Quick Start Guide

9XTend-NEMA™ Weatherproof RS-232/422/485 RF Modem

Create a long range wireless link in minutes.

Connect Hardware

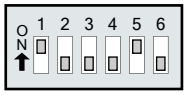
To install the modem and test its range, you need:

- 1 XTend-NEMA Weatherproof RS-232/485 RF Modem
- 1 XTend-PKG-R RS-232/485 RF Modem (or a second XTend-NEMA)
- 1 PC (Windows 98 SE, 2000 or XP) loaded with X-CTU Software
- Accessories (CAT5 cable with DB-9/PWR adapter board, loopback adapter, 2 RPSMA antennas (one is inside the NEMA enclosure), 2 power supplies)

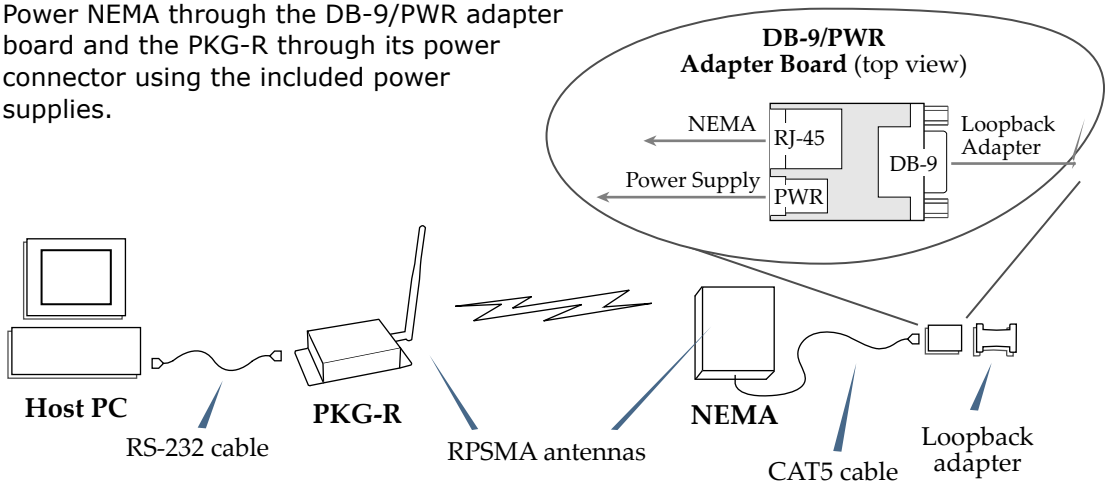
Hardware Setup

In these instructions, the XTend-NEMA RF Modem (remote) is referred to as "NEMA", and the XTend-PKG-R RF Modem (base) is referred to as "PKG-R".

1. Verify DIP Switches of NEMA & PKG-R are set to their default positions (RS-232, Point-to-point Mode: Switches 1 and 5 are ON (up) and the remaining 4 switches are OFF (down)).

   [Refer to back page for important information regarding the DIP switch.]
2. Connect the female DB-9 connector of the PKG-R to the male DB-9 connector of the host PC using an RS-232 cable [Figure 1].
3. Attach the serial loopback adapter to the female DB-9 connector of NEMA. The serial loopback adapter configures the NEMA to function as a repeater by looping data back into the modem for retransmission. [Figure 1]
4. Attach RPSMA antenna to PKG-R. (NEMA antenna is inside the enclosure.)
5. Power NEMA through the DB-9/PWR adapter board and the PKG-R through its power connector using the included power supplies.



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

Install Software

Double-click the file **setup_X-CTU.exe** and follow prompts of the installation screens. This file is located on the Digi-MaxStream Software and Documentation CD and under the 'Software' section of the following web page: www.maxstream.net/helpdesk/download.php

The X-CTU software interface has four tabs:

- **PC Settings:** Set up 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

Configure Serial Port-Modem Communications

Configure a serial port to communicate with the modem:

1. Launch the X-CTU Software: **Start > Programs > Digi-MaxStream > X-CTU**
2. On the **PC Settings** tab, from the dropdown list, select the PC serial Com port that will be used to connect to NEMA.
3. Select the PC interface baud rate that matches the RF data rate of NEMA. Use default values for remaining fields.

