Application Guide

Serial Communications Loop-Back Testing

ZŌN

When troubleshooting connection problems between your computer and a ZON router, it may be necessary to verify that the computer is capable of communicating via it's serial (COM) port.

Step One: Locate the active COM Port used by Windows

Open the System Properties window by either right-clicking on the "My Computer" icon on your desktop or the "My Computer" icon in the Start Menu.

Select the Hardware tab (see Figure 1). Select "Device Manager". This will launch the Device Manager window (as shown in Figure 2).
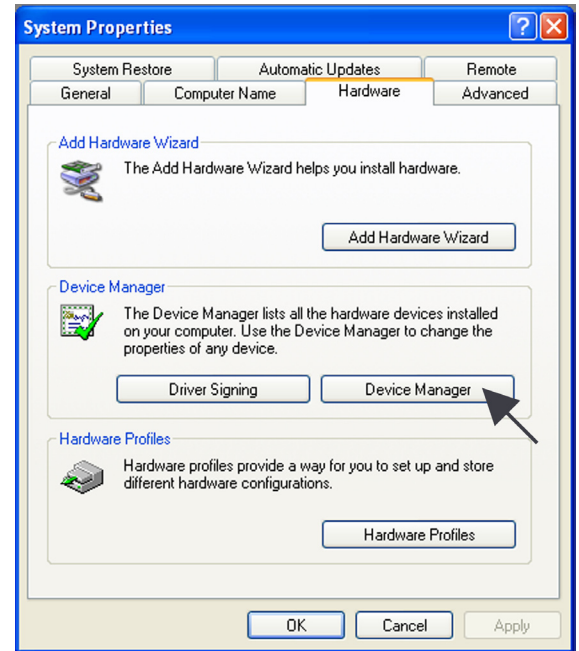

Figure 1

Figure 2

The device manager contains a list of various devices and their settings. Locate the listing for "Ports (COM and LPT). Expand the item by clicking on the "plus" sign next to it.

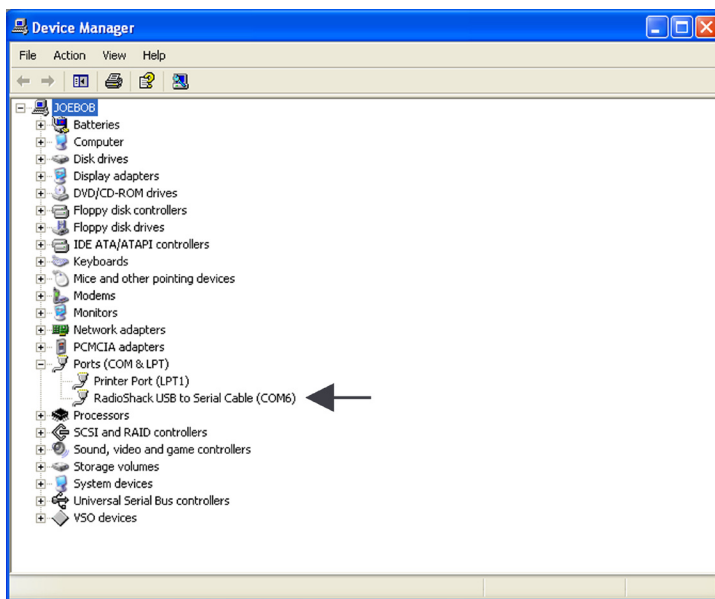The active COM port that Windows is using will be listed as shown by the example in Figure 2.

If you are using a COM port adapter (USB, PCI or PCMCIA), you should see the adapter and the COM port assigned to that adapter. In the event that you do not see your adapter listed, you do not have the adapter properly installed. To continue, you will need to properly install the adapter and it's drivers. Consult the documentation that was provided by your adapter's manufacturer.

If your computer has a built in serial port and you don't see it listed, you will need to consult the user's guide provided by your computer's manufacturer on the steps required to activate it's serial port.

Once you are able to see the active COM port listed in Device Manager, proceed to Step Two (on the next page).

Step Two: Build a Loop Back Device

Using the ZON DB9 to RJ11 connector and a spare, pre-made RJ-11 telephone cable, you can build a loop back plug. Cut the end off of one end of the cable, allowing about 2" for stripping and splicing. Figure 3 shows the pinouts for both a four-wire and six-wire telephone cable. If you are using a four-wire cable, tie wires 1 and 4 together. If you are using a six-wire cable, tie wires 2 and 5 together.

Connect the loop-back plug into the ZON DB9 to RJ11 connector, and connect this to your computer's serial port (Figure 4).
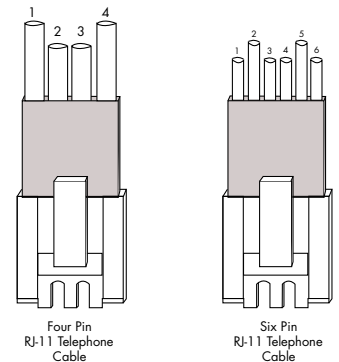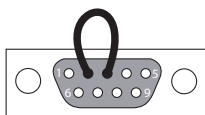
Four Pin
RJ-11 Telephone
Cable

Six Pin
RJ-11 Telephone
Cable

Figure 3

An alternate method is to use a DB9 Female connector and place one wire between pins 2 and 3 (Figure 5). Connect this directly to your computer's serial port.
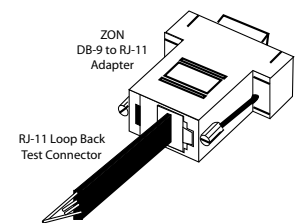
DB9 Female
Rear View

Figure 5

ZON
DB-9 to RJ-11
Adapter

RJ-11 Loop Back
Test Connector

Figure 4

Step Three: Launch Hyper Terminal

With your loop-back device connected to your computer, launch Hyper Terminal. This program is part of the Communications programs in the Accessories area of the Start Menu (Start>Programs>Accessories> Communcations>Hyper Terminal). Consult the various Help Menus or your software's manual for details on how to use Hyper Terminal.

Figure 6

In the "Connect To" window, it is important that you select the active COM port (from Step One) in the "Connect Using" field (Figure 6).

There are no special communications settings required for the loop-back test. You can use the default Hyper Terminal values.

After the terminal window opens, type on your computer's keyboard. When the loop-back device is connected and you cannot see your keystrokes in the terminal window, you either have a mis-wired loop-back device, or Hyper Terminal is unable to establish communications via the COM port chosen. You should verify your wiring and/or check the configuration of your computer's serial port.

If you are able to see your keystrokes in the terminal window, unplug the loop-back device and type again. Without the loop-back device in place, you should not see your keystrokes. This indicates that your loop-back communications is working for the specified COM port.

To further test your ability to communicate with the ZON router, please see the "Troubleshooting a Connection Issue" Application Guide, or refer to your ZON Serial Configuration Utility User's Guide.

040305-001