



# Quick Start Guide

## XStream-PKG-U™

### USB RF Modem



Create a long range wireless link in minutes.

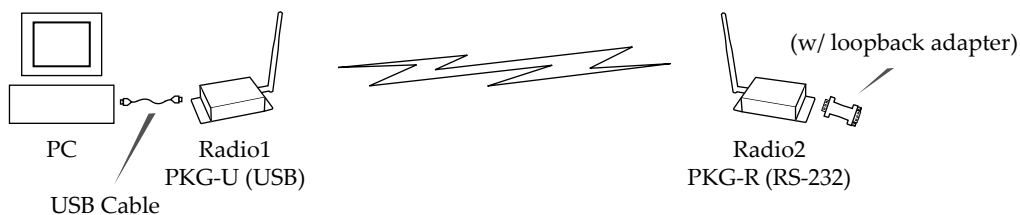
## Connect Hardware

To install the modem and test its range, you need:

- One XStream-PKG-U™ USB RF Modem
- One XStream-PKG-R™ RS-232/485 RF Modem
- Accessories (USB cable, Loopback Adapter, 1 Power Supply, 2 RPSMA Antennas)
- One computer (Windows 98 SE, 2000 or XP) that has an available USB port and is loaded with the following software: X-CTU Software & USB RF Modem drivers

### Hardware Setup

1. Verify PKG-U RF Modem ("Radio1") was successfully connected to the USB port of the PC.
2. Attach serial loopback adapter to the female DB-9 serial connector of the PKG-R RF Modem (Radio2).  
The serial loopback adapter configures Radio2 to function as a repeater by looping data back into the modem for retransmission.
3. Attach RPSMA antennas to Radio1 & Radio2.
4. Power Radio2 through its power connector. (Radio1 is already powered through one of the pins of the USB connection)



## Install Software

### Install X-CTU Software

Click the **Install X-CTU** button located on the Digi-MaxStream Software and Documentation CD user interface, or double-click the **setup\_X-CTU.exe** file. This file is located on the Software and Documentation CD and on the following web page: [www.maxstream.net/helpdesk/download.php](http://www.maxstream.net/helpdesk/download.php)

## Install USB RF Modem Drivers (Hardware USB Bus & Virtual Com Port drivers)

The following steps reflect use of the Windows XP operating system.

1. Connect the XStream-PKG-U RF Modem to a PC using a USB cable. The PKG-U RF Modem is a "plug-and-play" device that should automatically be detected by the PC.

The **Found New Hardware Wizard** dialog box appears

2. Verify the Digi-MaxStream Software and Documentation CD is inserted into the drive.
3. Select the **Install from specific list or location (Advanced)** option; then click **Next**.
- 4a. Select the "Search for best driver in these locations" option and check the **Search removable media (CD-ROM...)** box.
- 4b. Click **Next**.

The **Hardware Installation Windows Logo Testing** alert box appears.

5. Click **Continue Anyway**.
6. Click **Finish**.
7. Repeat steps 2 through 6 to install the second driver.
8. Re-boot computer if prompted to do so.

## Verify Driver Installations

1. Connect the PKG-U RF Modem "Radio1" to the USB port of a PC.  
An illuminated bottom-left red LED indicates a successful USB link.

### LED indication of successful USB link

(Left-bottom Red LED is illuminated.)

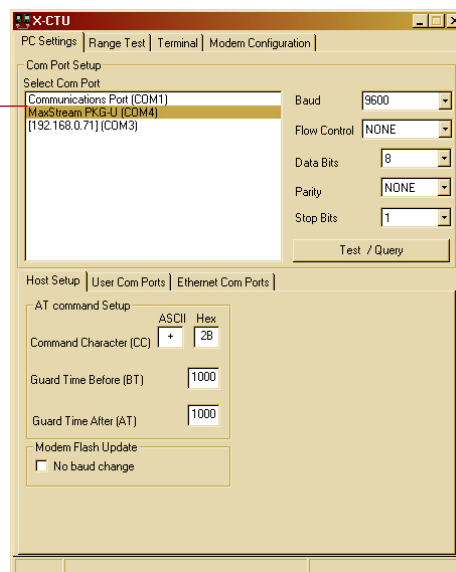


2. Launch the X-CTU Software: **Start > Programs > Digi-MaxStream > X-CTU**.
3. Click the **PC Settings** tab. Under the **Com Port Setup** section, select the PKG-U that is connected to the USB port. Com ports dedicated to a USB RF modem have "Digi PKG-U" in the com port name. This PC com port will be used when executing the range test.

### PC Settings tab

#### Com Port dedicated to the PKG-U RF Modem "Digi PKG-U (COM#)"

PC com port enumerations can also be viewed through the "Ports (COM & LPT)" entry of the Microsoft Windows Device Manager.



# Configure Serial Port-Modem Communications

Configure a serial port to communicate with the modems:

1. Launch X-CTU Software: **Start > Programs > Digi > X-CTU**
- ② Click the **PC Settings** tab. From the dropdown list, select the PC com port that will be used to connect to Radio1. Com ports dedicated to USB RF Modems always begin with "Digi PKG-U...".
- ③ Select the Baud rate that matches the default RF data rate (over-the-air baud) of Radio1. Use default values for remaining fields.

