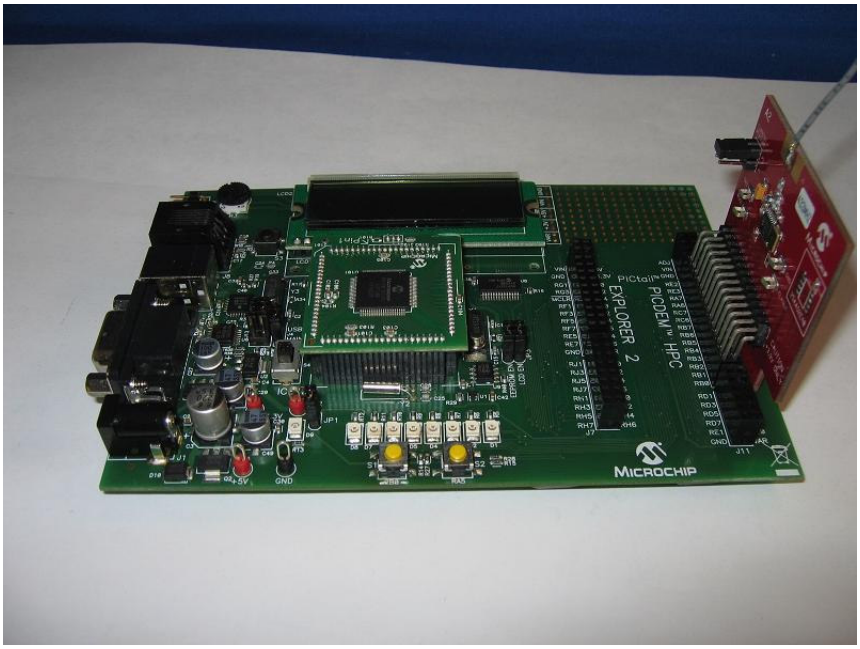
MRF49XA RF Transceiver Demo

Getting Started Guide

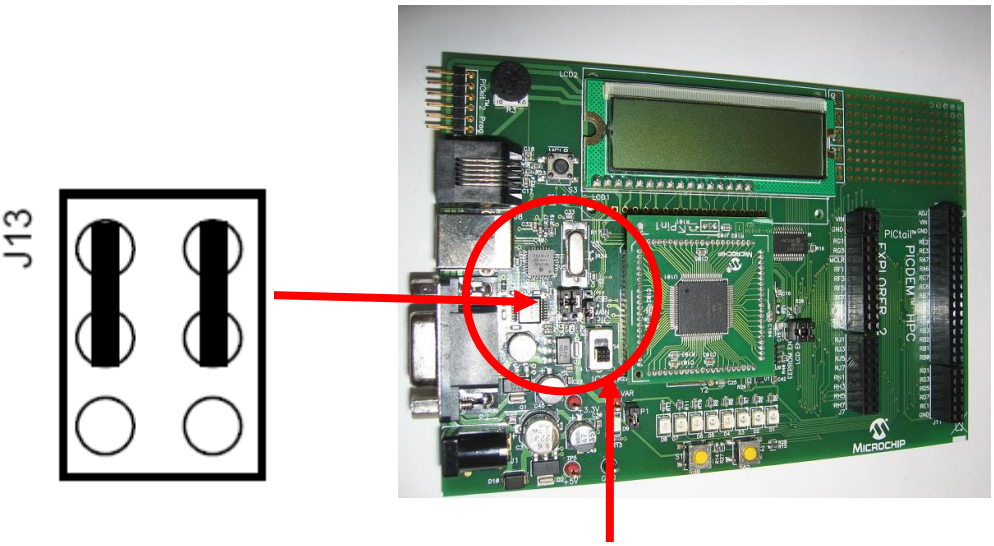


Requirements:

1. PIC18 Explorer (2) – DM183032 with PIC18F87J11 PIM
2. MRF49XA PICtail Daughter Board (2) – Unassigned
3. 9V Power Supplies (2)
4. USB Cables (2) or RS232 Serial Cables(2)

Hardware Setup:

1. PIC18 Explorer is shipped to use RS232 Serial cable. The RS232 serial cable can be connected directly between PIC18 Explorer and PC.
2. If USB cable is used, configure the Explorer PIC18 demo board to use USB connection by setting jumper J13 according to the following diagram

