



Model 112 Quick Start Guide

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Overview

This guide provides assistance when preparing an SPLnet system for initial use. After completing only a few simple tasks operation can begin. The first step is to connect a Model 121 or Model 122 Measurement Microphone to the Model 112 Main Electronics Unit. Then Ethernet connections appropriate for the specific application will be made to the Model 112 Main Electronics Unit and an associated personal computer. Next DC power will be connected to the Model 112. If appropriate for the application, two meteorological sensors can be connected. Finally, web browser software on the personal computer will be used to connect to and configure the Model 112.

If you purchased an SPLnet Complete Configuration all items required for basic operation are included in the shipping carton. This includes a Model 112, Model 121 or Model 122 microphone, BNC-to-BNC microphone cable, DC power supply, and both straight-thru and crossover Ethernet cables. “A la carte” purchasers may have some or all of these items.

Connecting the Measurement Microphone

Connect the BNC plug located on one end of the microphone cable to the Mic In connector located on the top panel of the Model 112’s enclosure. Connect the other BNC plug, located on the other end of the cable, to the BNC connector on the Model 121 or Model 122 microphone.

Ethernet Connections

The following sections provide two methods of connecting an SPLnet Model 112 Main Electronics Unit to a personal computer or local-area network (LAN). The first method details how to create a direct data connection between the Model 112 and a personal computer with no involvement of a LAN. The second method describes connecting the Model 112 to a LAN connection.

Model 112 Direct Connection to a Personal Computer

Figure 1 provides details on implementing a direct data connection from a Model 112 to a personal computer. Connect a crossover Ethernet cable from the Ethernet port on the Model 112 to the Ethernet port on the personal computer. In addition, the Model 112 must be connected to 12 volt DC power.

The Model 112 will begin its start-up process as soon as power is applied. Once the Model 112 is fully functional (approximately 30 seconds after power is applied) and the personal computer is operating, the yellow “link” LED on the Model 112’s Ethernet connector will be lit. The link LED on the personal computer’s network connector should also be lit. The green “data activity” LED, also located adjacent to the Model 112’s Ethernet connector, may also be blinking. The personal computer may also include an activity LED which could be blinking.

Measurement
Microphone

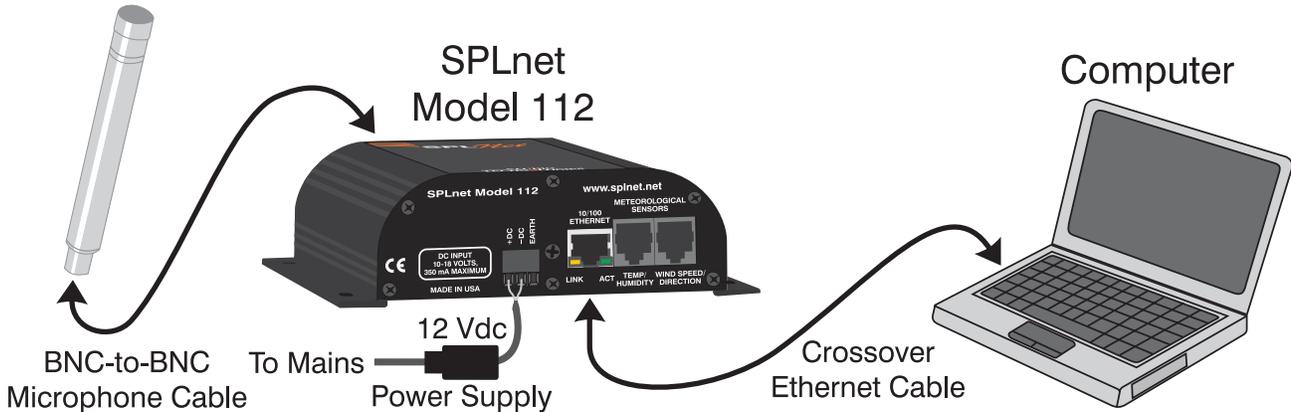


Figure 1. Model 112 Direct Connection to a Personal Computer

Model 112 Connection to an Ethernet Switch

Figure 2 shows how the Model 112 is connected to a LAN port. Begin by connecting one end of a straight-thru Ethernet cable to a port on an Ethernet switch. Connect the other end of the cable to the Ethernet port on the Model 112. The personal computer should be connected to the same LAN in the usual way. In addition, the Model 112 must be connected to 12 volt DC power.

