

TECHNICAL NOTE – RL2400S

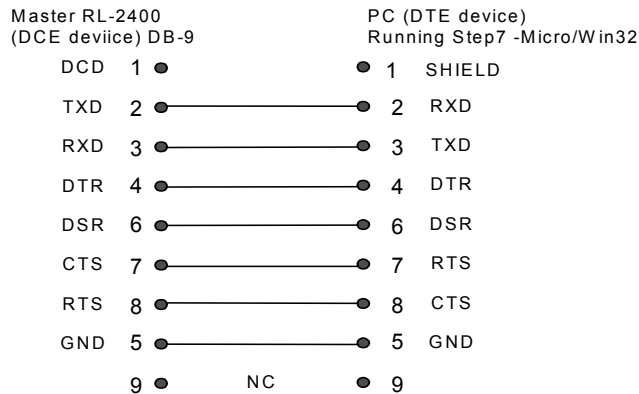
CABLING AN RL-2400S TO A SIEMENS S7-200 PLC (CPU 222)

Objective: This Application Connection Guide is a guide to setting up a wireless S7-200 PLC network using RL-2400 radios. The radios are set up to be transparent (wire-replacer) to the PLC network.

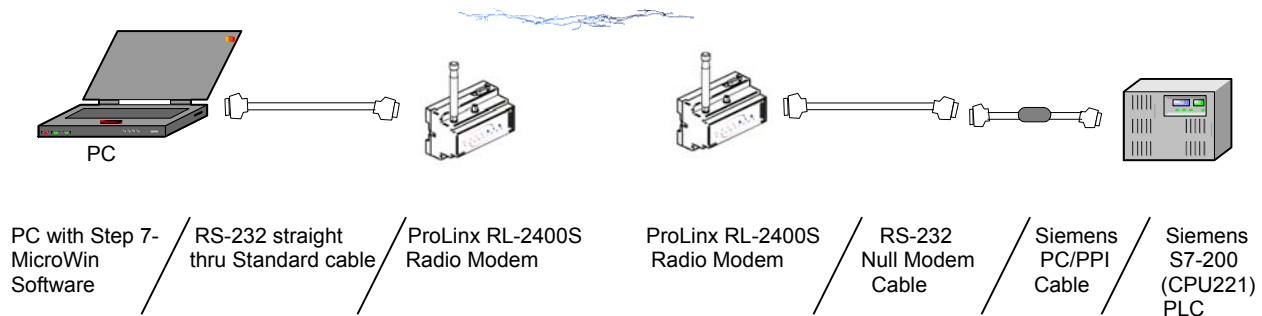
The following note describes the cable configuration from the remote RL-2400S radio modem to the Siemens S7-200 PLC. There are two ways the S7-200 PLC can be interfaced to the RL-2400 radio modems: either by using the PC/PPI cable protocol, or directly from the RL-2400S radio modem to the S7-200 serial port (Port 0).

Cable Configuration Using the PC/PPI Cable

The following shows the proper cable configuration when using the master RL-2400 radio modem to communicate from the PC (Step 7-Micro/Win32) software to the remote RL-2400 radio modem / S7-200 device. The master RL-2400 radio is cabled to the PC using a standard RS-232 serial cable.



The diagram shows the cable configuration from the PC (Step 7-Micro/Win software) to the master RL-2400 radio and from the remote RL-2400 to the S7-200 PLC, using the PC/PPI cable provided by Siemens. A null modem cable is used from the remote RL-2400 radio modem to the PC/PPI cable. The PC/PPI cable is connected from the other end of the null modem cable to Port 0 of the S7-200 PLC.

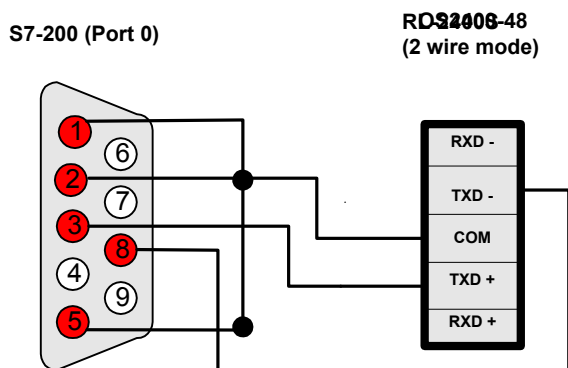


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Cable Configuration Using RL-23400S Cable

The RL-2400S radio will operate in the RL-2400S mode and can be configured to run in 2-wire or 4-wire mode. The Siemens S7-200 is configured using the PC/PPI mode and the following RS485 2-wire cable configuration.



Configuring the Wireless RL-2400S to Siemens S7-200 PLC

Following are the configuration steps to establish a communication link between the RL-2400 radio modem and the Siemens S7-200 PLC. Using the RL-2400 Setup & Diagnostic Software, select a new network, either Point-Point or Point-Multipoint Broadcast. If a single PC is communicating with a single PLC, a Point-Point network will work. If a single PC or Master PLC is connected to multiple PLCs, then a Point-Multipoint Broadcast network is needed.

Once the network has been selected, the radio's serial parameters need to be configured for the master and each remote radio within the network. The following radio settings are needed to communicate between the PC and S7-200 PLC:

- Baud Rate - 9600
- Parity - Even
- Data Bits - 8
- Handshake - None

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The S7-200 wireless network is ready to be tested. The following steps will determine if the radio modem connections are properly configured:

- Launch Step 7 - Micro/Win 32 software
- Go to view/communications
 - Select PC/PPI cable
 - Select remote address 2
 - Select local address 0
 - Select module PC/PPI cable protocol PPI
 - Select transmission rate, 9.6 Kbps
 - Select mode 11 bits

The master and remote radios will be transmitting and receiving data in both directions. Now a sample PLC program can be downloaded to the PLC through the RL-2400 wireless network by the following steps:

- File Open (select sample.mwp)
- Set the S7-200 PLC switch to stop
- Right mouse click onto the sample (CPU221), set <type> to CPU222 control or select <Read PLC>
- Select <OK>
- Select <View Ladder Logic>
- Select <File> Download
- The sample.mwp is downloaded to the S7-200 PLC
- Select from Debug menu <Chart Status>
- Place the PLC in RUN mode (physically switch the PLC to RUN)
- Now the bits on the controller can be monitored as the switches of the PLC are changed