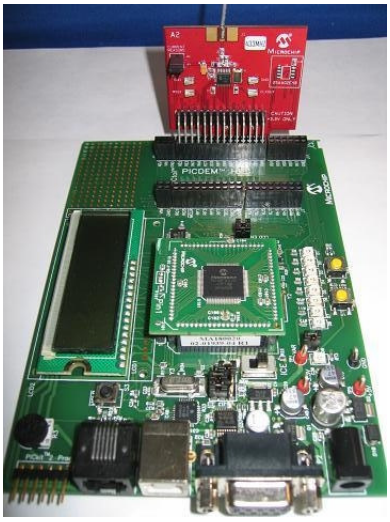


Make sure toggle switch is in the DOWN – ICE position. This switch activates the PIC18 on the PIM.

DO NOT remove the PIM or the board Vdd will be 5V which will destroy the MRF49XA PICtail.

3. Connect the MRF49XA PICtail daughter card to Explorer PIC18 demo board, as shown in picture below.

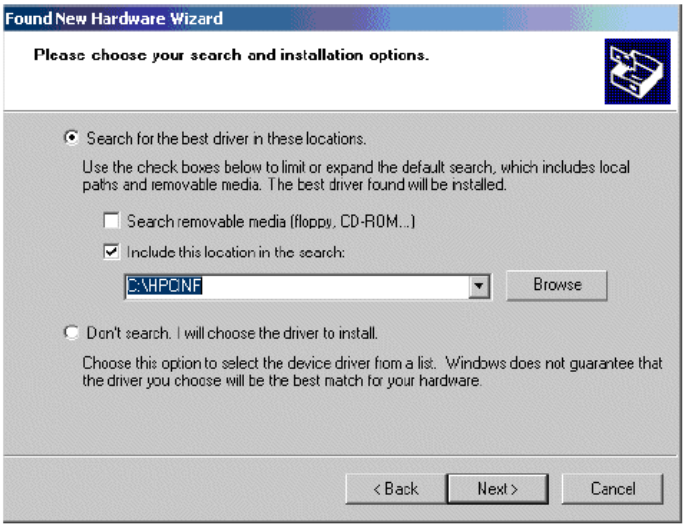
   Be sure to align pins labeled "RE2" on the MRF49XA module to the slot labeled "RE2" on the Explorer PIC18 demo board (skip the first 3 rows).



USB Driver Install:

4. If USB connection is used, USB driver must be installed. Install USB driver for the Explorer PIC18 demo board in following steps.
   - Connect Explorer PIC18 demo board to the PC using a USB cable.
   - Power up Explorer PIC18 demo board, following pop up window will appear

   - Select "Install from a list or specific location" option and click "Next". Following pop up window appears



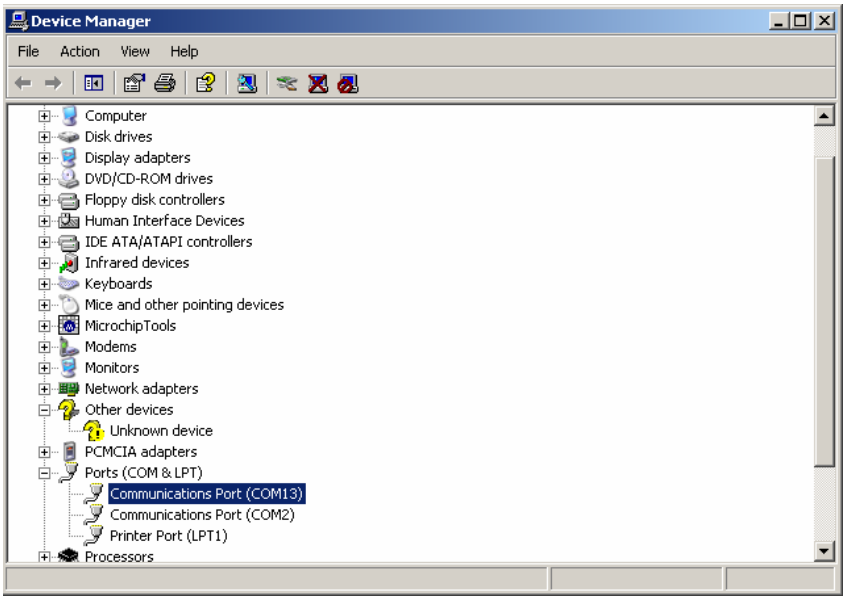
   - Select the check box "Include this location in the search", in the text box,
     - Browse to the INF folder under the demo directory. This is the location of the "mchpcdc.inf" driver. DO NOT USE Driver on PIC18 Explorer CD