The Model 112 will begin its start-up process as soon as power is applied. Once the Model 112 is fully functional the yellow link LED on the Model 112's Ethernet connector should be solidly lit. The green activity LED on the Model 112 may be blinking. The link LED on the personal computer's network connector should be lit. The personal computer may also include an activity LED which could be blinking.

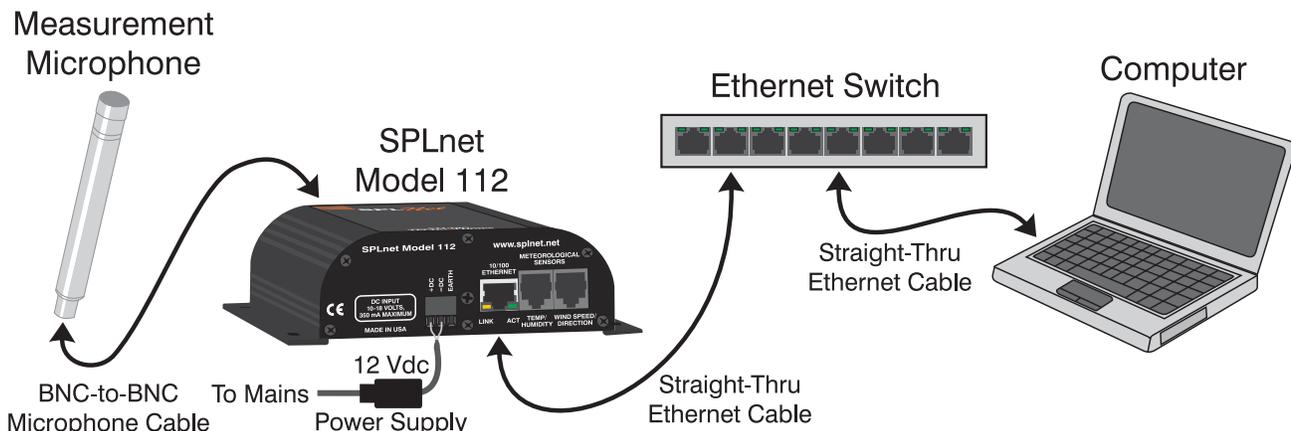


Figure 2. Model 112 Connection to a LAN

Connecting Power and Protective Ground

For Model 112 operation a source of DC power must be connected. In addition, for protection against damage caused by electrostatic discharge (“static” or ESD) a connection to earth ground must also be made. The nominal power source is recommended to be 12 volts DC with an acceptable range of 10 to 18. The maximum required current is 350 milliamperes.

A direct connection to a known “good” earth ground point is required to minimize the chance that static discharge will damage the Model 112’s circuitry. This is especially important when either or both of the meteorological sensors are connected. (The shield connections from these sensors are connected directly to the Model 112’s ground point.) A wire size of 14 AWG is recommended so as to maintain a low-impedance path.

A 3-position plug-in screw terminal strip, located on the Model 112’s bottom panel, is used to connect power and earth ground: pin 1 positive; pin 2 negative; pin 3 earth ground.

Connecting Meteorological Sensors

The Model 112 allows connection of two sensors that each measure two meteorological conditions. One sensor measures temperature and relative humidity while the other measures wind speed and wind direction. Two RJ11-style connectors (6-position, 6-contact modular jacks) are used to interface the sensors with the Model 112. The connectors are located on the Model 112’s bottom panel; please refer to Figure 3 for details.

Tables 1 and 2 provide connection details. Be careful if standard telephone-style modular cables are going to part of the installation. They perform a reversing function, as shown in Figure 4.