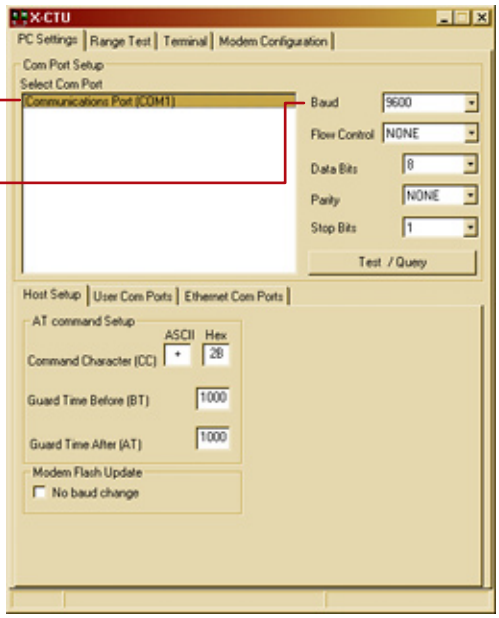
PC Settings tab

② PC Com Port

③ Default Values
Default RF data rate is 9600 baud

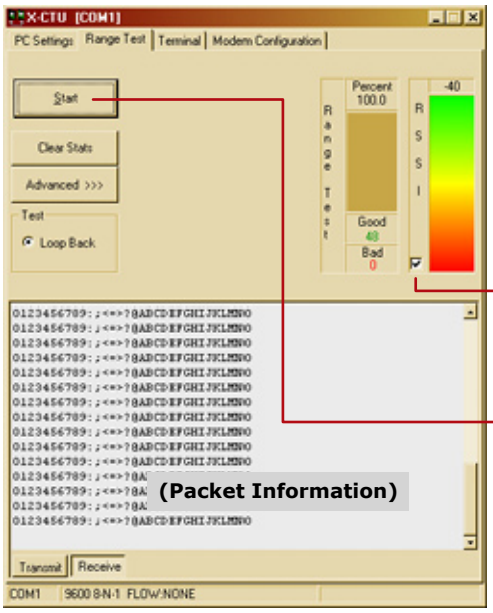
Other Default Values:

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 box in the **RSSI** section to enable display of signal strength.
3. Click the **Start** button to begin range test.
4. Move the remote PKG-R (with loopback adapter) away from NEMA to determine the range of the wireless link.



Range Test tab

2. **RSSI** checkbox
RSSI stands for "Received Signal Strength Indicator"

3. **Start/(Stop)** button

Additional Configuration Options

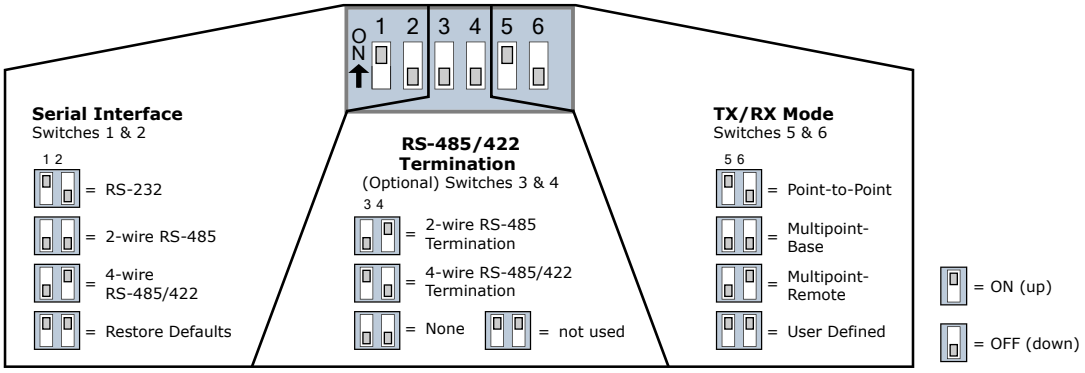
Out-of-box, the XTend-NEMA RF Modem is configured to provide immediate wireless links between devices. The modem's default configuration supports a wide range of RF communications.

If the RF Modem must be configured to support specific needs of a data system, many programming options are available. The RF modem recognizes an extensive set of AT and binary commands. Several commands can be sent to the modem using the DIP Switch that is located inside the weatherproof enclosure.

Using the RF Modem DIP Switch

The DIP switch allows users to configure the several RF modem settings.

DIP Switch Settings (applied only when powering on)



Each time the RF modem is powered on, the modem is automatically configured according to the positions of the DIP Switch. For example, the default positions (switches 2 and 5 are ON (up)) cause the DT and MY parameters to be set to specific values each time the RF modem is powered up.

To disable automatic configurations (so modified parameters persist in the modem registry on subsequent power-ups), set swiches 5 and 6 to their ON (up) positions.

Restoring Modem Defaults (DIP Switch Method)

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

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 the power supplying the XTend-NEMA RF modem, then turn it on again.

Other Configuration Options

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

Since the XTend-NEMA and XTend-PKG-R RF modems operate and behave the same, refer to the *XTend-PKG-R RF Modem User's Guide* for more information about supported configuration options.

Contact Digi

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