- Click "Next". There may be warning from Windows operating system about installing a driver without digital signature. Please ignore that warning and continue. After the driver is installed properly, the following screen will appear

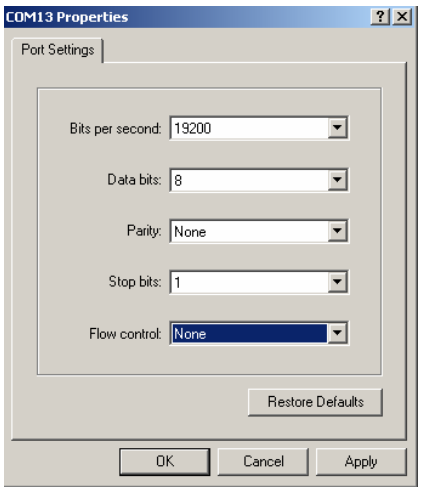
- Click "Finish". USB port is ready to be used.

Demo Procedure:

1. Open HyperTerminal program on the PC.
2. Determine which serial COM port has been assigned to the PIC18 Explorer by opening the Windows® Device Manager as shown:
3. Choose the serial port that has been assigned to the USB connection. The serial port that has been assigned to the USB connection can be found by plug and unplug the USB cable. Under "Ports" in Device Manager, a communication port will appear and then disappear with connecting state of the USB cable, according to picture below. This changing communication port is the one that has been assigned to the USB connection.



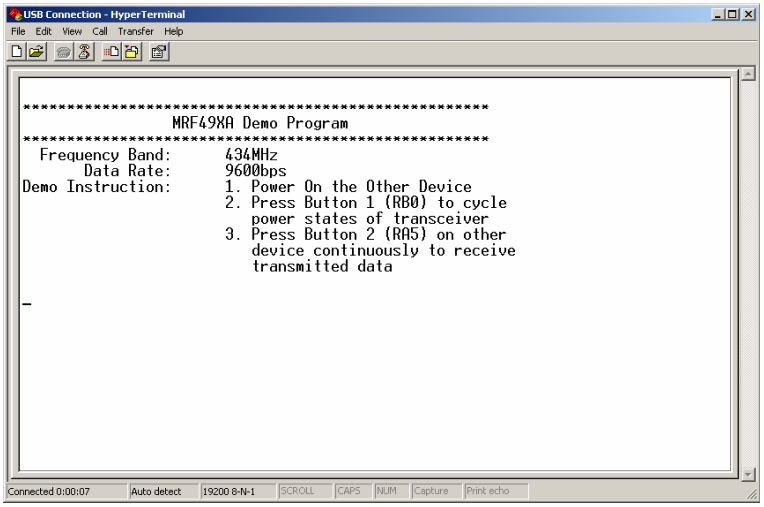
4. When setting the port properties, choose the bits per second to be “19200” and Flow control to “None”. Keep all other parameters as the default, as shown in the picture below.



5. Confirm the COM port is operating correctly and the correct driver is installed.

6. Power on the other demo board and open corresponding HyperTerminal with the same setting.

7. Press MCLR button on PIC18 Explorer demo board, an introduction page for the demo will show up on the HyperTerminal as below.



If Demo Program page does not show up:

- USB connection is not established. The HyperTerminal must be closed, unplug the USB cable and disconnect power to the PIC18 Explorer demo board. Power up the demo board first, then connect the USB cable to the PC. Repeat the step to open the hyper terminal and then check if the introduction page shows up on the HyperTerminal.

8. Pressing button 2 (RA5) on one demo board continuously will transmit (broadcast) the bit map of the phrase "Welcome to Demo MRF49XA" to the other demo board. The hyper terminal that is connected to the other demo board will display the bit map on the screen.

9. Pressing button 1 (RB0) on the demo board will cycle the power state of MRF49XA transceiver between SLEEP, IDLE and RECEIVE states.
    a. When removing jumper JP2 on MRF49XA PICtail daughter card and connecting the two ends to an amp meter, the current consumption of MRF49XA can be measured.
    b. When MRF49XA transceiver in sleep or idle mode, it cannot receive any messages. Pressing button 2 (RA5) on demo board will automatically put MRF49XA transceiver into receiving mode after transmitting.