS-232) away from the PKG-E (Ethernet) and observe packet information to determine the range of the wireless link.

Figure 3. Range Test tab of the X-CTU Software



Optional Configurations

Out-of-box, the XStream-PKG-E Ethernet RF Modems comes configured to provide immediate wireless links between devices. The default configuration of the modem supports a wide range of RF communications.

If the modem must support additional functions, modem parameters can be customized using standard AT and binary commands. MaxStream recommends using the X-CTU Software when configuring the PKG-E Ethernet RF Modem. Alternatively, programs such as "Telnet" and "HyperTerminal" can be used, although modem IP addresses must already be known in order to establish communications.

Restore RF Modem Defaults

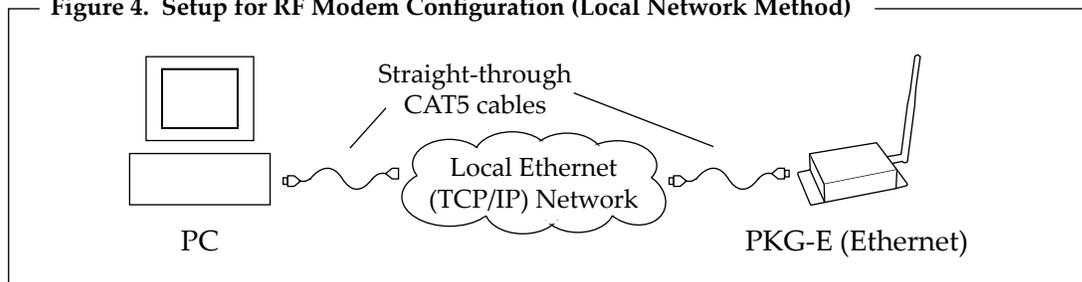
If the RF Modem is not responding or cannot enter into "AT Command Mode", restore RF Modem parameters to their original factory settings.

Restore RF Modem Default Parameters (Local Network Method):

After following the steps outlined in the Configuration Setup section [previous page], the RF modem is ready to be programmed. The following steps utilize the "Modem Configuration" tab of the X-CTU Software to restore default parameters.

1. Highlight the Com Port from the 'Select Com Port' list that is mapped to the Ethernet Modem.
2. Select the "Modem Configuration" tab.
3. Select the 'Read' button. (Currently stored parameter values are displayed.)
4. Select the 'Restore' button. (Original default parameter values are restored and written to the RF modem's non-volatile memory.)
5. Select the 'Baud Rate' Command (Listed under the 'Serial Interfacing' folder).
6. Change the BD parameter to '7 - 115200'. This maintains communication between the on-board RF module and Ethernet port.
7. Select the 'Write' button.

Figure 4. Setup for RF Modem Configuration (Local Network Method)



Ethernet RF Modem Configuration

The X-CTU Software features "Terminal" and "Modem Configuration" tabs that provide easy-to-use interfaces for configuring RF Modems. Refer to the product manual for information regarding configuration methods.

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