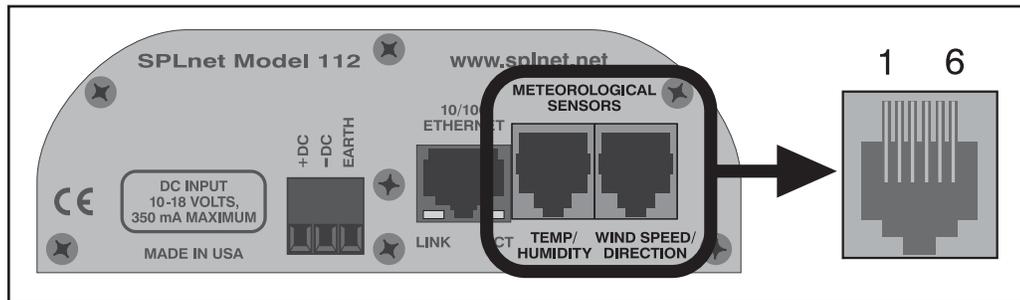


Figure 3. Meteorological Sensor RJ11 Jack Details

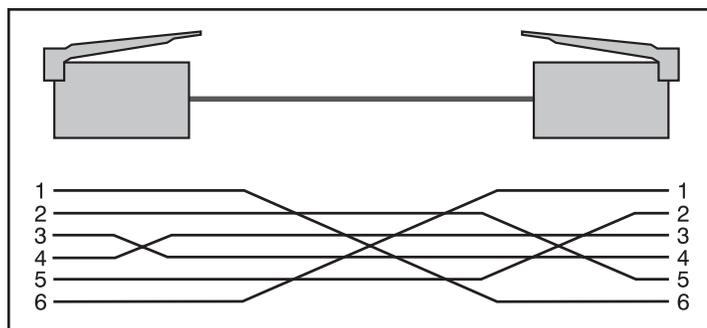


Figure 4. Most Modular Cables are Reversing!

Table 1. Temperature and Relative Humidity Sensor Connection Chart

RJ11 Pin	Sensor Cable Color	Function
1	None	Not Used
2	White	Relative Humidity (range 0-1 volts DC)
3	Black	Temperature (range 0-1 volts DC)
4	Brown	Sensor Power (27 volts DC, 4 mA maximum)
5	Blue	Sensor Common
6	Clear (Shield)	Cable Shield (in common with chassis ground)

Table 2. Wind Speed and Direction Sensor Connection Chart

RJ11 Pin	Sensor Cable Color	Function
1	Red	Direction Pot CCW
2	White	Speed Switch
3	Green	Direction Pot Wiper
4	None	Not Used
5	Black	Direction Pot CW/Speed Switch COM
6	Clear (Shield)	Cable Shield (in common with chassis ground)

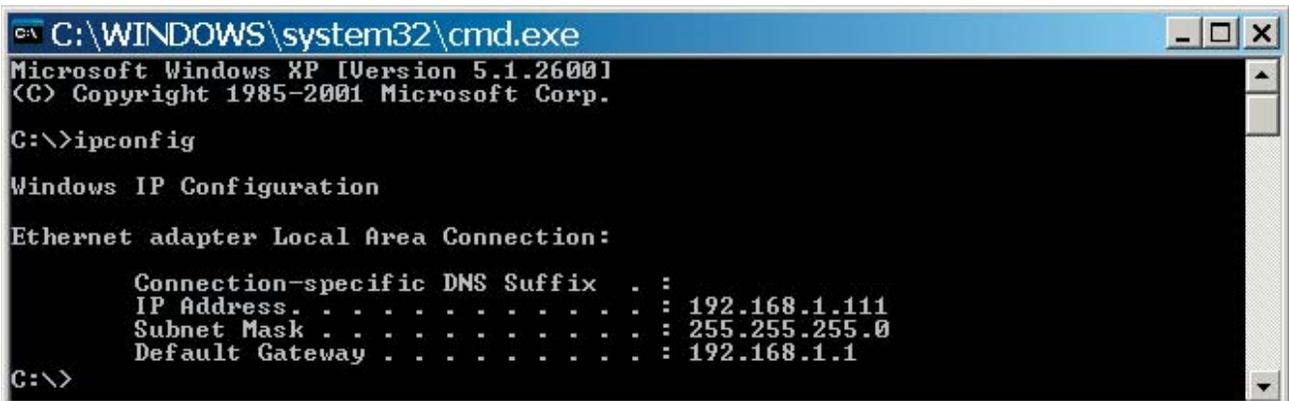
Network Settings

Once the Model 112 and associated personal computer have been connected via a direct connection or a LAN, power is applied and, if needed, the “meteo” sensors connected, it’s time to begin the system configuration. The important first steps are reviewing and, if required, revising the network settings on the Model 112 and the personal computer. The Model 112 is shipped with the following default network settings:

IP Address:	192.168.1.100
Subnet Mask:	255.255.255.0
Gateway IP Address:	192.168.1.1
DNS IP Address:	68.87.72.130

If the Model 112 is connected to a LAN it’s likely that the personal computer is able to directly access the unit. However, to access a Model 112 that is directly connected to a personal computer, you will need to make certain that the personal computer is not set to automatically obtain its IP address from a DHCP server. Instead, manually set the personal computer to a fixed IP address of 192.168.1.x, where x is any number from 1 to 255, but not 100. In this guide we’ll select x to be 111. Confirm that the Subnet Mask is 255.255.255.0. If it is not, change it to those values. At this point you do not need to worry about the Gateway IP Address or DNS IP Address.