PC Settings tab

② PC Com Port

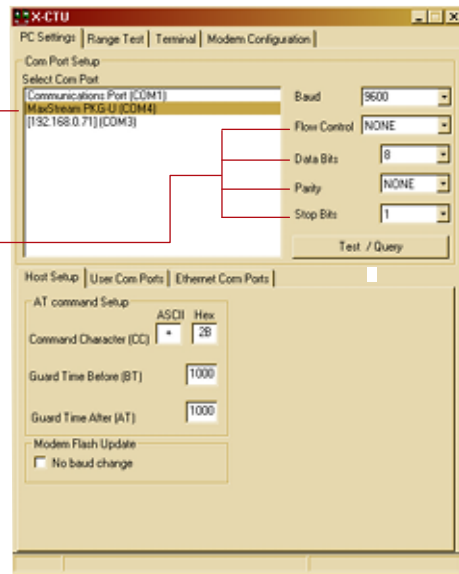
③ Default Values

Refer to XStream RF Modem part number to determine its default RF data rate:

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

Remaining Default Values:

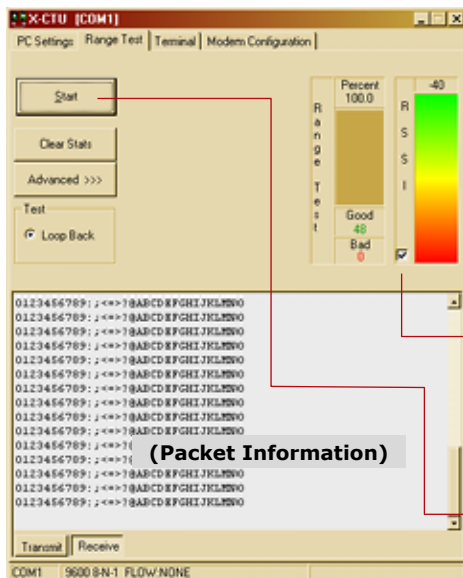
Flow Control	=	NONE
Data Bits	=	8
Parity	=	NONE
Stop Bits	=	1



## Determine the RF Modem's Range

1. Click the **Range Test** tab.
- ② (Optional) Check the check box in the **RSSI** section to enable its display. RSSI stands for "Received Signal Strength Indicator".
- ③ Click the **Start** button to begin range test.
4. Move Radio2 (with loopback adapter) away from Radio1 and observe packet information to determine the range of the wireless link.

Range Test tab



- ② RSSI check box  
RSSI stands for "Received Signal Strength Indicator".

- ③ Start/(Stop) button

# Tips and Suggestions

## Modify Interface Data Rate of RF Modem (Optional)

OEMs and integrators can interface with XStream RF Modems at different baud rates than the modem defaults, though actual RF data rate is fixed. To change the modem's serial interfacing rate, first select the PC com port baud rate that matches the modem's default [steps 1-2 below]. Then change the baud rate of the modem itself [steps 3-7]. Finally, select the baud rate of the PC com port to match the newly set baud rate of the modem [step 8].

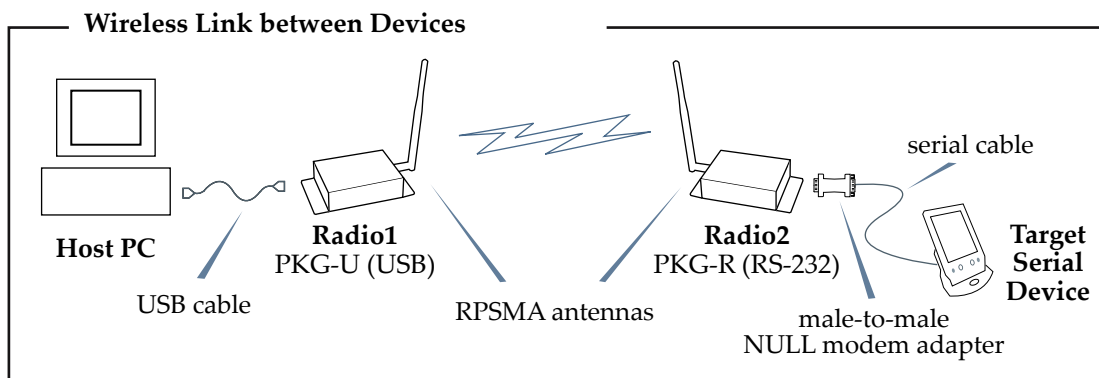
## Modify Interface Data Rate (Optional)

1. Set up a connection to a PC by following the installation steps on page 1.
2. Select the PC Com port baud rate that matches the RF Modem's fixed RF data rate by following steps 1, 2 and 3 of "Configure Serial Port-Modem Communications" (page 3).
3. Click the **Modem Configuration** tab of the X-CTU Software.
4. Click the **Read** button to view currently stored parameter values.
5. In the **Commands/Parameters** hierarchical tree, open the Serial Interfacing Options folder by selecting its plus (+) sign.
6. Select the **Baud Rate** entry, then select a desired baud rate from the dropdown list.
7. Click the **Write** button to save new settings to non-volatile memory.
8. Select the **PC Settings** tab, then select the value from the 'Baud' dropdown list that matches the newly set baud rate. This configures the PC com port to communicate at the new baud rate.

## Create a Wireless Link between Devices

A pair of RF Modems can be used in lieu of a cable to create a wireless link between devices. The diagram below shows a wireless strategy for connecting to target devices such as automatic meter readers, fleet management devices, remote weather stations, and a host of other applications. When connecting devices, consider the following:

- Use the **male-to-male NULL modem adapter** to connect Radio2 to a target serial device. Signals crossover inside the adapter.
- To verify cabling is functioning properly, insert a **female-to-female NULL modem adapter** in place of Radio1 and Radio2, then test communications without the RF modems in the link.



## Contact Digi

(Office hours are 8am – 5pm U.S. mountain standard time)

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