If the personal computer is running Windows XP a quick way to check the current network configuration is to run “ipconfig” from the command prompt. To open the command prompt click **Start, Run...**, type **cmd**, and then **Enter**. Then type **ipconfig** to check your configuration. Your screen should display something similar to this. (If you are running OS X on an Apple® Macintosh®, open a terminal window and type **ifconfig** for similar functionality.)



```
C:\WINDOWS\system32\cmd.exe
Microsoft Windows XP [Version 5.1.2600]
(C) Copyright 1985-2001 Microsoft Corp.

C:\>ipconfig

Windows IP Configuration

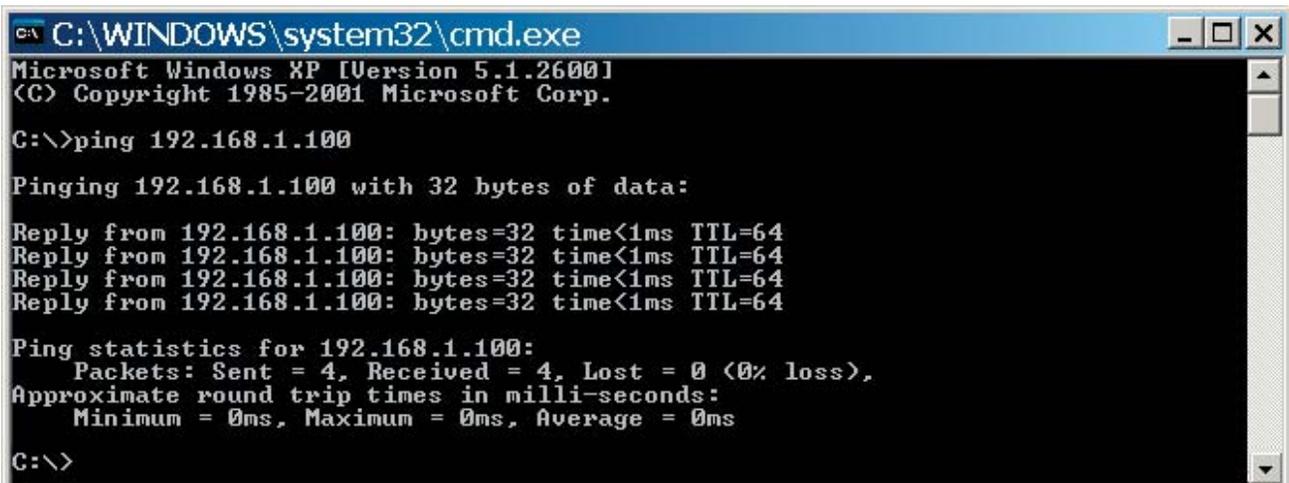
Ethernet adapter Local Area Connection:

    Connection-specific DNS Suffix  . : 
    IP Address. . . . .               : 192.168.1.111
    Subnet Mask . . . . .             : 255.255.255.0
    Default Gateway . . . . .         : 192.168.1.1

C:\>
```

Ping Test

Once the personal computer has been configured to access the Model 112 a connection test using the ping command is recommended. Under Windows XP entering **ping 192.168.1.100** at the command prompt would be appropriate. You should see something similar to this:



```
C:\WINDOWS\system32\cmd.exe
Microsoft Windows XP [Version 5.1.2600]
(C) Copyright 1985-2001 Microsoft Corp.

C:\>ping 192.168.1.100

Pinging 192.168.1.100 with 32 bytes of data:

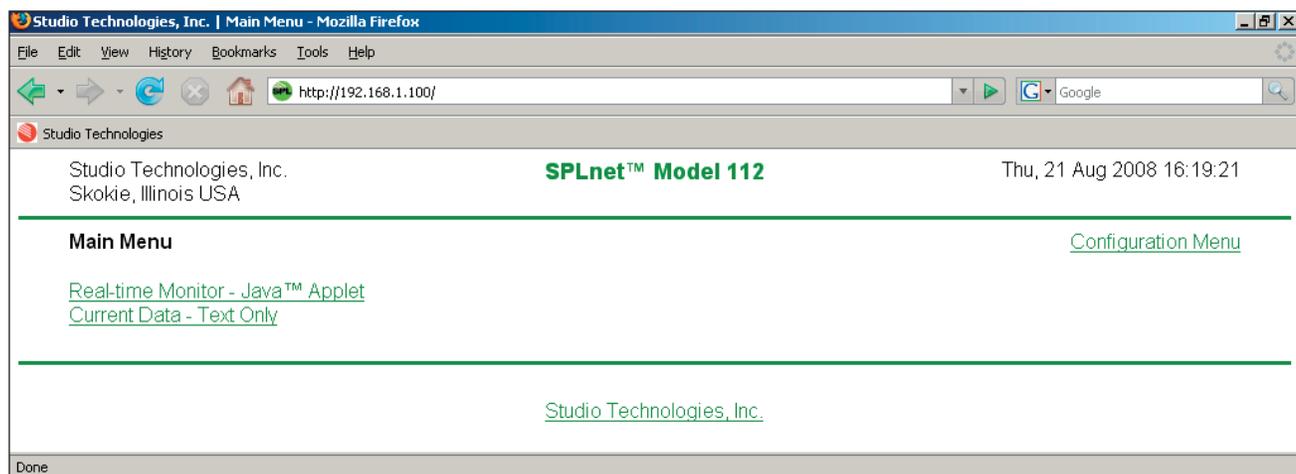
Reply from 192.168.1.100: bytes=32 time<1ms TTL=64

Ping statistics for 192.168.1.100:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 0ms, Maximum = 0ms, Average = 0ms

C:\>
```

Accessing the Model 112 Web Pages

Now it is time to login to the Model 112 using the personal computer's web browser. Compatible browsers include Internet Explorer®, Mozilla Firefox®, and Safari®. Type **192.168.1.100** into the address bar and press **Enter**. The Model 112's main web page should appear. In the upper right, click the **Configuration Menu** link. Once in the configuration menu, enter your login information or press submit if the default user name and password (guest, guest) appear. At the configuration menu select the **Network and Time** link. From the Network and Time menu you can configure the Model 112's network properties, making selections such that the unit will peacefully coexist on the intended LAN. If necessary, contact your network administrator for more details.



Note that it is possible that you will not see the Configuration Menu link on the main web page. This would occur if the unit has been configured to not display the link. In this case type **192.168.1.100/config.htm** into the address bar of your web browser to directly access the configuration menu. You can select whether or not to display the menu link from the Device Identity, Configuration Menu Access, and Applet configuration page.

Online Configuration Help

After the basic Model 112 network configuration has been completed use the online help to learn more about the unit's resources. The Help links redirect the browser to a website where the actual help content is located. As such, the personal computer's network connection must allow internet access.

Using the Java™ Applet

After the Model 112 has been configured to function correctly on a network normal operation can begin. To view the SPL data in real-time using your computer's web browser you will need to have the Java™ Runtime Engine (JRE), version 5 or later, installed. To download the latest version, go to <http://www.java.com>, click Download Now, and follow the installation instructions.

From the home page of the Model 112 you can now click **Real-time Monitor – Java Applet** to view the SPL data in real-time. Note that port 5520 must be opened on any fire walls between the PC and the Model 112 for the SPLnet applet to function. You can also click **Current Data – Text Only** to view a snapshot of the current measurements. This is appropriate for computing devices which are not running Java such as some mobile phones and PDAs.

Technical Note—Unknown IP Address

If the IP address assigned to a specific Model 112 unit is ever forgotten, pressing the **Reset** button, accessible via a small hole located on the top panel of the unit's enclosure, will always allow access. A short tap with the point of a pencil or pen is all that's required to restart the unit. When the unit has been restarted in this special mode it will have the default network settings active, including IP address 192.168.1.100 and subnet mask 255.255.255.0. In addition any user name and password entries are ignored, ensuring that the Model 112 can be accessed. (Using the default name/password combination of "guest" and "guest" is acceptable.) While the network settings can be changed if desired, restarting under the special mode doesn't automatically change the stored configuration values. (If the unit is again restarted using the menu system, or by first disconnecting and reconnecting power, the stored network configuration values will again become active.)